SANHUA

STANDARD PRODUCT

Catalogue

Air conditioning

Commercial refrigeration

Heat Pump





"Strive for perfection
Pursuit of excellence"

Sanhua is a leading HVAC&R manufacturer of controls and components with a global footprint and 40 years of experience. Our cooperation with the largest companies in the Automotive, Appliance and HVAC&R industry makes Sanhua a leading worldwide OEM supplier providing the highest quality components at the most competitive price.



三花

SANHUA IS LISTED AMONG TOP 100 STRONGEST CHINESE INDUSTRIAL BRANDS.

After sustainable growth over the last 3 decades, Sanhua have made significant progress to introduce a comprehensive range of controls and line components for the Commercial Air conditioning and Refrigeration Industries and to increase its service level coverage in the most important European markets.

SANHUA

SANHUA INTERNATIONAL
info@sanhuaeurope.com

Technical information
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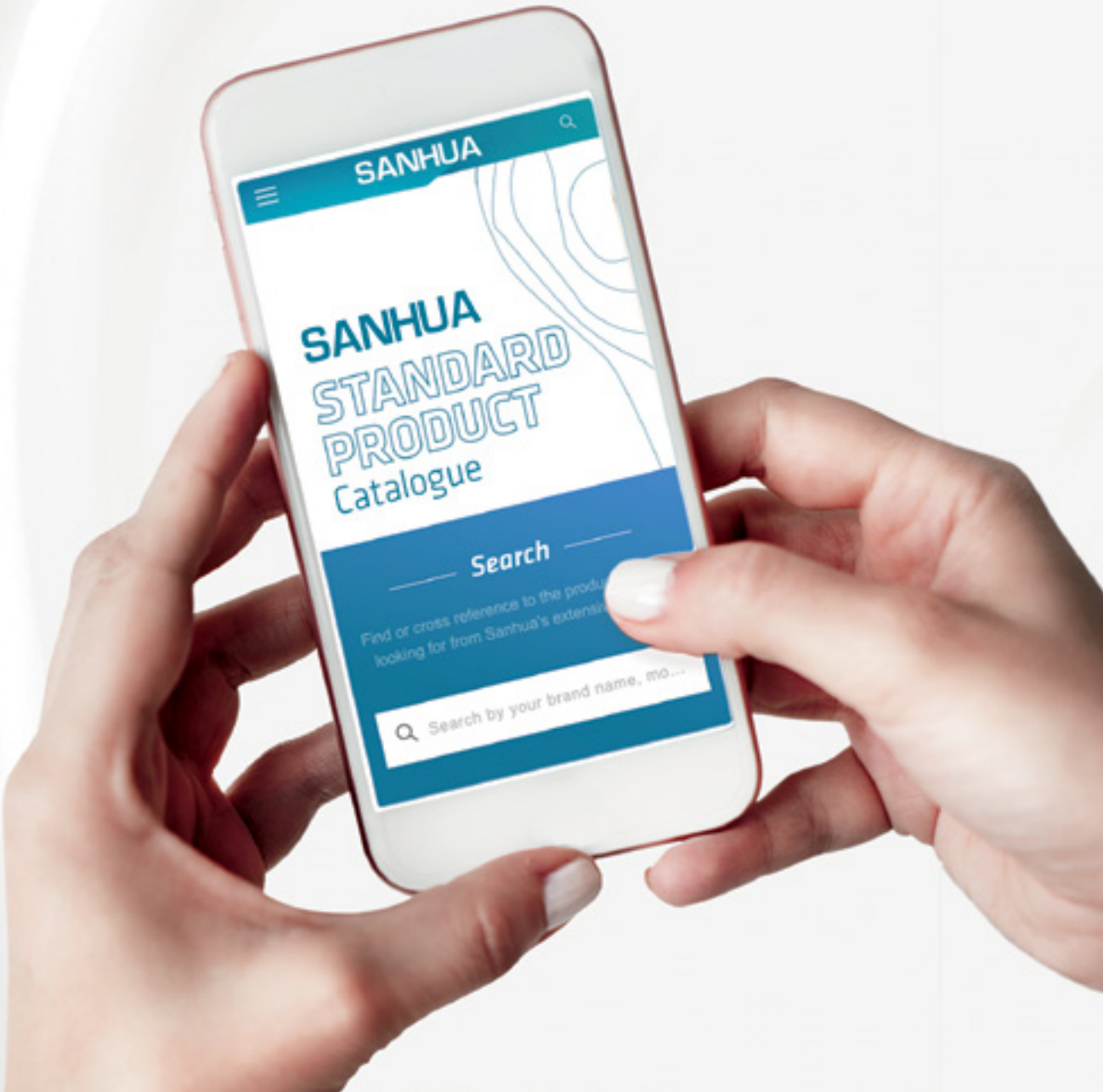
Certificate of registration
ISO 14001:2004

Certificate of registration
ISO 9001:2008

REACH
NR. 1907/2006
CONFORMITY DECLARATION

BEST SUPPLIER AWARDS

B/S/H/ Carrier TRANE



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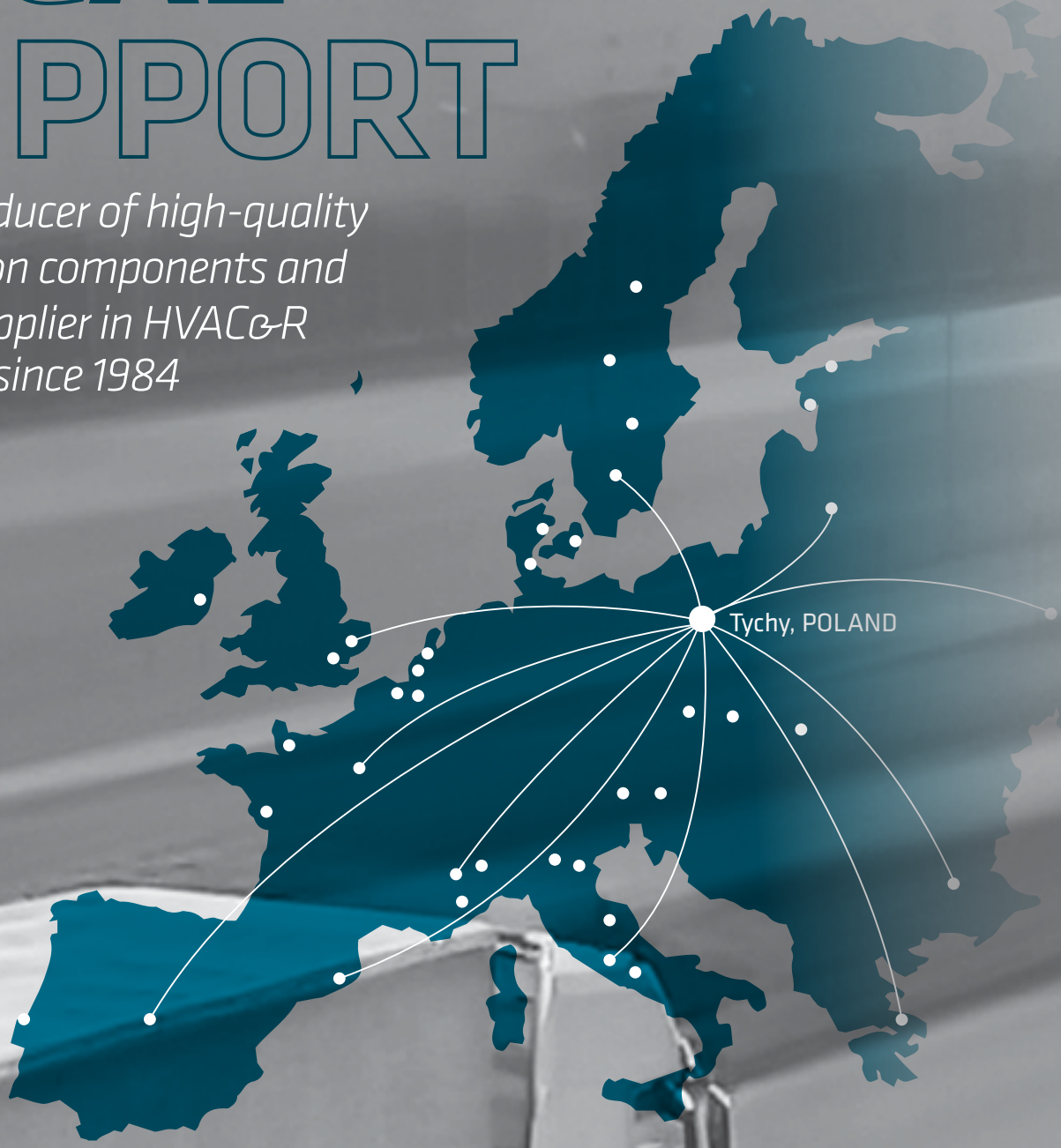
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Note: Sanhua accepts no responsibility for any errors that may occur in this catalogue. Sanhua accepts no responsibility for any product selection made from this material, it is the customers sole responsibility to ensure the correct selection of any components.

GLOBAL FOOTPRINT &

LOCAL SUPPORT

Global producer of high-quality refrigeration components and leading supplier in HVACoR industries since 1984



SANHUA

KEEPS YOU ONE STEP AHEAD OF THE COMING EFFICIENCY AND ENVIRONMENTAL EUROPEAN CHALLENGES



EEV TECHNOLOGY AND ELECTRONIC CONTROLS

IMPROVES HVAC&R SYSTEM EFFICIENCY UP TO 20%

DPF&VPF SERIES FROM 2KW TO 1400KW
**75KW AND 1400KW AVAILABLE IN QUARTER 4*

ADVANCED MSS *(MINIMUM STABLE SUPERHEAT)* CONTROL LOGIC



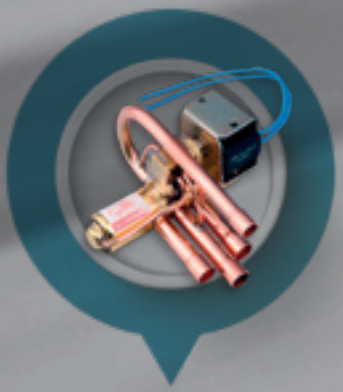
MICRO-CHANEL HEAT EXCHANGERS

IMPROVES EFFICIENCY BY 30%

REFRIGERANT CHARGE REDUCTION BY 30% *ENVIRONMENTAL FRIENDLY*

MCHE IS LIGHTER IN WEIGHT, SMALLER IN VOLUME *COMPACT DESIGN*



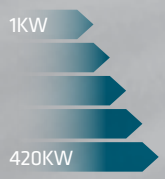


FOUR WAY REVERSING VALVE

IMPROVES EFFICIENCY BY 5%

SHF SERIES 1KW TO 420 KW

WIDEST RANGE IN THE MARKET WITH SINGLE BODY DESIGN



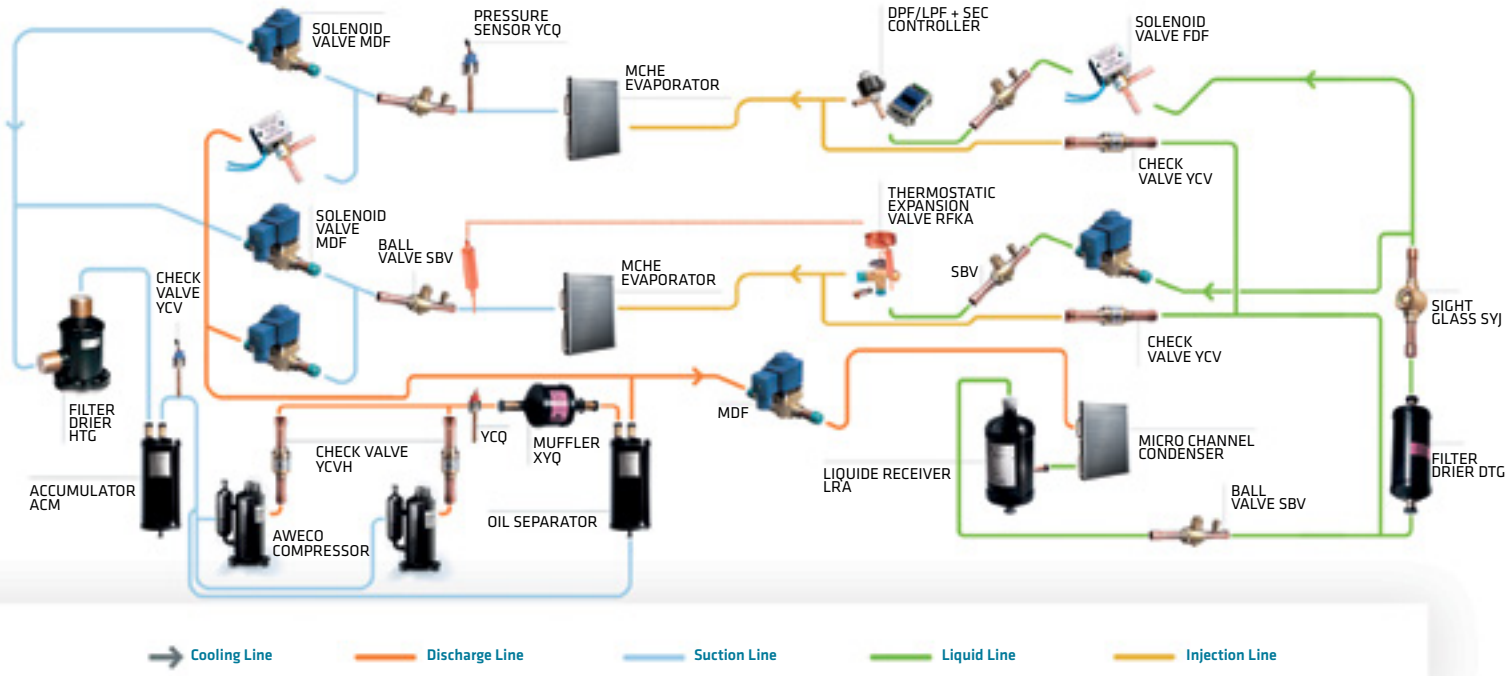
YOUR ROAD MAP TO THE ECO-DESIGN DIRECTIVE

SANHUA INTERNATIONAL
info@sanhuaeurope.com

THE SOLUTION IS HERE

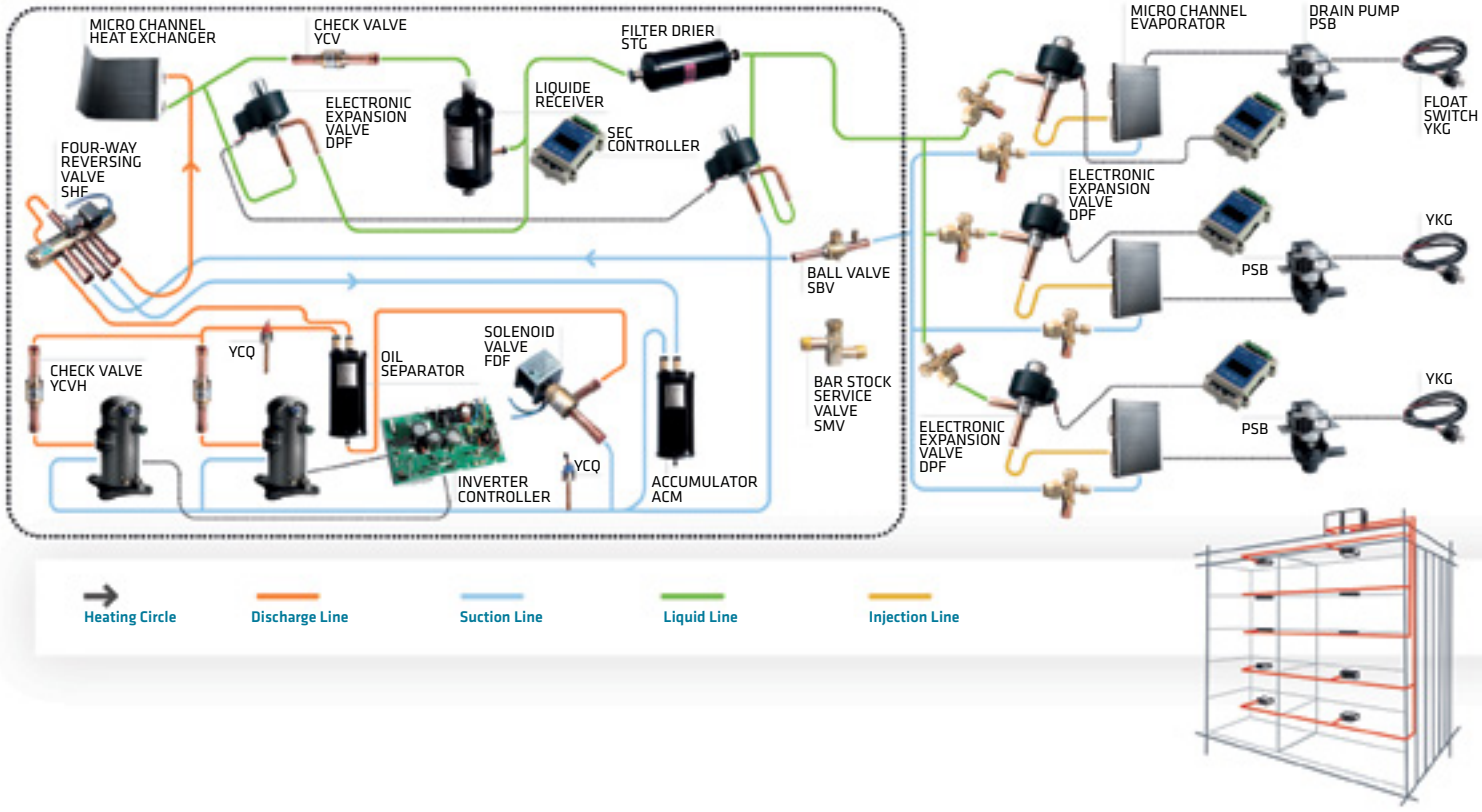
SANHUA IS YOUR PARTNER WITH COMPLETE RANGE AND TECHNOLOGY TO ADRESS NEW EFFICIENCY CHALLENGES

Commercial Refrigeration Application Solutions

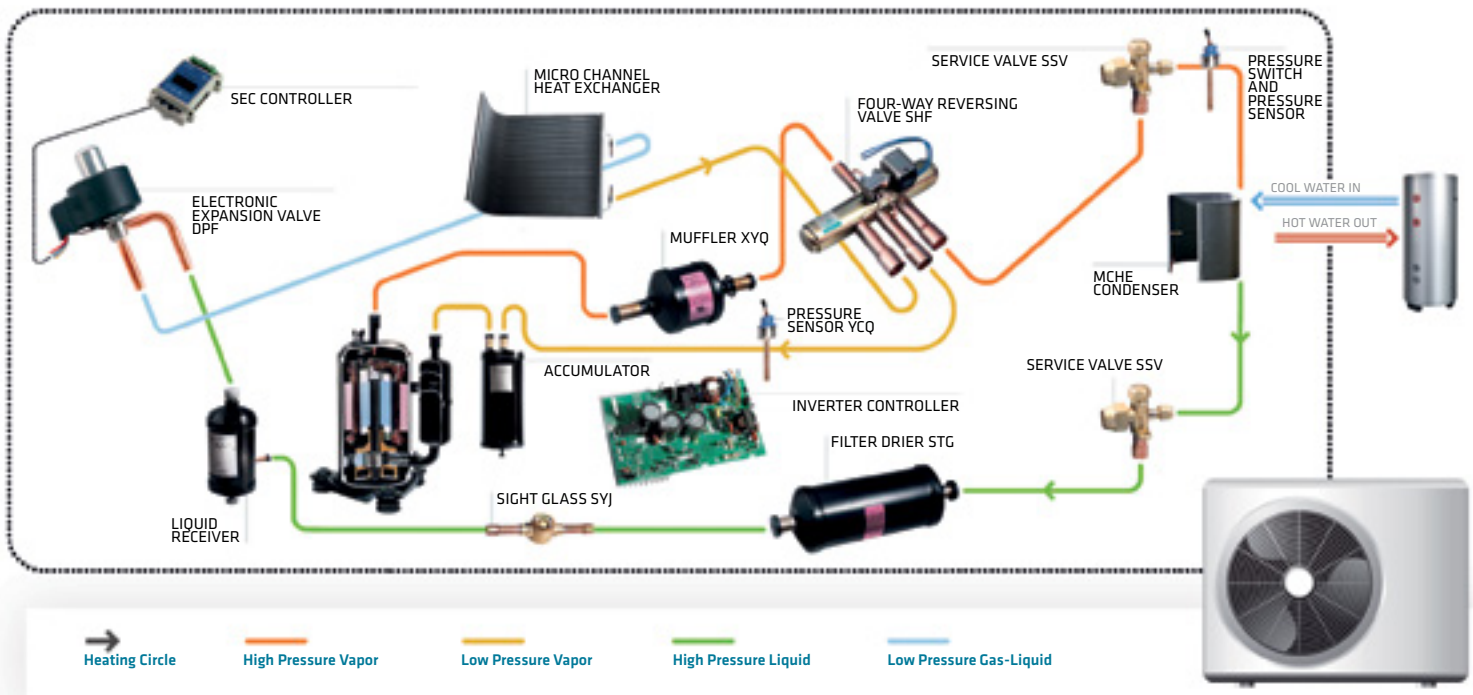


SANHUA

COMMERCIAL AIR CONDITIONING
VRF SYSTEM



Heat Pump Application Solutions



CHILLING IDEAS WORLDWIDE

***PEV** SERIES*

PULSE EXPANSION VALVE



PEV series pulse expansion valves are specially designed for use in refrigeration systems to precisely control the flow of refrigerant into the evaporator. Due to its solenoid valve structure, the flow is regulated by pulse width control (duration of on/off power).

FEATURES

- 90 BAR DESIGN FOR R744 REFRIGERANT
- LOWER KV VALUES CAN BE ACHIEVED (PEV0 IS ONLY 0.003M3/H)
- SOLENOID VALVE STRUCTURE, WITH DIRECT SHUT-OFF FUNCTION IN CASE OF SUDDEN POWER FAILURE
- THE VALVE BODY CAN BE REMOVED AND THE BUILT-IN FILTER CAN BE REPLACED FOR EASY CLEANING AND MAINTENANCE

GENERAL SPECIFICATIONS

- Applicable for all common HFC and HFO refrigerants such as R134a, R404A, R407A/F, R407C, R407H, R410A, R448A, R449A, R449B,R450A, R452A, R513A, R507A and R744 (CO2)
- Medium temperature TS min./max.: -60°C to +70°C (Outlet side of Valve)
- Ambient temperature min./max.: -40°C to +55°C
- Max. working pressure: 90 bar
- Min. OPD: 0 bar
- PED declaration, EN60335-2-xx for flammable refrigerants for PEV and on request for PEV-S

PULSE EXPANSION VALVE



ELECTRICAL PARAMETERS

- Recommended period of cycle time: 6 seconds
- Regulation range (capacity range): 10%-100%
- Voltage range: -15%~10%
- Insulation class of coil: F
- Protection class: IP 67

GENERAL CHARACTERISTICS

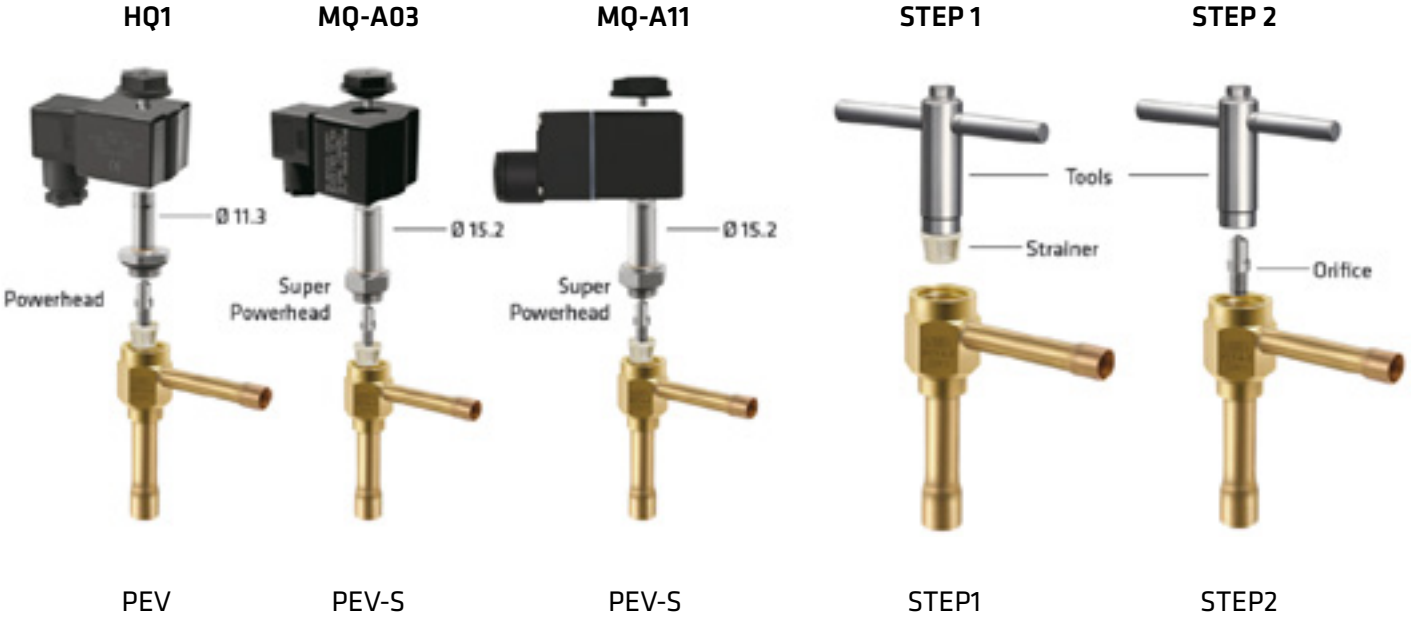
Valve Model	U11 Code Multi-Pack	kV m3/h	MWP [Bar]	MOPD [liquid][1)]	Dimensions		Weight (g)
				[Bar]	Øe inlet	Ød outlet	
PEV0-1	10386000502	0.003	90	35	3/8	1/2	185
PEV0-2	10386001602				10mm	12mm	
PEV1-1	10386000402	0.009			3/8	1/2	
PEV1-2	10386001502				10mm	12mm	
PEV2-1	10386000702	0.016			3/8	1/2	
PEV2-2	10386001402				10mm	12mm	
PEV3-1	10386000102	0.024			3/8	1/2	
PEV3-1S	10386002402				3/8	1/2	
PEV3-2	10386001202				10mm	12mm	218
PEV3-2S	10386002502				10mm	12mm	185
PEV3.5-1	10386000802	0.035		30	3/8	1/2	185
PEV3.5-1S	10386002202			35	3/8	1/2	218
PEV3.5-2	10386001302			30	10mm	12mm	185
PEV3.5-2S	10386002302			35	10mm	12mm	218
PEV4-1	10386000302	0.046		30	3/8	1/2	185
PEV4-1S	10386002602			35	3/8	1/2	218
PEV4-2	10386001102			30	10mm	12mm	185
PEV4-2S	10386002702			35	10mm	12mm	218
PEV5-1	10386000602	0.064		25	3/8	1/2	185
PEV5-1S	10386002802			35	3/8	1/2	218
PEV5-2	10386001002			25	10mm	12mm	185
PEV5-2S	10386002902			35	10mm	12mm	218
PEV6-1	10386000202	0.114		18	3/8	1/2	185
PEV6-1S	10386002102			35	3/8	1/2	218
PEV6-2	10386000902			18	10mm	12mm	185
PEV6-2S	10386003002			35	10mm	12mm	218

[1)]MOPD at rated voltage PEVx-yS = with Super power head + Super coil to increase the MOPD

PULSE EXPANSION VALVE



PEVx-yS = WITH SUPER POWER HEAD + SUPER COIL TO INCREASE THE MOPD



PEV can be equipped with higher power coil and realize higher MOPD by changing de powerhead

Strainer and orifice can be changed and maintained through tools provided by Sanhua

PULSE EXPANSION VALVE



DIMENSIONS

Condition 1: Tc/Te/Sc/SH: 45°C/-10°C/2K/6K 0°C/-20°C/2K/6K for R744
Strainer and orifice can be changed and maintained through tools provided by Sanhua

Valve Model	Maximal Cooling Capacity [kW]							
	R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
PEV0	0.26	0.23	0.36	0.32	0.32	0.22	0.24	0.21
PEV1	0.75	0.66	1.06	0.95	0.93	0.65	0.69	0.62
PEV2	1.32	1.16	1.86	1.66	1.63	1.15	1.22	1.08
PEV3(-S)	2.34	2.06	3.30	2.94	2.88	2.04	2.16	1.92
PEV3.5(-S)	2.96	2.61	4.18	3.73	3.66	2.58	2.74	2.44
PEV4(-S)	3.91	3.44	5.52	4.92	4.83	3.41	3.61	3.22
PEV5(-S)	5.44	4.80	7.69	6.86	6.72	4.74	5.03	4.48
PEV6(-S)	9.33	8.22	13.18	11.75	11.52	8.13	8.62	7.68

Valve Model	Maximal Cooling Capacity [kW]							
	R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
PEV0	0.46	0.28	0.30	0.18	0.20	0.35	0.40	0.54
PEV1	1.34	0.81	0.88	0.53	0.58	1.01	1.15	1.57
PEV2	2.36	1.43	1.55	0.92	1.02	1.76	2.02	2.75
PEV3(-S)	4.18	2.53	2.75	1.64	1.80	3.13	3.58	4.88
PEV3.5(-S)	5.30	3.20	3.48	2.08	2.29	3.96	4.54	6.18
PEV4(-S)	6.99	4.23	4.59	2.74	3.02	5.23	6.00	8.16
PEV5(-S)	9.74	5.89	6.40	3.82	4.21	7.29	8.35	11.36
PEV6(-S)	16.69	10.09	10.97	6.54	7.21	12.49	14.31	19.48

PULSE EXPANSION VALVE



Condition 2: Tc/Te/Sc/SH: 45°C/-35°C/2K/6K
-10°C/-40°C/2K/6K for R744

Valve Model	Maximal Cooling Capacity [kW]							
	R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
PEV0	0.24	0.21	0.35	0.31	0.30	0.21	0.22	0.19
PEV1	0.71	0.61	1.02	0.90	0.88	0.60	0.63	0.57
PEV2	1.24	1.07	1.80	1.58	1.55	1.06	1.11	1.00
PEV3(-S)	2.20	1.90	3.18	2.80	2.74	1.87	1.97	1.76
PEV3.5(-S)	2.79	2.40	4.04	3.55	3.47	2.37	2.50	2.24
PEV4(-S)	3.68	3.17	5.33	4.69	4.58	3.13	3.30	2.95
PEV5(-S)	5.12	4.42	7.42	6.53	6.38	4.36	4.60	4.11
PEV6(-S)	8.78	7.58	12.71	11.19	10.94	7.47	7.88	7.05

Valve Model	Maximal Cooling Capacity [kW]							
	R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
PEV0	0.47	0.26	0.28	0.16	0.18	0.33	0.40	0.62
PEV1	1.35	0.75	0.81	0.47	0.53	0.96	1.15	1.81
PEV2	2.38	1.32	1.43	0.82	0.93	1.69	2.02	3.17
PEV3(-S)	4.21	2.33	2.53	1.46	1.64	2.99	3.58	5.63
PEV3.5(-S)	5.34	2.96	3.21	1.85	2.08	3.80	4.54	7.13
PEV4(-S)	7.05	3.90	4.24	2.44	2.75	5.01	5.99	9.41
PEV5(-S)	9.82	5.44	5.91	3.40	3.82	6.98	8.35	13.11
PEV6(-S)	16.83	9.32	10.12	5.83	6.56	11.96	14.30	22.47

PULSE EXPANSION VALVE



COIL MODEL

Model	U11 Code Multi-Pack	Rated Voltage	Frequency	Power	Insulation Class	Ingress Protection	Weight (g)	Certification
HQ1F11	10780001202	AC220~230V	50HZ	7W	F	IP 67	185.9	TUV / UL
HQ1D17	10780001302	AC120V	50HZ	6W				TUV / UL
HQ1D80	10780001602	AC120V	60Hz	6w				TUV / UL
HQ1K17	10780001402	AC24V	50HZ	6W				TUV / UL
HQ1K80	10780001502	AC24V	60Hz	6w				TUV / UL
MQ-A0322F-007001	10820030702	AC220-230V	50Hz	13.5W			220	TUV
MQ-A0322F-007002	10820030602	AC220-230V	60Hz	16.5W			210	TUV
MQ-A0322F-007003	10820030502	AC220-230V	60HZ	16.5W		IP 65	211	UL
MQ-A03024-007001	10820030402	AC24V	50Hz	13.5W		IP 67	225	TUV
MQ-A1122F-007001	10820030302	AC220-230V	50Hz	13.5W			260	TUV
MQ-A1122F-007002	10820030202	AC220-230V	60Hz	16.5W			260	TUV
MQ-A1122F-007003	10820030102	AC220-230V	60Hz	16.5W			225	UL
MQ-A11024-007001	10820030002	AC24V	50Hz	13.5W			225	TUV

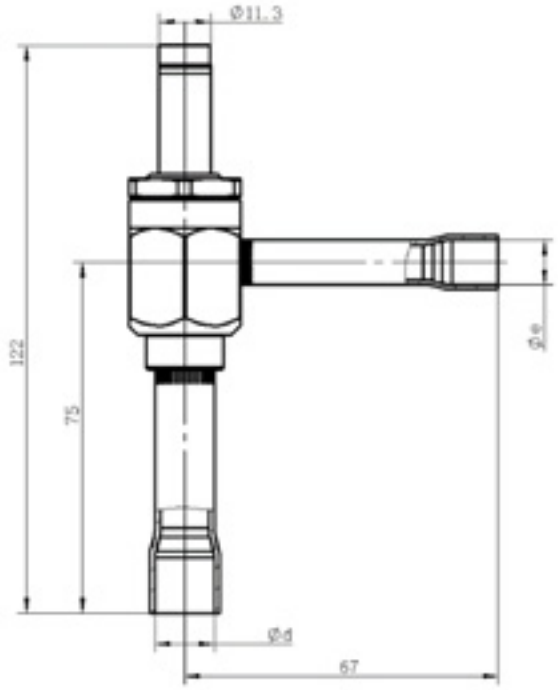
PULSE EXPANSION VALVE

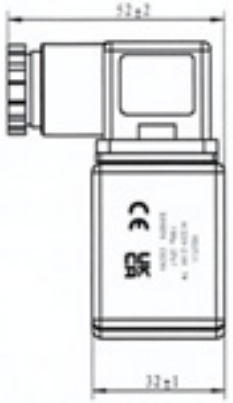


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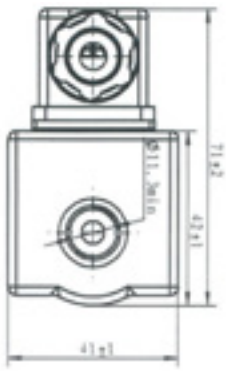
(unit is mm)

Standard PEV series

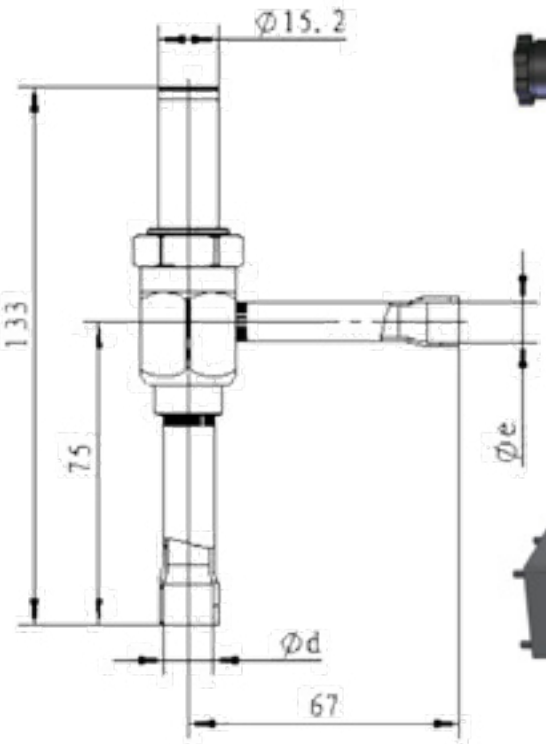




HQ1 Coil



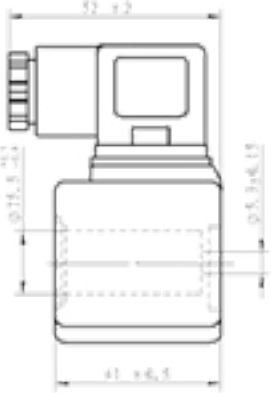
Super Powerhead



PEV-S series



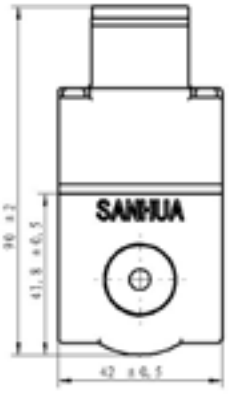
MQ-A03 Coil

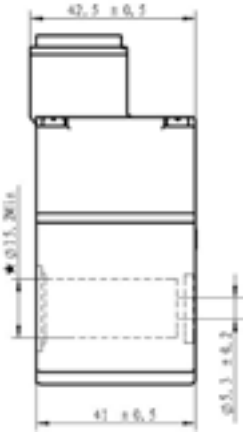






MQ-A11 Coil

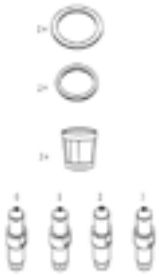
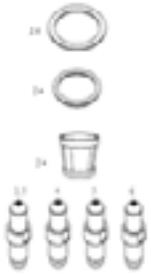




PULSE EXPANSION VALVE



SPAREPARTS

Model	PEV-K01	PEV-K02	PEV-K03	PEV-K04	PEV-K05	PEV-K06
U11 code	20386002302	20386002402	20386002702	20386002502	20386002602	20386004702
picture						

ACCESSORY

Product	Description	U11 code
Solenoid valve tester	Permanent magnet for PEV (for installation and testing purpose)	10108000102



***SEK** SERIES*

ELECTRONIC EXPANSION VALVE KIT



FEATURES

- COMPLETE AND SIMPLE SOLUTION FOR REFRIGERATION SYSTEM
- QUICK AND ACCURATE SUPERHEAT CONTROL TO ENSURE THE SYSTEM OPERATING WELL
- KIT CONTAINS SEC SERIES CONTROLLER: EEV COIL, PRESSURE TRANSDUCER CABLE WITH PACKARD CONNECTOR, TEMPERATURE SENSOR
- LPF-T SERIES, EEV WITH VERY LOW INTERNAL LEAKAGE <1ML/MIN
- THE EEV AND THE PRESSURE TRANSDUCER SHOULD BE SELECTED SEPARATELY ACCORDING TO THE COOLING CAPACITY AND THE REFRIGERANT TYPE.

ORDERING METHOD

Controller	Model	Part Number	Pressure transmitter type	Common products
SEC611-R6	SEK01-01-RK	SEKX0000102	YCQB (Voltage)	YCQB02-013251 –> Packard Cable (2m) NTC2A1 -> Temperature Probe (2m) PQ-M24012-000008 –> EEV coil (3m)
SEC612-R6	SEK01-02-RK	SEKX0000202	YCQC (Current)	

ELECTRONIC EXPANSION VALVE KIT



PRESSURE TRANSMITTER

YCQB (Voltage type) pressure transmitter for SEC611-R6 controller

	Model Name	Part Number	Connection type	Pressure range [bar]	Max Working pressure [bar]	Electrical connection	Accuracy	Medium Temp (°C)
0,5-3,5V	YCQB02H165	10185087602	Solder ¼"	-1-20	52,5	Packard	±0.8% FS	-40 / 120
	YCQB02H166	10185087002	Solder 6mm	-1-20	52,5	Packard	±0.8% FS	-40 / 120
	YCQB06L01	10185067202	Flare 7/16-20UNF-2B	0-60	90	Packard	±1.5% FS	-40 / 120
0,5-4,5V	YCQB04H50	10185004602	Solder ¼"	0-34.5	75	Packard	±2% FS	-30 / 120
	YCQB01L50	10185015702	Flare	-1-9.3	52,5	Packard	±2% FS	-30 / 130
	YCQB02L154	10185028102	Flare	0-20	52,5	Packard	±2% FS	-30 / 120
	YCQB03L157	10185046202	Flare	0-30	75	Packard	±0.8% FS	-40 / 120

YCQC (Current type) pressure transmitter for SEC612-R6 controller

Model Name	Part Number	Connection type	Pressure range [bar]	Max Working pressure [bar]	Electrical connection	Accuracy	Medium Temp (°C)
YCQC02L18	10185017102	Flare 7/16-20UNF-2B	-1-12	52,5	Packard	±0.8% FS	-40 / 80
YCQC02L107	10185056402		-1-20	52,5	Packard	±0.8% FS	-40 / 80
YCQC03L05	10185009302		0-30	75	Packard	±0.5% FS	-40 / 80
YCQC01H101	10185035902	Solder ¼	0-10	52,5	Packard	±0.8% FS	-40 / 80
High pressure models							
YCQC06L102	10185088302	Flare-Male	0-60	90	Packard		-40 / 80

Please note that the default pressure range are -1-12bar on SEC612-R6 and 0-20 bar for SEC611-R6.

ELECTRONIC EXPANSION VALVE

The electronic expansion selection must be done with the LPF-T datasheet.

As example: The LPF-32T (90 bar) can reach 42 kW for Co2 (Tc/Te/Sc/SH: 0°C/-20°C/2K/6K)

Or 25 kW with R449A (Tc/Te/Sc/SH: 45°C/-10°C/2K/6K)

Or 27 kW with R290 (Tc/Te/Sc/SH: 45°C/-10°C/2K/6K)

ELECTRONIC EXPANSION VALVE KIT



GENERAL SPECIFICATIONS

Controller:

Items	Description
Dimension	87(W)mm x 114.3(H)mm x 31.8(D)mm
Power supply	24Vdc+10%/-15% Class II
Power consumption	9W with LPF at 24VDC
Operation	-30~55°C, Humidity≤95%RH
Storage	-30~55°C, Humidity≤95%RH
Protection level	IP20



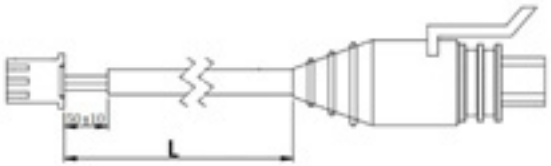
LPF-T coil with 3m cable length:

Items	Description
Rated voltage	12V DC (± 10%)
Excitation mode	1-2 phase excitation, uni-polar–500stps
Excitation rate	30 - 90pps
Current and resistance	260mA, 46 ± 3.7 Ω/phase(20°C)
Medium temp.	-40°C / +70°C (duty cycle≤40%)
Ambient temp.	-40°C / +60°C
Relative humidity	0 to 95% RH



Packard cable with 2m length:

Items	Description
Protection class	IP 67
Electrical connector	Packard connector



Temperature sensor with 2m length:

Items	Description
Type	NTC 5KΩ at 25°C
Wire	2×0.5mm²-2m length
Protection class	IP 67
Accuracy	±0.3°C (below25°C)
Temperature Range	-50 ~50°C



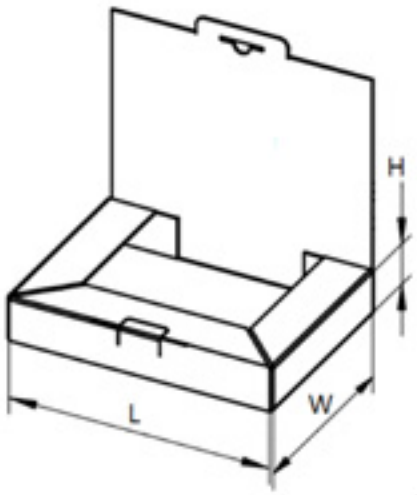
ELECTRONIC EXPANSION VALVE KIT



SPARE PARTS

Name	Model	U11 code	Description
Controller	SEC611-R6	10680005102	For YCQB (0.5-3.5 or 4.5V)
Controller	SEC612-R6	10680005002	For YCQC (4-20mA)
Temperature Sensor	NTC2A1	10665000102	Cable length 2m
LPF-T Coil	PQ-M24012-000008	10810129502	Coil with 3m cable
Packard cable	YCQB02-013251	20185108201	To connect the YCQ (2m)

PACKAGE DIMENSIONS



Name	Dimensions (mm)			Weight (kg)
	L	W	H	
SEK kit	590	480	230	0.45



SANHUA

ECO-FRIENDLY PRODUCTS & SOLUTIONS

Our target is to provide components and solutions to different industries in order to help the protection of the environment by reducing their energy consumption and increasing their system efficiency.



ELECTRONIC EXPANSION VALVES



IMPROVES EFFICIENCY UP TO 20%

ADVANCED MSS (MINIMUM STABLE SUPERHEAT)
CONTROL LOGIC

SANHUA

"Yearly SANHUA supplies over 40 million thermostatic and electronic expansion valves to the HVAC&R Automotive industries worldwide."



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DPF-TS/S *SERIES*

ELECTRONIC EXPANSION VALVE



TS/S series electronic expansion valves are designed for use in air conditioning and refrigeration systems or in heat pumps. The valve controls the automatic adjustment of refrigerant flow rate and makes the system work under optimized conditions for the purpose of fast cooling or heating, precise temperature control and energy saving. The valve can also be used e.g. for suction line pressure controls. These valves provide bidirectional operation to control the refrigerant flow rate in heating or cooling mode.

FEATURES

- APPLICABLE FOR REVERSIBLE SYSTEMS: BIDIRECTIONAL FLOW
- SMALLER INSTALLATION SPACE: LOW HEIGHT, SMALL VOLUME, LIGHT WEIGHT
- OPTIMIZED FLOW PATH DESIGN FOR NOISE REDUCTION
- FAST OPERATION, ENERGY SAVING

GENERAL SPECIFICATIONS

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A

  And also for flammable refrigerants like R32, R290, R1234ze(E), R1234yf
- Cooling capacity: 2 to 121 kW (for R410A)
- 500 steps (full stroke); 32 ± 20 opening steps
- Medium temperature TS min./max.: -40°C / +85°C (duty cycle rate below 50%)
- Ambient temperature min./max.: -30°C / +60°C (duty cycle rate below 50%)
- Relative humidity: 0 to 95% RH
- Certifications: UL/CSA and declaration according to LVD or PED
- Suitable with the EN 60335-2-24 / 2-40 / 2-89

ELECTRONIC EXPANSION VALVE



ELECTRICAL PARAMETERS

- Rated voltage: 12V DC(± 10%), rectangular wave
- Actuating mode: 4-phase 8-step permanent magnet stepping motor of direct-acting type
- Excitation mode: 1 ~ 2 phase excitation, unipolar actuation
- Excitation rate:
  - Seat Ø 1,3 to 3,2 mm: 30 to 90pps
  - Seat Ø 4,0 to 6,5 mm: 30 to 40pps
- Activation of self-holding mechanism: Maintain excitation in stop position min. 0,1~1,0 sec.
- Min. motion time from completely open to completely closed:
  - Seat Ø 1,0 to 3,2 mm: 6s @ 90pps
  - Seat Ø 4,0 to 6,5 mm: 13s @ 40pps
- Coil current:
  - Seat Ø 1,0 to 3,2 mm: 260mA/phase (20°C)
  - Seat Ø 4,0 to 6,5 mm: 375mA/phase (20°C)
- Coil resistance:
  - Seat Ø 1,0 to 3,2 mm: 46 ± 3.7 Ω/phase (20°C)
  - Seat Ø 4,0 to 6,5 mm: 32 ± 3.2 Ω/phase (20°C)
- Insulation class of coil: E
- Protection class: IP 67
- Compatible with Sanhua controller SEC series

GENERAL CHARACTERISTICS

Valve Model	Part Number[1)]	Design Type	Seat Φ (mm)	Kv (m^3/h)	MOP[2)] [Bar]	MOPD Direct[3)] [Bar]	MOPD Rev.[4)] [Bar]
DPF(TS1)1.0C-15	10130391602	n	1,0	0,03	49	35	≥25
DPF(TS1)1.0C-16	10130390002	L	1.0	0,03			
DPF(TS1)1.3C-21	10130389302	n	1,3	0,05			
DPF(TS1)1.3C-22	10130392002	L	1,3	0,05			
DPF(TS1)1.65C-36	10130391702	n	1,65	0,08			
DPF(TS1)1.65C-38	10130395102	L	1,65	0,08			
DPF(TS1)1.8C-69	10130391802	n	1,8	0,1			
DPF(TS1)1.8C-68	10130390402	L	1,8	0,1			
DPF(TS1)2.0C-33	10130392402	n	2	0,16			
DPF(TS1)2.0C-40	10130409402	L	2	0,16			
DPF(TS1)2.2C-24	10130392702	n	2,2	0,2			
DPF(TS1)2.2C-38	10130425202	L	2,2	0,2			
DPF(TS1)2.4C-40	10130392602	n	2,4	0,23			
DPF(TS1)2.4C-41	10130404802	L	2,4	0,23			
DPF(TS1)3.0C-29	10130389902	L	3	0,39			≥15
DPF(TS1)3.2C-30	10130389502	L	3,2	0,43			
DPF(S03)4.0C-01	10130355702	L	4	0,5			≥7
DPF(S03)4.5C-01	10130035502	L	4,5	0,7			
DPF(S03)5.5C-01	10130355802	L	5,5	0,9			
DPF(S03)6.5C-02	10130355902	L	6,5	1,1		30	

Note: 1) Coil is separated
2) MOP = Maximum Operating Pressure
3) MOPD Direct = Maximum Operating Pressure Difference in Direct flow direction
4) MOPD Rev = Maximum Operating Pressure Difference in Reversible flow direction

ELECTRONIC EXPANSION VALVE



Valve Model	Max Cooling Capacity @ 5°C/38°C/5K/5K [kW]												
	R134a	R513A	R407C	R404A R507A	R410A	R452A	R32	R290	R1234yf	R1234ze	R454B	R454C	R455A
DPF(TS1)1.0C-15 DPF(TS1)1.0C-16	3.1	2.7	4.3	2.9	4.8	3.1	7.0	4.2	2.3	2.5	5.5	3.6	4.0
DPF(TS1)1.3C-21 DPF(TS1)1.3C-22	4,5	3.8	6.2	4.2	6,9	4.5	9.9	5.8	3.2	3.4	7.6	5.0	5.5
DPF(TS1)1.65C-36 DPF(TS1)1.65C-38	7.6	6.4	10.4	7.1	11.6	7.6	16.7	10.0	5.6	5.9	13.1	8.6	9.5
DPF(TS1)1.8C-69 DPF(TS1)1.8C-68	9	7.7	12.4	8.5	13.8	9.1	19.9	12.0	6.6	7.1	15.7	10.3	11.4
DPF(TS1)2.0C-33 DPF(TS1)2.0C-40	11.1	9.5	15.3	10.5	17.1	11.2	24.6	14.9	8.2	8.8	19.5	12.8	14.1
DPF(TS1)2.2C-24 DPF(TS1)2.2C-38	12	10.2	16.4	11.3	18.3	12	26.4	16.0	8.9	9.4	21.0	13.8	15.2
DPF(TS1)2.4C-40 DPF(TS1)2.4C-41	14.1	12	19.4	13.3	21.6	14.2	31.1	18.8	10.4	11.1	24.6	16.2	17.8
DPF(TS1)3.0C-29	23.3	19.8	32.1	22	35.8	23.5	51.5	31.4	17.4	18.5	41.1	27.0	29.8
DPF(TS1)3.2C-30	25,7	21.8	35,3	24.2	39.4	25.9	56.8	34.4	19.0	20.2	45.0	29.5	32.5
DPF(S03)4.0C-01	42.8	36.3	58.8	40.3	65.5	43.1	94.4	57.2	31.6	33.7	74.9	49.2	54.2
DPF(S03)4.5C-01	57.2	48.6	78.7	63.9	67.7	57.6	126.3	77.1	42.6	45.4	100.9	66.3	73.1
DPF(S03)5.5C-01	66.2	56.3	91	62.4	101.5	66.7	146.2	88.6	49.0	52.2	116.0	76.2	84.0
DPF(S03)6.5C-02	80,5	68.5	110.7	75,9	123.4	81.1	177.9	108.4	59.9	63.8	141.9	93.2	102.7

For others running points or others refrigerants, please contact your local support or download our selection software – Quick Finder with the link : http://www.SanhuaSelector.com

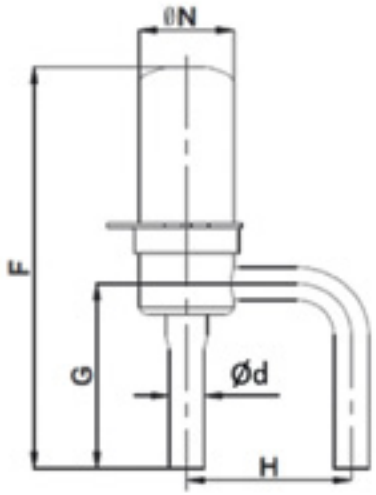
FLOW CHARACTERISTIC



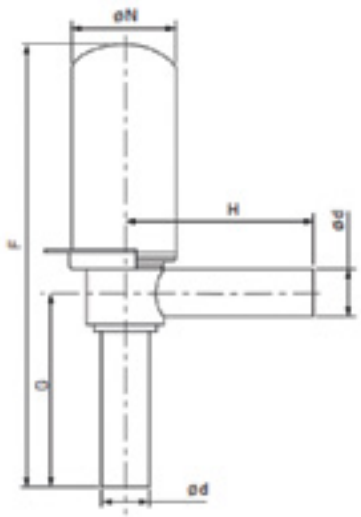
ELECTRONIC EXPANSION VALVE



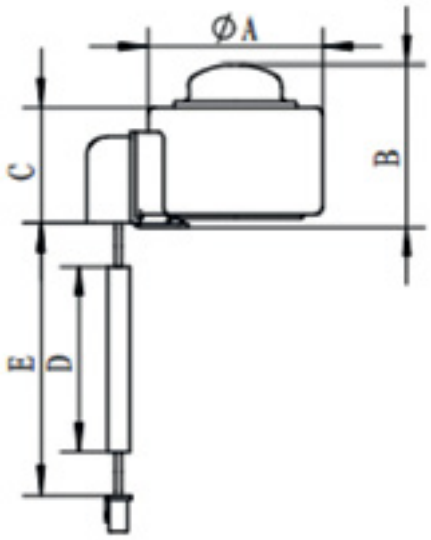
DIMENSIONS



DPF 1.0 ~ 2.4 n Design



DPF 3.0 ~ 6.5 L Design



Valve Model	Dimensions [mm]					Weight [kg]
	F	G	H	Ød	ØN	
DPF 1.0~2.4 n Design	77	36	30	6.35	17.35	0.04
DPF 1.0~2.4 L Design	77	36	36	6.35	17.35	0.04
DPF 3.0~3.2	85	43	53	7.94	17.35	0.05
DPF 4.0~6.5	148	64.7	63.4	15.88	35.3	0.26

Coil Model	Product Number	Valve Model	Dimensions [mm]				Terminal	Weight [kg]
			ØA	B	C	E		
PQ-M10012-004002	10810208802	DPF 1.0~3.2	38.5	35.8	37.6	700	XHP-5	0.12
PQ-M10012-004274	10810231902		38.5	35.8	37.6	1500	XHP-5	0.14
PQ-M10012-004213	10810232402		38.5	35.8	37.6	2000	XHP-5	0.16
PQ-M10012-004035	10810210602		38.5	35.8	37.6	5000	XHP-5	0.30
PQ-M03012-001004	10810141302	DPF 4.0~6.5	67.5	74.4	33.3	2000	XHP-5	0.5
PQ-M03012-001041	10810171302		67.5	74.4	33.3	5000	XHP-5	0.6

***DBF** SERIES*

ELECTRONIC EXPANSION VALVE

DBF series electronic expansion valves are especially designed for commercial air conditioning and heat pump. The balanced flow port design is adopted to realize the accurate bidirectional adjustment of refrigerant flow. The wide adjustment range can be accurately matched with the actual load of the system, so that the system can operate in the best working condition, so as to achieve accurate temperature control, rapid cooling and heating or defrosting and reduce energy consumption.



FEATURES

- COMPACT INSTALLATION: SAME DPF(T) COILS TYPE, SMALLER SIZE, LIGHTER WEIGHT
- BALANCED FLOW PORT DESIGN, FORWARD AND REVERSE PRESSURE DIFFERENCE UP TO 35BAR
- QUICK ACTION, ENERGY EFFICIENT
- BIDIRECTIONAL FLOW IS SUITABLE FOR REVERSIBLE SYSTEMS SUCH AS HEAT PUMPS
- COMPATIBLE WITH SANHUA SEC CONTROLLERS

GENERAL SPECIFICATIONS

- Applicable for all common HFCF, HFC and HFO refrigerants such as: R134a, R404A, R407C, R410A, R448A, R449A, R450A, R452A, R454B,R513A, R507A
  And also for flammable refrigerants like R32, R290, R1234ze(E), R1234yf...
- Cooling capacity: 10 ~ 120 KW (for R410A)
- Medium Temperature min./max. :
  -30°C~+80°C (duty cycle rate below 50%)
- Ambient temperature min./max. :
  -30°C~+60°C (duty cycle rate below 50%)
- Relative humidity: 0 to 95% RH
- 500 steps (full stroke); 42 ± 30 opening steps
- Instalation method:
  - Preferably vertical axial angle within ±15°, coil upright
  - Preferably horizontal pipe as inlet and vertical pipe as outlet
- Certifications: UL/CSA and declaration according to LVD or PED
- Suitable with the EN 60335-2-24 / 2-40 / 2-89

ELECTRONIC EXPANSION VALVE



ELECTRICAL PARAMETERS

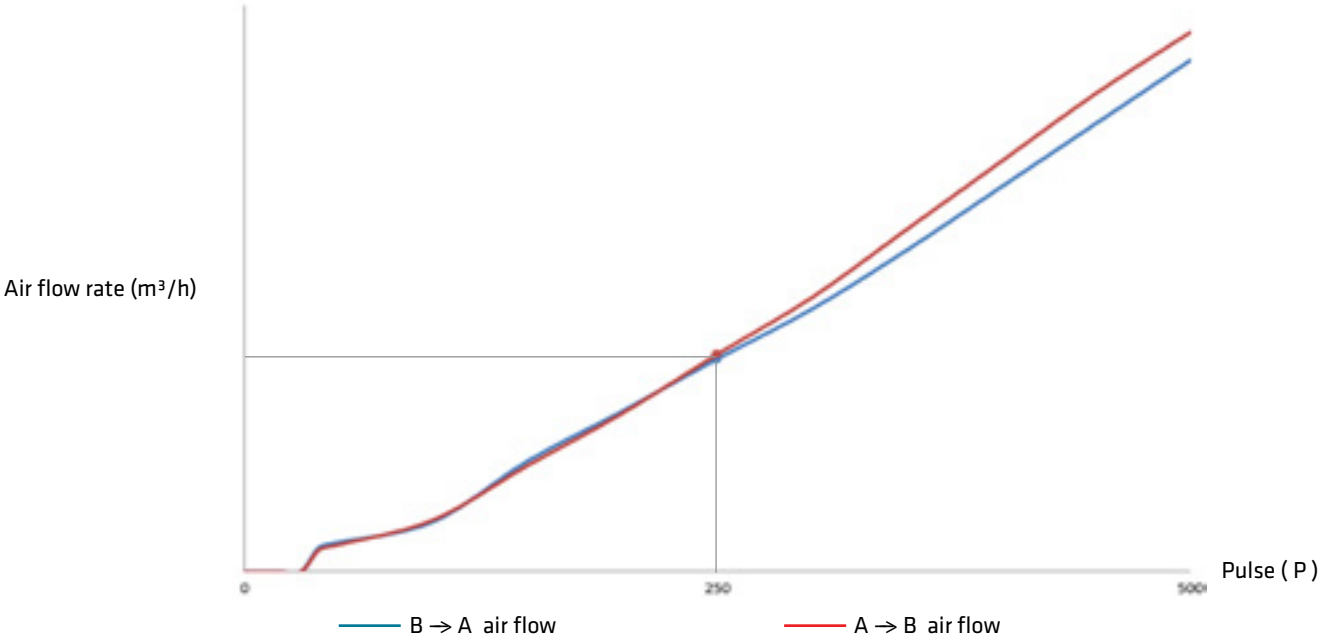
- Rated voltage: 12VDC (± 10%), rectangular wave
- Actuating mode: 4-phase 8-step permanent magnet stepping motor of direct-acting type
- Excitation mode: 1 - 2 phase excitation, uni-polar actuation
- Excitation rate: 30-40pps
- Activation of self-holding mechanism: Maintain excitation in stop position min. 0,1~1,0sec.
- Full stroke time: 13s (40pps)
- Coil current: 260mA/phase (20°C)
- Coil resistance: 46 ± 3.7 Ω/phase (20°C)
- Insulation class of coil: E
- Protection class: IP67
- Compatible with Sanhua controller SEC series

DBF SERIES TECHNICAL PARAMETERS

Model	Max Cooling Capacity @5°C/38°C/6K/2K [kW]										Kv [m3/h]	MOP 1) [Bar]	MOPD Direct 2) [Bar]	MOPD Rev. 3) [Bar]
	R134a	R513A	R407C	R404A R507	R410A	R452A	R32	R290	R1234ze	R454B				
DBF04H710	41.8	35.4	57.3	38.9	63.6	41.7	92.3	56.2	33.1	73.2	0.5	49	35	35
DBF05H710	55.9	47.4	76.7	52.0	85.1	55.7	123.5	75.2	44.4	97.9	0.7			
DBF06H710	64.7	54.9	88.8	60.2	98.5	64.5	142.9	87.1	51.3	113.3	0.9			
DBF07H710	78.8	66.8	108.0	73.2	119.8	78.5	173.8	105.9	62.4	137.9	1.1			

Note: 1) MOP = Maximum Operating Pressure
2) MOPD Direct = Maximum Operating Pressure Difference in Direct flow direction
3) MOPD Rev = Maximum Operating Pressure Difference in Reversible flow direction

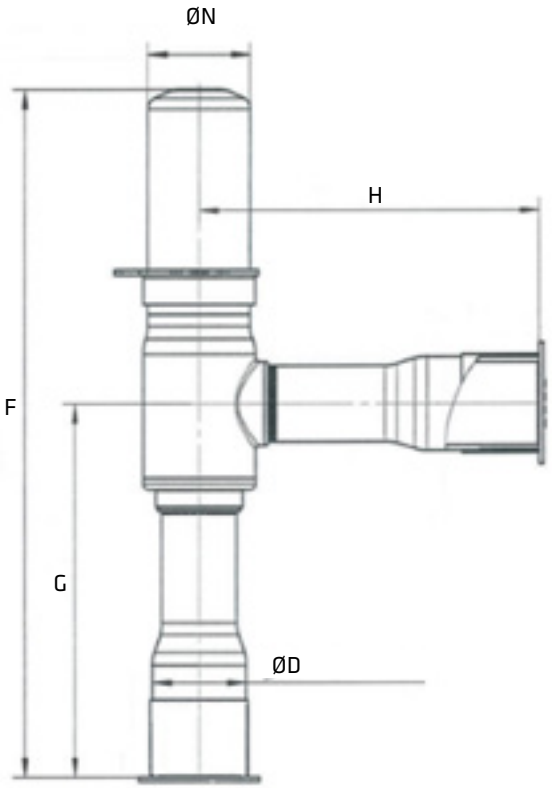
FLOW CHARACTERISTIC

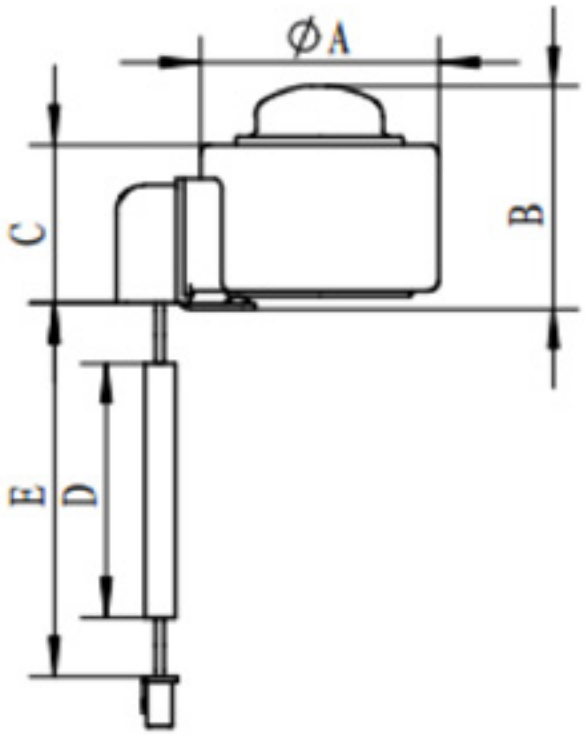


ELECTRONIC EXPANSION VALVE



DIMENSIONS





ELECTRONIC EXPANSION VALVE



Valve Model	Part Number	Dimensions [mm]					Weight [g]
		F	G	H	Ø D	Ø N	
DBF04H710	DBFX0000102	116	63	57.5	15.88	17.35	104
DBF05H710	DBFX0000202						
DBF06H710	DBFX0000302						
DBF07H710	DBFX0000402						

Coil Model	Part Number	Dimensions [mm]				Weight	Weight [kg]
		Ø A	B	C	E		
PQ-M10012-004002	10810208802	38.5	35.8	37.6	700	XHP-5	0.12
PQ-M10012-004274	10810210602	38.5	35.8	37.6	1500	XHP-5	0.14
PQ-M10012-004213	10810232402	38.5	35.8	37.6	2000	XHP-5	0.16
PQ-M10012-004035	10810231902	38.5	35.8	37.6	5000	XHP-5	0.30

***LPF** SERIES*

ELECTRONIC EXPANSION VALVE



LPF series Electronic Expansion Valves are especially designed for use in refrigeration systems. Thanks to the soft-sealing seat design, it can be as tight as a solenoid valve once it is completely shut off thus to prevent liquid refrigerant migrate to evaporator or compressor.

FEATURES

- EXTREMELY HIGH INTERNAL TIGHTNESS, WHICH IS AS GOOD AS WITH SOLENOID VALVES
- BETTER FLOW REGULATION
- COIL WITH IP67 WORKS SAFELY IN EXTREMELY ENVIRONMENT
- BUILT-IN STRAINER AT INLET (NOT INCLUDED IN LPF45~62
- FLOW DIRECTION: UNI-FLOW
- LPF...T : 90 BAR DESIGN FOR R744 REFRIGERANT AND SUITABLE WITH THE OTHERS REFRIGERANTS

GENERAL SPECIFICATION

- Applicable for all common HFCF, HFC and HFO refrigerants (such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A and also for flammable refrigerants like R290,R1234ze, R454C, R455A, R1234yf and R744 (CO_2)
- 500 steps (full stroke); 32±20 (LPF 03~32); 42±30 (LPF45~62) opening steps
- Temperature:

LPF Model	Medium temperature Min/Max	Ambient temperature Min/Max
LPF45 ~ 62	-40°C / +70°C (2)	-30°C / +60°C (2)
LPF03T ~ 32T	-40°C / +70°C (1)	-40°C / +60°C (1)

(1)duty cycle rate below 40% / (2)duty cycle rate below 50%

- Relative humidity: 0 to 95% RH
- Pressures:

LPF Model	MPW	MOPD
LPF03T ~ 24T	90 bar	50 bar
LPF30T ~ 32T	90 bar	35 bar
LPF45 ~ 62	49 bar	35 bar

- Declaration according to LVD and PED
- Suitable with the EN 60335-2-24 / 2-40 / 2-89

ELECTRONIC EXPANSION VALVE



ELECTRICAL PARAMETERS

- Rated voltage: 12V DC(± 10%), rectangular wave
- Excitation mode: 1 - 2 phase excitation, uni-polar actuation

LPF Model	Excitation rate	Full stroke time
LPF03T ~ 32T	30 - 90pps	6s@ 90pps
LPF45 ~ 62	30 - 40pps	13s@ 40pps

- Coil current: 260mA/phase (20°C)
- Coil resistance: 46 ± 3.7 Ω/phase (20°C)
- Insulation class of coil: E
- Protection class: IP 67
- Compatible with Sanhua controller SEC series

GENERAL CHARACTERISTICS

Condition 1: Tc/Te/Sc/SH: 45oC/-10oC/2K/6K (0 °C/-20 °C/2K/6K for R744)

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
LPF03T	1.0	0.009	0.90	0.80	1.28	1.14	1.12	0.79	0.84	0.74
LPF05T	1.0	0.014	1.39	1.23	1.97	1.75	1.72	1.21	1.29	1.15
LPF08T	1.0	0.025	2.3	2.0	3.2	2.8	2.8	2.0	2.1	1.84
LPF10T	1.0	0.04	3.6	3.2	5.1	4.6	4.5	3.2	3.4	3.0
LPF14T	1.4	0.08	6.9	6.1	9.7	8.7	8.5	6.0	6.4	5.7
LPF18T	1.8	0.12	9.5	8.4	13.5	12.0	11.8	8.3	8.8	7.9
LPF24T	2.4	0.20	13.0	11.5	18.4	16.4	16.1	11.3	12.1	10.8
LPF30T	3.0	0.27	18.4	16.2	26.0	23.3	22.7	16.0	17.1	15.2
LPF32T	3.2	0.30	20.2	17.8	28.5	25.5	24.9	17.6	18.7	16.6
LPF45	4.5	0.5	45.3	39.9	64.0	57.1	55.9	39.5	41.9	37.3
LPF52	5.2	0.7	60.6	53.4	85.6	76.3	74.8	52.8	56.0	49.9
LPF55	5.5	0.9	70.2	61.8	99.1	88.4	86.6	61.1	64.8	57.7
LPF62	6.2	1.1	85.3	75.2	102.5	107.5	105.3	74.4	78.9	70.2

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
LPF03T	1.0	0.009	1.62	0.98	1.06	0.63	0.70	1.21	1.39	1.89
LPF05T	1.0	0.014	2.49	1.51	1.64	0.98	1.08	1.86	2.14	2.91
LPF08T	1.0	0.025	4.0	2.4	2.6	1.6	1.7	3.0	3.4	4.7
LPF10T	1.0	0.04	6.5	3.9	4.3	2.6	2.8	4.9	5.6	7.6
LPF14T	1.4	0.08	12.4	7.5	8.1	4.8	5.3	9.2	10.6	14.4
LPF18T	1.8	0.12	17.1	10.3	11.2	6.7	7.4	12.8	14.6	19.9
LPF24T	2.4	0.2	23.4	14.1	15.3	9.2	10.1	17.5	20.0	27.2
LPF30T	3.0	0.27	33.0	19.9	21.7	12.9	14.2	24.7	28.3	38.5
LPF32T	3.2	0.30	36.2	21.8	23.7	14.2	15.6	27.0	31.0	42.1
LPF45	4.5	0.5	81.1	49.0	53.3	31.7	35.0	60.6	69.5	-
LPF52	5.2	0.7	108.5	65.5	71.2	42.5	46.8	81.1	93.0	-
LPF55	5.5	0.9	125.5	75.8	82.5	49.2	54.2	93.9	107.6	-
LPF62	6.2	1.1	152.7	92.3	100.3	59.8	65.9	114.2	130.9	-

ELECTRONIC EXPANSION VALVE



Condition 2: Tc/Te/Sc/SH: 45°C/-35°C/2K/6K (-10°C/-40°C/2K/6K for R744)

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R134a	R404A	R407F	R448A	R449A	R450A	R452A	R513A
LPF03T	1.0	0.009	0.85	0.73	1.23	1.08	1.06	0.72	0.76	0.68
LPF05T	1.0	0.014	1.31	1.13	1.90	1.67	1.63	1.11	1.18	1.05
LPF08T	1.0	0.025	2.1	1.8	3.1	2.7	2.6	1.8	1.9	1.7
LPF10T	1.0	0.04	3.4	3.0	5.0	4.4	4.3	2.9	3.1	2.7
LPF14T	1.4	0.08	6.5	5.6	9.4	8.3	8.1	5.5	5.8	5.2
LPF18T	1.8	0.12	9.0	7.7	13.0	11.4	11.2	7.6	8.0	7.2
LPF24T	2.4	0.2	12.3	10.6	17.8	15.6	15.3	10.5	11.0	9.9
LPF30T	3.0	0.27	17.4	15.0	25.1	22.1	21.6	14.8	15.6	13.9
LPF32T	3.2	0.30	19.0	16.4	27.5	24.2	23.7	16.2	17.0	15.3
LPF45	4.5	0.5	42.6	36.8	61.7	54.3	53.1	36.3	38.3	34.2
LPF52	5.2	0.7	57.0	49.2	82.6	72.7	71.7	48.5	51.2	45.8
LPF55	5.5	0.9	66.0	57.0	95.6	84.1	82.2	56.2	59.2	53.0
LPF62	6.2	1.1	80.3	69.3	116.3	102.3	100.0	68.3	72.1	64.5

Valve Model	Seat Φ (mm)	Kv (m^3/h)	Maximal Cooling Capacity [kW]							
			R454B	R454C	R455A	R1234yf	R1234ze	R290	R410A	R744
LPF03T	1.0	0.009	1.63	0.90	0.98	0.56	0.63	1.16	1.39	2.18
LPF05T	1.0	0.014	2.51	1.39	1.51	0.87	0.98	1.79	2.14	3.36
LPF08T	1.0	0.025	4.0	2.2	2.4	1.4	1.6	2.9	3.5	5.4
LPF10T	1.0	0.04	6.6	3.6	4.0	2.3	2.6	4.7	5.6	8.8
LPF14T	1.4	0.08	12.5	6.9	7.5	4.3	4.8	8.8	10.6	16.6
LPF18T	1.8	0.12	17.2	9.5	10.4	6.0	6.7	12.2	14.6	23.0
LPF24T	2.4	0.2	23.5	13.0	14.2	8.2	9.2	16.7	20.0	31.5
LPF30T	3.0	0.27	33.3	18.4	20.0	11.6	12.9	23.6	28.3	44.5
LPF32T	3.2	0.30	36.4	20.2	21.9	12.7	14.2	25.9	30.9	48.7
LPF45	4.5	0.5	81.7	45.2	49.1	28.3	31.8	58.1	69.4	-
LPF52	5.2	0.7	109.3	60.5	65.8	37.9	42.5	77.7	92.9	-
LPF55	5.5	0.9	126.6	70.1	76.1	43.8	49.2	89.9	107.5	-
LPF62	6.2	1.1	153.9	85.2	92.6	53.3	59.9	109.4	130.8	-

Note: The Max capacity is given for full opened position

ELECTRONIC EXPANSION VALVE



Valve Model	U11 Code Multi-Pack	Dimensions					Weight (g)
		F	G	H	Øe Inlet	Ød Outlet	
LPF03T-001	10136007702	88.5	45.8	49	3/8	1/2	60
LPF03T-002	10136010302				6mm	10mm	49.2
LPF05T-001	10136007802				3/8	1/2	60
LPF05T-002	10136010502				6mm	10mm	49.2
LPF08T-001	10136005402				3/8	1/2	60
LPF08T-002	10136006402	84.5	41.8	45	1/4	1/4	45.5
LPF08T-003	10136008202	88.5	45.8	49	10mm	12mm	59.8
LPF08T-004	10136010402			49	6mm	10mm	49.2
LPF10T-002	10136005502			49	3/8	1/2	60
LPF10T-003	10136005602			45	1/4	3/8	49.2
LPF10T-004	10136006502			49	10mm	12mm	59.9
LPF10T-005	10136006602			45	6mm	10mm	49.2
LPF14T-002	10136005702			49	3/8	1/2	60
LPF14T-003	10136005802			45	1/4	3/8	49.2
LPF14T-004	10136006702			49	10mm	12mm	59.9
LPF14T-005	10136006802			45	6mm	10mm	49.2
LPF18T-002	10136005902			49	3/8	1/2	59.9
LPF18T-003	10136006902			49	10mm	12mm	59.8
LPF24T-002	10136006002			49	3/8	1/2	59.9
LPF24T-003	10136007002			49	10mm	12mm	59.8
LPF30T-001	10136006102			49	3/8	1/2	59.8
LPF30T-002	10136007102			49	10mm	12mm	59.7
LPF32T-001	10136006202			49	3/8	1/2	59.8
LPF32T-002	10136006302			45	1/4	3/8	49
LPF32T-003	10136007202			49	10mm	12mm	59.7
LPF45-100	LPFX0001002	116	62.5	57.2	5/8	5/8	104
LPF52-100	LPFX0001102				5/8	5/8	
LPF55-100	LPFX0001202				5/8	5/8	
LPF62-100	LPFX0001302				5/8	5/8	

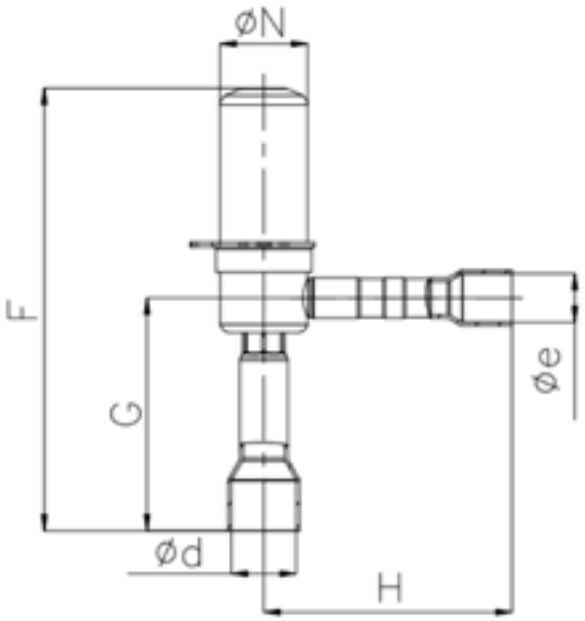
ELECTRONIC EXPANSION VALVE



DIMENSIONS

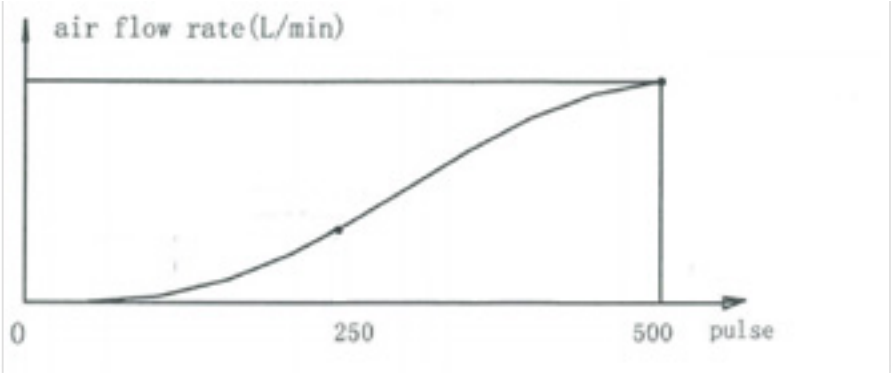
(Unit is mm)

ØN = 17.35 mm

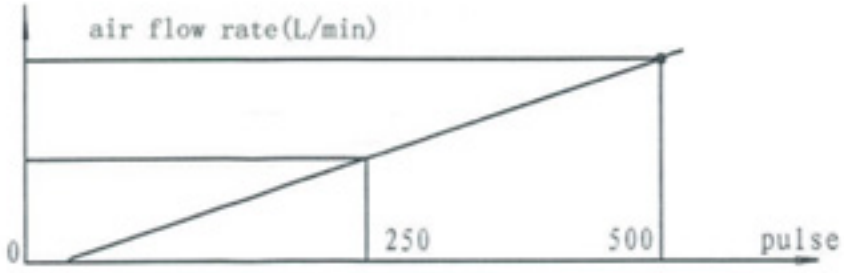


FLOW CHARACTERISTIC (EQUAL PERCENTAGE)

LPF-T 03~32



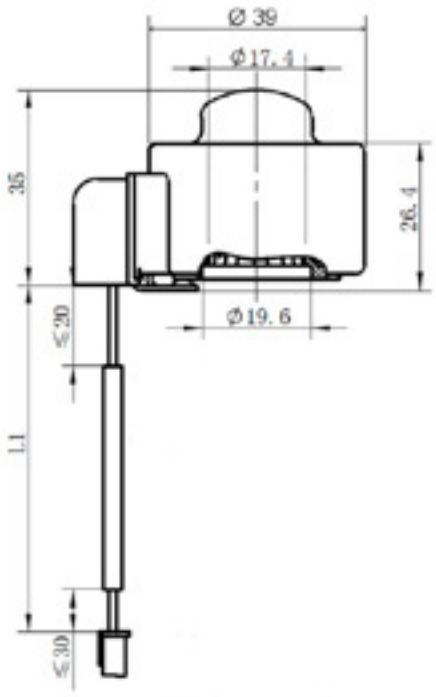
LPF 45~62



ELECTRONIC EXPANSION VALVE



The coil is separated
(Unit is mm)



Coil Model	Coil Code number	Coil Dimensions [mm]	Weight (g)
		L1	
PQ-M24012-000007	10810127602	1500	140
PQ-M24012-000008	10810129502	3000	
PQ-M24012-000009	10810129602	6000	
PQ-M24012-000010	10810129702	9000	

***SECR03** SERIES (REVO)*

REFRIGERATED CABINET CONTROLLER SECR03 (REVO)



FEATURES

- COMPLETE CABINET CONTROLLER WITH INTEGRATED CONTROL ON EEV, CABINET TEMPERATURE, DEFROST, EVAPORATING FAN AND ADDITIONNAL FUNCTIONS
- INTERCOM FOR MULTIPLE CONTROLLERS SHARED SIGNAL
- DUAL TEMPERATURE MODE FOR MULTIPLE OPERATING CONDITIONS
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR

GENERAL SPECIFICATIONS

- Applicable for various refrigerants including propane and CO_2.
- Operating temperature: -30°C ~ 55°C
- Storage temperature: -30°C ~ 55°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC
- Installation method: DIN35 rail
- Compatible with Sanhua DPF and LPF-T expansion valves

ELECTRICAL PARAMETERS

- Power supply: 24 Vac +10%/-15%, 50/60 Hz 24 Vdc+10%/-15%, Class II
- Requested transformer: >15 W (24 Vdc) / >25 VA (24 Vac)
- Connection: Pluggable terminal (M3) Torque 0.5 N.m, current ≤ 3 A (220 V)

  Min / Max wire diameter 0.34 ~ 2.5 mm^2 XHP terminal (EEV and sensors)
- Communication: RS485, Remote Display, InterCom

REFRIGERATED CABINET CONTROLLER



MODEL DESIGNATION LEGEND

NO. 1 2 3	Model Designation Legend
SECR03-R2	SANHUA Electronic Controller
SEC**R03**-R2	Revo series refrigerated cabinet controller
SECR03-**R2**	R2 is the controller version

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:
R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744 (CO_2), R744a (N_20), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R454A.

Model	Part Number	Details
SECR03-R2	10680001902	Cabinet controller
MD01-01	10680004802	Remote display
YCQB02H01 (HC)	10185001502	0-20 bar, 0.5-3.5 V, 1/4” soldering, 2 m cable (XHP)
YCQB02H18 (HC)	10185015402	0-20 bar, 0.5-3.5 V, 1/4” soldering, 4.9 m cable (XHP)
YCQB02L12 (HFC)	10185015502	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20 UNF-2B, 2 m cable (XHP)
YCQB02L28 (HFC)	10185015602	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20UNF-2B, 4.9 m cable (XHP)
YCQB09L02 (CO2)	10185044102	0-90 bar, 0.5-3.5 V, G 1/4, 2 m cable (XHP)
YCQB06L01 (CO2)	10185067202	0-60 bar, 0.5-3.5 V, Flare 7/16-20 UNF-2B (Packard) - XHP/Packard cable needed
YCQB02-013251	20185108201	2 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013252	20185108101	5 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013253	20185108001	9 m cable length XHP/Packard for YCQB & YCQC pressure sensors
NTC2A1	10665000102	Temperature Sensor (NTC 5 KΩ), 2m cable (XHP)
NTC5A1	10665000202	Temperature Sensor (NTC 5 KΩ), 5m cable (XHP)
NTC9A1	10665000402	Temperature Sensor (NTC 5 KΩ), 9m cable (XHP)
LPF-T	LPF-T Data sheet	LPF-T Electronic Expansion Valve

Note: The temperature & pressure sensors should be ordered separately.
Other pressures transmitters are available on the YCQ datasheet.

REFRIGERATED CABINET CONTROLLER



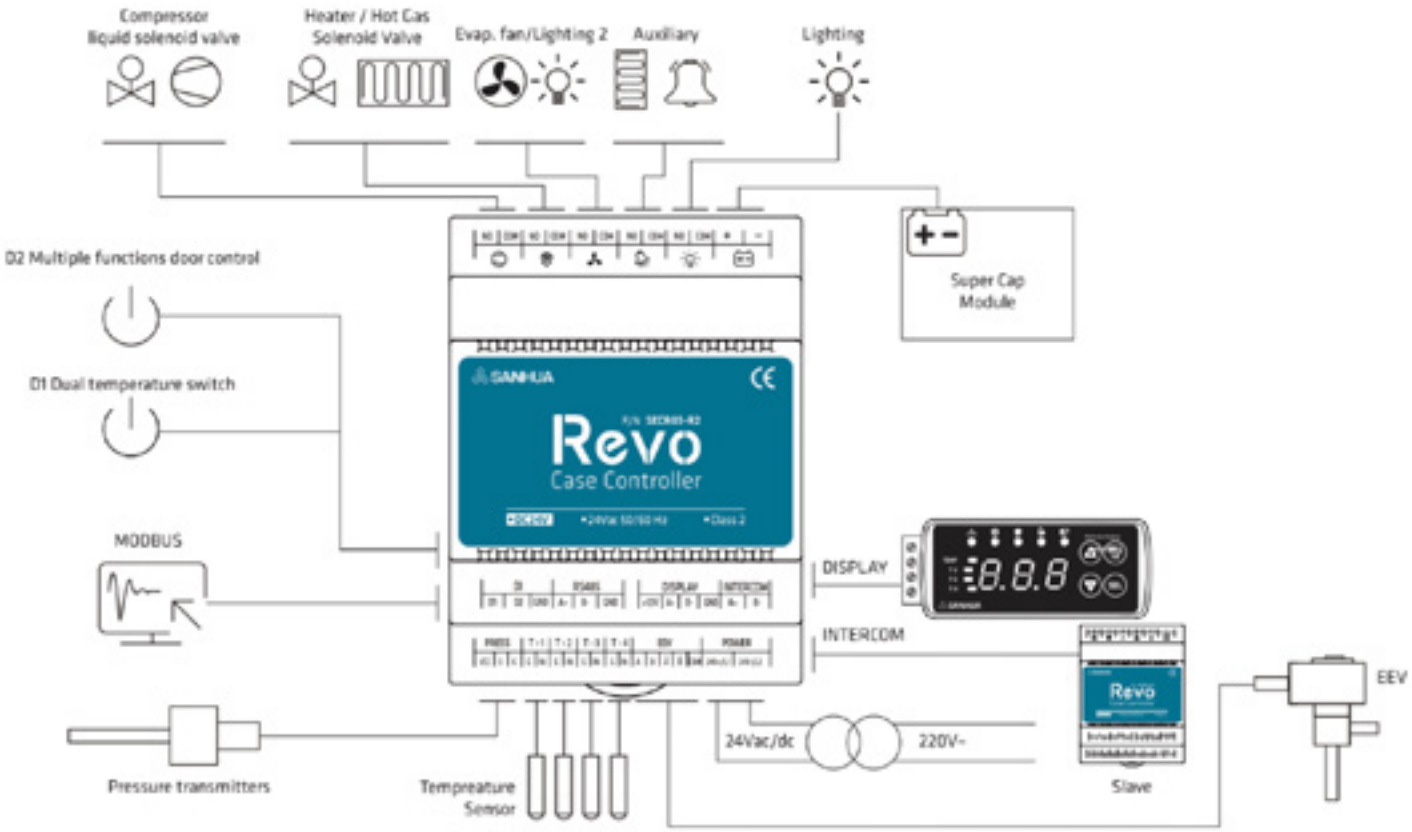
SENSOR INFORMATION

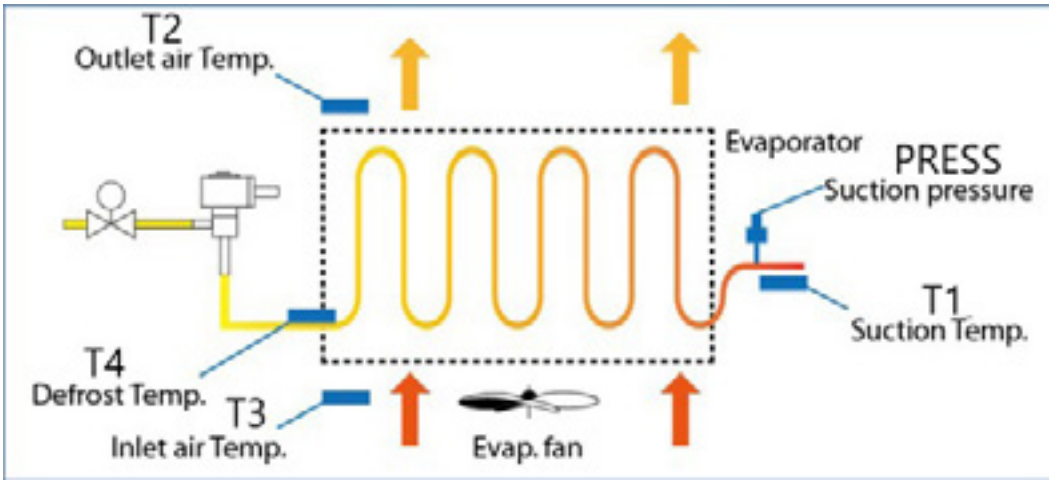
Items	Description	
Temperature sensor	Sensor type	NTC 5 KΩ
	Cable specification	2 / 5 or 9 m × 0.5 mm²
	Protection level	IP 67
	Accuracy	±0.3°C (at 25°C)
	Operating temperature range	-55°C ~ 85°C
Pressure Transmitter	Power Supply	YCQB: (5±0.25) VDC
	Output signal	YCQB: (0.5 ~ 3.5) VDC
	Pressure range accuracy	±2.0% F.S. (-30°C/+85°C)
	Protection level	IP 67
	Connection	Soldering: 1/4" or Thread: 1/4"SAE 7/16-20 UNF

REFRIGERATED CABINET CONTROLLER



INSTALLATION

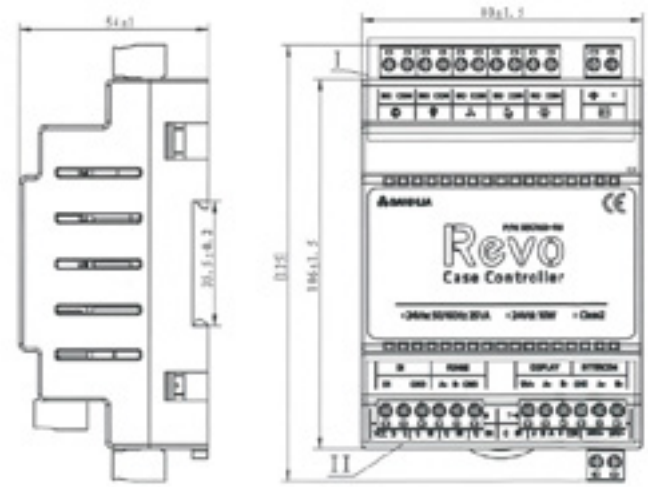


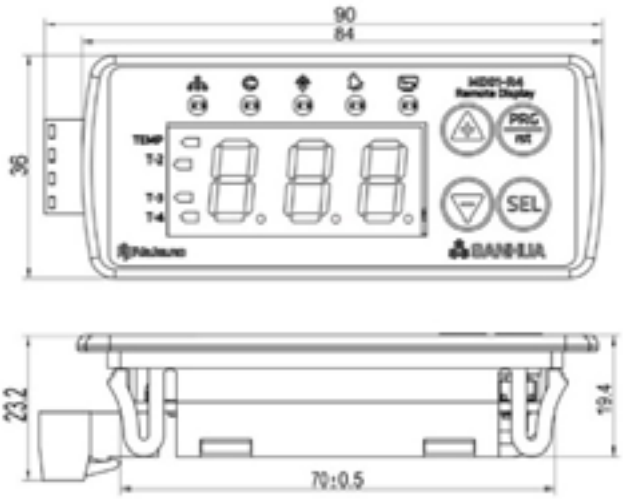


REFRIGERATED CABINET CONTROLLER



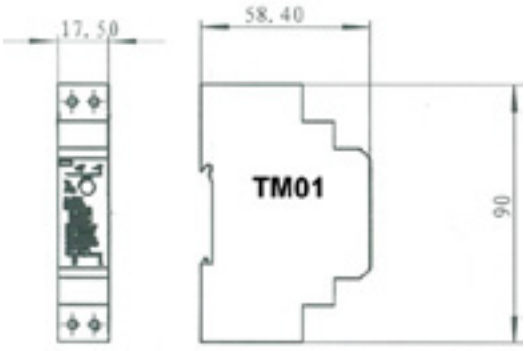
DIMENSIONS





ACCESSORIES

Transformer

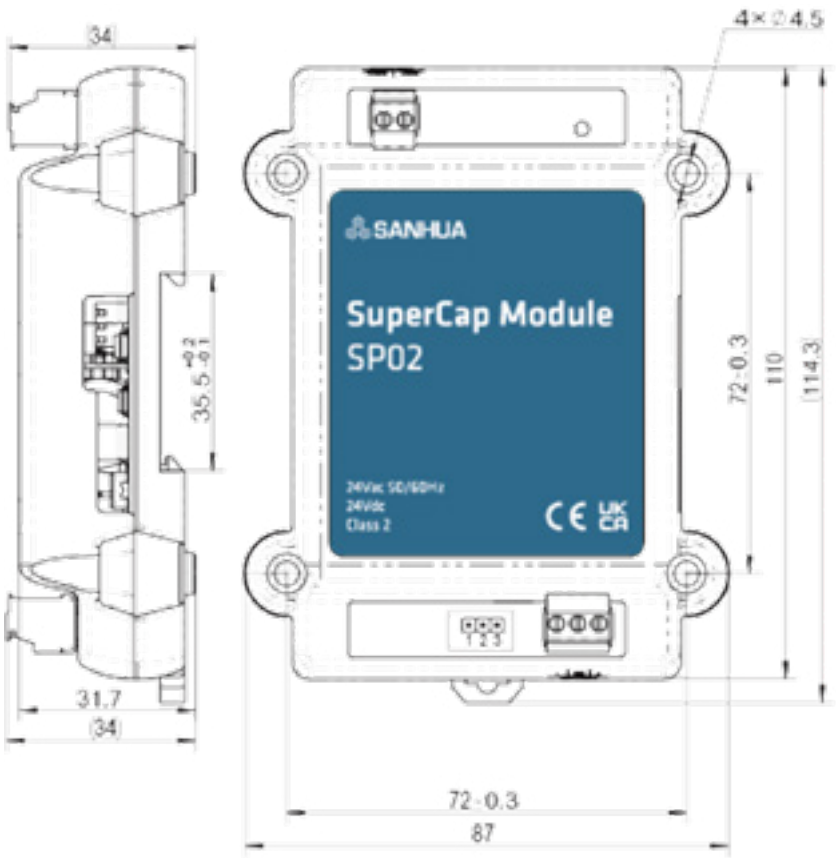
Item	Description		
Transformer	Supply Voltage	100 ~ 240 VAC	
	Output Voltage	From 21.6 to 29 V, Set at 24 VDC	
	Output current	0.63 A	
	Operating Temperature	-30 ~ +70°C	
	Mounting	DIN 35 mm	

Model	Part number	Output current
TM01	20680008002	0.63 A

REFRIGERATED CABINET CONTROLLER



ULTRACAPACITOR

Item	Description	
Model	SP02	
Dimension	72 (W) mm x 110 (H) mm x 31.7 (D) mm	
Voltage input	24 Vac, +10%/-15%, 50/60 HZ 24 Vdc, +10%/-15%	
Voltage output	22.5~23.5 V at Charging (24Vdc input), 14~16 V at discharging	
Discharging time	≥25 s (Load current 400 mA)	
Rated power	Max 8 W (24 Vdc) or 26 VA (24 Vac)	
Operation	-30~+55°C, ≤95% RH (Non-condensing)	
Storage	30~+55°C, ≤95% RH (Non-condensing)	

Model	Part number
SP02	10680004702

***SECR04** SERIES (REVO+)*

REFRIGERATED CABINET CONTROLLER SECR04 (REVO+)



FEATURES

- COMPLETE CABINET CONTROL WITH INTEGRATED CONTROL ON VARIABLE SPEED DRIVE, EEV, CABINET TEMPERATURE, DEFROST, EVAPORATING FAN AND LIGHTING
- INTERCOM FOR MULTIPLE CONTROLLERS SHARED SIGNAL
- DUAL TEMPERATURE MODE FOR MULTIPLE OPERATING CONDITIONS
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR

GENERAL SPECIFICATIONS

- Applicable for various refrigerants including propane and CO_2.
- Operating temperature: -30°C ~ 55°C
- Storage temperature: -30°C ~ 55°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC
- Installation method: DIN35 rail
- Compatible with Sanhua DPF and LPF-T expansion valves
- Compatible with Sanhua SD2 inverters

ELECTRICAL PARAMETERS

- Power supply: 24 Vac +10%/-15%, 50/60 Hz 24 Vdc+10%/-15%, Class II
- Requested transformer: >15 W (24 Vdc) / >25 VA (24 Vac)
- Connection: Pluggable terminal (M3) Torque 0.5 N.m, current ≤ 3 A (220 V)
- Min / Max wire diameter 0.34 ~ 2.5 mm^2 XHP terminal (EEV and sensors)
- Communication: RS485, Remote Display, InterCom

REFRIGERATED CABINET CONTROLLER



MODEL DESIGNATION LEGEND

NO. 1 2 3	Model Designation Legend
SECR04-R0 →	SANHUA Electronic Controller
SEC**R04**-R0 →	Revo + series refrigerated cabinet controller
SECR04-**R0** →	R0 is the controller version

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:
R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744 (CO_2), R744a (N_20), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R454A.

Model	Part Number	Details
SECR04-R0	10680004602	REVO+ Cabinet controller
MD01-04	10680006002	Remote display
YCQB02H01 (HC)	10185001502	0-20 bar, 0.5-3.5 V, 1/4" soldering, 2 m cable (XHP)
YCQB02H18 (HC)	10185015402	0-20 bar, 0.5-3.5 V, 1/4" soldering, 4.9 m cable (XHP)
YCQB02L12 (HFC)	10185015502	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20UNF-2B, 2 m cable (XHP)
YCQB02L28 (HFC)	10185015602	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20UNF-2B, 4.9 m cable (XHP)
YCQB09L02 (CO2)	10185044102	0-90 bar, 0.5-3.5 V, G 1/4, 2 m cable (XHP)
YCQB06L01 (CO2)	10185067202	0-60 bar, 0.5-3.5 V, Flare 7/16-20UNF-2B (Packard) – XHP/Packard cable needed
YCQB02-013251	20185108201	2 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013252	20185108101	5 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013253	20185108001	9 m cable length XHP/Packard for YCQB & YCQC pressure sensors
NTC2A1	10665000102	Temperature Sensor (NTC 5 KΩ), 2 m cable (XHP)
NTC5A1	10665000202	Temperature Sensor (NTC 5 KΩ), 5 m cable (XHP)
NTC9A1	10665000402	Temperature Sensor (NTC 5 KΩ), 9 m cable (XHP)
NTC2B1	10665000702	Discharge temperature sensor (NTC 50 K), 2 m cable (XHP)
NTC3B1	10665000802	Discharge temperature sensor (NTC 50 K), 3 m cable (XHP)
LPF-T	LPF-T Data sheet	LPF-T Electronic Expansion Valve
SD2	SD2 Data sheet	SD2 inverter to be selected according to the compressor

Note: The temperature & pressure sensors should be ordered separately.
Other pressures transmitters are available on the YCQ datasheet.

REFRIGERATED CABINET CONTROLLER



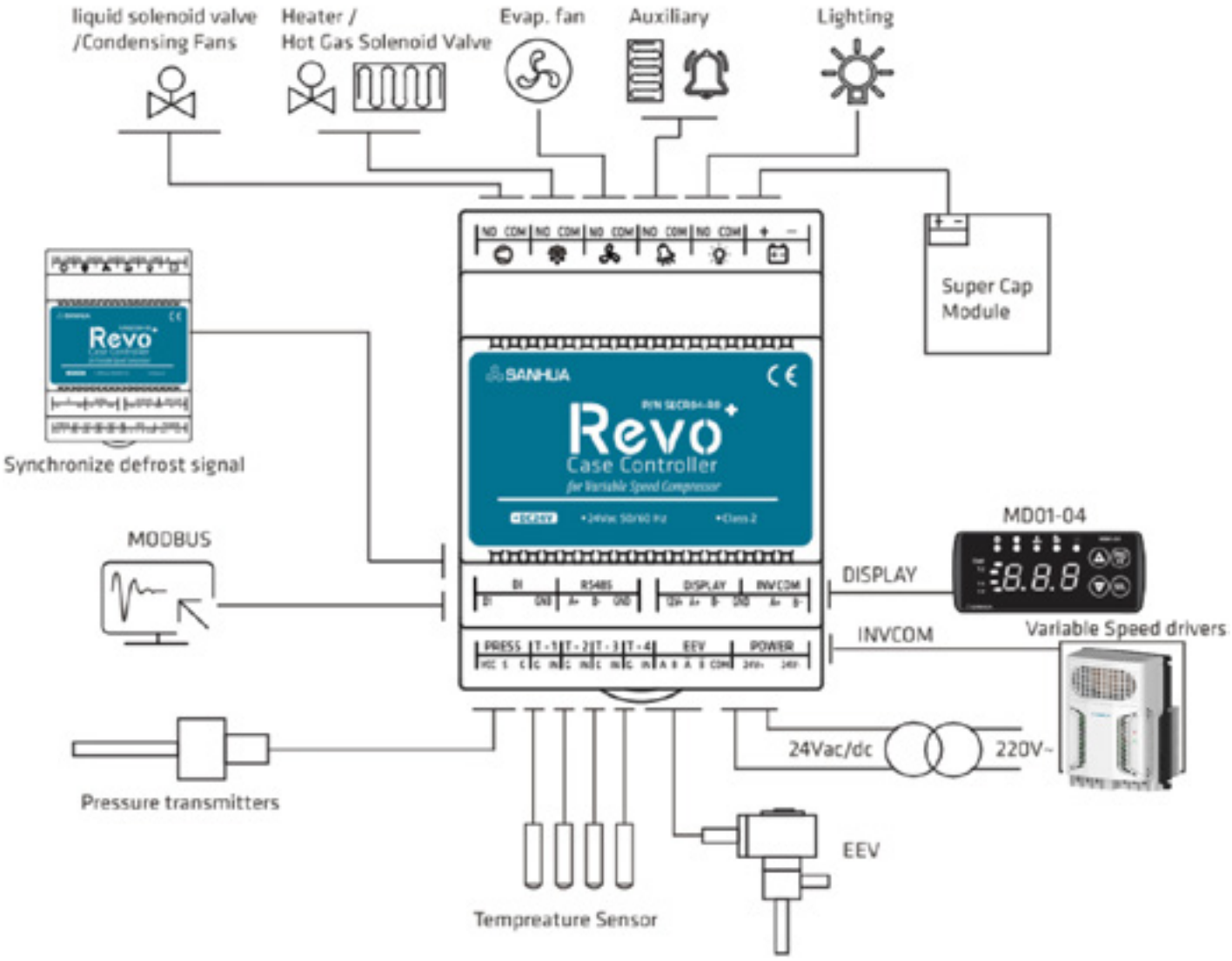
SENSOR INFORMATION

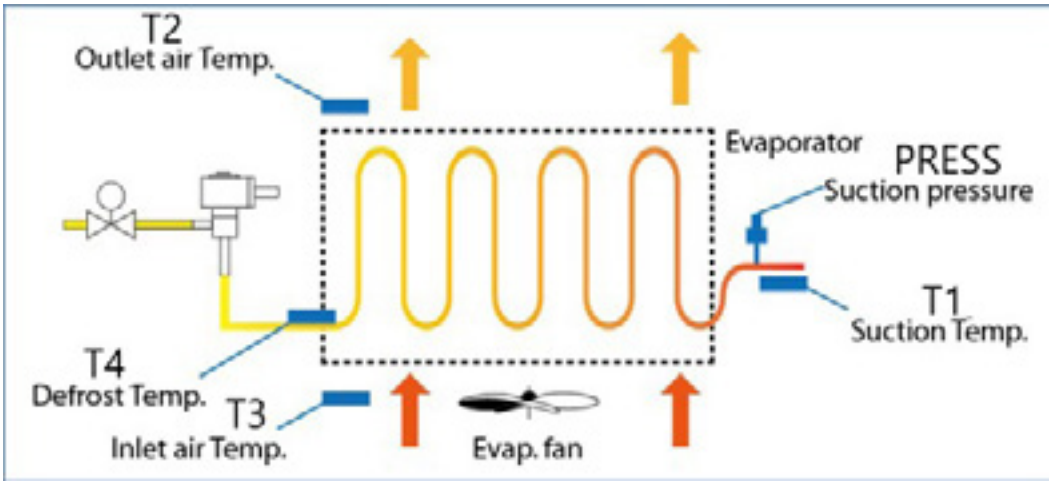
Items	Description	
Temperature sensor	Sensor type	NTC 5 KΩ & 50 KΩ (discharge)
	Cable specification	2 m (5 KΩ, 50 KΩ) / 3 m (5 KΩ, 50 KΩ) / 5 m (5 KΩ) or 9 m (5 KΩ) × 0.5 mm²
	Protection level	IP 67
	Accuracy	±0.3°C (at 25°C)
	Operating temperature range	-55°C ~ 85°C
Pressure Transmitter	Power Supply	YCQB: (5±0.25) VDC
	Output signal	YCQB: (0.5 ~ 3.5) VDC
	Pressure range accuracy	±2.0% F.S. (-30°C/+85 °C)
	Protection level	IP 67
	Connection	Soldering: 1/4" or Thread: 1/4"SAE 7/16-20UNF

REFRIGERATED CABINET CONTROLLER



INSTALLATION

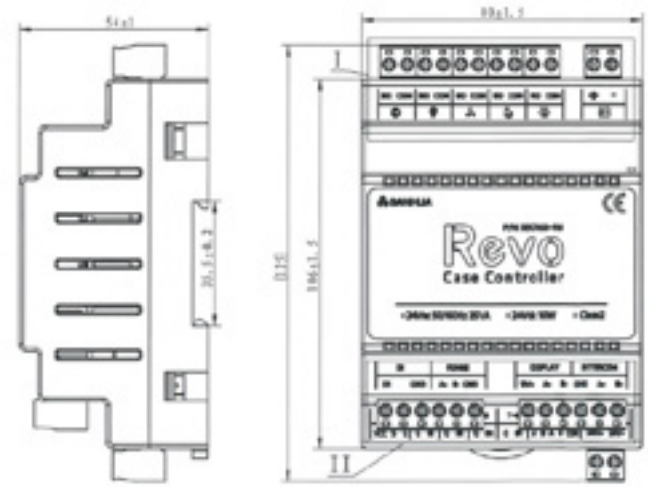


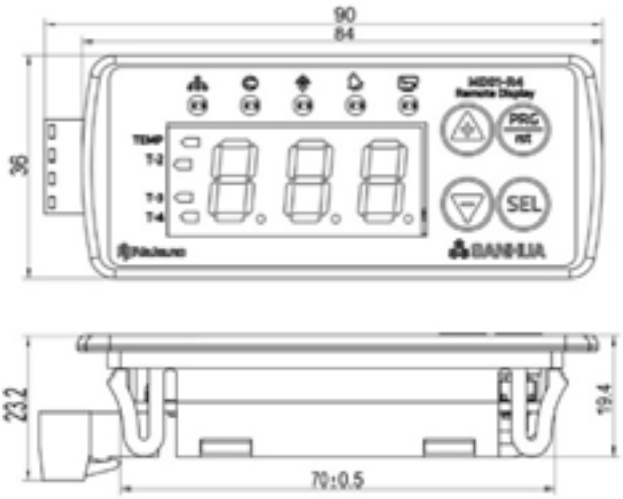


REFRIGERATED CABINET CONTROLLER



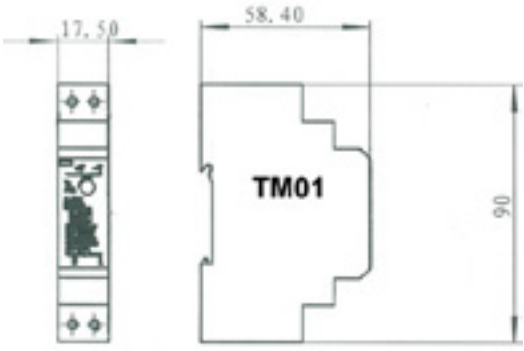
DIMENSIONS





ACCESSORIES

Transformer

Item	Description		
Transformer	Supply Voltage	100 ~ 240 VAC	
	Output Voltage	From 21.6 to 29 V, Set at 24 VDC	
	Output current	0.63 A	
	Operating Temperature	-30 ~ +70°C	
	Mounting	DIN 35 mm	

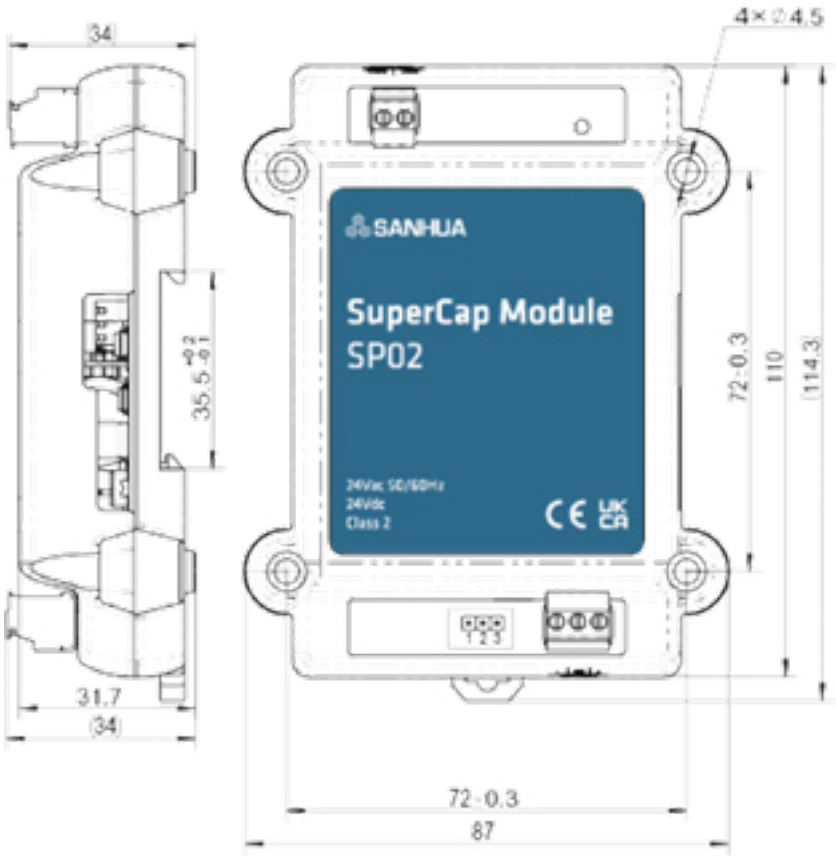
Model	Part number	Output current
TM01	20680008002	0.63 A

REFRIGERATED CABINET CONTROLLER



ULTRACAPACITOR

Item	Description
Model	SP02
Dimension	72 (W) mm x 110 (H) mm x 31.7 (D) mm
Voltage input	24 Vac, +10%/-15%, 50/60 HZ 24 Vdc, +10%/-15%
Voltage output	22.5~23.5 V at Charging (24 Vdc input), 14~16 V at discharging
Discharging time	≥25 s (Load current 400 mA)
Rated power	Max 8 W (24 Vdc) or 26 VA (24 Vac)
Operation	-30~+55°C, ≤95% RH (Non- condensing)
Storage	30~+55°C, ≤95% RH (Non-condensing)



Model	Part number
SP02	10680004702

***SECR05** SERIES (REVO Pulse)*

REFRIGERATED CABINET CONTROLLER SECR05 (REVO PULSE)



FEATURES

- COMPLETE CABINET CONTROLLER WITH INTEGRATED CONTROL ON PULSE EXPANSION VALVE, CABINET TEMPERATURE, DEFROST, EVAPORATING FAN AND ADDITIONNAL FUNCTIONS
- INTERCOM FOR MULTIPLE CONTROLLERS SHARED SIGNAL
- DUAL TEMPERATURE MODE FOR MULTIPLE OPERATING CONDITIONS
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR

GENERAL SPECIFICATIONS

- Applicable for various refrigerants including propane and CO_2.
- Operating temperature: -30°C ~ 55°C
- Storage temperature: -30°C ~ 55°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC & LVD
- Installation method: DIN35 rail
- Compatible with Sanhua PEV and PEV-S expansion valves

ELECTRICAL PARAMETERS

- Power supply: 85 Vac~265 Vac, 50/60 Hz
- Power consumption ≤ 25 VA
- Connection: Pluggable terminal (M3) Torque 0.5 N.m, current ≤ 3 A (220 V)

  Min / Max wire diameter 0.34 ~ 2.5 mm^2

  Pluggable terminal 5.08 (thread M3)

  Min/max wire diameter 1.0~2.5 mm^2, Torque 0.5 N.m, current≤10 A.

  XHP terminal (EEV and sensors)
- Communication: RS485, Remote Display, InterCom

REFRIGERATED CABINET CONTROLLER



MODEL DESIGNATION LEGEND

NO. 1 2 3		Model Designation Legend
SECR05-P1	→	SANHUA Electronic Controller
SEC**R05**-P1	→	Revo Pulse series refrigerated cabinet controller
SECR05-**P1**	→	P1 is the controller version

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:
R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A,
R448A, R449A, R452A, R744(CO_2), R744a(N_20), R32, R245fa, R23, R407A,
R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R454A.

Model	Part Number	Details
SECR05-P1	10680003802	Cabinet controller
MD05-01	10680003602	Remote display
YCQB02H01 (HC)	10185001502	0-20 bar, 0.5-3.5 V, 1/4" soldering, 2 m cable (XHP)
YCQB02H18 (HC)	10185015402	0-20 bar, 0.5-3.5 V, 1/4" soldering, 4.9 m cable (XHP)
YCQB02L12 (HFC)	10185015502	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20 UNF-2B, 2 m cable (XHP)
YCQB02L28 (HFC)	10185015602	0-20 bar, 0.5-3.5 V, Thread: SAE-1/4" 7/16-20 UNF-2B, 4.9 m cable (XHP)
YCQB09L02 (CO_2)	10185044102	0-90 bar, 0.5-3.5 V, G 1/4, 2 m cable (XHP)
YCQB06L01 (CO_2)	10185067202	0-60 bar, 0.5-3.5 V, Flare 7/16-20 UNF-2B (Packard) - XHP/Packard cable needed
YCQB02-013251	20185108201	2 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013252	20185108101	5 m cable length XHP/Packard for YCQB & YCQC pressure sensors
YCQB02-013253	20185108001	9 m cable length XHP/Packard for YCQB & YCQC pressure sensors
NTC2A1	10665000102	Temperature Sensor (NTC 5 KΩ), 2 m cable (XHP)
NTC5A1	10665000202	Temperature Sensor (NTC 5 KΩ), 5 m cable (XHP)
NTC9A1	10665000402	Temperature Sensor (NTC 5 KΩ), 9 m cable (XHP)
PEV	PEV Data sheet	PEV Pulse Expansion valve

Note: The temperature & pressure sensors should be ordered separately.
Other pressures transmitters are available on the YCQ datasheet.

REFRIGERATED CABINET CONTROLLER



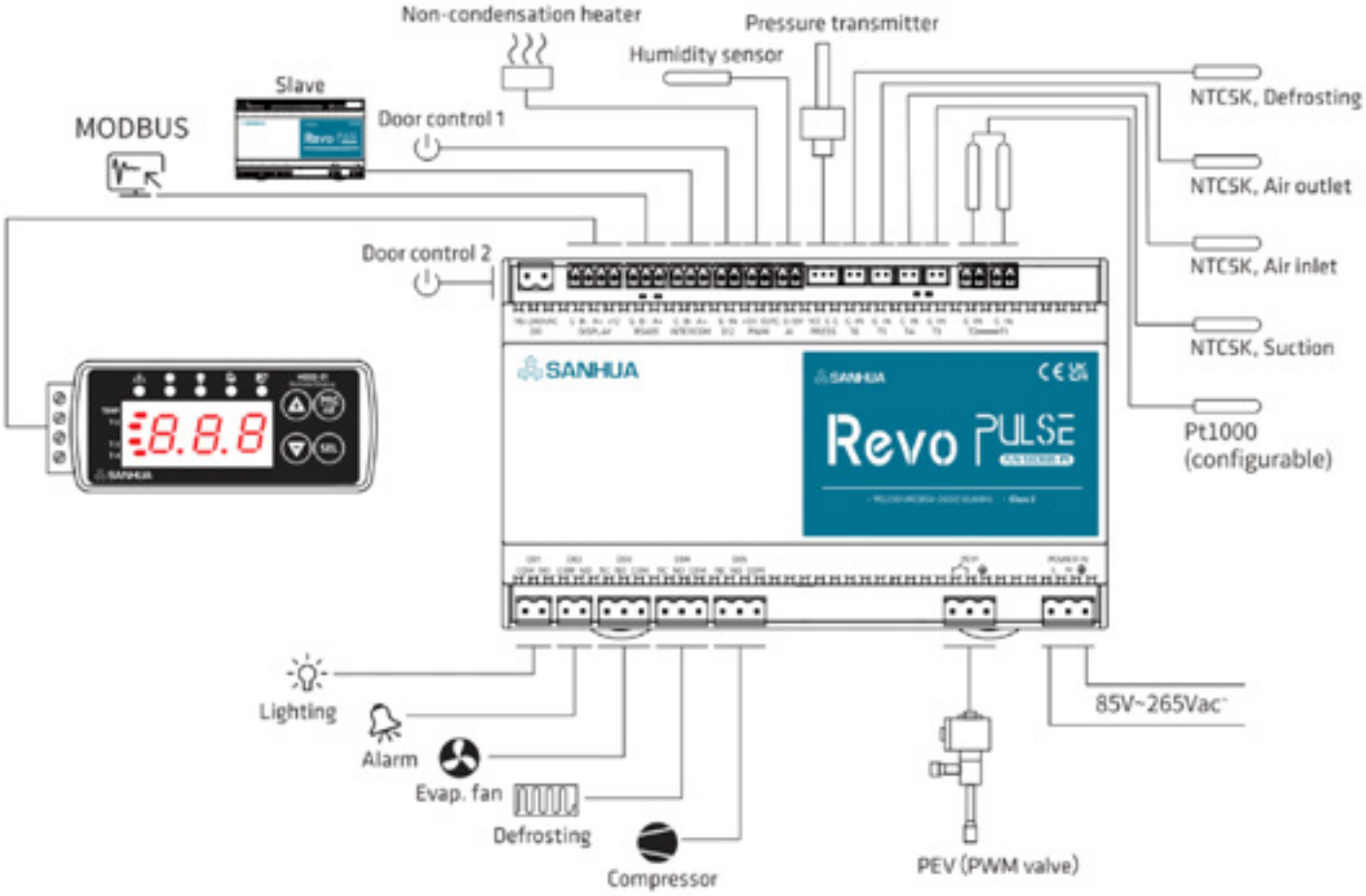
SENSOR INFORMATION

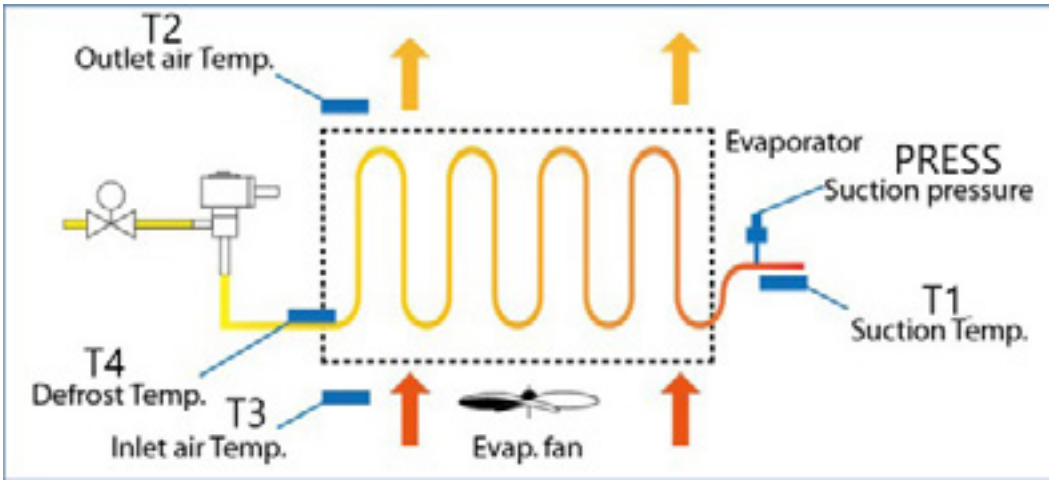
Items	Description	
Temperature sensor	Sensor type	NTC 5 KΩ
	Cable specification	2 / 5 or 9 m × 0.5 mm²
	Protection level	IP 67
	Accuracy	±0.3°C (at 25°C)
	Operating temperature range	-55°C ~ 85°C
Pressure Transmitter	Power Supply	YCQB: (5±0.25) VDC
	Output signal	YCQB: (0.5 ~ 3.5) VDC
	Pressure range accuracy	±2.0% F.S. (-30°C/+85 °C)
	Protection level	IP 67
	Connection	Soldering: 1/4" or Thread: 1/4"SAE 7/16-20UNF

REFRIGERATED CABINET CONTROLLER



INSTALLATION

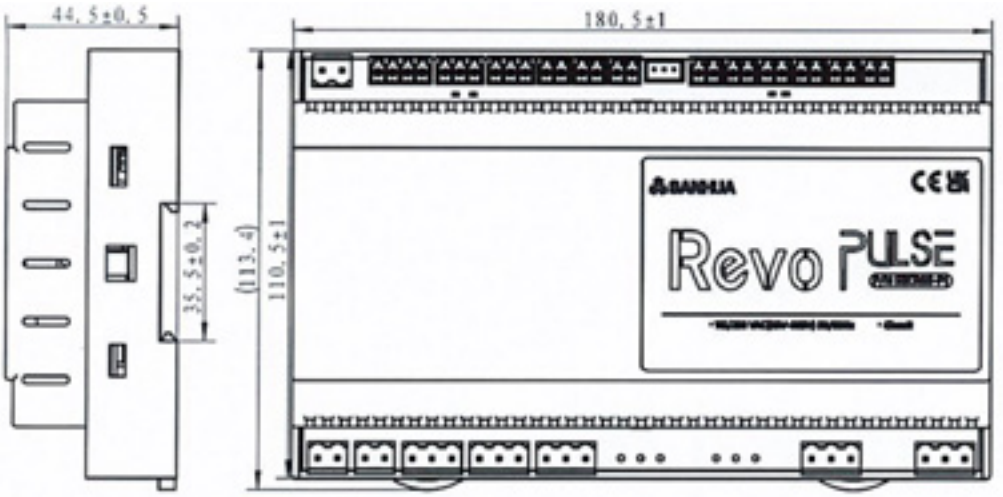


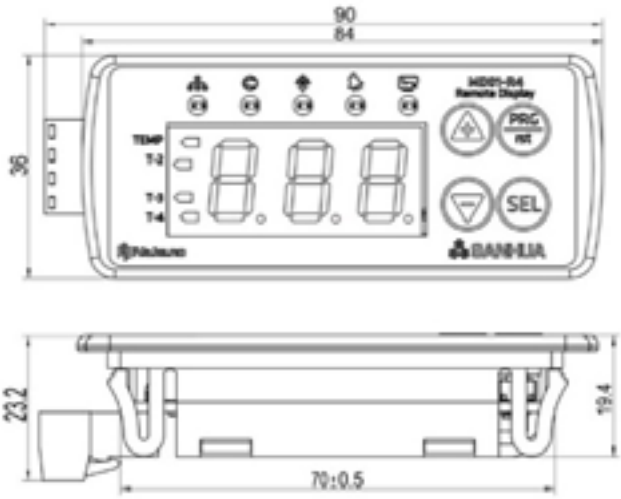


REFRIGERATED CABINET CONTROLLER



DIMENSIONS





***SECR06** SERIES (REVO se)*

REFRIGERATED CABINET CONTROLLER SECR06 (REVO SE)



FEATURES

- COMPLETE CABINET CONTROL WITH VERSION TO CONTROL VARIABLE SPEED COMPRESSORS, CABINET TEMPERATURE, DEFROST, EVAPORATING FAN AND LIGHTING
- INTERCOM FOR MULTIPLE CONTROLLERS SHARED SIGNAL
- DUAL TEMPERATURE MODE FOR MULTIPLE OPERATING CONDITIONS
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR

GENERAL SPECIFICATIONS

- Applicable for various refrigerants applications.
- Operating temperature: -30°C ~ 55°C
- Storage temperature: -30°C ~ 55°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC
- Installation method: DIN35 rail or through panel mounting
- Compatible with compressor using TTL or PWM signals.

ELECTRICAL PARAMETERS

- Power supply: 110-220 Vac +10%/-15%, 50/60 Hz, Class II
- Connection: Pluggable terminal (M3) Torque 0.5 N.m, current ≤ 3 A (220 V)

  Min / Max wire diameter 0.34 ~ 2.5 mm^2 XHP terminal (Temperature sensor)
- Communication: RS485, InterCom

MODEL DESIGNATION LEGEND

NO. 1 2 3	Model Designation Legend
SECR06-S1	→ SANHUA Electronic Controller
SEC**R06**-S1	→ Revo se series refrigerated cabinet controller
SECR06-**S1**	→ S1 is the controller version

REFRIGERATED CABINET CONTROLLER



PRODUCT FEATURES

Product family	Items	Revo SE		
Sanhua Model	Basic Information	SECR06-S1	SECR06-S2	SECR06-S3
Description		Thermostat for cooler	Thermostat for freezer	Inverter system
Typical Application		Remote/Plug-in	Remote/Plug-in	Remote/Semi Plug-in
Power Supply		110~220 Vac	110~220 Vac	110~220 Vac
Cooling	Output Signal	✓	✓	✓
EEV		×	×	×
Evaporative fan		×	✓	✓
Defrosting		×	✓	✓
Real Time Clock		×	✓	✓
Non-condensing/Alarm		×	×	×
Lighting		×	✓	✓
Digital Input (DI)	Input Signal	×	✓	✓
Outlet Air Temp.		✓	✓	✓
Auxiliary Air Temp.		×	✓	✓
Suction Temp.		×	×	×
Defrosting Temp.		×	✓	✓
TTL/PWM	Communication	×	×	✓
Modbus		×	✓	✓

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:
R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744(CO_2), R744a(N_2O), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R454A

Model	Part Number	Details
SECR06-S1	SECX0000102	REVO se Cabinet controller for Medium temperature applications
SECR06-S2	SECX0000202	REVO se Cabinet controller for Low temperature applications
SECR06-S3	SECX0000302	REVO se Cabinet controller with variable speed compressor control
NTC2A1	10665000102	Temperature Sensor (NTC 5 KΩ), 2 m cable (XHP)
NTC5A1	10665000202	Temperature Sensor (NTC 5 KΩ), 5 m cable (XHP)
NTC9A1	10665000402	Temperature Sensor (NTC 5 KΩ), 9 m cable (XHP)

Note: The temperature sensors should be ordered separately.

REFRIGERATED CABINET CONTROLLER

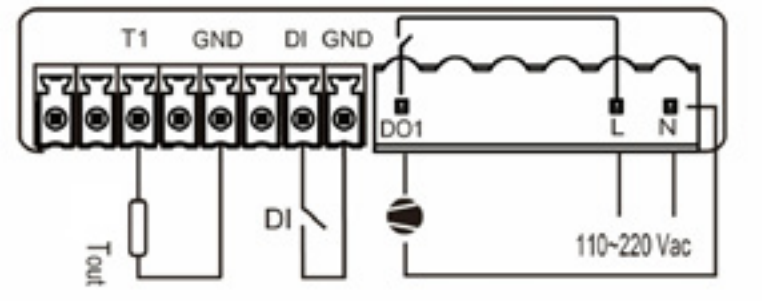


SENSOR INFORMATION

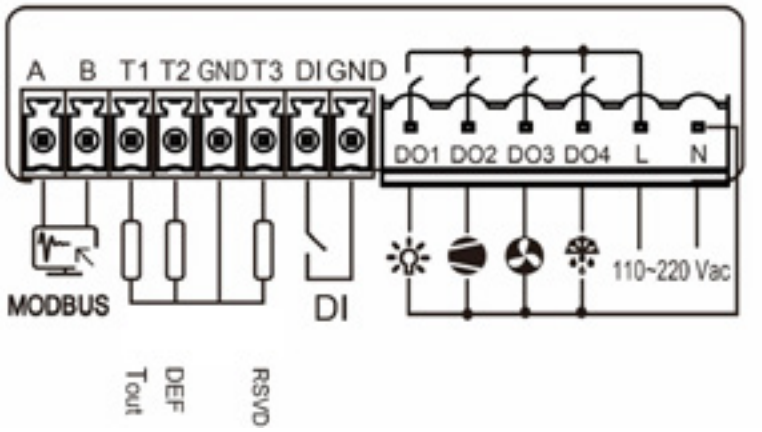
Items	Description	
Temperature sensor	Sensor type	NTC 5 KΩ
	Cable specification	2 m (5 KΩ) / 5 m (5 KΩ) or 9 m (5 KΩ) × 0.5 mm²
	Protection level	IP 67
	Accuracy	±0.3°C (at 25°C)
	Operating temperature range	-55°C ~ 85°C

INSTALLATION

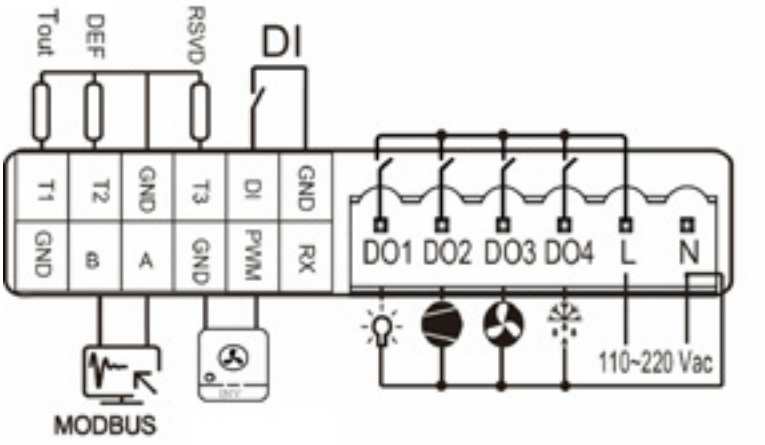
P/N | **SECR06-S1**



P/N | **SECR06-S2**



P/N | **SECR06-S3**

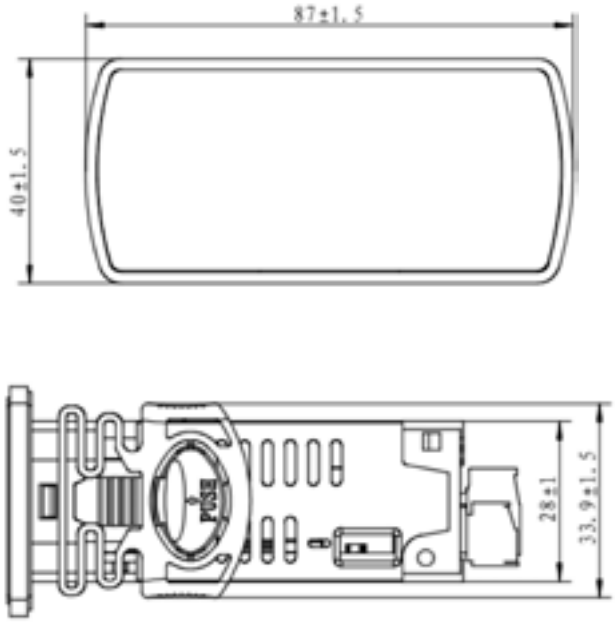


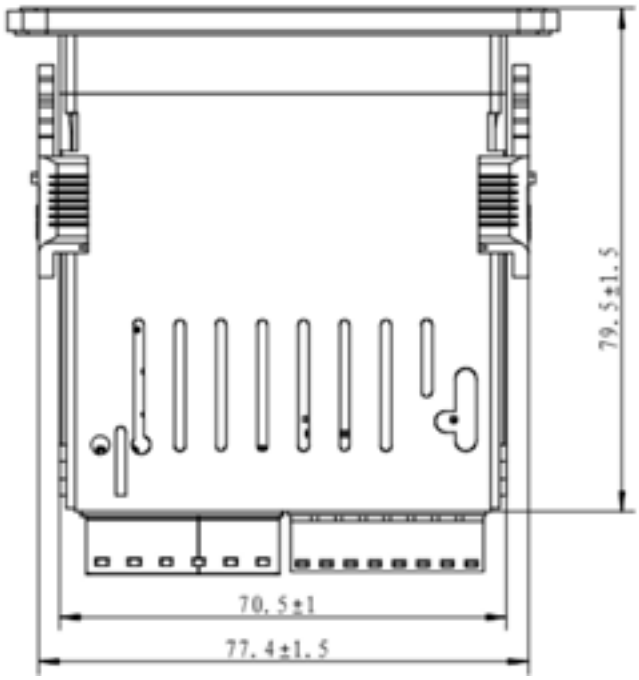
REFRIGERATED CABINET CONTROLLER



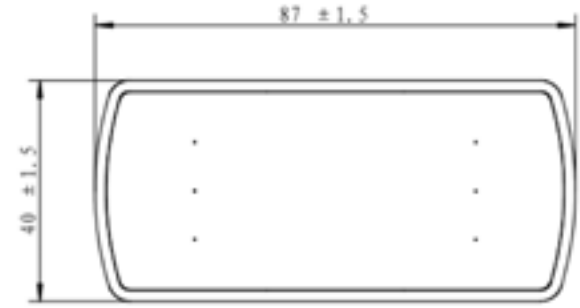
DIMENSIONS

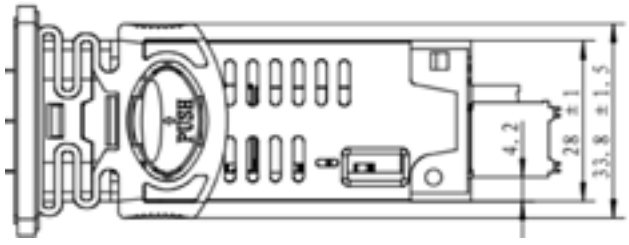
REVO S1 & S2

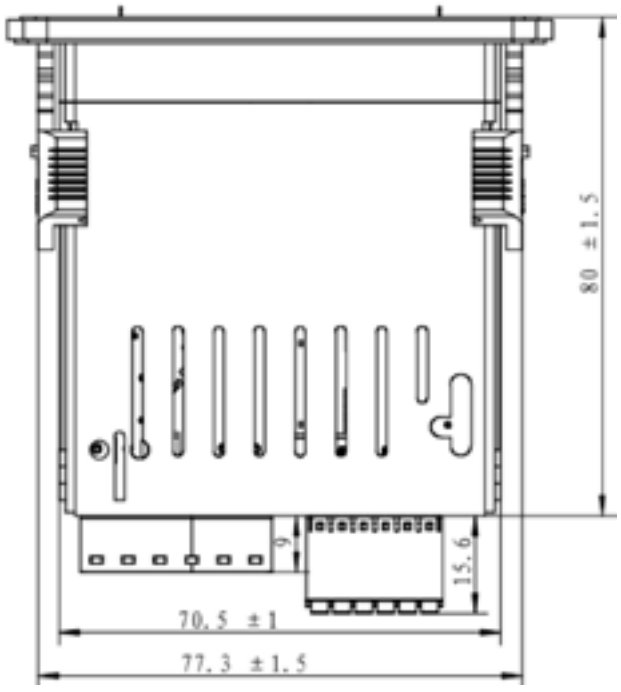




REVO S3







SECD04 *SERIES*

DUAL ELECTRONIC EXPANSION VALVE CONTROLLER



FEATURES

- DUAL EEV CONTROL
- ADVANCED PID ALGORITHM TO ENSURE ACCURATE AUTOMATIC ADJUSTMENT OF SUPERHEAT
- QUICK-SAFE PREVENTION OF LOW AND HIGH SUPERHEAT TO ENSURE THE SYSTEM OPERATING WELL AT ANY CONDITIONS
- SMALL SIZE, RAIL MOUNTING DESIGN, EASY TO INSTALL
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR
- FAIL SAFE FUNCTION TO ENSURE CONTINUOUS OPERATION
- VALVE CONTROL VIA MODBUS
- ELECTRICAL BALL VALVE (EBV) CONTROL

GENERAL SPECIFICATIONS

- Applicable for various refrigerants applications
- Operating temperature: -30°C ~ 55°C
- Storage temperature: -30°C ~ 55°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC
- Installation method:
  DIN rail snap-in or wall mounting with screws
- Compatible with Sanhua LPF-T, DPF and EBV valves

ELECTRICAL PARAMETERS

- Power supply: 24Vac/24Vdc +10%/-15%, 50/60Hz
- Requested transformer:
  Sanhua TM02 [≥ 30VA (24Vac) or ≥ 20W (24Vdc)]
- Inputs: 1x Pressure sensor input for 2 circuits
  2x Temperature sensor input
  1x upper level Communication input (RS485 & Modbus)
  1x Cascading communication input (RS485 & Modbus)
  2x Run/Stop Signal
- Output: 2x EEV output (12Vdc±10%), rectangular wave

DUAL ELECTRONIC EXPANSION VALVE CONTROLLER



MODEL DESIGNATION LEGEND

NO. 1 2 3 4	Model Designation Legend
SECD04-R1	**S**ANHUA electronic **E**xpansion valve **C**ontroller
SEC**D**04-R1	**D**ual EEV Controller
SECD**04**-R1	The **4th Generation** of eDual family
SECD04-**R1**	Different Combination of functions like **pressure signal, button and display**

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:
R22, R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744(CO2), R744A(N20), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R1270, R1233zdE, R1234zeZ, R452C, R454A, R457A.

All the models get a RS485 port for communication.

Model	Model	Part Number	Details
Controller	SECD04-R1	SECD0000302	**Voltage** pressure sensor + Display + button **(°C/Bar & °F/Psi)**
	SECD04-R2	SECD0000202	**Current** pressure sensor + Display + button **(°C/Bar & °F/Psi)**
	SECD04-01	SECD0000402	**Voltage** pressure sensor - No Display - No button **(°C/Bar & °F/Psi)**
	SECD04-02	SECD0000502	**Current** pressure sensor - No Display - No button **(°C/Bar & °F/Psi)**
Temp. Sensor	NTC2A1	10665000102	**2m** Temp. Sensor (5kΩ)
	NTC5A1	10665000202	**5m** Temp. Sensor (5kΩ)
	NTC9A1	10665000402	**9m** Temp. Sensor (5kΩ)
Pressure Sensor*	YCQB02H01-1	10185001502	**0/20 bar (0,5-3,5V)** with **Solder** connection, **2m** cable length
	YCQB02H18-1	10185015402	**0/20 bar (0,5-3,5V)** with **Solder** connection, **4.9m** cable length
	YCQB02L12-1	10185015502	**0/20 bar (0,5-3,5V)** with **Flare** connection, **2m** cable length
	YCQB02L28-1	10185015602	**0/20 bar (0,5-3,5V)** with **Flare** connection, **4.9m** cable length
	YCQB03H06	10185046502	**0/30 bar (0,5-4,5V)** with **Solder** connection, **2m** cable length
	YCQB04H50	10185004602	**0/34,5 bar (0,5-4,5V)** with **Solder** connection, **Packard** socket
	YCQB02L01	10185004902	**0/20 bar (0,5-4,5V)** with **Flare** connection, **2m** cable length
	YCQB03L157	10185046202	**0/30 bar (0,5-4,5V)** with **Flare** connection, **Packard** socket
	YCQC02L18	10185017102	**-1/12 bar (4-20mA)** with **Flare** connection, **Packard** socket
	YCQC09L02	10185042402	**0/90 bar (4-20mA)** with **Flare** connection, **Packard** socket
Packard cable	YCQB02-013251	20185108201	**2m** cable length for YCQB & YCQC pressure sensors
	YCQB02-013252	20185108101	**5m** cable length for YCQB & YCQC pressure sensors
	YCQB02-013253	20185108001	**9m** cable length for YCQB & YCQC pressure sensors

Note: The temperature & pressure sensors should be ordered separately.
*Other YCQ models are available, please check the SANHUA YCQ Datasheet or ask your local support

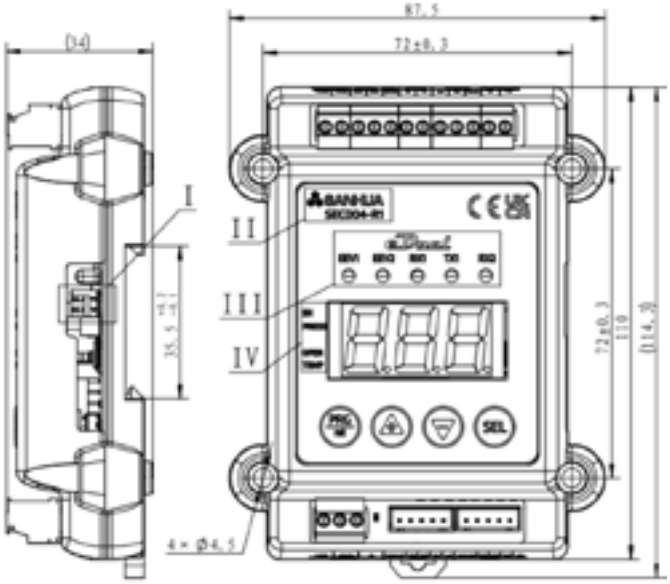
DUAL ELECTRONIC EXPANSION VALVE CONTROLLER



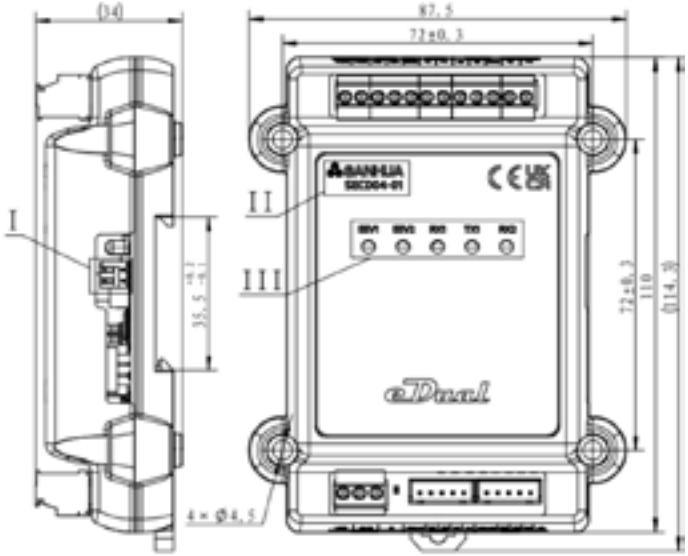
TEMPERATURE AND PRESSURE SENSORS

Items	Description	
Temperature sensor	Type	NTC 5 KΩ
	Wire	2 × 0.5 mm²
	Protection class	IP 67
	Accuracy	±0.3°C (below 25°C)
	Temperature Range	-50 ~ 50°C
	Electrical connector	XHP connector
Pressure transmitter	Voltage supply	YCQB: 5±0.25 Vdc YCQC: 10-30 Vdc
	Output	YCQB: 0.5~3.5 Vdc or 0.5~4.5 Vdc YCQC: 4-20mA
	Accuracy	±0.8% F.S.(-40 ~ 40°C)
	Protection class	IP 67
	Connection Type	Solder 1/4" Flare = Thread SAE - 1/4"7/16-20UNF-2B
	Electrical connector	XHP connector Packard connector

DIMENSIONS AND INSTALLATION



Version with display and buttons

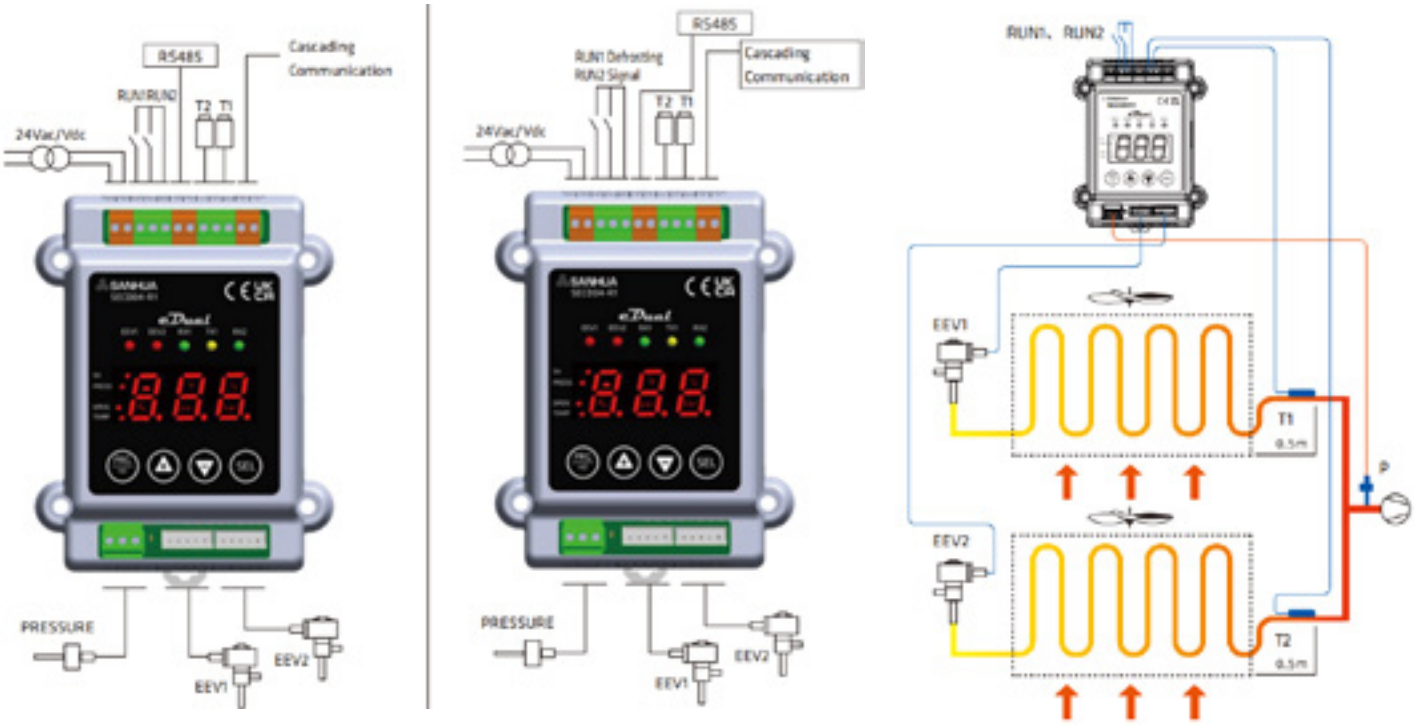


Version without display nor buttons

DUAL ELECTRONIC EXPANSION VALVE CONTROLLER



INSTALLATION DIAGRAM



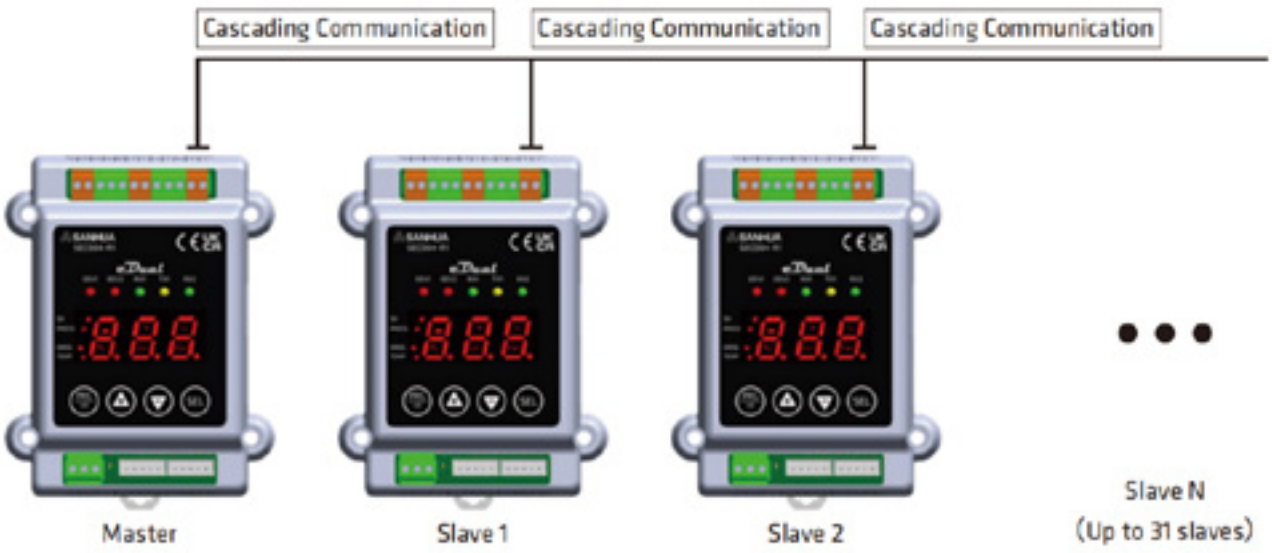
Option 1: The 2x Run signal can be configured as 2x independent RUN/STOP signal.

Option 2: 1x Run as shared RUN/STOP signal and the other as shared defrosting signal (to keep the EEV at defined position during defrosting).

Users can group up to 32 controllers (1x Master + 31x Slave) by cascading commnication port and this will enable all the Slaves to share the RUN, pressure and defrosting signal from Master controller.

The Pressure sharing is automatic in cascading commnication mode while specific parameter setting is needed for RUN signal {[40020]=1} and defrosting signal {[40019]=1} sharing.

If Parameter [40004] = 1, the Slaves are enabled to share the 1# temperaure signal from Master. Please notice that this require all the evaportors have idential performances all the time.



SEC61 *SERIES*

ELECTRONIC EXPANSION VALVE CONTROLLER

Electronic Expansion Valve Controller SEC61 series is the controller with enhanced features for the refrigeration applications, A/C and HP applications.



FEATURES

- ADVANCED PID ALGORITHM TO ENSURE ACCURATE AUTOMATIC ADJUSTMENT OF SUPERHEAT;
- QUICK-SAFE PREVENTION OF LOW AND HIGH SUPERHEAT TO ENSURE THE SYSTEM OPERATING WELL AT ANY CONDITIONS;
- SMALL SIZE, RAIL MOUNTING DESIGN, EASY TO INSTALL;
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR;
- FAIL SAFE FUNCTION TO ENSURE CONTINUOUS OPERATION;
- VALVE CONTROL VIA MODBUS;
- ELECTRICAL BALL VALVE (EBV) CONTROL.

GENERAL SPECIFICATIONS

- Applicable for various refrigerants
- Operating temperature: -30~55°C
- Storage temperature: -30~55°C
- Relative humidity: ≤95%RH
- Certification: UL, CE Declaration according to EMC
- Installation method: DIN railsnap-in or wall mounting with screws
- Compatible with Sanhua DPF and LPF valves

ELECTRICAL PARAMETERS

- Power supply:
  24Vac/24Vdc +10%/-15%, 50/60Hz
- Requested transformer: ≥ 15VA
- Inputs: 1 Pressure sensor input
  1 Temperature sensor input
  1 Communication input (RS485 Modbus)
- Output: 1 Auxiliary relay output (30Vdc/3A)
  1 EEV output (12V DC±10%), rectangular wave

ELECTRONIC EXPANSION VALVE CONTROLLER



MODEL DESIGNATION LEGEND

NO.				Model Designation Legend
1	2	3	4	
SEC	6	11	R6	SANHUA electronic Expansion valve Controller
SEC	**6**	11	R6	Digital means the sixth-generation product
SEC	6	**11**	R6	Odd means voltage P-sensor, even means current type
SEC	6	11	**R6**	R6 means with RS485 modbus communication

ORDERING METHOD

All the models are compatible with the main refrigerants on the market :
R22, R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744(CO_2), R744 (N20), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R1270, R1233zdE, R1234zeZ, R452C, R454A, R457A.
All the models get a RS485 port for communication.

Item	Model	Part Number	Details		
			Item		Qty
Controller	SEC611-R6	10680005102	**Voltage** pressure sensor	**°C/Bar & °F/Psi**	**1**
	SEC612-R6	10680005002	**Current** pressure sensor	**°C/Bar & °F/Psi**	**1**
Temp. Sensor	NTC2A1	10665000102	**2m** Temp. Sensor (5kΩ)		
	NTC5A1	10665000202	**5m** Temp. Sensor (5kΩ)		
	NTC9A1	10665000402	**9m** Temp. Sensor (5kΩ)		
	NTCX	-	**2m** Temp. Sensor (10kΩ)		
Pressure Sensor*	YCQB02H01-1	10185001502	**0/20 bar – Ratiometric (0,5-3,5V)** with **Solder** connection, **2m** cable length		
	YCQB02H18-1	10185015402	**0/20 bar - Ratiometric (0,5-3,5V)** with **Solder** connection, **4.9m** cable length		
	YCQB02L12-1	10185015502	**0/20 bar - Ratiometric (0,5-3,5V)** with **Flare** connection, **2m** cable length		
	YCQB02L28-1	10185015602	**0/20 bar - Ratiometric (0,5-3,5V)** with **Flare** connection, **4.9m** cable length		
	YCQB03H06	10185046502	**0/30 bar – Ratiometric (0,5-4,5V)** with **Solder** connection, **2m** cable length		
	YCQB04H50	10185004602	**0/34,5 bar – Ratiometric (0,5-4,5V)** with **Solder** connection, **Packard** connection		
	YCQB02L01	10185004902	**0/20 bar - Ratiometric (0,5-4,5V)** with **Flare** connection, **2m** cable length		
	YCQB03L157	10185046202	**0/30 bar - Ratiometric (0,5-4,5V)** with **Flare** connection, **Packard** connection		
	YCQC02L18	10185017102	**-1/12 bar - Current** with **Flare** connection, **Packard** connection		
	YCQC09L02	10185042402	**0/90 bar – Current** with **Flare** connection, **Packard** connection		
Packard cable	YCQB02-013251	20185108201	**2m** cable length for YCQB & YCQC pressure sensors		
	YCQB02-013252	20185108101	**5m** cable length for YCQB & YCQC pressure sensors		
	YCQB02-013253	20185108001	**9m** cable length for YCQB & YCQC pressure sensors		

Note: The temperature & pressure sensors should be ordered separately.

*Others YCQ models are available, please check the SANHUA YCQ Datasheet or ask your local support

ELECTRONIC EXPANSION VALVE CONTROLLER



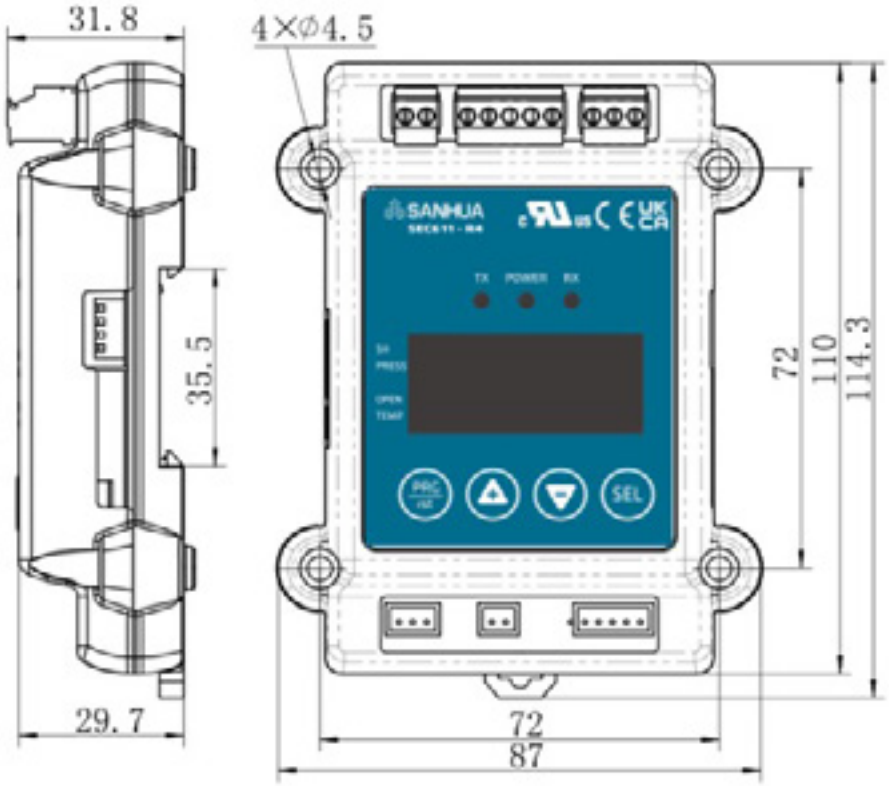
TEMPERATURE AND PRESSURE SENSORS

Item	Description	
Temperature Sensor	Type	NTC 5KΩ
	Wire	2×0.5mm²
	Protection class	IP 67
	Accuracy	±0.3ºC (below25ºC)
	Temperature Range	-50 ~50ºC
	Electrical connector	XHP connector
Pressure sensor	Voltage supply	YCQB: 5±0.25 Vdc YCQC: 10-30 Vdc
	Output	YCQB: 0.5~3.5 Vdc or 0.5~4.5 Vdc YCQC: 4-20mA
	Accuracy	±0.8% F.S.(-40~40ºC)
	Protection class	IP 67
	Connection Type	Solder 1/4” Flare = Thread SAE - 1/4"7/16-20UNF-2B
	Electrical connector	XHP connector Packard connector

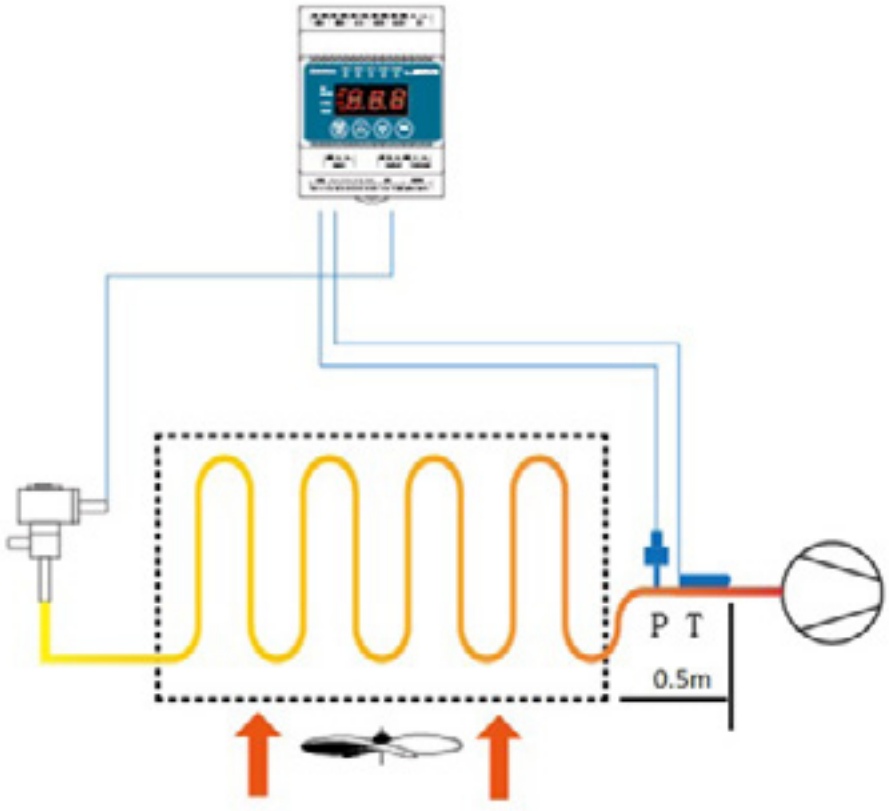
ELECTRONIC EXPANSION VALVE CONTROLLER



DIMENSIONS AND INSTALLATION



INSTALLATION DIAGRAM



ELECTRONIC EXPANSION VALVE CONTROLLER



ACCESSORIES

Power supply

Items	Description
Model	TM01
Dimension	17.5(W)mm x 90 (H)mm x 58.3 (D)mm
Voltage input	85 ~ 264VAC, 47 ~ 63Hz
Current AC	0.5A/115VAC, 0.25A/230VAC
Rated voltage output	24Vdc, ±1.0%
Rated current output	0.63A
Rated power	15.2W
Operation	-30~+70°C, 20~90%RH (Non-condensing)
Storage	-40~+85°C, 10~95%RH (Non-condensing)
Wire	18~24AWG9 (0.2~0.8mm²)



Items	Description
Model	TM02
Dimension	35(W)mm x 90 (H)mm x 58.3 (D)mm
Voltage input	85 ~ 264VAC, 47 ~ 63Hz
Current AC	0.5A/115VAC, 0.25A/230VAC
Rated voltage output	24Vdc, ±1.0%
Rated current output	1.5A
Rated power	36W
Operation	-30~+70°C, 20~90%RH (Non-condensing)
Storage	-40~+85°C, 10~95%RH (Non-condensing)
Wire	18~24AWG9 (0.2~0.8mm²)



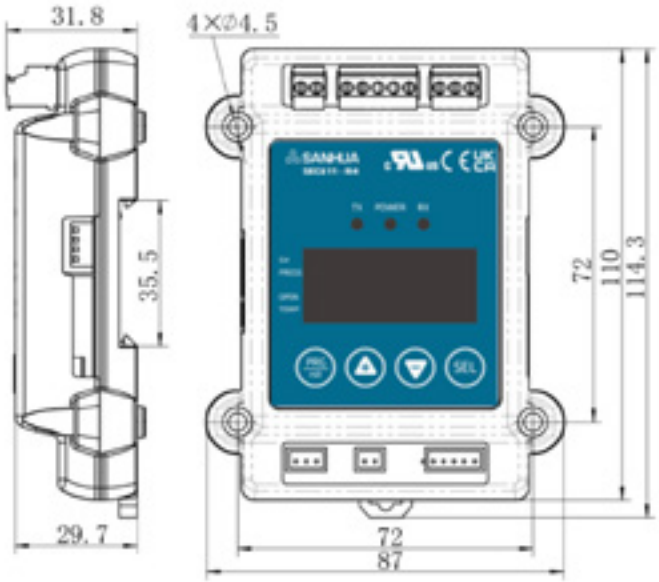
Model	Part Number	Output current	Code reported on the product label
TM01	20680008002	0.63 A	HDR 15
TM02	20680008102	1.5 A	HDR 30

ELECTRONIC EXPANSION VALVE CONTROLLER



Supercapacitor

Items	Description
Model	SP02
Dimension	72 (W)mm x 110 (H)mm x 29,7(D)mm
Voltage input	24Vac, +10%/-15%, 50/60HZ 24Vdc, +10%/-15%
Voltage output	22.5~23.5V at Charging (24Vdc input), 14~16V at discharging
Discharging time	≥25s (Load current 400mA)
Rated power	Max 8w (24Vdc) or 26VA (24Vac)
Operation	-30~+55°C, ≤95%RH (Non-condensing)
Storage	30~+55°C, ≤95%RH (Non-condensing)



Model	Part Number
SP02	10680004702

SEC711 *SERIES*

ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



FEATURES

- ADVANCED PID ALGORITHM TO ENSURE ACCURATE AUTOMATIC ADJUSTMENT OF SUPERHEAT
- QUICK-SAFE PREVENTION OF LOW AND HIGH SUPERHEAT TO ENSURE THE SYSTEM OPERATING WELL AT ANY CONDITIONS
- ENERGY EFFICIENT, ACHIEVING THE MOST EFFICIENT USE OF THE EVAPORATOR
- FAIL SAFE FUNCTION TO ENSURE CONTINUOUS OPERATION
- BIPOLAR ELECTRONIC EXPANSION VALVE (VPF AND ELECTRIC BALL VALVE) CONTROL
- 8 CONTROL MODE: SUPERHEAT/MANUAL/DRIVE/TEMPERATURE CONTROL/EVAPORATING PRESSURE REGULATION/CONDENSING PRESSURE REGULATION/HOT GAS BYPASS PRESSURE REGULATION/LIQUID LINE PRESSURE REGULATION MODE

GENERAL SPECIFICATIONS

- Applicable for various refrigerants
- Operating temperature: -30°C ~ 60°C
- Storage temperature: -40°C ~ 70°C
- Relative humidity: ≤95% RH
- Certification: CE Declaration according to EMC
- Installation method: DIN rail snap-in

ELECTRICAL PARAMETERS

- Power supply:
  24 Vac (20~28) Vac, 50/60 Hz or 24 Vdc (20~28) Vdc
- Requested transformer: ≥ 20 VA(24 Vac) or ≥10 W (24 Vdc) with VPF valve, ≥ 30 VA(24 Vac) or ≥15 W (24 Vdc) with 13/8-inch electric ball valve
- Inputs: 1x Pressure sensor input
  (Optional current-type YCQC or voltage-type YCQB)
  1x Temperature sensor input
  1x upper level Communication input
  (RS485 & Modbus RTU)
  1x Run/Stop Signal (Passive input)
  1x digital input DI (Passive input)
  1x backup power input
- Output: 1x 4-wire electronic expansion valve output (bipolar)
  1x relay output

ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



MODEL DESIGNATION LEGEND

NO. 1 2 3 4	Model Designation Legend
SEC711-R1	**S**ANHUA electronic **E**xpansion valve **C**ontroller
SEC**7**11-R1	**Digit 7 means** Controller for bipolar valves
SEC7**11**-R1	**Digit 11** means the product series number
SEC711-**R1**	**R1** product version number.

ORDERING METHOD

All the models are compatible with the main refrigerants on the market:

R22, R404A, R410A, R134a, R407C, R507, R1234ze, R1234yf, R290, R450A, R513A, R448A, R449A, R452A, R744(CO2), R744A(N20), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A, R600, R1270, R1233zdE, R1234zeZ, R452C, R454A, R457A, R515B and customized refrigerant.

Model	Model	Part Number	Details
Controller	SEC711-R1	SECX0000602	**Bipolar Electronic Expansion Valve Controller**
Temp. Sensor	NTC3A1	NTCX0000202	**3m** Temp. Sensor NTC5 kΩ/β3970 K **(-40~105)°C**
	NTC6A1	NTCX0000302	**6m** Temp. Sensor NTC5 kΩ/β3970 K **(-40~105)°C**
Pressure Sensor*	YCQB02H01-1	10185001502	**0/20 bar (0.5-3.5 V)** with **Solder** connection, **2m cable length**
	YCQB02H18-1	10185015402	**0/20 bar (0.5-3.5V)** with **Solder** connection, **4.9m cable length**
	YCQB02L12-1	10185015502	**0/20 bar (0.5-3.5V)** with **Flare** connection, **2m cable length**
	YCQB02L28-1	10185015602	**0/20 bar (0.5-3.5V)** with **Flare** connection, **4.9m cable length**
	YCQB03H06	10185046502	**0/30 bar (0.5-4.5V)** with **Solder** connection, **2m cable length**
	YCQB04H50	10185004602	**0/34.5 bar (0.5-4.5V)** with **Solder** connection, **Packard socket**
	YCQB02L01	10185004902	**0/20 bar (0.5-4.5V)** with **Flare** connection, **2m cable length**
	YCQB03L157	10185046202	**0/30 bar (0.5-4.5V)** with **Flare** connection, **Packard** socket
	YCQC02L18	10185017102	**-1/12 bar (4-20 mA)** with **Flare** connection, **Packard** socket
	YCQC09L02	10185042402	**0/90 bar (4-20 mA)** with **Flare** connection, **Packard** socket
Packard cable	YCQB02-013251	20185108201	**2m** cable length for YCQB & YCQC pressure sensors
	YCQB02-013252	20185108101	**5m** cable length for YCQB & YCQC pressure sensors
	YCQB02-013253	20185108001	**9m** cable length for YCQB & YCQC pressure sensors

Note: The temperature & pressure sensors should be ordered separately.
*Other YCQ models are available, please check the SANHUA YCQ Datasheet or ask your local support

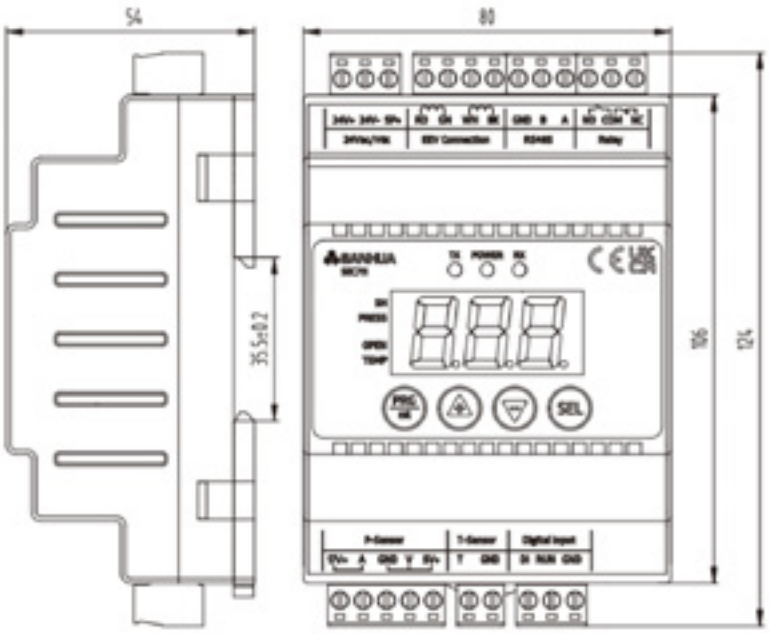
ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



TEMPERATURE AND PRESSURE SENSORS

Items	Description			
Temperature sensor	Type	NTC 5 KΩ/β3970 K	NTC10 K/β3977 K	PT1000
	Wire	2×0.2 mm²(24 AWG)	2×0.2 mm²(24 AWG)	2×0.2 mm²(24 AWG)
	Protection class	IP 67		
	Accuracy	±0.3°C @25°C	±0.3°C @25°C	±0.3°C @25°C
	Temperature Range	(-40~105)°C	(-40~105)°C	(-50~105)°C
	Electrical connector	XHP connector		
Pressure transmitter	Transmitter Type:	Voltage-type YCQB	Current-type YCQC	
	Voltage supply	(5±0.25) Vdc	(10~30) Vdc	
	Output	(0.5~3.5) Vdc or (0.5~4.5) Vdc	(4-20) mA	
	Accuracy	±2.0% F.S. (-30~85°C)	±0.8% F.S. (-40~40°C)	
	Protection class	IP 67		
	Connection Type	Solder 1/4" Flare = Thread SAE - 1/4"7/16-20UNF-2B		
	Electrical connector	XHP connector Packard connector		

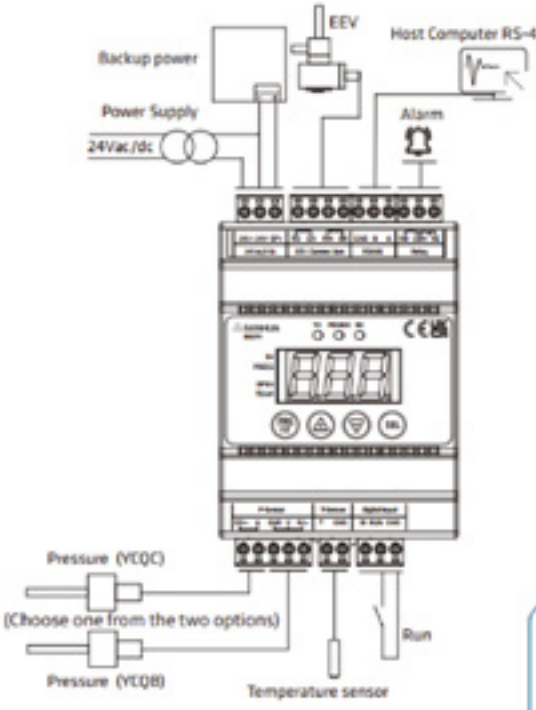
DIMENSIONS AND INSTALLATION



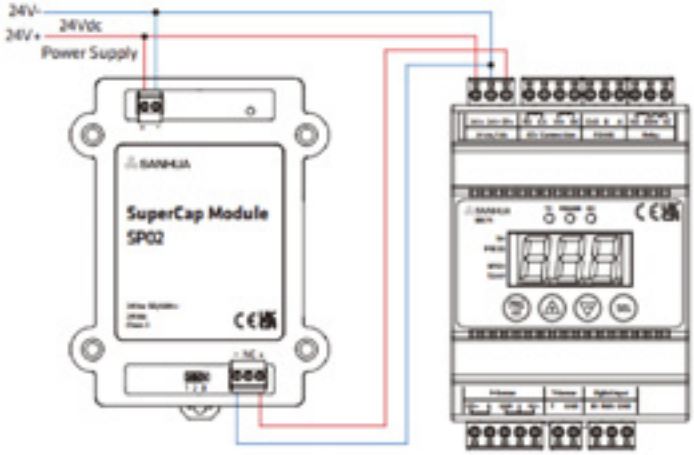
ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



INSTALLATION DIAGRAM



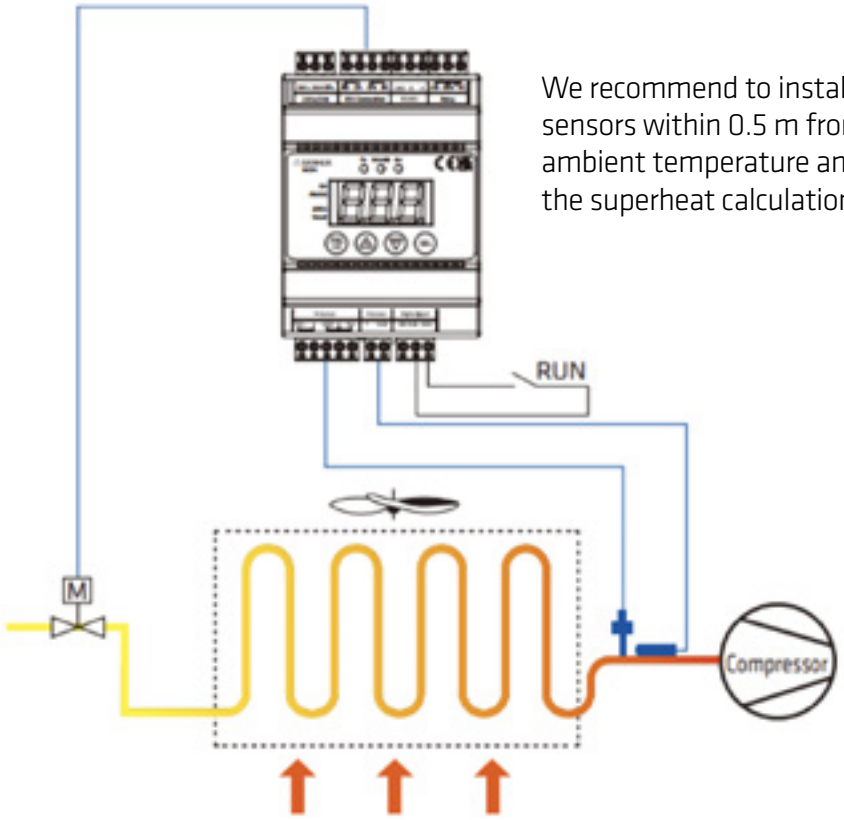
System Wiring Diagram



Backup Power Supply Wiring Diagram

★ **Note:**

1. The jumper cap of backup power supply SP02 is connected to pins 1 and 2;
2. When using the backup power supply, both the controller and the backup power supply must be powered by a 24Vdc supply.



We recommend to install the temperature and pressure sensors within 0.5 m from the evaporator to prevent ambient temperature and pressure drop interference for the superheat calculation.

ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



ACCESSORIES

Power supply

Item	Description	
Model	TM02	
Dimension	35(W) mm x 90 (H) mm x 58.3 (D) mm	
Voltage input	(85 ~ 264) VAC, 47 ~ 63 Hz	
Current AC	0.88 A/115 VAC, 0.48 A/230 VAC	
Rated voltage output	24 Vdc, ±1.0%	
Rated current output	1.5 A	
Rated power	36 W	
Operation	(-30~+70)°C, 20~90% RH (Non-condensing)	
Storage	(-40~+85)°C, 10~95% RH (Non-condensing)	
Wire	(18~24) AWG (0.2~0.8 mm²)	

Model	Part number	Output current	Code reported on the product label
TM02	20680008102	1.5 A	HDR 30

ELECTRONIC EXPANSION VALVE CONTROLLER FOR BIPOLAR VALVES



Supercapacitor

Item	Description	
Model	SP02	
Dimension	72 (W) mm x 110 (H) mm x 29,7(D) mm	
Voltage input	24 Vac, +10%/-15%, 50/60 HZ 24 Vdc, +10%/-15%	
Voltage output	Mode 1 (Jumper cap connected to pins 1 and 2 of the 3-pin header): No output during charging, and 14 Vdc ~ 15.5 Vdc during discharging. Mode 2 (Jumper cap connected to pins 2 and 3 of the 3-pin header): 22 Vdc (24 Vdc input) or 34 Vdc (24 Vac input) during charging, and 14 Vdc ~ 15.5 Vdc during discharging.	
Discharging time	≥14 s(Load current 450 mA)	
Rated power	Max 7 w (24 Vdc) or 14 VA (24 Vac)	
Operation	(-30~+55)°C, ≤95%RH (Non-condensing)	
Storage	(30~+55)°C, ≤95%RH (Non-condensing)	

Model	Part number
SP02	10680004702

SEC HD *SERIES*

ELECTRIC EXPANSION VALVE CONTROLLER



Heavy Duty controller carries out the same world-class superheat control performance of SEC6x family but with significant improved low temperature resistance and water protection class.

It can be installed inside of the cold storage room.

SEC631-HD & SEC641-HD for all refrigerant applications including CO2 (R744) and HC/HFO.

FEATURES

- HIGH WATER RESISTANCE
- LOW TEMPERATURE RESISTANT PARTS TO BE INSTALLED DOWN TO -35 ^{0}C ENVIRONMENT
- INTEGRATED TEMPERATURE SENSOR, PRESSURE TRANSMITTER SOCKET AND EEV COIL
- ACCURATE AND EFFICIENT SUPERHEAT CONTROL PERFORMANCE TO IMPROVE THE SYSTEM EFFICIENCY OF REFRIGERATION.

GENERAL SPECIFICATION

- Operating temperature: -35~55 °C
- Storage temperature: -40~60 °C, Humidity:≤95%RH, Non-condensing
- Enclosure: IP67
- 29 commonly used refrigerants are available (see table below)
- Certification: CE

ELECTRICAL PARAMETERS

- Power supply: 220Vac(85V~264V) 50/60Hz, 25VA (220Vac)
- Communication: RS485
- Inputs: Pressure transmitter x1, Temperature sensor x1, Digital signal x2 (Run signal and defrost signal)
- Output: EEV output

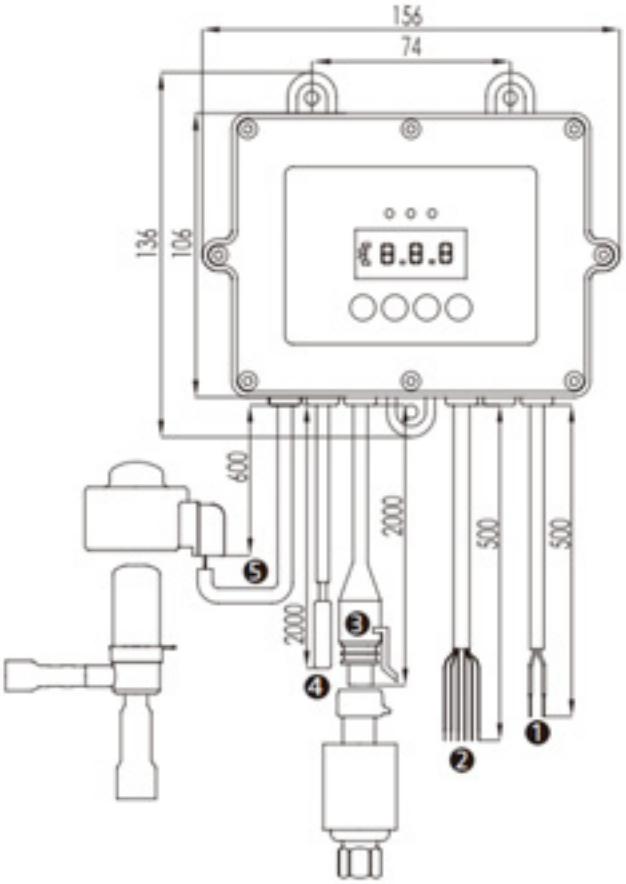
ELECTRIC EXPANSION VALVE CONTROLLER



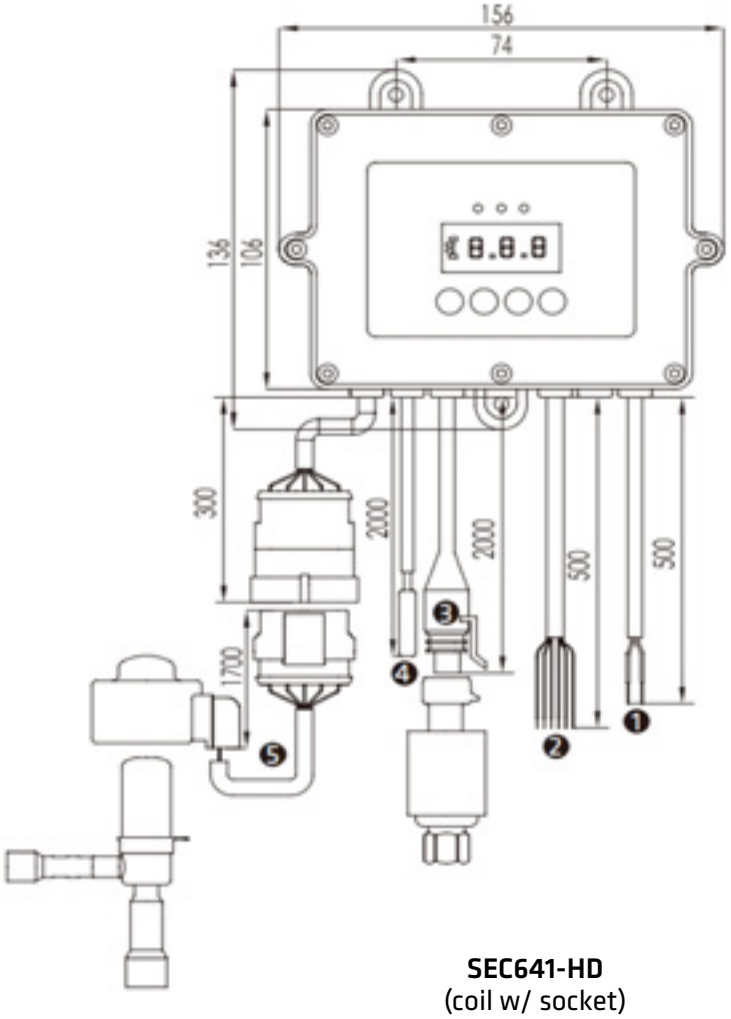
REFRIGERANTS

Code	Ref.	Code	Ref.	Code	Ref.	Code	Ref.	Code	Ref.
0	R22	7	R1234yf	14	R744(CO2)	21	R124	28	R600a
1	R404A	8	R290	15	R744A(N2O)	22	R717		
2	R410A	9	R450A	16	R32	23	R407H		
3	R134a	10	R513A	17	R245fa	24	R454C		
4	R407C	11	R448A	18	R23	25	R455A		
5	R507	12	R449A	19	R407A	26	R454B		
6	R1234ze	13	R452A	20	R407F	27	R452B		

DIMENSIONS



SEC631-HD
(integral coil)



SEC641-HD
(coil w/ socket)

Note: the thickness of the controller is 31mm.

ELECTRIC EXPANSION VALVE CONTROLLER



FUNCTIONS

No.	Laser Printed	Name	Function	Description
1	Power Supply	Power Supply	L (Red)	220Vac (85V~264V) 50/60Hz
			N (Black)	
2	Digital Input /RS485	Digital Input	RUN (Grey)	Connect to GND terminal to have the function working
			DEF (Yellow)*	
			GND (Black)	(1) work with RUN or DEF terminal (2) work with 12Vdc terminal to supply power to remote display
		RS485 Communication	B (Blue)	RS485 B- (TRX-)
			A (Orange)	RS485 A+ (TRX+)
			12Vdc (Red)	12Vdc output
3	Pressure Transmitter	Pressure Transmitter 0.5-3.5V	5Vdc (Red)	Power Supply
			S1 (White)	Signal output
			GND (Black)	GND
4	Temperature Sensor	Temperature Sensor	GND (Red)	NTC 5KΩ, -50oC~+50oC
			T (Black)	
5	EEV Coil	Electronic Expansion valve Coil	12Vdc	SEC631-HD integrated PQ-M24 coil SEC641-HD PQ-M24 coil with waterproof connector (female and male)
			B	
			A	
			B	
			A	

*** Note:** Defrost DEF (Yellow) signal is only used when the hot gas defrosting requires reversed operating of the electronic expansion valve (the fixed opening% of the EEV can be set up in the controller)

ORDERING METHOD

SEC631-HD with integrated coil	SEC641-HD with remote coil
Included in the controller: Temperature sensor (NTC2A1) EEV Coil integrated	
Not included in the controller: Pressure transducer (To be selected according to the refrigerant and application) Valve body (To be selected according to your need)	

ORDERING REFERENCES

Name	Model	U11 code	Description
SEC-HD with integrated coil			
EEV Controller	SEC631-HD (1)	10680004002	PQ-M24 coil included
SEC-HD with remote coil			
EEV Controller	SEC641-HD (1)	10680003902	PQ-M24 coil included (remote)
Pressure transducer			
Pressure Transducer (CO2)	YCQB06L01	10185067202	Input: 0~60bar, Output: 0.5-3.5V Packard connector, Flare 7/16-20UNF-2B (Female)
Pressure Transducer (HC) - (inch)	YCQB02H165	10185087602	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Solder ¼" (ODM)
Pressure Transducer (HC) - (mm)	YCQB02H166	10185087002	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Solder 6mm (ODM)
Pressure Transducer (HFC)	YCQB02L171	10185060402	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Flare 7/16-20UNF-2B (Female)

Note: 1) Pressure transmitter and valve body are not included in the controller package.

ELECTRIC EXPANSION VALVE CONTROLLER



SPARE PARTS AND ACCESSORIES

Name	Model	U11 code	Description
Pressure Transducer (CO2)	YCQB06L01	10185067202	Input: 0~60bar, Output: 0.5-3.5V Packard connector, Flare 7/16-20UNF-2B (Female)
Pressure Transducer (HC) (inch)	YCQB02H165	10185087602	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Solder ¼" (ODM)
Pressure Transducer (HC) (mm)	YCQB02H166	10185087002	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Solder 6mm (ODM)
Pressure Transducer (HFC)	YCQB02L171	10185060402	Input: -1~20bar, Output: 0.5-3.5V Packard connector, Flare 7/16-20UNF-2B (Female)
Temperature Sensor	NTC2A1	10665000102	Cable length 2000mm
EEV Coil	PQ-M24012-000071 (1)	10810212002	PQ-M24 coil with waterproof connector 1700mm length
Remote Display	MD03-R4	10680002502	For displaying and parameter setting

Note: 1) Approved EEV models: LPF, LPF-T.

PHOTOS OF ACCESSORIES

Pressure Transducer (CO2/HFC)	Pressure Transducer (HC)	Temperature Sensor	EEV Coil with waterproof connector
			

Remote Display (Through panel mounting)


***VPF** SERIES*

ELECTRONIC EXPANSION VALVE



VPF series electronic expansion valves are designed for commercial and industrial applications. Typical VPF applications are air conditioning and refrigeration systems or heat pumps. The valve controls the automatic adjustment of refrigerant flow rate and makes the system work under optimized conditions for the purpose of fast cooling or heating, precise temperature control and energy saving. The valve can also be used e.g. for suction line pressure controls. These valves provide bidirectional operation to control the refrigerant flow rate in heating or cooling mode.

FEATURES

- ENERGY SAVING THANKS TO VERY PRECISE CAPACITY CONTROL: UP TO 3800 STEPS
- INTERNAL TIGHTNESS LIKE A SOLENOID VALVE
- OPTIMIZED FLOW PATH DESIGN FOR NOISE REDUCTION
- APPLICABLE FOR REVERSIBLE SYSTEMS LIKE HEAT PUMPS: BIDIRECTIONAL FLOW
- CORROSION RESISTANT DESIGN, LONG LIFETIME, HIGH RELIABILITY
- COMPACT DESIGN
- MODELS WITH INTEGRATED SIGHT GLASS ARE AVAILABLE
- MODELS FOR OIL FREE APPLICATIONS

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO and flammable refrigerants such as: R134a, R513A, R404A, R407A, R407C, R407F, R450A, R452A, R452B, R410A, R507A, R1234yf, R1234ze, R290, R32, R454C, R455A, ...
- Cooling capacity: 54 to 1495 kW (R134a nominal capacity)
- Up to 3800 steps (full stroke); Valve starts opening with
  - VPF12.5, VPF25: 110 steps
  - VPF50... VPF400: 165 steps
- Medium temperature TS min./max.: -40°C / +90°C
- Ambient temperature min./max.: -40°C / +60°C
- Relative humidity: 0 to 100% RH
- Installation position:
  - Major flow direction from connection A to B
  - Installation in horizontal and vertical pipes possible
  - Installation position in horizontal lines with stepper motor preferably upwards
- Certifications: EAC, PED Declaration for fluids group 1&2

ELECTRONIC EXPANSION VALVE



ELECTRICAL PARAMETERS

- Rated voltage: 12VDC, rectangular wave
- Actuating mode: 2-phase 4-step permanent magnet stepping motor
- Excitation mode: 2 phase excitation, bi-pole actuation
- Coil resistance: 52 ± 5,2Ω/coil (20°C)
- Insulation coil class: E
- Protection class: IP 67

	Voltage drive	Current drive
Excitation rate	150 pps Max	300 pps Max
Motion time from completely open to completely closed	VPF12.5...VPF50: 17,3s VPF100: 23,3s VPF150...VPF400: 25,3s	VPF12.5...VPF50: 8,7s VPF100: 11,7s VPF150...VPF400: 12,7s
Nominal motor current*	124mA RMS per phase in control operation	100mA RMS per phase in control operation
Peak motor current*	238mA RMS per phase in control operation	140mA RMS per phase in control operation

*Specified motor currents are based on max. excitation rates

MODEL DESIGNATIONS

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	VPF	Electronic expansion valve with bi-pole stepper motor
2	**Capacity Size**	**Description**
	12.5	Digits for valve capacity size
	25	
	50	
	100	
	150	
	250	
	400	
3	**Connections Type**	**Description**
	H	Solder
4	**Valve Body**	**Description**
	0...4	With sight glass
	5...9	Without sight glass
5	**Pipe Connection**	**Description**
	1...9	Digit for pipe connection diameter

MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
VPF	100	H	0	3	Electronic expansion valve
VPF	**100**	H	0	3	Digits for capacity size
VPF	100	**H**	0	3	Connection: Solder
VPF	100	H	**0**	3	Valve body: With sight glass
VPF	100	H	0	**3**	Digit for pipe connection diameter

ELECTRONIC EXPANSION VALVE



TECHNICAL PARAMETER

VPF 12.5 to 150

MWP (Max Working Pressure) = 50 bar

MOPD (Max Operating Pressure Differential) A->B or B-> A = 39 bar

Model	Part Number[1)]	Valve Shape	Sight Glass	Connections ød ODF Inlet A x Outlet B		Seat ø	Kv[2)]	PED Cat. Fluid	
				[inch]	[mm]	[mm]	m³/h	Group 1	Group 2
VPF12.5H52	10130349502	straight	without	5/8 x 5/8	16 × 16	7,5	0,8	Art. 4.3	Art. 4.3
VPF12.5H53	10130350202			7/8 x 7/8	22 × 22			Art. 4.3	Art. 4.3
VPF12.5H58	10130342102	L-shape	without	5/8 x 5/8	16 × 16			Art. 4.3	Art. 4.3
VPF12.5H59	10130349802			7/8 x 7/8	22 × 22			Art. 4.3	Art. 4.3
VPF25H52	10130349202	straight	without	5/8 x 5/8	16 × 16	7,5	1,4	Art. 4.3	Art. 4.3
VPF25H53	10130356202			7/8 x 7/8	22 × 22			Art. 4.3	Art. 4.3
VPF25H58	10130343202	L-shape	without	5/8 x 5/8	16 × 16			Art. 4.3	Art. 4.3
VPF25H59	10130356102			7/8 x 7/8	22 × 22			Art. 4.3	Art. 4.3
VPF50H51	10130337702	straight	without	7/8 x 7/8	22 x 22	11,4	2,3	Art. 4.3	Art. 4.3
VPF50H52	10130347002			7/8 x 1 1/8	-			Art. 4.3	Art. 4.3
VPF50H53	10130356502			1 1/8 x 1 1/8	-			Art. 4.3	Art. 4.3
VPF50H54	10130342302			1 1/8 x 1 3/8	-			Cat. II	Art. 4.3
VPF50H56	10130347102			-	22 x 28			Art. 4.3	Art. 4.3
VPF50H57	10130347202			-	28 x 28			Art. 4.3	Art. 4.3
VPF50H58	10130342402			-	28 x 35			Cat. II	Art. 4.3
VPF 50H01	10130341102	straight	with	7/8 x 7/8	22 x 22			Art. 4.3	Art. 4.3
VPF 50H02	10130346702			7/8 x 1 1/8	-			Art. 4.3	Art. 4.3
VPF 50H03	10130344802			1 1/8 x 1 1/8	-			Art. 4.3	Art. 4.3
VPF50H04	10130342802			1 1/8 x 1 3/8	-			Cat. II	Art. 4.3
VPF50H06	10130346802			-	22 x 28			Art. 4.3	Art. 4.3
VPF50H07	10130346902			-	28 x 28			Art. 4.3	Art. 4.3
VPF50H08	10130342502			-	28 x 35			Cat. II	Art. 4.3
VPF100H51	10130347502	straight	without	1 1/8 x 1 1/8	-	14,4	4,0	Cat. II	Art. 4.3
VPF100H52	10130347602			1 1/8 x 1 3/8	-			Cat. II	Art. 4.3
VPF100H53	10130342602			1 3/8 x 1 3/8	35 x 35			Cat. II	Art. 4.3
VPF100H54	10130347702			-	28 x 28			Cat. II	Art. 4.3
VPF100H55	10130347802			-	28 x 35			Cat. II	Art. 4.3
VPF100H01	10130356802	straight	with	1 1/8 x 1 1/8	-			Cat. II	Art. 4.3
VPF100H02	10130347302			1 1/8 x 1 3/8	-			Cat. II	Art. 4.3
VPF100H03	10130356602			1 3/8 x 1 3/8	35 x 35			Cat. II	Art. 4.3
VPF100H05	10130347402			-	28 x 35			Cat. II	Art. 4.3
VPF100H06	10130343102			-	28 x 28			Cat. II	Art. 4.3
VPF150H01	10130357002	L-shape	with	1 1/8 x 1 3/8	-	14,8	7,7	Cat. II	Art. 4.3
VPF150H02	10130356702			1 5/8 x 1 5/8	-			Cat. II	Art. 4.3

Note: 1) Extent of delivery: valve body (reference number for connection cable see in the following pages)
2) Kv values valid for the flow direction inlet A to outlet B
O.R =On Request

ELECTRONIC EXPANSION VALVE



VPF 250 & 400

MWP (Max Working Pressure) = 45 bar / 34 bar for the VPF400H10 model

MOPD (Max Operating Pressure Differential) A->B or B -> A = 35 bar / 21 bar for the VPF400H10 model

Model	Part Number[1)]	Valve Shape	Sight Glass	Connections ød ODF Inlet A x Outlet B		Seat ø	Kv[2)]	PED Cat. Fluid	
				[inch]	[mm]	[mm]	m³/h	Group 1	Group 2
VPF250H41	10130481002	straight	with	1 1/8 x 1 1/8	-	25	11,9	Cat. II	Art. 4.3
VPF250H42	10130478402			1 3/8 x 1 3/8	35 x 35			Cat. II	Art. 4.3
VPF250H43	10130477302			1 5/8 x 1 5/8	-			Cat. II	Art. 4.3
VPF250H44	10130481102			-	28 x 28			Cat. II	Art. 4.3
VPF250H45	10130481202			-	42 x 42			Cat. II	Art. 4.3
VPF400H01	10130344902	straight	with	1 5/8 x 1 5/8	-	33	17,0	Cat. II	Cat. I
VPF400H02	10130349002			-	42 x 42			Cat. II	Cat. I
VPF400H03	10130343302			2 1/8 x 2 1/8	54 x 54			Cat. II	Cat. I
VPF400H10	10130426002	angle	with	2 1/8 x 2 5/8	54 x 67	28,5	14,5	O.R.	Cat. I

Note: 1) Extent of delivery: valve body (reference number for connection cable see in the following pages)
2) Kv values valid for the flow direction inlet A to outlet B
O.R =On Request

VPF models for oil free application

Model	Part Number	Valve Shape	Sight Glass	Connections ød ODF Inlet A x Outlet B		Kv[2)]	PED Cat Fluid Group 1	PED Cat Fluid Group 2
				[inch]	[mm]	[m³/h]		
VPF12.5H82	10130458302	straight	Without	5/8 x 5/8	16 × 16	0.8	Art. 4.3	Art. 4.3
VPF25H83	10130438302	straight		7/8 x 7/8	22 × 22	1.3	Art. 4.3	Art. 4.3
VPF50H81	10130458902	straight		7/8 x 7/8	22 × 22	2.4	Art. 4.3	Art. 4.3
VPF50H83	10130432402	straight	With	1 1/8 x 1 1/8	-		Art. 4.3	Art. 4.3
VPF100H81	10130467502	straight		1 1/8 x 1 1/8	-	4.0	Cat. I	Art. 4.3
VPF100H83	10130458402	straight		1 3/8 x 1 3/8	35 x 35		Cat. I	Art. 4.3
VPF150H82	10130458502	angle		1 5/8 x 1 5/8	-	7.7	Cat. II	Art. 4.3
VPF250H92	10130492602	straight		1 3/8 x 1 3/8		14	Cat. II	Art. 4.3
VPF250H93	10130477402	straight		1 5/8 x 1 5/8	-		Cat. II	Art. 4.3
VPF400H81	10130461902	straight		1 5/8 x 1 5/8	-	17	Cat. II	Cat. I
VPF400H83	10130425802	straight		2 1/8 x 2 1/8	54 x 54		Cat. II	Cat. I

ELECTRONIC EXPANSION VALVE



COOLING CAPACITIES

Model	Steps Completely Open	Nominal Cooling Capacity[1] [kW]												
		R134a	R407A	R407C	R407F	R404A R507A	R410A	R32	R290	R454B	R454C	R455A	R1234yf	R1234ze
VPF12.5	2600	54	67	71	76	50	82	126	77.4	101.2	66.1	72.8	41.9	43
VPF25	2600	116	144	152	162	108	176	262	160.8	210.1	137.2	151.1	87	92
VPF50	2600	221	275	290	310	206	336	527	323.1	422.3	275.7	303.6	173	175
VPF100	3500	319	397	418	447	297	484	748	458.9	599.7	391.6	431.3	248	253
VPF150	3800	574	714	752	804	534	871	1294	794	1036	676	745	435	455
VPF250	3800	892	1108	1168	1249	830	1353	2073	1272	1661	1084	1194	700	706
VPF400	3800	1495	1857	1958	2094	1392	2269	3475	2133	2784	1818	2001	1171	1183
VPF400	2700	1301	1616	1703	1822	1211	N.C	N.C	N.C	N.C	N.C	N.C	N.C	1029

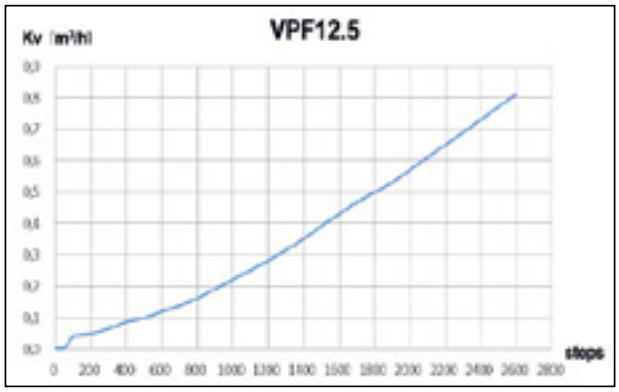
Note: 1) Nominal conditions: Condensing temperature = 38°C / Evaporating temperature = +4,4°C / liquid temperature = 37°C
2) For refrigerants with glide, performances are given in dew point
N.C = Not Certified

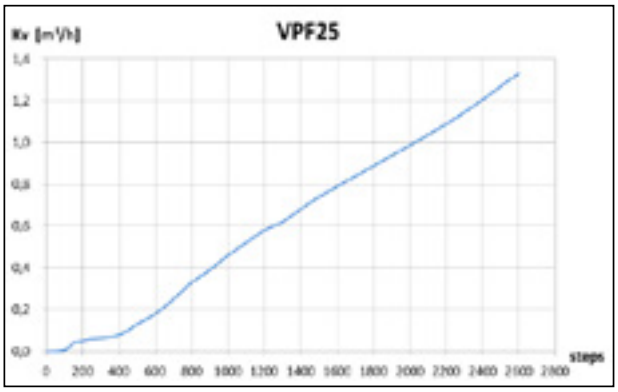
For others running points, others refrigerants, or oil free models, please contact your local support or download our selection software – Sanhua Selector with the link: www.sanhuaeurope.com

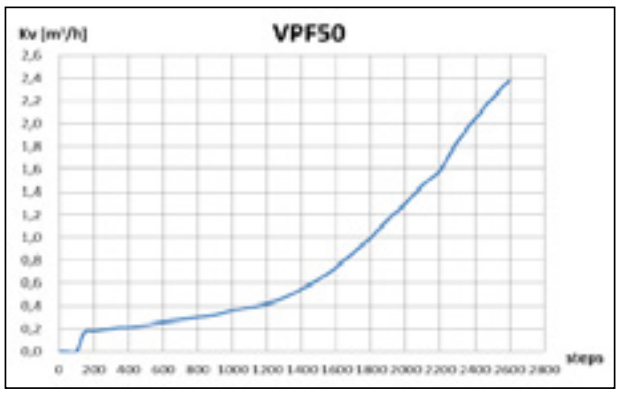
ELECTRONIC EXPANSION VALVE

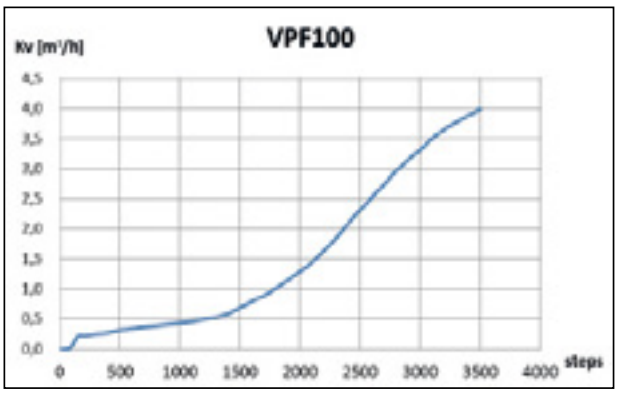


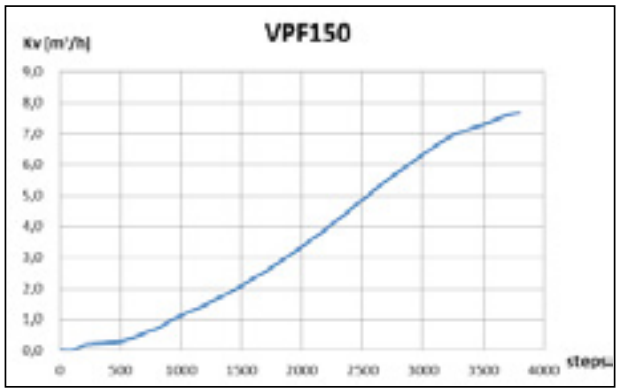
FLOW CHARACTERISTIC

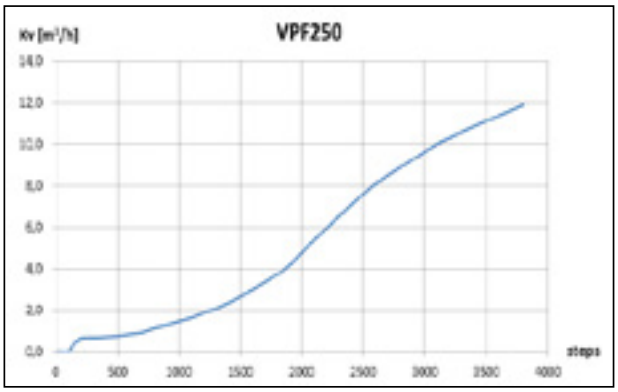


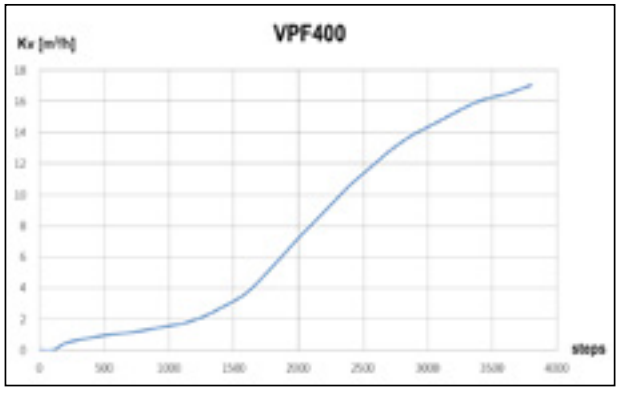










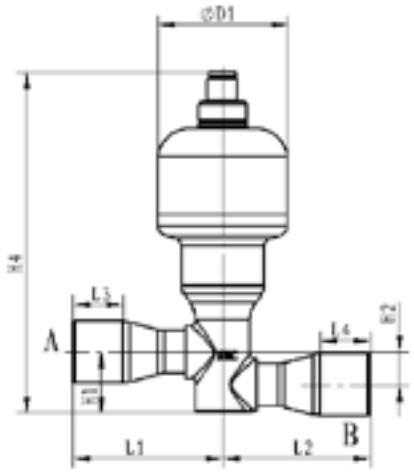


ELECTRONIC EXPANSION VALVE

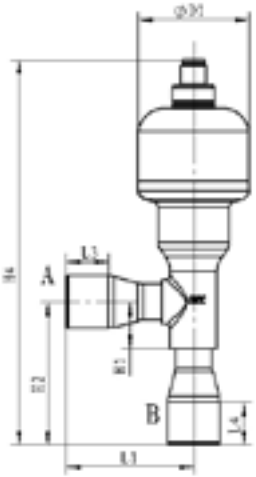


DIMENSIONS

Model	Part Number	Dimensions [mm]								Weight (kg)
		L1	L2	L3	L4	H1	H2	H4	øD1	
VPF12.5H52	10130349502	60	60	13	13	25,6	13	136	52	0.5
VPF12.5H53	10130350202	60	60	20	20	25,6	13	136	52	
VPF12.5H58	10130342102	60	-	13	13	22,5	66,5	178	52	
VPF12.5H59	10130349802	60	-	20	20	22,5	66,5	178	52	
VPF12.5H82	10130458302	60	60	13	13	13	136	52	52	
VPF25H52	10130349202	60	60	13	13	25,6	13	136	52	
VPF25H53	10130356202	60	60	20	20	25,6	13	136	52	
VPF25H58	10130343202	60	-	13	13	22,5	66,5	178	52	
VPF25H59	10130356102	60	-	20	20	22,5	66,5	178	52	
VPF25H83	10130438302	60	60	20	20	25.6	13	136	52	



VPF12.5, VPF25, Straight version

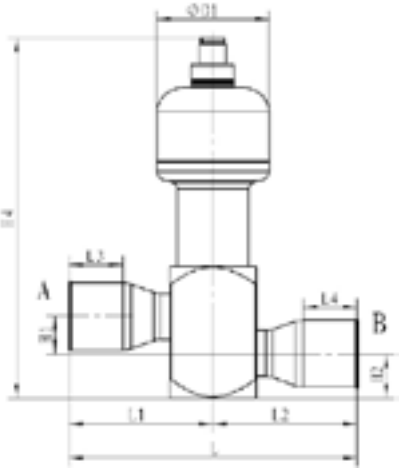


VPF12.5, VPF25, L-Shape version

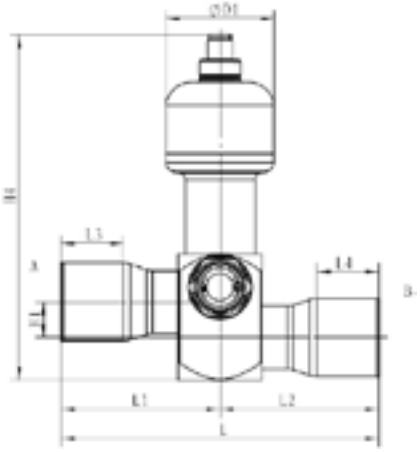
ELECTRONIC EXPANSION VALVE



Model	Part Number	Dimensions [mm]									Weight (kg)
		L	L1	L2	L3	L4	H1	H2	H4	øD1	
VPF50H51	10130337702	112	56	56	20	20	17	20,5	166	52	1.1
VPF50H52	10130347002	122	56	66	20	25	17	20,5	166	52	
VPF50H53	10130356502	132	66	66	25	25	17	20,5	166	52	
VPF50H54	10130342302	142	66	76	25	30	17	20,5	166	52	
VPF50H56	10130347102	122	56	66	20	25	17	20,5	166	52	
VPF50H57	10130347202	132	66	66	25	25	17	20,5	166	52	
VPF50H58	10130342402	142	66	76	25	30	17	20,5	166	52	
VPF50H01	10130341102	112	56	56	20	20	17	20,5	166	52	
VPF50H02	10130346702	122	56	66	20	25	17	20,5	166	52	
VPF50H03	10130344802	132	66	66	25	25	17	20,5	166	52	
VPF50H04	10130342802	142	66	76	25	30	17	20,5	166	52	
VPF50H06	10130346802	122	56	66	20	25	17	20,5	166	52	
VPF50H07	10130346902	132	66	66	25	25	17	20,5	166	52	
VPF50H08	10130342502	142	66	76	25	30	17	20,5	166	52	
VPF50H81	10130458902	122	56	56	20	20	17	20.5	166	52	
VPF50H83	10130432402	132	66	66	25	25	17	20.5	166	52	
VPF100H51	10130347502	132	66	66	25	25	17	20,5	166	52	
VPF100H52	10130347602	142	66	76	25	30	17	20,5	166	52	
VPF100H53	10130342602	152	76	76	30	30	17	20,5	166	52	
VPF100H54	10130347702	132	66	66	25	25	17	20,5	166	52	
VPF100H55	10130347802	142	66	76	25	30	17	20,5	166	52	
VPF100H01	10130356802	132	66	66	25	25	17	20,5	166	52	
VPF100H02	10130347302	142	66	76	25	30	17	20,5	166	52	
VPF100H03	10130356602	152	76	76	30	30	17	20,5	166	52	
VPF100H05	10130347402	142	66	76	25	30	17	20,5	166	52	
VPF100H06	10130343102	132	66	66	25	25	17	20,5	166	52	
VPF100H81	10130467502	132	66	66	25	25	17	20.5	166	52	
VPF100H83	10130458402	152	76	76	30	30	17	20.5	166	52	



VPF50, VPF100 without sight glass

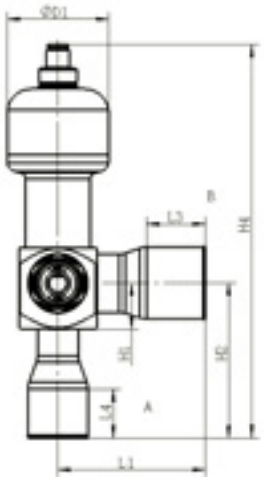


VPF50, VPF100 with sight glass

ELECTRONIC EXPANSION VALVE



Model	Part Number	Dimensions [mm]									Weight (kg)
		L	L1	L2	L3	L4	H1	H2	H4	øD1	
VPF150H01	10130357002	-	76	-	30	25	24	70	195	52	1.0
VPF150H02	10130356702		76		25	25	33,5	89	212	52	
VPF150H82	10130458502		76		25	25	33,5	89	212	52	

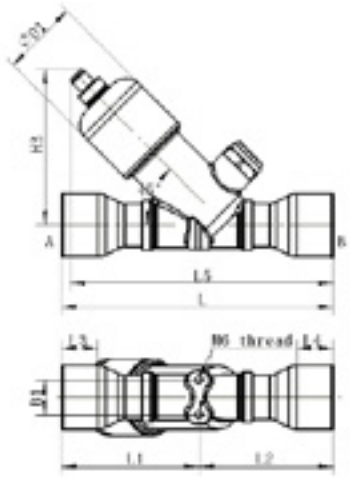


VPF150 with sight glass

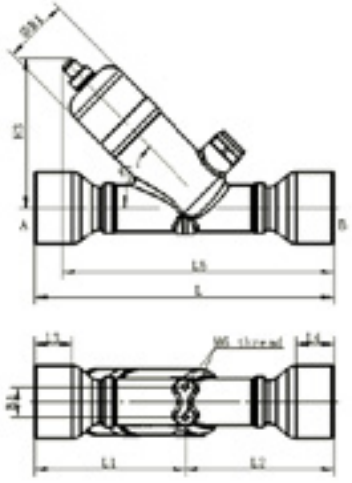
ELECTRONIC EXPANSION VALVE



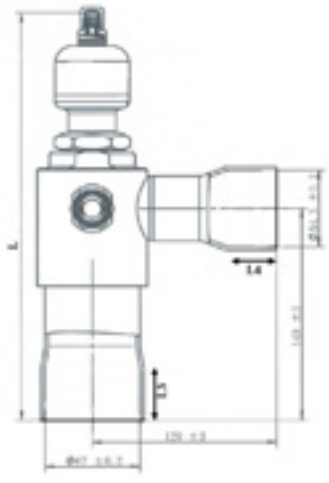
Model	Part Number	Dimensions [mm]									Weight (kg)
		L	L1	L2	L3	L4	L5	H3	B1	øD1	
VPF250H41	10130481002	186	84	82	25	25	189	117	24	52	
VPF250H42	10130478402	186	94	92	30	30	189	117	24	52	
VPF250H43	10130477302	186	94	92	25	25	189	117	24	52	
VPF250H44	10130481102	186	84	82	25	25	189	117	24	52	1.1
VPF250H45	10130481202	186	94	92	25	25	189	117	24	52	
VPF250H92	10130492602	186	94	92	25	25	189	117	24	52	
VPF250H93	10130477402	186	94	92	25	25	189	117	24	52	
VPF400H01	10130344902	203	104	99	30	30	198	118	24	52	
VPF400H02	10130349002	203	104	99	30	30	198	118	24	52	1.7
VPF400H03	10130343302	240	121	119	30	30	218	118	24	52	
VPF400H10	10130426002	286	-	-	36	32	-	-	-	-	3.7
VPF400H81	10130461902	203	104	99	30	30	198	118	24	52	1.7
VPF400H83	10130425802	240	121	119	30	30	218	118	24	52	1.7



VPF250with sight glass



VPF400 with sight glass



VPF400H10

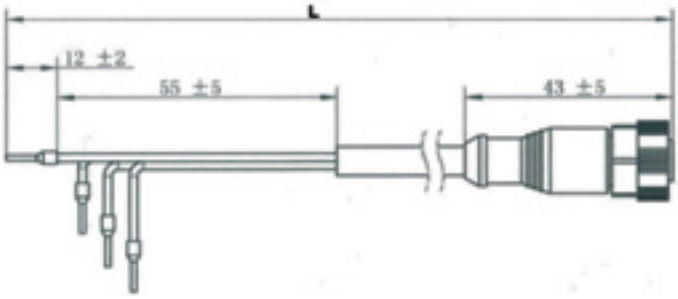
ELECTRONIC EXPANSION VALVE



ACCESSORIES

Connection Cable

Model	Part Number	Cable Length (L) [m]	Tolerance [mm]	IP
Y02A	20130674902	2000	± 40	67
Y04A	20130675002	4000	± 80	67
Y08A	20130675102	8000	± 160	67



SANHUA

Technical information

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VSD2010 *SERIES*

ELECTRONIC EXPANSION VALVE DRIVER



FEATURES

- UNIPOLAR EEV MOTOR DRIVER, SUITABLE FOR SANHUA DPF / LPF SERIES
- 0~10VDC OR 4~20mA ANALOG SIGNAL INPUT, CONTROL EEV OPENING
- MODEL WITH SUPERCAPACITOR AVAILABLE
- SMALL SIZE, SLIDE DESIGN, EASY TO INSTALL

GENERAL SPECIFICATIONS

- Suitable 1-2 phase unipolar type EEV, E.g DPF & LPF series.
- Operating temperature: -30 ~ +55°C
- Storage temperature: -30 ~ +55°C
- Relative humidity: ≤90%RH
- Dimension: 102(W)mm×100(H)mm×44(D)mm (with terminal)
- Protection level: IP20
- Certification: CE Declaration according to EMC

ELECTRONIC EXPANSION VALVE DRIVER



ELECTRICAL PARAMETERS

- Power supply:

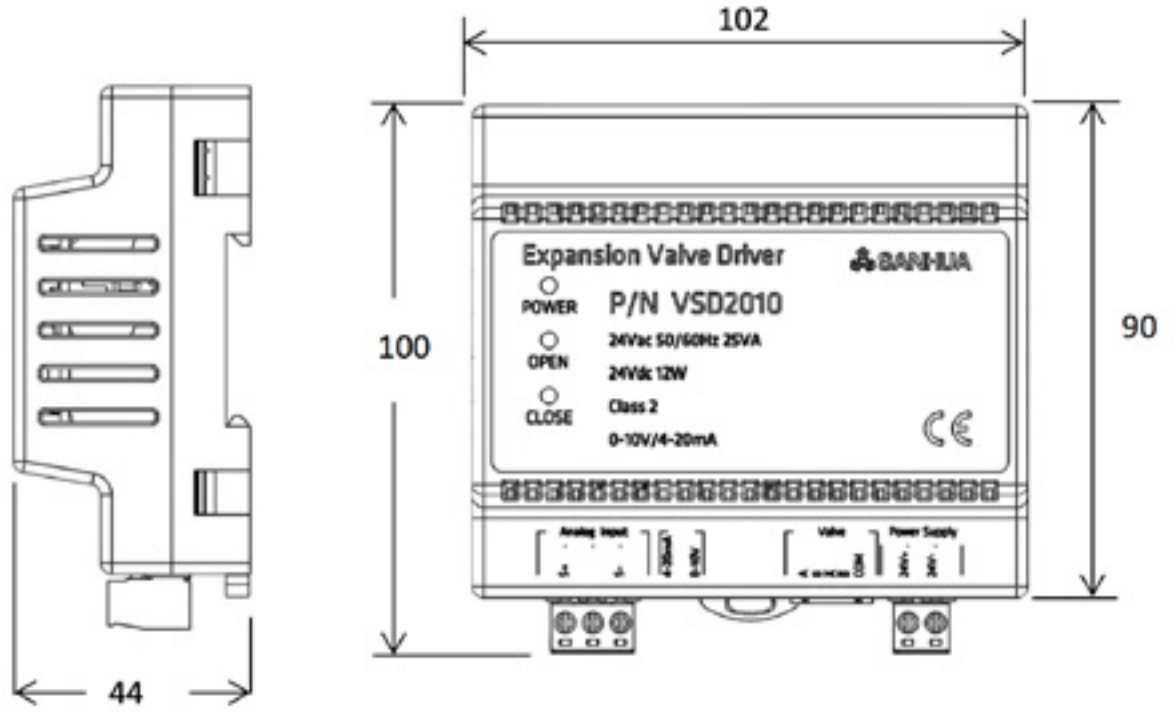
VSD2010	24Vac (20~28Vac) 50/60Hz 25VA or 24Vdc (20~28Vdc) 12W, class 2
VSD2010P	24Vac (20~28Vac) 50/60Hz 35VA or 24Vdc (20~28Vdc) 15W, class 2

- Inputs: 4~20mA or 0~10VDC analog signal
- Output: 5 wires EEV output
- Self-holding mechanism: Maintain excitation in stop position min. 0.1s
- Drive speed: 30pps (normal operation) / 90pps (during supercapacitor close valve)

MODEL LIST

Model	Part Number	Detail
VSD2010	10685001002	Standard model
VSD2010P	10685000902	Model with supercapacitor inside

DIMENSIONS (in mm)



VSD1002 *SERIES*

ELECTRONIC EXPANSION VALVE DRIVER



FEATURES

- CONSTANT CURRENT CONTROL STEPPER MOTOR, PRECISE DRIVE CURRENT
- 0~10VDC OR 4~20MA ANALOG SIGNAL INPUT, CONTROL EEV OPENING
- FORCED OPEN/CLOSE VALVE CONTROL TO FACILITATE DEBUGGING
- SUPPORT MODBUS COMMUNICATION, UP TO 32 CASCADES
- SMALL SIZE, SLIDE DESIGN, EASY TO INSTALL

GENERAL SPECIFICATION

- Suitable for all VPF series EEV
- Operating temperature: -30~+55°C
- Storage temperature: -30 ~ +55°C
- Relative humidity: ≤90%RH
- Dimension: 102(W)mm×90(H)mm×43.5(D)mm
- Protection level: IP20
- Certification: UL, CE Declaration according to EMC

ELECTRICAL PARAMETERS

- Power supply:
  24Vac (20~28), 50/60Hz
  24Vdc (20~28), class 2
- Power consumption: Max 6W at 24Vdc
- Terminals: Spacing 5.08mm Pluggable
- Inputs: 4~20mA or 0~10VDC analog signal
- Output: 4 wires EEV output
- Communication: RS485

ELECTRONIC EXPANSION VALVE DRIVER



MODEL LIST

Model	Part Number	Detail
VSD1002	10685000202	Standard model
VSD1002P	10685000302	Model with battery backup inside

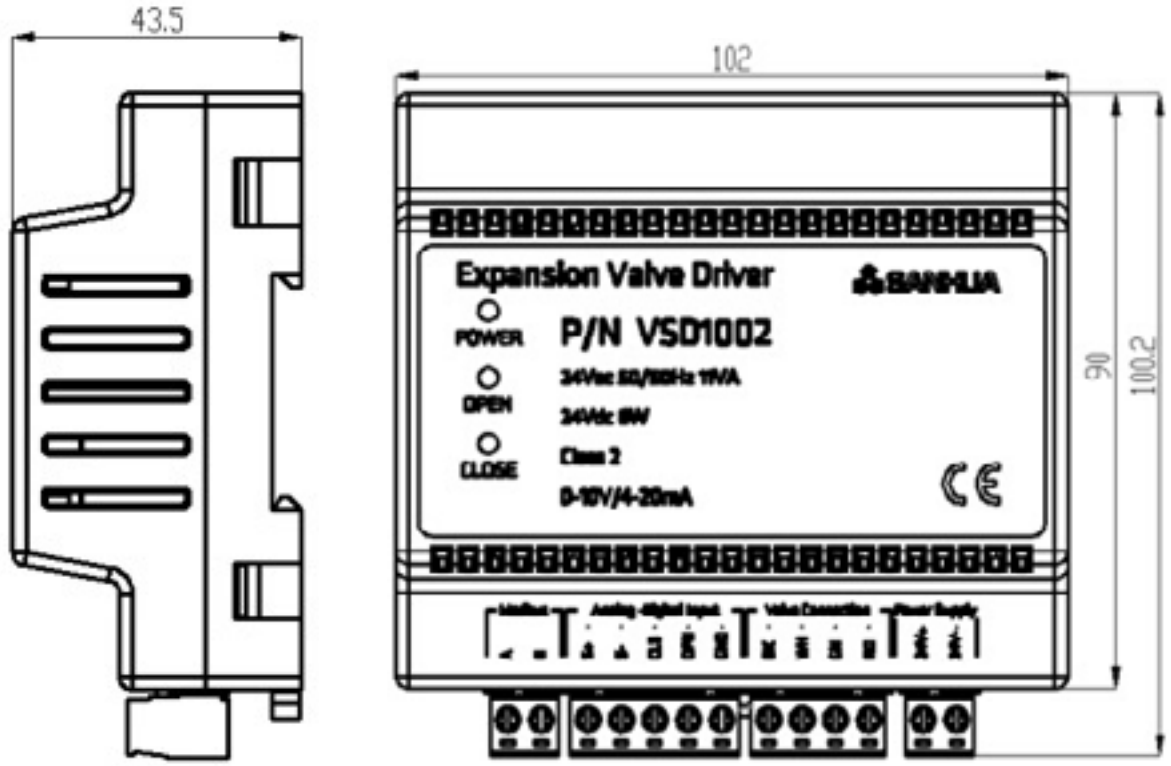
TECHNICAL PARAMETERS

Pulse for different VPF models

Pulse	VPF models
2700	VPF12.5 VPF25 VPF50
3500	VPF100
3800	VPF150 VPF250 VPF400

DIMENSIONS

(in mm)



VSD2001 *SERIES*

ELECTRONIC EXPANSION VALVE DRIVER



FEATURES

- DRIVER FOR TWO IN DEPENDENT EEV
- UNIPOLAR/ BIPOLAR EEV CAN BE SELECTED INDEPENDENTLY
- SUITABLE FOR SANHUA DPF / LPF / VPF SERIES
- 0~10VDC OR 4~20mA ANALOG SIGNAL INPUT, CONTROL EEV OPENING
- SMALL SIZE, SLIDE DESIGN, EASY TO INSTALL

GENERAL SPECIFICATIONS

- Operating temperature: -30 ~ +55°C
- Storage temperature: -30 ~ +55°C
- Relative humidity: ≤ 95%RH
- Dimension: 102(W)mm×111(H)mm×44(D)mm (with terminals)
- Protection level: IP20
- Certification: CE Declaration according to EMC

ELECTRICAL PARAMETERS

- Power supply:
  24Vac (20~28), 50/60Hz, 60VA
  24Vdc (20~28), 30W, class 2
- Inputs: 4~20mA or 0~10VDC analog signal
- Output: Unipolar / Bipolar EEV output
- Self-holding mechanism:
  Maintain excitation in stop position min. 0.1s
- Drive speed: 200pps (30-200pps can be selected)

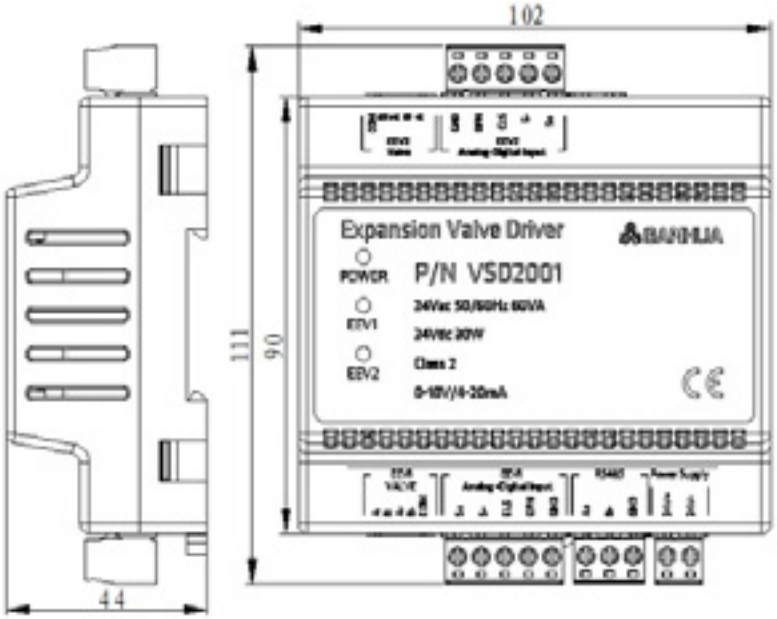
ELECTRONIC EXPANSION VALVE DRIVER



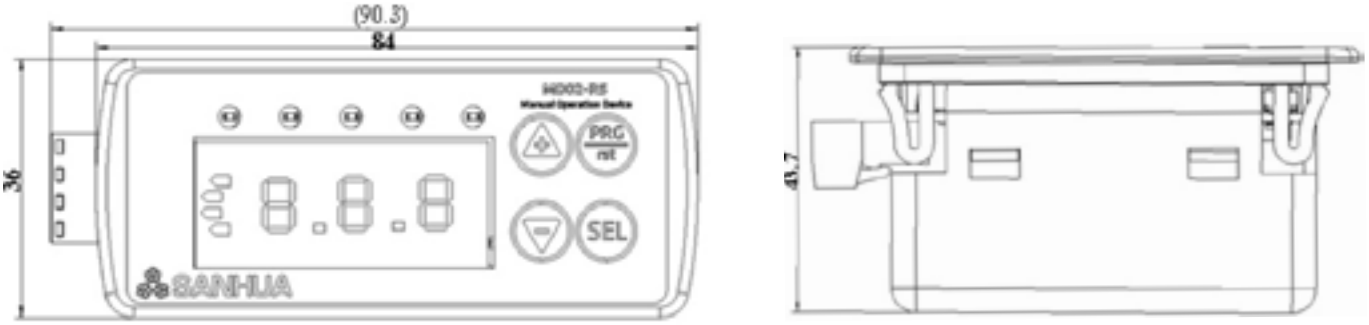
ORDERING

Model	Part Number	Detail
VSD2001	10685000602	Standard model
MD02-R5	10680002602	Manual operator

DIMENSIONS (in mm)



DIMENSIONS (in mm)



SD2 *SERIES*

VARIABLE SPEED DRIVE

SANHUA SD2 variable speed drive series are dedicated to BLDC compressor and fans.



FEATURES

- OPTIMIZED FOR HVAC&R APPLICATIONS SUCH AS HEAT PUMP, AIR CONDITIONING, REFRIGERATION RACKS AND CONDENSING UNITS.
- EXTENDED SPEED RANGE ALLOWING TO REDUCE THE NUMBER OF SHORT CYCLE AND PROVIDE MORE COOLING CAPACITY
- CUSTOMIZABLE HEATSINK ACCORDING TO THE CONFIGURATION OF YOUR UNITS
- REFRIGERANT COOLING AVAILABLE WITH EASY SERVICEABILITY
- THROUGH PANEL MOUNTING FOR LOWER FOOTPRINT
- COMPATIBLE WITH NUMEROUS OF HERMETIC BLDC COMPRESSOR. ALL TESTED IN OUR CERTIFIED TUV LABORATORY AT DIFFERENT CONDITIONS.
- DRIVE ALREADY SET ACCORDING TO YOUR COMPRESSOR AND YOUR APPLICATION

GENERAL SPECIFICATIONS

- Adapted for application using A3 refrigerants
- Operating temperature: -25°C to +65°C
- Storage temperature: -40°C to +85°C
- Relative humidity: ≤ 95%RH
- Safe Torque Off (STO)
- Harmonic compliant according to EMC Directive (2014/30/EU)
- Certification: UL, CE Declaration according to low voltage directive
- Compliant with pollution degree 3 environment
- Installation method: wall mounting with screws
- Works well with Sanhua DPF and LPF EEVs

ELECTRICAL SPECIFICATIONS

- Power supply:
  1Ph, 230VAC ±20%, 50/60Hz
  3Ph, 400VAC ±20%, 50/60Hz
- Modbus RTU (RS485)
- Pluggable terminals
- Analogue Input – Speed reference
- High Pressure switch
- NTC probe

VARIABLE SPEED DRIVE



MODEL DESIGNATION

N°							Model Designation Legend
1	2	3	4	5	6	7	
SD2	011	A1	H	0	X	A	SANHUA SD2 variable speed drive series
SD2	**011**	A1	H	0	X	A	**Output Current (Amps)** 011: 11A-RMS (Single Phase) 015: 15A-RMS (Single/Three Phase) 020: 20A-RMS (Single/Three Phase) 025: 25A-RMS (Three Phase) 032: 32A-RMS (Three Phase) 037: 37A-RMS (Three Phase) 045: 45A-RMS (Three Phase)
SD2	011	**A1**	H	0	X	A	**Input Power Supply (VAC)** A1: 1P 94-135VAC 50Hz (Under Development) A2: 1P 220-240VAC 50Hz/60HzMP B2: 3P 200-260VAC 60Hz (Under Development) B4: 3P 380-415VAC 50Hz/60HzMP C4: 3P 420-528VAC 60Hz (Under Development) C5: 3P 520-630VAC 50Hz (Under Development)
SD2	011	A1	**H**	0	X	A	**Cooling Version** A: Active Air Cooling FAN (Under Development) H: Horizontal Heat Sink Cooled Finned MP V: Vertical Hea t Sink Cooled Finned MP F: Flat Plate Fluid Cooled MP
SD2	011	A1	H	**0**	X	A	**IP CLASS / Housing** 0: IP00 W/O Enclosure MP 2: IP20 Plastic Enclosure MP 5: IP54 (Under Development)
SD2	011	A1	H	0	**X**	A	**Drive Version** X: Prototype Sample or Production Pilot S: Mass Production Single Package M: Mass Production Multi Package
SD2	011	A1	H	0	X	**A**	**Version Index:** A: First Edition of each Sample or MP B: Second Edition of each Sample or MP

VARIABLE SPEED DRIVE



ORDERING METHOD

All SD2 drives are tested in our TÜV certified laboratory. This ensures a perfect matching for your application.
Contact your sales representative for the drive selection and best advice adapted to your application.
SD2 are available in different cooling type (see below).

A Cooling type :

Horizontal Finned



Vertical Finned



Flat plate



Type	Max. output Current	Model	Cooling Type	SANHUA U11 Code	Frame size
1PH 2.6KW Inverter IP20	11 A	SD2011A2H2XA000	Horizontal Finned	10501030801	1
		SD2011A2V2XA000	Vertical Finned	10501031301	1
		SD2011A2F2XA000	Flat Plate	10501034301	1
1PH 3.8KW Inverter IP20	15 A	SD2015A2H2XA000	Horizontal Finned	10501030101	1
		SD2015A2V2XA000	Vertical Finned	10501031401	1
		SD2015A2F2XA000	Flat Plate	10501034401	1
1PH 5.0KW Inverter IP20	20 A	SD2020A2H2XA000	Horizontal Finned	10501030201	2
		SD2020A2V2XA000	Vertical Finned	10501031501	2
		SD2020A2F2XA000	Flat Plate	10501034101	2
3PH 3.8KW Inverter IP20	15 A	SD2015B4H2XA000	Horizontal Finned	10501030401	3
		SD2015B4V2XA000	Vertical Finned	10501031601	3
		SD2015B4F2XA000	Flat Plate	10501034501	3
3PH 5.0KW Inverter IP20	20 A	SD2020B4H2XA000	Horizontal Finned	10501030501	3
		SD2020B4V2XA000	Vertical Finned	10501031701	3
		SD2020B4F2XA000	Flat Plate	10501034601	3
3PH 8.0KW Inverter IP20	25 A	SD2025B4H2XA000	Horizontal Finned	10501030601	3
		SD2025B4V2XA000	Vertical Finned	10501031801	3
		SD2025B4F2XA000	Flat Plate	10501034701	3
3PH 11.5KW Inverter IP20	32 A	SD2032B4H2XA000	Horizontal Finned	10501033701	3
		SD2032B4V2XA000	Vertical Finned	10501033501	3
		SD2032B4F2XA000	Flat Plate	10501034201	3
3PH 15KW Inverter IP20	37 A	SD2037B4V2XA000	Horizontal Finned	10501039101	4
		SD2037B4H2XA000	Vertical Finned	10501039001	4
		SD2037B4F2XA000	Flat Plate	10501039201	4
		SD2037B4A2XA000	Active cooling*	10501039301	4
3PH 18,5KW Inverter IP20	45 A	SD2045B4V2XA000	Horizontal Finned	10501039501	4
		SD2045B4H2XA000	Vertical Finned	10501039401	4
		SD2045B4F2XA000	Flat Plate	10501039601	4
		SD2045B4A2XA000	Active cooling*	10501039701	4

* This version uses internal fan for cooling

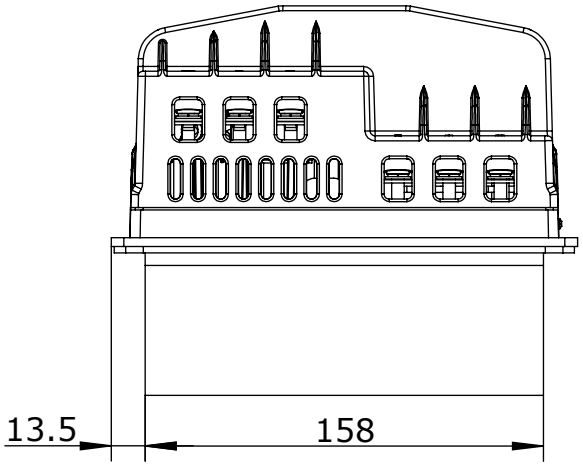
VARIABLE SPEED DRIVE

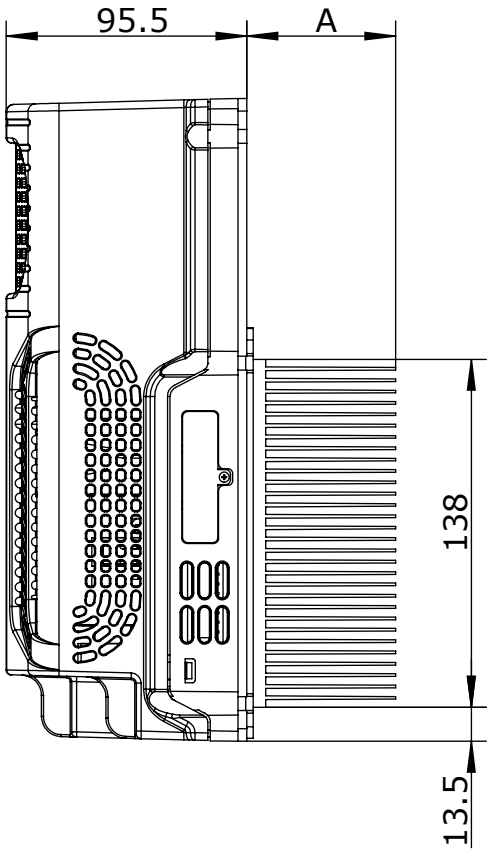


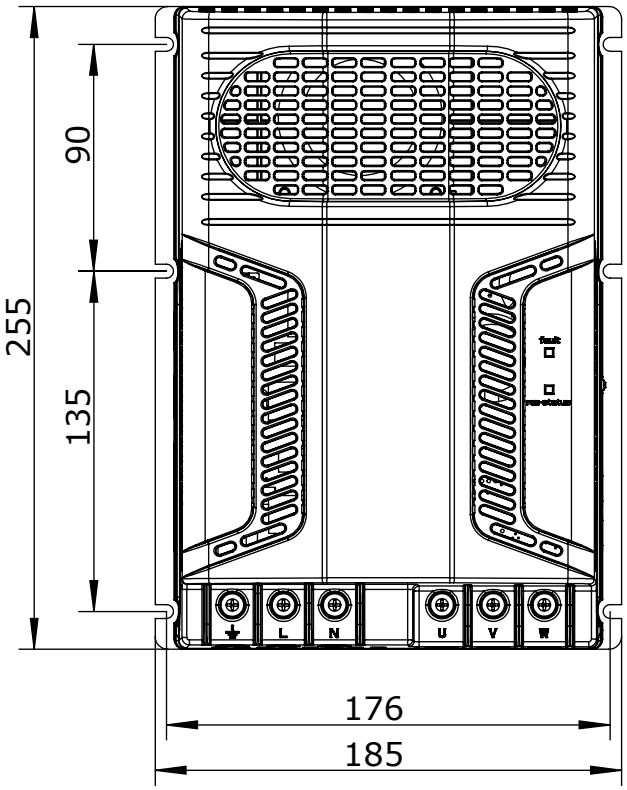
DIMENSIONS

Frame size 1

Model	A (Length of different Cooling type) (mm)			Weight (kg)		
	Horizontal	Vertical	Flat plate	Horizontal	Vertical	Flat plate
SD2011A2	39.5	39.5	8	2.38	2.38	2.24
SD2015A2	59	59	8	3.59	3.59	2.79





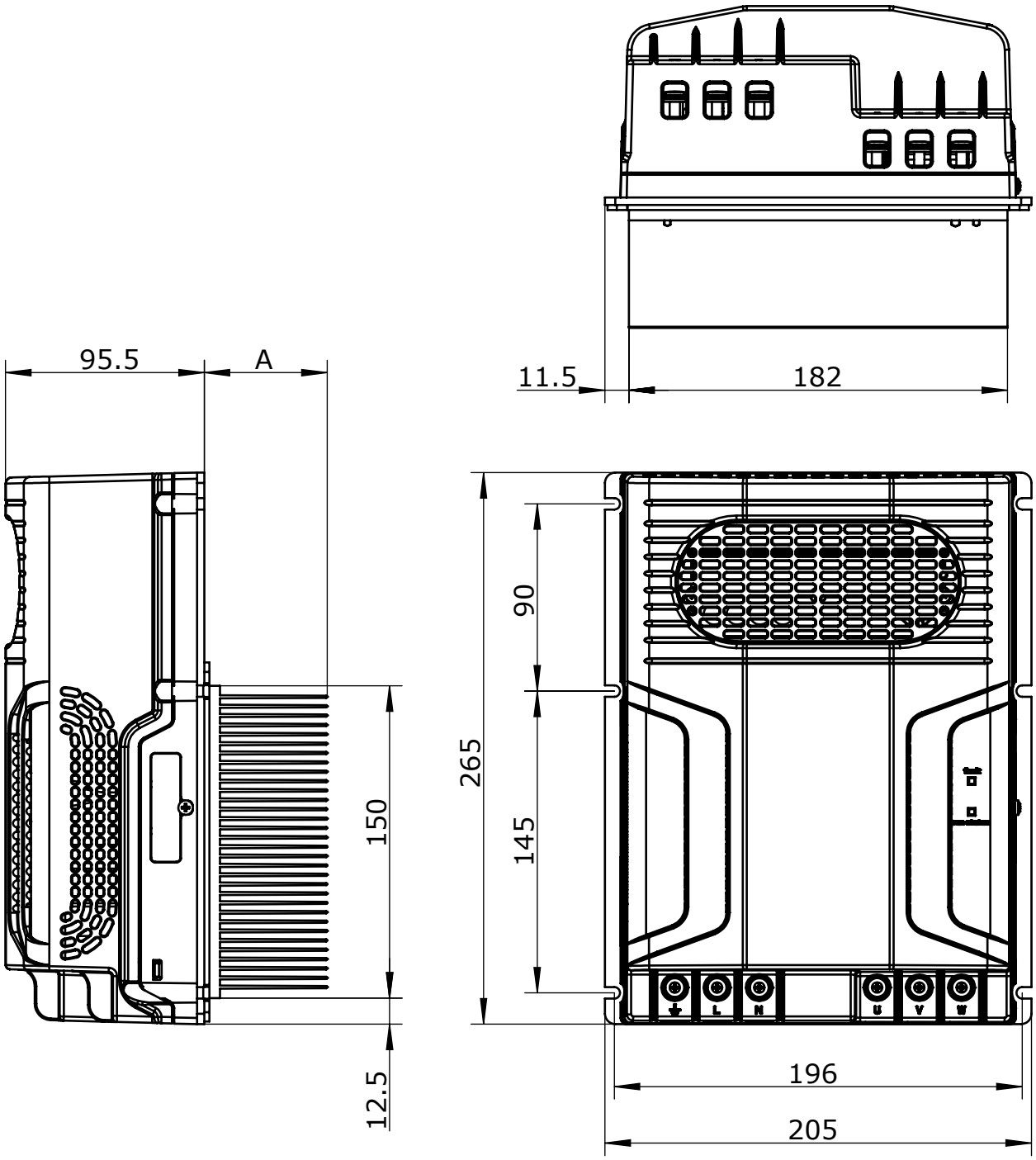


VARIABLE SPEED DRIVE



Frame size 2

Model	A (Length of different Cooling type) (mm)			Weight (kg)		
	Horizontal	Vertical	Flat plate	Horizontal	Vertical	Flat plate
SD2020A2	59	59	8	3.95	3.95	2.95

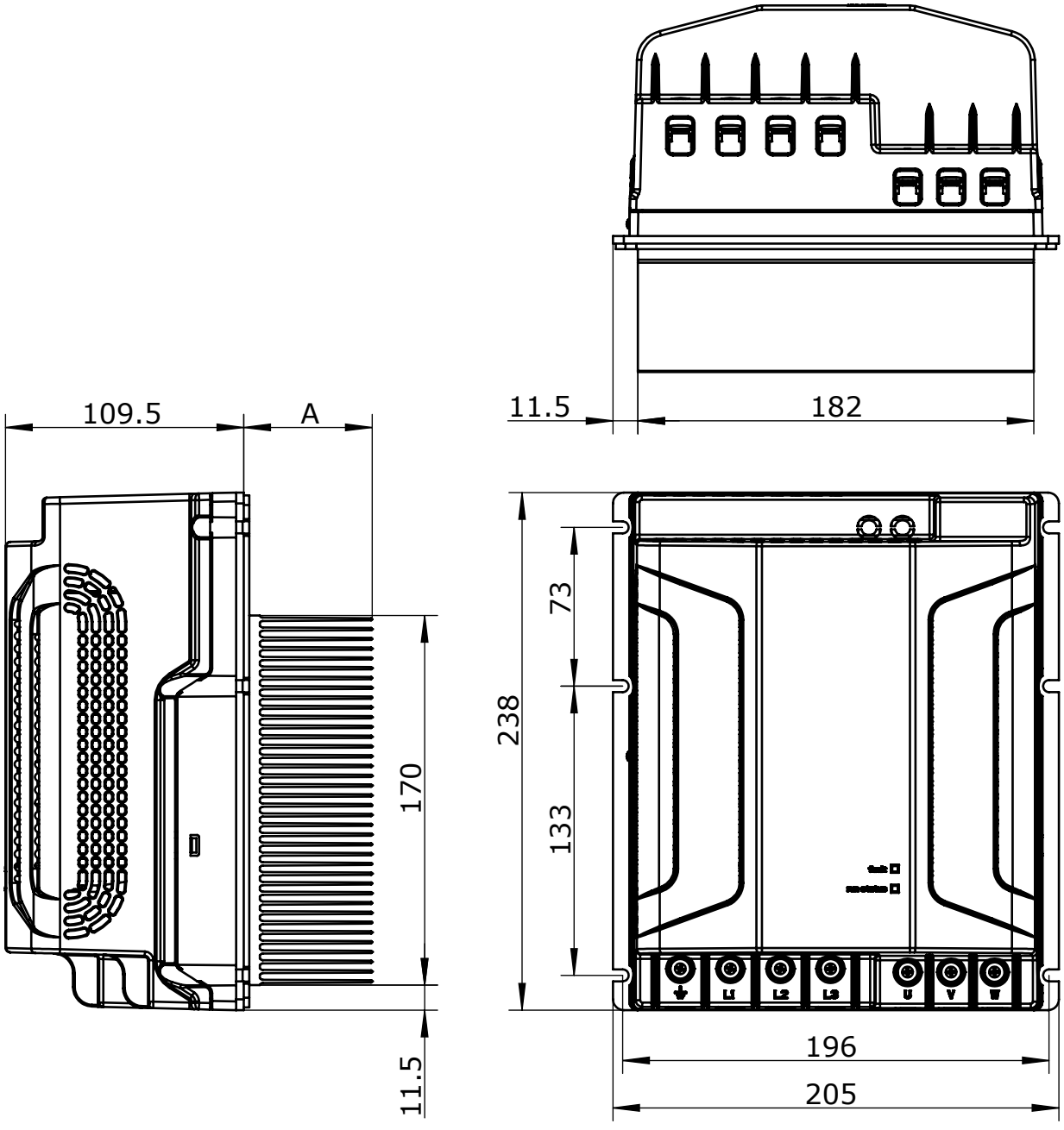


VARIABLE SPEED DRIVE



Frame size 3

Model	A (Length of different Cooling type) (mm)			Weight (kg)		
	Horizontal	Vertical	Flat plate	Horizontal	Vertical	Flat plate
SD2015B4	39.5	39.5	8	3.1	3.1	2.4
SD2020B4	59	59	8	3.84	3.84	2.61
SD2025B4	59	59	8	4.46	4.46	2.98
SD2032B4	69	69	8	4.14	4.14	3.13

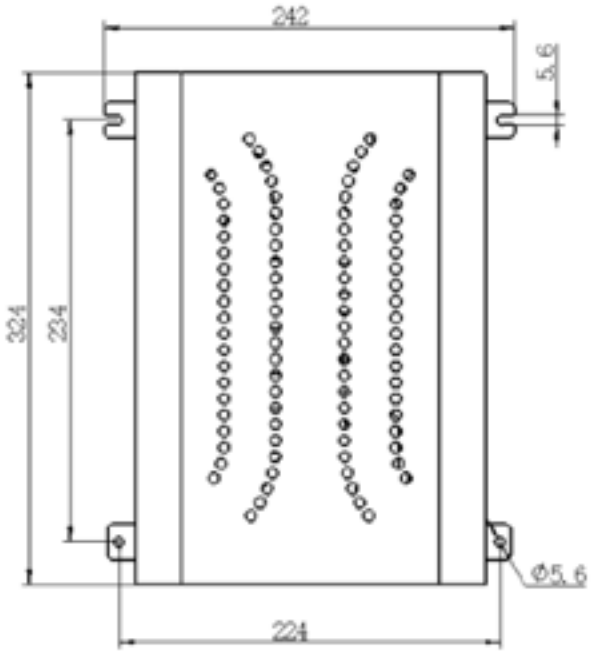


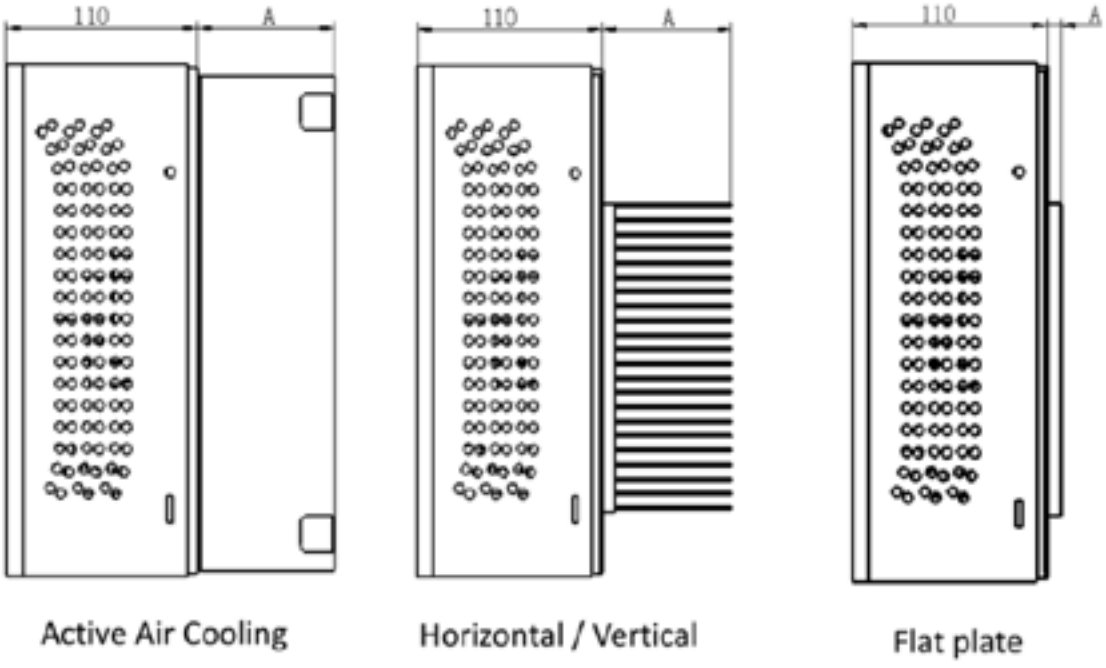
VARIABLE SPEED DRIVE



Frame size 4

Model	A (Length of different Cooling type) (mm)				Weight (kg)			
	Active cooling	Horizontal	Vertical	Flat plate	Active cooling	Horizontal	Vertical	Flat plate
SD2037B4	84	70	70	11	7	5.6	5.6	4
SD2045B4	84	80	80	11	7	5.6	5.6	4



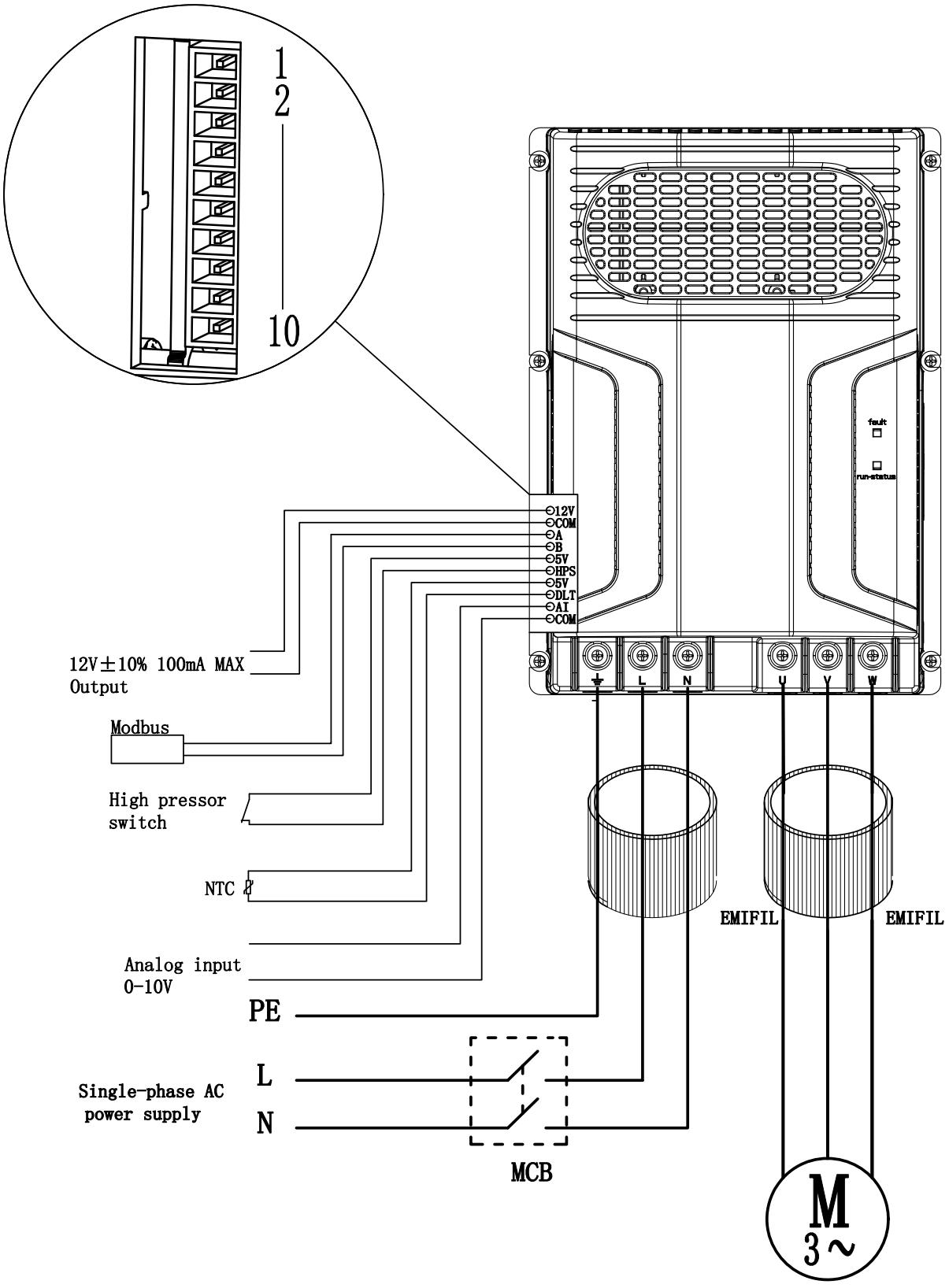


VARIABLE SPEED DRIVE



INSTALLATION DIAGRAM

1ph - SD2011 / SD2015 / SD2020

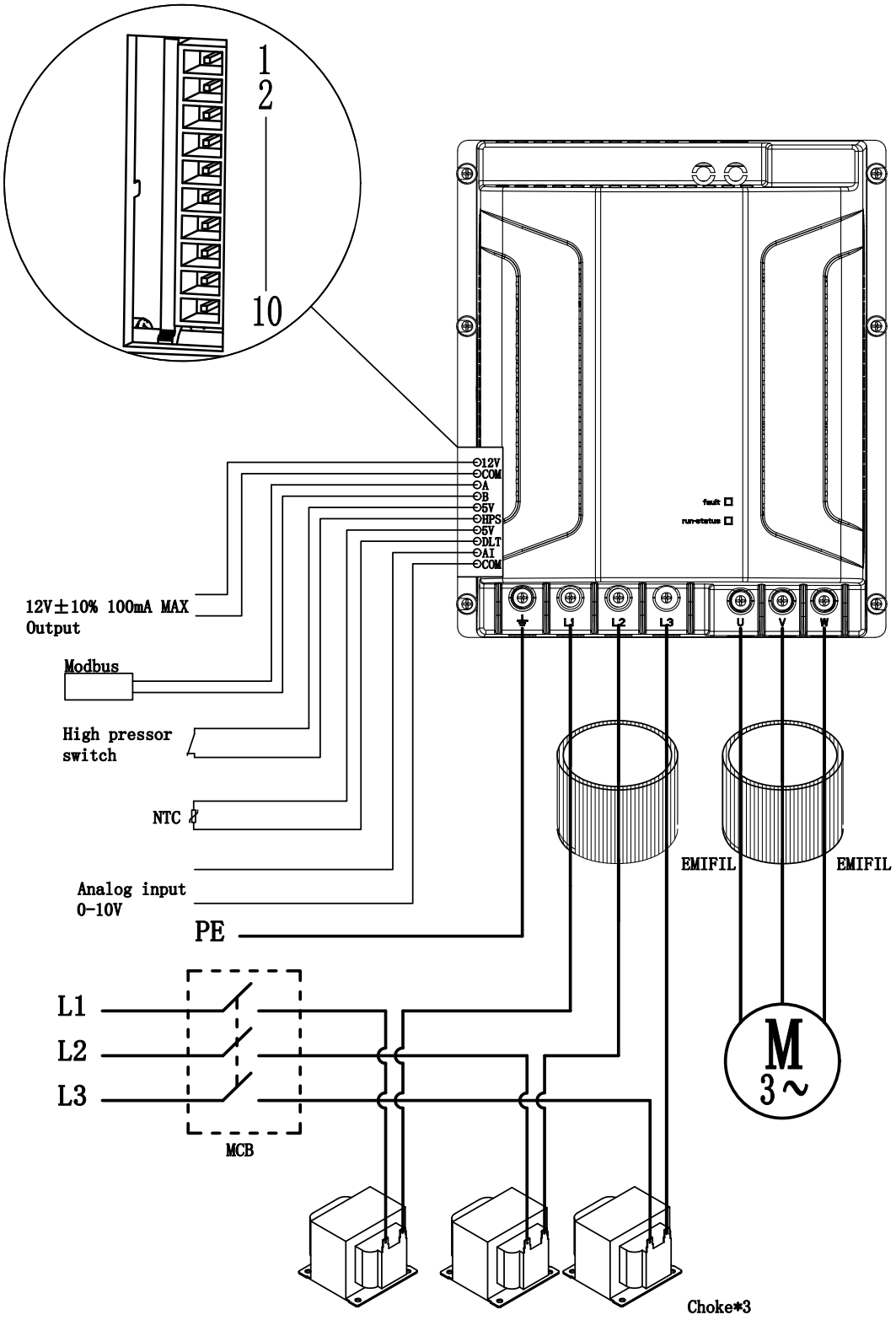


VARIABLE SPEED DRIVE



INSTALLATION DIAGRAM

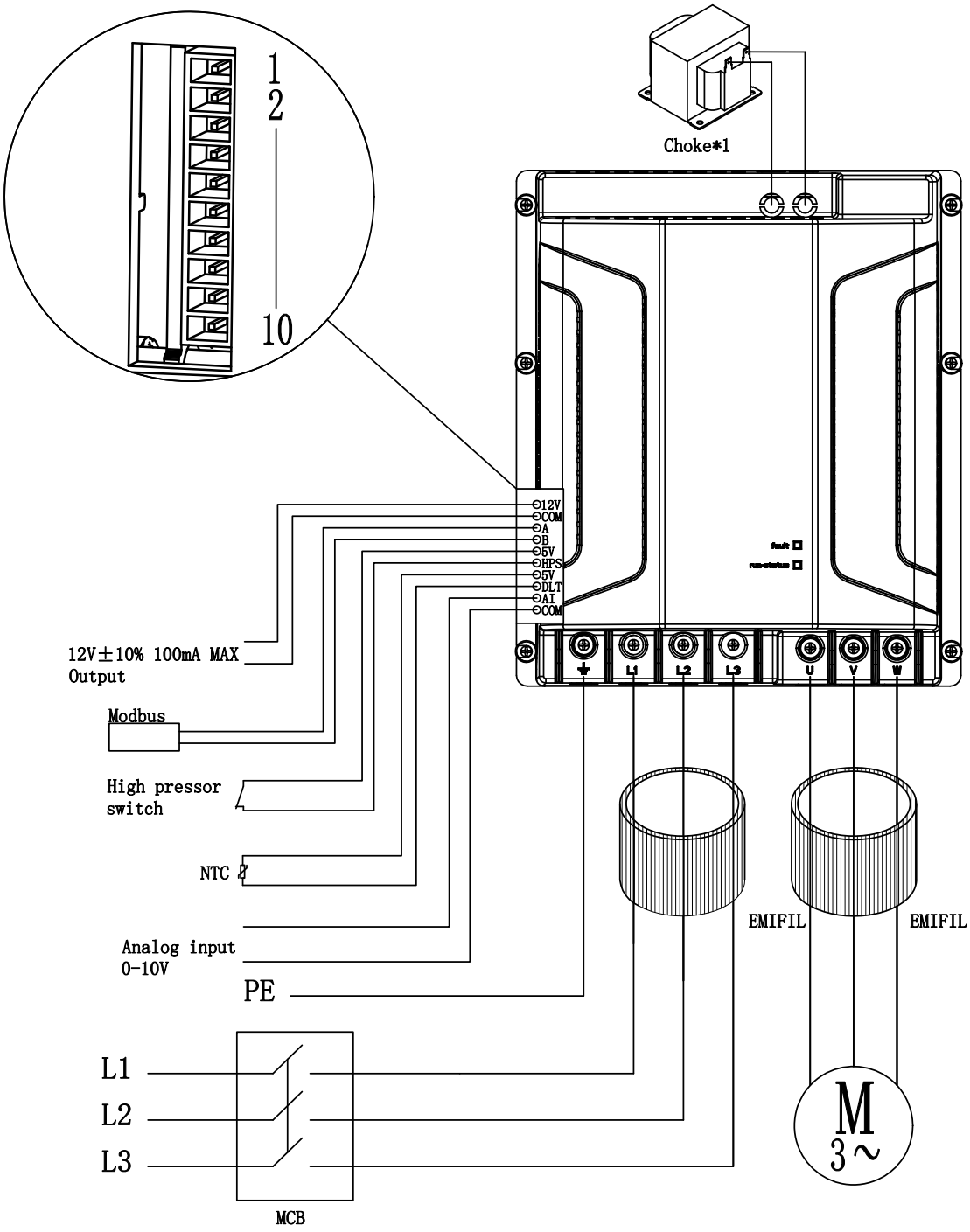
3ph - SD2015 / SD2020 / SD2025



VARIABLE SPEED DRIVE



3ph – SD2032 / SD2037 / SD2045



VARIABLE SPEED DRIVE



PRESSURE SWITCHES

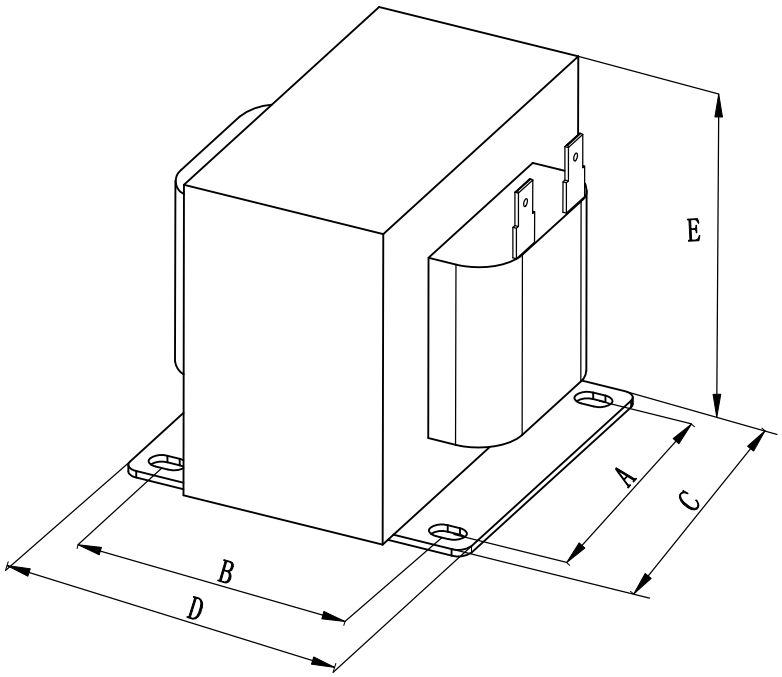
Pressure type	Reference	Electrical rating	Contact	Reset	Port fitting	Electrical connector
HP	MPS2AXXX	240V / 1-4A	NO/NC	Automatic	"1/4 SAE, 1/4 solder, 6mm solder, 1/8 NPTF Male"	Lead wires, AMP connector, Automotive connector...
LP	MPS1AXXX					

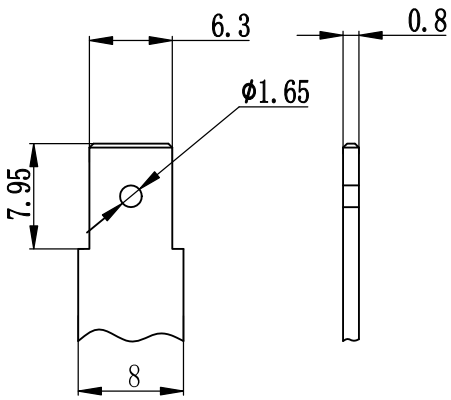
Contact your sales representative for the pressures switch selection and best advice adapted to your application.

CHOKES

Three-phase models are supplied together with chokes to be externally connected to the drives.
Chokes for single phase version are embedded in the drive.

SD2 drive	Type	Nb.	Choke Model	SANHUA U11 Code	Dimensions [mm]						Weight (kg)
					A	B	C	D	E	F	
SD2015B4	3PH 3.8KW	3	LE76-0825-XT	10530500401	64	64	78	76,2	65	5,2	1,5
SD2020B4	3PH 5.0KW		LE105-1325-XTA	10530500501	88	90	105	110	89	6	3,9
SD2025B4	3PH 8.0KW		LE85.8-2503B-XTA	10530500601	64	64	76,2	78	73	4	2
SD2032B4	3PH 11.5KW	1	R3515	10521007201	79	88	93,2	112,5	73,5	5,8*16	1,86
SD2037B4	3PH 15KW		R5004	23000002001	103	104	133	135	97	6*15	6,0
SD2045B4	3PH 18.5KW		R6035	23000002101	103	104	133	135	113	6*15	6,3





YCQB *SERIES*

PRESSURE SENSORS YCQB



Pressure sensors are widely used in Air Conditioning, Refrigeration and Heat Pump system. Using a 5V excitation input these sensors provide a 0.5-3.5 V or 0.5-4.5 V ratiometric signal output proportional to the pressure of the medium. This device requires no end user amplification. Pressure sensors permit to control and guarantee the system working under safe and stability condition.

FEATURES

- OVERALL FEATURES: APPLIED HIGH PERFORMANCE DIGITAL CIRCUIT WHICH HAS GOOD LINEAR, SMALL TEMPERATURE EXCURSION AND HIGH LEVEL OF ACCURACY OVER WIDE OPERATING RANGE;
- SMALL SIZE AND SIMPLE INSTALLATION;
- MODELS AVAILABLE WITH LEAD WIRE DIRECT CONNECTOR OR WITH PACKARD AND MOLEX SOCKET CONNECTIONS
- STABILITY: APPLIED SUPERIOR PRESSURE CORE, GOOD STABILITY UNDER STRICT PROCESS CONTROL;
- DIVERSIFICATION: DIFFERENT PRESSURE RANGES AND DIFFERENT LEVEL OF ACCURACY

GENERAL SPECIFICATIONS

- Applicable for HFC / HFO / flammables refrigerants and CO_2
- Relative humidity: 0 to 95% RH
- Installation position: preferably with vertical axis and sensor upwards
- Certifications: UL/CSA and declaration according to EMC directive

ELECTRICAL SPECIFICATIONS

- Supply voltage: 5V ± 0.25V DC
- Current consumption: Max. 10 mA
- Response time: <10 ms
- Insulation resistance: Min. 100 MΩ
- Load resistance: Min. 10 kΩ
- Protection class: IP66/IP67

PRESSURE SENSOR



MODEL DESIGNATION

YCQ	B	02	L	xxxx	YCQ = Pressure Transmitter
YCQ	**B**	02	L	xxxx	B = Voltage output / C = Current Output
YCQ	B	**02**	L	xxxx	Pressure range 01 : between 0 and 10 bar 02 : between 0 and 20 bar 03 : between 0 and 30 bar 04 : between 0 and 40 bar 05 : between 0 and 50 bar
YCQ	B	02	**L**	xxxx	L = Thread / H= Solder
YCQ	B	02	L	**xxxx**	Digits for additional information

GENERAL CHARACTERISTICS

YCQB with 0.5 to 3.5V output signal

Model Name	Output signal **= 0.5 to 3.5V** (compatible with Sanhua controller = SEC)						
	Part Number	Connection type	Pressure range	Max Working pressure	Electrical connection	Accuracy	Medium Temp.
			[bar]	[bar]	Type	%	°C
YCQB02H01	10185004702	Solder ¼"	0-20	52.5	2m wires +XHP	±2% FS	-30 / 120
YCQB02H01-01	10185001502		0-20	52.5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB02H18-1	10185015402		0-20	52.5	4.9m wires +XHP	±0,8% FS	-40 / 120
YCQB02H165	10185087602		-1-20	52.5	Packard	±0,8% FS	-40 / 120
YCQB03H05	10185046602		0-30	75	2m wires +XHP	±0,8% FS	-40 / 120
YCQB05H01	10185004802		0-50	75	2m wires +XHP	±2% FS	-30 / 120
YCQB02H166	10185087002	Solder 6mm	-1-20	52.5	Packard	±0,8% FS	-40 / 120
YCQB02L12-1	10185015502	Flare 7/16-20UNF-2B	0-20	52.5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB02L28-1	10185015602		0-20	52.5	4.9m wires +XHP	±0,8% FS	-40 / 120
YCQB02L171	10185060402		-1-20	52.5	Packard	±0,8% FS	-40 / 120
YCQB03L156	10185046302		0-30	75	Packard	±0,8% FS	-40 / 120
YCQB06L01	10185067202		0-60	90	Packard	±1.5% FS	-40 / 120
YCQB09L02	10185044102	G1/4	0-90	225	2m wires +XHP	±2% FS	-30 / 85

PRESSURE SENSOR



YCQB with 0.5 to 4.5V output signal

Output signal = **0.5 to 4.5V**							
Model Name	**Part Number**	**Connection type**	**Pressure range**	**Max Working pressure**	**Electrical connection**	**Accuracy**	**Medium Temp.**
			[bar]	**[bar]**	**Type**	**%**	**°C**
YCQB02H50	10185004502	Solder ¼"	0-13.8	52.5	Packard	±2% FS	-30 / 120
YCQB02H153	10185021802		0-17.3	52.5	Packard	±2% FS	-30 / 80
YCQB04H50	10185004602		0-34.5	75	Packard	±2% FS	-30 / 120
YCQB03H06	10185046502		0-30	75	2m wires +XHP	±0,8% FS	-40 / 120
YCQB05H11	10185046102		0-50	75	2m wires +XHP	±2% FS	-40 / 150
YCQB05H154	10185109102		0-50	75	Packard	±2% FS	-30 / 120
YCQB02L01	10185004902	Flare 7/16-20UNF-2B	0-20	52.5	2m wires +XHP	±2% FS	-30 / 120
YCQB02L01-1	10185001402		0-20	52.5	2m wires +XHP	±0,8% FS	-40 / 120
YCQB03L18	10185046402		0-30	75	2m wires +XHP	±0,8% FS	-40 / 120
YCQB05L01	10185007002		0-46	75	2m wires +XHP	±2% FS	-30 / 120
YCQB05L63	10185046002		0-50	75	2m wires +XHP	±2% FS	-40 / 150
YCQB01L50	10185015702		-1-9.3	52.5	Packard	±2% FS	-30 / 130
YCQB02L50	10185004002		0-13.8	52.5	Packard	±1% FS	-30 / 120
YCQB02L51	10185014102		0-17.2	52.5	Packard	±1% FS	-30 / 120
YCQB02L154	10185028102		0-20	52.5	Packard	±2% FS	-30 / 120
YCQB03L157	10185046202		0-30	75	Packard	±0,8% FS	-40 / 120
YCQB04L50	10185004202		0-34.5	52.5	Packard	±1% FS	-30 / 120
YCQB05L50	10185004302		0-46	75	Packard	±1% FS	-30 / 120
YCQB05L53	10185013402		0-45	75	Packard	±2% FS	-30 / 130
YCQB05L161	10185045902		0-50	75	Packard	±2% FS	-40 / 150
YCQB02L100	10185009102		0-20	52.5	Molex	±2% FS	-30 / 120
YCQB05L100	10185009202		0-46	75	Molex	±1% FS	-30 / 120

PRESSURE SENSOR



YCQB for High pressure use

Model Name	U11	Connection type	Pressure range	Max Working pressure	Electrical connection	Cable length	Output signal	Medium Temp.
			[bar]	[bar]	Type	[m]	[VDC]	°C
YCQB06L01	10185067202	Flare 7/16-20UNF-2B	0-60	90	Packard	0	0.5 to 3.5	-40/+80
YCQB15L02	YCQB0010302		0-150	225	XHP	2	0.5 to 4.5	-30/+85
YCQB06L02	YCQB0009602	G 1/4	0-60	90	XHP	2	0.5 to 3.5	-40/+80
YCQB09L02	10185044102		0-90	90	XHP	2	0.5 to 3.5	-30/+85
YCQB15L01	10185030302		0-150	225	XHP	2	0.5 to 4.5	-30/+85
YCQB06L154	YCQB0009901	Flare 7/16-20UNF-2A	0-60	90	Packard	0	0.5 to 4.5	-30/+120
YCQB09L151	YCQB0010001		0-90	225	Packard	0	0.5 to 4.5	-30/+120
YCQB12L152	YCQB0010101		0-120	225	Packard	0	0.5 to 4.5	-30/+120
YCQB16L154	YCQB0010201		0-160	225	Packard	0	0.5 to 4.5	-30/+120
YCQB15H01	YCQB0010402	Solder 1/4	0-150	225	XHP	2	0.5 to 4.5	-30/+85

YCQB for water use

Suitable with pure water and water + glycol till 50%.

Output signal = 0.5 to 4.5V							
Model Name	Part Number	Connection type	Pressure range	Max Working pressure	Electrical connection	Cable length	Medium Temp.
			[bar]	[bar]	Type	[m]	°C
YCQB01L503	10185042702	Flare 7/16-20UNF-2B	0-10	52.5	XHP	2	-30/+100

Note: 1) Signal span: VFS=FS (Full Scale) = VA(pr) - VA0

2) Accuracy measured within the temperature ranges shown in Table 1:
Included Nonlinearity (L) and pressure hysteresis. The Nonlinearity is the deviation of the real sensor characteristic VA = f(p) from the ideal straight line. It can be approximated by a polynomial of second order, with the maximum at px = pr / 2.
The equation to calculate the nonlinearity is: L = (VA(px) – VA0) / (VA(pr) – VA0) – px / pr

3) Response Time: delay between a pressure change (10 to 90% pr) and the corresponding signal output change (10 to 90% FS)

4) Insulation Resistance measured with rated voltage: 500 VDC

For other connection types (M12, M16...) please contact your Sanhua local representative.

YCQC *SERIES*

PRESSURE SENSOR YCQC

Pressure sensors are widely used in Air Conditioning, Refrigeration and Heat Pump system. YCQC pressure sensor uses a DC 10-30V excitation input to provide a 4-20 mA signal output proportional to the pressure of the medium. This device requires no end user amplification. Pressure sensors permit to control and guarantee the system working under safe and stability condition.



FEATURES

- OVERALL FEATURES: APPLIED HIGH PERFORMANCE DIGITAL CIRCUIT WHICH HAS GOOD LINEAR, SMALL TEMPERATURE SHIFT AND HIGH LEVEL OF ACCURACY OVER WIDE OPERATING RANGE
- SMALL SIZE AND SIMPLE INSTALLATION; MODELS AVAILABLE WITH PACKARD CONNECTOR OR WIRES
- STABILITY: APPLIED SUPERIOR PRESSURE CORE, GOOD STABILITY UNDER STRICT PROCESS CONTROL

GENERAL SPECIFICATIONS

- Applicable for HFC / HFO / flammables refrigerants and CO_2
- Relative humidity: 0 to 95% RH
- Installation position: preferably with vertical axis and sensor upwards
- Certifications: UL/CSA and declaration according to EMC directive

ELECTRICAL SPECIFICATIONS

- Supply voltage: from 10V to 30V DC
- Rated output signal: from 4 to 20 mA
- Voltage dependency: < 0,05% FS/10 V
- Current Limitation (linear output signal up to 1.5 x rated range): 28 mA
- Signal Span (V_{FS}): 16 V
- Insulation resistance: Min. 100 MΩ
- Protection class: IP65/IP66

PRESSURE SENSOR



GENERAL CHARACTERISTICS

YCQC with 4-20mA signal output

Model Name	Output signal = 4- 20mA						
	Part Number	Connection type	Pressure range	Max Working pressure	Electrical connection	Accuracy	Medium Temp.
			[bar]	[bar]	Type	%	°C
YCQC01L804	YCQC0005202	7/16-20UNF-2B	-0.5~7	30	Packard	±0.8% FS	-40 / 80
YCQC01L806	YCQC0004102	7/16-20UNF-2B	-0.8~7	30	Packard	±0.8% FS	-40 / 80
YCQC02L802	YCQC0003602	7/16-20UNF-2B	-1~12	45	Packard	±0.8% FS	-40 / 80
YCQC02L809	YCQC0004502	7/16-20UNF-2B	0-18	52.5	Packard	±0.8% FS	-40 / 80
YCQC02L806	YCQC0003502	7/16-20UNF-2B	-1~20	52.5	Packard	±0.8% FS	-40 / 80
YCQC03L804	YCQC0003202	7/16-20UNF-2B	0-30	75	Packard	±0.8% FS	-40 / 80
YCQC03L807	YCQC0002802	7/16-20UNF-2B	0-30	75	M12	±0.8% FS	-40 / 80
YCQC03L809	YCQC0004602	7/16-20UNF-2A	0-30	75	Packard	±2.0% FS	-40 / 80
YCQC05L806	YCQC0004002	7/16-20UNF-2B	0-44.8	75	Packard	±0.8% FS	-40 / 80
YCQC05L807	YCQC0002702	7/16-20UNF-2B	0-50	75	M12	±0.8% FS	-40 / 135
YCQC05L810	YCQC0003402	7/16-20UNF-2B	0-50	75	Packard	±0.8% FS	-40 / 80
						±3.5% FS	-40 / 150
YCQC01H801	YCQC0002902	Solder ¼”	0-10	30	Packard	±0.8% FS	-40 / 80
YCQC02H803	YCQC0005602	Solder 6mm	-1~12	30	Packard	±2.0% FS	-40 / 80
YCQC03H801	YCQC0003802	Solder ¼”	0-30	75	Packard	±0.8% FS	-40 / 135
YCQC05H801	YCQC0003102	Solder ¼”	0-50	75	Packard	±0.8% FS	-40 / 80
						±2.0% FS	80 / 100

PRESSURE SENSOR



YCQC for High pressure use

Output signal = **4- 20mA**						
Model Name	**Part Number**	**Connection type**	**Pressure range**	**Max Working pressure**	**Electrical connection**	**Medium Temp.**
			[bar]	**[bar]**	**Type**	**°C**
YCQC06Lxxx	On request	7/16-20UNF-2x	0-60	90	Packard	-40 / 80
YCQC06Lxxx	On request	7/16-20UNF-2x	0-60	90	M12	-40 / 80
YCQC06Hxxx	On request	Solder ¼”	0-60	90	Packard	-40 / 80
YCQC06Hxxx	On request	Solder ¼”	0-60	90	M12	-40 / 80
YCQC06Hxxx	On request	Solder 6mm	0-60	90	M12	-40 / 80
YCQC09L701	YCQC0007702	7/16-20UNF-2B	0-90	135	Packard + 10cm	-20 / 100
YCQC15H02	YCQC0006502	Solder ¼”	0-150	225	Packard	-40 / 80
YCQC15L02	10185042302	G 1/4	0-150	225	Packard + 10cm	-20 / 100

PRESSURE SENSOR



YCQC for water use

Suitable with pure water and water + glycol till 50%.

Output signal = 4- 20mA						
Model Name	Part Number	Connection type	Pressure range	Max Working pressure	Electrical connection	Medium Temp.
			[bar]	[bar]	Type	°C
YCQC01L501	10185036002	Flare 7/16-20UNF-2B	-0.8 - 7	52.5	Packard	-40 / 80

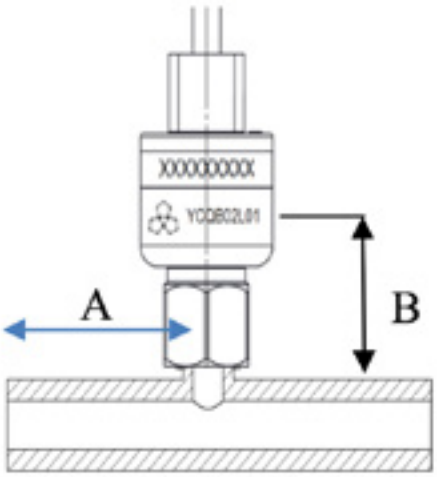
Note: 1) Signal span: V_{FS}=FS (Full Scale) = $V_A(p_r)$ - V_{A0}
2) Insulation Resistance measured with rated voltage: 500 VDC

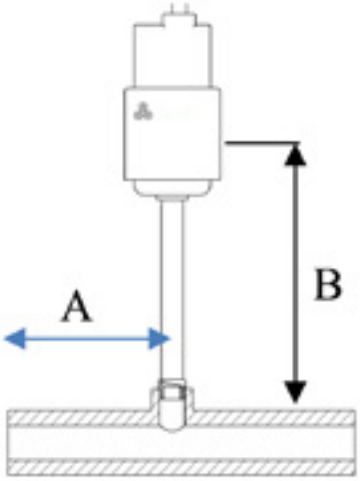
DIMENSIONS

Please refer to the 2D drawing or contact your local representative.

OPERATING TEMPERATURES

YCQB or YCQC
Flare and Brazed





Maxi Medium Temperature	Ambient Temperature	Distance "A"	Distance "B" Flare	Distance "B" Brazed
[°C]	[°C]	[mm]	[mm]	[mm]
150	60	>30	40	70

PRESSURE SENSOR

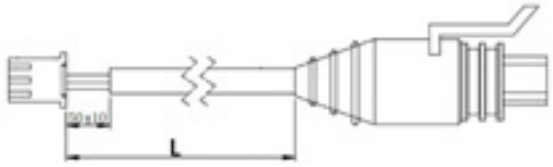


ACCESSORIES

Packard Cables IP **67** with 3 wires

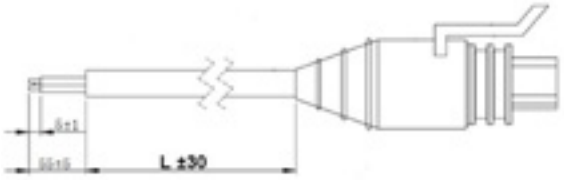
Model Name	Part Number	Connector Type	Total Cable Length	Terminal
YCQB02-013251	20185108201	Packard	2000 mm	XHP-3
YCQB02-013252	20185108101	Packard	5000 mm	XHP-3
YCQB02-013253	20185108001	Packard	9000 mm	XHP-3

Note: Can be used also with YCQC pressure transmitter models



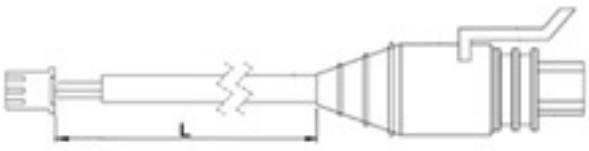
Packard Cables IP **67** with 3 wires

Model Name	Part Number	Connector Type	Total Cable Length	Terminal
YCQB02-013050	20185034002	Packard	1500 mm	Lead Wires
YCQB02-013056	20185034102	Packard	5000 mm	Lead Wires
YCQB02-013084	20185044902	Packard	8000 mm	Lead Wires



Packard Cables IP **67** + XHP connector with 2 wires

Model Name	Part Number	Connector Type	Total Cable Length	Terminal
YCQC02-013037	20185051102	Packard	2000 mm	XHP-3
YCQC02-013038	20185051202	Packard	5000 mm	XHP-3
YCQC02-013039	20185051302	Packard	9000 mm	XHP-3

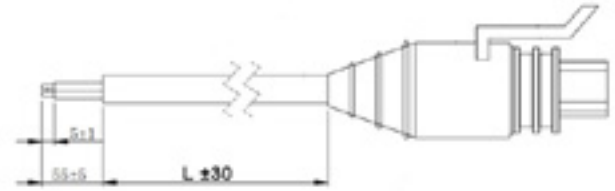


PRESSURE SENSOR



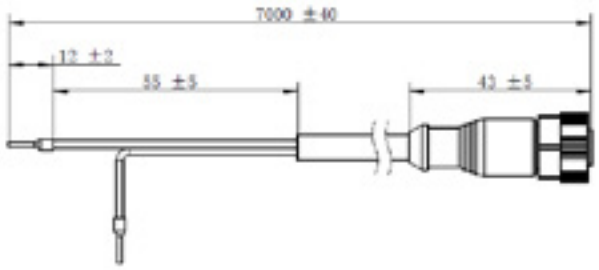
Packard Cables IP **67** with 2 wires

Model Name	Part Number	Connector Type	Total Cable Length	Terminal
YCQC02-013034	20185046602	Packard	2000 mm	Lead Wires
YCQC02-013036	20185051002	Packard	4000 mm	Lead Wires



M12 cable with 2 wires

Model Name	Part Number	Connector Type	Total Cable Length	Terminal
YCQC02-013080	20185040302	M12	7000 mm	Wires with end cap Pins 1-4
YCQC02-013081	20185069302	M12	3000 mm	Wires with end cap Pins 1-3



PSV01/50/60/15/16 *SERIES*

PRESSURE CONTROLS



Pressure controls can be used in refrigeration and air conditioning systems to protect the systems from extremely low suction pressure or extremely high discharge pressure. The pressure controls are also used to start or stop the refrigeration compressors and air-cooled condenser fans, to regulate other components in the systems which require pressure control function.

FEATURES

- HIGH PRECISION AND EXCELLENT STABILITY
- LONG LIFE TIME WITH BOTH EXCELLENT ELECTRIC AND MECHANICAL RELIABILITY
- SPDT SWITCH TO ENSURE GOOD CONTACT AND DISCONNECT CONVERSION WITH FAST REACTIONS
- VARIOUS PRESSURE CONTROLLING RANGES
- INSTALLATION PLATE FOR OPTION

GENERAL SPECIFICATION

- Refrigerant: HCFC, HFC, HFO (R134a, R404A/R507, R407C, R22, R407A/F, R448A/449A, R452A, R513A, R450A, R410A); approved A2L[1)] refrigerants: R1234ze, R1234yz, R1234yf, R32, R452B, R454A, R454B, R454C, R455A
- Medium Temperature: -40°C /+120°C
- Ambient Temperature: -30°C/+65°C
- Relative Humidity: 0-95% RH
- Max. Working Pressure: HP: 3.5MPa/4.5MPa; LP: 1.65MPa
- Enclosure: IP30 (IP44 as option)
- Certification:
  - CE acc. LVD 2014/35/EU (EN60730-1:2011 EN60730-2-6:2016)
  - CE acc. PED 2014/68/EU, category IV (EN 12263)
  - UL acc. UL508 (E480941)

Contact load	AC1	AC3	AC15	DC
Rated Voltage (V)	400	400	400	24
Rated Current (A)	16	16	10	8

1) Approved electrical load for selected A2L refrigerants

Voltage	Current	Power factor	Frequency
250 V AC	≤ 4 A	cos φ ≥ 0,4	50/60 Hz
250 V AC	≤ 6 A	cos φ ≥ 0,594	50/60 Hz
250 V AC	≤ 16 A	cos φ ≥ 0,78	50/60 Hz

PRESSURE CONTROLS



MODEL DESIGNATION

Position Number	Model Designation Legend	
1	**Type**	**Description**
	PSV	Pressure control
2	**Pressure regulating range**	**Description**
	01	LP: -0.5~7 bar(g)
	50	HP: 6~32 bar(g)
	60	HP: 8~42 bar(g)
	15	Dual (LP): -0.5~7 bar(g) / Dual (HP): 6~32 bar(g)
	16	Dual (LP): -0.5~7 bar(g) / Dual (HP): 8~42 bar(g)
3	**Reset Mode**	**Description**
	A	**A**utomatic reset
	M	**M**anual reset
	AA	**A**uto LP/ **A**uto HP
	AM/MA/MM/MC/CA/CM/CC	……
4	**Connection type**	**Description**
	L	Flare
	H	Solder
	M	Capillary
5	**Product design (type)**	**Description**
	S	Standard Model - IP30
	F	Standard Model - IP44
	C	Customized Model
6	**Serial number, Certification type**	**Description**
	0X (01/03/05/…..); X = odd	PED IV Certified, HP Double bellow. Inch or unified Inch & Metric
	0X (02/04/06/…..); X = even	PED IV Certified, HP Double bellow. Metric only
	5X (51/53/55...); X = odd	Ordinary Model, HP Single bellow. Inch or unified Inch & Metric
	5X (52/54/56...); X = even	Ordinary Model, HP Single bellow. Metric only

MODEL DESIGNATION EXAMPLE

Position Number							Model designation example (according above legend)
1	2	3	4	-	5	6	
PSV	15	AA	L	-	S	01	Pressure control
PSV	**15**	AA	L	-	S	01	Dual: LP: -0.5~7 bar(g) / HP: 6~32 bar(g)
PSV	15	**AA**	L	-	S	01	Auto reset HP, Auto reset LP
PSV	15	AA	**L**	-	S	01	Flare connection
PSV	15	AA	L	**-**	**S**	01	Standard Model
PSV	15	AA	L	-	S	**01**	PED IV Certified, HP Double bellows

PRESSURE CONTROLS



SELECTION AND ORDERING

PSV01, PSV50, PSV60, PSV15, PSV60 Flare Connection										
Pressure	Type	Low Pressure (LP)		High Pressure (HP)		Reset		PED 2014 68/EU EN 12263 Certified[1)]	Ordering Code	
		Range	Differential Pressure ΔP	Range	Differential Pressure ΔP				Flare Connection 7/16-20UNF (1/4in. & 6mm)	
		[bar]	[bar]	[bar]	[bar]	Low Pressure	High Pressure		Model	U11 Code
LP	PSV01	-0.5~7	0.7~5	—	—	Auto	—	√	PSV01AL-S01	10660012102
LP	PSV01	-0.5~7	0.7~5	—	—	Auto	—	√	PSV01AL-F01	PSVX0000602
LP	PSV01	-0.5~7	0.7	—	—	Man	—	√	PSV01ML-S01	10660013102
HP	PSV50	—	—	6~32	3~15	—	Auto	×	PSV50AL-S51	10660012902
HP	PSV50	—	—	6~32	3~15	—	Auto	×	PSV50AL-F51	PSVX0001102
HP	PSV50	—	—	6~32	3	—	Man	×	PSV50ML-S51	10660013002
HP	PSV50	—	—	6~32	3	—	Man	×	PSV50ML-F51	PSVX0001502
HP	PSV50	—	—	6~32	4~15	—	Auto	√	PSV50AL-S01	10660014202
HP	PSV50	—	—	6~32	4~15	—	Auto	√	PSV50AL-F01	PSVX0001002
HP	PSV50	—	—	6~32	4	—	Man	√	PSV50ML-S01	10660018402
HP	PSV50	—	—	6~32	4	—	Man	√	PSV50ML-F01	PSVX0001202
HP	PSV60	—	—	8~42	5~15	—	Auto	√	PSV60AL-S01	10660014302
HP	PSV60	—	—	8~42	5~15	—	Auto	√	PSV60AL-F01	PSVX0001602
HP	PSV60	—	—	8~42	5	—	Man	√	PSV60ML-S01	10660019202
HP	PSV60	—	—	8~42	5	—	Man	√	PSV60ML-F01	PSVX0001802
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Auto	×	PSV15AAL-S51	10660012302
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Auto	×	PSV15AAL-F51	PSVX0000802
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Man	×	PSV15AML-S51	10660012202
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Man	×	PSV15AML-F51	PSVX0001402
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Auto	√	PSV15AAL-S01	10660014402
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Auto	√	PSV15AAL-F01	PSVX0000702
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Man	√	PSV15AML-S01	10660016702
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Man	√	PSV15AML-F01	PSVX0000902
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Auto	×	PSV16AAL-S51	10660018602
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Man	×	PSV16AML-S51	10660019402
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Auto	√	PSV16AAL-S01	10660014102
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Auto	√	PSV16AAL-F01	PSVX0001702
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Man	√	PSV16AML-S01	10660018702

PRESSURE CONTROLS



PSV01, PSV50, PSV60, PSV15, PSV16 Solder Connection												
Pressure	Type	Low Pressure (LP)		High Pressure (HP)		Reset		PED 2014 68/EU EN 12263 Certi-fied[1)]	Ordering Code		Ordering Code	
		Range	Differential Pressure ΔP	Range	Differential Pressure ΔP				Solder ODF 1/4 in.		Solder ODF 6mm	
		[bar]	[bar]	[bar]	[bar]	LP	HP		Model	U11 Code	Model	U11 Code
LP	PSV01	-0.5~7	0.7~5	—	—	Auto	—	√	PSV01AH-S01	10660021702		
LP	PSV01	-0.5~7	0.7~5	—	—	Auto	—	√			PSV01AH-F02	PSVX0000502
HP	PSV50	—	—	6~32	3~15	—	Auto	×	PSV50AH-S51	10660020802		
HP	PSV50	—	—	6~32	4~15	—	Auto	√	PSV50AH-S01	10660020702		
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Auto	×	PSV15AAH-S51	10660021302		
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Man	×	PSV15AMH-S51	10660020302		
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Auto	√	PSV15AAH-S01	10660020102		
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Auto	√			PSV15AAH-F02	PSVX0001902
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Man	√	PSV15AMH-S01	10660020202		
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Auto	×	PSV16AAH-S51	10660022502		
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Man	×	PSV16AMH-S51	10660022402		
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Auto	√	PSV16AAH-S01	10660020402		
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Man	√	PSV16AMH-S01	10660020502		

PRESSURE CONTROLS



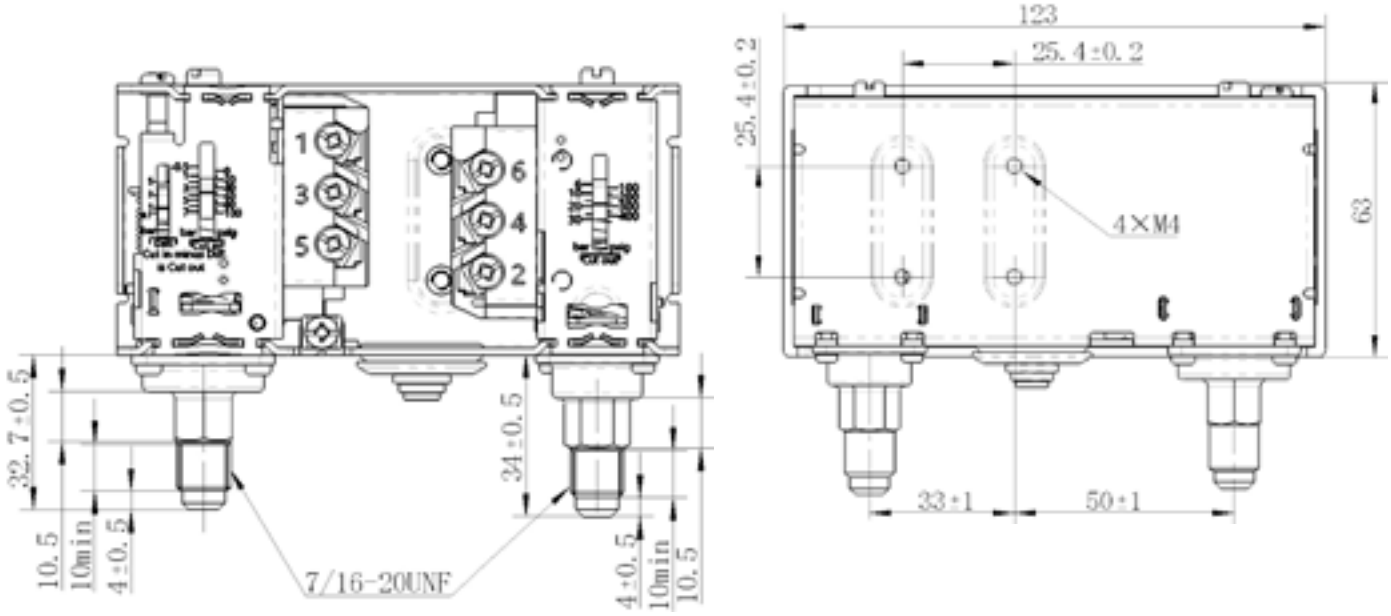
PSV01, PSV50, PSV15, Capillary with nut										
Pressure	Type	Low Pressure (LP)		High Pressure (HP)		Reset		PED 2014 68/EU Certified	Ordering Code	
		Range	Differential Pressure ΔP	Range	Differential Pressure ΔP				Capillary+Nut 7/16-20UNF (1/4in. & 6mm)	
		[bar]	[bar]	[bar]	[bar]	Low Pressure	High Pressure		Model	U11 Code
LP	PSV01	-0.5~7	0.7~5	—	—	Auto	—	√	PSV01AM-S01	10660012802
LP	PSV01	-0.5~7	0.7	—	—	Man	—	√	PSV01MM-S01	10660019502
HP	PSV50	—	—	6~32	3~15	—	Auto	×	PSV50AM-S51	10660012702
HP	PSV50	—	—	6~32	3	—	Man	×	PSV50MM-S51	10660019702
HP	PSV50	—	—	6~32	4~15	—	Auto	√	PSV50AM-S01	10660016502
HP	PSV50	—	—	6~32	4	—	Man	√	PSV50MM-S01	10660019602
HP	PSV60	—	—	8~42	5~15	—	Auto	√	PSV60AM-S01	10660019802
HP	PSV60	—	—	8~42	5	—	Man	√	PSV60MM-S01	10660020602
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Auto	×	PSV15AAM-S51	10660018502
Dual	PSV15	-0.5~7	0.7~5	6~32	4	Auto	Man	×	PSV15AMM-S51	10660022702
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Auto	√	PSV15AAM-S01	10660021602
Dual	PSV15	-0.5~7	0.7~5	6~32	5	Auto	Man	√	PSV15AMM-S01	10660021502
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Auto	×	PSV16AAM-S51	10660022102
Dual	PSV16	-0.5~7	0.7~5	8~42	5	Auto	Man	×	PSV16AMM-S51	10660021902
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Auto	√	PSV16AAM-S01	10660021402
Dual	PSV16	-0.5~7	0.7~5	8~42	6	Auto	Man	√	PSV16AMM-S01	10660019902

Tips: Pressure controls which are certified by TÜV, Rheinland acc. to PED 2014 68/EU, EN12263 are designed with double bellows at high pressure, and they provide “fail-safe” function.
The double bellows system prevents loss of charge in the event of the inner bellow rupture.
A rupture in the inner bellow will cause the control cut-out pressure to fall about 3 times less the set value and the compressor will stop.
A rupture in the outer bellows will cause the control cut-out pressure to fall to about 3 bar under the set value and providing the so-called “fail-safe” function.

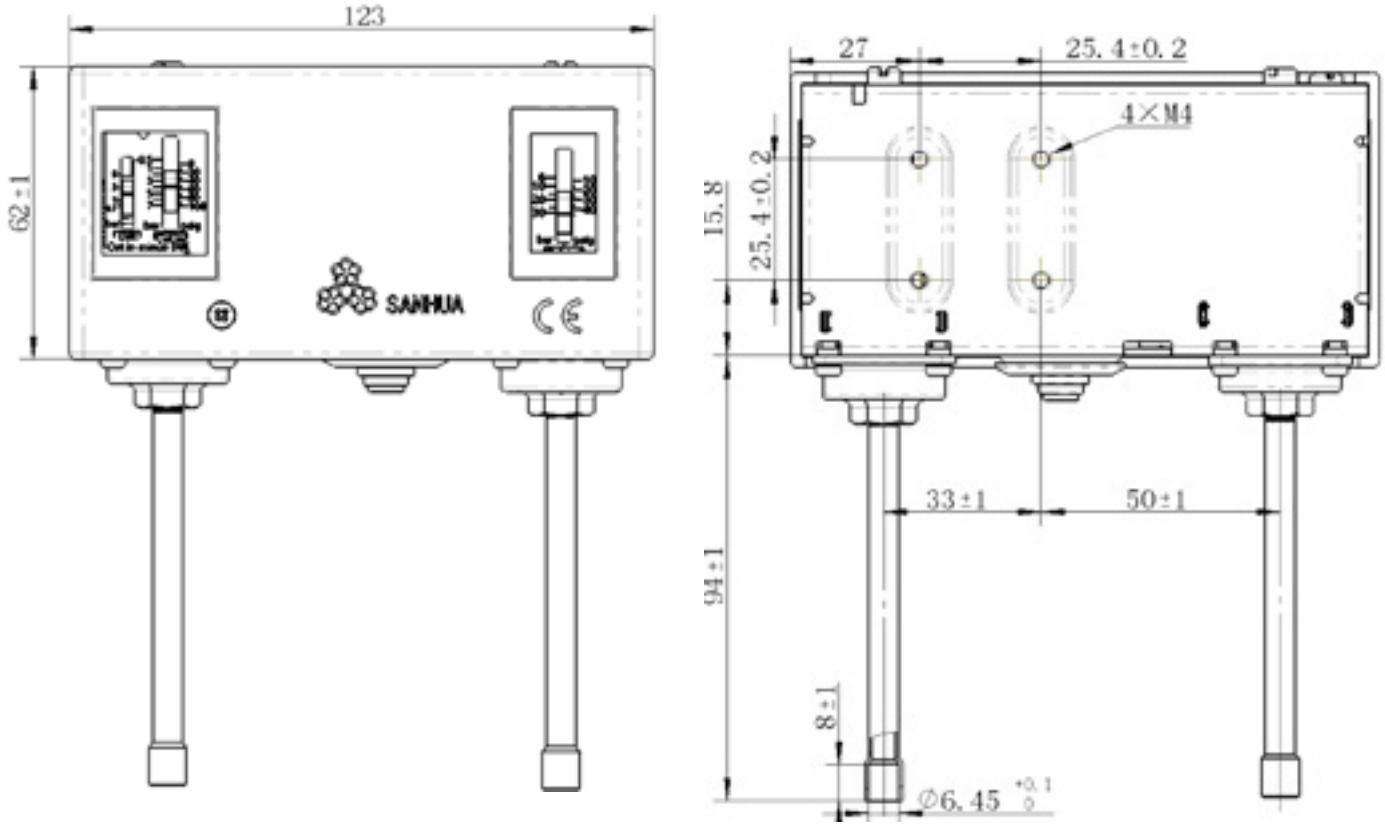
PRESSURE CONTROLS



DIMENSIONAL DRAWING



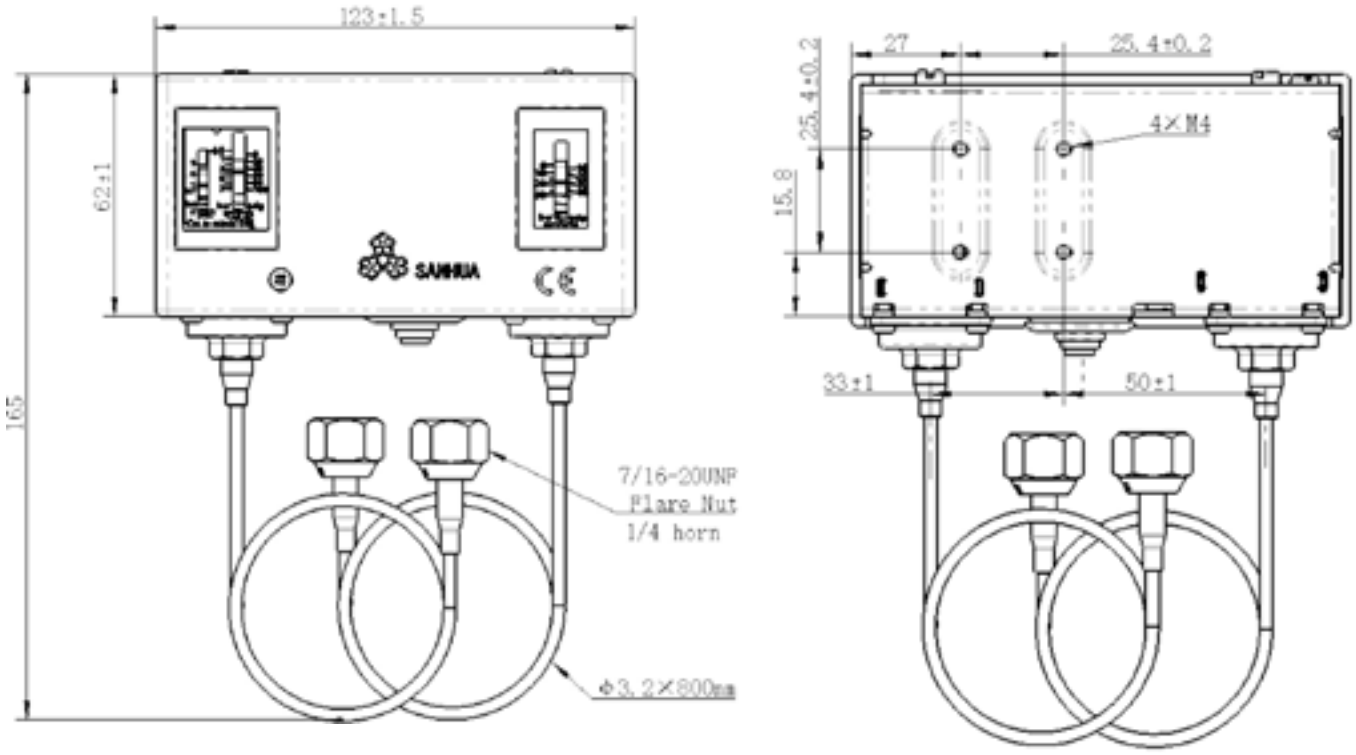
PSV15/16××L



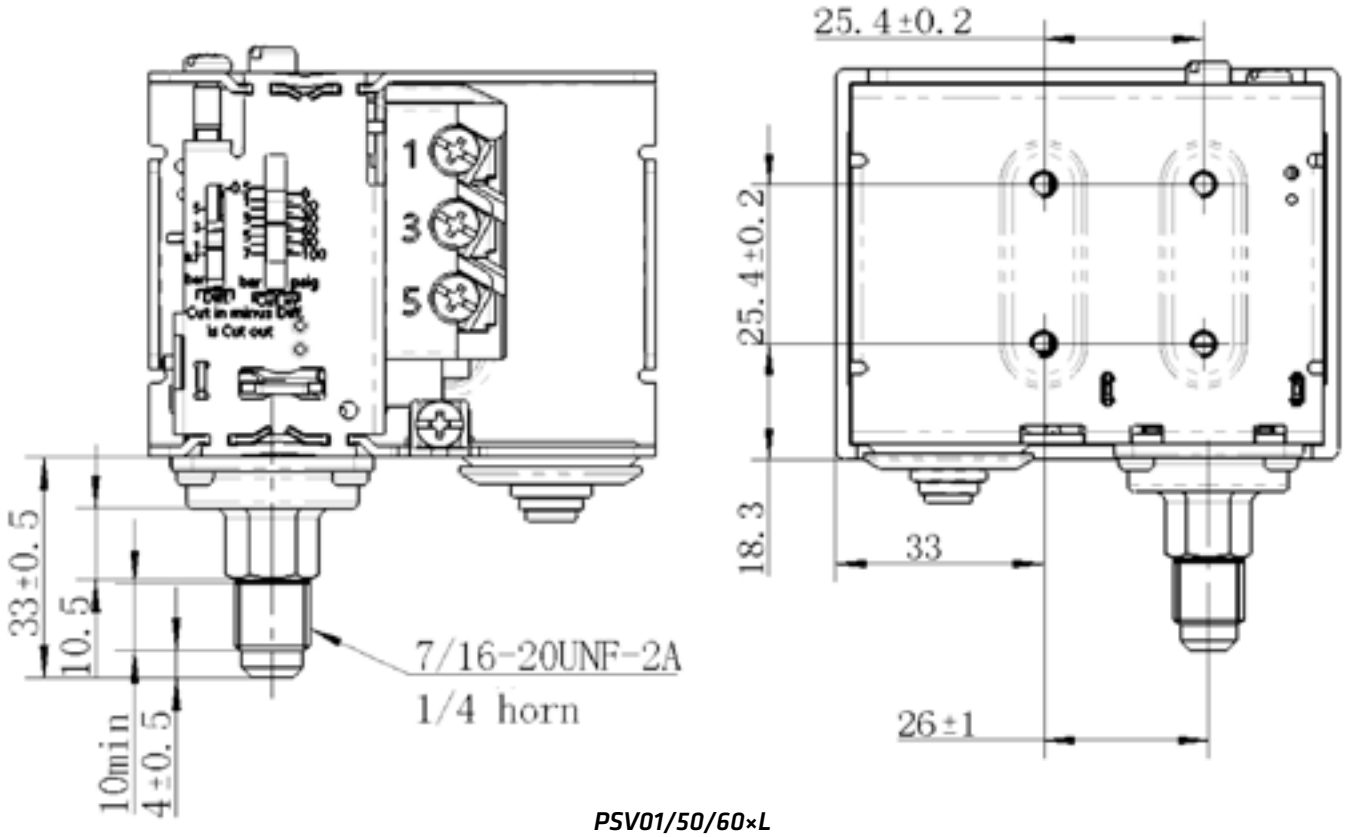
PSV15/16 ××H

PRESSURE CONTROLS





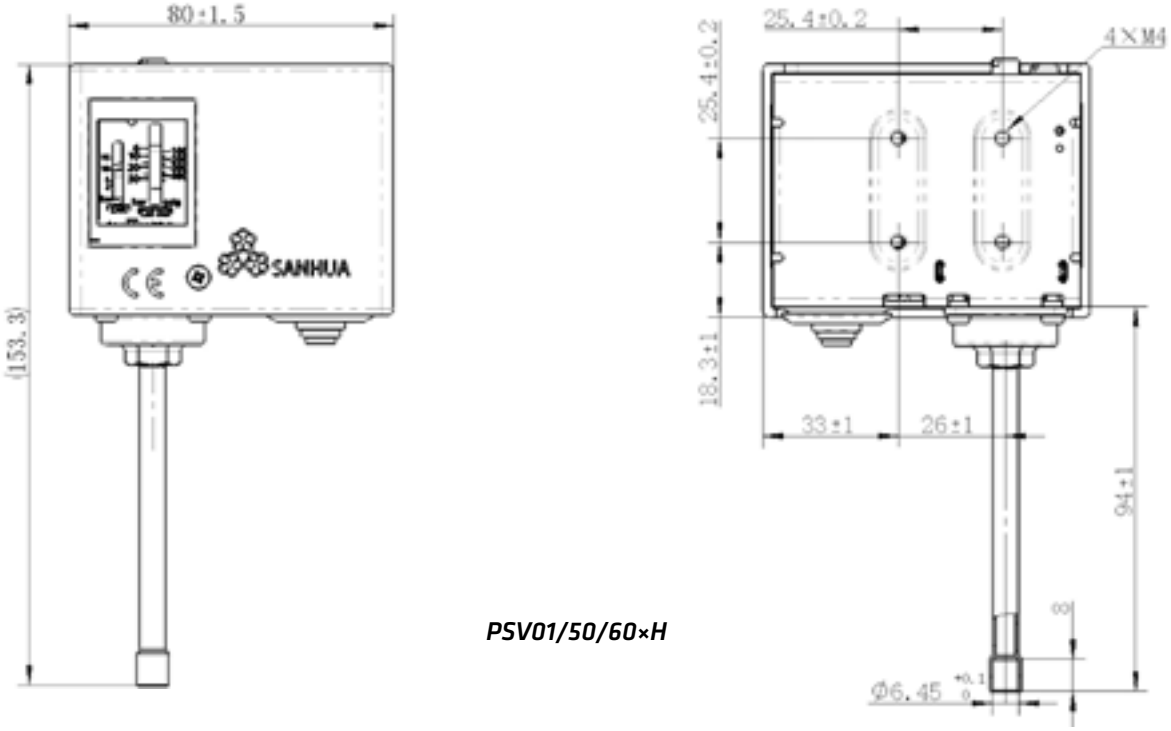
PSV15/16 ××M



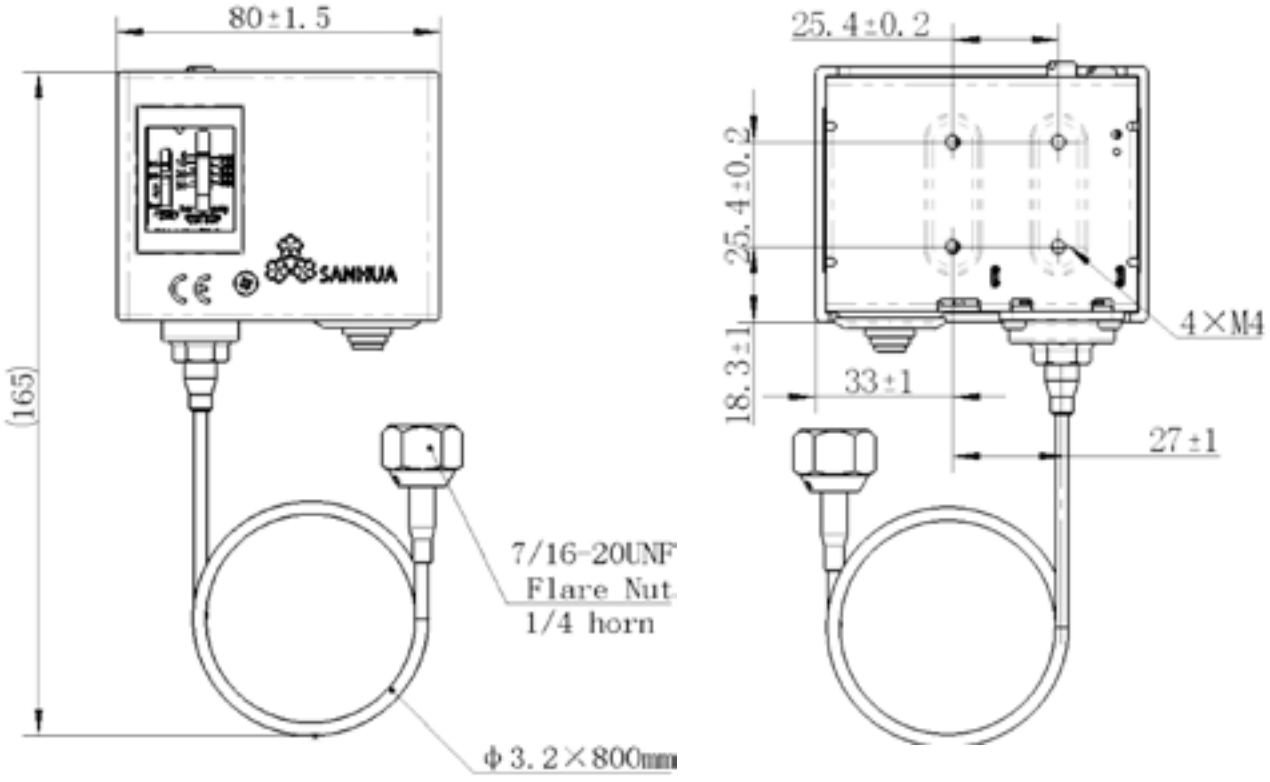
PSV01/50/60×L

PRESSURE CONTROLS





PSV01/50/60×H



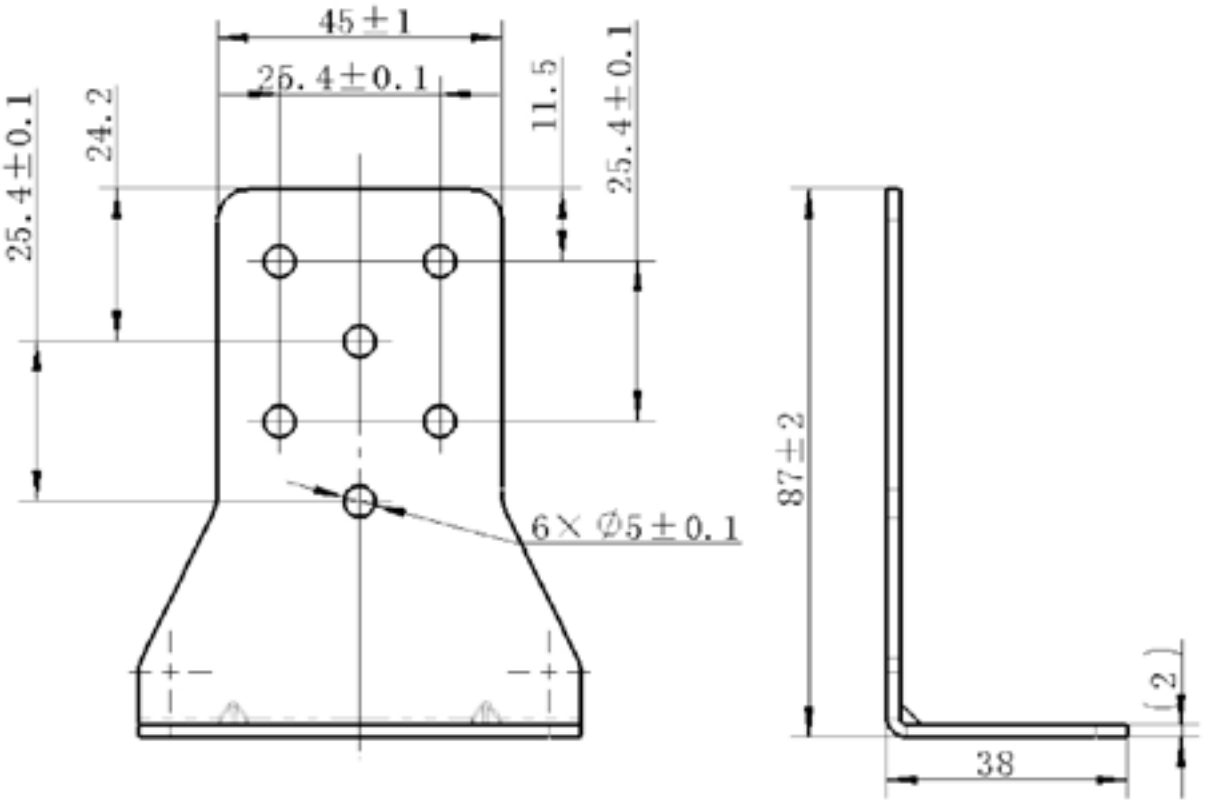
PSV01/50/60×M

PRESSURE CONTROLS



INSTALLATION PLATE

Model	U11 code
PS50-50001	20660018502



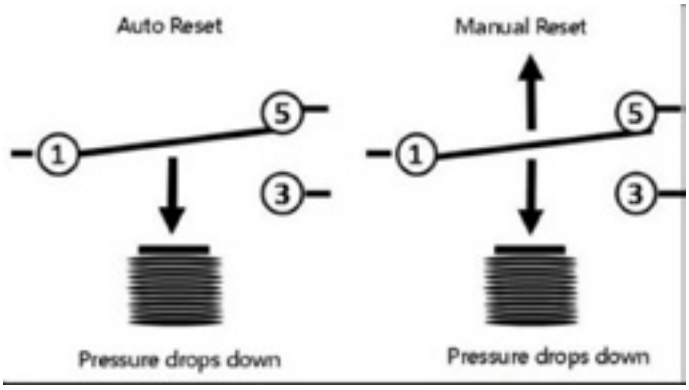


PRESSURE CONTROLS

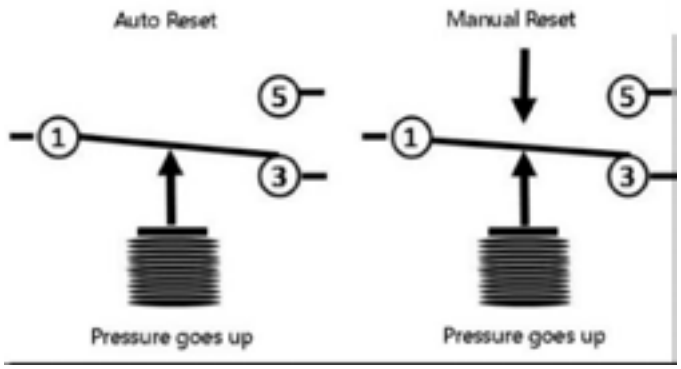


CONTACT SYSTEM

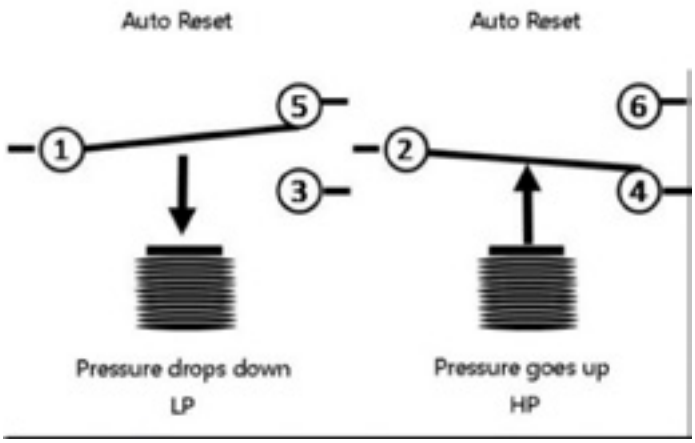
Single PSV01



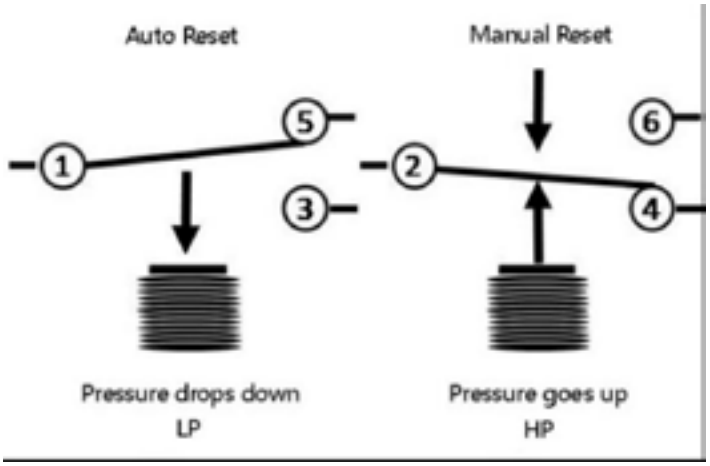
Single PSV50/60



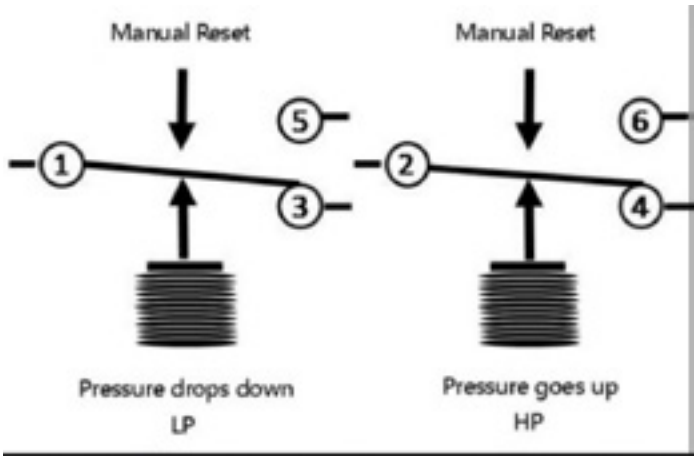
Dual PSV15/16AA



Dual PSV15/16AM



Dual PSV15/16MM



PRESSURE CONTROLS



Requirements for usage with approved A2L refrigerants (R1234ze, R1234yz, R1234yf, R32, R452B, R454A, R454B, R454C, R455A):

- Only trained and experienced personnel can work with flamable refigerants and make instalation, handling and service of PSV pressure switches in such systems with appropriate tools
- It is strictly forbidden to exceed declared electrical loads for PSV
- PSV has to be used as integrated component into the system with necessary protection against unautorized access
- Necessary to avoid extreme working conditions which can cause damage of presure switch or its critical mulfunctioning : e.g. excessive vibration, contact with water, external mechnical impact which can destroy PSV, corrosive environment
- System has to be designed in a way to avoid very frequent cycling of pressure switch (by setting resonable on/off pressures, differential, etc)
- Design of complete system should prevent accumulation and storage of high concentration of refigerant around pressure switch.

***MPS** SERIES*

MINI PRESSURE SWITCHES



(Standard range: for fluids GROUP 2 or 1 according to Directive 2014/68/EU or GROUP A1, A2L and A3 according to ANSI-ASHRAE 34-2016)
MPS are mini pressure switches with non-adjustable settings. Due to its low weight and compact size, they are usually directly installed on the refrigeration, air conditioning, heat pump systems for high-pressure, low-pressure protection or for fan control.

FEATURES

- MODELS FOR DIFFERENT APPLICATIONS: HP/LP PROTECTION, FAN CONTROL
- VARIOUS PRESSURE SETTING AND CONNECTIONS.
- ENCAPSULATED, WATER AND DUST PROTECTED WITH IP67 PROTECTION LEVEL
- SMALL SIZE AND LIGHT WEIGHT FOR DIRECT MOUNTING

GENERAL SPECIFICATION

- Applicable for all common HFC, HFO, HC refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A, R290, R1234ze(E), R1234yf, R447A, R452B, R454B, R454C, R455A
- Medium temperature TS min./max.: -40°C/135 °C
- Ambient temperature min./max.: -25°C / +70°C
- MWP: MPS1AL/AH 10 bar; MPS2AL/AH 50 bar
- IP67 after Installation (Lead Wire); IP65 after Installation (Tab Terminal)
- Relative humidity: 0 to 95% RH
- Installation position: Liquid, suction, and discharge line (respecting pressure and temperature limits)
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU), EN60335-2-24/40/89
  CE – EN60730 (LVD), EN60335-2-24/40/89
  CE – EN12263 (PED Cat. IV)
  UL – UL60730: UL file SA44584

MINI PRESSURE SWITCHES



ELECTRICAL RATINGS

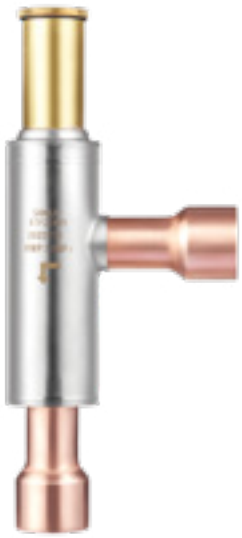
AC 120V/240V, DC 5V/12V Rated current 1A to 6A
DC 24 Rated current 1A to 4A

Application	Model	Code	Cut-out & tolerance bar	Cut-in & tolerance bar	Reset	Contact system type	Connections Solder		Connections Flare	Cable length (mm)
							6 mm	¼ inch	Female (with depressor)	
Hight pressure Cut-out	MPS2AH17	10570001901	19 ±1	15 ±1.5	Auto	SPST-NC	•			1000
	MPS2AH26	10570004101	26 ±1	20 ±1.5	Auto	SPST-NC		•		2000
	MPS2AH29	10570002401	31 ±1	24 ±1.5	Auto	SPST-NC	•			1500
	MPS2AH82[1)]	10570004801	30 ±1	25 ±1.5	Auto	SPST-NC		•		
	MPS2AH01	10570000301	41.5 +0/-1.5	32 ±2	Auto	SPST-NC		•		1000
	MPS2AH02	10570000101	45 +0/-3	34 ±2	Auto	SPST-NC		•		1000
Low pressure Cut-out	MPS1AH13	10570004201	0.3 ±0.3	1.2 ±0.3	Auto	SPST-NO	•			2000
	MPS1AH09	10570003401	0.6 ±0.5	1.8 ±0.4	Auto	SPST-NO	•			1000
	MPS1AH12	10570002501	0.7 ±0.5	1.7 ±0.4	Auto	SPST-NO	•			1500
	MPS1AL01	10570000901	1 ±0.2	1.6 ±0.2	Auto	SPST-NO			•	1000
Fan control	MPS2AL05[2)]	10570001101	9 ±0.5	12 ±0.7	Auto	SPST-NO			•	1000

Note: 1) model with tab terminals
2) with AMP 2-520263-2 connectors on electrical cables

***XTF** SERIES*

SUCTION (CRANKCASE) PRESSURE REGULATOR



XTF series suction pressure regulator is installed at the suction line of the compressor to keep pressure at certain limited level and avoid compressor overloading during high suction pressure.

FEATURES

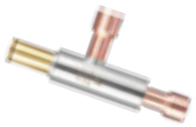
- ACCURATE AND ADJUSTABLE PRESSURE REGULATION
- WIDE PRESSURE OPERATING RANGE
- PULSATION DAMPING DESIGN
- STAINLESS STEEL VALVE BODY, CORROSION RESISTANT
- HIGH LIFETIME: 250,000 TIMES

GENERAL SPECIFICATION

- Refrigerants:
  - XTF12H/XTF15H/XTF22H: Applicable for all common HCFC, HFC, HFO, HC refrigerants such as: R22, R134a, R404A, R410A, R507A, R407C, R407A/F/H, R448A/ R449A, R452A, R450A, R513A, R1234ze(E), R1234yf, R32, R452B, R454B/C, R290
  - XTF28H/XTF35H: Applicable for all common HCFC, HFC, HFO refrigerants (non-flammable) such as: R22, R134a, R404A, R410A, R507A, R407C, R407A/F/H, R448A/ R449A, R452A, R450A, R513A
- Medium temperature range: -40°C ÷ +130°C
- Ambient temperature range: -40°C ÷ +60°C
- Relative humidity: ≤100%
- P band [1]: XTF12H/XTF15H/XTF22H: 2 bar, XTF28H/XTF35H: 1,5 bar
- Declaration according to PED (2014/68/EU)

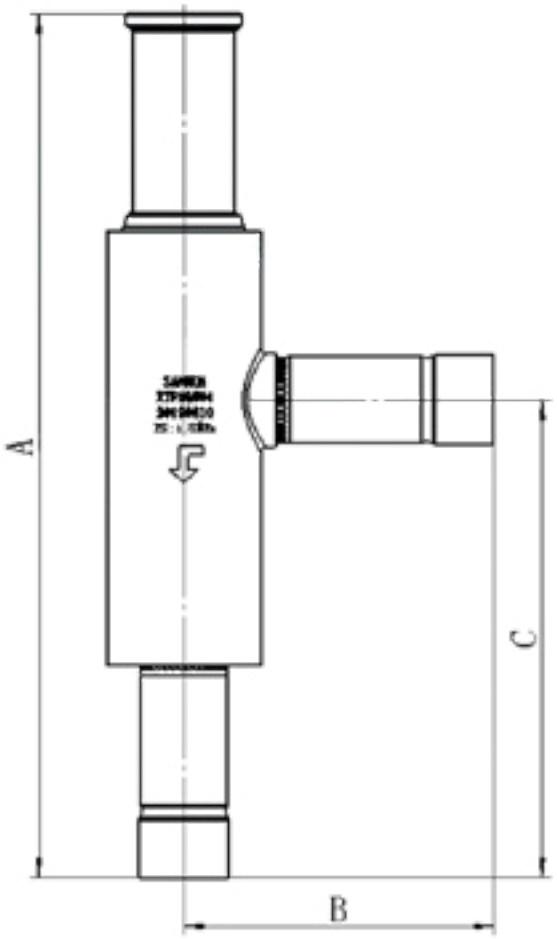
1) Proportion band (P-band) is defined as the pressure difference between opening pressure set value and pressure the valve is completely open (amount of pressure needed to move valve from fully closed position to fully open position)

SUCTION (CRANKCASE) PRESSURE REGULATOR



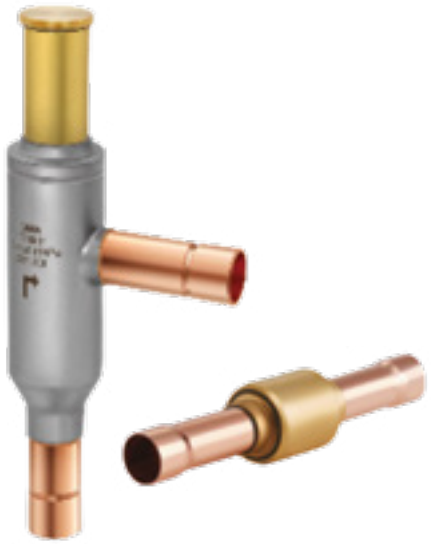
GENERAL CHARACTERISTICS

Model	Part Number	Kv	PS	Factory setting	Pressure regulating	Connection ODF		Dimensions [mm]			Weight
		[m³/h]	[bar]	[bar]	[bar]	[inch]	[mm]	A	B	C	[g]
XTF12H01	10510000602	3.2	18	2.5	1.5÷6	1/2	-	179	64	99	370
XTF15H01	10510000102	3.2				5/8	16	179	64	99	370
XTF22H01	10510000202	3.2				7/8	22	179	64	99	370
XTF28H01	10510000302	6.2				1-1/8	-	259	105	151	910
XTF35H01	10510000502	6.2				1-3/8	35	259	105	151	910



LTF *SERIES*

CONDENSING PRESSURE REGULATOR



LTF condensing pressure regulator is used in refrigeration and air conditioning units with air-cooled condensers and usually is installed after the condenser. During low ambient temeprature conditions it maintains sufficient and constant condensing pressure to ensure normal and stable refigerant flow via TXV into evaporator. It is used together with a differential pressure check valve YCVS10-004.

FEATURES

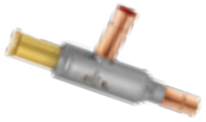
- ACCURATE AND ADJUSTABLE PRESSURE REGULATION
- STAINLESS STEEL VALVE BODY, CORROSION RESISTANT
- STAINLESS STEEL RELIABLE BELLOW
- HIGH LIFETIME: 400,000 TIMES

GENERAL SPECIFICATION

- Refrigerants: applicable for all common HCFC, HFC, HFO, HC refrigerants such as: R22, R134a, R404A, R410A, R507A, R407C, R407A/F/H, R448A/R449A, R452A, R450A, R513A, R1234ze(E), R1234yf, R32, R452B, R454B/C, R290
- Medium temperature range: -30°C ÷ +140°C
- Ambient temperature range: -30°C÷ +70°C
- Relative humidity: ≤100%
- P band [1]: 6,2 bar
- Declaration according to PED (2014/68/EU)

1) Proportion band (P-band) is defined as the pressure difference between opening pressure set value and pressure the valve is completely open (amount of pressure needed to move valve from fully closed position to fully open position)

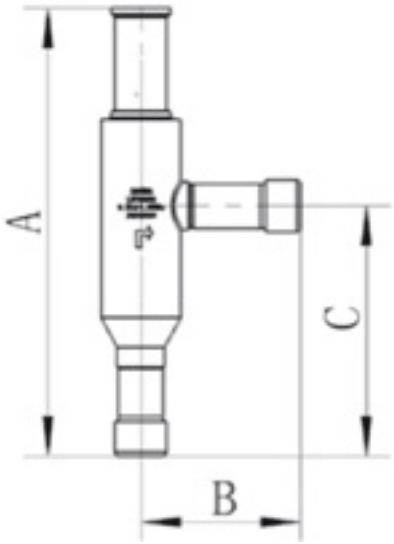
CONDENSING PRESSURE REGULATORTOR



GENERAL CHARACTERISTICS

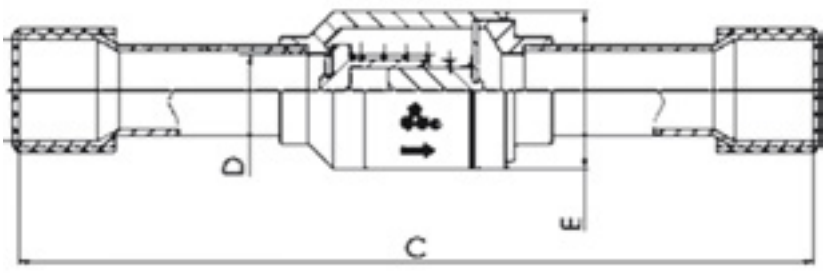
Model	Part Number	Kv[1)]	PS	Factory setting	Pressure regulating	Connection ODF		Dimensions [mm]		
		[m³/h]	[bar]	[bar]	[bar]	[inch]	[mm]	A	B	C
LTF12H01	10500003702	2	43	10±0.5	5÷17.5	-	12	180	64	100
LTF16H01	10500000202	2		7.5±0.5		5/8	16	180	64	100
LTF22H01	10500003202	2		7.5±0.5		7/8	22	180	64	100

1) Under the inlet pressure of the product set value of 7.5 bar + 2.9 bar



Model	Part Number	Kv[1)] (fully open)	PS	Min OPD	Medium temperature range	Connection ODF		Dimensions [mm]	
		[m³/h]	[bar]	[bar]	[bar]	[inch]	[mm]	C	E
YCVS10-004	10160059902	3	49	1.4	-50 ÷ +150	1/2	-	130	100

1) The valve is fully open under 3 bar differential pressure



***CTF** SERIES*

EVAPORATOR PRESSURE REGULATOR



CTF evaporating pressure regulator is installed at the outlet of the evaporator to maintain constant evaporating pressure and prevent it from being too low.

Evaporator pressure regulator is need in systems where:

- necessary to protect against an evaporating pressure is too low (e.g. protection against freezing in a water chiller)
- one system with multiple evaporators working at different evaporating pressure (temperature) to maintain different temperatures in cooling volumes

FEATURES

- ACCURATE AND ADJUSTABLE PRESSURE REGULATION
- STAINLESS STEEL VALVE BODY, CORROSION RESISTANT
- RELIABLE STAINLESS-STEEL BELLOWS
- HIGH LIFETIME: 400,000 TIMES

GENERAL SPECIFICATION

- Refrigerants: Applicable for all common HCFC, HFC, HFO, HC refrigerants such as: R22, R134a, R404A, R410A, R507A, R407C, R407A/F/H, R448A/R449A, R452A, R450A, R513A, R1234ze(E), R1234yf, R32, R452B, 454B/C, R290
- Medium temperature range: -30°C ÷ +140°C
- Ambient temperature range: -30°C÷ +60°C
- Relative humidity: ≤100%
- P band [1]: 6 bar
- Declaration according to PED (2014/68/EU)

1) Proportion band (P-band) is defined as the pressure difference between opening pressure set value and pressure the valve is completely open (amount of pressure needed to move valve from fully closed position to fully open position)

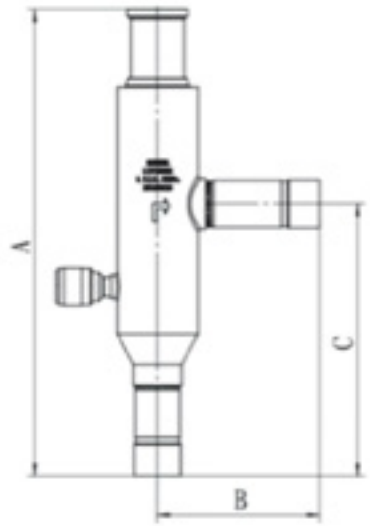
EVAPORATOR PRESSURE REGULATOR



GENERAL CHARACTERISTICS

Model	Part Number	Type	Kv	PS	Factory setting	Pressure regulating	Connection ODF		Dimensions [mm]			Weight
			[m³/h]	[bar]	[bar]	[bar]	[inch]	[mm]	A	B	C	[g]
CTF12H01	CTFX0000202	Without service port	2	43	5	2÷6	-	12	165	64	100	270
CTF16H01	10656000402	Without service port			2		5/8	16	165	64	100	280
CTF16H51	10656000202	With service port					5/8	16	180	64	105	310
CTF22H01	CTFX0000102	Without service port			5		7/8	22	165	64	100	290

1) Under the inlet pressure of the product set value of 0.2MPa+0.29MPa



SOLENOID VALVES



EASIER AUTOMATIC CONTROL
HIGHER EFFICIENCY

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"Yearly SANHUA supplies over
20 Million solenoid valves to the
refrigeration, HVAC&R and home
appliances Industries worldwide."
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***MDF** SERIES*

SOLENOID VALVE





(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016).
MDF series solenoid valves are direct operated or pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATER TIGHT AND SAFE
- QUICK INSTALLATION COIL MQ-A11 FOR FAST AND EASY INSTALLATION AVAILABLE

GENERAL SPECIFICATIONS[1)]

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A
- Suitable for oil-free systems
- Maximum Operating Pressure:
  - MDF 2H...22H and MDF 2L...15L: 4,9 MPa (49 bar)
  - MDF 25H...40H: 4,5 MPa (45 bar)
- Medium temperature TS min./max.:
  - MDF 2H...22H and MDF 2L...15L: -30°C/105°C
  - MDF 25H...40H: -40°C/150°C
- Ambient temperature min./max.: -30°C / +55°C
- Relative humidity: 0 to 95% RH
- Installation position:
  - Liquid, suction and discharge line
  - Preferably coil upwards and flow direction corresponds to the arrow
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU), UL approval

SOLENOID VALVE



TECHNICAL PARAMETERS OF VALVE BODY

Valve Body		Usable Coils	Normal position	Actuation	Kv [m³/h]	MOP [Mpa]	Max. OPD [MPa] Air[7]		Min. OPD[7] [Mpa]
Solder	Flare						AC[4] coil	DC[5][6] coil	
MDF-A03-2H	MDF-A03-2L	AC + DC	NC[1]	Direct	0,16	4,9	3,1	3,1	0,00
MDF-A03-3H	MDF-A03-3L				0,23				
MDF-A03-6H	MDF-A03-6L	AC		Pilot[2]	0,8			NR	0,005
MDF-D03-6H	MDF-D03-6H	DC					NP	2,8	
MDF-A03-10H	MDF-A03-10L	AC			1,9		3,1	NR	
MDF-D03-10H	MDF-D03-10L	DC					NP	2,8	
MDF-A03-15H	MDF-A03-15L	AC			2,3		3,1	NR	
MDF-D03-15H	MDF-D03-15L	DC					NP	2,8	
MDF-A03-15H	-	AC			3,3		3,1	NR	0,02
MDF-A03-20H		AC + DC			5,0			3,1	
MDF-A03-22H					6,0				
MDF-B03-25H				Pilot (P)[3]	10,3	4,5			
MDF-B03-32H					15,4				
MDF-B03-40H					25,0				

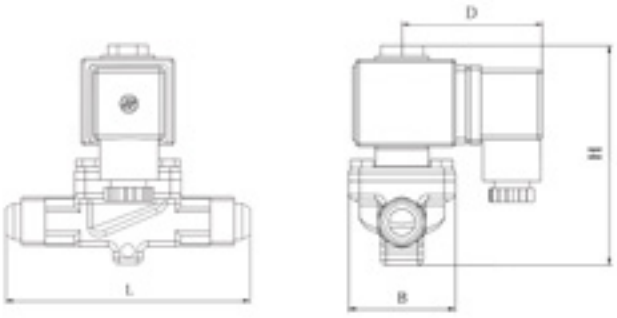
Note: 1) NC means: Normally closed valve
2) Membrane operated
3) Piston operated
4) NP means: not permitted to use, select MDF-A03 model
5) NR means: not recommended to use. Only possible with R134a and min. evaporation temp. / max. condensing temp. -15°C/+58°C, select MDF-D03 model
6) Pressure values valid for 24V DC coil. Values for 12V DC coils on request
7) Max. OPD at 85% Ue.(AC, Air); Max. OPD at 90% Ue.(DC, Air)

SOLENOID VALVE



DIMENSIONS

Valve Body
Thread Connection



Model Valve Body	Part Number[1) 2)]	SAE Flare Connection [inch]	Kv [m³/h]	PED Category Group 2	Dimensions [mm]			
					L	B	D	H
MDF-A03-2L 001	10125000102	1/4	0,16	4.3	59	30	53	82
MDF-A03-3L 001	10125009202	1/4	0,23	4.3	59	30	53	82
MDF-A03-3L 003	10125004402	3/8	0,23	4.3	70	30	53	82
MDF-A03-6L 001	10125009302	3/8	0,8	4.3	69	36	53	88
MDF-D03-6L 005	10125018002	3/8	0,8	4.3	69	36	53	88
MDF-A03-6L 003	10125004502	1/2	0,8	4.3	75	36	53	88
MDF-D03-6L 003	10125017802	1/2	0,8	4.3	75	36	53	88
MDF-A03-10L 003	10125005402	1/2	1,9	4.3	84	42	53	96
MDF-D03-10L 003	10125018902	1/2	1,9	4.3	84	42	53	96
MDF-A03-10L 001	10125009402	5/8	1,9	4.3	92	42	53	96
MDF-D03-10L 001	10125018702	5/8	1,9	4.3	92	42	53	96
MDF-A03-15L 001	10125009502	5/8	2,3	4.3	104	52	53	100
MDF-D03-15L 001	10125019302	5/8	2,3	4.3	104	52	53	100
MDF-A03-15L 003	10125004802	7/8	2,3	4.3	119	52	53	100
MDF-D03-15L 003	10125019502	7/8	2,3	4.3	119	52	53	100

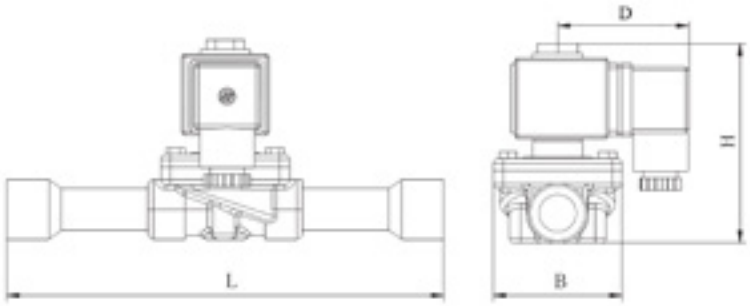
Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.
3) Please contact Sanhua if you need MDF15 with Kv value 3.3.

SOLENOID VALVE



DIMENSIONS

Valve Body - Inch Solder Connection



Model Valve Body	Part Number[1) 2)]	Solder Connection ODF	Kv	PED Category Group 2	Dimensions [mm]			
		[inch]	[m³/h]		L	B	D	H
MDF-A03-2H 001	10125011202	1/4	0,16	4.3	102	30	53	82
MDF-A03-3H 001	10125011302	1/4	0,23	4.3	102	30	53	82
MDF-A03-3H 003	10125003602	3/8	0,23	4.3	117	30	53	82
MDF-A03-6H 001	10125011402	3/8	0,8	4.3	111	36	53	88
MDF-D03-6H 001	10125017402	3/8	0,8	4.3	111	36	53	88
MDF-A03-6H 003	10125004202	1/2	0,8	4.3	127	36	53	88
MDF-D03-6H 003	10125017502	1/2	0,8	4.3	127	36	53	88
MDF-A03-10H 001	10125011502	1/2	1,9	4.3	127	42	53	95
MDF-D03-10H 001	10125017202	1/2	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	5/8	1,9	4.3	160	42	53	95
MDF-D03-10H 003	10125018402	5/8	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	5/8	2,3	4.3	176	52	53	100
MDF-D03-15H 005	10125017102	5/8	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	7/8	2,3	4.3	176	52	53	100
MDF-D03-15H 003	10125019002	7/8	2,3	4.3	176	52	53	100
MDF-A03-15H 051	MDFX0002102	5/8	3,3	4.3	176	52	53	100
MDF-A03-15H 052	MDFX0002202	7/8	3,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	7/8	5	4.3	191	60	53	117
MDF-A03-22H 001	10125011802	7/8	6,0	4.3	281	60	53	117
MDF-A03-20H 003	10125005602	1-1/8	5	4.3	214	52	53	117
MDF-A03-22H 009	10125006202	1-1/8	6,0	4.3	281	60	53	117
MDF-B03-25H 003	10125006902	1-1/8	10,3	4.3	256	76	53	144
MDF-A03-22H 003	10125005102	1-3/8	6,0	4.3	281	60	53	117
MDF-B03-25H 004	10125006802	1-3/8	10,3	4.3	280	76	53	144
MDF-B03-32H 001	10125009102	1-3/8	15,4	4.3	281	76	53	144
MDF-B03-32H 002	10125007502	1-5/8	15,4	I	281	76	53	144
MDF-B03-40H 002	10125004302	1-5/8	25	I	281	84	53	152
MDF-B03-40H 004	10125007702	2-1/8	25	I	281	84	53	152

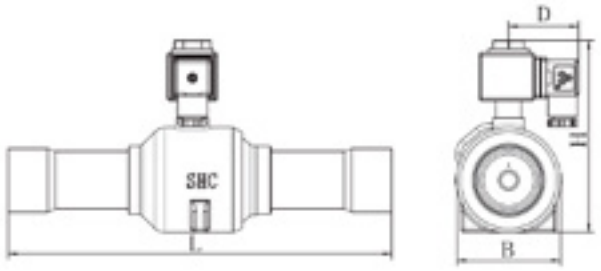
Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE



DIMENSIONS

Valve Body – Metrical Solder Connection



Model Valve Body	Part Number[1) 2)]	Solder Connection ODF [mm]	Kv [m³/h]	PED Category Group 2	Dimensions [mm]			
					L	B	D	H
MDF-A03-2H 003	10125006502	6	0,16	4.3	102	30	53	82
MDF-A03-3H 005	10125003802	6	0,23	4.3	102	30	53	82
MDF-A03-3H 007	10125003402	10	0,23	4.3	117	30	53	82
MDF-A03-6H 005	10125004102	10	0,8	4.3	111	36	53	88
MDF-D03-6H 005	10125016802	10	0,8	4.3	111	36	53	88
MDF-A03-6H 007	10125006702	12	0,8	4.3	127	36	53	88
MDF-D03-6H 007	10125018202	12	0,8	4.3	127	36	53	88
MDF-A03-10H 005	10125003502	12	1,9	4.3	127	42	53	95
MDF-D03-10H 005	10125017002	12	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	16	1,9	4.3	160	42	53	95
MDF-D03-10H 003	10125018402	16	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	16	2,3	4.3	176	52	53	100
MDF-D03-15H 005	10125017102	16	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	22	2,3	4.3	176	52	53	100
MDF-D03-15H 003	10125019002	22	2,3	4.3	176	52	53	100
MDF-A03-15H 051	MDFX0002102	16	3,3	4.3	176	52	53	100
MDF-A03-15H 052	MDFX0002202	22	3,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	22	5	4.3	191	52	53	117
MDF-A03-22H 001	10125011802	22	6,0	4.3	281	60	53	117
MDF-A03-20H 007	10125005702	28	5	4.3	214	52	53	117
MDF-A03-22H 011	10125000302	28	6,0	4.3	281	60	53	117
MDF-B03-25H 005	10125007002	28	10,3	4.3	256	76	53	144
MDF-A03-22H 003	10125005102	35	6,0	4.3	281	60	53	117
MDF-B03-25H 004	10125006802	35	10,3	4.3	280	76	53	144
MDF-B03-32H 001	10125009102	35	15,4	4.3	281	76	53	144
MDF-B03-32H 003	10125007102	42	15,4	I	281	76	53	144
MDF-B03-40H 003	10125007602	42	25	I	281	84	53	152
MDF-B03-40H 004	10125007702	54	25	I	281	84	53	152

Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE



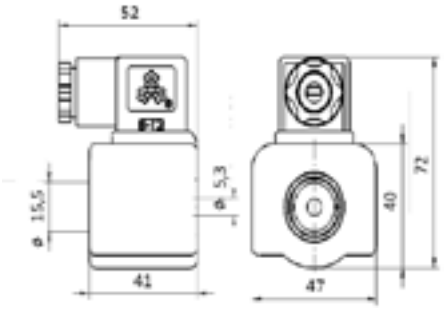
TECHNICAL PARAMETERS OF COIL

Model Coil[1]	Part Number[2]	Plug type	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insu-lation Class	Protection Class (w/plug)	UL Approval
MQ-A03024-000001	10820009902	DIN Plug	AC	24	10,5W (50Hz) 8,5W (60Hz)	-15% +10%	F	IP67	NO
MQ-A03024-000018	10820013702							IP65	YES
MQ-A0311A-000001	10820010102			110 to 120	12W (50Hz) 10W (60Hz)			IP67	NO
MQ-A0311A-000005	10820016502							IP65	YES
MQ-A0322G-000001[4]	10820010002			220 to 240	12W (50Hz) 10W (60Hz)			IP67	NO
MQ-A0322G-000024	10820015002							IP65	YES
MQ-A11024-000001	10820009402	Quick Install Plug[3]	AC	24	9,5 (50Hz) 8,5 (60Hz)				OR[5]
MQ-A1111A-000001	10820009202			110 to 120	11,5 (50Hz) 10,0 (60Hz)			IP67	OR
MQ-A1122G-000001	10820009002			220 to 240	11 (50Hz) 9,5 (60Hz)				OR
MQ-D03012-000002	10820001302	DIN Plug	DC	12	15	±10%			NO
MQ-D03024-000002	10820001002			24				IP67	NO
MQ-D03110-000003	OR			110					NO

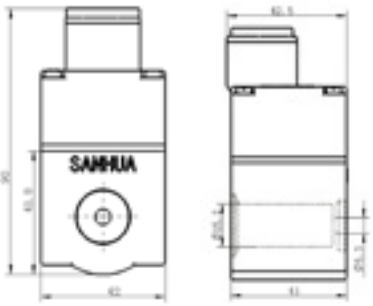
Note: 1) Match with valve body: Please respect information in table "Technical Parameters of valve body". See page 2 of this document
2) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws
3) Outer cable diameter: 7,1 to 9,7mm and cable core 0,75 to 2,5mm^2
4) Coil MQ-A0322G-000001 is third party certified for usage with flammable refrigerants (A2L, A3). Usage of the other coils (only without UL approval) with flammable refrigerants – please contact Sanhua.
5) OR: On Request

DIMENSIONS - COILS

MQ-A03 and MQ-D03 (Coils with DIN Plug):

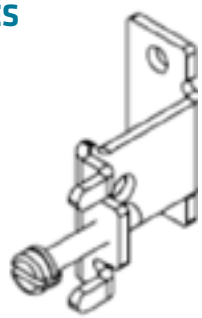


MQ-11 (Coils with Quick Install Plug):



ACCESSORIES

Bracket



Model[1]	Part Number	Applicable Valve Models	
		Solder	Flare
MDF-A03-033001	20125000902	MDF-A03-2H	MDF-A03-2L
		MDF-A03-3H	MDF-A03-3L
		MDF-A03-6H	MDF-A03-6L
		MDF-A03-10H	MDF-A03-10L
		MDF-A03-15H	MDF-A03-15L

Note: 1) Extent of delivery: bracket and screw

FOR SERVICE PURPOSE PERMANENT MAGNET COIL AVAILABLE

Coil Model	Part Number
KCT01	10108000102

***MDF** SERIES*

SOLENOID VALVE





(GreenTech range: for fluids GROUP 1 according to Directive 2014/68/EU or GROUP A3/A2L according to ANSI-ASHRAE 34-2016).
MDF series solenoid valves are direct operated or pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATER TIGHT AND SAFE

GENERAL SPECIFICATIONS[1)]

- Applicable for HC, HFC/HFO, HFO refrigerants such as: R290, R1234ze(E), R1234yf, R447A, R452B, R454B, R454C, R455A
- Suitable for oil-free systems
- Maximum Operating Pressure:
  - MDF 2H...22H: 4,9 MPa (49 bar)
  - MDF 25H...40H: 4,5 MPa (45 bar)
- Medium temperature TS min./max.:
  - MDF 2H...22H: -30°C/105°C
  - MDF 25H...40H: -40°C/150°C
- Ambient temperature min./max.: -30°C / +55°C
- Relative humidity: 0 to 95% RH
- Installation position:
  - Liquid, suction and discharge line
  - Preferably coil upwards and flow direction corresponds to the arrow
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU)
  Certification acc. EN60335-2-24/40/89 as "not source of ignition"; EN60730
  Certification acc. PED Cat II: EN ISO 21922-2021
  (for models in PED Cat. II)

SOLENOID VALVE



TECHNICAL PARAMETERS OF VALVE BODY

Valve Body Solder	Normal position	Actuation	Kv [m³/h]	MOP [MPa] Air	Max. OPD [Mpa]	Min. OPD [Mpa]
MDF-A03-2H	NC[1]	Direct	0,16	4,9	3,1[3]	0,00
MDF-A03-3H			0,23			
MDF-A03-6H		Pilot[2]	0,8			0,005
MDF-A03-10H			1,9			
MDF-A03-15H			2,3			
MDF-A03-15H			3,3			
MDF-A03-20H			5,0			
MDF-A03-22H			6,0			
MDF-B03-25H		Pilot (P)[3]	10,3	4,5		0,02
MDF-B03-32H			15,4			
MDF-B03-40H			25,0			

Note: 1) NC means: Normally closed valve
2) Membrane operated
3) Piston operated
4) Max. OPD at 85% Ue.(Air). Other coils on request

DIMENSIONS

Valve Body - Inch Solder Connection, Models with MOP 45 bar

Model Valve Body	Part Number[1) 2)]	SAE Flare Connection [inch]	Kv [m³/h]	PED Category Fluid Group I	Dimensions [mm]			
					L	B	D	H
MDF-A03-2H 001	10125011202	1/4	0,16	4.3	102	30	53	82
MDF-A03-3H 001	10125011302	1/4	0,23	4.3	102	30	53	82
MDF-A03-3H 003	10125003602	3/8	0,23	4.3	117	30	53	82
MDF-A03-6H 001	10125011402	3/8	0,8	4.3	111	36	53	88
MDF-A03-6H 003	10125004202	1/2	0,8	4.3	127	36	53	88
MDF-A03-10H 001	10125011502	1/2	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	5/8	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	5/8	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	7/8	2,3	4.3	176	52	53	100
MDF-A03-15H 051	MDFX0002102	5/8	3,3	4.3	176	52	53	100
MDF-A03-15H 052	MDFX0002202	7/8	3,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	7/8	5	4.3	191	52	53	117
MDF-A03-22H 001	10125011802	7/8	6,0	4.3	281	60	53	117
MDF-A03-20H 003	10125005602	1-1/8	5	II	214	52	53	117
MDF-A03-22H 009	10125006202	1-1/8	6,0	II	281	60	53	117
MDF-B03-25H 003	10125006902	1-1/8	10,3	II	256	76	53	144
MDF-A03-22H 003	10125005102	1-3/8	6,0	II	281	60	53	117
MDF-B03-25H 004	10125006802	1-3/8	10,3	II	280	76	53	144
MDF-B03-32H 001	10125009102	1-3/8	15,4	II	281	76	53	144
MDF-B03-32H 002	10125007502	1-5/8	15,4	II	281	76	53	144
MDF-B03-40H 002	10125004302	1-5/8	25	II	281	84	53	152
MDF-B03-40H 004	10125007702	2-1/8	25	II	281	84	53	152

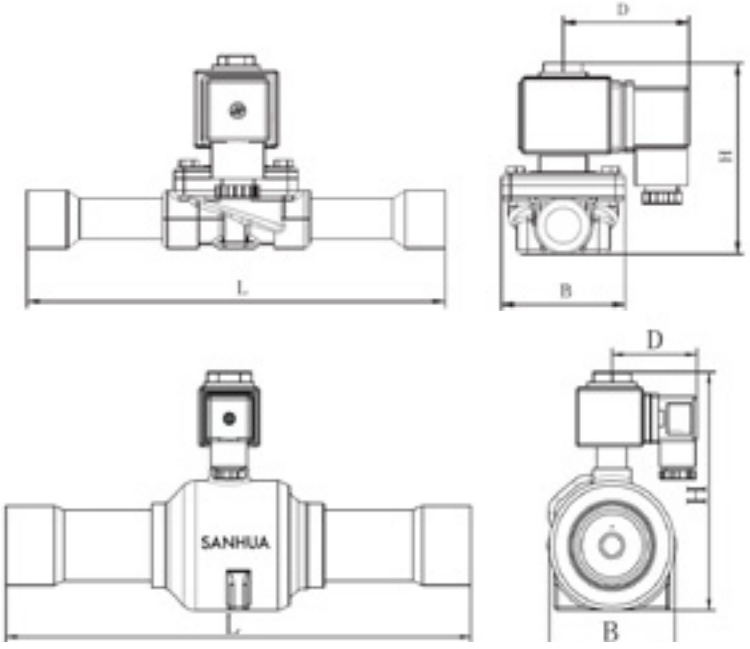
SOLENOID VALVE



Valve Body – Metrical Solder Connection, Models with MOP 45 bar

Model Valve Body	Part Number[1) 2)]	SAE Flare Connection [mm]	Kv [m³/h]	PED Category Fluid Group I	Dimensions [mm]			
					L	B	D	H
MDF-A03-2H 003	10125006502	6	0,16	4.3	102	30	53	82
MDF-A03-3H 005	10125003802	6	0,23	4.3	102	30	53	82
MDF-A03-3H 007	10125003402	10	0,23	4.3	117	30	53	82
MDF-A03-6H 005	10125004102	10	0,8	4.3	111	36	53	88
MDF-A03-6H 007	10125006702	12	0,8	4.3	127	36	53	88
MDF-A03-10H 005	10125003502	12	1,9	4.3	127	42	53	95
MDF-A03-10H 003	10125006302	16	1,9	4.3	160	42	53	95
MDF-A03-15H 005	10125003702	16	2,3	4.3	176	52	53	100
MDF-A03-15H 003	10125005002	22	2,3	4.3	176	52	53	100
MDF-A03-15H 051	MDFX0002102	16	3,3	4.3	176	52	53	100
MDF-A03-15H 052	MDFX0002202	22	3,3	4.3	176	52	53	100
MDF-A03-20H 001	10125011702	22	5	4.3	191	52	53	117
MDF-A03-22H 001	10125011802	22	6,0	4.3	281	60	53	117
MDF-A03-20H 007	10125005702	28	5	II	214	52	53	117
MDF-A03-22H 011	10125000302	28	6,0	II	281	60	53	117
MDF-B03-25H 005	10125007002	28	10,3	II	256	76	53	144
MDF-A03-22H 003	10125005102	35	6,0	II	281	60	53	117
MDF-B03-25H 004	10125006802	35	10,3	II	280	76	53	144
MDF-B03-32H 001	10125009102	35	15,4	II	281	76	53	144
MDF-B03-32H 003	10125007102	42	15,4	II	281	76	53	144
MDF-B03-40H 003	10125007602	42	25	II	281	84	53	152
MDF-B03-40H 004	10125007702	54	25	II	281	84	53	152

Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details



SOLENOID VALVE



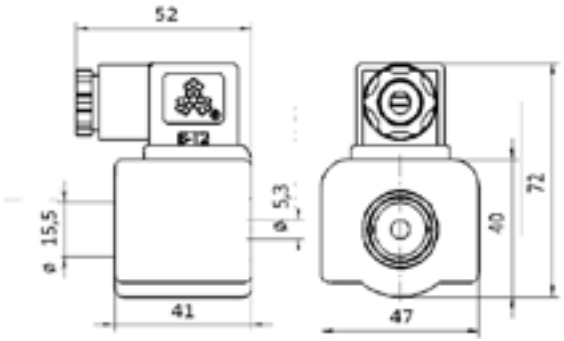
TECHNICAL PARAMETERS OF COIL

Model Coil[1)]	Part Number	Plug type	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insulation Class	Protection Class (w/plug)	UL Approval
MQ-A03024-000001	10820009902	DIN	AC	24	10,5 (50Hz) 8,5 (60Hz)	-15% +10%	F	IP67	NO
MQ-A0311A-000001	10820010102			110 to 120	12 (50Hz) 10 (60Hz)			IP67	NO
MQ-A0322G-000001	10820010002			220 to 240	12 (50Hz) 10 (60Hz)			IP67	NO

Note: 1) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws

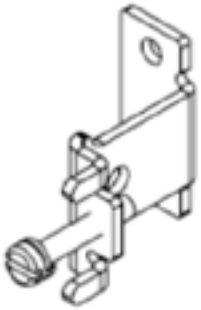
DIMENSIONS - COILS

MQ-A03 (Coil with DIN Plug):



ACCESSORIES

Bracket



Model[1)]	Part Number	Applicable Valve Models
		Solder
MDF-A03-033001	20125000902	MDF-A03-2H
		MDF-A03-3H
		MDF-A03-6H
		MDF-A03-10H
		MDF-A03-15H

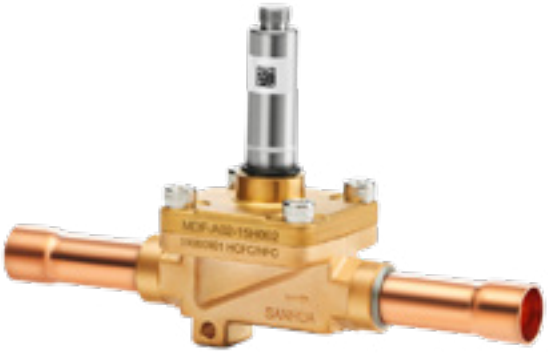
Note: 1) Extent of delivery: bracket and screw

FOR SERVICE PURPOSE PERMANENT MAGNET COIL AVAILABLE

Coil Model	Part Number
KCT01	10108000102

MDF-A02 (NO) *SERIES*

SOLENOID VALVE



(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016).
MDF-A02 series solenoid valves are normally open (NO) pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATERTIGHT AND SAFE

GENERAL SPECIFICATIONS[1)]

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A
- Medium temperature: -30°C ~ +105°C
- Ambient temperature: -30°C ~ +55°C
- Relative humidity: 0 to 95%RH
- Installation position:
  - liquid, suction and discharge line
  - preferably coil upwards and flow direction corresponds to the arrow
- Declaration according to LVD and PED

Note: 1) Please contact Sanhua to get models for oil-free application.

SOLENOID VALVE



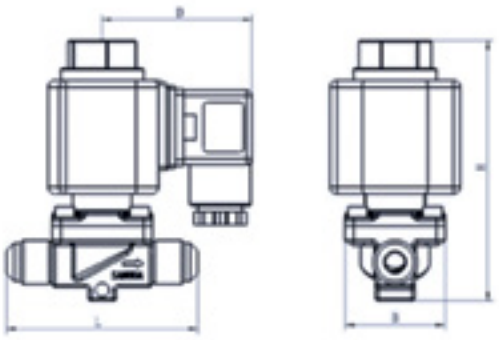
TECHNICAL PARAMETERS OF VALVE BODY

Valve Body		Usable Coils	Normal position	Actuation	Kv [m³/h]	MOP [Mpa]	Max. OPD [Mpa]	Min. OPD[4] [Mpa]
Solder	Flare							
MDF-A02-6H	MDF-A02-6L	AC/DC	NO[1]	Pilot[2]	0,8	4,5	2,8[3]	0,02
MDF-A02-10H	MDF-A02-10L				1,9			
MDF-A02-15H	MDF-A02-15L				2,3			
MDF-A02-20H					5			
MDF-A02-22H					6			

Note: 1) NO means: Normally open valve
2) Membrane operated
3) Max. OPD with liquid is 2,1 MPa, Max. OPD at 85% Ue
4) Min. OPD: values referred to 100% of nominal flow

DIMENSIONS

Valve Body - Thread Connection



Model Valve Body	Part Number[1)2)]	SAE Flare Connection [inch]	Kv [m³/h]	PED Category Group 2	Dimensions [mm]			
					L	B	D	H
MDF-A02-6L 002	10125012502	3/8	0,8	4.3	69	36	53	95
MDF-A02-6L 004	10125012602	1/2	0,8	4.3	75	36	53	95
MDF-A02-10L 002	10125012902	5/8	1,9	4.3	92	42	53	102,5
MDF-A02-10L 004	10125013002	1/2	1,9	4.3	84	42	53	102,5
MDF-A02-15L 002	10125013302	5/8	2,3	4.3	104	52	53	107,5
MDF-A02-15L 004	10125013402	7/8	2,3	4.3	119	52	53	107,5

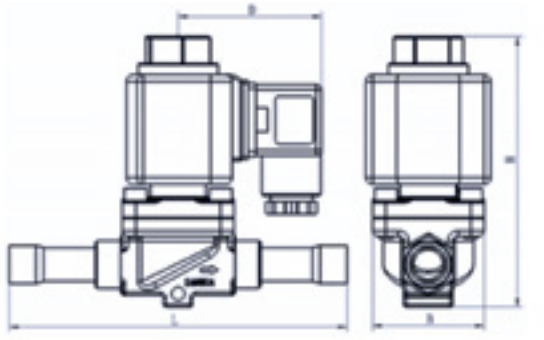
Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE



DIMENSIONS

Valve Body - Solder Connection



Model Valve Body	Part Number[1)2)]	Solder Connection ODF		Kv	PED Category Fluid Group 2	Dimensions [mm]			
		[inch]	[mm]	[m³/h]		L	B	D	H
MDF-A02-6H 002	10125001802	3/8		0,8	4.3	111	36	53	95
MDF-A02-6H 004	10125012302	1/2		0,8	4.3	127	36	53	95
MDF-A02-6H 006	10125009702		10	0,8	4.3	111	36	53	95
MDF-A02-6H 008	10125012402		12	0,8	4.3	127	36	53	95
MDF-A02-10H 002	10125012002	1/2		1,9	4.3	127	42	53	102,5
MDF-A02-10H 004	10125012702	5/8	16	1,9	4.3	160	42	53	102,5
MDF-A02-10H 006	10125012802		12	1,9	4.3	127	42	53	102,5
MDF-A02-15H 004	10125013102	7/8	22	2,3	4.3	176	52	53	107,5
MDF-A02-15H 006	10125013202	5/8	16	2,3	4.3	176	52	53	107,5
MDF-A02-20H 002	10125013502	7/8	22	5	4.3	191	60	53	124
MDF-A02-20H 004	10125013602	1-1/8		5	4.3	214	60	53	124
MDF-A02-20H 008	10125013702		28	5	4.3	214	60	53	124
MDF-A02-22H 002	10125013802	7/8	22	6	4.3	281	60	53	124
MDF-A02-22H 004	10125013902	1-3/8	35	6	I	281	60	53	124
MDF-A02-22H 008	10125014002	1-1/8		6	4.3	281	60	53	124
MDF-A02-22H 012	10125015202		28	6	4.3	281	60	53	124

Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE



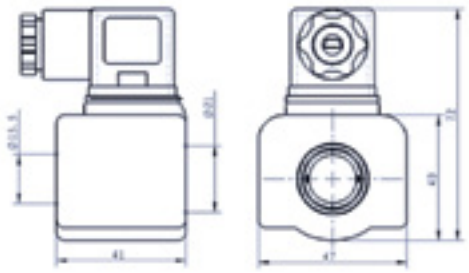
TECHNICAL PARAMETERS OF COIL

Model Coil	Part Number[1)]	Plug type[2)]	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insu-lation Class	Protection Class (w/plug)	UL Approval
MQ-A02024-000001	10820004502	DIN Plug	AC	24	12,5 (50Hz) 10,5 (60Hz)	-15% +10%	F	IP67	NO
MQ-A0211A-000001	10820003702			110 to 120					NO
MQ-A0222G-000001	10820004102			220 to 240					NO
MQ-D02012-000001	10820006702		DC	12	10	±10%			NO
MQ-D02024-000001	10820006902			24					NO

Note: 1) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws
2) Outer cable diameter: 7,1 to 9,7mm and cable core 0,75 to 2,5mm^2

DIMENSIONS - COILS

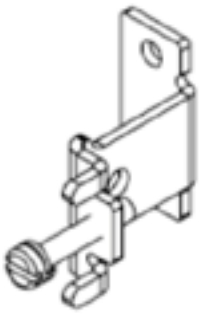
MQ-A02 (Coils with DIN Plug):



ACCESSORIES

Bracket

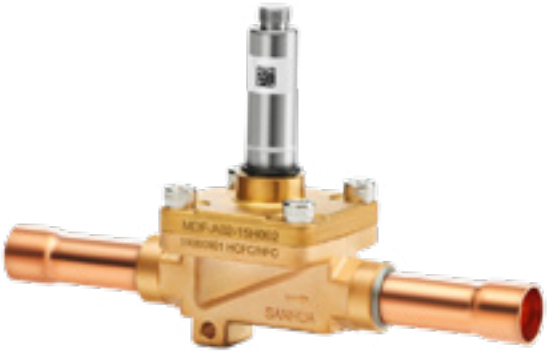
Model[1)]	Part Number	Applicable Valve Models	
		Solder	Flare
MDF-A03-033001	20125000902	MDF-A02-6H	MDF-A02-6L
		MDF-A02-10H	MDF-A02-10L
		MDF-A02-15H	MDF-A02-15L



Note: 1) Extent of delivery: bracket and screw

MDF-A02 (NO) *SERIES*

SOLENOID VALVE



(GreenTech range: for fluids GROUP 1 according to Directive 2014/68/EU or GROUP A3/A2L according to ANSI-ASHRAE 34-2016)
MDF-A02 series solenoid valves are normally open (NO) pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD
- COILS ARE DOUBLE SEALED, WATERTIGHT AND SAFE

GENERAL SPECIFICATIONS[1)]

- Applicable for all common HFC/HFO/HC refrigerants such as: R290, R1234yf, R1234ze(E), R32[2)], R454B, R454C
- Medium temperature: -30°C ~ +105°C
- Ambient temperature: -30°C ~ +55°C
- Relative humidity: 0 to 95%RH
- Installation position:
  - liquid, suction and discharge line
  - preferably coil upwards and flow direction corresponds to the arrow
- Declaration according to LVD and PED

Note: 1) MDF series is not suitable for "oil free" systems; customized models for such application are available on request
2) With R32 only respecting MOP 45 bar

SOLENOID VALVE



TECHNICAL PARAMETERS OF VALVE BODY

Valve Body Solder	Usable Coils	Normal position	Actuation	Kv [m³/h]	MOP [Mpa]	Max. OPD [Mpa]	Min. OPD[4] [Mpa]
MDF-A02-6H	AC/DC	NO[1]	Pilot[2]	0,8	4,5	2,8[3]	0,02
MDF-A02-10H				1,9			
MDF-A02-15H				2,3			
MDF-A02-20H				5			
MDF-A02-22H				6			

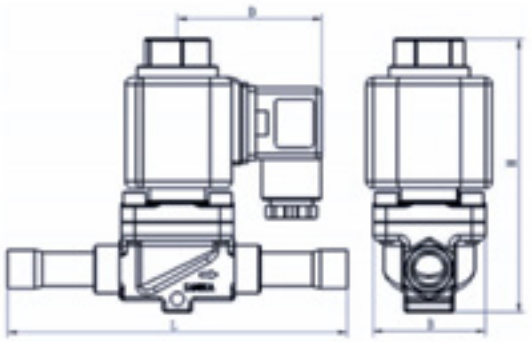
Note: 1) NO means: Normally open valve
2) Membrane operated
3) Max. OPD with liquid is 2,1 MPa, Max. OPD at 85% Ue
4) Min. OPD: values referred to 100% of nominal flow

SOLENOID VALVE



DIMENSIONS

Valve Body - Solder Connection



Model Valve Body	Part Number[1)2)]	Solder Connection ODF		Kv [m³/h]	PED Category Fluid Group 1	Dimensions [mm]			
		[inch]	[mm]			L	B	D	H
MDF-A02-6H 002	10125001802	3/8		0,8	4.3	111	36	53	95
MDF-A02-6H 004	10125012302	1/2		0,8	4.3	127	36	53	95
MDF-A02-6H 006	10125009702		10	0,8	4.3	111	36	53	95
MDF-A02-6H 008	10125012402		12	0,8	4.3	127	36	53	95
MDF-A02-10H 002	10125012002	1/2		1,9	4.3	127	42	53	102,5
MDF-A02-10H 004	10125012702	5/8	16	1,9	4.3	160	42	53	102,5
MDF-A02-10H 006	10125012802		12	1,9	4.3	127	42	53	102,5
MDF-A02-15H 004	10125013102	7/8	22	2,3	4.3	176	52	53	107,5
MDF-A02-15H 006	10125013202	5/8	16	2,3	4.3	176	52	53	107,5
MDF-A02-20H 002	10125013502	7/8	22	5	4.3	191	60	53	124
MDF-A02-20H 004	10125013602	1-1/8		5	4.3	214	60	53	124
MDF-A02-20H 008	10125013702		28	5	4.3	214	60	53	124
MDF-A02-22H 002	10125013802	7/8	22	6	4.3	281	60	53	124
MDF-A02-22H 008	10125014002	1-1/8		6	4.3	281	60	53	124
MDF-A02-22H 012	10125015202		28	6	4.3	281	60	53	124

Note: 1) Extent of delivery: valve body without coil
2) Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE



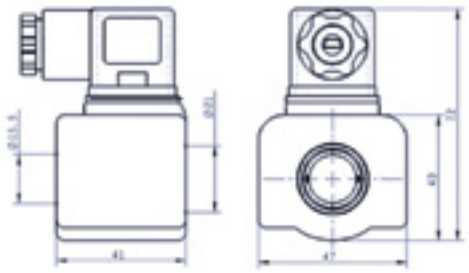
TECHNICAL PARAMETERS OF COIL

Model Coil	Part Number[1)]	Plug type[2)]	Supply	Rated Voltage [V]	Power [W]	Voltage Tolerance	Insu-lation Class	Protection Class (w/plug)	UL Approval
MQ-A02024-000001	10820004502	DIN Plug	AC	24	12,5 (50Hz) 10,5 (60Hz)	-15% +10%	F	IP67	NO
MQ-A0211A-000001	10820003702			110 to 120					NO
MQ-A0222G-000001	10820004102			220 to 240					NO
MQ-D02012-000001	10820006702		DC	12	10	±10%			NO
MQ-D02024-000001	10820006902			24					NO

Note: 1) Extent of delivery: coil body, fastening screw for the coil body, plug for electrical connection incl. Gaskets and fastening screws
2) Outer cable diameter: 7,1 to 9,7mm and cable core 0,75 to 2,5mm^2

DIMENSIONS - COILS

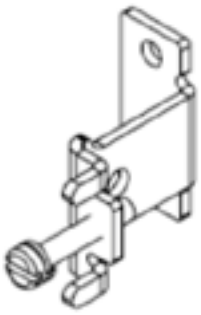
MQ-A02 (Coils with DIN Plug):



ACCESSORIES

Bracket

Model[1)]	Part Number	Applicable Valve Models	
		Solder	Flare
MDF-A03-033001	20125000902	MDF-A02-6H	MDF-A02-6L
		MDF-A02-10H	MDF-A02-10L
		MDF-A02-15H	MDF-A02-15L



Note: 1) Extent of delivery: bracket and screw

MQ-A11 *SERIES*

SOLENOID COIL



The special strength of the MQ-A11 coil series is the quick and easy installation. At the same time the product offers outstanding product features and it fulfill additionally the installation requirements of a wide range of applications. Typically are such coils used e.g. in the refrigeration, freezing systems, air conditioning and heat pump industry.
The MQ-A11 coil fits to all MDF-A03 and MDF-B03 solenoid valves.

FEATURES

- QUICK INSTALLATION VIA TOOLLESS WIRE CONNECTION SYSTEM
- EASY CABLE ENTRY MANAGEMENT DUE TO JAM SCREW CABLE TIGHTENING
- IMPROVED PROTECTION CLASS
- FLEXIBLE AND SOLID CABLES USABLE
- REDUCED ENERGY CONSUMPTION

TECNHICAL PARAMETERS

Model Coil[1)]	Part Number[2)]	Rated Voltage [V]	Supply	Power [W]	Frequ. [Hz]	Voltage Tolerance	Insulation Class	Protection class	Outer Cable φ [mm]	Cable core [mm²]
MQ-A11 024-000001	10820009402	24	AC	9,5 (50Hz) 8,5 (60Hz)	50/60	-15% to +10%	F	IP67	7,1 to 9,7	0,75 to 2,5
MQ-A11 11A-000001	10820009202	110 to 120		11,5 (50Hz) 10,0 (60Hz)						
MQ-A11 22G-000001	10820009002	220 to 240		11,0 (50Hz) 9,5 (60Hz)						

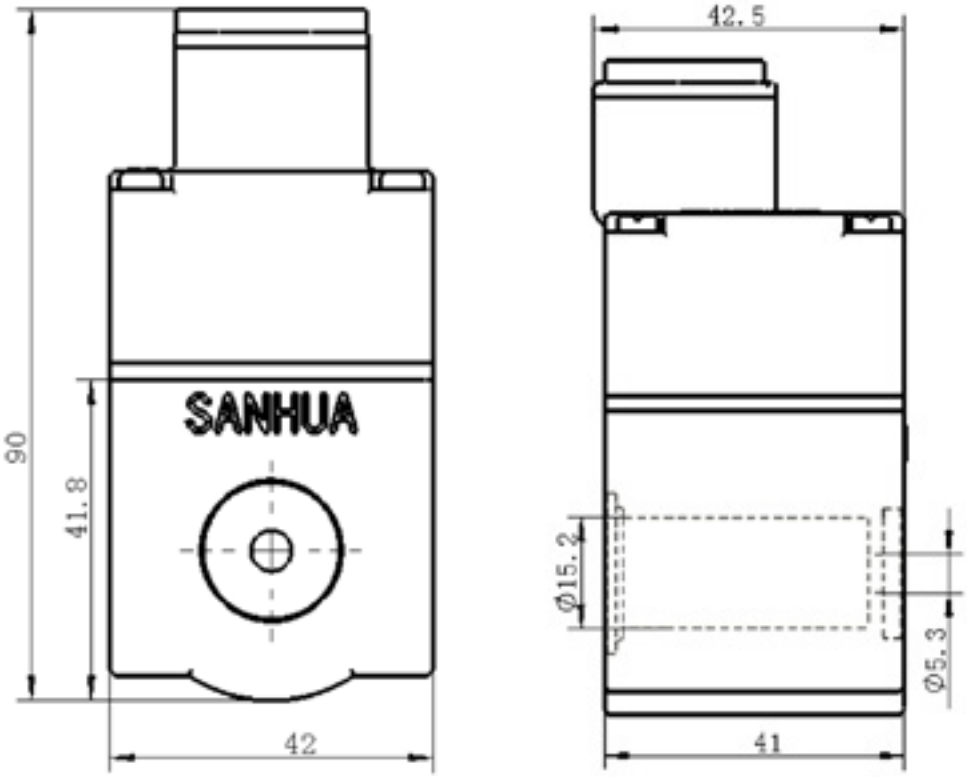
Note: 1) Applicable to MDF-A03 and MDF-B03 valve bodies
2) Extent of delivery: coil body, junction box, gasket, 4x fixing screws, terminal strip and jam screw

SOLENOID COIL



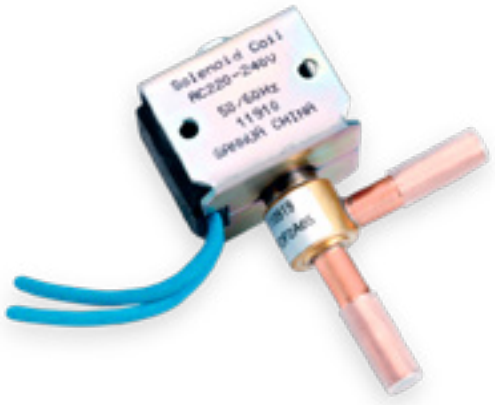
DIMENSIONS - COIL

Coils with junction box (MQ-A11)



FDF (NC) *SERIES*

SOLENOID VALVE



FDF series solenoid valves are direct operated or pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- GREAT VALVE OPENING PERFORMANCE, HIGH MOPD

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HFO, HC refrigerants.
  - fluids GROUP 2 (according to Directive 2014/68/EU) or GROUP A1 (according to ANSI-ASHRAE 34-2016): R22, R134a, R404A, R410A, R507, R407C, R407A/F, R448A/R449A, R452A, R450A/R513A
  - fluids GROUP 1 (according to Directive 2014/68/EU) or GROUP A3/A2L (according to ANSI-ASHRAE 34-2016): R290, R1234yf, R1234ze(E), R32, R447A, R452B, R454B, R454C, R600a
- Medium temperature TS min./max.: -30°C / 120°C
- Ambient temperature min./max.: -30°C / +50°C
- Relative humidity: 0 to 95% RH
- Installation position: - Liquid, suction and discharge line
  - Coil upwards, coil axis ± 15° tolerance versus vertical axis
  - Flow direction corresponds to the arrow
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU), RoHS (2011/65/EU), REACH, Pressure Equipment (Safety) Regulation 2016 (2016/1105), Electrical Equipment (Safety) Regulation 2016 (2016/1101), EN60335-2-24/40/89 for flammable refrigerants (together with coil FQ-A05 22G-001022 VDE certification acc. EN60335-2-24/40/89 for flammable refrigerants)

TECHNICAL PARAMETERS OF VALVE BODY

Model Valve Body	Product Number	Normal Position	Actuation	Ø Seat	Kv	MOP	Max. OPD	Min. OPD	Ød OD	Ød OD	Measurement [mm]		
				[mm]	[m³/h]	[MPa]	[MPa]	[MPa]	[mm]	[inch]	L	L1	L2
FDF 2A 94	10120019802	NC	Direct	1,9	0,08	4,5	3,4	0	6,35	1/4	66,5	32	34
FDF 2.5A 08	10120021102		Pilot	2,5	0,21		2,1	0,01	6,35	1/4	84,6	37,5	38
FDF 3A 08	10120019302			2,7	0,26		3,4		7,94	5/16	81,4	34,5	35,7
FDF 4A 10	10120025302			4,0	0,30		2,8	0	6,35	1/4	81,2	35,3	37,8
FDF 6A 58	10120018702			5,8	0,56		3,4	0,01	7,94	5/16	81,6	34,5	35,7
FDF 11A 14	10120020402			11	2,40		2,8	0,02	12,7	1/2	117,5	62	62
FDF 13A08	10120026402			13	3,5				15,88	5/8	117,5	62	62

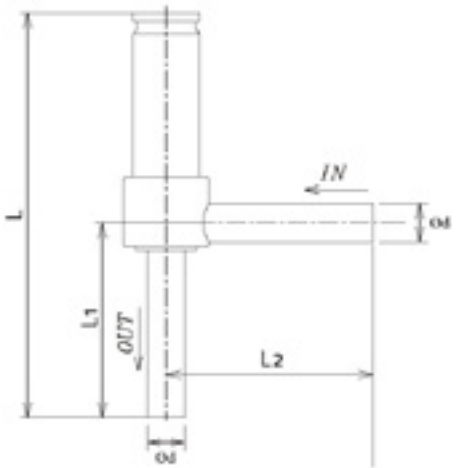
Note: 1) New model with stainless steel body (lead free)

SOLENOID VALVE

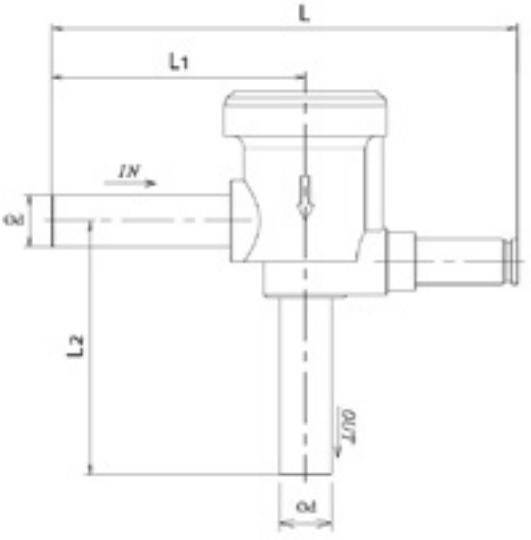


DIMENSIONS - VALVE BODY

FDF 2A ... FDF 6A



FDF 11A ... FDF 13A

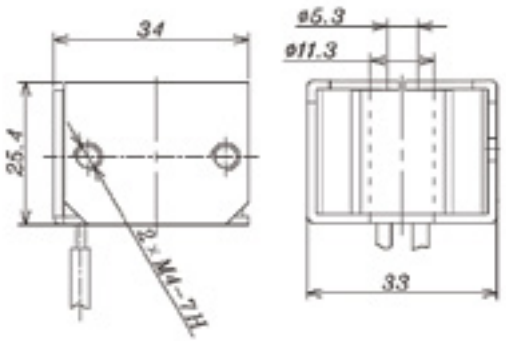


TECNHICAL PARAMETERS OF COIL

Model Coil	Product Number	Rated Voltage [V]	Supply	Power [1] [W]	Freq. [Hz]	Voltage Tolerance	Insulation Class	Wiring type: flying leads [mm]
FQ-A05 024-000709	10800072302	24	AC	5 (50Hz) 4,5 (60Hz)	50/60	-15% +10%	B	1800±50
FQ-A05 120-001098	10800062002	110 to 120		5 (50Hz) 4,5 (60Hz)				800±30
FQ-A05 22G-001022	10800057302	220 to 240		5 (50Hz) 4,5 (60Hz)				600±20

Note: 1) FQ-A0522G power consumption based on 240V; FQ-A05120 power consumption based on 120V

DIMENSIONS - COIL



FDF2AK (NO) *SERIES*

SOLENOID VALVE



FDF2AK series solenoid valves are direct operated, normally open solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COMPACT DESIGN
- LOW ENERGY CONSUMPTION
- EXCELLENT OPERATION PERFORMANCE

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HFO, HC refrigerants:
  - fluids GROUP 2 (according to Directive 2014/68/EU) or GROUP A1 (according to ANSI-ASHRAE 34-2016): R134a, R404A, R410A, R507, R407C, R407A/F, R448A/R449A, R452A, R450A/R513A
  - fluids GROUP 1 (according to Directive 2014/68/EU) or GROUP A3/A2L (according to ANSI-ASHRAE 34-2016): R290, R1234yf, R1234ze(E), R32, R447A, R452B, R454B, R454C, R600a
- Medium temperature TS min./max.: -30°C / 120°C
- Ambient temperature: -30°C / +50°C
- Relative humidity: 0 to 95% RH
- Installation position:
  - Liquid, suction and discharge line
  - Coil upwards, coil axis ±15° tolerance versus vertical axis
  - Flow direction corresponds to the arrow
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU), RoHS (2011/65/EU), REACH
  DoC acc. EN60335-2-24/40/89 for flammable refrigerants

TECHNICAL PARAMETERS OF VALVE BODY

Valve Body Model	Part Number*	Normal Position	Actuation	Ø Seat [mm]	Kv [m³/h]	MOP [MPa]	Max. OPD [MPa]	Min. OPD [MPa]	Connection OD Ød	
									[mm]	[inch]
FDF2AK19	10120047402	NO	Direct	1,8	0,05	4,5	2,1	0	6,35 ±0,1	1/4
FDF2AK22	10120055502			1,9	0,08	4,5	1,5			

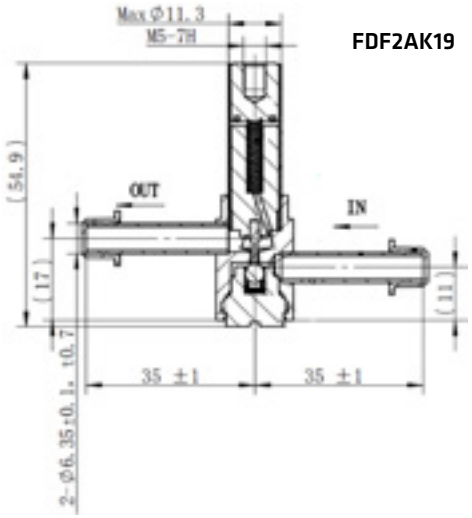
* Available also as industrial package. Contact Sanhua for more details.

SOLENOID VALVE

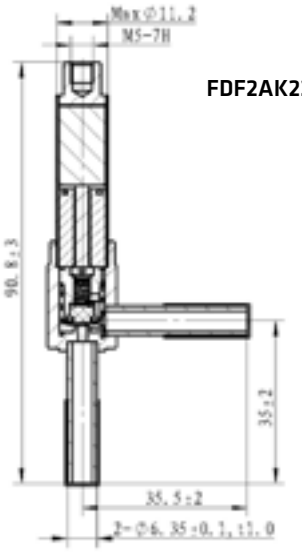


DIMENSIONS - VALVE BODY

FDF2AK19



FDF2AK22



TECNHICAL PARAMETERS OF COIL

Coil Model	Part Number*	Rated Voltage [V]	Supply	Power[3] [W]	Used for	Freq. [Hz]	Voltage Tolerance	Insulation Class	Wiring type
FQ-A05024-000709	10800072302	24	AC	5 (50Hz) 4,5 (60Hz)	FDF2AK01[1]	50/60	-15% +10%	B	1800±50
FQ-A05120-001098	10800062002	110 to 120		5 (50Hz) 4,5 (60Hz)					800±30
FQ-A0522G-001022	10800057302	220 to 240		5 (50Hz) 4,5 (60Hz)					600±20
FQ-A0522G-002955	FQAC0003402	220 to 240		5 (50Hz) 4,5 (60Hz)	FDF2AK22[2]				2000±50

Note: * Available also as industrial package. Contact Sanhua for more details.

1) Dimensions: drawing 1

2) Dimensions: drawing 2

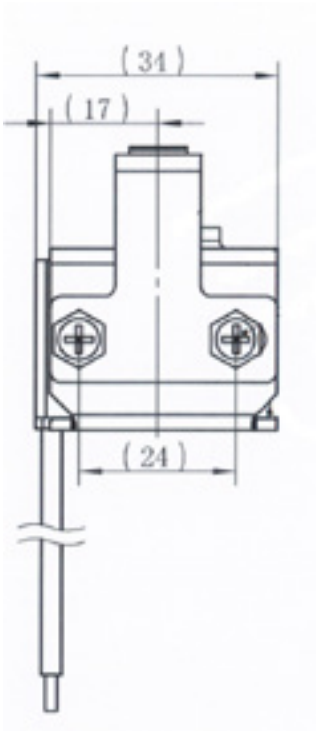
3) Power consumption based on 220V

SOLENOID VALVE

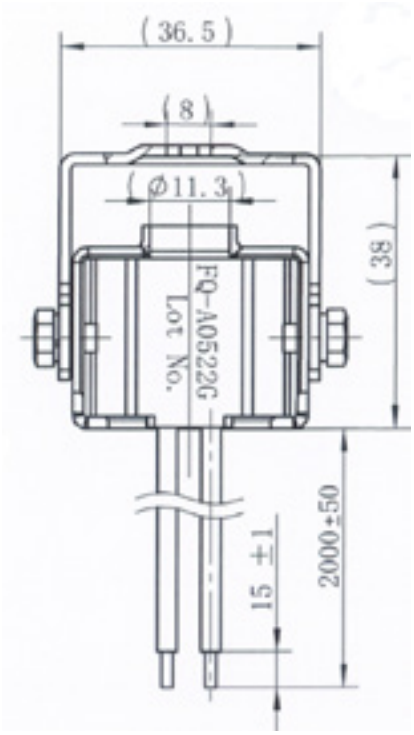


DIMENSIONS - COIL

Drawing 1: FQ-A05024-000709, FQ-A05120-001098, FQ-A0522G-001022



Drawing 2: FQ-A0522G-002955



FDF-G (NC) *SERIES*

SOLENOID VALVE



FDF-G solenoid valves is lead-free stainless-steel series of FDF valves, with direct or pilot operating type, mainly used in refrigeration, air conditioning and heat pump system refrigerant control.

FEATURES

- STAINLESS STEEL BODY REALIZES LEAD-FREE APPROACH - ENVIRONMENTALLY FRIENDLY
- DUE TO FURNACE BRAZING PROCESS IMPROVED PRODUCT RELIABILITY AND CONSISTENCE
- IMPROVED RESISTANCE TO IMPURITIES

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HFO refrigerants (for oil system applications please contact Sanhua)
  - fluids GROUP 2 (according to Directive 2014/68/EU) or GROUP A1 (according to ANSI-ASHRAE 34-2016): R134a, R404A, R410A, R507, R407C, R407A/F, R448A/R449A, R452A, R450A/R513A.
  - for fluids GROUP 1 (according to Directive 2014/68/EU) or GROUP A3/A2L (according to ANSI-ASHRAE 34-2016): R290, R1234yf, R1234ze(E), R32, R447A, R452B, R454B, R454C, R600a.
- Medium temperature TS min./max.: -30°C / +120°C
- Ambient temperature min./max.: -30°C / +50°C
- Relative humidity: 0 to 95% RH
- Installation position:
  - Liquid, suction and discharge line
  - Coil upwards, coil axis ±15° tolerance versus vertical axis
  - Flow direction corresponds to the arrow
- Declarations/Certification/Approvals:
  DoC acc. PED (2014/68/EU), LVD (2014/35/EU), RoHS (2011/65/EU), REACH, Pressure Equipment (Safety) Regulation 2016 (2016/1105), Electrical Equipment (Safety) Regulation 2016 (2016/1101), EN60335-24/40/89.

SOLENOID VALVE



TECHNICAL PARAMETERS OF VALVE BODY

Model Valve Body	Product Number	Normal Position	Actuation	Kv	MOP	Max. OPD[1)]	Min. OPD	Ød OD (inlet)	Ød OD (outlet)	Measurement [mm]		
				[m³/h]	[MPa]	[MPa]	[kPa]	[mm]	[inch]	L	L1	L2
FDF2AG01	10119001002	NC	Direct	0,08	4,5	3,4	0	1/4	1/4	66,6	33,3	33,0
FDF3AG01	FDFX0000202		Pilot	0,3		3,4	5	5/16	5/16	77,7	34,5	35,4
FDF4AG200	FDFX0000102			0,43		3,0	0	5/16	5/16	77,7	34,5	35,4
FDF6AG01	10120052102			0,56		3,4	5	5/16	5/16	77,7	34,5	35,5
FDF8AG01	FDFX0001502			0,95		3,1	7	3/8	3/8	88,4	41,0	43,3
FDF11AG01	FDFX0001602			2,58		2,8	7	1/2	1/2	118	60,0	60,0
FDF13AG01	FDFX0001702			3,45		2,8	7	5/8	5/8	117,3	60,0	60,0

Note: 1) Maximum operating pressure difference was measured with coil FQ-A0522G (220-240 V AC) with gas phase

TECNHICAL PARAMETERS OF COIL

Model Coil	Product Number	Rated Voltage	Supply	Power[1)]	Freq.	Voltage Tolerance	Insulation Class	Wiring type: flying leads
		[V]		[W]	[Hz]			[mm]
FQ-A05 024-000709	10800072302	24	AC	5 (50Hz) 4,5 (60Hz)	50/60	-15% +10%	B	1800±50
FQ-A05 120-001098	10800062002	110 to 120		5 (50Hz) 4,5 (60Hz)				800±30
FQ-A05 22G-001022	10800057302	220 to 240		5 (50Hz) 4,5 (60Hz)				600±20

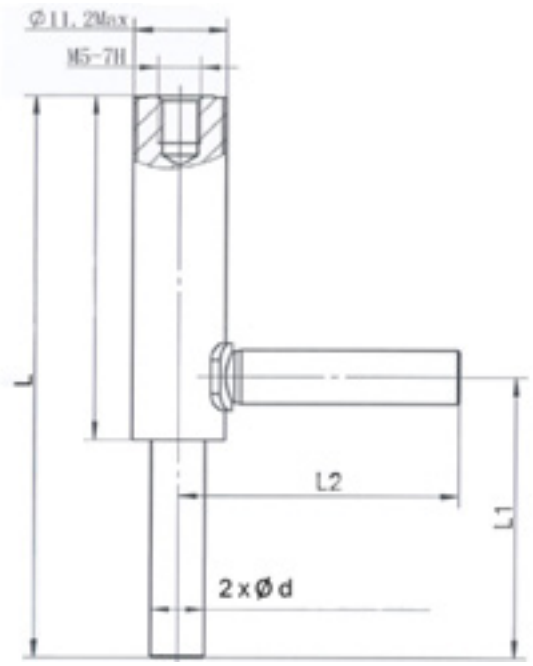
Note: 1) FQ-A0522G power consumption based on 240V;
FQ-A05120 power consumption based on 120V

OUT

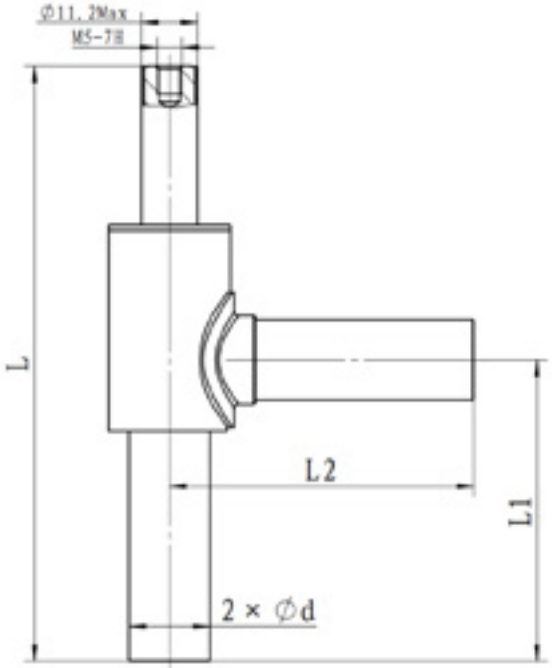
SOLENOID VALVE



DIMENSIONS - VALVE BODY

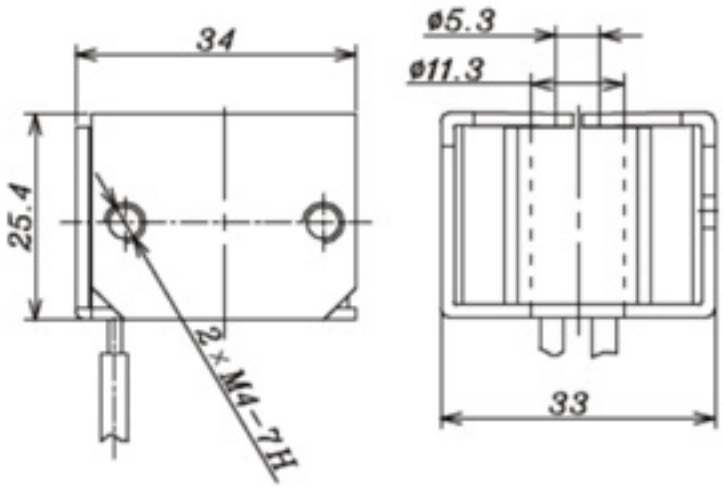


FDF2AG-FDF6AG



FDF8AG-FDF13AG

DIMENSIONS - COIL (FQ-A05)



***LDF** SERIES*

SOLENOID VALVE



(GreenTech range: aplicapable for fluids GROUP 1 and GROUP 2 according to Directive 2014/68/EU or GROUP A3/A2L and GROUP A1 according to ANSI-ASHRAE 34-2016)

LDF series solenoid valves are direct operated or pilot operated solenoid valves, mainly used in refrigerant control of various devices such as refrigerating and freezing systems, air conditioners and heat pumps.

FEATURES

- COILS: LOW ENERGY CONSUMPTION, RELIABLE
- LOW INTERNAL LEAKAGE
- COMPACT DESIGN, EASY TO INSTALL.

GENERAL SPECIFICATIONS

- Applicable for all common HFC/HFO/HC refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A, R290, R1234yf, R1234ze(E), R32[1)], R447A, R452B, R454B, R454C
- Medium temperature TS min./max.: -30°C/+120°C
- Ambient temperature min./max.: -30°C /+50°C
- Relative humidity:0 to 95%RH
- Max. operating pressure PS: 4.5Mpa
- Installation position:
  - Liquid, suction and discharge line
  - Coil upwards, coil axis ±15° to tolerance versus vertical axis
  - Flow direction corresponds to the arrow
- Declaration according to LVD or PED, UL approval

Note: 1) With R32 only respecting MOP 45 bar

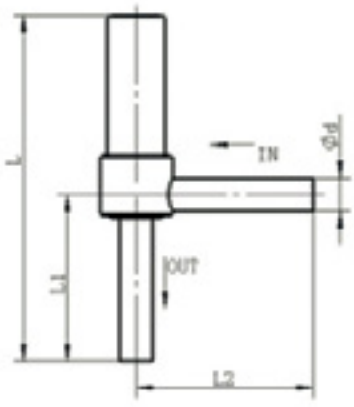
SOLENOID VALVE

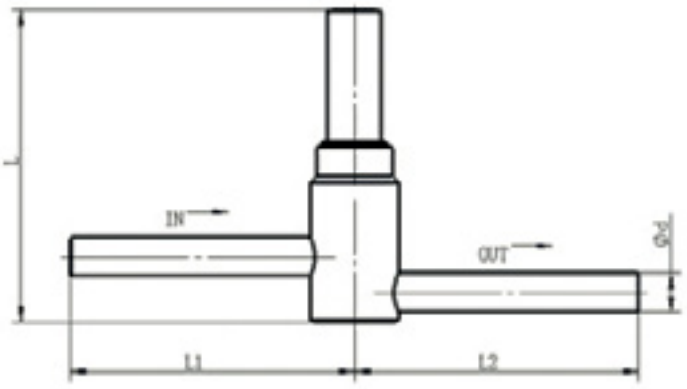


TECHNICAL PARAMETERS OF VALVE BODY

Model Valve Body	Part Number	Normal Position	Actuation	Ø Seat [mm]	Kv [mm]	MOP [MPa]	OPD [MPa]		Ød ODM [inch]
							Max	Min	L2
LDF2A01	10127000102	NC	Direct	2	0.12	4.5	3.1	0	1/4
LDF2A02	10127000402			2	0.12	4.5	3.1	0	1/4
LDF3A08	10127001802		Pilot	3	0.26	4.5	3.1	0.005	1/4
LDF4A08	10127001102			4	0.3	4.5	3.1	0.005	1/4
LDF6A08	10127001202			5.8	0.6	4.5	3.1	0.005	5/16
LDF8A01	10127000502			8	0.9	4.5	3.1	0.005	3/8
LDF8A02	10127000602			8	1.1	4.5	3.1	0.005	3/8

Model Valve Body	Ød ODM [inch]	Dimensions			Drawings number
		L	L1	L2	
LDF2A01	1/4	51,6	40	39,5	2
LDF2A02	1/4	79,6	38,5	40	1
LDF3A08	1/4	91	45,8	46,7	1
LDF4A08	1/4	91	45	46	1
LDF6A08	5/16	95	48,5	49	1
LDF8A01	3/8	67	71	71	2
LDF8A02	3/8	120,7	69,5	71	1





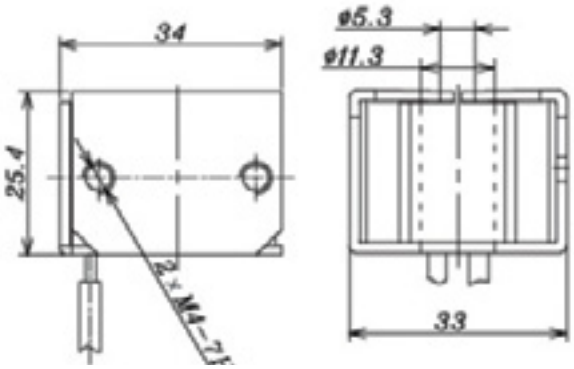
SOLENOID VALVE



TECHNICAL PARAMETERS OF COIL

Model Coil	Rated voltage [V]	Power [W]	Voltage Tolerance	Insulation Class	Wiring type	Cable length, [mm]	Part Number
FQ-A05 024-000709	AC 24	5 (50Hz) 4,5 (60Hz)	+10% -15%	B	Lead Wires	1800	10800072302
FQ-A05 120-001098	AC 120	5 (50Hz) 4,5 (60Hz)				800	10800062002
FQ-A05 22G-001022	AC 220-240	5 (50Hz) 4,5 (60Hz)				600	10800057302

DIMENSIONS - COIL



CDF-U *SERIES*

NC SOLENOID VALVE



The CDF-U series normally closed solenoid valves come in two structures: direct-acting and pilot-operated. They are mainly used in applications such as oil circuits, hot gas bypassing, and thermal defrosting in CO_2 transcritical systems.

FEATURES

- THE MAXIMUM WORKING PRESSURE IS 140 BAR AND THE MAXIMUM WORKING TEMPERATURE IS 150°C
- THE MOPD (MAX) IN THE OIL IS UP TO 110 BAR
- IT IS APPLICABLE TO REFRIGERANT CIRCUITS (GASEOUS AND LIQUID) AND PURE OIL CIRCUITS
- THE STAINLESS-STEEL VALVE BODY IS PAIRED WITH 2 COPPER CONNECTING PIPES, FEATURING A LEAD-FREE DESIGN
- THE VALVE BODY IS DETACHABLE FOR EASY MAINTENANCE

GENERAL SPECIFICATIONS

- Applicable refrigerant: R744 (CO2), POE & PAG oil and others
- Medium temperature TS min./max.: -40°C~+150°C
- Ambient temperature min./max.: -40°C~+55°C
  (For higher temperatures, please contact Sanhua)
- Relative humidity: 0 to 95% RH
- Certification: Declaration according to LVD or PED
  (For UL certification requirements, please contact Sanhua)
- Installation position:
  - Oil return, high pressure hot gas bypass/dump and hot gas defrost application.
  - The coil is facing upwards and perpendicular to the valve body, with a verticality of ±90°.

TECHNICAL PARAMETERS OF VALVE BODY

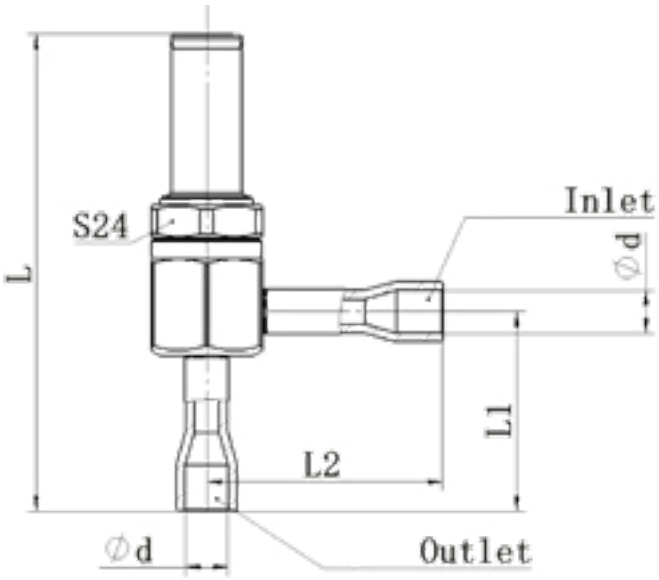
Model Valve Body	Product Number	Normal Position	Actuation	Kv	MOP	Max. OPD*	Min. OPD	Ød OD (Inlet)	Ød OD (Outlet)	Measurement [mm]		
				[m³/h]	[bar]	[bar]	[bar]	(inch)	(inch)			
CDF1U100	CDFX0000102	NC	Direct	0,05	140	110	0	3/8	3/8	103	51	43
CDF2U100	CDFX0000202		Pilot	0,10		110	0,14	3/8	3/8	103	51	43
CDF3U100	CDFX0000302			0,23		110	0,14	3/8	3/8	103	51	43

(*) The maximum operating pressure difference was measured using AC coil MQ3G01 in oil

NC SOLENOID VALVE



DIMENSIONS - VALVE BODY

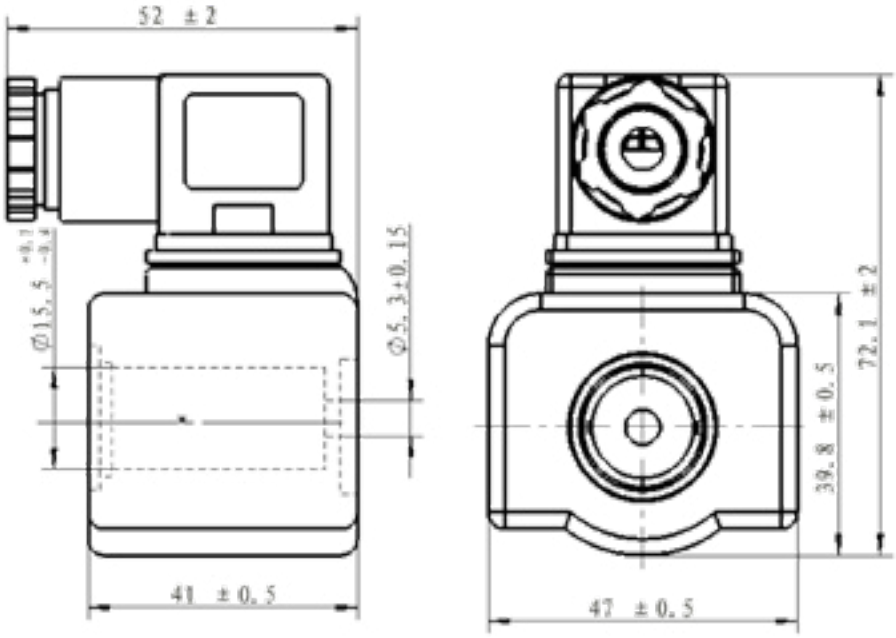


CDF1U-3U

TECHNICAL PARAMETERS OF COIL

Model Coil	Product Number	Rated Voltage [V]	Supply	Power [E]	Freq. [Hz]	Voltage Tolerance	Insulation Class	Protection grade
MQ3G01	MQAC0000202	220-230	AC	13,5	50	-15% +10%	H	IP67

DIMENSIONS – COIL (FQ-A05)



CDF-T *SERIES*

NC SOLENOID VALVE



The CDF-T series solenoid valves are direct-acting and pilot-operated types. They are suitable for CO_2 transcritical conditions and can be used for refrigerant control in Refrigeration and Freezing systems.

FEATURES

- ZERO PRESSURE DIFFERENCE VALVE OPENING CAN BE ACHIEVED
- THE VALVE BODY STRUCTURE IS COMPACTLY DESIGNED, SAVING INSTALLATION SPACE
- LEAD-FREE AND ENVIRONMENTALLY FRIENDLY
- COIL: LOW POWER CONSUMPTION AND GOOD RELIABILITY

GENERAL SPECIFICATIONS

- Applicable medium:
  R744 (If the medium is oil, please contact Sanhua)
- Maximum Working Pressure: 140 bar
- Ambient Temperature: -40 °C/+60 °C
- Medium Temperature: -40 °C/+150 °C
- Relative Humidity: Less than 95 %
- Certification: CE

TECHNICAL PARAMETER

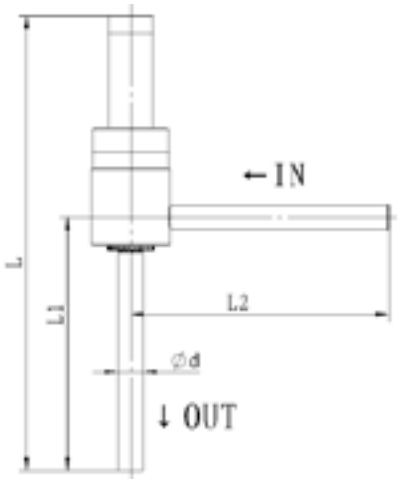
Valve Model	Part Number	Actuation	Orifice	Kv	MOP	Max. OPD (Air/AC)*	Min. OPD
			[mm]	[m³/h]	[bar]	[bar]	[bar]
CDF1T01	CDFX0000802	Direct Type	0.9	0.024	140	110	0
CDF2T01	CDFX0000902	Pilot Type	1.8	0.1	140	110	0
CDF3T01	CDFX0001002		3	0.28	140	110	0
CDF4T01	CDFX0000602		4.0	0.38	140	110	0

*It's measured with coil SQ-A3122G-001069.

NC SOLENOID VALVE



DIMENSION

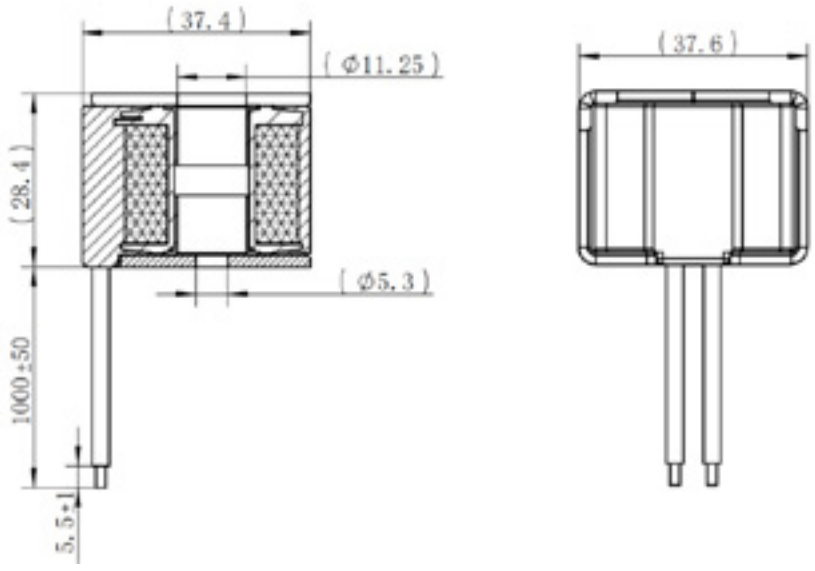


Valve Model	Connection Ød	L	L1	L2
	[inch]	[mm]	[mm]	[mm]
CDF1T01	1/4	101	62.6	63
CDF2T01	1/4	112.7	63.3	64.5
CDF3T01	1/4	112.7	63.3	64.5
CDF4T01	1/4	112.7	63.3	64.5

TECHNICAL PARAMETER OF COIL

Model	Part Number	Rated Voltage	Allowed Voltage Fluctuation	Rated Power (50/60Hz)	Insulation Class	Coil Connection Type	Lead Length
		[V]		[W]			[mm]
SQ-A3122G-001069	SQAC0003102	AC220~240	-15%~+10%	6.5/4.5	B	Lead Type	1000

DIMENSIONS – COIL (FQ-A05)




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THERMOSTATIC EXPANSION VALVES



FLEXIBILITY OF CHOICE
INCREASED MECHANICAL STRENGTH

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“Yearly SANHUA supplies over
40 million thermostatic and electronic
expansion valves to the HVAC&R and
Automotive industries worldwide.”
DISCOVER WHY
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RFKH *SERIES*

THERMOSTATIC EXPANSION VALVE



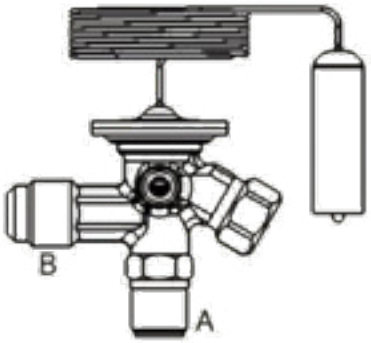
RFKH series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant´s superheat at the outlet of the evaporator. They can be used for various refrigerants under all working conditions. Typical applications are refrigeration systems like freezers, ice makers, dehumidifiers as well as air conditioners and heat pumps at various evaporation temperature ranges.

FEATURES

- STAINLESS STEEL CAPILLARY AND SENSING BULB
- EXCHANGEABLE VALVE ORIFICE, EASY TO STOCK HOLDING, CONVENIENT FOR CAPACITY MATCH AND REPAIR
- THERMAL BULB UTILIZES CROSS CHARGE TECHNOLOGY, PROVIDING CONSISTENT SUPERHEAT DEGREE OVER THE WHOLE EVAPORATION TEMPERATURE RANGE
- VALVES WITH MOP FUNCTION CAN BE PROVIDED TO ASSURE RELIABLE COMPRESSOR OPERATION
- APPLICABLE IN A WIDE EVAPORATION TEMPERATURE RANGE
- RELIABLE AND CONSISTENT PERFORMANCE OF SUPERHEAT CONTROL

GENERAL SPECIFICATIONS

- Applicable for all common HCFC and HFC refrigerants such as: R22, R407C, R404A, R507, R134a, R404A, R410A, R407A, R407F, R448A/R449A, R452A, R450A/R513A, R455A, R454C
- Ambient temperature min./max.: -35°C / +55°C
- Medium temperature TS min./max.: -40°C / +70°C extended to -60°C / +70°C for range B models
- Max. operating pressure PS: 4.6 MPa (46 bar)
- Installation position:
  - Preferably valve head upwards
  - Flow direction from inlet A to outlet B
- Certifications: UL/CSA and PED declaration





THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

- RFKH series angle shape valve
- Inlet 3/8" flare connection
- Capillary tube length 1,5m
- Equalization port:
  - RFKH flare/flare type with ¼" flare connection;
  - RFKH flare/solder type with ¼" or 6mm solder connection

MODEL DESIGNATION LEGEND

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	RFKH	Thermostatic expansion valve
2	**Refrigerant**	**Description**
	01	R22
	02	R407C
	03	R404A / R507A
	04	R134a
	05	R410A
	07	R407A / R407F
	08	R448A / R449A
	10	R450A
	11	R452A
	14	R513A
	20	R455A / R454C
3	**Pressure Equalization**	**Description**
	E	External pressure equalization
	(Omitted)	Internal pressure equalization
4	**Miscellaneous**	**Description**
	xxxxA	Digits for additional information

THERMOSTATIC EXPANSION VALVE



MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
RFKH	01	E	xxx	xxxA	Thermostatic expansion valve
RFKH	**01**	E	xxx	xxxA	Refrigerant R22
RFKH	01	**E**	xxx	xxxA	Connection for external pressure equalization
RFKH	01	E	**xxx**	xxxA	Nominal Capacity (in USRT)
RFKH	01	E	xxx	**xxxA**	Digits for additional information

MODELS DESIGNATION (VALVE HEAD)



Code	Description
KH01-6.0-26A	Part number
-40/10°C	Evaporating temperature (°C)
-40/+50°F	Evaporating temperature (°F)
R22/R407C	Refrigerant
MWP 4.6Mpa	Max. Working pressure (MPa)
MWP 665psig	Evaporating temperature (Psig)

MODELS WITH MOP FUNCTION

RFKH valves can be selected with MOP (Max. Operating Pressure) function.
MOP protects the compressor motor against excessive evaporating pressure during normal operation.

Refrigerant	Range N (-40°C to +10°C)	Range NM (-40°C to -5°C)	Range NL (-40°C to -15°C)	Range B (-60°C to -25°C)
	MOP = +15°C	MOP = 0°C	MOP = -10°C	MOP = -20°C
R22	6,9 barg - STD	4,0 barg – O.R.	2,5 barg - STD	N.A.
R407C	6,6 barg - STD	N.A.	N.A.	N.A.
R404A / R507	8,4 barg - STD	5,0 barg – O.R.	3,3 barg - STD	2,0 barg - STD
R134a	3,9 barg - STD	1,9 barg – O.R.	1,0 barg – O.R.	N.A.
R410A	11,5 barg - STD	7,0 barg – O.R.	4,7 barg - STD	N.A.
R407A / R407F	7,9 barg - STD	N.A.	N.A.	N.A.
R448A / R449A	7,3 barg - O.R.	4,2 barg – O.R.	2,6 barg - STD	1,5 barg - O.R.
R450A	3,2 barg - O.R.	1,5 barg – O.R.	0,7 barg - O.R.	N.A.
R452A	8,0 barg - O.R.	4,6 barg – O.R.	3,0 barg - STD	1,7 barg - STD
R513A	4,3 barg - O.R.	2,3 barg – O.R.	1,3 barg - O.R.	N.A.
R455A	6,8 barg - O.R.	3,8 barg – O.R.	2,4 barg - O.R.	N.A.
R454C	6,3 barg - O.R.	3,5 barg – O.R.	2,2 barg - O.R.	N.A.

Note: STD : Standard product
O.R. : On Request
N.A. : Not Available

THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

Tab. A : Models with Range N : Temperature Range from -40°C to +10°C [without MOP]

Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R22	RFKH01-6.0-22A	10201028802	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH01E-6.0-13A	10201028902	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH01-6.0-26A	10201029202	flare / solder		-	12	-	-	-	-
	RFKH01E-6.0-06A	10201033302	flare / solder / solder		-	12	-	-	-	6
	RFKH01-6.0-07A	10201029102	flare / solder		-	-	1/2	-	-	-
	RFKH01E-6.0-08A	10201029002	flare / solder / solder		-	-	1/2	-	1/4	-
R407C	RFKH02-6.3-24A	10201037902	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH02E-6.3-20A	10201040002	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH02-6.3-27A	10201029302	flare / solder		-	12	-	-	-	-
	RFKH02E-6.3-28A	10201033602	flare / solder / solder		-	12	-	-	-	6
	RFKH02-6.3-32A	10201029402	flare / solder		-	-	1/2	-	-	-
	RFKH02E-6.3-18A	10201033502	flare / solder / solder		-	-	1/2	-	1/4	-
R404A / R507A	RFKH03-4.8-21A	10201028402	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-15A	10201028502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-03A	10201029702	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-02A	10201033902	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-09A	10201028702	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-10A	10201027402	flare / solder / solder		-	-	1/2	-	1/4	-
R134a	RFKH04-2.9-23A	10201038502	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH04E-2.9-19A	10201040602	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH04-2.9-29A	10201030702	flare / solder		-	12	-	-	-	-
	RFKH04E-2.9-17A	10201035202	flare / solder / solder		-	12	-	-	-	6
	RFKH04-2.9-30A	10201030802	flare / solder		-	-	1/2	-	-	-
	RFKH04E-2.9-31A	10201035302	flare / solder / solder		-	-	1/2	-	-	1/4
R410A	RFKH05-7.6-66A	10201028002	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH05E-7.6-33A	10201028302	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH05-7.6-37A	10201031002	flare / solder		-	12	-	-	-	-
	RFKH05E-7.6-36A	10201035502	flare / solder / solder		-	12	-	-	-	6
	RFKH05-7.6-35A	10201028102	flare / solder		-	-	1/2	-	-	-
	RFKH05E-7.6-34A	10201028202	flare / solder / solder		-	-	1/2	-	-	1/4
R407A / R407F	RFKH07-6.0-43A	10201038702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH07E-6.0-42A	10201040902	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH07-6.0-44A	10201046402	flare / solder		-	12	-	-	-	-
	RFKH07E-6.0-41A	10201035702	flare / solder / solder		-	12	-	-	-	6
	RFKH07-6.0-45A	10201031102	flare / solder		-	-	1/2	-	-	-
	RFKH07E-6.0-46A	10201035802	flare / solder / solder		-	-	1/2	-	-	1/4

THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

Tab. A : Models with Range N : Temperature Range from -40°C to +10°C [without MOP]

Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R448A / R449A	RFKH08-6.1-49A	10201038802	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH08E-6.1-48A	10201041002	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH08-6.1-50A	10201031202	flare / solder		-	12	-	-	-	-
	RFKH08E-6.1-47A	10201035902	flare / solder / solder		-	12	-	-	-	6
	RFKH08-6.1-51A	10201031302	flare / solder		-	-	1/2	-	-	-
	RFKH08E-6.1-52A	10201036002	flare / solder / solder		-	-	1/2	-	1/4	-
R450A	RFKH10-2.8-61A	10201039202	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH10E-2.8-60A	10201041402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH10-2.8-72A	10201031802	flare / solder		-	12	-	-	-	-
	RFKH10E-2.8-59A	10201036602	flare / solder / solder		-	12	-	-	-	6
	RFKH10-2.8-63A	10201047402	flare / solder		-	-	1/2	-	-	-
	RFKH10E-2.8-64A	10201047502	flare / solder / solder		-	-	1/2	-	1/4	-
R452A	RFKH11-4.5-55A	10201039302	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH11E-4.5-54A	10201041502	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH11-4.5-56A	10201031902	flare / solder		-	12	-	-	-	-
	RFKH11E-4.5-53A	10201036702	flare / solder / solder		-	12	-	-	-	6
	RFKH11-4.5-57A	10201032002	flare / solder		-	-	1/2	-	-	-
	RFKH11E-4.5-58A	10201036802	flare / solder / solder		-	-	1/2	-	1/4	-
R513A	RFKH14-2.7-68A	10201039602	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH14E-2.7-67A	10201041902	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH14-2.7-70A	10201032702	flare / solder		-	12	-	-	-	-
	RFKH14E-2.7-65A	10201037402	flare / solder / solder		-	12	-	-	-	6
	RFKH14-2.7-71A	10201032802	flare / solder		-	-	1/2	-	-	-
	RFKH14E-2.7-76A	10201037502	flare / solder / solder		-	-	1/2	-	1/4	-
R455A / R454C	RFKH20-4.3-80A	10201039702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH20E-4.3-79A	10201042002	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH20-4.3-81A	10201032902	flare / solder		-	12	-	-	-	-
	RFKH20E-4.3-78A	10201037602	flare / solder / solder		-	12	-	-	-	6
	RFKH20-4.3-82A	10201033002	flare / solder		-	-	1/2	-	-	-
	RFKH20E-4.3-83A	10201037702	flare / solder / solder		-	-	1/2	-	1/4	-

THERMOSTATIC EXPANSION VALVE



Tab. B : Models with Range N : Temperature Range from -40°C to +10°C [with MOP = +15°C]

Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R22	RFKH 01-6.0-205A	10201042302	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH01E-6.0-204A	10201039902	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH01-6.0-206A	10201042402	flare / solder		-	12	-	-	-	-
	RFKH01E-6.0-201A	10201042102	flare / solder / solder		-	12	-	-	-	6
	RFKH01-6.0-202A	10201042202	flare / solder		-	-	1/2	-	-	-
	RFKH01E-6.0-203A	10201033402	flare / solder / solder		-	-	1/2	-	1/4	-
R407C	RFKH02-6.3-209A	10201038002	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH02E-6.3-208A	10201043702	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH02-6.3-210A	10201029502	flare / solder		-	12	-	-	-	-
	RFKH02E-6.3-211A	10201033802	flare / solder / solder		-	12	-	-	-	6
	RFKH02-6.3-212A	10201029602	flare / solder		-	-	1/2	-	-	-
	RFKH02E-6.3-207A	10201033702	flare / solder / solder		-	-	1/2	-	1/4	-
R404A / R507A	RFKH03-4.8-218A	10201045102	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-217A	10201040302	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-214A	10201030102	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-213A	10201034502	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-215A	10201030202	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-216A	10201034602	flare / solder / solder		-	-	1/2	-	1/4	-
R134a	RFKH04-2.9-221A	10201038602	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH04E-2.9-220A	10201040702	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH04-2.9-222A	10201045302	flare / solder		-	12	-	-	-	-
	RFKH04E-2.9-219A	10201045202	flare / solder / solder		-	12	-	-	-	6
	RFKH04-2.9-223A	10201030902	flare / solder		-	-	1/2	-	-	-
	RFKH04E-2.9-224A	10201035402	flare / solder / solder		-	-	1/2	-	-	1/4
R410A	RFKH05-7.6-230A	10201045702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH05E-7.6-225A	10201040802	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH05-7.6-229A	10201045602	flare / solder		-	12	-	-	-	-
	RFKH05E-7.6-228A	10201045502	flare / solder / solder		-	12	-	-	-	6
	RFKH05-7.6-227A	10201045402	flare / solder		-	-	1/2	-	-	-
	RFKH05E-7.6-226A	10201035602	flare / solder / solder		-	-	1/2	-	-	1/4

THERMOSTATIC EXPANSION VALVE



Tab. C : Models with Range NL : Temperature Range from -40°C to -15°C [with MOP = -10°C]

Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R404A / R507A	RFKH03-4.8-312A	10201038302	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-311A	10201040402	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-308A	10201030302	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-307A	10201034802	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-309A	10201030402	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-310A	10201034902	flare / solder / solder		-	-	1/2	-	1/4	-
R448A / R449A	RFKH08-6.1-315A	10201039002	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH08E-6.1-314A	10201041202	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH08-6.1-316A	10201031502	flare / solder		-	12	-	-	-	-
	RFKH08E-6.1-313A	10201036302	flare / solder / solder		-	12	-	-	-	6
	RFKH08-6.1-317A	10201031602	flare / solder		-	-	1/2	-	-	-
	RFKH08E-6.1-318A	10201036402	flare / solder / solder		-	-	1/2	-	1/4	-
R452A	RFKH11-4.5-320A	10201039502	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH11E-4.5-319A	10201041702	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH11-4.5-321A	10201032302	flare / solder		-	12	-	-	-	-
	RFKH11E-4.5-324A	10201037002	flare / solder / solder		-	12	-	-	-	6
	RFKH11-4.5-322A	10201032402	flare / solder		-	-	1/2	-	-	-
	RFKH11E-4.5-323A	10201037102	flare / solder / solder		-	-	1/2	-	-	1/4

Note: 1) Extent of delivery: valve body and bulb strap
2) Different evaporation temperature range on request
3) MOP function on request
4) Part Number is referred to Multi Pack

THERMOSTATIC EXPANSION VALVE



Tab. D : Models with Range B : Temperature Range from -60°C to -25°C [without MOP]

Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R404A / R507A	RFKH03-4.8-106A	10201038102	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-105A	10201040102	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-102A	10201029802	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-101A	10201034002	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-103A	10201029902	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-104A	10201034102	flare / solder / solder		-	-	1/2	-	1/4	-

Tab. E : Models with Range B : Temperature Range from -60°C to -25°C [with MOP -20°C]

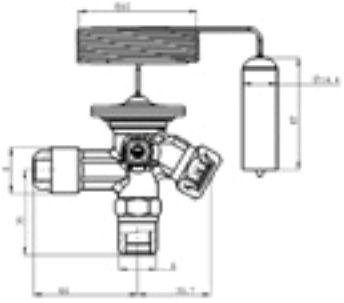
Ref.	Model Valve Body	Part Number[1 & 4)]	Connection type	Inlet ØA	Outlet ØB			Ext. ØC		
			In / Out / Ext. Pressure Equal.	Flare	Flare	Solder		Flare	Solder	Solder
				[inch]	[inch]	[mm]	[inch]	[inch]	[inch]	[mm]
R404A / R507A	RFKH03-4.8-406A	10201038202	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH03E-4.8-405A	10201040202	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH03-4.8-402A	10201045002	flare / solder		-	12	-	-	-	-
	RFKH03E-4.8-401A	10201034202	flare / solder / solder		-	12	-	-	-	6
	RFKH03-4.8-403A	10201030002	flare / solder		-	-	1/2	-	-	-
	RFKH03E-4.8-404A	10201034302	flare / solder / solder		-	-	1/2	-	1/4	-
R452A	RFKH11-4.5-409A	10201047702	flare / flare	3/8	1/2	-	-	-	-	-
	RFKH11E-4.5-408A	10201041802	flare / flare / flare		1/2	-	-	1/4	-	-
	RFKH11-4.5-410A	10201032502	flare / solder		-	12	-	-	-	-
	RFKH11E-4.5-407A	10201037202	flare / solder / solder		-	12	-	-	-	6
	RFKH11-4.5-411A	10201032602	flare / solder		-	-	1/2	-	-	-
	RFKH11E-4.5-412A	10201037302	flare / solder / solder		-	-	1/2	-	1/4	-

Note: 1) Extent of delivery: valve body and bulb strap
2) Different evaporation temperature range on request
3) MOP function on request
4) Part Number is referred to Multi Pack

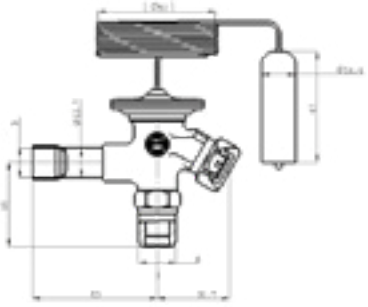
THERMOSTATIC EXPANSION VALVE



DIMENSIONS

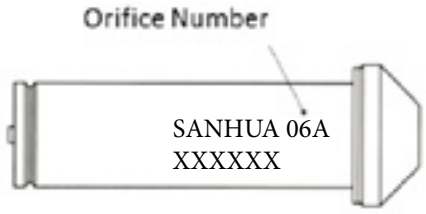


Valve Body - Connection Type: flare/flare/flare



Valve Body - Connection Type: flare/solder/solder

ACCESSORIES



ORIFICES

Orifice Number	Valve Orifice Model	Valve Orifice Part Number	Nominal Capacity[1] [kW]					
			R22	R407C	R404A R507A	R134a	R410A	R407A R407F
0X	RFKH-023-0X	10202001702	1	1	0,7	0,69	1,3	1
0	RFKH-023-00	10202001002	1,9	2,1	1,4	1,2	2,5	1,8
1	RFKH-023-01	10202001102	3,8	4	2,8	2,1	5	3,7
2	RFKH-023-02	10202001202	5,1	5,4	4	2,7	6,2	5,1
3	RFKH-023-03	10202001302	8,6	9,2	6,8	4,4	11,2	8,6
4	RFKH-023-04	10202001402	13,2	13,9	10,8	6,5	17	13,4
5	RFKH-023-05	10202001502	18,1	18,5	14,1	8,6	21,3	17,6
6	RFKH-023-06	10202001602	21,3	22,1	16,8	10,3	26,8	21,2

Orifice Number	Valve Orifice Model	Valve Orifice Part Number	Nominal Capacity[1] [kW]						
			R448A	R449A	R450A	R452A	R513A	R455A	R454C
0X	RFKH-023-0X	10202001702	1,1	1,0	0,6	0,8	0,6	0,6	0,6
0	RFKH-023-00	10202001002	2,1	2,0	1,1	1,5	1,0	1,3	1,2
1	RFKH-023-01	10202001102	4,0	4,0	1,9	3,0	1,8	2,5	2,4
2	RFKH-023-02	10202001202	5,0	4,9	2,3	3,7	2,2	3,5	3,3
3	RFKH-023-03	10202001302	8,9	8,8	4,2	6,7	4,0	6,0	5,8
4	RFKH-023-04	10202001402	13,6	13,4	6,3	10,1	6,1	9,8	9,4
5	RFKH-023-05	10202001502	17,0	16,8	7,9	12,7	7,6	12,6	12,1
6	RFKH-023-06	10202001602	21,4	21,1	9,9	16,0	9,6	15,1	14,5

Note: 1) Nominal working conditions: Condensing temperature 38°C; evaporating temperature +4,4°C; liquid temperature 37°C
2) R407C data based on dew point conditions
3) Nominal capacity based on
- Static Superheat (SS) 5K (for models without MOP) and 4K (for models with MOP)
- Opening Superheat(OS) 6K

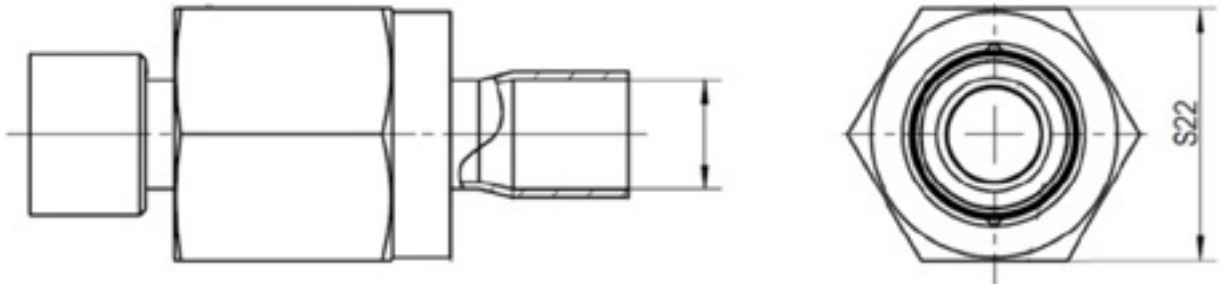
THERMOSTATIC EXPANSION VALVE



SOLDER ADAPTERS FOR RFKH INLET A

Model	Part Number[1)]	SAE Flare Ø e	Solder Connection Ø d
RFK-A04-038010	20200001602	3/8″	3/8"
RFK-A04-038011	20201002502		10mm
RFK-A04-038012	20201002602		1/4"
RFK-A04-038013	20201002702		6mm

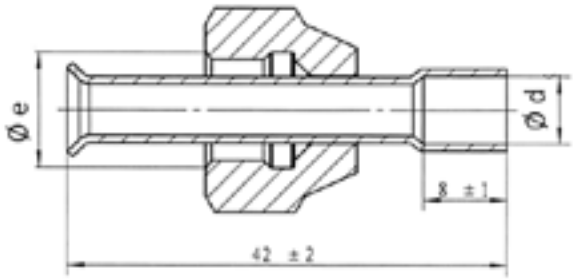
Note: 1) Copper pipe and flare nut are in the extent of delivery



SOLDER ADAPTERS FOR RFKH EXTERNAL PRESSURE EQUALIZATION C

Model	Part Number[1)]	SAE Flare Ø e	Solder Connection Ø d
RFKA-038-03	20201000502	1/4″	6mm
RFKA-038-04	20201000602		1/4"

Note: 1) Copper pipe and flare nut are in the extent of delivery



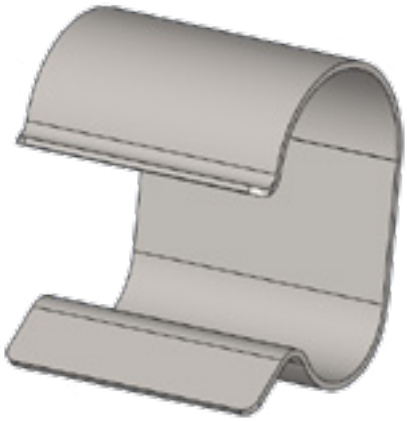
THERMOSTATIC EXPANSION VALVE



ACCESSORIES

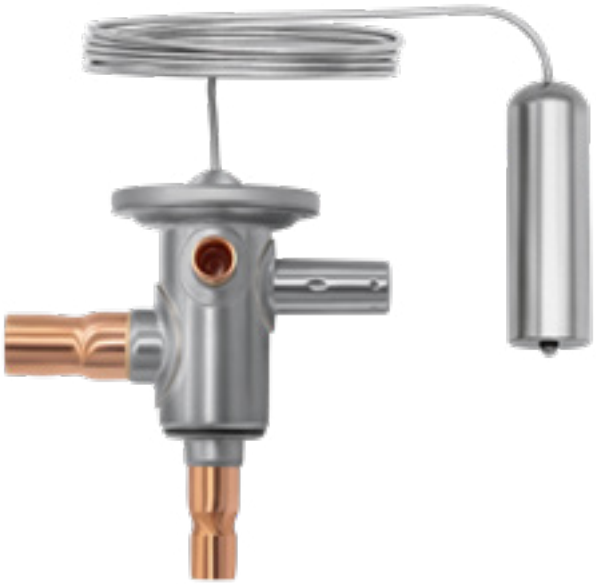
All the RFGC06 models listed in this datasheet are equipped with copper stripe to fix the bulb suitable for a wide range of pipe diameters on suction line piping.

As an alternative Sanhua offers clips suitable for pipes with different diameters. It can be ordered as accessories: models and ordering codes are visible in the table below

Picture	Type / Pipe	Model	Ordering Number (U11)	Quantity per Pack
	Stripe	RFK-000-019013	20201012702	160
	Clip [6 mm]	RFK-000-025024	20205202201	500
	Clip [8 mm]	RFK-000-025022	20205202001	
	Clip [10 mm]	RFK-000-025021	20205201901	
	Clip [12 mm]	RFK-000-025023	20205202101	
	Clip [1/4"]	RFK-000-025024	20205202201	
	Clip [5/16" mm]	RFK-000-025022	20205202001	
	Clip [3/8" mm]	RFK-000-025021	20205201901	
	Clip [1/2" mm]	RFK-000-025023	20205202101	

RFGC *SERIES*

THERMOSTATIC EXPANSION VALVE



RFGC series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant´s superheat at the outlet of the evaporator.
The main body in stainless steel guarantees an increased robustness, certainly of a lead-free material with advantage of connections welding in copper.
Typical applications are refrigeration systems like commercial refrigerators and freezers, dehumidifiers as well as air conditioners and heat pumps at various evaporation temperatures. RFGC 06 series has been designed and optimized for application with propane (R290).

FEATURES

- THE MAIN BODY IS MADE OF STAINLESS STEEL, HIGHLY ROBUST, WITH HIGH LEVEL OF VIBRATION AND CORROSION RESISTANCE, LIGHTWEIGHT AND COMPACT STRUCTURE.
- CONNECTION IN COPPER FOR WELDING
- OPTIONAL MOP CHARGE
- INTERNAL STRAINER INCLUDED ON INLET
- THE TEMPERATURE SENSOR ASSEMBLY HAS CROSS CHARGE, ENSURING GOOD SUPERHEAT CHARACTERISTICS ACROSS THE ENTIRE EVAPORATION TEMPERATURE RANGE
- STAINLESS STEEL VALVE PORT, STRONG AND RELIABLE, CAN WITHSTAND THE REVERSE IMPACT OF HIGH PRESSURE REFRIGERANT WITHIN THE SYSTEM.

GENERAL SPECIFICATIONS

- Special series designed for application with R290
- Evaporating temperature min/max: -40°C/+10°C
- Medium temperature min/max: -40°C/70°C
- Factory setting for static super heat: 4 K
- Max. operating pressure PS: 3,5 MPa (35 bar)
- Installation position with preferably valve head upwards

THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	RFGC	Thermostatic expansion valve
2	**Refrigerant**	**Description**
	06	R290
3	**Pressure Equalization**	**Description**
	E	External pressure equalization
	(Omitted)	Internal pressure equalization
4	**Nominal Capacity**	**Description**
	xxx	Nominal Capacity (in USRT)
5	**Miscellaneous**	**Description**
	xxxx	Digits for additional information e.g. temperature range, MOP, Bleed…

MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
RFGC	06	E	xxx	xxx	Thermostatic expansion valve
RFGC	**06**	E	xxx	xxx	Refrigerant R290
RFGC	06	**E**	xxx	xxx	Connection for external pressure equalization
RFGC	06	E	**xxx**	xxx	Nominal Capacity (in USRT)
RFGC	06	E	xxx	**xxx**	Digits and letter for additional information

MODELS DESIGNATION (VALVE HEAD)



Code	Description
GC06E	Part number
-40/+10°C	Evaporating temperature (°C)
-40/+50°F	Evaporating temperature (°F)
R290	Refrigerant
MWP 3.5 Mpa	Max. Working pressure (MPa)
MWP 505 psig	Max. Working pressure (Psig)

THERMOSTATIC EXPANSION VALVE



TECHNICAL DATA

Nominal Cooling Capacities [1) 2)]

	Size	Valve Model	Capacity	
			[kW]	[USRT]
R290	x	RFGC06(E)-014-xxx	0,49	0,14
	0	RFGC06(E)-0.18-xxx	0.64	0,18
	1	RFGC06(E)-0.27-xxx	0.94	0,27
	2	RFGC06-0.32-1103	1.13	0.32
	3	RFGC06(E)-0.41-xxx	1.5	0,41
	4	RFGC06(E)-0.72-xxx	2.6	0,72
	5	RFGC06(E)-0.96-xxx	3.4	0.96
	6	RFGC06(E)-1.5-xxx	5.3	1.5
	7	RFGC06(E)-2.0-xxx	7.0	2.0
	8	RFGC06(E)-2.9-xxx	10.2	2.9
	9	RFGC06(E)-4.1-xxx	14.3	4.1

Note: 1) Nominal capacity valid for:
- Version in straight and angle shape -
- Versions with metrical and imperial connections

2) Nominal working conditions: Condensing temperature: 38°C; evaporating temperature +4,4°C; Liquid temperature 37°C

MODEL LIST

Table 1 – RFGC Models with internal equalization and imperial connections

Valve Size	Bleed	Connection IN/OUT		Model Name [Internal Eq.]	Product Number [Internal Eq.]
	[%]	[inch]	[mm]		
x	0%	1/4 × 3/8	/	RFGC06-0.14-1100	RFGC0000102
0	0%	1/4 × 3/8	/	RFGC06-0.18-1101	RFGC0000202
1	0%	1/4 × 1/2	/	RFGC06-0.27-1102	RFGC0000302
2	0%	1/4 × 1/2	/	RFGC06-0.32-1103	RFGC0000402
3	0%	1/4 × 1/2	/	RFGC06-0.41-1104	RFGC0002702
4	0%	1/4 × 1/2	/	RFGC06-0.72-1105	RFGC0000502
5	0%	1/4 × 1/2	/	RFGC06-0.96-1106	RFGC0000602
6	0%	1/4 × 1/2	/	RFGC06-1.5-1107	RFGC0000702
7	0%	3/8 × 1/2	/	RFGC06-2.0-1108	RFGC0000802

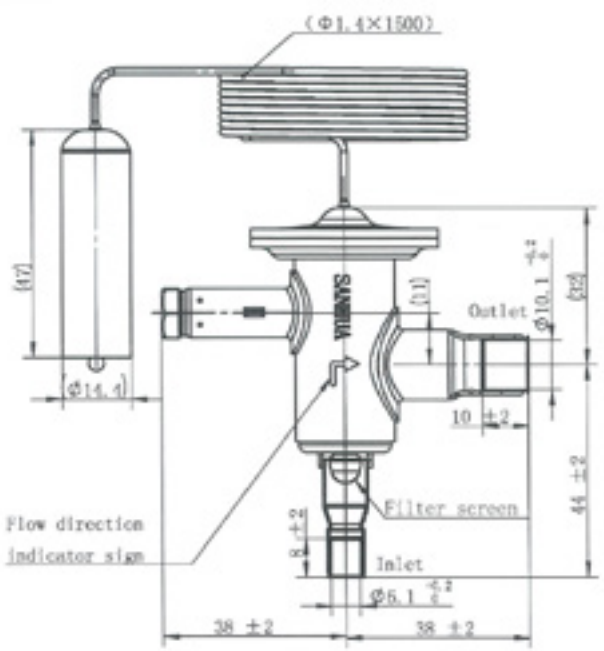
THERMOSTATIC EXPANSION VALVE



MODEL LIST

Table 2 – RFGC Models with internal equalization and metric connections

Valve Size	Bleed	Connection IN/OUT		Model Name [Internal Eq.]	Product Number [Internal Eq.]
	[%]	[inch]	[mm]		
x	0%	/	6x10	RFGC06-0.14-1114	RFGC0000902
0	0%	/	6x10	RFGC06-0.18-1115	RFGC0001002
1	0%	/	6x12	RFGC06-0.27-1116	RFGC0001102
2	0%	/	6x12	RFGC06-0.32-1117	RFGC0001202
3	0%	/	6x12	RFGC06-0.41-1118	RFGC0002802
4	0%	/	6x12	RFGC06-0.72-1119	RFGC0001302
5	0%	/	6x12	RFGC06-0.96-1120	RFGC0001402
6	0%	/	6x12	RFGC06-1.5-1121	RFGC0001502
7	0%	/	10x12	RFGC06-2.0-1122	RFGC0001602



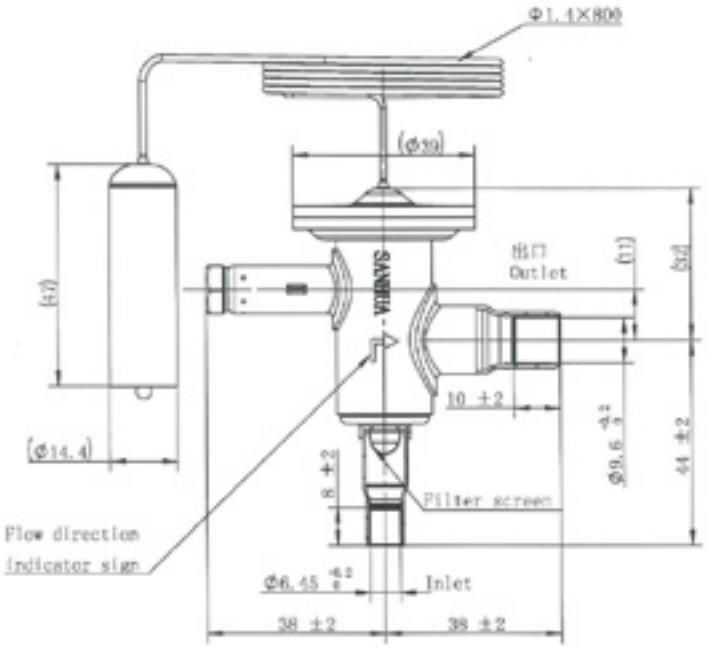
THERMOSTATIC EXPANSION VALVE

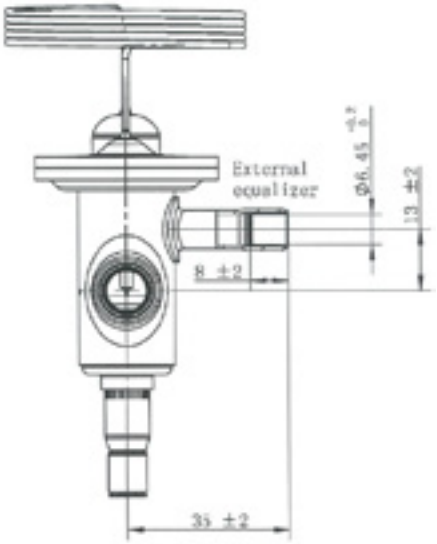


MODEL LIST

Table 3 - RFGC Models with external equalization (imperial and metric connections)

Valve Size	Bleed	Connection IN/OUT		Connection Ext.		Model Name [External Eq.]	Product Number [External Eq.]
	[%]	[inch]	[mm]	[inch]	[mm]		
5	0%	1/4×1/2	/	1/4	/	RFGC06E-0.96-1109	RFGC0001702
6	0%	1/4×1/2	/	1/4	/	RFGC06E-1.5-1110	RFGC0001802
7	0%	3/8×1/2	/	1/4	/	RFGC06E-2.0-1111	RFGC0001902
8	0%	3/8×1/2	/	1/4	/	RFGC06E-2.9-1112	RFGC0002002
9	0%	3/8×1/2	/	1/4	/	RFGC06E-4.1-1113	RFGC0002102
5	0%	/	6×12	/	6	RFGC06E-0.96-1123	RFGC0002202
6	0%	/	6×12	/	6	RFGC06E-1.5-1124	RFGC0002302
7	0%	/	10×12	/	6	RFGC06E-2.0-1125	RFGC0002402
8	0%	/	10×12	/	6	RFGC06E-2.9-1126	RFGC0002502
9	0%	/	10×12	/	6	RFGC06E-4.1-1127	RFGC0002602





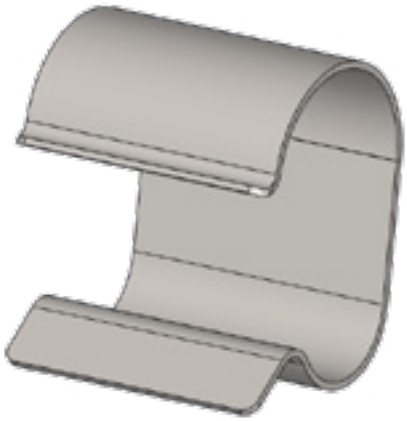
THERMOSTATIC EXPANSION VALVE



ACCESSORIES

All the RFGC06 models listed in this datasheet are equipped with copper stripe to fix the bulb suitable for a wide range of pipe diameters on suction line piping.

As an alternative Sanhua offers clips suitable for pipes with different diameters. It can be ordered as accessories: models and ordering codes are visible in the table below

Picture	Type / Pipe	Model	Ordering Number (U11)	Quantity per Pack
	Stripe	RFK-000-019013	20201012702	160
	Clip [6 mm]	RFK-000-025024	20205202201	500
	Clip [8 mm]	RFK-000-025022	20205202001	
	Clip [10 mm]	RFK-000-025021	20205201901	
	Clip [12 mm]	RFK-000-025023	20205202101	
	Clip [1/4"]	RFK-000-025024	20205202201	
	Clip [5/16" mm]	RFK-000-025022	20205202001	
	Clip [3/8" mm]	RFK-000-025021	20205201901	
	Clip [1/2" mm]	RFK-000-025023	20205202101	

RFGB *SERIES*

THERMOSTATIC EXPANSION VALVE



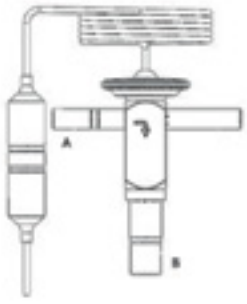
RFGB series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant´s superheat at the outlet of the evaporator. They can be used for various refrigerants under all working conditions. Typical applications are refrigeration systems like commercial refrigerators and freezers, icemakers, dehumidifiers as well as air conditioners at various evaporation temperature.

FEATURES

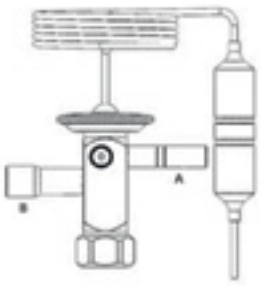
- COMPACT DESIGN WITH BUILD-IN ORIFICE
- WARM THERMO HEAD CONSTRUCTION
- ALL CONNECTIONS PIPES ARE COMPLETELY IN COPPER
- VALVES WITH MOP FUNCTION CAN BE PROVIDED TO ASSURE RELIABLE COMPRESSOR OPERATION
- APPLICABLE IN A WIDE EVAPORATION TEMPERATURE RANGE
- RELIABLE AND CONSISTENT PERFORMANCE OF SUPERHEAT CONTROL

GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R407C, R507A...
- Ambient temperature min./max.: -35/+55°C
- Medium temperature TS min./max.: -40°C / +70°C
- Max. operating pressure PS: 3,5 MPa (35 bar)
- Installation position: - Preferably valve head upwards
  - Flow direction from inlet A to outlet B
- Certifications: UL/CSA and PED declaration



Angle version



Straight version

THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

- RFGB valve available in straight shape with adjustable superheat on site
- RFGB valve available in angle shape with fixed factory superheat settings
- Both versions are available with the following solder connections
  - Metric: Inlet 6mm ODF/ Outlet 10mm ODF or Inlet 10mm ODF/ Outlet 12mm ODF
  - Imperial: Inlet 1/4" ODF/ Outlet 3/8" ODF or Inlet 3/8" ODF/ Outlet 1/2" ODF
- Equalization port available as option:
  - Metric: 6mm ODF (available for models with metric solder connections)
  - Imperial: 1/4" ODF (available for models with imperial solder connections)
- Capillary tube length 800mm

MODEL DESIGNATION LEGEND

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	RFGB	Thermostatic expansion valve with build-in orifice
2	**Refrigerant**	**Description**
	1	R22
	2	R407C
	3	R404A / R507A
	4	R134a
	6	R290
3	**Pressure Equalization**	**Description**
	E	External pressure equalization
	(Omitted)	Internal pressure equalization
4	**Valve Size**	**Internal Orifice Size**
	From 1 to 5	Valve size: proportional to the orifice size and to the nominal capacity
5	**Valve Shape**	**Description**
	S	Straight Version
	A	Angle Version
6	**Connections Type**	**Description**
	Mx	Metric: M6 inlet 6mm ; M10 inlet 10mm
	Ix	Imperial: I2 inlet 1/4" ; I3 inlet 3/8"
7	**Miscellaneous**	**Description**
	xxx	Digits for additional information e.g. static superheat, MOP, Bleed...

THERMOSTATIC EXPANSION VALVE



MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
RFGB	04	E	1.0	xxx	Thermostatic expansion valve with build-in orifice
RFGB	**04**	E	1.0	xxx	Refrigerant: R134a
RFGB	04	**E**	1.0	xxx	With connection for external pressure equalization
RFGB	04	E	**1.0**	xxx	Nominal Capacity (expressed in USRT)
RFGB	04	E	1.0	**xxx**	Additional digits

MODELS DESIGNATION (VALVE HEAD)



Code	Description
GB06E-1.0-518	Model
-40/+10°C	Evaporating temperature (°C)
-40/+50°F	Evaporating temperature (°F)
R290	Refrigerant
MWP 3.5Mpa	Max. Working Pressure (MPa)
MWP 505psig	Max. Working Pressure (Psig)

FIXING BULB OPTIONS

For customized RFGB thermostatic expansion valves it is possible to select the preferred bulb mounting element. The available options are the following two:

Strap		Suitable for Tube diameter: 1/4''; 3/8''; 1/2''; 5/8''; 3/4''; 7/8''; 1''
Clip		Suitable for Tube diameter: 1/4''; 3/8''; 1/2''

THERMOSTATIC EXPANSION VALVE



TECHNICAL DATA

Nominal Cooling Capacities[1)2)]						
Refrigerant	Size	Model Name[4)]	Drawing	Capacity		PS
				[USRT]	[kW]	[MPa]
R22	0	RFGB 01(E) -0	RFGB01(E)-0.17-xxx	0,17	0,60	3,5
	1	RFGB 01(E) -1	RFGB01(E)-0.35-xxx	0,35	1,20	
	2	RFGB 01(E) -2	RFGB01(E)-0.7-xxx	0,70	2,50	
	3	RFGB 01(E) -3	RFGB01(E)-1.0-xxx	1,00	3,50	
	4	RFGB 01(E) -4	RFGB01(E)-1.5-xxx	1,50	5,30	
	5	RFGB 01(E) -5	RFGB01(E)-2.0-xxx	2,00	7,00	
R407C[3)]	0	RFGB 02(E) -0	RFGB02(E)-0.19-xxx	0,19	0,67	3,5
	1	RFGB 02(E) -1	RFGB02(E)-0.38-xxx	0,38	1,30	
	2	RFGB 02(E) -2	RFGB02(E)-0.76-xxx	0,76	2,70	
	3	RFGB 02(E) -3	RFGB02(E)-1.1-xxx	1,10	3,90	
	4	RFGB 02(E) -4	RFGB02(E)-1.6-xxx	1,60	5,60	
	5	RFGB 02(E) -5	RFGB02(E)-2.2-xxx	2,20	7,70	
R404A / R507	0	RFGB 03(E) -0	RFGB03(E)-0.13-xxx	0,13	0,50	3,5
	1	RFGB 03(E) -1	RFGB03(E)-0.25-xxx	0,25	0,90	
	2	RFGB 03(E) -2	RFGB03(E)-0.5-xxx	0,50	1,80	
	3	RFGB 03(E) -3	RFGB03(E)-0.7-xxx	1,70	2,50	
	4	RFGB 03(E) -4	RFGB03(E)-1.0-xxx	1,00	3,50	
	5	RFGB 03(E) -5	RFGB03(E)-1.4-xxx	1,40	4,90	
R134a	0	RFGB 04(E) -0	RFGB04(E)-0.12-xxx	0,12	0,40	3,5
	1	RFGB 04(E) -1	RFGB04(E)-0.23-xxx	0,22	0,80	
	2	RFGB 04(E) -2	RFGB04(E)-0.44-xxx	0,44	1,50	
	3	RFGB 04(E) -3	RFGB04(E)-0.63-xxx	0,63	2,20	
	4	RFGB 04(E) -4	RFGB04(E)-0.94-xxx	0,94	3,30	
	5	RFGB 04(E) -5	RFGB04(E)-1.3-xxx	1,30	4,60	
R290	0	RFGB 06(E) -0	RFGB06(E)-0.17-xxx	0,17	1,69	3,5
	1	RFGB 06(E) -1	RFGB06(E)-0.35-xxx	0,35	1,20	
	2	RFGB 06(E) -2	RFGB06(E)-0.7-xxx	0,70	2,50	
	3	RFGB 06(E) -3	RFGB06(E)-1.0-xxx	1,00	3,50	
	4	RFGB 06(E) -4	RFGB06(E)-1.5-xxx	1,50	5,30	
	5	RFGB 06(E) -5	RFGB06(E)-2.0-xxx	2,00	7,00	

Note:

1) Nominal capacity valid for: - Version "S" in straight shape and version "A" in angle shape
- Versions with metrical and imperial connections

2) Nominal working conditions: Condensing temperature: 38°C; evaporating temperature +4,4°C; Liquid temperature 37°C

3) R407C data based on dew point conditions

4) Model Name in this table is referred to the first 4 positions of the model designation

THERMOSTATIC EXPANSION VALVE



MODEL LIST

Evaporation Temp. Range to = +10...-40°C [1)]

Model Name [2) 3) 4) 5)]				Connections Size (Solder ODF)					
				Inlet		Outlet		Pressure Equal.	
Valve Body All Refrigerants	**Capacity Size** All Sizes	**Valve Shape**[6)] Straight / Angle	**Pipe connections** Metric / Imperial	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
RFGB 01 - RFGB 02 - RFGB 03 - RFGB 04 - RFGB 06 -	0 - 1 - 2 - 3 - 4 - 5 -	S -	M6 M10	6	-	10	-	-	-
				10	-	12	-	-	-
			2 3	-	1/4	-	3/8	-	-
				-	3/8	-	1/2	-	-
		A -	M6 M10	6	-	10	-	-	-
				10	-	12	-	-	-
			2 3	-	1/4	-	3/8	-	-
				-	3/8	-	1/2	-	-
RFGB 01E - RFGB 02E - RFGB 03E - RFGB 04E - RFGB 06E -	0 - 1 - 2 - 3 - 4 - 5 -	S -	M6 M10	6	-	10	-	6	-
				10	-	12	-	6	-
			2 3	-	1/4	-	3/8	-	1/4
				-	3/8	-	1/2	-	1/4
		A -	M6 M10	6	-	10	-	6	-
				10	-	12	-	6	-
			2 3	-	1/4	-	3/8	-	1/4
					3/8	-	1/2	-	1/4

Note:

1) Different evaporation temperature range on request

2) Extent of delivery: valve body and bulb strap

3) MOP function on request

4) Delivery time on request

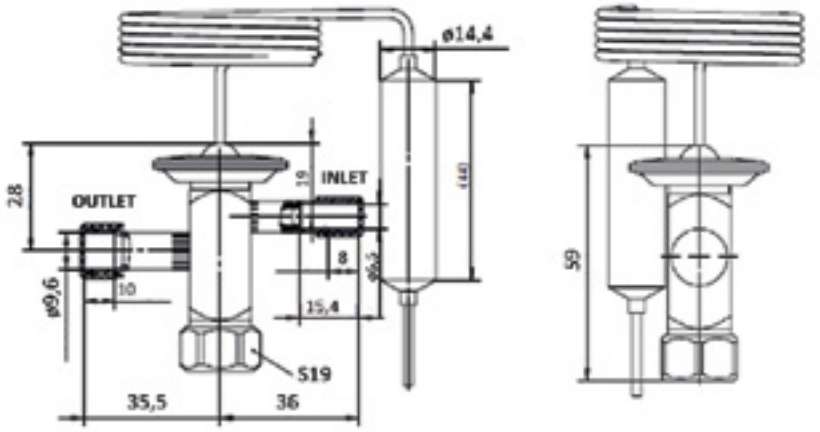
5) Model Name in this table is referred to the first 6 positions of the model designation

6) Superheat : - Straight version "S" with adjustable settings
- Angle version "A" with fixed factory settings

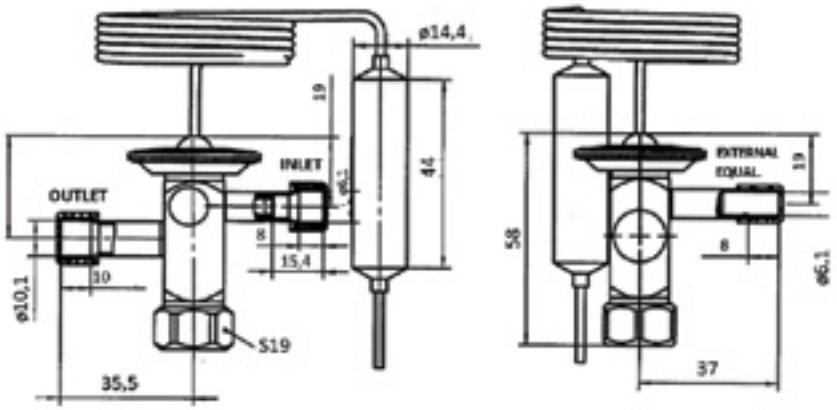
THERMOSTATIC EXPANSION VALVE



DIMENSIONS



Straight Shape with Internal Pressure Equalization

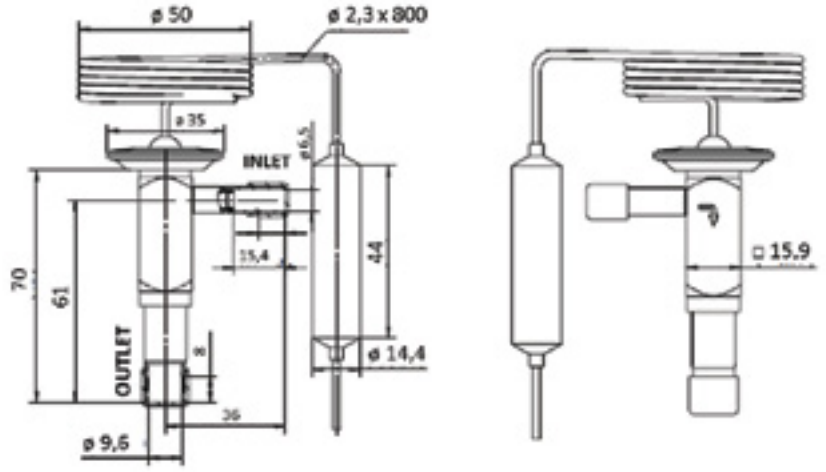


Straight Shape with External Pressure Equalization

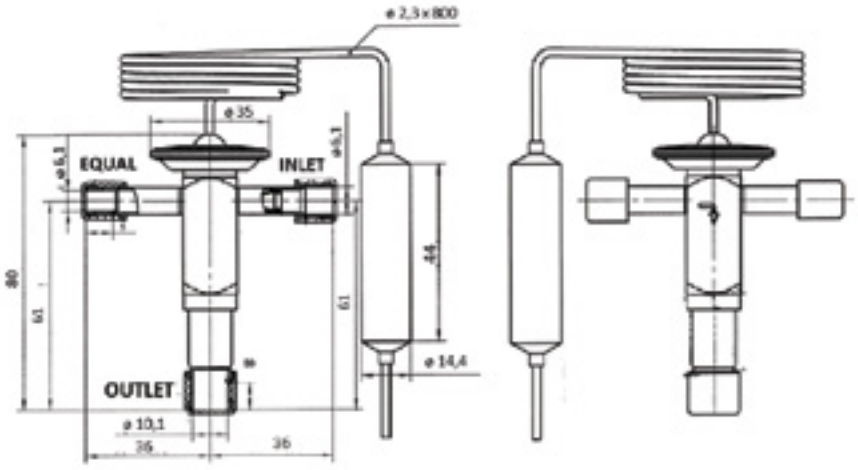
THERMOSTATIC EXPANSION VALVE



DIMENSIONS



Angle Shape with Internal Pressure Equalization



Angle Shape with External Pressure Equalization

RFGB *SERIES*

THERMOSTATIC EXPANSION VALVE WITH REPLACABLE STRAINER



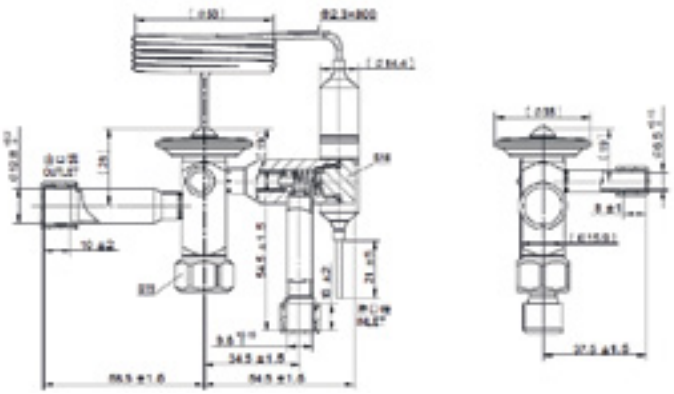
RFGB thermostatic expansion valves are also available on request with a replaceable strainer placed on the inlet connection of the valve. This mechanical filter equipped with a metallic net (mesh 100) can block all the potential impurities present in the refrigeration circuit avoiding that some of them damage the valve. The particular layout of the inlet connection (from the bottom) allows the strainer to be removed for cleaning or replacement without having to remove the valve from the system

All the RFGB variants shown on "Technical Data" and "Model List" tables can be customized on request with the introduction of a replaceable strainer.

MODEL DESIGNATION EXAMPLE

Position Number							According to Model Designation Legend
1	2	3	4	5	6	7	
RFGB	04	E	3	S	M6	xxx	Thermostatic expansion valve with build-in orifice
RFGB	**04**	E	3	S	M6	xxx	Refrigerant: R134a
RFGB	04	**E**	3	S	M6	xxx	With connection for external pressure equalization
RFGB	04	E	**3**	S	M6	xxx	Capacity: Valve and orifice size 3
RFGB	04	E	3	**S**	M6	xxx	Valve Shape: straight
RFGB	04	E	3	S	**M6**	xxx	Valve pipe connections: metric inlet 6mm/outlet 10mm
RFGB	04	E	3	S	M6	**8xx**	"8" as first digits for RFGB with strainer

DIMENSIONS (RFGB WITH REPLACEABLE STRAINER)



Straight shape with external equalization and replaceable strainer

***RFGB** SERIES*

THERMOSTATIC EXPANSION VALVE



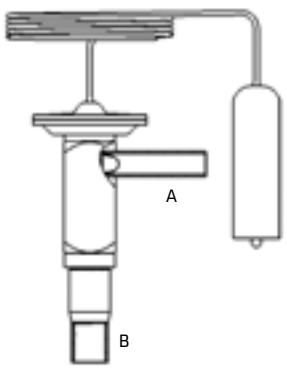
RFGB series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant´s superheat at the outlet of the evaporator. They can be used for various refrigerants under all working conditions. Typical applications are refrigeration systems like commercial refrigerators and freezers, icemakers, dehumidifiers as well as air conditioners and heat pumps at various evaporation temperatures. The RFGB series is suitable for R134a, R404A/R507A and R407C, while the RFGB 06 series has been specifically designed and optimized for application with propane (R290).

FEATURES

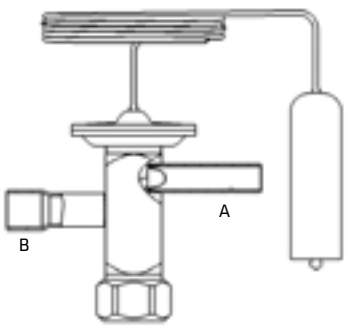
- COMPACT DESIGN WITH BUILD-IN ORIFICE
- WARM THERMO HEAD CONSTRUCTION
- ALL CONNECTIONS PIPES ARE COMPLETELY IN COPPER
- BULB AND CAPILLARY IN STAINLESS STEEL GUARANTEE HIGH ROBUSTNESS
- VALVES WITH MOP FUNCTION CAN BE PROVIDED TO ASSURE RELIABLE COMPRESSOR OPERATION
- APPLICABLE IN A WIDE EVAPORATION TEMPERATURE RANGE
- RELIABLE AND CONSISTENT PERFORMANCE OF SUPERHEAT CONTROL

GENERAL SPECIFICATION

- Applicable for refrigerants:
  R134a, R404A/R507A, R407C, R290
- A2L refrigerants (including those under evaluation) available upon request
- Ambient temperature min./max.: -35/+55°C
- Medium temperature TS min./max.: -40°C / +70°C
- Factory setting for static super heat: 3.5 K
- Max. operating pressure PS: 3,5 MPa (35 bar)
- Installation position:
  - Preferably valve head upwards
  - Flow direction from inlet A to outlet B
- Certifications: UL/CSA and PED declaration



Angle version



Straight version

THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

- RFGB valve available in straight shape with adjustable superheat on site
- RFGB valve available in angle shape with fixed factory superheat settings
- Both versions are available with the following solder connections
  - Metric: Inlet 6mm ODF/ Outlet 10mm ODF or Inlet 10mm ODF/ Outlet 12mm ODF
  - Imperial: Inlet 1/4" ODF/ Outlet 3/8" ODF or Inlet 3/8" ODF/ Outlet 1/2" ODF
- Equalization port available as option:
  - Metric: 6mm ODF (available for models with metric solder connections)
  - Imperial: 1/4" ODF (available for models with imperial solder connections)
- Capillary tube length 800mm

MODEL DESIGNATION LEGEND

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	RFGB	Thermostatic expansion valve with build-in orifice
2	**Refrigerant**	**Description**
	02	R407C
	03	R404A / R507A
	04	R134a
	06	R290
3	**Pressure Equalization**	**Description**
	E	External pressure equalization
	(Omitted)	Internal pressure equalization
4	**Capacity**	**Description**
	YY	Nominal valve capacity in tons (USRT)
5	**Internal Code**	**Description**
	2XXX	Straight Layout + Internal consequential code
	6XXX	Angle Layout + Internal consequential code

THERMOSTATIC EXPANSION VALVE



MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
RFGB	06	E	1.0	xxxx	Thermostatic expansion valve with build-in orifice
RFGB	**06**	E	1.0	xxxx	Refrigerant: R290
RFGB	06	**E**	1.0	xxxx	With connection for external pressure equalization
RFGB	06	E	**1.0**	xxxx	Capacity: Nominal value 1.0 USRT (3.5kW)
RFGB	06	E	1.0	**6xxx**	Angle Shape + Internal consequential code

MODELS DESIGNATION (VALVE HEAD)



Code	Description
GB06E-0.17-2800	Part number
-40/+10°C	Evaporating temperature (°C)
-40/+50°F	Evaporating temperature (°F)
R290	Refrigerant
MWP 3.5Mpa	Max. Working Pressure (MPa)
MWP 505psig	Evaporating temperature (Psig)

THERMOSTATIC EXPANSION VALVE



TECHNICAL DATA

Nominal Cooling Capacities [1) 2)]

Nominal Cooling Capacities[1)2)]				
Refrigerant	**Size**	**Valve Nomenclature**	**Capacity**	
			[USRT]	**[kW]**
R407C	0	RFGB02(E)-0.19-xxx	0,19	0,67
	1	RFGB02(E)-0.38-xxx	0,38	1,30
	2	RFGB02(E)-0.76-xxx	0,76	2,70
	3	RFGB02(E)-1.1-xxx	1,10	3,90
	4	RFGB02(E)-1.6-xxx	1,60	5,60
	5	RFGB02(E)-2.2-xxx	2,20	7,70
R404A / R507A	0	RFGB03(E)-0.13-xxx	0,13	0,50
	1	RFGB03(E)-0.25-xxx	0,25	0,90
	2	RFGB03(E)-0.5-xxx	0,50	1,80
	3	RFGB03(E)-0.7-xxx	0,70	2,50
	4	RFGB03(E)-1.0-xxx	1,00	3,50
	5	RFGB03(E)-1.4-xxx	1,40	4,90
R134a	0	RFGB04(E)-0.12-xxx	0,12	0,40
	1	RFGB04(E)-0.23-xxx	0,22	0,80
	2	RFGB04(E)-0.44-xxx	0,44	1,50
	3	RFGB04(E)-0.63-xxx	0,63	2,20
	4	RFGB04(E)-0.94-xxx	0,94	3,30
	5	RFGB04(E)-1.3-xxx	1,30	4,60
R290	0	RFGB06(E)-0.17-xxx	0,17	0,60
	1	RFGB06(E)-0.35-xxx	0,35	1,20
	2	RFGB06(E)-0.7-xxx	0,70	2,50
	3	RFGB06(E)-1.0-xxx	1,00	3,50
	4	RFGB06(E)-1.5-xxx	1,50	5,30
	5	RFGB06(E)-2.0-xxx	2,00	7,00

Note:

1) Nominal capacity valid for: - Version in straight and angle shape -
- Versions with metrical and imperial connections

2) Nominal working conditions: Condensing temperature: 38°C; evaporating temperature +4,4°C;
Liquid temperature 37°C

THERMOSTATIC EXPANSION VALVE



MODEL LIST

Table 1

Temperature ***Range N: from -40°C to +10°C****, without MOP*
Models with ***Straight layout*** *and adjustable static superheat setting*
Models with ***Imperial Connections***
Models with ***External Equalization****: connection size 1/4" (*)*

Refri-gerant	Valve Size	Capacity	Bleed	Connection (Solder ODF) IN/OUT	Model Name [Internal Eq.]	Product Number (U11) [Internal Eq.]	Model Name [External Eq.]*	Product Number (U11) [External Eq.]
		[kW]	[%]	[inch]				
R290	0	0,6	15%	1/4"; 3/8"	RFGB06-0.17-2xxx	On Request	RFGB06E-0.17-2xxx	On Request
	0	0,6	0%	1/4"; 3/8"	RFGB06-0.17-2800	102052520	RFGB06E-0.17-2840	102052671
	0	0,6	0%	3/8"; 1/2"	RFGB06-0.17-2880	102052638	RFGB06E-0.17-2920	102052729
	1	1,2	15%	1/4"; 3/8"	RFGB06-0.35-2806	On Request	RFGB06E-0.35-2xxx	On Request
	1	1,2	0%	1/4"; 3/8"	RFGB06-0.35-2801	102052521	RFGB06E-0.35-2841	102052672
	1	1,2	0%	3/8"; 1/2"	RFGB06-0.35-2881	102052508	RFGB06E-0.35-2921	102052730
	2	1,2	15%	1/4"; 3/8"	RFGB06-0.7-2xxx	On Request	RFGB06E-0.7-2xxx	On Request
	2	2,5	0%	1/4"; 3/8"	RFGB06-0.7-2802	102052522	RFGB06E-0.7-2842	102052673
	2	2,5	0%	3/8"; 1/2"	RFGB06-0.7-2882	102052505	RFGB06E-0.7-2922	102052731
	3	3,5	15%	1/4"; 3/8"	RFGB06-1.0-2808	On Request	RFGB06E-1.0-2xxx	On Request
	3	3,5	0%	1/4"; 3/8"	RFGB06-1.0-2803	102052540	RFGB06E-1.0-2843	102052674
	3	3,5	0%	3/8"; 1/2"	RFGB06-1.0-2883	102052639	RFGB06E-1.0-2923	102052732
	4	5,3	15%	1/4"; 3/8"	RFGB06-1.5-2807	On Request	RFGB06E-1.5-2xxx	On Request
	4	5,3	0%	1/4"; 3/8"	RFGB06-1.5-2804	102052541	RFGB06E-1.5-2844	102052675
	4	5,3	0%	3/8"; 1/2"	RFGB06-1.5-2884	102052640	RFGB06E-1.5-2924	102052733
	5	7	0%	1/4"; 3/8"	RFGB06-2.0-2805	102052542	RFGB06E-2.0-2845	102052676
	5	7	0%	3/8"; 1/2"	RFGB06-2.0-2885	102052641	RFGB06E-2.0-2925	102052441
R407C	0	0,67	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.19-2xxx	On Request	RFGB02E-0.19-2xxx	On Request
	1	1,3	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.38-2xxx	On Request	RFGB02E-0.38-2xxx	On Request
	2	2,7	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.76-2xxx	On Request	RFGB02E-0.76-2xxx	On Request
	3	3,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-1.1-2xxx	On Request	RFGB02E-1.1-2xxx	On Request
	4	5,6	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-1.6-2xxx	On Request	RFGB02E-1.6-2xxx	On Request
	5	7,7	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-2.2-2xxx	On Request	RFGB02E-2.2-2xxx	On Request
R404A / R507A	0	0,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.13-2xxx	On Request	RFGB03E-0.13-2xxx	On Request
	1	0,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.25-2xxx	On Request	RFGB03E-0.25-2xxx	On Request
	2	1,8	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.5-2xxx	On Request	RFGB03E-0.5-2xxx	On Request
	3	2,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.7-2xxx	On Request	RFGB03E-0.7-2xxx	On Request
	4	3,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-1.0-2xxx	On Request	RFGB03E-1.0-2xxx	On Request
	5	4,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-1.4-2xxx	On Request	RFGB03E-1.4-2xxx	On Request
R134a	0	0,4	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.12-2xxx	On Request	RFGB04E-0.12-2xxx	On Request
	1	0,8	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.23-2xxx	On Request	RFGB04E-0.23-2xxx	On Request
	2	1,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.44-2xxx	On Request	RFGB04E-0.44-2xxx	On Request
	3	2,2	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.63-2xxx	On Request	RFGB04E-0.63-2xxx	On Request
	4	3,3	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.94-2xxx	On Request	RFGB04E-0.94-2xxx	On Request
	5	4,6	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-1.3-2xxx	On Request	RFGB04E-1.3-2xxx	On Request

THERMOSTATIC EXPANSION VALVE



MODEL LIST

Table 2

Temperature ***Range N: from -40°C to +10°C****, without MOP*
Models with ***Straight layout*** *and adjustable static superheat setting*
Models with ***Imperial Connections***
Models with ***External Equalization****: connection size 6 mm (*)*

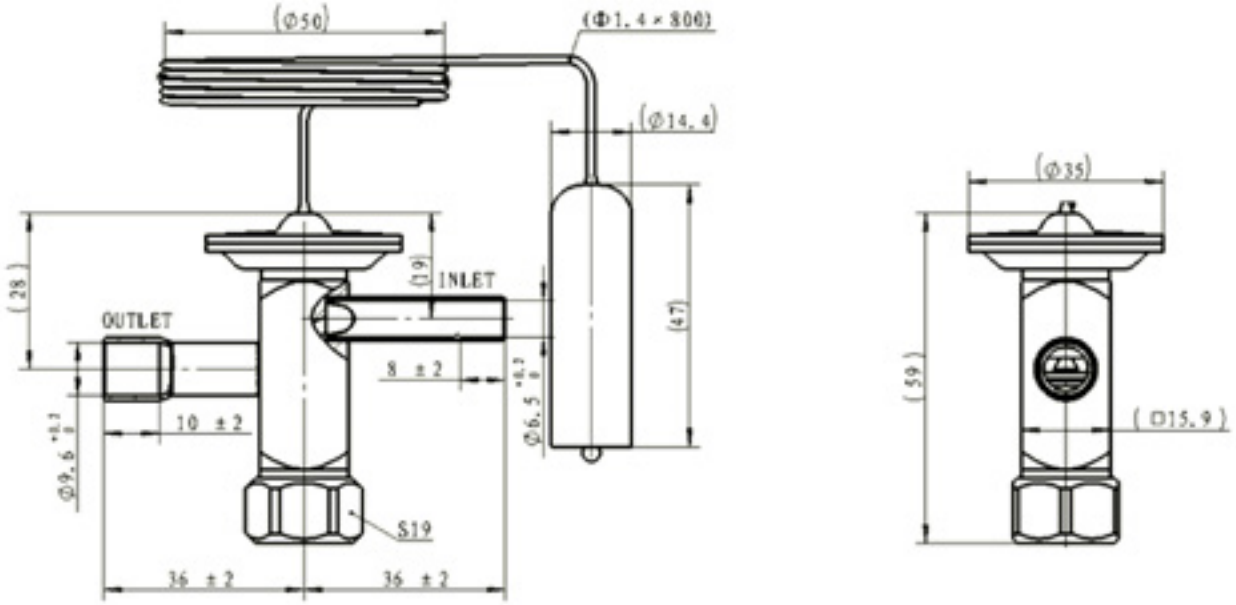
Refri-gerant	Valve Size	Capacity	Bleed	Connection (Solder ODF) IN/OUT	Model Name [Internal Eq.]	Product Number (U11) [Internal Eq.]	Model Name [External Eq.]*	Product Number (U11) [External Eq.]
		[kW]	[%]	[inch]				
R290	0	0,6	15%	6;10	RFGB06-0.17-2xxx	On Request	RFGB06E-0.17-2xxx	On Request
	0	0,6	0%	6;10	RFGB06-0.17-2820	102052570	RFGB06E-0.17-2860	102052706
	0	0,6	0%	10;12	RFGB06-0.17-2900	102052605	RFGB06E-0.17-2940	102052762
	1	1,2	15%	6;10	RFGB06-0.35-2xxx	On Request	RFGB06E-0.35-2xxx	On Request
	1	1,2	0%	6; 10	RFGB06-0.35-2821	102052571	RFGB06E-0.35-2861	102052707
	1	1,2	0%	10; 12	RFGB06-0.35-2901	102052606	RFGB06E-0.35-2941	102052763
	2	2,5	15%	6; 10	RFGB06-0.7-2xxx	On Request	RFGB06E-0.7-2xxx	On Request
	2	2,5	0%	6; 10	RFGB06-0.7-2822	102052572	RFGB06E-0.7-2862	102052708
	2	2,5	0%	10; 12	RFGB06-0.7-2902	102052607	RFGB06E-0.7-2942	102052764
	3	3,5	15%	6; 10	RFGB06-1.0-2xxx	On Request	RFGB06E-1.0-2xxx	On Request
	3	3,5	0%	6; 10	RFGB06-1.0-2823	102052573	RFGB06E-1.0-2863	102052709
	3	3,5	0%	10; 12	RFGB06-1.0-2903	102052608	RFGB06E-1.0-2943	102052765
	4	5,3	0%	6; 10	RFGB06-1.5-2824	102052574	RFGB06E-1.5-2864	102052710
	4	5,3	0%	10; 12	RFGB06-1.5-2904	102052609	RFGB06E-1.5-2944	102052766
	5	7	0%	6; 10	RFGB06-2.0-2825	102052575	RFGB06E-2.0-2865	102052711
	5	7	0%	10; 12	RFGB06-2.0-2905	102052610	RFGB06E-2.0-2945	102052767
R407C	0	0,67	0%	6; 10 // 10; 12	RFGB02-0.19-2xxx	On Request	RFGB02E-0.19-2xxx	On Request
	1	1,3	0%	6; 10 // 10; 12	RFGB02-0.38-2xxx	On Request	RFGB02E-0.38-2xxx	On Request
	2	2,7	0%	6; 10 // 10; 12	RFGB02-0.76-2xxx	On Request	RFGB02E-0.76-2xxx	On Request
	3	3,9	0%	6; 10 // 10; 12	RFGB02-1.1-2xxx	On Request	RFGB02E-1.1-2xxx	On Request
	4	5,6	0%	6; 10 // 10; 12	RFGB02-1.6-2xxx	On Request	RFGB02E-1.6-2xxx	On Request
	5	7,7	0%	6; 10 // 10; 12	RFGB02-2.2-2xxx	On Request	RFGB02E-2.2-2xxx	On Request
R404A / R507A	0	0,5	0%	6; 10 // 10; 12	RFGB03-0.13-2xxx	On Request	RFGB03E-0.13-2xxx	On Request
	1	0,9	0%	6; 10 // 10; 12	RFGB03-0.25-2xxx	On Request	RFGB03E-0.25-2xxx	On Request
	2	1,8	0%	6; 10 // 10; 12	RFGB03-0.5-2xxx	On Request	RFGB03E-0.5-2xxx	On Request
	3	2,5	0%	6; 10 // 10; 12	RFGB03-0.7-2xxx	On Request	RFGB03E-0.7-2xxx	On Request
	4	3,5	0%	6; 10 // 10; 12	RFGB03-1.0-2xxx	On Request	RFGB03E-1.0-2xxx	On Request
	5	4,9	0%	6; 10 // 10; 12	RFGB03-1.4-2xxx	On Request	RFGB03E-1.4-2xxx	On Request
R134a	0	0,4	0%	6; 10 // 10; 12	RFGB04-0.12-2xxx	On Request	RFGB04E-0.12-2xxx	On Request
	1	0,8	0%	6; 10 // 10; 12	RFGB04-0.23-2xxx	On Request	RFGB04E-0.23-2xxx	On Request
	2	1,5	0%	6; 10 // 10; 12	RFGB04-0.44-2xxx	On Request	RFGB04E-0.44-2xxx	On Request
	3	2,2	0%	6; 10 // 10; 12	RFGB04-0.63-2xxx	On Request	RFGB04E-0.63-2xxx	On Request
	4	3,3	0%	6; 10 // 10; 12	RFGB04-0.94-2xxx	On Request	RFGB04E-0.94-2xxx	On Request
	5	4,6	0%	6; 10 // 10; 12	RFGB04-1.3-2xxx	On Request	RFGB04E-1.3-2xxx	On Request

Note: 1) Different evaporation temperature range on request
2) Extent of delivery: valve body and bulb strap
3) MOP function on request
4) Bleed function on request (5%, 10% or 15%)

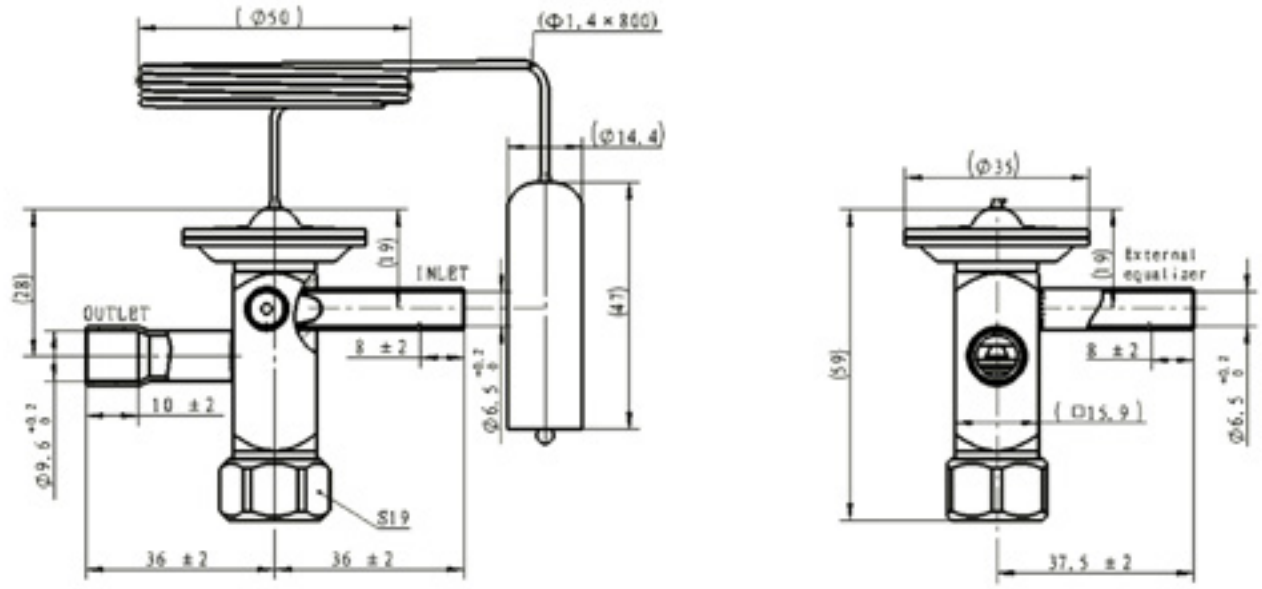
THERMOSTATIC EXPANSION VALVE



DIMENSIONS STRAIGHT SHAPE VERSION



Internal pressure equalization



External pressure equalization

THERMOSTATIC EXPANSION VALVE



MODEL LIST

Table 3

Temperature ***Range N: from -40°C to +10°C****, without MOP*
Models with ***Angle layout*** *and fixed static super-heat setting*
Models with ***Imperial Connections***
Models with ***External Equalization****: connection size 1/4" (*)*

Refri-gerant	Valve Size	Capacity	Bleed	Connection (Solder ODF) IN/OUT	Model Name [Internal Eq.]	Product Number (U11) [Internal Eq.]	Model Name [External Eq.]*	Product Number (U11) [External Eq.]
		[kW]	[%]	[inch]				
R290	0	0,6	15%	1/4"; 3/8"	RFGB06-0.17-6xxx	On Request	RFGB06E-0.17-6xxx	On Request
	0	0,6	0%	1/4"; 3/8"	RFGB06-0.17-6800	102052797	RFGB06E-0.17-6840	10205293
	0	0,6	0%	3/8"; 1/2"	RFGB06-0.17-6880	102052899	RFGB06E-0.17-6920	102053004
	1	1,2	15%	1/4"; 3/8"	RFGB06-0.35-6xxx	On Request	RFGB06E-0.35-6xxx	On Request
	1	1,2	0%	1/4"; 3/8"	RFGB06-0.35-6801	102052280	RFGB06E-0.35-6841	102052935
	1	1,2	0%	3/8"; 1/2"	RFGB06-0.35-6881	102052900	RFGB06E-0.35-6921	102053005
	2	2,5	15%	1/4"; 3/8"	RFGB06-0.7-6xxx	On Request	RFGB06E-0.7-6xxx	On Request
	2	2,5	0%	1/4"; 3/8"	RFGB06-0.7-6802	102052798	RFGB06E-0.7-6842	102052936
	2	2,5	0%	3/8"; 1/2"	RFGB06-0.7-6882	102052901	RFGB06E-0.7-6922	102053006
	3	3,5	15%	1/4"; 3/8"	RFGB06-1.0-6xxx	On Request	RFGB0E6-1.0-6xxx	On Request
	3	3,5	0%	1/4"; 3/8"	RFGB06-1.0-6803	102052799	RFGB06E-1.0-6843	102052937
	3	3,5	0%	3/8"; 1/2"	RFGB06-1.0-6883	102052902	RFGB06E-1.0-6923	102053007
	4	5,3	0%	1/4"; 3/8"	RFGB06-1.5-6804	102052800	RFGB06E-1.5-6844	102052938
	4	5,3	0%	3/8"; 1/2"	RFGB06-1.5-6884	102052903	RFGB06E-1.5-6924	102053008
	5	7	0%	1/4"; 3/8"	RFGB06-2.0-6805	102052801	RFGB06E-2.0-6845	102052939
	5	7	0%	3/8"; 1/2"	RFGB06-2.0-6885	102052904	RFGB06E-2.0-6925	102053009
R407C	0	0,67	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.19-6xxx	On Request	RFGB02E-0.19-6xxx	On Request
	1	1,3	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.38-6xxx	On Request	RFGB02E-0.38-6xxx	On Request
	2	2,7	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-0.76-6xxx	On Request	RFGB02E-0.76-6xxx	On Request
	3	3,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-1.1-6xxx	On Request	RFGB02E-1.1-6xxx	On Request
	4	5,6	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-1.6-6xxx	On Request	RFGB02E-1.6-6xxx	On Request
	5	7,7	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB02-2.2-6xxx	On Request	RFGB02E-2.2-6xxx	On Request
R404A / R507A	0	0,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.13-6xxx	On Request	RFGB03E-0.13-6xxx	On Request
	1	0,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.25-6xxx	On Request	RFGB03E-0.25-6xxx	On Request
	2	1,8	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.5-6xxx	On Request	RFGB03E-0.5-6xxx	On Request
	3	2,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-0.7-6xxx	On Request	RFGB03E-0.7-6xxx	On Request
	4	3,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-1.0-6xxx	On Request	RFGB03E-1.0-6xxx	On Request
	5	4,9	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB03-1.4-6xxx	On Request	RFGB03E-1.4-6xxx	On Request
R134a	0	0,4	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.12-6xxx	On Request	RFGB04E-0.12-6xxx	On Request
	1	0,8	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.23-6xxx	On Request	RFGB04E-0.23-6xxx	On Request
	2	1,5	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.44-6xxx	On Request	RFGB04E-0.44-6xxx	On Request
	3	2,2	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.63-6xxx	On Request	RFGB04E-0.63-6xxx	On Request
	4	3,3	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-0.94-6xxx	On Request	RFGB04E-0.94-6xxx	On Request
	5	4,6	0%	1/4"; 3/8" // 3/8"; 1/2"	RFGB04-1.3-6xxx	On Request	RFGB04E-1.3-6xxx	On Request

THERMOSTATIC EXPANSION VALVE



MODEL LIST

Table 4

Temperature ***Range N: from -40°C to +10°C****, without MOP*
Models with ***Angle layout*** *and fixed static super-heat setting*
Models with ***Metric Connections***
Models with ***External Equalization****: connection size 6mm (*)*

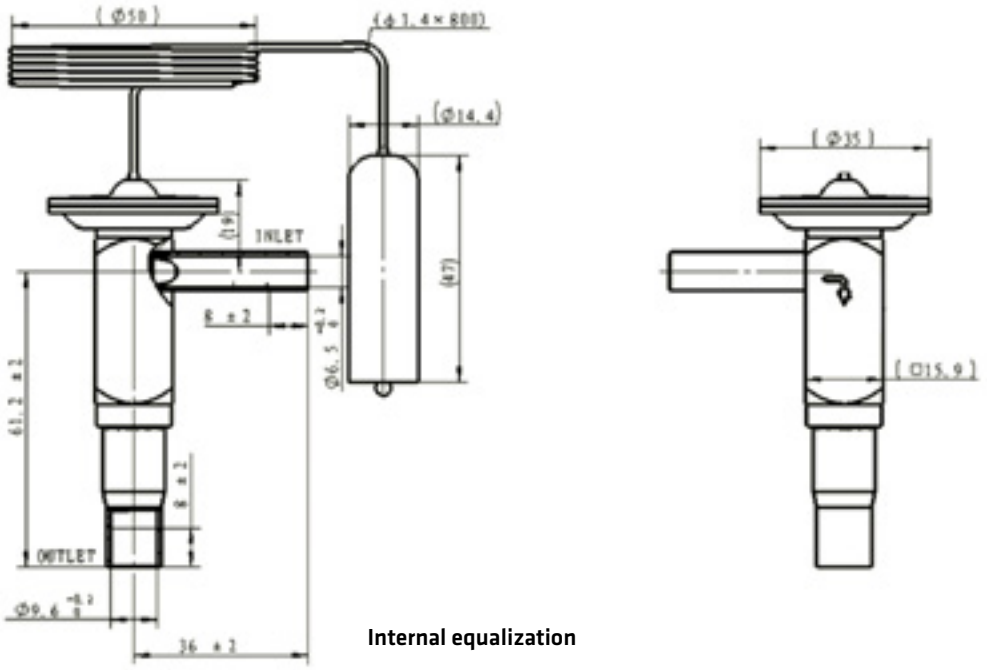
Refri-gerant	Valve Size	Capacity	Bleed	Connection (Solder ODF) IN/OUT	Model Name [Internal Eq.]	Product Number (U11) [Internal Eq.]	Model Name [External Eq.]*	Product Number (U11) [External Eq.]
		[kW]	[%]	[inch]				
R290	0	0,6	15%	6; 10	RFGB06-0.17-6xxx	On Request	RFGB06E-0.17-6xxx	On Request
	0	0,6	0%	6; 10	RFGB06-0.17-6820	102052830	RFGB06E-0.17-6860	102052969
	0	0,6	0%	10; 12	RFGB06-0.17-6900	102052865	RFGB06E-0.17-6940	102053039
	1	1,2	15%	6; 10	RFGB06-0.35-6828	On Request	RFGB06E-0.35-6xxx	On Request
	1	1,2	0%	6; 10	RFGB06-0.35-6821	102052831	RFGB06E-0.35-6861	102052970
	1	1,2	0%	10; 12	RFGB06-0.35-6901	102052866	RFGB06E-0.35-6941	102053040
	2	2,5	15%	6; 10	RFGB06-0.7-6xxx	On Request	RFGB06E-0.7-6xxx	On Request
	2	2,5	0%	6; 10	RFGB06-0.7-6822	102052832	RFGB06E-0.7-6862	102052971
	2	2,5	0%	10; 12	RFGB06-0.7-6902	102052867	RFGB06E-0.7-6942	102053041
	3	3,5	15%	6; 10	RFGB06-1.0-6xxx	On Request	RFGB06E-1.0-6xxx	On Request
	3	3,5	0%	6; 10	RFGB06-1.0-6823	102052833	RFGB06E-1.0-6863	102052972
	3	3,5	0%	10; 12	RFGB06-1.0-6903	102052868	RFGB06E-1.0-6943	102053042
	4	5,3	0%	6; 10	RFGB06-1.5-6824	102052834	RFGB06E-1.5-6864	102052834
	4	5,3	0%	10; 12	RFGB06-1.5-6904	102052869	RFGB06E-1.5-6944	102053043
	5	7	0%	6; 10	RFGB06-2.0-6825	102052835	RFGB06E-2.0-6865	102052974
	5	7	0%	10; 12	RFGB06-2.0-6905	102052870	RFGB06E-2.0-6945	102053044
R407C	0	0,67	0%	6; 10 // 10; 12	RFGB02-0.19-6xxx	On Request	RFGB02E-0.19-6xxx	On Request
	1	1,3	0%	6; 10 // 10; 12	RFGB02-0.38-6xxx	On Request	RFGB02E-0.38-6xxx	On Request
	2	2,7	0%	6; 10 // 10; 12	RFGB02-0.76-6xxx	On Request	RFGB02E-0.76-6xxx	On Request
	3	3,9	0%	6; 10 // 10; 12	RFGB02-1.1-6xxx	On Request	RFGB02E-1.1-6xxx	On Request
	4	5,6	0%	6; 10 // 10; 12	RFGB02-1.6-6xxx	On Request	RFGB02E-1.6-6xxx	On Request
	5	7,7	0%	6; 10 // 10; 12	RFGB02-2.2-6xxx	On Request	RFGB02E-2.2-6xxx	On Request
R404A / R507A	0	0,5	0%	6; 10 // 10; 12	RFGB03-0.13-6xxx	On Request	RFGB03E-0.13-6xxx	On Request
	1	0,9	0%	6; 10 // 10; 12	RFGB03-0.25-6xxx	On Request	RFGB03E-0.25-6xxx	On Request
	2	1,8	0%	6; 10 // 10; 12	RFGB03-0.5-6xxx	On Request	RFGB03E-0.5-6xxx	On Request
	3	2,5	0%	6; 10 // 10; 12	RFGB03-0.7-6xxx	On Request	RFGB03E-0.7-6xxx	On Request
	4	3,5	0%	6; 10 // 10; 12	RFGB03-1.0-6xxx	On Request	RFGB03E-1.0-6xxx	On Request
	5	4,9	0%	6; 10 // 10; 12	RFGB03-1.4-6xxx	On Request	RFGB03E-1.4-6xxx	On Request
R134a	0	0,4	0%	6; 10 // 10; 12	RFGB04-0.12-6xxx	On Request	RFGB04E-0.12-6xxx	On Request
	1	0,8	0%	6; 10 // 10; 12	RFGB04-0.23-6xxx	On Request	RFGB04E-0.23-6xxx	On Request
	2	1,5	0%	6; 10 // 10; 12	RFGB04-0.44-6xxx	On Request	RFGB04E-0.44-6xxx	On Request
	3	2,2	0%	6; 10 // 10; 12	RFGB04-0.63-6xxx	On Request	RFGB04E-0.63-6xxx	On Request
	4	3,3	0%	6; 10 // 10; 12	RFGB04-0.94-6xxx	On Request	RFGB04E-0.94-6xxx	On Request
	5	4,6	0%	6; 10 // 10; 12	RFGB04-1.3-6xxx	On Request	RFGB04E-1.3-6xxx	On Request

Note: 1) Different evaporation temperature range on request
2) Extent of delivery: valve body and bulb strap
3) MOP function on request
4) Bleed function on request (5%, 10% or 15%)

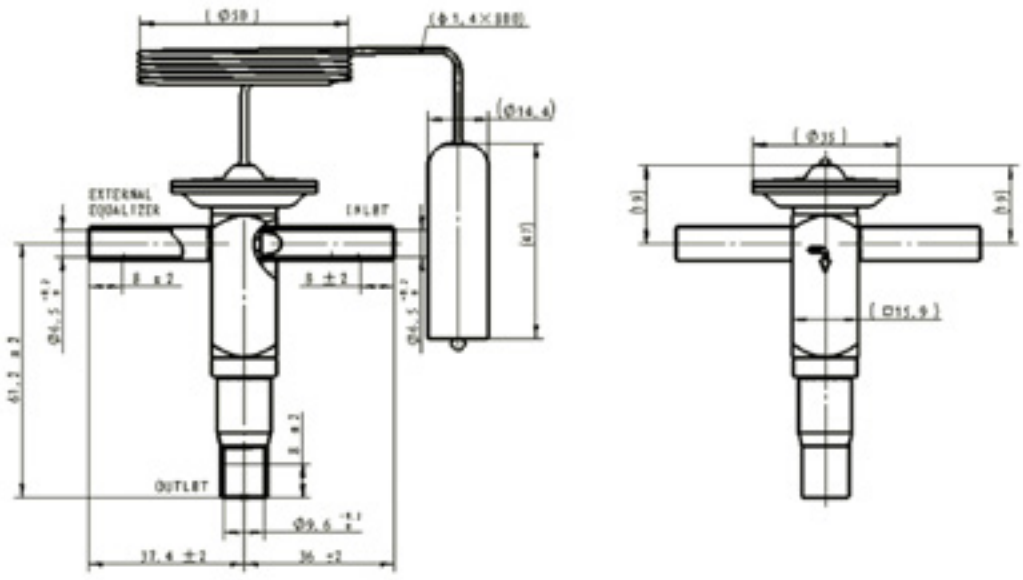
THERMOSTATIC EXPANSION VALVE



DIMENSIONS - ANGLE SHAPE VERSION



Internal equalization



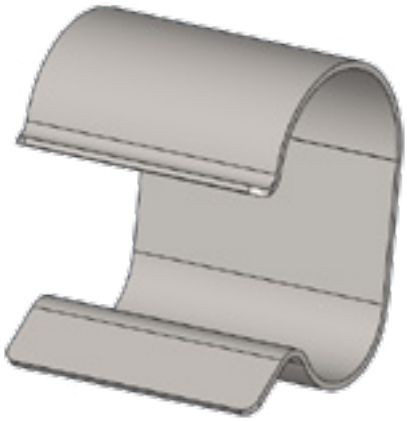
External equalization

THERMOSTATIC EXPANSION VALVE



ACCESSORIES

All the RFGB06 models listed in this datasheet are equipped with stainless-steel clips suitable to fix the sensitive element (bulb) to the suction line piping. The standard clip matches pipes with diameters 9.52mm (3/8"). Clips suitable for pipes with different diameters can be ordered as accessories: models and ordering codes are visible in the table below. As an alternative Sanhua offers a stainless-steel stripe to fix the bulb suitable for a wide range of pipe diameters.

Picture	Type / Pipe	Model	Ordering Number (U11)	Quantity per Pack
	Stripe	RFK-000-019013	20201012702	160
	Clip [6 mm]	RFK-000-025024	20205202201	500
	Clip [8 mm]	RFK-000-025022	20205202001	
	Clip [10 mm]	RFK-000-025021	20205201901	
	Clip [12 mm]	RFK-000-025023	20205202101	
	Clip [1/4"]	RFK-000-025024	20205202201	
	Clip [5/16" mm]	RFK-000-025022	20205202001	
	Clip [3/8" mm]	RFK-000-025021	20205201901	
	Clip [1/2" mm]	RFK-000-025023	20205202101	

***RFGD** SERIES*

THERMOSTATIC EXPANSION VALVE



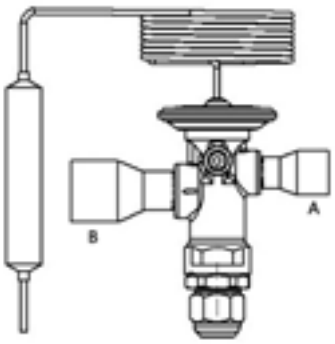
RFGD series thermostatic expansion valves are used to adjust mass flow of refrigerant into the evaporator while controlling the refrigerant´s superheat at the outlet of the evaporator. They can be used for various refrigerants under all working conditions. Typical applications are refrigeration systems like commercial refrigerators and freezers, icemakers, dehumidifiers as well as air conditioners at various evaporation temperatures.

FEATURES

- COMPACT DESIGN WITH BUILD-IN ORIFICE
- DOUBLE DIAPHRAGM DESIGN
- WARM THERMO HEAD CONSTRUCTION
- ALL CONNECTIONS PIPES ARE COMPLETELY IN COPPER
- VALVES WITH MOP FUNCTION CAN BE PROVIDED TO ASSURE RELIABLE COMPRESSOR OPERATION
- APPLICABLE IN A WIDE EVAPORATION TEMPERATURE RANGE
- RELIABLE AND CONSISTENT PERFORMANCE OF SUPERHEAT CONTROL
- BALANCED PORT – SUITABLE FOR REVERSIBLE CYCLES
- THERMAL BULB UTILIZES CROSS CHARGE TECHNOLOGY, PROVIDING CONSISTENT SUPERHEAT DEGREE OVER THE WHOLE EVAPORATION TEMPERATURE RANGE
- WIDE CAPACITIES RANGE SPLIT IN 9 ORIFICES SIZES:
  - RFGD10: (ORIFICES 1 TO 6)
  - RFGD20: (ORIFICES 7 TO 9)

GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R507A, R407C, R410A; R448A/R449A, R452A, R513A, R407A with an appropriate SH adjustment
- Ambient temperature min./max.: -35/+55°C
- Medium temperature TS min./max.: -40°C / +70°C
- Max. operating pressure PS: 4.8 Mpa[1)]
- Installation position:
  - Preferably valve head upwards
  - Main flow direction from inlet A to outlet B
- Certifications: UL/CSA and PED declaration



THERMOSTATIC EXPANSION VALVE



TECHNICAL PARAMETERS

- RFGD valves are available in straight shape with adjustable superheat on site
- RFGD valves are available with the different solder and flare connections (see more details in following tables)
- RFGD valves are available with 2 different temperature ranges:
  - from -40°C to +10°C
  - from -25°C to +10°C
- Equalization port available as option:
  - Metric: 6mm ODF (available for models with metric solder connections)
  - Imperial: 1/4" ODF (available for models with imperial solder connections)
- Capillary tube length 1500mm as standard. Different length customizable on request.
- Standard MOP values:
  - T. range -40°C to +10°C: MOP: +15°C or MOP not present
  - T. range -25°C to +10°C: MOP: +15°C

MODEL DESIGNATION LEGEND

Position Number	Model Designation Legend	
1	**Product Code**	**Product Series**
	RFGD	Thermostatic expansion valve with build-in orifice
2	**Refrigerant**	**Description**
	1	R22
	2	R407C
	3	R404A / R507
	4	R134a
	5	R410A
3	**Pressure Equalization**	**Description**
	E	External pressure equalization
	(Omitted)	Internal pressure equalization
4	**Capacity**	**Description**
	X.X	Nominal valve capacity in tons
5	**Miscellaneous**	**Description**
	xxx	Digits for additional information

THERMOSTATIC EXPANSION VALVE



MODEL DESIGNATION EXAMPLE

Position Number					According to Model Designation Legend
1	2	3	4	5	
RFGD	04	E	1.5	xxx	Thermostatic expansion valve with build-in orifice
RFGD	**04**	E	1.5	xxx	Refrigerant: R134a
RFGD	04	**E**	1.5	xxx	With connection for external pressure equalization
RFGD	04	E	**1.5**	xxx	Capacity: Valve and orifice size **3**
RFGD	04	E	1.5	**xxx**	Digits for additional information

MODELS DESIGNATION (VALVE HEAD)



Code	Description
GD04E-1.5-1601	Model
-40/10°C	Evaporating temperature (°C)
-40/+50°F	Evaporating temperature (°F)
R134a	Refrigerant
MWP 4.8 Mpa	Max. Working Pressure (MPa)
MWP 695 psig	Max. Working Pressure (Psig)

THERMOSTATIC EXPANSION VALVE



TECHNICAL DATA

Nominal Capacities[1]

R22			R407C[2)]			R404A / R507A			R134a			R410A		
PS: 2,8 MPa			PS: 2,8 MPa			PS: 3,5 MPa			PS: 2,1 MPa			PS: 4,5 MPa		
Model Name[3)]	Capacity		Model Name[3)]	Capacity		Model Name[3)]	Capacity		Model Name[3)]	Capacity		Model Name[3)]	Capacity	
	[USRT]	[kW]		[USRT]	[kW]		[USRT]	[kW]		[USRT]	[kW]		[USRT]	[kW]
RFGD 01(E)-1	3,0	10,6	RFGD 02(E)-1	2,5	8,8	RFGD 03(E)-1	2,0	7,0	RFGD 04(E)-1	1,5	5,3	RFGD 05(E)-1	3,5	12,3
RFGD 01(E)-2	4,0	14,1	RFGD 02(E)-2	3,5	12,3	RFGD 03(E)-2	2,5	8,8	RFGD 04(E)-2	2,5	8,8	RFGD 05(E)-2	4,5	15,8
RFGD 01(E)-3	6,0	12,1	RFGD 02(E)-3	5,0	17,6	RFGD 03(E)-3	4,0	14,1	RFGD 04(E)-3	3,5	12,3	RFGD 05(E)-3	6,5	22,9
RFGD 01(E)-4	7,5	26,4	RFGD 02(E)-4	7,0	24,6	RFGD 03(E)-4	5,0	17,6	RFGD 04(E)-4	4,5	15,8	RFGD 05(E)-4	9,0	31,7
RFGD 01(E)-5	9,0	31,7	RFGD 02(E)-5	8,5	29,9	RFGD 03(E)-5	6,0	21,1	RFGD 04(E)-5	5,5	19,3	RFGD 05(E)-5	11,0	38,7
RFGD 01(E)-6	11,0	38,7	RFGD 02(E)-6	10,0	35,2	RFGD 03(E)-6	7,5	26,4	RFGD 04(E)-6	7,0	24,6	RFGD 05(E)-6	13,0	45,7
RFGD 01(E)-7	12,0	42,2	RFGD 02(E)-7	12,0	42,2	RFGD 03(E)-7	9,0	31,7	RFGD 04(E)-7	8,0	28,1	RFGD 05(E)-7	15,0	52,8
RFGD 01(E)-8	15,0	52,8	RFGD 02(E)-8	15,0	52,8	RFGD 03(E)-8	11,0	38,7	RFGD 04(E)-8	10,0	35,2	RFGD 05(E)-8	19,0	66,8
RFGD 01(E)-9	18,0	63,3	RFGD 02(E)-9	18,0	63,3	RFGD 03(E)-9	13,0	45,7	RFGD 04(E)-9	12,0	42,2	RFGD 05(E)-9	23,0	80,9

Note:

1) Nominal capacities referred at the following working conditions:
   Condensing temperature: 38°C; evaporating temperature +4,4°C; Liquid temperature 37°C
   Static Super Heating: 4 K
2) R407C data based on dew point conditions
3) Model Name in this table is referred to the first 4 positions of the model designation

THERMOSTATIC EXPANSION VALVE



RFGD MODELS

RFGD range allow high level of customization on request considering parameters indicated in table below. Contact Sanhua to request specific model not included on standard range.

Model Name									Temperature Range	
Refrigerant	Valve Body	Capacity Size	Inlet		Outlet		Pressure Equal.			-40°C to +10°C	-25°C to +10°C
			[mm]	[inch]	[mm]	[inch]	w/equal	[mm]	[inch]		
R22 R407C R404A/R507 R134a R410A	RFGD01 RFGD02 RFGD03 RFGD04 RFGD05	1- 2- 3- 4- 5- 6-	10	-	16	-	-	6	-	No MOP	MOP: +15°C
			12	-	22	-		6	-		
			16		22			6	-		
			-	3/8	-	5/8		-	1/4		
			-	1/2	-	7/8		-	1/4		
				5/8		7/8		-	1/4		
		7- 8- 9-	16		22		-	6			
			16		28			6			
			16		28			6			
			22		28			6			
			22		28			6			
			22		35			6			
				5/8		7/8			1/4		
				5/8		1-1/8			1/4		
				5/8		1-1/8			1/4		
				7/8		1-1/8			1/4		
				7/8		1-1/8			1/4		
				7/8		1-3/8			1/4		

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

A) Models with Metric Connections

RFGD10 (orifice 1-6) -40°C to +10°C (Models without MOP)

Ref.	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
			Metric	[mm]	[mm]		
R407C	RFGD 02E	1 -	M10/16	10 x 16	6	RFGD02E-2.5-1202	10205200202
		2 -	M12/22	12 x 22	6	RFGD02E-3.5-1206	10205200402
		3 -	M12/22	12 x 22	6	RFGD02E-5.0-1212	10205200602
		4 -	M16/22	12 x 22	6	RFGD02E-7.0-1219	10205200802
		5 -	M16/22	16 x 22	6	RFGD02E-8.5-1221	10205201002
		6 -	M16/22	16 x 22	6	RFGD02E-10.0-1224	10205234502
R404A / R507	RFGD 03E	1 -	M10/16	10 x 16	6	RFGD03E-2.0-1402	10205240402
		2 -	M12/22	12 x 22	6	RFGD03E-2.5-1404	10205235202
		3 -	M12/22	12 x 22	6	RFGD03E-4.0-1408	10205235402
		4 -	M16/22	12 x 22	6	RFGD03E-5.0-1411	10205235602
		5 -	M16/22	16 x 22	6	RFGD03E-6.0-1414	10205235802
		6 -	M16/22	16 x 22	6	RFGD03E-7.5-1417	10205235902
R134a	RFGD 04E	1 -	M10/16	10 x 16	6	RFGD04E-1.5-1601	10205240602
		2 -	M12/22	12 x 22	6	RFGD04E-2.5-1604	10205236102
		3 -	M12/22	12 x 22	6	RFGD04E-3.5-1609	10205236202
		4 -	M16/22	12 x 22	6	RFGD04E-4.5-1613	10205236302
		5 -	M16/22	16 x 22	6	RFGD04E-5.5-1616	10205236402
		6 -	M16/22	16 x 22	6	RFGD04E-7.0-1618	10205236502
R410A	RFGD 05E	1 -	M10/16	10 x 16	6	RFGD05E-3.5-1802	10205231402
		2 -	M12/22	12 x 22	6	RFGD05E-4.5-1806	10205236602
		3 -	M12/22	12 x 22	6	RFGD05E-6.5-1812	10205236802
		4 -	M16/22	16 x 22	6	RFGD05E-9.0-1816	10205236902
		5 -	M16/22	16 x 22	6	RFGD05E-11.0-1819	10205220202
		6 -	M16/22	16 x 22	6	RFGD05E-13.0-1824	10205220302

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

B) Models with Metric Connections

RFGD20 (orifice 7-9) -40°C to +10°C (Models without MOP)

Ref.	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
			Metric	[mm]	[mm]		
R407C	RFGD 02E -	7 -	M16/22	16 x 22	6	RFGD02E-12.0-565A	RFGD0011402
		7 -	M16/28	16 x 28	6	RFGD02E-12.0-544A	RFGD0004602
		8 -	M16/28	16 x 28	6	RFGD02E-15.0-546A	RFGD0004702
		8 -	M22/28	22 x 28	6	RFGD02E-15.0-548A	RFGD0004802
		9 -	M22/28	22 x 28	6	RFGD02E-18.0-550A	RFGD0011502
		9 -	M22/35	22 x 35	6	RFGD02E-18.0-566A	RFGD0014702
R404A / R507	RFGD 03E -	7 -	M16/22	16 x 22	6	RFGD03E-9.0-563A	RFGD0015702
		8 -	M16/28	16 x 28	6	RFGD03E-11.0-536A	RFGD0015002
		8 -	M22/28	22 x 28	6	RFGD03E-11.0-538A	RFGD0016502
		9 -	M22/28	22 x 28	6	RFGD03E-13.0-540A	RFGD0015302
		9 -	M22/35	22 x 35	6	RFGD03E-13.0-564A	RFGD0004902
R134a	RFGD 04E -	7 -	M16/22	16 x 22	6	RFGD04E-8.0-559A	RFGD0004202
		7 -	M16/28	16 x 28	6	RFGD04E-8.0-503A	RFGD0017102
		8 -	M16/28	16 x 28	6	RFGD04E-10.0-515A	RFGD0017102
		8 -	M22/28	22 x 28	6	RFGD04E-10.0-521A	RFGD0016202
		9 -	M22/28	22 x 28	6	RFGD04E-12.0-523A	RFGD0008302
R410A	RFGD 05E -	7 -	M16/22	16 x 22	6	RFGD05E-15.0-567A	RFGD0017602
		7 -	M16/28	16 x 28	6	RFGD05E-15.0-552A	RFGD0017502
		8 -	M16/28	16 x 28	6	RFGD05E-19.0-553A	RFGD0006502
		9 -	M22/28	22 x 28	6	RFGD05E-23.0-556A	RFGD0018102
		9 -	M22/35	22 x 35	6	RFGD05E-23.0-568A	RFGD0005002

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

C) Models with Metric Connections

RFGD20 (orifice 7-9) -25°C to +10°C with MOP +15°C

Ref.	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
			Metric	[mm]	[mm]		
R407C	RFGD 02E -	7 -	M16/22	16 x 22	6	RFGD02E-12.0-663A	RFGD0012902
		7 -	M16/28	16 x 28	6	RFGD02E-12.0-639A	RFGD0014402
		8 -	M16/28	16 x 28	6	RFGD02E-15.0-641A	RFGD0014502
		8 -	M22/28	22 x 28	6	RFGD02E-15.0-643A	RFGD0014602
		9 -	M22/28	22 x 28	6	RFGD02E-18.0-645A	RFGD0014802
		9 -	M22/35	22 x 35	6	RFGD02E-18.0-664A	RFGD0014902
R404A / R507	RFGD 03E -	7 -	M16/22	16 x 22	6	RFGD03E-9.0-661A	RFGD0016002
		7 -	M16/28	16 x 28	6	RFGD03E-9.0-629A	RFGD0015902
		8 -	M16/28	16 x 28	6	RFGD03E-11.0-631A	RFGD0015102
		8 -	M22/28	22 x 28	6	RFGD03E-11.0-633A	RFGD0015202
		9 -	M22/28	22 x 28	6	RFGD03E-13.0-635A	RFGD0015502
		9 -	M22/35	22 x 35	6	RFGD03E-13.0-662A	RFGD0015602
R134a	RFGD 04E -	7 -	M16/22	16 x 22	6	RFGD04E-8.0-657A	RFGD0001502
		7 -	M16/28	16 x 28	6	RFGD04E-8.0-603A	RFGD0001602
		8 -	M16/28	16 x 28	6	RFGD04E-10.0-605A	RFGD0016302
		8 -	M22/28	22 x 28	6	RFGD04E-10.0-607A	RFGD0011602
		9 -	M22/28	22 x 28	6	RFGD04E-12.0-609A	RFGD0016702
		9 -	M22/35	22 x 35	6	RFGD04E-12.0-658A	RFGD0017002
R410A	RFGD 05E -	7 -	M16/22	16 x 22	6	RFGD05E-15.0-665A	RFGD0017802
		7 -	M16/28	16 x 28	6	RFGD05E-15.0-649A	RFGD0017702
		8 -	M16/28	16 x 28	6	RFGD05E-19.0-651A	RFGD0017902
		8 -	M22/28	22 x 28	6	RFGD05E-19.0-653A	RFGD0018002
		9 -	M22/28	22 x 28	6	RFGD05E-23.0-655A	RFGD0018202
		9 -	M22/35	22 x 35	6	RFGD05E-23.0-666A	RFGD0018302

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

D) Models with Imperial Connections

RFGD10 (orifice 1-6) -40°C to +10°C (Models without MOP)

Ref.	MWP [MPa]	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
				Imperial	[inch]	[inch]		
R407C	2,8	RFGD 02E	1 -	3/5	3/8 x 5/8	1/4	RFGD02E-2.5-1200	10205200102
			2 -	4/7	1/2 x 7/8	1/4	RFGD02E-3.5-1205	10205200302
			3 -	4/7	1/2 x 7/8	1/4	RFGD02E-5.0-1209	10205200502
			4 -	5/7	5/8 x 7/8	1/4	RFGD02E-7.0-1217	10205200702
			5 -	5/7	5/8 x 7/8	1/4	RFGD02E-8.5-1220	10205200902
			6 -	5/7	5/8 x 7/8	1/4	RFGD02E-10.0-1222	10205215102
R404A / R507	3,5	RFGD 03E	1 -	3/5	3/8 x 5/8	1/4	RFGD03E-2.0-1401	10205240302
			2 -	4/7	1/2 x 7/8	1/4	RFGD03E-2.5-1403	10205235102
			3 -	4/7	1/2 x 7/8	1/4	RFGD03E-4.0-1407	10205235302
			4 -	5/7	5/8 x 7/8	1/4	RFGD03E-5.0-1410	10205235502
			5 -	5/7	5/8 x 7/8	1/4	RFGD03E-6.0-1413	10205235702
			6 -	5/7	5/8 x 7/8	1/4	RFGD03E-7.5-1416	10205215002
R134a	2,1	RFGD 04E	1 -	3/5	3/8 x 5/8	1/4	RFGD04E-1.5-1600	10205240502
			2 -	4/7	1/2 x 7/8	1/4	RFGD04E-2.5-1603	10205236002
			3 -	4/7	1/2 x 7/8	1/4	RFGD04E-3.5-1607	10205220902
			4 -	5/7	5/8 x 7/8	1/4	RFGD04E-4.5-1612	10205221002
			5 -	5/7	5/8 x 7/8	1/4	RFGD04E-5.5-1615	10205221102
			6 -	5/7	5/8 x 7/8	1/4	RFGD04E-7.0-1617	10205221202
R410A	4,5	RFGD 05E	1 -	3/5	3/8 x 5/8	1/4	RFGD05E-3.5-1800	10205231302
			2 -	4/7	1/2 x 7/8	1/4	RFGD05E-4.5-1805	10205233502
			3 -	4/7	1/2 x 7/8	1/4	RFGD05E-6.5-1809	10205236702
			4 -	5/7	5/8 x 7/8	1/4	RFGD05E-9.0-1815	10205217402
			5 -	5/7	5/8 x 7/8	1/4	RFGD05E-11.0-1818	10205215302
			6 -	5/7	5/8 x 7/8	1/4	RFGD05E-13.0-1822	10205215402

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

E) Models with Imperial Connections

RFGD20 (orifice 7-9) -40°C to +10°C (Models without MOP)

Ref.	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
			Imperial	[inch]	[inch]		
R407C	RFGD 02E -	7 -	5/7	5/8 x 7/8	1/4	RFGD02E-12.0-542A	RFGD0005102
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD02E-12.0-543A	RFGD0018802
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD02E-15.0-545A	RFGD0002402
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD02E-15.0-547A	RFGD0005202
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD02E-18.0-549A	RFGD0005302
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD02E-18.0-551A	RFGD0018902
R404A / R507	RFGD 03E -	7 -	5/7	5/8 x 7/8	1/4	RFGD03E-9.0-532A	RFGD0003902
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD03E-9.0-533A	RFGD0002802
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD03E-11.0-537A	RFGD0002902
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD03E-13.0-539A	RFGD0004102
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD03E-13.0-541A	RFGD0003002
R134a	RFGD 04E -	7 -	5/7	5/8 x 7/8	1/4	RFGD04E-8.0-501A	RFGD0005402
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD04E-8.0-502A	RFGD0003302
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD04E-10.0-504A	RFGD0001002
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD04E-10.0-520A	RFGD0003102
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD04E-12.0-522A	RFGD0003402
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD04E-12.0-524A	RFGD0003202
R410A	RFGD 05E -	7 -	5/7	5/8 x 7/8	1/4	RFGD05E-15.0-510A	RFGD0002502
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD05E-15.0-511A	RFGD0005502
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD05E-19.0-512A	RFGD0002602
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD05E-19.0-517A	RFGD0005602
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD05E-23.0-555A	RFGD0002702
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD05E-23.0-557A	RFGD0005702

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

F) Models with Imperial Connections

RFGD20 (orifice 7-9) -25°C to +10°C with MOP +15°C

Ref.	Valve Body	Capacity Size All Sizes	Connections IN x OUT		Pressure Equal.	Model Name	Product Number U11 Code Multi-Pack
			Imperial	[inch]	[inch]		
R407C	RFGD 02E -	7 -	5/7	5/8 x 7/8	1/4	RFGD02E-12.0-637A	RFGD0003502
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD02E-12.0-638A	RFGD0003602
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD02E-15.0-640A	RFGD0018502
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD02E-15.0-642A	RFGD0003702
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD02E-18.0-644A	RFGD0005802
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD02E-18.0-646A	RFGD0003802
R404A / R507	RFGD 03E -	7 -	5/7	5/8 x 7/8	1/4	RFGD03E-9.0-627A	RFGD0015802
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD03E-9.0-628A	RFGD0012302
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD03E-11.0-630A	RFGD0018602
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD03E-11.0-632A	RFGD0012402
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD03E-13.0-634A	RFGD0015402
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD03E-13.0-636A	RFGD0011102
R134a	RFGD 04E -	7 -	5/7	5/8 x 7/8	1/4	RFGD04E-8.0-601A	RFGD0005902
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD04E-8.0-602A	RFGD0017202
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD04E-10.0-604A	RFGD0014202
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD04E-10.0-606A	RFGD0006002
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD04E-12.0-608A	RFGD0006102
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD04E-12.0-610A	RFGD0006402
R410A	RFGD 05E -	7 -	5/7	5/8 x 7/8	1/4	RFGD05E-15.0-647A	RFGD0018402
		7 -	5/9	5/8 x 1-1/8	1/4	RFGD05E-15.0-648A	RFGD0004302
		8 -	5/9	5/8 x 1-1/8	1/4	RFGD05E-19.0-650A	RFGD0007202
		8 -	7/9	7/8 x 1-1/8	1/4	RFGD05E-19.0-652A	RFGD0004402
		9 -	7/9	7/8 x 1-1/8	1/4	RFGD05E-23.0-654A	RFGD0006302
		9 -	7/11	7/8 x 1-3/8	1/4	RFGD05E-23.0-656A	RFGD0004502

THERMOSTATIC EXPANSION VALVE



RFGD STANDARD RANGE

G) Models with Flare Connections

RFGD20 -40°C to +10°C without MOP

Ref.	Valve Body	Capacity Size All Sizes	Connections			Model Name	Product Number U11 Code Multi-Pack
			Flare	INxOUTxE	Flare Type		
R134a	RFGD 04E -	7 -	I5/6	5/8×3/4×1/4	MIOxMIOxMIO	RFGD04E-8.0-525A	RFGD0013802
		8 -	I5/6	5/8×3/4×1/4	MIOxMIOxMIO	RFGD04E-10.0-526A	RFGD0018702
		8 -	S5/6	5/8×3/4×1/4	SAExSAExSAE	RFGD04E-10.0-527A	RFGD0006202
		9 -	I5/6	5/8×3/4×1/4	MIOxMIOxMIO	RFGD04E-12.0-528A	RFGD0013902

Connections

1) MIO: Inlet = 7/8-14UNF-2A ; Outlet = 17/16-14UNS-2A ; Ext. Equalization port = 7/16-20UNF-2A
2) SAE: Inlet = 7/8-14UNF-2A ; Outlet = 17/16-14UNS-2A ; Ext. Equalization port = 7/16-20UNF-2A

H) Models with Flare Connections

RFGD20 -25°C to +10°C with MOP +15°C

Ref.	Valve Body	Capacity Size All Sizes	Connections			Model Name	Product Number U11 Code Multi-Pack
			Flare	INxOUTxE	Flare Type		
R134a	RFGD 04E -	7 -	I5/6	5/8×3/4×1/4	MIOxMIOxMIO	RFGD04E-8.0-611A	RFGD0017302
		7 -	S5/6	5/8×3/4×1/4	SAExSAExSAE	RFGD04E-8.0-612A	RFGD0017402
		8 -	I5/6	5/8×3/4×1/4	MIOxMIOxMIO	RFGD04E-10.0-613A	RFGD0014302
		8 -	S5/6	5/8×3/4×1/4	SAExSAExSAE	RFGD04E-10.0-614A	RFGD0016602
		9 -	S5/6	5/8×3/4×1/4	SAExSAExSAE	RFGD04E-12.0-615A	RFGD0016802
		9 -	O5/6	5/8×3/4×1/4	ORFSxORFSxSAE	RFGD04E-12.0-616A	RFGD0016902

Connections

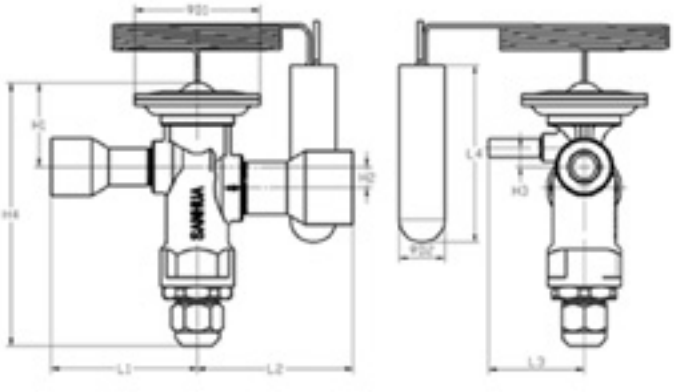
1) MIO: Inlet = 7/8-14UNF-2A ; Outlet = 17/16-14UNS-2A ; Ext. Equalization port = 7/16-20UNF-2A
2) SAE: Inlet = 7/8-14UNF-2A ; Outlet = 17/16-14UNS-2A ; Ext. Equalization port = 7/16-20UNF-2A
3) ORFS: Inlet = 1-14UNS-2A; Outlet = 1-3/16-12UN-2A; Ext. Equalization port = 7/16-20UNF-2A

THERMOSTATIC EXPANSION VALVE

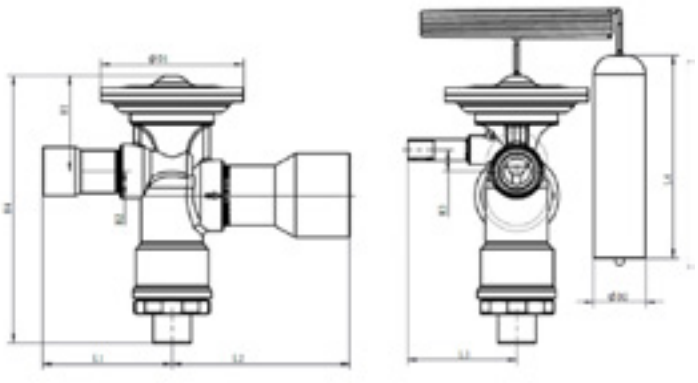


DIMENSIONS

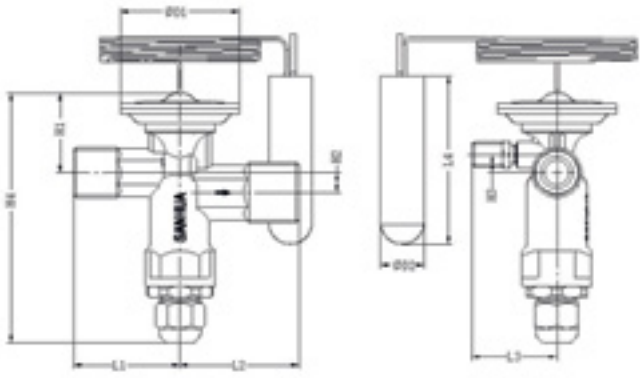
RFGD10



RFGD20



Model	Connections		Capillary	Dimensions [mm]									
	Imperial	Metric		H1	H2	H3	H4	L1	L2	L3	L4	ΦD1	ΦD2
	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
RFGD10	3/8×5/8	10×16	1.5	30	7.5	5	93	41.5	45.5	37.5	67	45	14.5
	1/2×7/8	12×22						41.5	59.5				
	5/8×7/8	16×22						45.5	59.5				
RFGD20	5/8×7/8	16×22	1.5	35.5	9	8	99.31	48	62	40.5	75	53	19.2
	5/8×1-1/8	16×28						48	66				
	7/8×1-1/8	22×28						62	66				
	7/8×1-3/8	22×35						62	66				



Model	Connections	Capillary	Dimensions [mm]									
	Flare		H1	H2	H3	H4	L1	L2	L3	L4	ΦD1	ΦD2
	Inlet x Out x Ext. E	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
RFGD20	5/8×3/4×1/4MIO	1.5	32	9	8	111	47.5	53	37.7	75	53	19,2
	5/8×3/4×1/4SAE											
	5/8×3/4 ORFS×1/4											

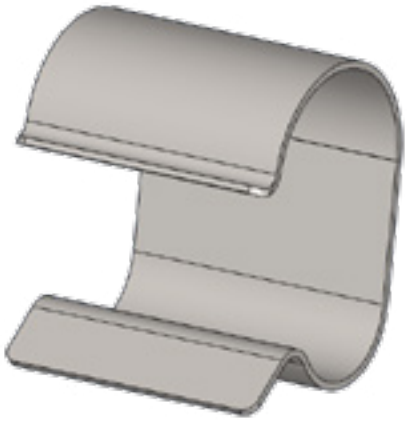
THERMOSTATIC EXPANSION VALVE



ACCESSORIES

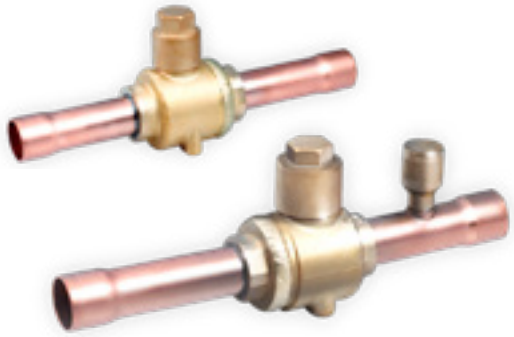
All the RFGC06 models listed in this datasheet are equipped with copper stripe to fix the bulb suitable for a wide range of pipe diameters on suction line piping.

As an alternative Sanhua offers clips suitable for pipes with different diameters. It can be ordered as accessories: models and ordering codes are visible in the table below.

Picture	Type / Pipe	Model	Ordering Number (U11)	Quantity per Pack
	Stripe	RFK-000-019013	20201012702	160
	Clip [6 mm]	RFK-000-025024	20205202201	500
	Clip [8 mm]	RFK-000-025022	20205202001	
	Clip [10 mm]	RFK-000-025021	20205201901	
	Clip [12 mm]	RFK-000-025023	20205202101	
	Clip [1/4"]	RFK-000-025024	20205202201	
	Clip [5/16" mm]	RFK-000-025022	20205202001	
	Clip [3/8" mm]	RFK-000-025021	20205201901	
	Clip [1/2" mm]	RFK-000-025023	20205202101	

***SBV** SERIES*

BALL VALVE



The ball valve of series SBV is applicable for commercial air conditioner, freezing or deep-freezing equipment or other refrigeration circuits in order to open and to shut off inner flow path by operating the valve stem. It can also be used as service valve for vacuum pumping and refrigerant injection etc.

FEATURES

- STRAIGHTWAY TYPE, FULL PORT, LOW PRESSURE DROP , COST-EFFECTIVE
- VALVE BODY AND VALVE SEAT WITH WELDED STRUCTURE, WITH HIGH PRODUCT RELIABILITY
- ROTATE 1/4 CIRCLES FROM FULL-OPEN TO FULL-CLOSE, EASY TO OPERATE
- BI-DIRECTIONAL FLOW
- ROTATION STOP ON REQUEST FOR FULL-OPEN AND FULL-CLOSE OF THE VALVE FOR SIZES ≥ SBV-11
- SPECIAL SEALING MATERIALS TO PREVENT INTERNAL LEAKAGE

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC and HFO refrigerants such as: R134a, R404A, R407A/C/F, R410A, R507A, R448A, R449A, , R452A, R1234ze(E), R290,...
- Medium temperature TS min./max.: -40°C / +120°C
- Max. operating pressure PS: 4,9 MPa (49 bar)
- Installation position: liquid, suction and discharge line in all directions
- Certifications: UL/CSA and PED declaration

BALL VALVE



GENERAL CHARACTERISTICS

1. Standard SBV models with FULL PORT passage

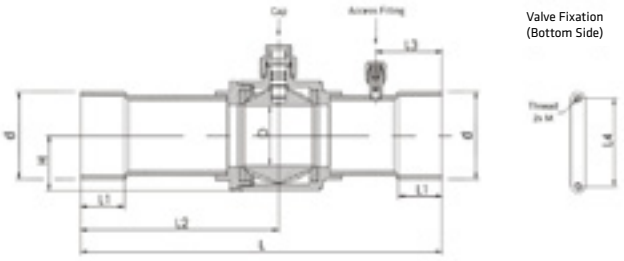
Without Access Fitting		Connections Ø d ODF		Kv	Wrench Size Cap	PED category		With Access Fitting	
Model	Part Number*	[inch]	[mm]	[m³/h]	[mm]	Fluids Group 1	Fluids Group 2	Model	Part Number*
SBV02-020T	10150130002	-	6	1,9	19	4.3	4.3	SBV02-320T	10150130102
SBV02-019T	10150129402	1/4	-	1,9	19	4.3	4.3	SBV02-319T	10150129902
SBV03-019T	10150129302	3/8	-	5,5	19	4.3	4.3	SBV03-319T	10150130602
SBV03-020T	10150130202	-	10	5,5	19	4.3	4.3	SBV03-320T	10150130302
SBV04-020T	10150129802	-	12	7,3	19	4.3	4.3	SBV04-320T	10150130502
SBV04-019T	10150129702	1/2	-	7,3	19	4.3	4.3	SBV04-319T	10150130402
SBV(M)-A5YHSY-2-SA	10150057602	-	15	13,8	14	4.3	4.3	SBV(M)-JA5YHSY-2-SA	10150057702
SBV(M)-A5YHSY-1-SA	10150053302	5/8	16	13,8	14	4.3	4.3	SBV(M)-JA5YHSY-1-SA	10150053402
SBV(M)-A6YHSY-2-SA	10150054602	-	18	20,6	17	4.3	4.3	SBV(M)-JA6YHSY-2-SA	10150054502
SBV(M)-A6YHSY-1-SA	10150054302	3/4	-	20,6	17	4.3	4.3	SBV(M)-JA6YHSY-1-SA	10150054202
SBV(M)-A7YHSY-1-SA	10150053502	7/8	22	29	17	4.3	4.3	SBV(M)-JA7YHSY-1-SA	10150053602
SBV(M)-A9YHSY-2-SA	10150055102	-	28	54,3	17	II	4.3	SBV(M)-JA9YHSY-2-SA	10150055202
SBV(M)-A9YHSY-1-SA	10150054702	1 1/8	-	54,3	17	II	4.3	SBV(M)-JA9YHSY-1-SA	10150054802
SBV(M)-A11YHSY-1-SA	10150055002	1 3/8	35	85,5	17	II	4.3	SBV(M)-JA11YHSY-1-SA	10150054902
SBV(M)-A13YHSY-2-SA	10150055502	1 5/8	-	133,7	17	II	I	SBV(M)-JA13YHSY-2-SA	10150055402
SBV(M)-A13YHSY-1-SA	10150055302	-	42	133,7	17	II	I	SBV(M)-JA13YHSY-1-SA	10150057802
SBV(M)-A17YHSY-1-SA	10150055702	2 1/8	54	225	19	II	I	SBV(M)-JA17YHSY-1-SA	10150055802
SBV(M)-A19YHSY-1-SA	10150055902	-	64	225	19	II	I	SBV(M)-JA19YHSY-1-SA	10150056002
SBV(M)-A21YHSY-2-SA	10150056302	2 5/8	-	380	19	II	I	SBV(M)-JA21YHSY-2-SA	10150056402
SBV(M)-A25YHSY-2-SA	10150056502	3 1/8	80	530	24	II	I	SBV(M)-JA25YHSY-2-SA	10150056602
SBV(M)-A29YHSY-1-SA	10150057002	3 5/8	92	700	24	II	I	SBV(M)-JA29YHSY-1-SA	10150056902
SBV(M)-A33YHSY-2-SA	10150056102	4 1/8	105	950	29	II	I	SBV(M)-JA33YHSY-2-SA	10150056202
SBV(M)-A34YHSY-1-SA	10150057102	4 1/4	108	950	29	II	I	SBV(M)-JA34YHSY-1-SA	10150057202

Note:
- SBV model with different connection sizes available on request
- * Available also as industrial package. Contact Sanhua for more details

BALL VALVE



DIMENSIONS & WEIGHT



Part Number		L	L1	L2	L3[1)]	L4	D	H	M	Weight
Without Access Fitting	With Access Fitting	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SBV02-020T	SBV02-320T	132	10	68	31	16	10	14	M4 x 0,7	0,20
SBV02-019T	SBV02-319T	132	10	68	31	16	10	14	M4 x 0,7	0,20
SBV03-019T	SBV03-319T	132	10	68	31	16	10	14	M4 x 0,7	0,20
SBV03-020T	SBV03-320T	132	10	68	31	16	10	14	M4 x 0,7	0,20
SBV04-020T	SBV04-320T	160	10	85	42,5	16	10	14	M4 x 0,7	0,21
SBV04-019T	SBV04-319T	160	10	85	42,5	16	10	14	M4 x 0,7	0,21
SBV(M)-A5YHSY-2-SA	SBV(M)-JA5YHSY-2-SA	160	13	85	31	22	14	16	M4 x 0,7	0,30
SBV(M)-A5YHSY-1-SA	SBV(M)-JA5YHSY-1-SA	160	13	85	31	22	14	16	M4 x 0,7	0,30
SBV(M)-A6YHSY-2-SA	SBV(M)-JA6YHSY-2-SA	185	16	99	37	30	19	20	M4 x 0,7	0,51
SBV(M)-A6YHSY-1-SA	SBV(M)-JA6YHSY-1-SA	185	16	99	37	30	19	20	M4 x 0,7	0,51
SBV(M)-A7YHSY-1-SA	SBV(M)-JA7YHSY-1-SA	185	17	99	37	30	19	20	M4 x 0,7	0,52
SBV(M)-A9YHSY-2-SA	SBV(M)-JA9YHSY-2-SA	208	21	112	44	38	25	25	M4 x 0,7	0,73
SBV(M)-A9YHSY-1-SA	SBV(M)-JA9YHSY-1-SA	208	21	112	44	38	25	25	M4 x 0,7	0,73
SBV(M)-A11YHSY-1-SA	SBV(M)-JA11YHSY-1-SA	251	25	136	44	48	32	31	M6 x 1,0	1,42
SBV(M)-A13YHSY-2-SA	SBV(M)-JA13YHSY-2-SA	281	28	151	56	55	38	35	M6 x 1,0	1,90
SBV(M)-A13YHSY-1-SA	SBV(M)-JA13YHSY-1-SA	281	28	151	56	55	38	35	M6 x 1,0	1,90
SBV(M)-A17YHSY-1-SA	SBV(M)-JA17YHSY-1-SA	305	34	167	56	74	50	46	M6 x 1,0	3,74
SBV(M)-A19YHSY-1-SA	SBV(M)-JA19YHSY-1-SA	305	34	167	70	74	50	46	M6 x 1,0	3,79
SBV(M)-A21YHSY-2-SA	SBV(M)-JA21YHSY-2-SA	305	37	167	56	74	60	56	M6 x 1,0	6,08
SBV(M)-A25YHSY-2-SA	SBV(M)-JA25YHSY-2-SA	378	42	186	80	90	70	63	M6 x 1,0	8,81
SBV(M)-A29YHSY-1-SA	SBV(M)-JA29YHSY-1-SA	423	42	208	75	108	80	75	M6 x 1,0	11,47
SBV(M)-A33YHSY-2-SA	SBV(M)-JA33YHSY-2-SA	423	42	210,0	75	148	95	91	M6 x 1,0	20,17
SBV(M)-A34YHSY-1-SA	SBV(M)-JA34YHSY-1-SA	423	42	210,0	75	148	95	91	M6 x 1,0	20,17

Note: 1) Applicable to versions with access fitting

BALL VALVE

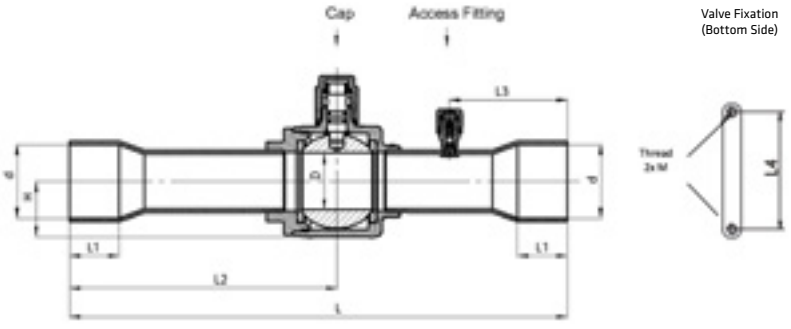


GENERAL CHARACTERISTICS

2. Standard SBV models with REDUCED PORT passage

Without Access Fitting		Connections Ø d ODF		Kv	Wrench Size Cap	PED category		With Access Fitting	
Model	Part Number*	[inch]	[mm]	[m³/h]	[mm]	Fluids Group 1**	Fluids Group 2	Model	Part Number*
SBV06-602	10150116502	-	18	13,8	14	4.3	4.3	SBV06-802	10150116402
SBV06-601	10150115002	3/4	-	13,8	14	4.3	4.3	SBV06-801	10150115102
SBV07-601	10150115302	7/8	22	13,8	14	4.3	4.3	SBV07-801	10150087602
SBV09-602	10150116302	-	28	29	17	4.3	4.3	SBV09-802	10150116202
SBV09-601	10150084902	1 1/8	-	29	17	4.3	4.3	SBV09-801	10150115402
SBV11-601	10150102702	1 3/8	35	54,3	17	II	4.3	SBV11-801	10150093102
SBV13-601	10150102502	1 5/8	-	85,5	17	II	4.3	SBV13-801	10150093202
SBV13-602	10150116102	-	42	85,5	17	II	4.3	SBV13-802	10150116002
SBV17-601	10150115502	2 1/8	54	133,7	17	II	I	SBV17-801	10150087502
SBV21-601	10150102602	2 5/8	-	225	19	II	I	-	-
SBV25-601	10150115602	3 1/8	80	380	19	II	I	-	-
SBV29-601	10150115702	3 5/8	92	530	24	II	I	-	-
SBV33-601	10150115802	4 1/8	105	700	24	II	I	-	-
SBV34-601	10150115902	4 1/4	108	700	24	II	I	-	-

Note:
- SBV model with different connection sizes available on request
- * Available also as industrial package. Contact Sanhua for more details



BALL VALVE



DIMENSIONS & WEIGHT

Part Number		L	L1	L2	L3[1)]	L4	D	H	M	Weight
Without Access Fitting	With Access Fitting	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[kg]
SBV06-602	SBV06-802	185	16	99	46	22	14	16	M4 x 0,7	0,33
SBV06-601	SBV06-801	185	16	99	46	22	14	16	M4 x 0,7	0,33
SBV07-601	SBV07-801	185	17	99	46	22	14	16	M4 x 0,7	0,34
SBV09-602	SBV09-802	208	21	112	53	30	19	20	M4 x 0,7	0,56
SBV09-601	SBV09-801	208	21	112	53	30	19	20	M4 x 0,7	0,56
SBV11-601	SBV11-801	251	25	136	63	38	25	25	M4 x 0,7	0,81
SBV13-301	SBV13-801	281	28	151	66.5	48	32	31	M6 x 1,0	1,51
SBV13-602	SBV13-802	281	28	151	66.5	48	32	31	M6 x 1,0	1,51
SBV17-601	SBV17-801	305	34	167	63	55	38	35	M6 x 1,0	2,31
SBV21-601	-	305	37	135	-	74	50	46	M6 x 1,0	3,80
SBV25-601	-	378	42	186	-	74	60	56	M6 x 1,0	6,58
SBV29-601	-	423	42	208	-	90	70	63	M6 x 1,0	9,35
SBV33-601	-	423	42	210	-	108	80	75	M6 x 1,0	11,71
SBV34-601	-	423	42	210	-	108	80	75	M6 x 1,0	11,76

Note: 1) Applicable to versions with access fitting

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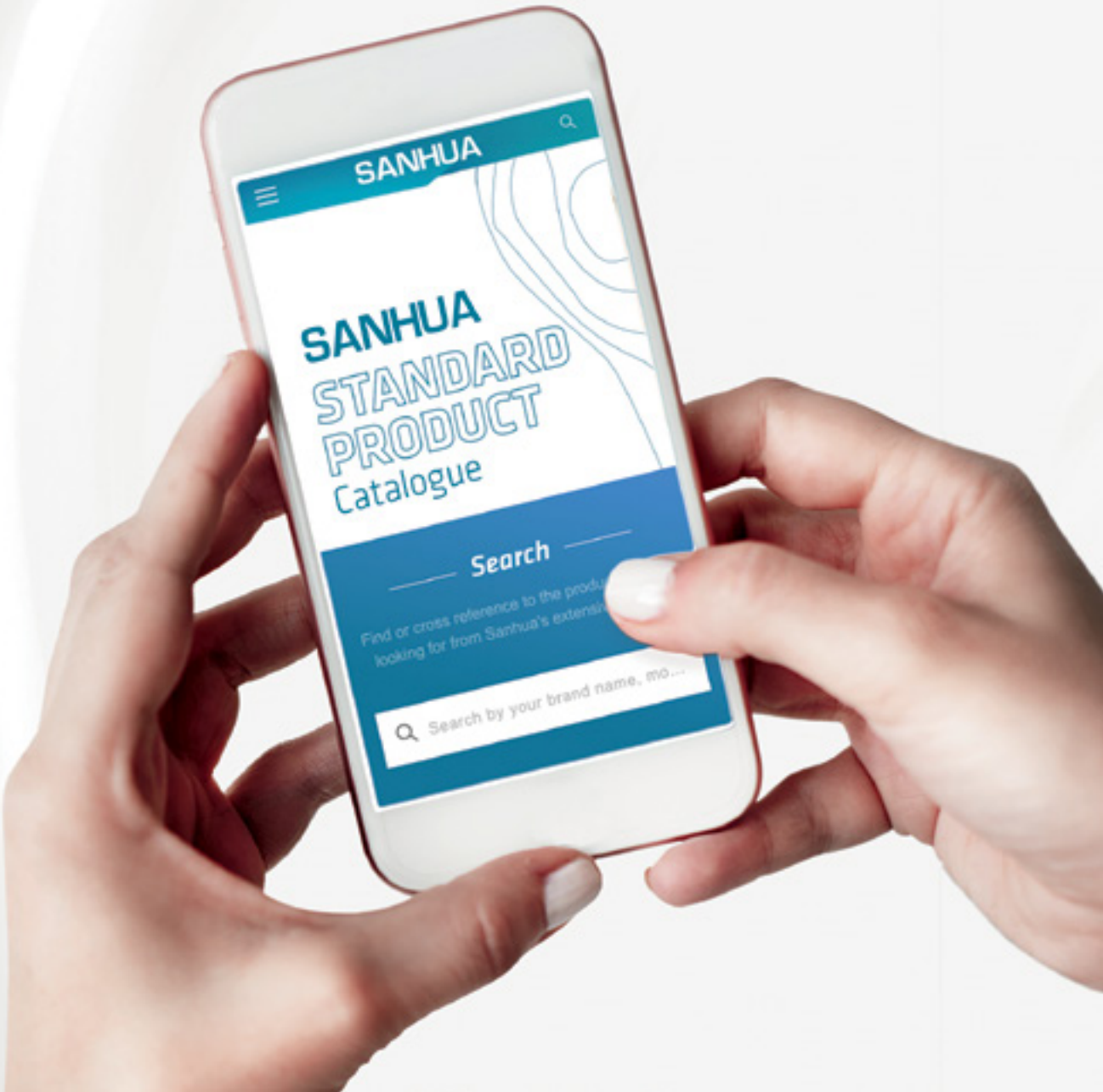
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NR. 1907/2006
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B/S/H/ Carrier TRANE



GBV *SERIES*

BALL VALVE



The ball valve of series GBV is applicable for commercial air conditioner, freezing / deep-freezing applications and other refrigeration systems. This ball valves are designed to open and close inner flow path by operating the valve stem. It can also be used as service valve for vacuum pumping and refrigerant injection etc. The Design Pressure (PS) of the versions GBV is 49 bars.

FEATURES

- STRAIGHTWAY TYPE, FULL PORT, LOW PRESSURE DROP
- ALL STAINLESS STEEL BODY WITH COPPER CONNECTORS
- PRODUCED WITH ADVANCED WELDING PROCESS TO PROVIDE VERY LOW INTERNAL LEAKAGE RATES, AND SMOOTH OPENING/CLOSING ROTATION
- LIGHT WEIGHT BODY WITH VERY GOOD VIBRATION RESISTANCE, MOSTLY NO NEED OF FIXATION
- BI-DIRECTIONAL FLOW
- EASY MAINTENANCE: THE VALVE CAP IS ANTI-FALLING DESIGN AND ANTI-ROTATING VALVE STEM
- GREEN ENVIRONMENTAL PROTECTION: LEAD-FREE DESIGN, SO THAT THE PRODUCT LIFE CYCLE CARBON EMISSIONS IS ABOUT 50% OF A BRASS BALL VALVE

GENERAL SPECIFICATIONS

- Applicable for all common HFC, HFO and HC refrigerants such as: R134a, R404A, R410A, R507A, R448A, R449A, R450A, R452A, R513A, R32, R1234yf, R1234ze(E), R1233zd(E), R454A/B/C, R455A, R290
- Medium temperature TS min./max.: -40°C / +120°C (< +150°C for short term use)
- Max. operating pressure (PS): 4,9 MPa (49 bar)
- Installation position: liquid, suction and discharge line in all directions
- Certifications: UL, PED

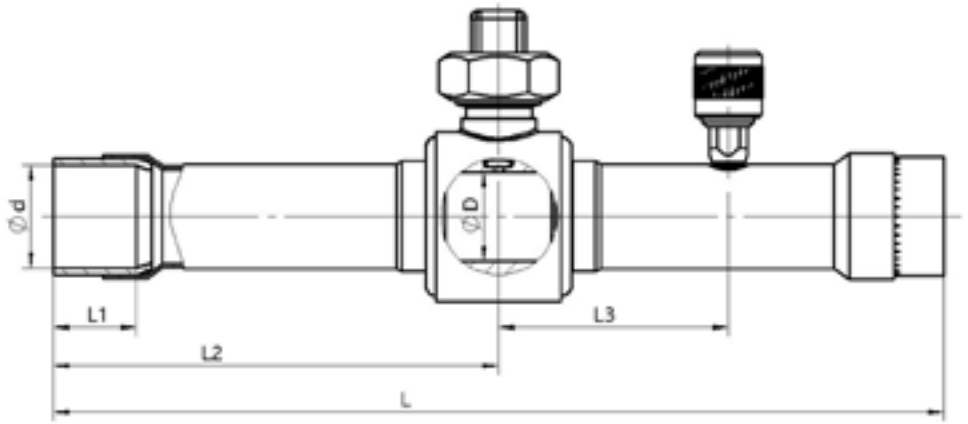
BALL VALVE



GENERAL CHARACTERISTICS

1. Standard GBV models with FULL PORT passage

Without Access Fitting			Connections Ø ODF		Kv	DN	PED category		With Access Fitting		
Model	Part Number	Weight [g]	[inch]	[mm]	[m³/h]		Fluids Group 1	Fluids Group 2	Model	Part Number	Weight [g]
GBV02H002	GBVX0000602	76	-	6	1.9	12.5	Art. 4.3	Art. 4.3	GBV02H004	GBVX0000802	90
GBV02H001	GBVX0000502	76	1/4	-	1.9	12.5	Art. 4.3	Art. 4.3	GBV02H003	GBVX0000702	90
GBV03H002	GBVX0001002	81	-	10	5.5	12.5	Art. 4.3	Art. 4.3	GBV03H004	GBVX0001202	95
GBV03H001	GBVX0000902	81	3/8	-	5.5	12.5	Art. 4.3	Art. 4.3	GBV03H003	GBVX0001102	95
GBV04H002	GBVX0001402	93	-	12	7.3	12.5	Art. 4.3	Art. 4.3	GBV04H004	GBVX0001602	109
GBV04H001	GBVX0001302	93	1/2	-	7.3	12.5	Art. 4.3	Art. 4.3	GBV04H003	GBVX0001502	109
GBV05H002	10150131302	110	-	15	13.8	14,6	Art. 4.3	Art. 4.3	GBV05H004	10150131802	125
GBV05H001	10150125202	110	5/8	16	13,8	14,6	Art. 4.3	Art. 4.3	GBV05H003	10150127202	125
GBV06H002	10150131402	244	-	18	20.6	20,6	Art. 4.3	Art. 4.3	GBV06H004	GBVX0000102	260
GBV06H001	10150120502	244	3/4	-	20,6	20,6	Art. 4.3	Art. 4.3	GBV06H003	10150122902	260
GBV07H001	10150120402	255	7/8	22	29	20,6	Art. 4.3	Art. 4.3	GBV07H003	10150121502	270
GBV09H002	10150131602	366	-	28	54.3	26,6	Art. 4.3	Art. 4.3	GBV09H004	GBVX0000202	380
GBV09H001	10150126402	366	1- 1/8	-	54,3	26,6	Cat II	Art. 4.3	GBV09H003	10150127302	380
GBV11H001	10150128402	667	1-3/8	35	85,5	33,4	Cat II	Cat I	GBV11H003	10150128702	682
GBV13H001	10150128502	1151	1-5/8	-	133,7	39,0	Cat II	Cat I	GBV13H003	10150128802	1163
GBV13H002	10150131702	1151	-	42	133.7	39,0	Cat II	Cat I	GBV13H004	GBVX0000302	1163



BALL VALVE



DIMENSIONS

Product Number		Connections Ø ODF		L	L1	L2	L3	Ø D
Without Access Fitting	With Access Fitting	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
GBV02H002	GBV02H004	-	6	132	8	66	37.8	12.5
GBV02H001	GBV02H003	1/4	-	132	8	66	37.8	12.5
GBV03H002	GBV03H004	-	10	132	10	66	37.8	12.5
GBV03H001	GBV03H003	3/8	-	132	10	66	37.8	12.5
GBV04H002	GBV04H004	-	12	160	13	80	37.8	12.5
GBV04H001	GBV04H003	1/2	-	160	13	80	37.8	12.5
GBV05H002	GBV05H004	-	15	158	13	79	37	14
GBV05H001	GBV05H003	5/8	16	158	13	79	37	14
GBV06H002	GBV06H004	-	18	188	17	94	48.5	19
GBV06H001	GBV06H003	3/4	-	188	17	94	48.5	19
GBV07H001	GBV07H003	7/8	22	188	17.5	94	48.5	19
GBV09H002	GBV09H004	-	28	206	20	103	43.5	25
GBV09H001	GBV09H003	1-1/8	-	206	20	103	43.5	25
GBV11H001	GBV11H003	1-3/8	35	250	25	125	56	32
GBV13H001	GBV13H003	1-5/8	-	275	25	137	60	38
GBV13H002	GBV13H004	-	42	275	25	137	60	38

Note: 1. The models without access fitting have no dimension of 'L3'.
2. Other size of connections are available on request.

CBV *SERIES*

BALL VALVE

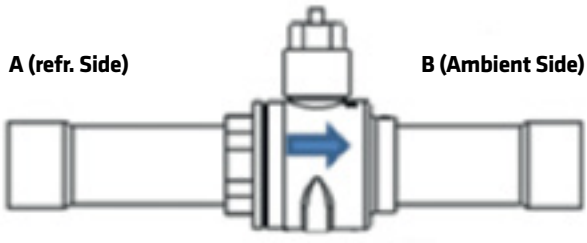


CBV valves are typically used in commercial CO_2 refrigeration applications in order to open and to shut off inner flow path by operating the valve stem. The ball valve of series CBV is applicable for subcritical CO_2 refrigeration systems and is a perfect choice for all similar CO_2 systems.

FEATURES

- STRAIGHTWAY TYPE, FULL PORT, LOW PRESSURE DROP, COST-EFFECTIVE
- VALVE BODY AND VALVE SEAT WITH WELDED STRUCTURE, WITH HIGH PRODUCT RELIABILITY
- ROTATE ¼ CIRCLES FROM FULL-OPEN TO FULL-CLOSE, EASY TO OPERATE
- BIDIRECTIONAL FLOW [1)]
- ROTATION STOP FOR FULL-OPEN AND FULL-CLOSE OF THE VALVE AVAILABLE
- SPECIAL SEALING MATERIALS TO PREVENT INTERNAL LEAKAGE

Note: 1) CBV valves fulfill internal tightness requirements of the standard EN12284, paragraph 9.6.3 in both flow directions.
Installations with shut off function to the atmosphere (just temporarily for service purpose): Please install the solder connection "B" at the airside. Please see solder connection "A" and "B" at the dimensional drawing page 3.
Remark: Welding body junction is always at solder connection "A"



GENERAL SPECIFICATION

- Applicable for R744 (CO_2)
- Medium temperature TS min./max.: -40°C/+150°C
- Max. operating pressure PS: 6,0 MPa (60bar)
- Installation position: liquid, suction and discharge line in all directions
- Certification: PED declaration.

BALL VALVE



GENERAL CHARACTERISTICS

Model	Part Number*[1)]	Connection Ø d ODF		Kv	Wrench Size Cap	PED Category
		[inch]	[mm]	[m³/h]	[mm]	
CBV02-002	10150074202	-	6	1,9	H14	4.3
CBV02-001	10150074102	1/4	-	1,9	H14	4.3
CBV03-001	10150074302	3/8	-	5,5	H14	4.3
CBV03-002	10150074402	-	10	5,5	H14	4.3
CBV04-002	10150074602	-	12	7,3	H14	4.3
CBV04-001	10150074502	1/2	-	7,3	H14	4.3
CBV05-001	10150074702	5/8	16	13,8	H14	4.3
CBV06-002	10150074902	-	18	20,6	H17	4.3
CBV06-001	10150074802	3/4	-	20,6	H17	4.3
CBV07-001	10150063002	7/8	22	29,0	H17	4.3
CBV09-002	10150075002	-	28	54,3	H17	4.3
CBV09-001	10150062902	1 1/8	-	54,3	H17	4.3
CBV11-001	10150075102	1 3/8	35	85,5	H17	I
CBV13-002	10150062802	1 5/8	-	133,7	H17	I
CBV13-003	10150075202	-	42	133,7	H17	I
CBV17-001	10150075302	2 1/8	54	225,0	H19	I

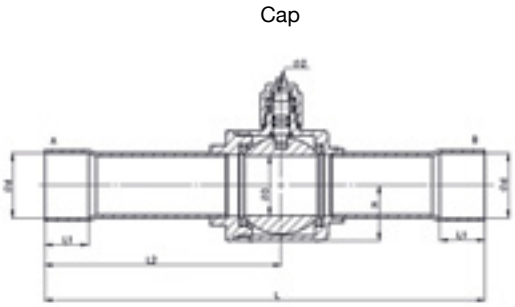
Note: * Available also as industrial package. Contact Sanhua for more details.

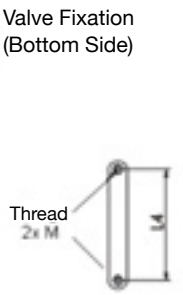
1) Extent of delivery: valve body and standard cap

BALL VALVE



DIMENSIONS & WEIGHT





Model	Part Number*	L	L1	L2	L4	D	H	M	Weight
CBV02-002	10150074202	132	8	68	22	14	16	M4 x 0,7	0,28
CBV02-001	10150074102	132	8	68	22	14	16	M4 x 0,7	0,28
CBV03-001	10150074302	132	8	68	22	14	16	M4 x 0,7	0,29
CBV03-002	10150074402	132	8	68	22	14	16	M4 x 0,7	0,29
CBV04-002	10150074602	160	10	85	22	14	16	M4 x 0,7	0,30
CBV04-001	10150074502	160	10	85	22	14	16	M4 x 0,7	0,30
CBV05-001	10150074702	160	12	85	22	14	16	M4 x 0,7	0,30
CBV06-002	10150074902	185	14	99	30	19	20	M4 x 0,7	0,51
CBV06-001	10150074802	185	14	99	30	19	20	M4 x 0,7	0,51
CBV07-001	10150063002	185	17	99	30	19	20	M4 x 0,7	0,52
CBV09-002	10150075002	208	20	112	38	25	25	M4 x 0,7	0,73
CBV09-001	10150062902	208	20	112	38	25	25	M4 x 0,7	0,73
CBV11-001	10150075102	251	25	136	48	32	31	M6 x 1,0	1,42
CBV13-002	10150062802	281	29	151	55	38	35	M6 x 1,0	1,90
CBV13-003	10150075202	281	29	151	55	38	35	M6 x 1,0	1,90
CBV17-001	10150075302	305	34	167	74	50	46	M6 x 1,0	3,74

* Available also as industrial package. Contact Sanhua for more details.

GREEN TECHNOLOGY FOR LOW CARBON FOOTPRINT

SANHUA

CBVT *SERIES*

BALL VALVE

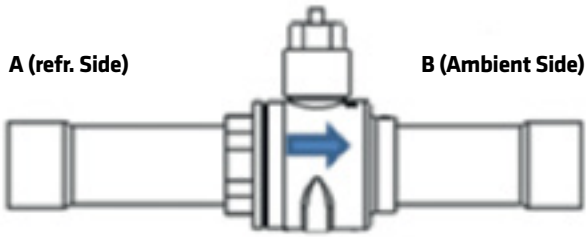


The ball valve of series CBVT is applicable for commercial CO_2 refrigeration applications in order to open and to shut off inner flow path by operating the valve stem. The ball valve of CBVT is applicable for transcritical CO_2 refrigeration systems and is a perfect choice for all similar CO_2 systems.

FEATURES

- STRAIGHTWAY TYPE, FULL PORT, LOW PRESSURE DROP – HIGH EFFICIENCY
- VALVE BODY WITH WELDED STRUCTURE – PRODUCT STRENGTH AND RELIABILITY
- ROTATE 1/4 CIRCLES FROM FULL-OPEN TO FULL-CLOSE – EASY AND FAST TO OPERATE
- BIDIRECTIONAL FLOW[1)]
- VERSION WITH BI-METAL CONNECTIONS – EASY AND FAST BRAZING FOR SYSTEMS WITH K65 PIPING
- VERSION WITH STAINLESS-STEEL BUTT-WELDING CONNECTIONS – SUITABLE FOR SYSTEMS WITH STAINLESS STEEL PIPING

Note: 1) CBVT valves fulfill internal tightness requirements of the standard EN12284, paragraph 9.6.3 only in the direction indicated by the arrow [refrigerant on connection "A"; airside on connection "B"]. Installations with shut off function to the atmosphere (just temporarily for service purpose): Please install the solder connection "B" at the airside. Remark: Welding body junction is always at solder connection "A"



GENERAL SPECIFICATIONS

- Applicable for R744 (CO_2)
- Medium temperature TS min./max.: -40°C / +150°C
- Max. operating pressure PS: 14 MPa (burst pressure: 42MPa)
- Installation position: liquid, suction and discharge line in all directions
- Certifications: PED declaration
- UL attestation

BALL VALVE



GENERAL CHARACTERISTICS

1) Models with Bi-Metal Connections

Model	Part Number	Connection Ø d ODF		Kv	Wrench Size Cap	PED Category
		[inch]	[mm]	[m³/h]	[mm]	
CBVT 02H002	10150108802	-	6	1,9	H19	4.3
CBVT 02H001	10150103102	1/4	-	1,9	H19	4.3
CBVT 03H001	10150099502	3/8	-	5,5	H19	4.3
CBVT 03H002	10150109102	-	10	5,5	H19	4.3
CBVT 04H002	10150108902	-	12	7,3	H19	4.3
CBVT 04H001	10150099202	1/2	-	7,3	H19	4.3
CBVT 05H002	10150109002	-	15	13,8	H14	4.3
CBVT 05H001	10150099302	5/8	16	13,8	H14	4.3
CBVT 06H002	10150109302	-	18	20,6	H17	4.3
CBVT 06H001	10150099102	3/4	-	20,6	H17	4.3
CBVT 07H001	10150099002	7/8	22	29,0	H17	4.3
CBVT 09H002	10150109202	-	28	54,2	H17	4.3
CBVT 09H001	10150098902	1-1/8	-	54,2	H17	4.3
CBVT 11H001	10150098502	1-3/8	35	85,5	H17	I
CBVT 13H001	10150098602	1-5/8	-	133,7	H17	I
CBVT 13H002	10150109402	-	42	133,7	H17	I
CBVT 17H001	10150098402	2-1/8	54	225,0	H19	I

2) Models with Stainless-Steel Butt-Welding Connections

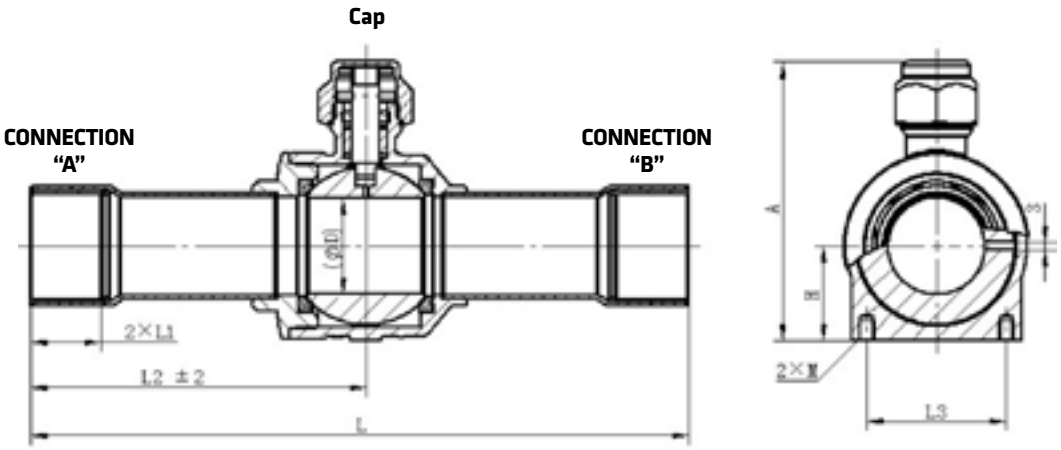
Model	Part Number	Connection Ø d ODF		Kv	Wrench Size Cap	PED Category
		[inch]	[mm]	[m³/h]	[mm]	
CBVT 03H302	10150111402	-	10	5,5	H19	4.3
CBVT 04H302	10150111602	-	12	7,3	H19	4.3
CBVT 05H301	10150111702	5/8	16	13,8	H14	4.3
CBVT 06H302	10150111902	-	18	20,6	H17	4.3
CBVT 07H301	10150110302	7/8	22	29,0	H17	4.3
CBVT 09H302	10150112102	-	28	54,2	H17	4.3
CBVT 11H301	10150112202	1-3/8	35	85,5	H17	I
CBVT 13H302	10150112402	-	42	133,7	H17	I

BALL VALVE



DIMENSIONS

1) Models with Bi-Metal Connections

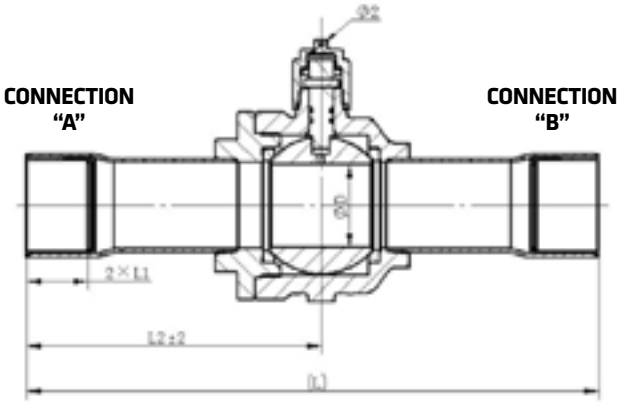


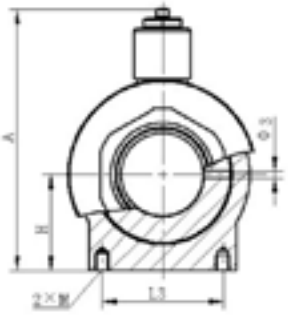
Model	L	L1	L2	L3	D	H	A	M	Weight
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]
CBVT 02H002	126	8	66.5	16	10	14	50,4	M4×0.7	190
CBVT 02H001	126	8	66,5	16	10	14	50,4	M4×0.7	176
CBVT 03H001	132	10	69,5	16	10	14	50,4	M4×0.7	180
CBVT 03H002	132	10	69.5	16	10	14	50,4	M4×0.7	183
CBVT 04H002	139	12	73	16	10	14	50,4	M4×0.7	190
CBVT 04H001	139	12	73	16	10	14	50,4	M4×0.7	188
CBVT 05H002	148	16	77	22	14	16	58,5	M4×0.7	279
CBVT 05H001	148	16	77	22	14	16	58,5	M4×0.7	289
CBVT 06H002	148	16	76	30	19	20	73	M4×0.7	470
CBVT 06H001	152	16	78	30	19	20	72	M4×0.7	491
CBVT 07H001	189	19	97	30	19	20	73	M4×0.7	526
CBVT 09H002	185,5	20	95	38	25	27	85.3	M4×0.7	748
CBVT 09H001	185,5	20	95	38	25	27	85,3	M4×0.7	749
CBVT 11H001	204	25	105	48	32	37	105	M6×1.0	1814
CBVT 13H001	260	28	134	55	38	43,5	118,5	M6×1.0	2734
CBVT 13H002	260	28	134	55	38	43,5	118,5	M6×1.0	2736
CBVT 17H001	284	33	145	74	50	58,5	145	M6×1.0	5787

BALL VALVE



2) Models with Stainless-Steel Butt-Welding Connections





Model	L	L1	L2	L3	D	H	A	M	Weight
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]
CBVT 03H302	132	8	69,5	16	10	14	47,7	M4×0.7	184
CBVT 04H302	139	8	73	16	10	14	47,7	M4×0.7	188
CBVT 05H301	148	/	77	22	14	16	58,7	M4×0.7	269
CBVT 06H302	148	8	76	30	19	20	73	M4×0.7	481
CBVT 07H301	185	/	94,5	30	19	20	73	M4×0.7	512
CBVT 09H302	205	/	105	38	25	27	85.3	M4×0.7	760
CBVT 11H301	205	/	106	48	32	37	105	M6×1.0	1836
CBVT 13H302	242	/	125	55	38	43,5	118,5	M6×1.0	2853

***CBVP** SERIES*

BALL VALVE WITH INTEGRATED CHECK-VALVE



The ball valve of series CBVP is applicable for commercial transcritical CO_2 refrigeration applications. The CBVP integrates ball valve, check valve and service valve, which is applicable for branched systems, like in a supermarket, for suction lines to protect the evaporator. It can also be used as a service valve during maintenance, which is applicable to evacuate or charge refrigerant, and can also be used to connect the pressure gauges or sensors.

FEATURES

- COMPACT DESIGN, SAVING INSTALLATION SPACE WITH ALL 3 FUNCTIONS IN 1
- INTEGRATING A CHECK VALVE FOR PRESSURE RELIEF PURPOSE AND WITH SERVICEABLE PISTON
- SERVICE VALVE INSTEAD OF SCHRADER VALVE WITH BETTER RELIABILITY AND LONGER LIFESPAN
- FULL METAL VALVE CAP WITH EFFECTIVE SECONDARY SEALING
- THE ONLY PRODUCT IN THE INDUSTRY THAT INTEGRATES A BALL VALVE, CHECK VALVE, AND SERVICE VALVE
- THE VERSION WITHOUT SERVICE VALVE IS AVAILABLE

GENERAL SPECIFICATIONS

- Applicable for R744 (CO_2)
- Medium temperature TS min./max.: -40°C / +150°C
- Max. Operating Pressure PS: 140 bar
- Installation position: liquid, suction and discharge line in all directions
- Certifications: PED, UL (on going)
- Isolation shell is in preparation



BALL VALVE WITH INTEGRATED CHECK-VALVE



GENERAL CHARACTERISTICS

With Service Valve				Connection Ød ODF		Kv	DN	Wrench Size Ball Valve Cap [mm]	PED Category [Fluid Group 2]	Without Service Valve		
Model	Product Number	Wrench Size of Service Valve Cap [mm]	Weight [g]	[inch]	[mm]	[m³/h]				Model	Product Number	Weight [g]
CBVP03H401	CBVP0000102	H22	520	3/8	-	2.4	11,1	H14	Art. 4.3	CBVP03H001	CBVP0000802	387
CBVP03H402	CBVP0000602	H22	520	-	10	2.4	11,1	H14	Art. 4.3	CBVP03H002	CBVP0000902	387
CBVP04H401	CBVP0000202	H22	530	1/2	-	4.9	12,8	H14	Art. 4.3	CBVP04H001	CBVP0001002	379
CBVP04H402	CBVP0000702	H22	530	-	12	4.9	12,8	H14	Art. 4.3	CBVP04H002	CBVP0001102	396
CBVP05H401	CBVP0000302	H22	660	5/8	-	9.6	16	H14	Art. 4.3	CBVP05H001	CBVP0001302	529
CBVP05H402	CBVP0001202	H22	660	-	16	9.6	16	H14	Art. 4.3	CBVP05H002	CBVP0001402	527
CBVP06H401	CBVP0000402	H22	900	3/4	-	15.8	19,6	H17	Art. 4.3	CBVP06H001	CBVP0001602	899
CBVP06H402	CBVP0001502	H22	900	-	18	15.8	19,6	H17	Art. 4.3	CBVP06H002	CBVP0001702	769
CBVP07H401	CBVP0000502	H22	910	7/8	22	23.1	22,4	H17	Art. 4.3	CBVP07H001	CBVP0001802	781

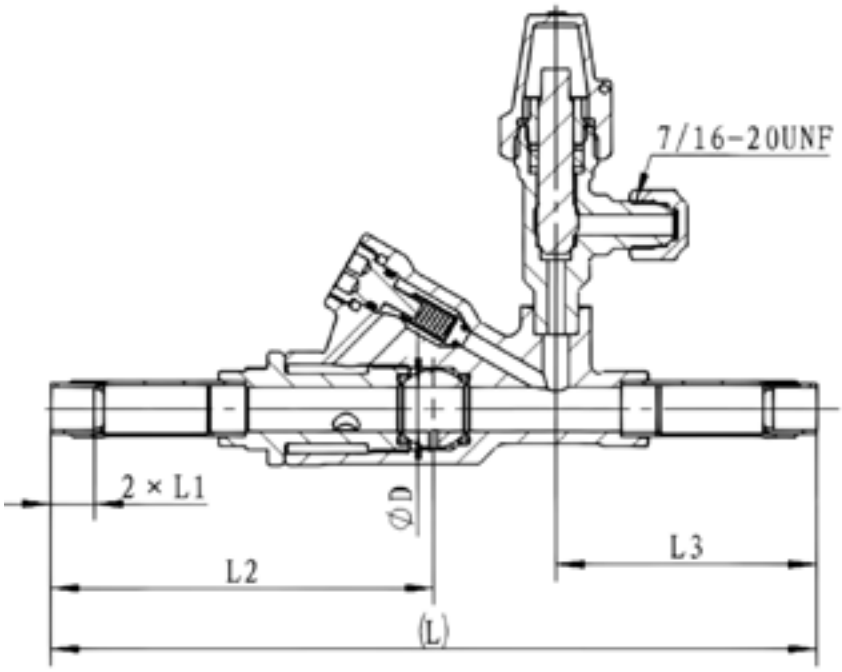
Name	U11	Fitting for following Pipe Size	
		Imperial Connection Size	Metric Connection Size
SBV-A03-031005	CBVP0001902	3/8 + 1/2	10+12
SBV-A05-031006	CBVP0002002	5/8	16
SBV-A07-031007	CBVP0002102	3/4 + 7/8	18+22

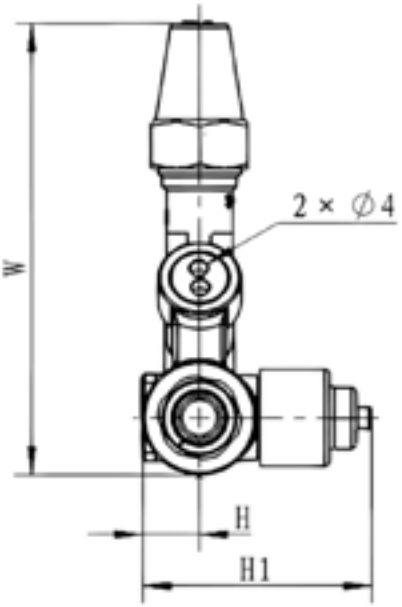
BALL VALVE WITH INTEGRATED CHECK-VALVE



DIMENSIONS

1) Models with Service Valve



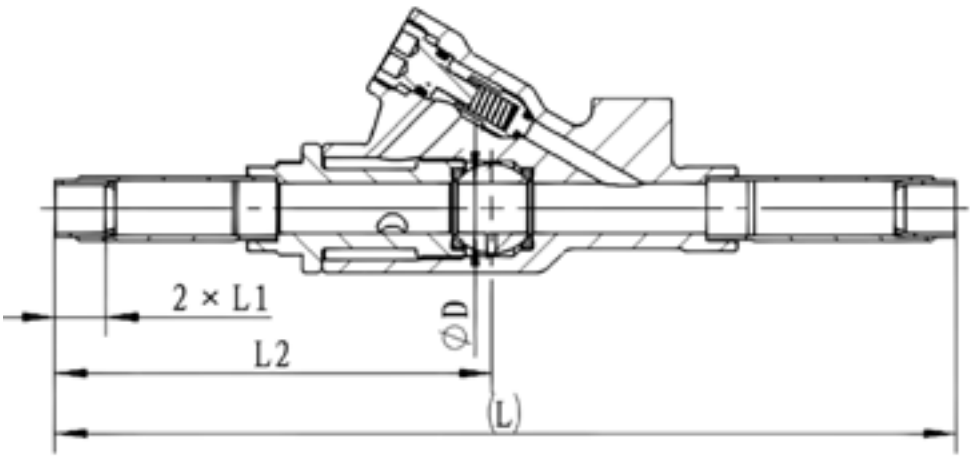


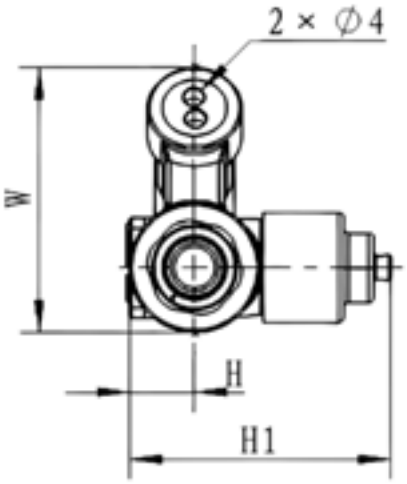
Model	L	L1	L2	L3	D	H
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
CBVP03H401	169	10	81.5	59.5	10	13
CBVP03H402	169	10	81.5	59.5	10	13
CBVP04H401	183	13	88.5	67.0	10	13
CBVP04H402	183	13	88.5	67.0	10	13
CBVP05H401	200	16	96.5	71.5	14	16
CBVP05H402	200	16	96.5	71.5	14	16
CBVP06H401	199	17	97.0	70.0	19	20
CBVP06H402	199	17	97.0	70.0	19	20
CBVP07H401	199	17.5	97.0	70.0	19	20

BALL VALVE WITH INTEGRATED CHECK-VALVE

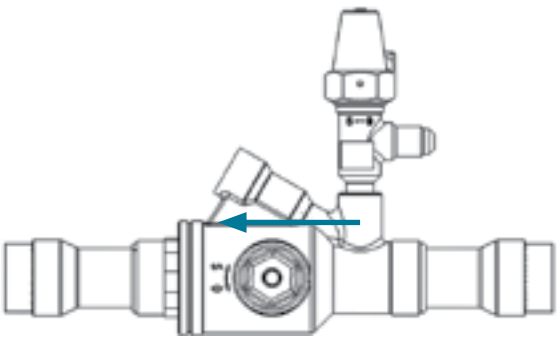


2) Models without Service Valve





Model	L	L1	L2	L3	D	H
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
CBVP03H001	169	10	81.5	10	13	13
CBVP03H002	169	10	81.5	10	13	13
CBVP04H001	183	13	88.5	10	13	13
CBVP04H002	183	13	88.5	10	13	13
CBVP05H001	200	16	96.5	14	16	16
CBVP05H002	200	16	96.5	14	16	16
CBVP06H001	199	17	97.0	19	20	20
CBVP06H002	199	17	97.0	19	20	20
CBVP07H001	199	17.5	97.0	19	20	20



***EBV** SERIES*

2-WAYS ELECTRONIC BALL VALVES



EBV electric ball valve can adjust the refrigerant flow and cut off the refrigerant passage according to the system operating conditions, and is suitable for occasions with requirements such as flow resistance, liquid hammer, opening and closing noise and energy con-sumption. It can replace the pressure regulating valve, ele-ctronic expansion valve and solenoid valve at the same time, and play the role of pressure regulation and refrigerant on-off. In the R32 system, it can be used as a safety valve to immediatelycut off the system circuit once a refrigerant leak is detected.

FEATURES

SOLENOID VALVE FUNCTION:

- BIDIRECTIONAL ON-OFF CONTROL
- SLOWLY OPEN AND CLOSE, AVOID WATER HAMMER AND FLUID IMPACT NOISE
- ENERGY-SAVING, ONLY ENERGY CONSUMPTION DURING THE OPERATION PROCESS
- FULL-PORT BALL VALVE CORE, LARGE FLOW, LOW PRESSURE LOSS

FLOW REGULATE FUNCTION:

- FULL OPEN FLOW IS LARGE, PRESSURE LOSS IS SMALL
- HIGH PRECISION IN SMALL FLOW REGULATION
- LOW INTERNAL LEAKAGE, FULLY CLOSED CAN BE USED AS A SHUT-OFF VALVE

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC refrigerants such as: R134a, R404A, R407C, R410A, R32, R454B etc.
- Medium temperature TS min./max.: -40°C to +120°C (depending on the model)
- Ambient temperature min./max.: -30°C to +65°C (depending on the model)
- Max. working pressure: 50 bar
- Kv values : from 3 to 38.5 m3/h
- Certifications: PED / UL / LVD

2-WAYS ELECTRONIC BALL VALVES



MODEL DESIGNATION

EBV X03 H - XXX

- ADDITIONAL DIGITS
- SOLDER CONNECTION
- CV VALUE
- BLANK = 2 WAYS VALVE
  3 = 3 WAYS VALVE
- PRODUCT FAMILY

ELECTRICAL PARAMETERS

- Rated voltage: 12VDC
- Excitation mode: 2-2 phase excitation mode
- Excitation speed: indicated on the coil and valve drawings
- Coil resistance:
  46 Ω for PQ-M10 (unipolar) or
  72 Ω for PQ-M35 (bipolar)
  52 Ω for built in motor
- Insulation class of coil: E
- Protection class: IP 67

GENERAL CHARACTERISTICS

2 ways valves models with separated coil

Model	Part Number	Kv	Number of steps	MWP	MOPD	Medium T°	Ambient T°	Ø	Weight
		[m³/h]		[Bar]	[Bar]	[°C]	[°C]		[g]
EBV03H001	10156006201	3.0	2800	50	H->L : 30 L->H : 30	-40~120	-30~70	3/8″	0.17
EBV03H002	10156006601	5.1	2800					½″	0.17
EBV05H050 [1&2]	10156006301	8.6	4000		H->L : 30 L->H : 30			5/8″	0.36
EBV05H051 [1&2]	10156007101	8.6	4000					¾″	0.38
EBV07H-002 [1]	10156002901	17.1	2800		H->L : 15 L->H : 5	-30~120		7/8″	0.52
EBV07H-003 [1]	10156003101	17.1	2800					1″1/8	0.56
EBV07H-006 [1]	10156006801	17.1	2800		H->L : 30 L->H : 15			7/8″	0.54
EBV09H008 [1&2]	10156005701	38.5	4000		H->L : 10	-40~120		1″1/8	0.85
EBV09H009 [2]	10156005801	38.5	4000					2″1/8	0.85
EBV09H010 [2]	10156006401	38.5	4000					1″5/8	0.78
EBV09H-001 [3]	10156002201	38.5	3500		H->L : 10 L->H : 5	-30~120		1″1/8	1.25

[1] models with SUS304 tube material + copper connections
[2] models suitable with oil free system
[3] With built in motor
H-> L = Normal flow direction / L->H = Reverse flow direction

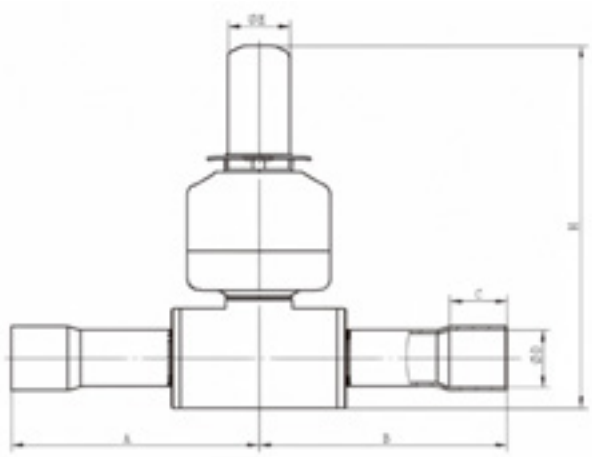
2-WAYS ELECTRONIC BALL VALVES

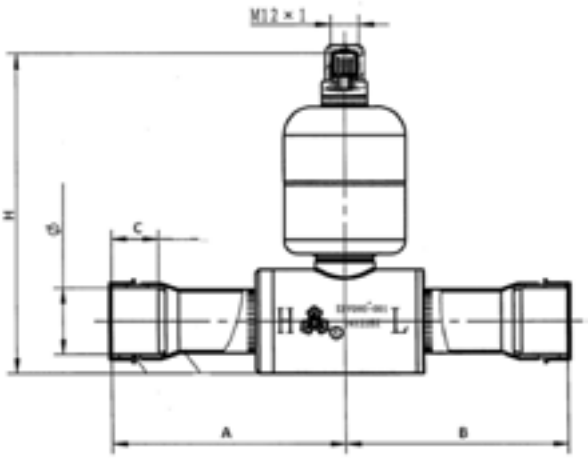


Coil model	Part Number	Coil type	Suitable with
PQ-M10012-004002	10810208801	Unipolar	EBV03/EBV05/EBV07/EBV09
PQ-M10012-004274	10810231901	Unipolar	
PQ-M10012-004213	10810232402	Unipolar	
PQ-M10012-004035	10810210602	Unipolar	
PQ-M35012-001003	10810213502	Bipolar	

DIMENSIONS

(unit is mm)

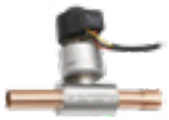




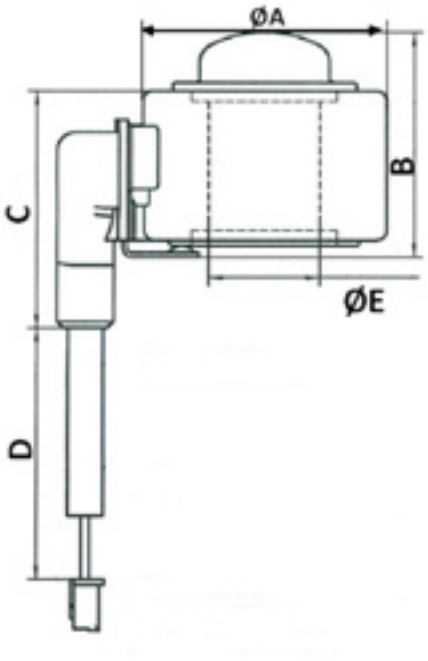
Model	Flow direction	Tube diameter		Dimensions				
		øD		A	B	C	øE	H
		[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
EBV03H001	Bi-flow	3/8	9.52	55	55	10	17.3	79
EBV03H002	Bi-flow	1/2	12.7	51.5	51.5	12	17.3	79
EBV05H050	Bi-flow	5/8	15.88	69.4	69.4	13	17.3	102
EBV05H051	Bi-flow	3/4	19.05	80.6	80.6	17	17.3	102
EBV07H-002	Bi-flow	7/8	22.2	93	90	17.5	17.3	109
EBV07H-003	Bi-flow	1-1/8	28.6	102	100	20	17.3	109
EBV07H-006	Bi-flow	7/8	22.2	93	90	17.5	17.3	110
EBV09H008	Uni-flow	1-1/8	28.6	113	109	32.8	17.3	109
EBV09H009	Uni-flow	2-1/8	54	91	88	30	17.3	119
EBV09H010	Uni-flow	1-5/8	41.5	91	88	30	17.3	119
EBV09H-001[1]	Bi-flow	1-1/8	28.8	100	96	20	-	139

[1] With built in motor – right drawing

2-WAYS ELECTRONIC BALL VALVES



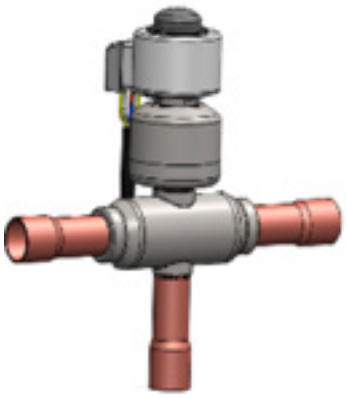
Coil Model	Dimensions [mm]					Connector type
	ØA	B	C	D	ØE	
PQ-M10012-004002	38.5	35.8	37.6	700	17.5	XHP-5
PQ-M10012-004274	38.5	35.8	37.6	1500	17.5	XHP-5
PQ-M10012-004213	38.5	35.8	37.6	2000	17.5	XHP-5
PQ-M10012-004035	38.5	35.8	37.6	5000	17.5	XHP-5
PQ-M35012-001003	38.5	35.5	25.6	6000	17.5	Lead wire



***EBV** SERIES*

3-WAYS ELECTRONIC BALL VALVES

The EBV refrigerant three-way electronic ball valve can be used in commercial air conditioning systems for heat recovery, constant temperature dehumidification, and other occasions, achieving refrigerant on-off and flow regulation for the A and B outlet paths.



FEATURES

- FULL STAINLESS STEEL VALVE BODY DESIGN, HIGH STRENGTH, CORROSION RESISTANT
- PRECISE FLOW DISTRIBUTION ADJUSTMENT, MINIMAL FLOW FLUCTUATION
- COMPACT DESIGN, REQUIRING MINIMAL INSTALLATION SPACE
- LIGHTWEIGHT DESIGN, GOOD VIBRATION RESISTANCE
- HIGH OPERATING LIFE

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC refrigerants such as: R134a, R404A, R407C, R410A, R32, R454B etc.
- Medium temperature TS min./max.: -40°C to +120°C
- Ambient temperature min./max.: -30°C to +60°C
- Max. working pressure: 50 bar
- Kv value: from 3.5 m^3/h
- Certifications: PED / UL / LVD

ELECTRICAL PARAMETERS

- Rated voltage: 12VDC (unipolar)
- Excitation mode: 2-2 phase excitation mode unipolar, and bipolar for some models
- Excitation speed: 100 pps
- Coil resistance: 46 Ω for PQ-M10 (unipolar) or 72 Ω for PQ-M35 (bipolar) 52 Ω for built in motor
- Insulation class of coil: E
- Protection class: IP 67

3-WAYS ELECTRONIC BALL VALVES

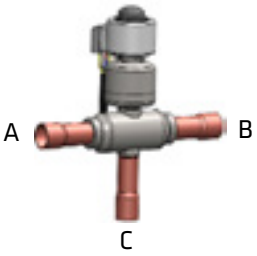


GENERAL CHARACTERISTICS

3 ways valves models

All these models can run in both directions:

From C to A or C to B
Or
from A to C and B to C



Valve Model	Part Number	Kv	Number of steps	MWP	MOPD	Medium T°	Ambient T°	Ø	Weight
		[m³/h]		[Bar]	[Bar]	[°C]	[°C]		[g]
EBV305H001	10156006101	2.6	4400	50	31	-40~120	-30~70	5/8″	0.41
EBV305H002	10156006501	2.6	4400		30	-40~120		½″	0.43
EBV309H001[1]	10156005401	8.6	3800		28	-40~135		7/8	1.47

[1] with bent tubes and built in motor

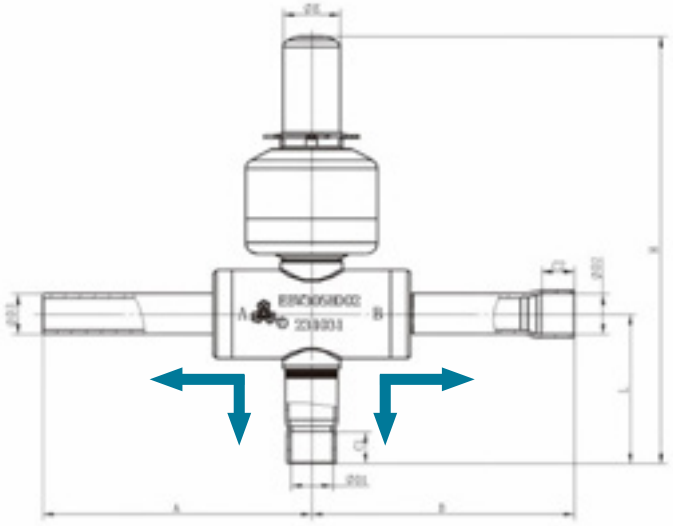
Coil model	Part Number	Coil type	Suitable with
PQ-M10012-004002	10810208801	Unipolar	EBV305
PQ-M10012-004274	10810231901	Unipolar	
PQ-M10012-004213	10810232402	Unipolar	
PQ-M10012-004035	10810210602	Unipolar	
PQ-M35012-001003	10810213502	Bipolar	

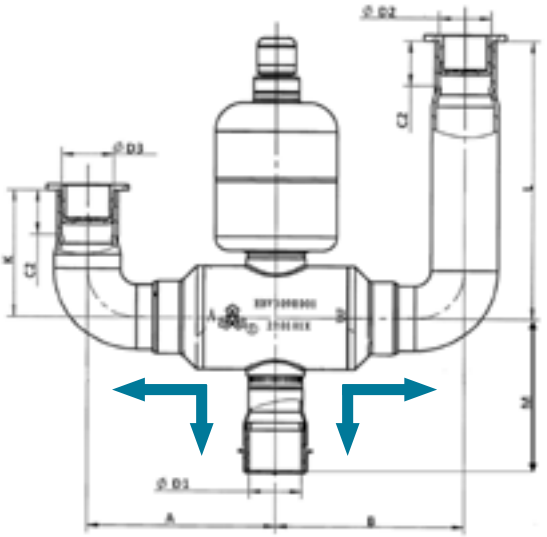
3-WAYS ELECTRONIC BALL VALVES



DIMENSIONS

(unit is mm)

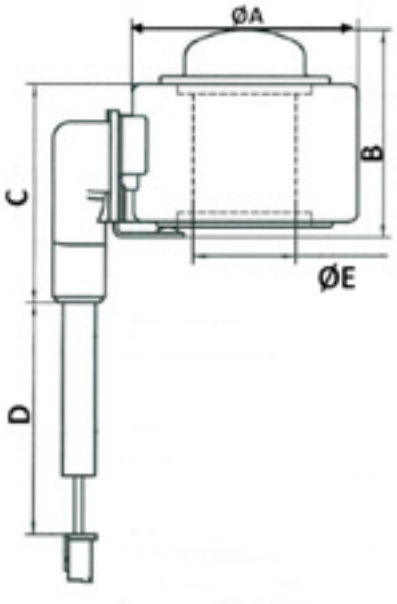




Model	Tube dimensions					Dimensions						
	øD1	øD2	øD3	C1	C2	A	B	L	K	M	H	øE
	[inch]	[inch]	[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
EBV305H001	5/8	5/8	5/8	12.7	16	72	74	47.3	-	-	135.2	17.3
EBV305H002	1/2	1/2	1/2	10	10	81.8	79.9	47.3	-	-	135.2	17.3
EBV309H001[1]	7/8	7/8	7/8	19	19	80.6	80.6	120	55	56	-	-

[1] with bent tubes and built in motor – Right drawing

Coil Model	Dimensions [mm]					Connector type
	ØA	B	C	D	ØE	
PQ-M10012-004002	38.5	35.8	37.6	700	17.5	XHP-5
PQ-M10012-004274	38.5	35.8	37.6	1500	17.5	XHP-5
PQ-M10012-004213	38.5	35.8	37.6	2000	17.5	XHP-5
PQ-M10012-004035	38.5	35.8	37.6	5000	17.5	XHP-5
PQ-M35012-001003	38.5	35.5	25.6	6000	17.5	Lead wire



3-WAYS ELECTRONIC BALL VALVES

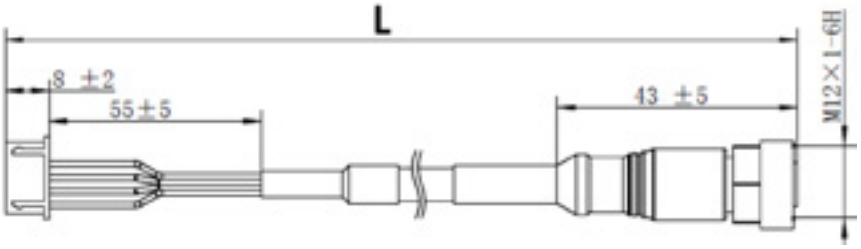


ACCESSORIES

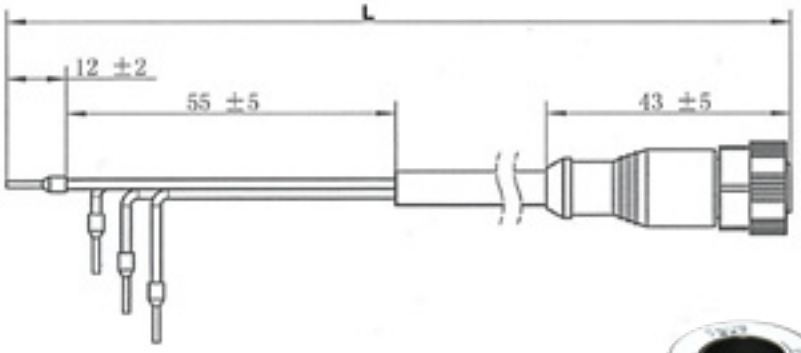
M12 cables for the built-in motor EBV models

Model	Part Number	Cable Length (L) [mm]	Connector type	Tolerance [mm]	IP level
Y02B	20156013602	2000	XHP-5	+/-40	67
Y04B	20156014602	4000	XHP-5	+/-80	67
Y08B	20156024402	8000	XHP-5	+/-160	67
Y02A	20130674902	2000	Lead wire	+/-40	67
Y04A	20130675002	4000	Lead wire	+/-80	67
Y08A	20130675102	8000	Lead wire	+/-160	67

YOx**B** cable type



YOx**A** cable type





Manual magnetic tool

The magnetic tool can be used to open/close the valve manually

	Magnet model	Part Number
Uni polar motor	DPF-T-FZ03	34130309102

Drivers for EBV

	Driver model	Part Number
Uni polar	SEC611-R06	10680005102
Bi polar	VSD1006	10685001202
Bi polar	VSD2001	10685000602
Manual operator	MD02-R5	10680002602

***EBVC** SERIES*

ELECTRIC THREE-WAY BALL VALVE



Suitable for heat recovery applications in CO_2 transcritical systems, the medium enters from the bottom pipe and exits from the left or right pipe, which can open or close the refrigerant flow path.

FEATURES

- STAINLESS STEEL PIPE WITH COPPER LINING FOR EASY WELDING
- LOW INTERNAL LEAKAGE
- HIGH LIFE CYCLE: 50,000 TIMES
- THE ACTUATOR CONNECTION BRACKET IS POSITIONED SYMMETRICALLY, AND ITS BALANCE IS BETTER, MAKING THE CONNECTION BETWEEN THE ACTUATOR AND THE VALVE MORE RELIABLE.

GENERAL SPECIFICATIONS

- Applicable medium: R744
- Ambient temperature: -40°C/+70°C
- Medium temperature: -40°C/+150°C
- Max. working pressure: 140 bar
- PED is ready, UL certification in progress

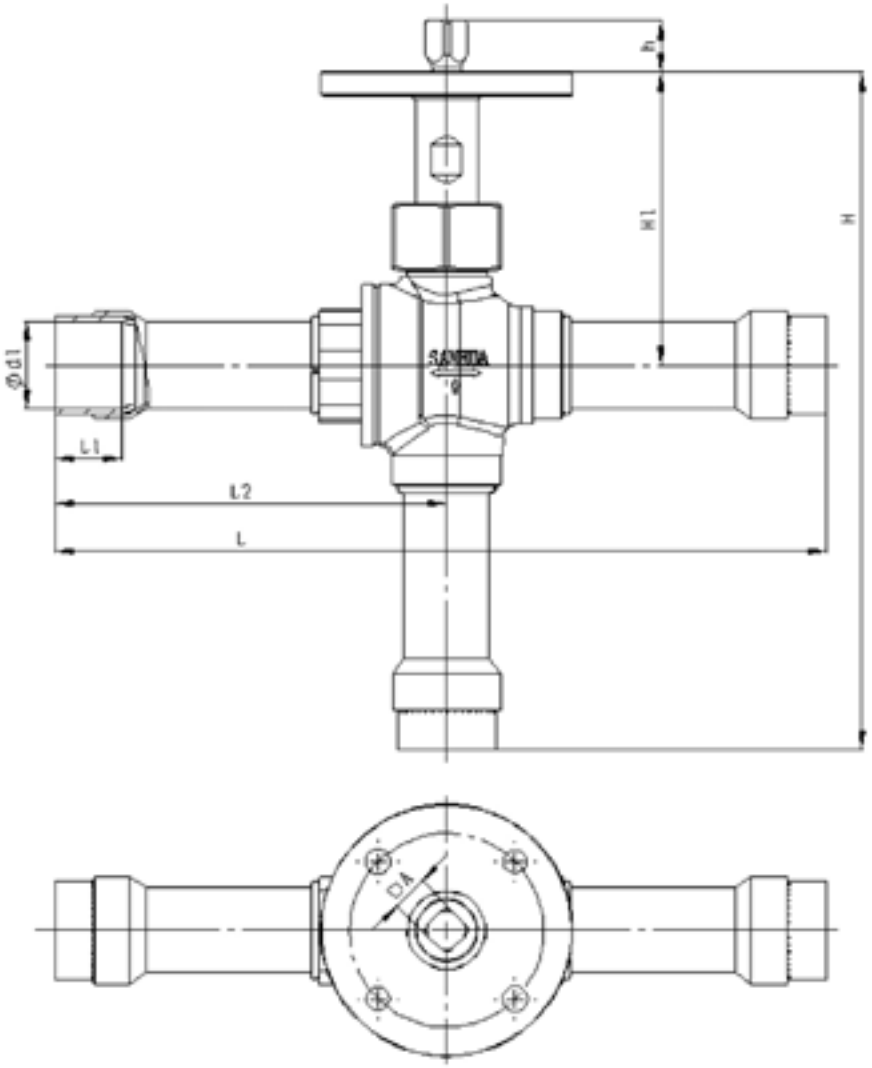
TECHNICAL PARAMETERS

Model	U11	Connections Ød ODF		Kv	PED category
		[inch]	[mm]	[m³/h]	
EBVC303H001	10156008002	-	10	1.9	Art 4.3
EBVC304H001	10156007802	-	12	2.0	Art 4.3
EBVC306H001	10156007902	-	18	4.3	Art 4.3
EBVC307H001	10156007602	7/8	22	7.2	Art 4.3
EBVC309H001	10156006902	1-1/8	-	12.4	Art 4.3

ELECTRIC THREE-WAY BALL VALVE



DIMENSION



Model	L	L1	L2	H1	H	h	Φd1	□A	Flange size	Weight
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	/	[g]
EBVC303H001	136	10	71	66	131	13	10.1	9	F05	475
EBVC304H001	150	13	78	66	138	13	12.1	9	F05	490
EBVC306H001	156	17	79	75.5	153	13	18.2	9	F05	800
EBVC307H001	199	17.5	101	75.5	174.5	13	22.4	9	F05	860
EBVC309H001	251	20	122.5	80	195	14	28.8	9	F05	1470

***EBD** SERIES*

ACTUATOR



EBD series actuators, torque 10 and 20 N·m, can control two-way, three-way ball valves and other torque adaptation valves, support on/off function.

FEATURES

- HIGH LIFE CYCLE: 60,000 TIMES (WITH 20 N·M LOADED), 100.000 TIMES (WITH 10 N·M LOADED)
- VALVE BODY OPENING CAN BE SEEN BY DIAL SCALE
- THE ACTUATOR SUPPORTS MANUAL OPERATION AND AUTOMATIC OPERATION, AND CAN BE SWITCHED FREELY
- 2 POSITIONING PINS AND 2 THREADED HOLES ARE DESIGNED FOR EASY INSTALLATION WITH THE VALVE

GENERAL SPECIFICATIONS

- Size for the latch fitting the mounting shaft: 9*9 and 14*14
- Fitted flange: F05
- Ambient temperature: -20°C/+70°C
- Conforms to LVD

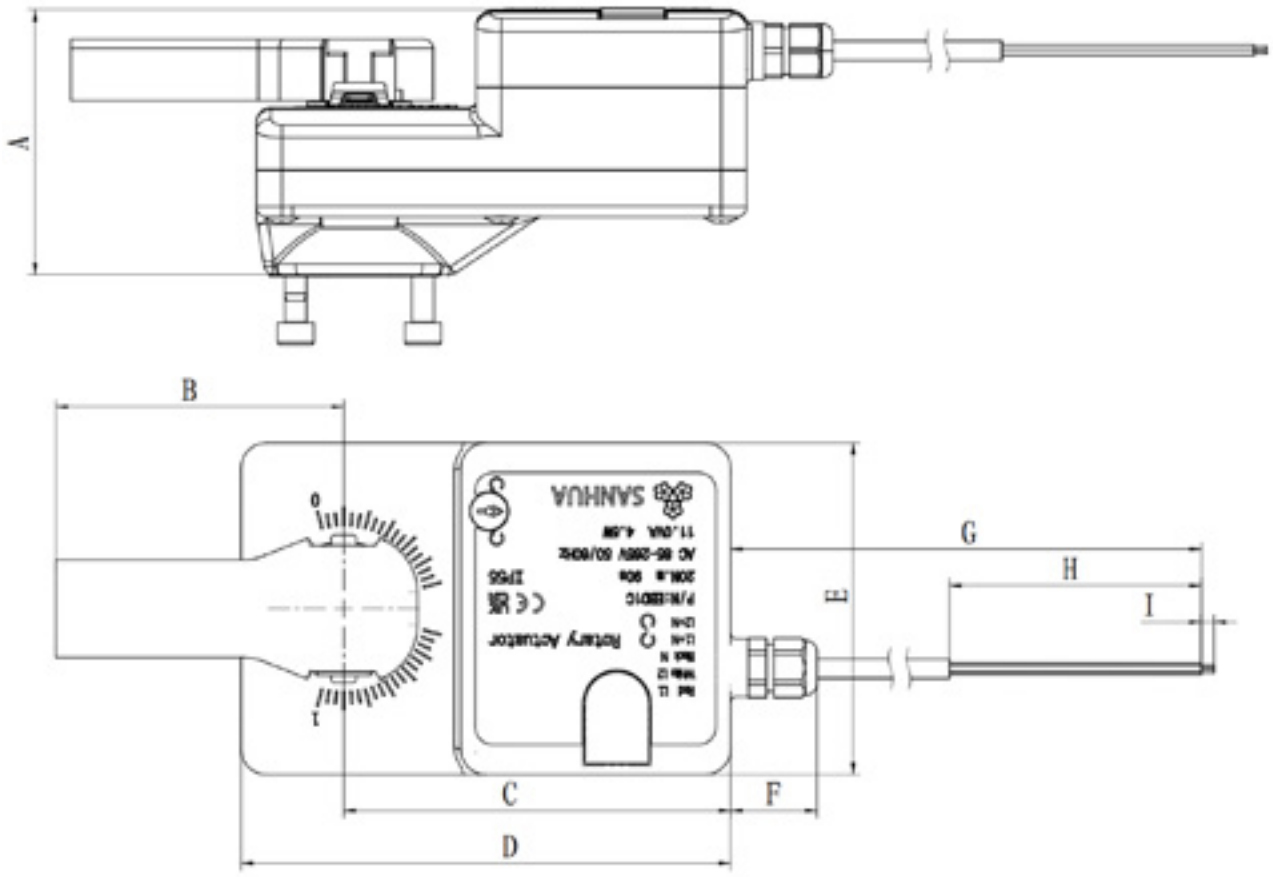
TECHNICAL PARAMETERS

Model	U11 Code	Function	Rated Voltage	Voltage range	Frequency	Power/Torque	Running time	Rotation range	Degree of protection
			(V)	(V)	(Hz)	(W/N·m)	(s)	(°)	
EBD1C01	101580009	On/off	AC 220	AC 85~265	50/60	3.5/10; 4.0/20	90	95	IP55

ACTUATOR

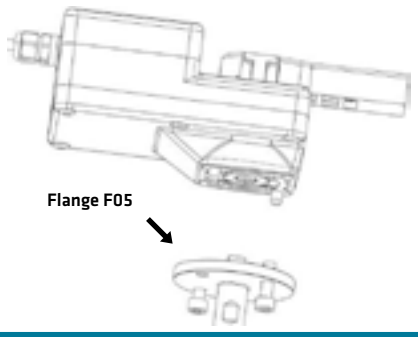


DIMENSION

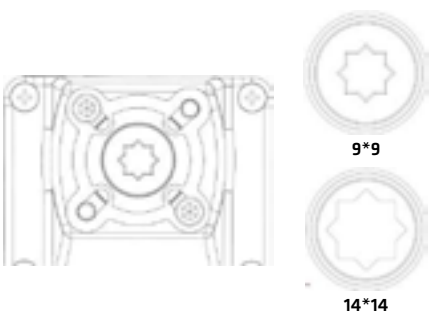


Model	A	B	C	D	E	F	G	H	I	J	Flange size	Weight
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	/	[g]
EBD1C01	73	80	108	136	92	24	900	70	3.5	Φ10	F05	1200

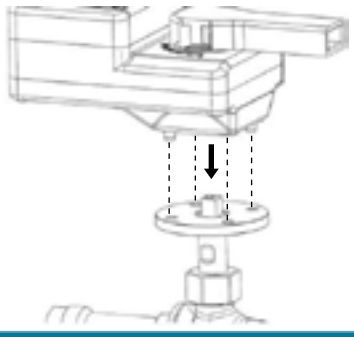
Note: The EBD1C01 mounting shaft is suitable for 9*9 pins. If you need to adapt 14*14 pins, please contact Sanhua.



The EBD actuator must fit the F05 flange



The EBD actuator can fit 9*9 and 14*14 pin



The actuator and valve are installed together

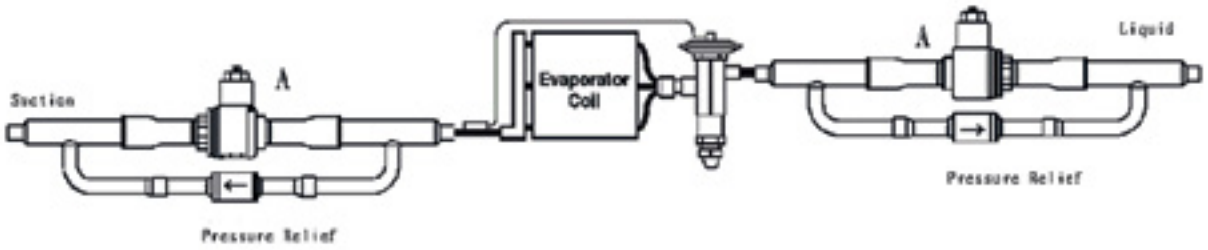
***GZJA** SERIES*

GZJA SUB ASSEMBLY SERIES: BALL VALVE + CHECK VALVE [R744 SUB-CRITICAL]



GZJA sub-assemblies include a CBVT ball valve (PS=140bar) and a BCV check valve (PS=90bar); they are typically used in commercial CO_2 refrigeration applications, to isolate specific parts or components present in the system. With the ball valves in closed position the refrigerant cannot achieve the isolated component, but it can be suck up through the check valves. A typical application is keeping evaporator coil isolated without over pressurizing due to warm up.

Figure 1



The symbol 'A' indicates the pressure relief side of the sub assembly. Any pressure builds up on the 'A' side with the ball valve in the closed position can relieve to the other side of the ball valve. When used on an evaporator coil, the 'A' side of the assembly should always be on the coil side. (Refer to Figure 1.)

FEATURES

- RELIABLE WELDING QUALITY, AND AVOID WELDING MISTAKE OF CHECK VALVE DIRECTION
- COMPACT DESIGN TO SAVE INSTALLATION SPACE

GENERAL SPECIFICATIONS

- Applicable for R744 (CO_2)
- Medium temperature TS min./max.: -40°C/+90°C
- Max. Operation pressure PS: 9MPa (90bar)
- Certification: PED declaration
- UL certification – Not available (on request)

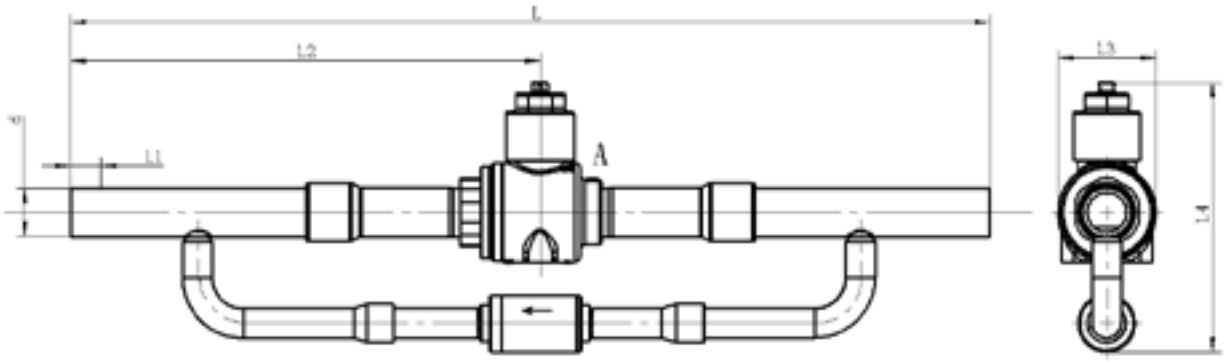
GZJA SUB ASSEMBLY SERIES: BALL VALVE + CHECK VALVE [R744 SUB-CRITICAL]



GENERAL CHARACTERISTICS

Model	Part Number	Solder connection Ø d (ODM)	KV [BALL VALVE]	KV [CHECK VALVE]	Wrench Size Cap	PED Category
		[inch]	[m³/h]	[m³/h]	[mm]	
GZJA66004	10245294201	3/8	13,8	0,9	H19	4.3
GZJA66005	10245294301	1/2	13,8	0,9	H19	4.3
GZJA66006	10245294401	5/8	13,8	0,9	H19	4.3
GZJA66007	10245294501	3/4	20,6	0,9	H19	4.3
GZJA66008	10245294601	7/8	29,0	0,9	H19	4.3
GZJA66009	10245294701	1 1/8	54,2	0,9	H19	4.3

DIMENSIONS AND WEIGHTS



Model	Part number (Industrial pack)	Solder connection Ø d (ODM)	Wrench Size Cap					
			L	L1	L2	L3	L4	Weight
		[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]
GZJA66004	10245294201	3/8	302	10	151	32.2	87.3	550
GZJA66005	10245294301	1/2	302	10	151	32.2	88	550
GZJA66006	10245294401	5/8	302	10	151	32.2	88	550
GZJA66007	10245294501	3/4	383.3	10	196.7	40.2	104.8	940
GZJA66008	10245294601	7/8	383.3	10	196.7	40.2	105.4	1000
GZJA66009	10245294701	1 1/8	382.6	10	196.7	53.6	111.8	1600

***YCVS** SERIES*

CHECK VALVE PISTON TYPE





Piston type check valves are designed for installation in commercial refrigerating systems and in residential or industrial air conditioning plants. They are used to control the unidirectional flow of refrigerant so as to prevent backflow. A specific section of the present datasheet is related to the Check Valves models suitable for installation in system using flammable refrigerants HFO (categories A2* and A2L*), and Hydrocarbons HC (category A3*).

*According to ANSI-ASHRAE 34-2016 and EN-378-1 ANNEX EN 378-1:2016 Annex E

FEATURES

- THIS VALVE CAN ENSURE THE ONLY CORRECT FLOW DIRECTION
- EQUIPPED WITH DAMPING SPRING TO FREELY INSTALL THE VALVE AT POSITIONS WITH PRESSURE PULSE
- AVAILABLE IN 2 LAYOUTS DEPENDING BY SIZE:
  STRAIGHTWAY VALVE AND L-SHAPE VALVE, EASY TO CONNECT.
- SPECIAL VERSION OF CHECK VALVE EQUIPPED WITH REINFORCED SPRING, APPLICABLE TO COMPRESSOR DISCHARGE PIPES IN SINGLE OR MULTI COMPRESSOR SYSTEMS (YCVSH & YCVSH-R SERIES)
- LOW PRESSURE DROP DURING OPERATION
- TYPES WITH PORT SIZE BIGGER 25MM HAVING PED CAT.II BY TUV RHEINLAND.

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HC refrigerants such as: R22, R134a, R404A, R407C, R410A, R507A, R407A/F, R290, R32, R1234yf, R1234ze, R448A/R449A, R452A, R450A/R513A, R744
- Ambient temperature range: from -30°C to +60°C
- Medium temperature TS min./max.:
  -50°C / 150°C
- Max. operating pressure PS:
  4,9 MPa (49 bar)
- Installation position:
  - Flow direction corresponds to the arrow
  - The suggested positions are described in the installation instructions
- Declaration of Conformity issued in accordance with PED directive (2014/68/EU)
- Certifications: UL/CSA

CHECK VALVE PISTON TYPE



GENERAL CHARACTERISTICS

1a. Models with normal piston spring

Model	Part Number	Type	Connections Ø d ODF		Kv	Min. OPD	DN	PS	max TS	PED Category [Fluid Group 1]	PED Category [Fluid Group 2]
			[inch]	[mm]	[m³/h]	[kPa]	[mm]	[bar]	[°C]		
YCVS2H02	10162001502	S	-	6	0,56	5	5,0	49	150	Art. 4.3	Art. 4.3
YCVS2H01	10162001602	S	1/4	-	0,56	5	5,0	49	150	Art. 4.3	Art. 4.3
YCVS3H01	10162000402	S	3/8	-	1,60	5	7,9	49	150	Art. 4.3	Art. 4.3
YCVS3H02	10162000502	S	-	10	1,60	5	7,9	49	150	Art. 4.3	Art. 4.3
YCVS4H02	10162000802	S	-	12	2,64	5	11,1	49	150	Art. 4.3	Art. 4.3
YCVS4H01	10161001302	S	1/2	-	2,64	5	11,1	49	150	Art. 4.3	Art. 4.3
YCVS5H03	10161001602	S	5/8	16	4,00	5	13,0	49	150	Art. 4.3	Art. 4.3
YCVS6H04	10162003702	S	-	18	6,80	5	17,1	49	150	Art. 4.3	Art. 4.3
YCVS6H03	10161001702	S	3/4	-	6,80	5	17,1	49	150	Art. 4.3	Art. 4.3
YCVS7H03	10161001802	S	7/8	22	6,80	5	17,1	49	150	Art. 4.3	Art. 4.3
YCVS 20-77GSHC-1	10160030002	L	7/8	22	13,20	10	19,8	49	150	Art. 4.3	Art. 4.3
YCVS 26-88GSHC-1	10160037202	L	-	28	19,02	10	25,6	49	150	Cat.2	Art. 4.3
YCVS 26-99GSHC-1	10160030102	L	1 1/8	-	19,02	10	25,6	49	150	Cat.2	Art. 4.3
YCVS 31-BBGSHC-1	10160024402	L	1 3/8	35	29,10	10	31,0	49	150	Cat.2	Art. 4.3
YCVS 31-DDGSHC-1	10160037002	L	1 5/8	-	29,10	10	31,0	49	150	Cat.2	Art. 4.3
YCVS 31-DDGSHC-2	10160032402	L	-	42	29,10	10	31,0	49	150	Cat.2	Art. 4.3

CHECK VALVE PISTON TYPE



1b. Models with reinforced piston spring

Model	Part Number	Type	Connections Ø d ODF		Kv	Min. OPD	DN	PS	max TS	PED Category [Fluid Group 1]	PED Category [Fluid Group 2]
			[inch]	[mm]	[m³/h]	[kPa]	[mm]	[bar]	[°C]		
YCVSH3H01	10162000602	S	3/8	-	1,60	15	7,9	49	150	Art. 4.3	Art. 4.3
YCVSH3H02	10162000702	S	-	10	1,60	15	7,9	49	150	Art. 4.3	Art. 4.3
YCVSH4H02	10162001302	S	-	12	2,64	15	11,1	49	150	Art. 4.3	Art. 4.3
YCVSH4H01	10162001202	S	1/2	-	2,64	15	11,1	49	150	Art. 4.3	Art. 4.3
YCVSH5H03	10162001102	S	5/8	16	4,00	15	13,0	49	150	Art. 4.3	Art. 4.3
YCVSH6H04	10162003802	S	-	18	6,80	15	17,1	49	150	Art. 4.3	Art. 4.3
YCVSH6H03	10162001002	S	3/4	-	6,80	15	17,1	49	150	Art. 4.3	Art. 4.3
YCVSH7H03	10162000902	S	7/8	22	6,80	15	17,1	49	150	Art. 4.3	Art. 4.3
YCVSH 20-77GSHC-1	10160034602	L	7/8	22	13,20	30	19,8	49	150	Art. 4.3	Art. 4.3
YCVSH 26-88GSHC-1	10160023702	L	-	28	19,02	30	25,6	49	150	Cat.2	Art. 4.3
YCVSH 26-99GSHC-1	10160034702	L	1 1/8	-	19,02	30	25,6	49	150	Cat.2	Art. 4.3
YCVSH 31-BBGSHC-1	10160037402	L	1 3/8	35	29,10	30	31,0	49	150	Cat.2	Art. 4.3
YCVSH 31-DDGSHC-1	10160037102	L	1 5/8	-	29,10	30	31,0	49	150	Cat.2	Art. 4.3
YCVSH 31-DDGSHC-2	10160042302	L	-	42	29,10	10	31,0	49	150	Cat.2	Art. 4.3

Note: For the simulation of the performance, please refer to the Sanhua selection tool “Quickfinder” or ask your local support.

CHECK VALVE PISTON TYPE



DIMENSIONS AND WEIGHTS

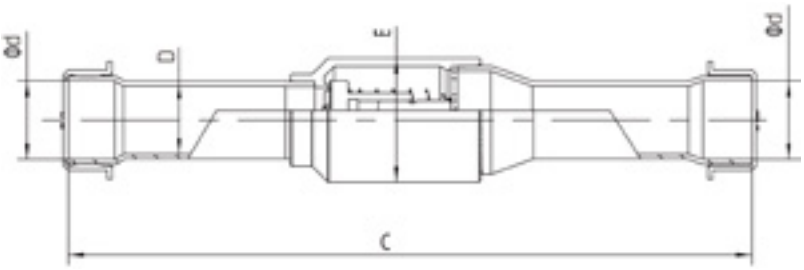
Models (table 1a)	Models (table 1b)	Type	Dimensions			Weight [kg]
			ØD	C	E	
			[mm]	[mm]	[mm]	
YCVS2H02	-	S	5	90	18	0,046
YCVS2H01	-	S	5	90	18	0,046
YCVS3H01	YCVSH3H01	S	8	110	17	0,046
YCVS3H02	YCVSH3H02	S	8	110	17	0,046
YCVS4H02	YCVSH4H02	S	10	130	21	0,069
YCVS4H01	YCVSH4H01	S	10	130	21	0,069
YCVS5H03	YCVSH5H03	S	13	140	23.5	0,107
YCVS6H04	YCVSH6H04	S	17	165	30	0,168
YCVS6H03	YCVSH6H03	S	17	165	30	0,169
YCVS7H03	YCVSH7H03	S	17	165	30	0,174
YCVS 20-77GSHC-1	YCVSH 20-77GSHC-1	L	20	132	87	0,427
YCVS 26-88GSHC-1	YCVSH 26-88GSHC-1	L	26	196	123	1,050
YCVS 26-99GSHC-1	YCVSH 26-99GSHC-1	L	26	196	123	1,132
YCVS 31-BBGSHC-1	YCVSH 31-BBGSHC-1	L	31	196	123	1,154
YCVS 31-DDGSHC-1	YCVSH 31-DDGSHC-1	L	31	196	123	1,182
YCVS 31-DDGSHC-2	YCVSH 31-DDGSHC-2	L	31	196	123	1,184

CHECK VALVE PISTON TYPE

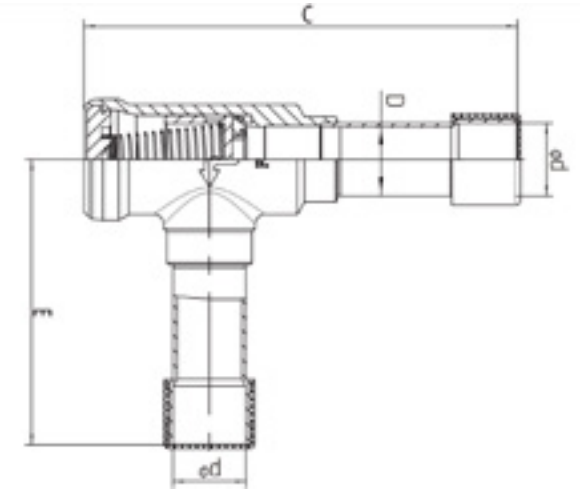


GENERAL CHARACTERISTICS

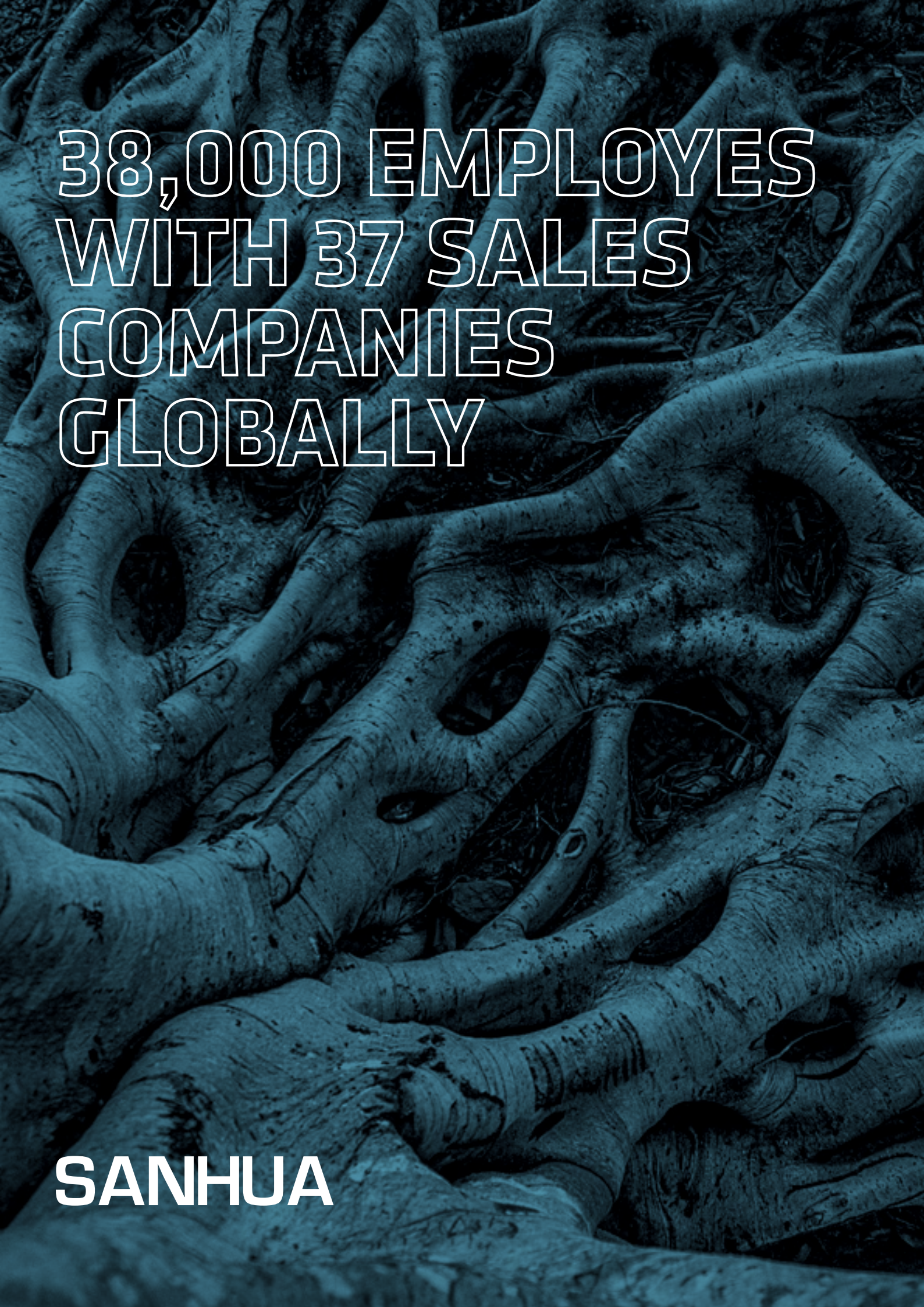
Straight-way



L-shape






38,000 EMPLOYES
WITH 37 SALES
COMPANIES
GLOBALLY
SANHUA

***CCV-H** SERIES*

CHECK VALVE MAGNETIC TYPE



Magnetic type check valves are designed for installation in commercial refrigerating systems and in residential or industrial air conditioning plants. They are used to control the unidirectional flow of refrigerant to prevent backflow; the magnetic actuator guarantees a high reliability standard. The Design Pressure (PS) of the versions CCV-H [49 bars] and the allowed refrigerant temperatures range [from -40°C to +150°C], permits a safe and reliable installation also in R32 systems without liquid injection and high discharge temperatures.

FEATURES

- THIS VALVE CAN ENSURE THE ONLY CORRECT FLOW DIRECTION.
- MAGNETIC CLOSURE ELEMENT FOR HIGH RELIABILITY STANDARDS
- COMPACT AND SEALED DESIGN WITH NO RISK OF EXTERNAL LEAKAGE: HIGHLY SUGGESTED FOR APPLICATIONS WITH FLAMMABLE REFRIGERANTS.
- SMALLER CCV-H SIZES [FROM CCV2H TO CCV6H] HAVE COPPER VALVE BODIES WHILE BIGGER CCV-H SIZES HAVE STAINLESS STEEL VALVE BODIES (WITH COPPER JOINTS, NO WELDING PROTECTION IS REQUIRED)
- BUILT-IN MECHANICAL FILTER (STRAINER)
- LOW PRESSURE DROPS DURING OPERATION.
- CERTIFIED ACCORDING PED CAT.II BY TUV RHEINLAND

GENERAL SPECIFICATIONS

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R410A, R507A, R448A, R449A, R450A, R452A, R513A, R32, R1234ze(E), R1233zd(E), R454A/B/C, R455A, R290, R1270, R600a
- Medium temperature TS min./max.: -40°C / +150°C
- Max. operating pressure PS: 4,9 MPa (49 bar)
- Installation position:
  - Flow direction corresponds to the arrow
  - CCV can be installed in any position and direction in the system
- Declaration according to PED

CHECK VALVE MAGNETIC TYPE



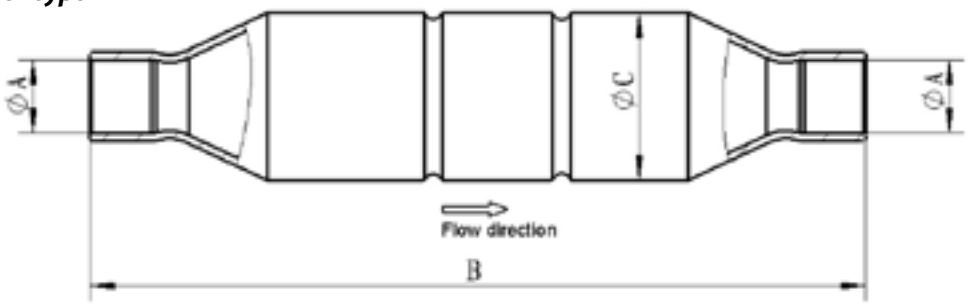
GENERAL CHARACTERISTICS

Model	Part Number	Connections Ø d ODF		Kv	Min. OPD	Dimensions		Weight	Layout / Drawing(1)	PED Category [Fluid Group 1]	PED Category [Fluid Group 2]
						Ø C	B				
		[inch]	[mm]	[m³/h]	[bar]	[mm]	[mm]	[kg]	[-]		
CCV2H05	10163002302	1/4	-	0,8	0,1	21,8	101,6	0,069	A	Art. 4.3	Art. 4.3
CCV3H06	CCVX0000802	3/8	-	1,2	0,1	21,8	101,6	0,070	A	Art. 4.3	Art. 4.3
CCV4H05	CCVX0000602	1/2	-	2,7	0,1	28,0	127,0	0,124	A	Cat.II	Art. 4.3
CCV5H06	CCVX0000902	5/8	16	2,9	0,1	28,0	127,0	0,130	A	Cat.II	Art. 4.3
CCV6H05	CCVX0001702	3/4	-	2,9	0,1	28,0	127,0	0,134	A	Cat.II	Cat.I
CCV7H01	10163001302	7/8	22	6,5	0,1	35,5	178,0	0,177	B	Cat.II	Cat.I
CCV9H01	10163000502	1 1/8	-	11,4	0,1	45,0	212,0	0,306	B	Cat.II	Cat.I
CCV11H01	10163001202	1 3/8	35	16,2	0,1	56,0	239,0	0,504	B	Cat.II	Cat.I
CCV13H01	10163002902	1 5/8	-	24,0	0,1	63,0	250,0	0,627	B	Cat.II	Cat.I
CCV17H01	10163003002	2 1/8	54	42,8	0,1	78,0	300,0	1,183	B	Cat.II	Cat.I

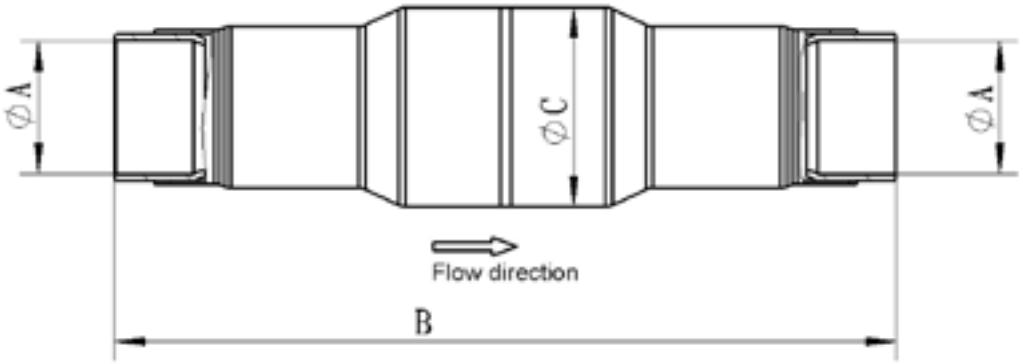
Note: 1. Drawing "A" is referred to CCV-H models with copper valve bodies.
Drawing "B" is referred to CCV-H models with stainless-steel valve bodies.

DIMENSIONAL DRAWING

"A": CCV-H Copper type



"B": CCV-H Stainless-Steel type



***BCV** SERIES*

CO_2 CHECK VALVE

BCV series of check valves are designed for installation in transcritical CO_2 refrigeration system and HPWH systems. They are used to ensure correct flow direction of refrigerant so as to prevent backflow.



FEATURES

- THIS VALVE PERMITS UNI-DIRECTIONAL FLOW ONLY.
- STAINLESS STEEL VALVE BODY FOR HIGHER STRENGTH, WHICH CAN WITHSTAND PRESSURE OF MAX. 140BAR MOP.
- FURNACE WELDING AND LASER WELDING FOR EXCELLENT WELDING QUALITY, WHICH ENSURES IDEAL AIR TIGHTNESS IN HIGH PRESSURE SYSTEM.
- COPPER CONNECTION TUBE OR BI-METAL CONNECTION TUBE WITH INNER EXTENDED COPPER TUBE FOR EASY SOLDER.

GENERAL SPECIFICATION

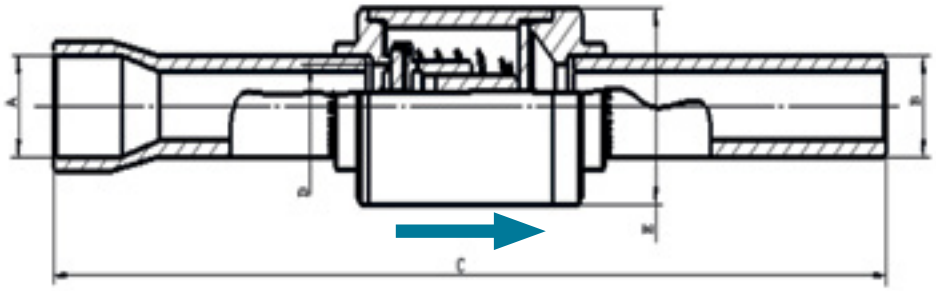
- Applicable for R744 (CO_2)
- Medium temperature TS min./max.: -50°C /150°C
- Max. operating pressure PS: 140bar[1)]

  Note: BCV08-005 is a special check valve model developed for sub-critical application (PS=90bar) with soft sealing technology to minimize the internal leakage rate
- Installation position:
  -Flow direction corresponds to the arrow
- Declaration according to CE/PED

CO_2 CHECK VALVE

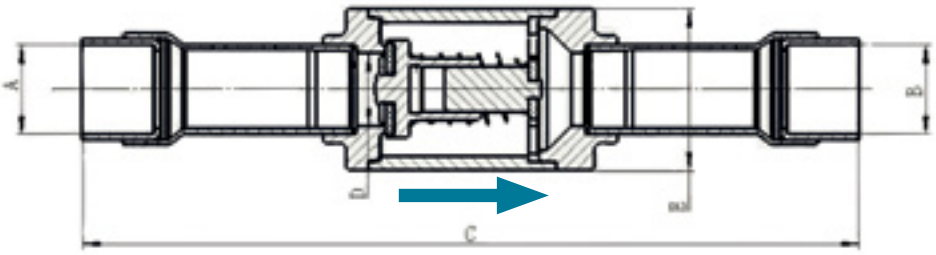


GENERAL CHARACTERISTICS



Model	Part number	Connection Tube Material	Type	Connection		Kv	Min.OPD	Dimension		
				ØA ODF	ØB ODM			D	C	E
				[inch]	[inch]	[m³/h]	[kPa]	[mm]	[mm]	[mm]
BCV08-005*	10160059702	Copper	Straight-way	3/8	3/8	0.9	40	8	110.6	18.5
BCV08-001	10160046702	Copper	Straight-way	3/8	3/8	0.9	40	8	110.6	18.5

***Note:** please note the general specification about the difference of this model.



Model	Part number	Connection Tube Material	Type	Connection		Kv	Min.OPD	Dimension		
				ØA ODF	ØB ODF			D	C	E
				[inch]	[inch]	[m³/h]	[kPa]	[mm]	[mm]	[mm]
BCV13-002	10160058802	Copper+ Stainless Steel	Straight-way	1/2	1/2	2.9	5	13	127.6	29
BCV13-001	10160058902	Copper+ Stainless Steel	Straight-way	5/8	5/8	3.3	5	13	140	29
BCV17-001	10160060802	Copper+ Stainless Steel	Straight-way	7/8	7/8	5.1	5	17	178.4	34

SYJ *SERIES*

SIGHT GLASS



(**Standard range:** for fluids GROUP 1&2 according to Directive 2014/68/EU or GROUP A1, A2/A2L, A3 according to ANSI-ASHRAE 34-2016)

Sight glasses are installed after the filter drier in liquid line of refrigerating systems, in order to observe property changes of the refrigerant (liquid/vapor) and to indicate the moisture level by colors.

FEATURES

- HIGH PRECISION COLOR INDICATOR
- SOLID AND CORROSION RESISTANT BRASS MATERIAL
- GOOD READABILITY DUE TO HIGH CLEAR SIGHT GLASS OF WIDE ANGLE
- SEALING OF LOW CREEP PTFE TO ENSURE LEAKAGE FREE PERFORMANCE
- NEW: OPTIMIZED SIZE OF BRASS BODY, REDUCED WEIGHT
- NEW: INCREASED MWP 52 BARS
- NEW: MODEL SYJ28 (1 1/8 SOLDER) ADDED

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO, HC refrigerants (and CO_2) such as: R22, R134a, R404A, R410A, R507A, R407C, R407A/F/H, R448A/R449A, R452A, R450A, R513A, R1234ze(E), R1234yf, R32, R452B, R454B/C, R290, R744
- Ambient temperature min./max.: -50°C / +80°C
- Medium temperature TS min./max.: -50°C / +80°C
- Environmental transport/storage temperature and humidity: -40°C/+65°C; air humidity: RH≤95%.
- Max. operating pressure PS: 5.2 MPa (52 bar)
- Installation position:
  - Liquid and suction line
  - Preferably in vertical lines, recommended position for horizontal lines are upwards without inclination in any direction
- Declaration according to PED (all products are covered by Art.4.3 PED Directive 2014/68/EU); UL – in process

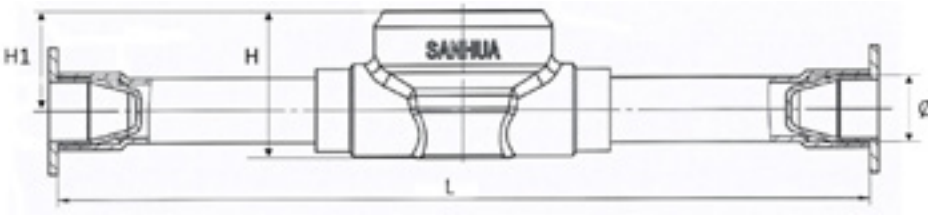
SIGHT GLASS



Version with Solder Connections

General Characteristics											
Model Series	Model Name	Part Number (multi package)[1)]	Connection Type	Connecting ODF		Dimensions & Weight					
				Ød		L	H	H1	Weight	Drawing	
				[inch]	[mm]	[mm]	[mm]	[mm]	[g]		
SYJ6	SYJ06H52	SYJX0000402	ODF x ODF solder	-	6	101	21,5	14,5	65	A	
SYJ6	SYJ06H51	10285016702		1/4	-	101	21,5	14,5	65		
SYJ10	SYJ10H51	10285016802		3/8	-	119	21,5	14,5	70		
SYJ10	SYJ10H52	SYJX0000202		-	10	119	21,5	14,5	70		
SYJ12	SYJ12H51	10285017202		1/2	-	146	28	18,25	100		
SYJ12	SYJ12H52	SYJX0000302		-	12	146	28	18,25	100		
SYJ16	SYJ16H51	10285016902		5/8	16	146	28	18,25	115		
SYJ19	SYJ19H51	10285017002		3/4	-	173	35	21,5	180		
SYJ22	SYJ22H51	10285017102		7/8	22	173	35	21,5	200		
SYJ28	SYJ28H51	SYJX0000502		1 1/8		173	35	21,5	200		

Note: 1) Available also as industrial package. Contact Sanhua for more details.

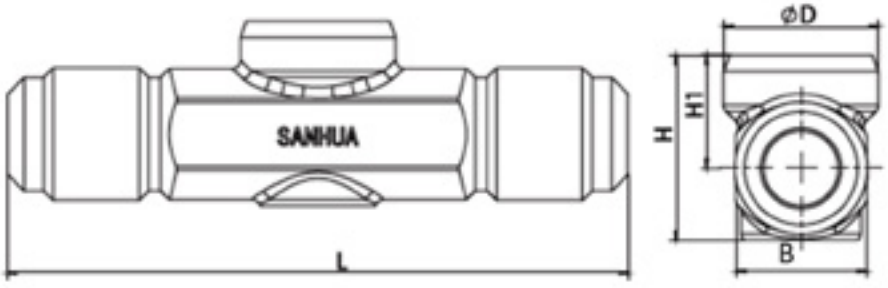


"Drawing A"

Version with male/male Flare Connections

General Characteristics											
Model Series	Model Name	Part Number (multi package)[1)]	Connection Type	SAE Flare	Dimensions & Weight						
				Ød	L	H	H1	D	B	Weight	Drawing
				[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]	
SYJ6	SYJ06L51	SYJX0001602	Flare M x M	1/4	67	21,5	14,5	26	13	78	B
SYJ10	SYJ10L51	SYJX0000802		3/8	82	27	18	26	15,85	135	
SYJ12	SYJ12L51	SYJX0001002		1/2	88	27	18	26	15,85	145	
SYJ16	SYJ16L51	SYJX0001202		5/8	104	31	19	26	21,85	240	
SYJ19	SYJ19L51	SYJX0001502		3/4	110	31	19	26	21,85	270	

Note: 1) Available also as industrial package. Contact Sanhua for more details.



"Drawing B"

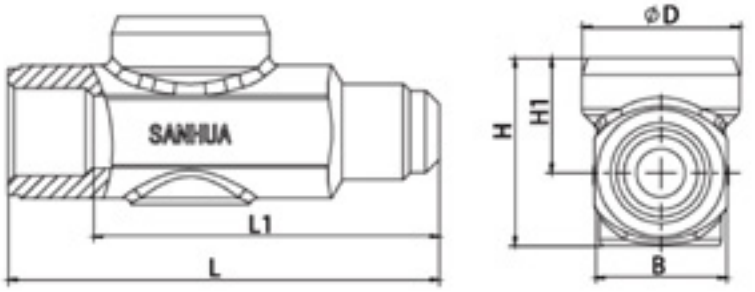
SIGHT GLASS



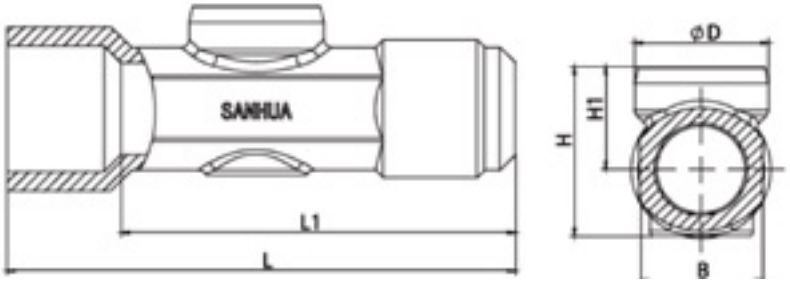
Version with male/female Flare connections

General Characteristics												
Model Series	Model Name	Part Number (multi package)[1)]	Connection Type	SAE Flare	Dimensions & Weight							Drawing
				Ød	L	L1	H	H1	φD	B	Weight	
				[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]	
SYJ6	SYJ06L61	SYJX0000702	Flare F x M	1/4	58	46	27	18	26	15,85	95	C
SYJ10	SYJ10L61	SYJX0000902		3/8	71	57	31	19	26	21,85	175	
SYJ12	SYJ12L61	SYJX0001102		1/2	76	59	33	20	26	23,85	195	
SYJ16	SYJ16L61	SYJX0001302		5/8	92	72	33	20	26	23,85	245	D
SYJ19	SYJ19L61	SYJX0001402		3/4	98	76	33	20	26	23,85	260	

Note: 1) Available also as industrial package. Contact Sanhua for more details.



"Drawing C"



"Drawing D"

Moisture Indication Limits

Refrigerant	Moisture Content 25°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R22	<80	80~200	>200
R134a	<90	90~160	>160
R404A	<40	40~140	>140
R410A	<100	100~300	>300
R507A	<15	15~90	>90
R407C	<50	50~200	>200
R407H	<80	80~240	>240
R407A	<60	60~200	>200
R448A	<50	50~230	>230
R449A	<40	40~220	>220
R452A[1)]	<50	50~120	>120
R450A[1)]	<45	45~260	>260
R513A	<60	60~120	>120

Note: 1) Calculated data based on refrigerant properties

SIGHT GLASS



Refrigerant	Moisture Content 40°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R22	<120	120~280	>280
R134a	<180	180~300	>300
R404A	<80	80~160	>160
R410A	<150	150~540	>540
R507A	<80	80~170	>170
R407C	<100	100~260	>260
R407H	<120	120~400	>400
R407A	<80	80~380	>380
R448A	< 90	90~340	>340
R449A	<70	70~310	>310
R452A[1)]	<90	90~170	>170
R450A[1)]	<110	110~420	>420
R513A	<80	80~200	>200

Note: 1) Calculated data based on refrigerant properties

Refrigerant	Moisture Content 25°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R290	<120	120~220	>220
R1234ze(E)	<60	60~180	>180
R1234yf	<60	60~160	>160
R32	<120	120~380	>380
R452B[1)]	<95	95~290	>290
R454B[1)]	<115	115~290	>290
R454C[1)]	<75	75~160	>160

Refrigerant	Moisture Content 40°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R290	<200	200~320	>320
R1234ze(E)	<80	80~220	>220
R1234yf	<80	80~280	>280
R32	<200	200~580	>580
R452B[1)]	<210	210~330	>330
R454B[1)]	<150	150~340	>340
R454C[1)]	<85	85~240	>240

Note: 1) Calculated data based on refrigerant properties

SYJ-T *SERIES*

SIGHT GLASS



Standard range: for fluids GROUP 2 according to Directive 2014/68/EU

Sight glasses are installed after the filter drier in liquid line of refrigerating systems, in order to observe property changes of the refrigerant (liquid/vapor) and to indicate the moisture level by colors.

FEATURES

- HIGH PRECISION COLOR INDICATOR
- INDICATOR PLACED CLOSELY TO THE GLASS TO PREVENT SURFACE CONTAMINATION
- SOLID AND CORROSION RESISTANT BRASS MATERIAL
- GOOD READABILITY DUE TO HIGH CLEAR SIGHT GLASS OF WIDE ANGLE
- SEALING OF LOW CREEP PTFE TO ENSURE LEAKAGE FREE PERFORMANCE
- NEW ANNULAR HUMIDITY COLOR INDICATOR. FULL PORT PASSAGE WITH LOW PRESSURE DROP

GENERAL SPECIFICATION

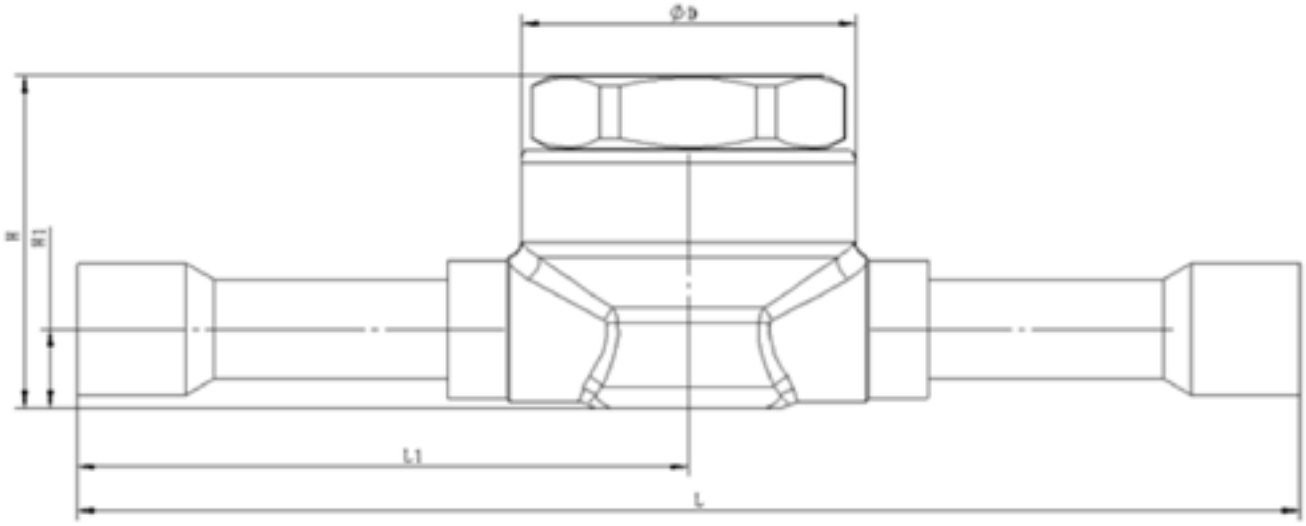
- Applicable for all common HCFC, HFC, HFO refrigerants such as: R744, R134a, R404A, R410A, R507, R407C, R407A/F, R448A/R449A, R452A, R450A/R513A4
- Ambient temperature min./max.: -40°C / +60°C
- Medium temperature TS min./max.: -40°C / +120°C
- Max. operating pressure PS: 13 MPa (130 bar)
- Installation position:
  - Liquid and suction line
  - Preferably in vertical lines, recommended position for horizontal lines are upwards without inclination in any direction
  - Oil return Lines
- Declaration according to PED (all products have been covered by Art.4.3 PED Directive 2014/68/EU)

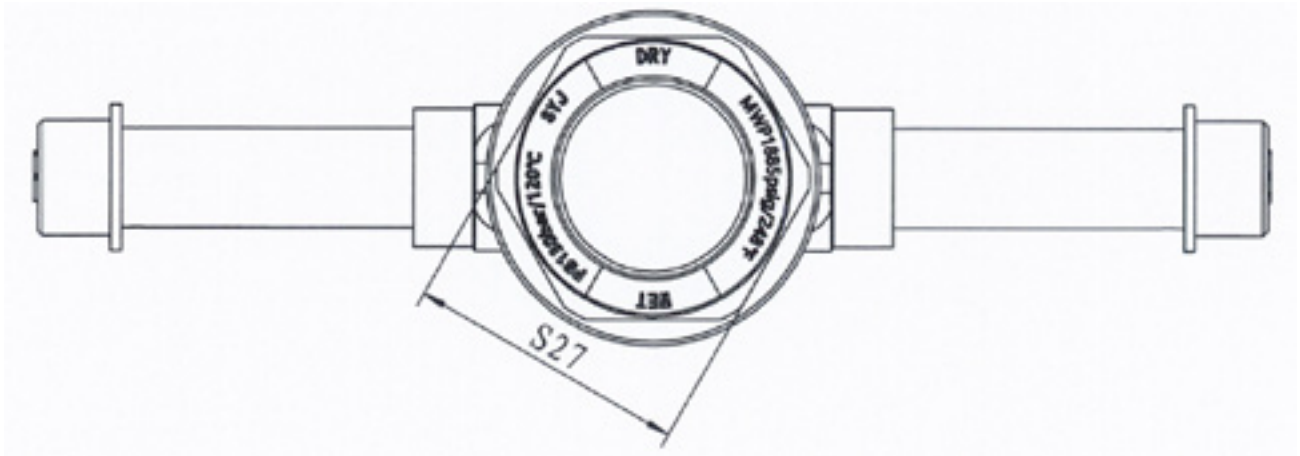
SIGHT GLASS



MODEL AND DIMENSIONS

Model	Part Number	d	L1	L	H	H1	φD	Weight
		[inch]	[mm]	[mm]	[mm]	[mm]	[mm]	[g]
SYJ06H51T	SYJX0005302	1/4	58.5	117	31.8	7.5	32	141.4
SYJ10H51T	SYJX0005202	3/8	58.5	117	31.8	7.5	32	145.0





SSV *SERIES*

BRASS SERVICE VALVE



Brass service valves of series SSV are applicable for split air conditioners to connect indoor unit and outdoor unit. It can also be used in other cooling or refrigeration systems. The inner path of the valve can be closed by operating the valve stem. The 3way version (with charge port) can be used as service valve for vacuum pumping and refrigerant injection.

FEATURES

- AVAILABLE WITHOUT AND WITH CHARGE PORT
- COST EFFICIENT SOLUTION
- RELIABLE AND ROBUST DESIGN

GENERAL SPECIFICATIONS

- Applicable for all common HFC and HFO refrigerants[1)] such as: R134a, R404A, R407C, R410A, R507A, R407A, R407F, R448A, R449A, R452A, R450A, R513A, R290, R1234ze(E), R1234yf, R32, R452B, R454B, R454C
- Ambient temperature min./max.: -30°C / +55°C
- Medium temperature TS min./max.: -30 °C / +120°C
- Max. operating pressure PS: 4,9 MPa (49 bar)
- Installation position: Preferably liquid and suction line
- Certifications: PED declaration

Note: 1) For cooling capacities please refer to Sanhua selection tool

GENERAL CHARACTERISTICS

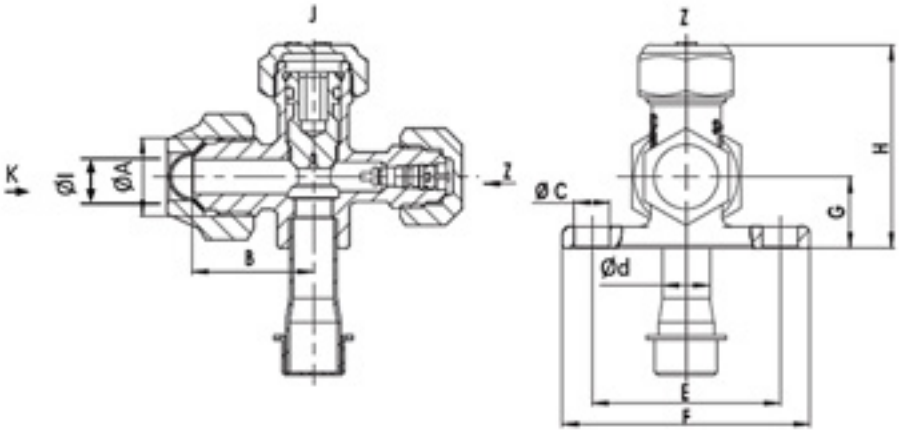
Model	Part Number[1)]	Connections				Cooling capacity	PED Category
		ØA Flare	Ød ODF	ØI Pipe	Charge Port Flare (SAE)		
		[inch]	[inch]	[mm]	[inch]	[kW]	
SSV-A2GSHC-23	10165068702	7/16-20UNF	1/4	4,8	-	0,7 - 1,5	4.3
SSV-JA3GSHC-20	10165068602	5/8-18UNF	3/8	7	5/16	0,7 - 3,7	4.3
SSV-JA4GSHC-19	10165070602	3/4-16UNF	1/2	10	5/16	1,1 - 7,5	4.3
SSV-JA5GSHC-15	10165068802	7/8-14UNF	5/8	12,5	5/16	1,5 - 8,8	4.3
SSV-JA6GSHC-13	10165070302	1 1/16-14UNS	3/4	16	5/16	3,7 - 5,9	4.3
SSV-JA3GSHC-44	10165366802	5/8-18UNF	3/8	7	1/4	0,7 - 3,7	4.3
SSV-JA4GSHC-44	10165366902	3/4-16UNF	1/2	10	1/4	1,1 - 7,5	4.3
SSV-JA5GSHC-32	10165367002	7/8-14UNF	5/8	12,5	1/4	1,5 - 8,8	4.3
SSV-JA6GSHC-25	10165375502	1 1/16-14UNS	3/4	16	1/4	3,7 - 5,9	4.3

Note: 1) Extent of delivery:
- SSV-JA valve body with schrader valve, cap charge port, cap shut-off valve, nut pipe connection
- SSV-A valve body, cap shut-off valve, nut pipe connection, without charge port

BRASS SERVICE VALVE



DIMENSIONS



Model	Part Number	Dimensions [mm]						Wrench Size [mm]			
		B	ØC	E	F	G	H	Nut Pipe Connection K	Cap Shut-off Valve J	Valve[1] Steam J	Cap Charge Port Z
SSV-A2GSHC-23	10165068702	23,5	7,2	38	50	14	36	17	19	5	-
SSV-JA3GSHC-20	10165068602	25	7,2	38	50	14	41	22	19	5	17
SSV-JA4GSHC-19	10165070602	32	7,2	38	50	16	44	24	22	5	17
SSV-JA5GSHC-15	10165068802	35	7,2	38	54	18	50	27	26	5	17
SSV-JA6-GSHC-13	10165070302	48,5	8	44	60	25	64	32	30	5	17
SSV-JA3GSHC-44	10165366802	25	7,2	38	50	14	41	22	19	5	14
SSV-JA4GSHC-44	10165366902	32	7,2	38	50	16	44	24	22	5	14
SSV-JA5GSHC-32	10165367002	35	7,2	38	54	18	50	27	26	5	14
SSV-JA6GSHC-25	10165375502	48,5	8	44	60	25	64	32	30	5	14

Note: 1) Allen screw

CSV SERIES

SERVICE VALVES



Brass service valves of CSV series are applicable for R744 systems. The inner path of the valve can be closed by operating the valve stem. The units can be used as service valve for vacuum pumping and refrigerant injection.

FEATURES

- COST EFFICIENT SOLUTION
- RELIABLE AND ROBUST DESIGN
- EASY OPERATION

GENERAL SPECIFICATIONS

- Applicable for R744
- Max. operating pressure PS: 140 bar
- Ambient temperature min./max.: -30°C / +60°C
- Medium temperature TS min./max.: -30°C / +120°C
- Installation position: In liquid and suction line for Service connection
- Certifications: PED declaration (all the models are in Art.4.3 according to PED Directive 2014/68/EU)

GENERAL CHARACTERISTICS

Model	Part Number[1)]	Connections					Kv
		Port "A"[2)]		Port "B"[3)]		Charge Connection	
		Type	Size [inch]	Type	Size [inch]	Type	[m³/h]
CSV-Z22ST-11	10165413301	-	-	Solder - ODF	1/4"	M16	-
CSV-Z22SHC-1	JZFX0001501	-	-	Solder - ODF	1/4"	7/16-20UNF	-
CSV-Z22ST-13	10165413401	Solder - ODF	1/4"	Solder - ODF	1/4"	M16	0.33
CSV-Z22SHC-2	JZFX0001601	Solder - ODF	1/4"	Solder - ODF	1/4"	7/16-20UNF	0.33
CSV-Z33ST-10	10165413201	Solder - ODF	3/8"	Solder - ODF	3/8"	M16	0.95
CSV-Z33SHC-1	JZFX0001701	Solder - ODF	3/8"	Solder - ODF	3/8"	7/16-20UNF	0.95
CSV-Z44ST-9	10165413101	Solder - ODF	1/2"	Solder - ODF	1/2"	M16	1.40
CSV-Z44SHC-2	JZFX0001801	Solder - ODF	1/2"	Solder - ODF	1/2"	7/16-20UNF	1.40

Note: 1) Extent of delivery: valve body with charge port & pipe connection(s), dust cap for shut-off port, caps for charge port and pipe connection
2) Port "A" for model CSV-Z22ST-11&CSV-Z22SHC-1 is charge connection (Fig.1&Fig.2)
3) Port "B" for model CSV-Z22ST-11&CSV-Z22SHC-1 is the connection to system (Fig.1&Fig.2)

SERVICE VALVES



DIMENSIONS

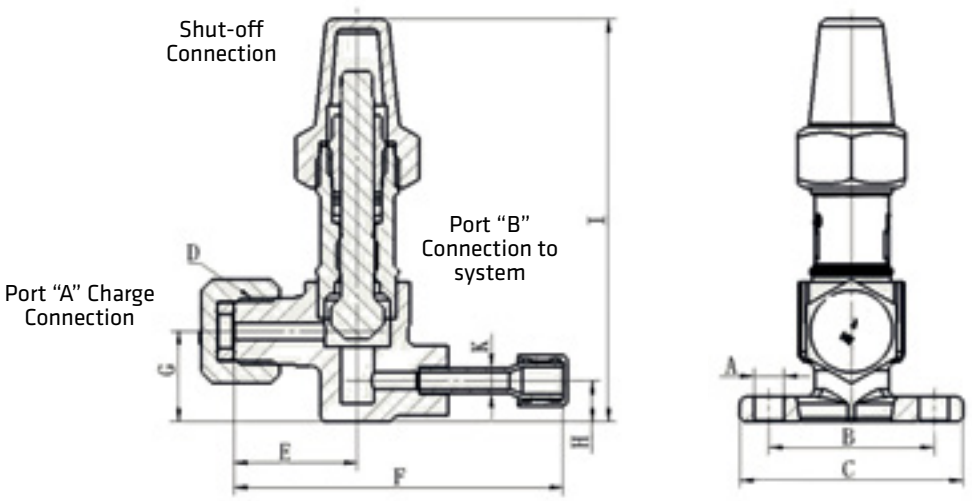


Fig.1 Model: CSV-Z22ST-11

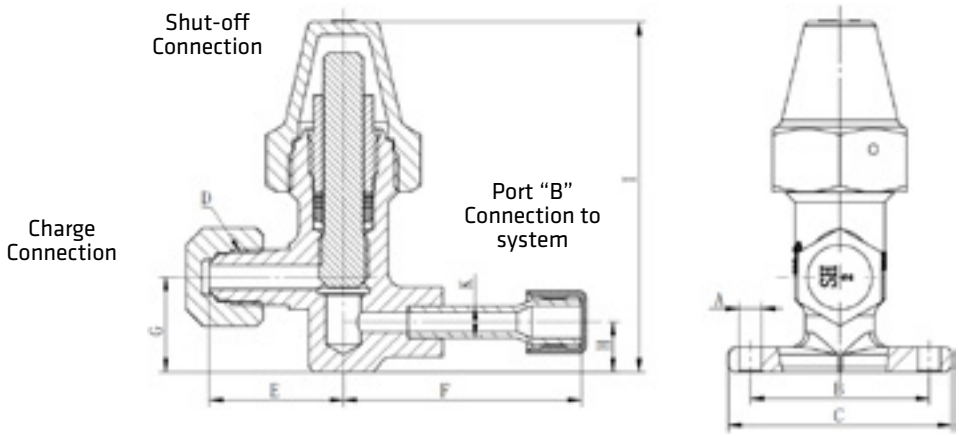


Fig.2 Model: CSV-Z22SHC-1

SERVICE VALVES



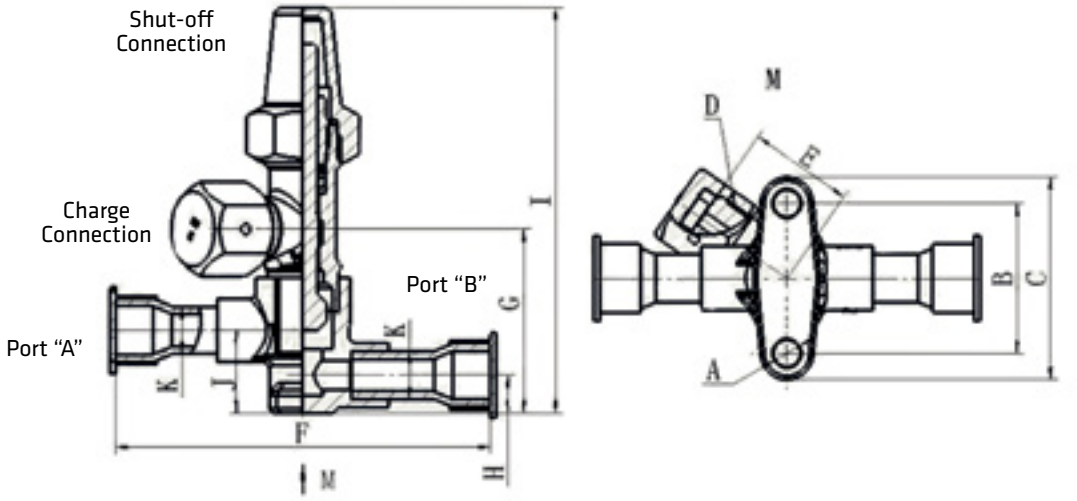


Fig.3 Models: CSV-Z22ST-13, CSV-Z22SHC-2, CSV-Z33ST-10, CSV-Z33SHC-1, CSV-Z44SHC-2 & CSV-Z44ST-9

Model	Charge Connection		Shut-off Connection			Dimensions [mm]							
	Size [inch]	Cap wrench Size	Size [inch]	Cap wrench Size	Stem Size Ø [mm]	ØA	B	C	E	F	H	I	J
CSV-Z22ST-11	M16	H22	M20	H26	6.35	7.2	40	54	28	80	10	98	-
CSV-Z22SHC-1	7/16-20UNF	H17	M22	H26	6.35	4.5	36	45	27	75	10	70	-
CSV-Z22ST-13	M16	H22	M20	H26	6.35	7.2	40	54	28	100	10	108	22
CSV-Z22SHC-2	7/16-20UNF	H17	M20	H26	6.35	7.2	40	54	28	100	10	108	22
CSV-Z33ST-10	M16	H22	M20	H26	6.35	7.2	40	54	28	100	10	108	22
CSV-Z33SHC-1	7/16-20UNF	H17	M20	H26	6.35	7.2	40	54	28	100	10	108	22
CSV-Z44ST-9	M16	H22	M20	H26	6.35	7.2	40	54	28	100	10	108	22
CSV-Z44SHC-2	7/16-20UNF	H17	M20	H26	6.35	7.2	40	54	28	100	10	108	22

TCJ *SERIES*

CHARGE VALVE



Charge valves are mainly installed in air conditioning and refrigeration systems. They are used as service valve for circuit evacuation to vacuum and for refrigerant injection.

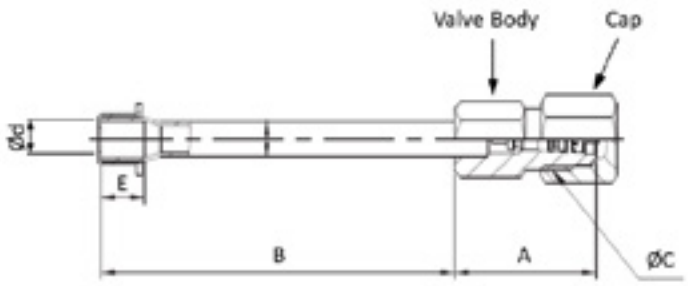
FEATURES

- SIMPLE STRUCTURE, CONVENIENT TO USE
- PREVENT REFRIGERANT LOSS THROUGH INTEGRATED SHRADER VALVE

GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC refrigerants such as: R22, R134a, R404A, R407C, R410A, R507A ...
- Ambient temperature min./max.: -30/+55°C
- Medium temperature TS min./max.: -30°C / +80°C
- Max. operating pressure PS: 4,5 MPa (45 bar)
- Installation position: liquid or suction line
- Declaration according to PED

DIMENSIONS

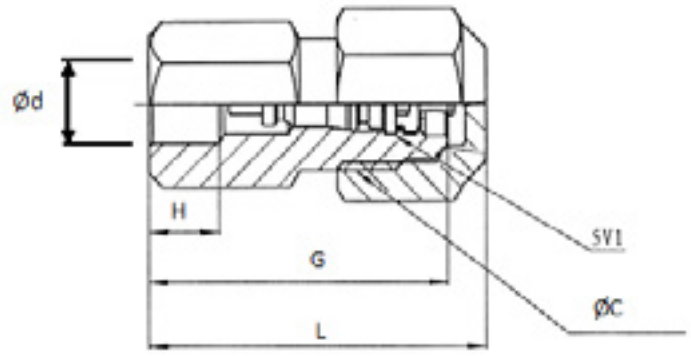


Model	Part Number* 1)	Connections			Dimensions			Wrench Size		Refrigerant
		Solder ODF Ød		Flare UNF ØC	A	B	E	Valve Body	Cap	
		[mm]	[inch]	[inch]	[mm]			[mm]		[mm]
TCJ-2HMSZ-1	10155004802	6,35	1/4	7/16-20	26	65	8	12	14	R22
TCJ-2GMS-1	10155001502	6,35	1/4	1/2-20	26	65	8	14	17	R134a/R404A/R407C R410A/R507

Note: * Available also as industrial package. Contact Sanhua for more details.
1) Extent of delivery: valve body, schrader valve and cap

CHARGE VALVE





Model	Part Number* 1)	Connections			Dimensions			Wrench Size		Refrigerant
		Solder ODF Ød		Flare UNF ØC	L	G	H	Valve Body	Cap	
		[mm]	[inch]	[inch]	[mm]			[mm]		[mm]
TCJ-2HLEN-1	10155010302	6,35	1/4	7/16-20	29	26	6	12	14	R22
TCJ-2GLEN-2	10155009202	6,35	1/4	1/2-20	29	26	6	14	17	R134a/R404A/R407C R410A/R507

Note: * Available also as industrial package. Contact Sanhua for more details.
1) Extent of delivery: valve body, schrader valve and cap

***DTG** SERIES*

UNI-FLOW FILTER DRIERS



(GreenTech range: for fluids GROUP 1 according to Directive 2014/68/EU or GROUP A3/A2L according to ANSI-ASHRAE 34-2016).

The filter driers of series DTG are used in refrigeration system with unidirectional flow to absorb moisture and acid in the system and to filter out the impurities.

FEATURES

- HIGHLY EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- HYBRID DESICCANT
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μM
- CORROSION RESISTANT PAINTING SURVIVES SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: SOLDER

GENERAL SPECIFICATIONS

- Applicable for HC, HFC, HFO refrigerants such as:R290, R1234ze(E), R1234yf, R447A, R452B, R454B, R454C
- Ambient temperature min./max.: -30°C / +70°C
- Medium temperature TS min./max.: -30°C / +120°C
- Max. operating pressure PS max.: 4,83 MPa (48,3 bar) - 700 PSI
- Installation position:
  - Flow direction corresponds to the arrow
  - Preferably installed in liquid line
- Certifications: UL/CSA and PED declaration (all products have been covered by Art.4.3 PED Directive 2014/68/EU)

TECNHICAL PARAMETERS *Desiccant Selection Table*

	Medium Type	80% 3Å desiccant and 20% active alumina	100% 3Å desiccant
Refrigerant	HC	Applicable	Applicable
	HFC	Applicable	Applicable
	HFO	Applicable	Applicable
Oil[1)]	Mineral oil or AB	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable
	POE or PAG with additive	Not Applicable	Applicable

Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina

UNI-FLOW FILTER DRIERS



Model Designation Legend

1	**Product Code**	**Filter Drier Series**	
	DTG	Indicates unidirectional filter drier	
2	**Filter Core**	**Structure and Material**	
	B	Solid core, 100%3Å desiccant	
	F	Solid core, 80% 3Å desiccant and 20% active alumina	
3	**Internal Volume**	**Expressed in [inch³]**	**Expressed in [cm³]**
	03	3	49
	05	5	82
	08	8	131
	16	16	262
	30	30	492
	41	41	672
	75	75	1229
4	**Connection Size**	**Pos. 5 shows "0": Solder [inch]**	
	02	1/4	
	25	5/16	
	03	3/8	
	04	1/2	
	05	5/8	
	06	3/4	
	07	7/8	
	09	1 1/8	
	Connection Size	**Pos. 5 shows "1": Solder [mm]**	
	06	6	
	(08) *	(5/16” version can be used e.g. DTG-B03 250)	
	10	10	
	12	12	
	(16) *	(5/8” version can be used e.g. DTG-B08 050)	
	(22) *	(7/8” version can be used e.g. DTG-B16 070)	
	28	28	
5	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1*	Solder with metric connections	
6	**Version Number**	**Description**	
	901	Standard product	

Note: *Solder connections which fit to metric and inch are marked with inch product codes e.g. 8, 16 and 22 mm

UNI-FLOW FILTER DRIERS



MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
DTG	B	03	06	1	901	Unidirectional filter drier
DTG	**B**	03	06	1	901	Solid filter core with 100% 3Å desiccant
DTG	B	**03**	06	1	901	3 inch³ internal volume
DTG	B	03	**06**	1	901	When Pos. 5 is "1": connection size 6mm
DTG	B	03	06	**1**	901	Solder connection metric
DTG	B	03	06	1	**901**	Standard product

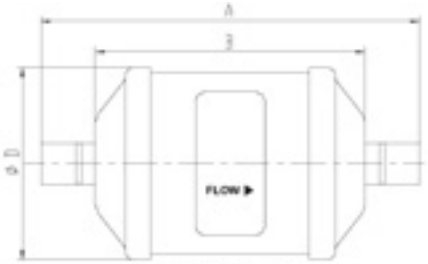
UNI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF DTG-B FILTER - SOLDER CONNECTION

Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[2] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
DTGB032s	DTG-B03 020-901	10230008302	DTG-B03 061-901	10230008702	3	49	1/4	6	45	65	103	160	Art. 4.3
DTGB0325s	DTG-B03 250-901	10230008402	DTG-B03 250-901	10230008402	3	49	5/16	8	45	65	103	160	Art. 4.3
DTGB033s	DTG-B03 030-901	10230008502	DTG-B03 101-901	10230008802	3	49	3/8	10	45	65	103	160	Art. 4.3
DTGB034s	DTG-B03 040-901	10230008602	DTG-B03 121-901	10230008902	3	49	1/2	12	45	65	113	160	Art. 4.3
DTGB052s	DTG-B05 020-901	10230010202	DTG-B05 061-901	10230010802	5	82	1/4	6	69	76	114	450	Art. 4.3
DTGB0525s	DTG-B05 250-901	10230010402	DTG-B05 250-901	10230010402	5	82	5/16	8	69	76	114	450	Art. 4.3
DTGB053s	DTG-B05 030-901	10230010502	DTG-B05 101-901	10230010902	5	82	3/8	10	69	76	114	450	Art. 4.3
DTGB054s	DTG-B05 040-901	10230010602	DTG-B05 121-901	10230011002	5	82	1/2	12	69	76	124	450	Art. 4.3
DTGB055s	DTG-B05 050-901	10230010702	DTG-B05 050-901	10230010702	5	82	5/8	16	69	76	124	450	Art. 4.3
DTGB082s	DTG-B08 020-901	10230009502	DTG-B08 061-901	10230011302	8	131	1/4	6	69	98	136	550	Art. 4.3
DTGB0825s	DTG-B08 250-901	10230009402	DTG-B08 250-901	10230009402	8	131	5/16	8	69	98	136	550	Art. 4.3
DTGB083s	DTG-B08 030-901	10230009302	DTG-B08 101-901	10230011402	8	131	3/8	10	69	98	136	550	Art. 4.3
DTGB084s	DTG-B08 040-901	10230009602	DTG-B08 121-901	10230011602	8	131	1/2	12	69	98	146	550	Art. 4.3
DTGB085s	DTG-B08 050-901	10230009702	DTG-B08 050-901	10230009702	8	131	5/8	16	69	98	146	550	Art. 4.3
DTGB162s	DTG-B16 020-901	10230012002	DTG-B16 061-901	10230012702	16	262	1/4	6	69	118	156	660	Art. 4.3
DTGB1625s	DTG-B16 250-901	10230012102	DTG-B16 250-901	10230012102	16	262	5/16	8	69	118	156	660	Art. 4.3
DTGB163s	DTG-B16 030-901	10230012202	DTG-B16 101-901	10230012802	16	262	3/8	10	69	118	156	660	Art. 4.3
DTGB164s	DTG-B16 040-901	10230012302	DTG-B16 121-901	10230015902	16	262	1/2	12	69	118	166	660	Art. 4.3
DTGB165s	DTG-B16 050-901	10230012402	DTG-B16 050-901	10230012402	16	262	5/8	16	69	118	166	660	Art. 4.3
DTGB166s	DTG-B16 060-901	10230012502	-	-	16	262	3/4	-	69	118	178	660	Art. 4.3
DTGB167s	DTG-B16 070-901	10230012602	DTG-B16 070-901	10230012602	16	262	7/8	22	69	118	178	660	Art. 4.3
DTGB303s	DTG-B30 030-901	10230013902	DTG-B30 101-901	10230014502	30	492	3/8	10	81	193	231	1550	Art. 4.3
DTGB304s	DTG-B30 040-901	10230014002	DTG-B30 121-901	10230014602	30	492	1/2	12	81	193	241	1550	Art. 4.3
DTGB305s	DTG-B30 050-901	10230014102	DTG-B30 050-901	10230014102	30	492	5/8	16	81	193	241	1550	Art. 4.3
DTGB306s	DTG-B30 060-901	10230014202	-	-	30	492	3/4	-	81	193	253	1550	Art. 4.3
DTGB307s	DTG-B30 070-901	10230014302	DTG-B30 070-901	10230014302	30	492	7/8	22	81	193	253	1550	Art. 4.3
DTGB309s	DTG-B30 090-901	10230014402	DTG-B30 281-901	10230014802	30	492	1 1/8	28	81	193	263	1550	Art. 4.3
DTGB414s	DTG-B41 040-901	10230013202	DTG-B41 121-901	10230013602	41	672	1/2	12	94	194	242	2050	Art. 4.3
DTGB415s	DTG-B41 050-901	10230013302	DTG-B41 050-901	10230013302	41	672	5/8	16	94	194	242	2050	Art. 4.3
DTGB417s	DTG-B41 070-901	10230013402	DTG-B41 070-901	10230013402	41	672	7/8	22	94	194	254	2050	Art. 4.3
DTGB419s	DTG-B41 090-901	10230013502	DTG-B41 281-901	10230013802	41	672	1 1/8	28	94	194	264	2050	Art. 4.3
DTGB757s	DTG-B75 070-901	10230014902	DTG-B75 070-901	10230014902	75	1229	7/8	22	94	333	393	3400	Art. 4.3
DTGB759s	DTG-B75 090-901	10230015002	DTG-B75 281-901	10230015102	75	1229	1 1/8	28	94	333	403	3400	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Dimensions are rounded up to integral mm
3) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

UNI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF DTG-F FILTER - SOLDER CONNECTION

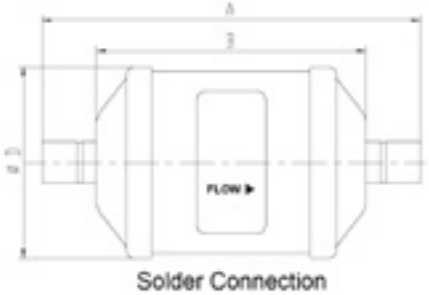
Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[2] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
DTGF032s	DTG-F03 020-901	10230016102	DTG-F03 061-901	10230016502	3	49	1/4	6	45	65	103	160	Art. 4.3
DTGF0325s	DTG-F03 250-901	10230016202	DTG-F03 250-901	10230016202	3	49	5/16	8	45	65	103	160	Art. 4.3
DTGF033s	DTG-F03 030-901	10230016302	DTG-F03 101-901	10230016602	3	49	3/8	10	45	65	103	160	Art. 4.3
DTGF034s	DTG-F03 040-901	10230016402	DTG-F03 121-901	10230016002	3	49	1/2	12	45	65	113	160	Art. 4.3
DTGF052s	DTG-F05 020-901	10230017702	DTG-F05 061-901	10230017202	5	82	1/4	6	69	76	114	450	Art. 4.3
DTGF0525s	DTG-F05 250-901	10230017602	DTG-F05 250-901	10230017602	5	82	5/16	8	69	76	114	450	Art. 4.3
DTGF053s	DTG-F05 030-901	10230017502	DTG-F05 101-901	10230017102	5	82	3/8	10	69	76	114	450	Art. 4.3
DTGF054s	DTG-F05 040-901	10230017402	DTG-F05 121-901	10230017002	5	82	1/2	12	69	76	124	450	Art. 4.3
DTGF055s	DTG-F05 050-901	10230017302	DTG-F05 050-901	10230017302	5	82	5/8	16	69	76	124	450	Art. 4.3
DTGF082s	DTG-F08 020-901	10230018102	DTG-F08 061-901	10230018602	8	131	1/4	6	69	98	136	550	Art. 4.3
DTGF0825s	DTG-F08 250-901	10230018202	DTG-F08 250-901	10230018202	8	131	5/16	8	69	98	136	550	Art. 4.3
DTGF083s	DTG-F08 030-901	10230018302	DTG-F08 101-901	10230018702	8	131	3/8	10	69	98	136	550	Art. 4.3
DTGF084s	DTG-F08 040-901	10230018402	DTG-F08 121-901	10230018802	8	131	1/2	12	69	98	146	550	Art. 4.3
DTGF085s	DTG-F08 050-901	10230018502	DTG-F08 050-901	10230018502	8	131	5/8	16	69	98	146	550	Art. 4.3
DTGF162s	DTG-F16 020-901	10230019302	DTG-F16 061-901	10230020002	16	262	1/4	6	69	118	156	660	Art. 4.3
DTGF1625s	DTG-F16 250-901	10230019402	DTG-F16 250-901	10230019402	16	262	5/16	8	69	118	156	660	Art. 4.3
DTGF163s	DTG-F16 030-901	10230019502	DTG-F16 101-901	10230020102	16	262	3/8	10	69	118	156	660	Art. 4.3
DTGF164s	DTG-F16 040-901	10230019602	DTG-F16 121-901	10230020202	16	262	1/2	12	69	118	166	660	Art. 4.3
DTGF165s	DTG-F16 050-901	10230019702	DTG-F16 050-901	10230019702	16	262	5/8	16	69	118	166	660	Art. 4.3
DTGF166s	DTG-F16 060-901	10230019802	-	-	16	262	3/4	-	69	118	178	660	Art. 4.3
DTGF167s	DTG-F16 070-901	10230019902	DTG-F16 070-901	10230019902	16	262	7/8	22	69	118	178	660	Art. 4.3
DTGF303s	DTG-F30 030-901	10230020902	DTG-F30 101-901	10230021502	30	492	3/8	10	81	193	231	1550	Art. 4.3
DTGF304s	DTG-F30 040-901	10230021002	DTG-F30 121-901	10230021602	30	492	1/2	12	81	193	241	1550	Art. 4.3
DTGF305s	DTG-F30 050-901	10230021102	DTG-F30 050-901	10230021102	30	492	5/8	16	81	193	241	1550	Art. 4.3
DTGF306s	DTG-F30 060-901	10230021202	-	-	30	492	3/4	-	81	193	253	1550	Art. 4.3
DTGF307s	DTG-F30 070-901	10230021302	DTG-F30 070-901	10230021302	30	492	7/8	22	81	193	253	1550	Art. 4.3
DTGF309s	DTG-F30 090-901	10230021402	DTG-F30 281-901	10230021802	30	492	1 1/8	28	81	193	263	1550	Art. 4.3
DTGF414s	DTG-F41 040-901	10230022402	DTG-F41 121-901	10230022802	41	672	1/2	12	94	194	242	2050	Art. 4.3
DTGF415s	DTG-F41 050-901	10230022502	DTG-F41 050-901	10230022502	41	672	5/8	16	94	194	242	2050	Art. 4.3
DTGF417s	DTG-F41 070-901	10230022602	DTG-F41 070-901	10230022602	41	672	7/8	22	94	194	254	2050	Art. 4.3
DTGF419s	DTG-F41 090-901	10230022702	DTG-F41 281-901	10230023002	41	672	1 1/8	28	94	194	264	2050	Art. 4.3
DTGF757s	DTG-F75 070-901	10230023102	DTG-F75 070-901	10230023102	75	1229	7/8	22	94	333	393	3400	Art. 4.3
DTGF759s	DTG-F75 090-901	10230031102	DTG-F75 281-901	10230023302	75	1229	1 1/8	28	94	333	403	3400	Art. 4.3

Note: 1) Delivery time on request

2) Available also as industrial package. Contact Sanhua for more details

3) Dimensions are rounded up to integral mm

4) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

UNI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity[1) 2)] [kW]			
	R290	R454B	R1234yf	R1234ze(E)
DTGB032s	9.22	9,50	5.55	6.76
DTGB0325s	11.17	11,51	6.72	8.19
DTGB033s	14.53	14,98	8.75	10.65
DTGB034s	28.58	29,45	17.21	20.95
DTGB052s	10.44	10,75	6.28	7.65
DTGB0525s	11.12	11,56	6.75	8.22
DTGB053s	23.80	24,52	14.33	17.44
DTGB054s	29.36	30,25	17.67	21.52
DTGB055s	40.58	41,81	24.43	29.74
DTGB082s	10.88	11,21	6.55	7.97
DTGB0825s	12.49	12,86	7.52	9.15
DTGB083s	25.36	26,13	15.27	18.59
DTGB084s	30.19	31,11	18.17	22.13
DTGB085s	52.62	54,22	31.68	38.57
DTGB162s	12.92	13,32	7.78	9.47
DTGB1625s	12.49	12,86	7.52	9.15
DTGB163s	25.36	26,13	15.27	18.59
DTGB164s	32.92	33,92	19.82	24.13
DTGB165s	50.62	52,16	30.48	37.10
DTGB166s	54.57	56,23	32.85	40.00
DTGB167s	55.35	57,04	33.32	40.57
DTGB303s	30.19	31,11	18.17	22.13
DTGB304s	39.02	40,20	23.49	28.59
DTGB305s	53.40	55,03	32.15	39.14
DTGB306s	73.55	75,78	44.28	53.90
DTGB307s	73.89	76,13	44.48	54.15
DTGB309s	82.81	85,33	49.85	60.69
DTGB414s	41.36	42,61	24.90	30.31
DTGB415s	70.67	72,82	42.54	51.79
DTGB417s	105.44	108,65	63.48	77.28
DTGB419s	107.98	111,26	65.00	79.14
DTGB757s	107.20	110,45	64.53	78.56
DTGB759s	111.98	115,38	67.41	82.07

SELECTION TABLE

Model	Capacity[1) 2)] [kW]			
	R290	R454B	R1234yf	R1234ze(E)
DTGF032s	9.22	9,50	5.55	6.76
DTGF0325s	11.17	11,51	6.72	8.19
DTGF033s	14.53	14,98	8.75	10.65
DTGF034s	28.58	29,45	17.21	20.95
DTGF052s	10.44	10,75	6.28	7.65
DTGF0525s	11.12	11,56	6.75	8.22
DTGF053s	23.80	24,52	14.33	17.44
DTGF054s	29.36	30,25	17.67	21.52
DTGF055s	40.58	41,81	24.43	29.74
DTGF082s	10.88	11,21	6.55	7.97
DTGF0825s	12.49	12,86	7.52	9.15
DTG-F083s	25.36	26,13	15.27	18.59
DTGF084s	30.19	31,11	18.17	22.13
DTGF085s	52.62	54,22	31.68	38.57
DTGF162s	12.92	13,32	7.78	9.47
DTGF1625s	12.49	12,86	7.52	9.15
DTGF163s	25.36	26,13	15.27	18.59
DTGF164s	32.92	33,92	19.82	24.13
DTGF165s	50.62	52,16	30.48	37.10
DTGF166s	54.57	56,23	32.85	40.00
DTGF167s	55.35	57,04	33.32	40.57
DTGF303s	30.19	31,11	18.17	22.13
DTGF304s	39.02	40,20	23.49	28.59
DTGF305s	53.40	55,03	32.15	39.14
DTGF306s	73.55	75,78	44.28	53.90
DTGF307s	73.89	76,13	44.48	54.15
DTGF309s	82.81	85,33	49.85	60.69
DTGF414s	41.36	42,61	24.90	30.31
DTGF415s	70.67	72,82	42.54	51.79
DTGF417s	105.44	108,65	63.48	77.28
DTGF419s	107.98	111,26	65.00	79.14
DTGF757s	107.20	110,45	64.53	78.56
DTGF759s	111.98	115,38	67.41	82.07

Note: 1) the above data is based on clean system at ideal conditions; with impurities accumulated in the filter, the capacity may decrease
2) given capacity is for all available types of connection for the same model: solder [inch] and equivalent solder [mm]

SELECTION FORMULAS

Filter Driers for liquid line are manufactured in compliance with ARI Standard 710. Flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of refrigerant is -15°C (5°F).

DTG *SERIES*

UNI-FLOW FILTER DRIERS



(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016).

The filter driers of series DTG are used in refrigeration system with unidirectional flow to absorb moisture and acid in the system and to filter out the impurities.

FEATURES

- HIGH EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- HYBRID DESICCANT
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μm
- CORROSION RESISTANT PAINTING SURVIVES SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: FLARE OR SOLDER

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HFO refrigerants such as: R22, R134a, R404A, R407C, R410A, R507, R407A/F, R448A/ R449A, R452A, R450A/R513A
- Ambient temperature min./max.: -30°C / +70°C
- Medium temperature TS min./max.: -30°C / +120°C
- Max. operating pressure PS max.: 4,83 MPa (48,3 bar) - 700 PSI
- Installation position:
  - Flow direction corresponds to the arrow
  - Preferably installed in liquid line
- Certifications: UL/CSA and PED declaration

TECNHICAL PARAMETERS *Desiccant Selection Table*

	Medium Type	80% 3Å desiccant and 20% active alumina	100% 3Å desiccant
Refrigerant	HFC	Applicable	Applicable
	HCFC	Applicable	Applicable
	HFO	Applicable	Applicable
Oil[1)]	Mineral oil or AB	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable
	POE or PAG with additive	Not Applicable	Applicable

Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina.

UNI-FLOW FILTER DRIERS



Model Designation Legend

1	**Product Code**	**Filter Drier Series**	
	DTG	Indicates unidirectional filter drier	
2	**Filter Core**	**Structure and Material**	
	B	Solid core, 100%3Å desiccant	
	F	Solid core, 80% 3Å desiccant and 20% active alumina	
3	**Internal Volume**	**Expressed in [inch³]**	**Expressed in [cm³]**
	03	3	49
	05	5	82
	08	8	131
	16	16	262
	30	30	492
	41	41	672
	75	75	1229
4	**Connection Size**	**Pos. 5 shows "0": Solder [inch]**	
	02	1/4	
	25	5/16	
	03	3/8	
	04	1/2	
	05	5/8	
	06	3/4	
	07	7/8	
	09	1 1/8	
	Connection Size	**Pos. 5 shows "1": Solder [mm]**	
	06	6	
	(08) *	(5/16” version can be used e.g. DTG-B03 **25**0)	
	10	10	
	12	12	
	(16) *	(5/8” version can be used e.g. DTG-B08 **05**0)	
	(22) *	(7/8” version can be used e.g. DTG-B16 **07**0)	
	28	28	
5	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1*	Solder with metric connections	
6	**Version Number**	**Description**	
	901	Standard product	

Note: *Solder connections which fit to metric and inch are marked with inch product codes e.g. 8, 16 and 22 mm

UNI-FLOW FILTER DRIERS



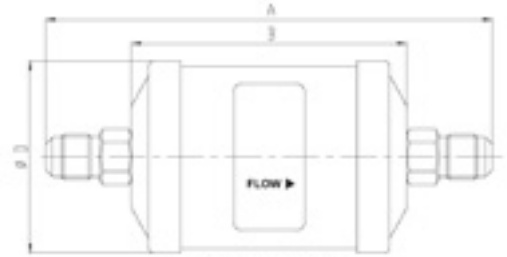
MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
DTG	B	03	06	1	901	Unidirectional filter drier
DTG	**B**	03	06	1	901	Solid filter core with 100% 3Å desiccant
DTG	B	**03**	06	1	901	3 inch³ internal volume
DTG	B	03	**06**	1	901	When Pos. 5 is "1": connection size 6mm
DTG	B	03	06	**1**	901	Solder connection metric
DTG	B	03	06	1	**901**	Standard product

GENERAL CHARACTERISTICS OF DTG-B FILTER - FLARE CONNECTION

Filter	Model	Part Number (multi package)[1]	Nominal Volume		Connection	Dimensions & Weight [2]				PED Category[3] (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[g]	
DTGB032	DTG-B03 024-901	10230009202	3	49	1/4	45	65	112	160	Art. 4.3
DTGB033	DTG-B03 034-901	10230009102	3	49	3/8	45	65	125	160	Art. 4.3
DTGB034	DTG-B03 044-901	10230009002	3	49	1/2	45	65	133	160	Art. 4.3
DTGB052	DTG-B05 024-901	10230009802	5	82	1/4	69	76	123	450	Art. 4.3
DTGB053	DTG-B05 034-901	10230009902	5	82	3/8	69	76	136	450	Art. 4.3
DTGB082	DTG-B08 024-901	10230010002	8	131	1/4	69	98	145	550	Art. 4.3
DTGB083	DTG-B08 034-901	10230010302	8	131	3/8	69	98	158	550	Art. 4.3
DTGB084	DTG-B08 044-901	10230010102	8	131	1/2	69	98	166	550	Art. 4.3
DTGB162	DTG-B16 024-901	10230011502	16	262	1/4	69	118	165	660	Art. 4.3
DTGB163	DTG-B16 034-901	10230011702	16	262	3/8	69	118	178	660	Art. 4.3
DTGB164	DTG-B16 044-901	10230011902	16	262	1/2	69	118	186	660	Art. 4.3
DTGB165	DTG-B16 054-901	10230011802	16	262	5/8	69	118	195	660	Art. 4.3
DTGB166	DTG-B16 064-901	10230013102	16	262	3/4	69	118	195	660	Art. 4.3
DTGB303	DTG-B30 034-901	10230015402	30	492	3/8	81	193	253	1550	Art. 4.3
DTGB304	DTG-B30 044-901	10230015502	30	492	1/2	81	193	261	1550	Art. 4.3
DTGB305	DTG-B30 054-901	10230015702	30	492	5/8	81	193	270	1550	Art. 4.3
DTGB306	DTG-B30 064-901	10230015802	30	492	3/4	81	193	270	1550	Art. 4.3
DTGB053	DTG-B30 074-901	10230015602	30	492	7/8	81	193	283	1550	Art. 4.3
DTGB414	DTG-B41 044-901	10230015302	41	672	1/2	94	194	262	2050	Art. 4.3
DTGB415	DTG-B41 054-901	10230015202	41	672	5/8	94	194	271	2050	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Dimensions are rounded up to integral mm
3) PED Directive 2014/68/EU



Flare Connection

UNI-FLOW FILTER DRIERS



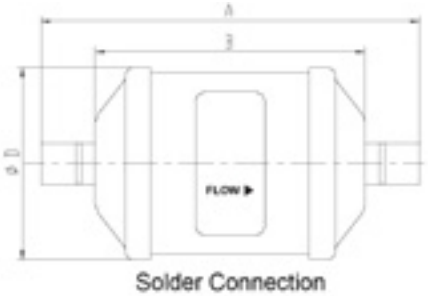
GENERAL CHARACTERISTICS OF DTG-B FILTER - SOLDER CONNECTION

Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[2] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
DTGF032s	DTG-B03 020-901	10230008302	DTG-B03 061-901	10230008702	3	49	1/4	6	45	65	103	160	Art. 4.3
DTGF0325s	DTG-B03 250-901	10230008402	DTG-B03 250-901	10230008402	3	49	5/16	8	45	65	103	160	Art. 4.3
DTGF033s	DTG-B03 030-901	10230008502	DTG-B03 101-901	10230008802	3	49	3/8	10	45	65	103	160	Art. 4.3
DTGF034s	DTG-B03 040-901	10230008602	DTG-B03 121-901	10230008902	3	49	1/2	12	45	65	113	160	Art. 4.3
DTGF052s	DTG-B05 020-901	10230010202	DTG-B05 061-901	10230010802	5	82	1/4	6	69	76	114	450	Art. 4.3
DTGF0525s	DTG-B05 250-901	10230010402	DTG-B05 250-901	10230010402	5	82	5/16	8	69	76	114	450	Art. 4.3
DTGF053s	DTG-B05 030-901	10230010502	DTG-B05 101-901	10230010902	5	82	3/8	10	69	76	114	450	Art. 4.3
DTGF054s	DTG-B05 040-901	10230010602	DTG-B05 121-901	10230011002	5	82	1/2	12	69	76	124	450	Art. 4.3
DTGF055s	DTG-B05 050-901	10230010702	DTG-B05 050-901	10230010702	5	82	5/8	16	69	76	124	450	Art. 4.3
DTGF082s	DTG-B08 020-901	10230009502	DTG-B08 061-901	10230011302	8	131	1/4	6	69	98	136	550	Art. 4.3
DTGF0825s	DTG-B08 250-901	10230009402	DTG-B08 250-901	10230009402	8	131	5/16	8	69	98	136	550	Art. 4.3
DTGF083s	DTG-B08 030-901	10230009302	DTG-B08 101-901	10230011402	8	131	3/8	10	69	98	136	550	Art. 4.3
DTGF084s	DTG-B08 040-901	10230009602	DTG-B08 121-901	10230011602	8	131	1/2	12	69	98	146	550	Art. 4.3
DTGF085s	DTG-B08 050-901	10230009702	DTG-B08 050-901	10230009702	8	131	5/8	16	69	98	146	550	Art. 4.3
DTGF162s	DTG-B16 020-901	10230012002	DTG-B16 061-901	10230012702	16	262	1/4	6	69	118	156	660	Art. 4.3
DTGF1625s	DTG-B16 250-901	10230012102	DTG-B16 250-901	10230012102	16	262	5/16	8	69	118	156	660	Art. 4.3
DTGF163s	DTG-B16 030-901	10230012202	DTG-B16 101-901	10230012802	16	262	3/8	10	69	118	156	660	Art. 4.3
DTGF164s	DTG-B16 040-901	10230012302	DTG-B16 121-901	10230015902	16	262	1/2	12	69	118	166	660	Art. 4.3
DTGF165s	DTG-B16 050-901	10230012402	DTG-B16 050-901	10230012402	16	262	5/8	16	69	118	166	660	Art. 4.3
DTGF166s	DTG-B16 060-901	10230012502	-	-	16	262	3/4	-	69	118	178	660	Art. 4.3
DTGF167s	DTG-B16 070-901	10230012602	DTG-B16 070-901	10230012602	16	262	7/8	22	69	118	178	660	Art. 4.3
DTGF303s	DTG-B30 030-901	10230013902	DTG-B30 101-901	10230014502	30	492	3/8	10	81	193	231	1550	Art. 4.3
DTGF304s	DTG-B30 040-901	10230014002	DTG-B30 121-901	10230014602	30	492	1/2	12	81	193	241	1550	Art. 4.3
DTGF305s	DTG-B30 050-901	10230014102	DTG-B30 050-901	10230014102	30	492	5/8	16	81	193	241	1550	Art. 4.3
DTGF306s	DTG-B30 060-901	10230014202	-	-	30	492	3/4	-	81	193	253	1550	Art. 4.3
DTGF307s	DTG-B30 070-901	10230014302	DTG-B30 070-901	10230014302	30	492	7/8	22	81	193	253	1550	Art. 4.3
DTGF309s	DTG-B30 090-901	10230014402	DTG-B30 281-901	10230014802	30	492	1 1/8	28	81	193	263	1550	Art. 4.3
DTGF414s	DTG-B41 040-901	10230013202	DTG-B41 121-901	10230013602	41	672	1/2	12	94	194	242	2050	Art. 4.3
DTGF415s	DTG-B41 050-901	10230013302	DTG-B41 050-901	10230013302	41	672	5/8	16	94	194	242	2050	Art. 4.3
DTGF417s	DTG-B41 070-901	10230013402	DTG-B41 070-901	10230013402	41	672	7/8	22	94	194	254	2050	Art. 4.3
DTGF419s	DTG-B41 090-901	10230013502	DTG-B41 281-901	10230013802	41	672	1 1/8	28	94	194	264	2050	Art. 4.3
DTGF757s	DTG-B75 070-901	10230014902	DTG-B75 070-901	10230014902	75	1229	7/8	22	94	333	393	3400	Art. 4.3
DTGF759s	DTG-B75 090-901	10230015002	DTG-B75 281-901	10230015102	75	1229	1 1/8	28	94	333	403	3400	Art. 4.3

Note: * Available also as industrial package. Contact Sanhua for more details.

1) Dimensions are rounded up to integral mm

2) PED Directive 2014/68/EU



Solder Connection

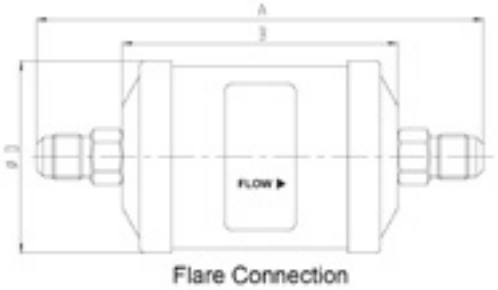
UNI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF DTG-F FILTER - FLARE CONNECTION

Filter	Model[1]	Part Number (multi package)[2]	Nominal Volume		Connection	Dimensions & Weight[3]				PED Category[4] (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[g]	
DTGF032	DTG-F03 024-901	10230018002	3	49	1/4	45	65	112	160	Art. 4.3
DTGF033	DTG-F03 034-901	10230017902	3	49	3/8	45	65	125	160	Art. 4.3
DTGF034	DTG-F03 044-901	10230017802	3	49	1/2	45	65	133	160	Art. 4.3
DTGF052	DTG-F05 024-901	10230016802	5	82	1/4	69	76	123	450	Art. 4.3
DTGF053	DTG-F05 034-901	10230016702	5	82	3/8	69	76	136	450	Art. 4.3
DTGF082	DTG-F08 024-901	10230019002	8	131	1/4	69	98	145	550	Art. 4.3
DTGF083	DTG-F08 034-901	10230019102	8	131	3/8	69	98	158	550	Art. 4.3
DTGF084	DTG-F08 044-901	10230019202	8	131	1/2	69	98	166	550	Art. 4.3
DTGF162	DTG-F16 024-901	10230020402	16	262	1/4	69	118	165	660	Art. 4.3
DTGF163	DTG-F16 034-901	10230020502	16	262	3/8	69	118	178	660	Art. 4.3
DTGF164	DTG-F16 044-901	10230020602	16	262	1/2	69	118	186	660	Art. 4.3
DTGF165	DTG-F16 054-901	10230020702	16	262	5/8	69	118	195	660	Art. 4.3
DTGF166	DTG-F16 064-901	10230020802	16	262	3/4	69	118	195	660	Art. 4.3
DTGF303	DTG-F30 034-901	10230021902	30	492	3/8	81	193	253	1550	Art. 4.3
DTGF304	DTG-F30 044-901	10230022002	30	492	1/2	81	193	261	1550	Art. 4.3
DTGF305	DTG-F30 054-901	10230022102	30	492	5/8	81	193	270	1550	Art. 4.3
DTGF306	DTG-F30 064-901	10230022202	30	492	3/4	81	193	270	1550	Art. 4.3
DTGF307	DTG-F30 074-901	10230022302	30	492	7/8	81	193	283	1550	Art. 4.3
DTGF414	DTG-F41 044-901	10230031402	41	672	1/2	94	194	262	2050	Art. 4.3
DTGF414	DTG-F41 054-901	10230031502	41	672	5/8	94	194	271	2050	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Delivery time on request
3) Dimensions are rounded up to integral mm
4) PED Directive 2016/68/EU. Category evaluated considering product as a "vessel"



Flare Connection

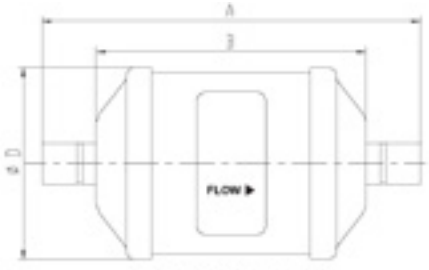
UNI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF DTG-F FILTER - SOLDER CONNECTION

Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[2] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
DTGF032s	DTG-F03 020-901	10230016102	DTG-F03 061-901	10230016502	3	49	1/4	6	45	65	103	160	Art. 4.3
DTGF0325s	DTG-F03 250-901	10230016202	DTG-F03 250-901	10230016202	3	49	5/16	8	45	65	103	160	Art. 4.3
DTGF033s	DTG-F03 030-901	10230016302	DTG-F03 101-901	10230016602	3	49	3/8	10	45	65	103	160	Art. 4.3
DTGF034s	DTG-F03 040-901	10230016402	DTG-F03 121-901	10230016002	3	49	1/2	12	45	65	113	160	Art. 4.3
DTGF052s	DTG-F05 020-901	10230017702	DTG-F05 061-901	10230017202	5	82	1/4	6	69	76	114	450	Art. 4.3
DTGF0525s	DTG-F05 250-901	10230017602	DTG-F05 250-901	10230017602	5	82	5/16	8	69	76	114	450	Art. 4.3
DTGF053s	DTG-F05 030-901	10230017502	DTG-F05 101-901	10230017102	5	82	3/8	10	69	76	114	450	Art. 4.3
DTGF054s	DTG-F05 040-901	10230017402	DTG-F05 121-901	10230017002	5	82	1/2	12	69	76	124	450	Art. 4.3
DTGF055s	DTG-F05 050-901	10230017302	DTG-F05 050-901	10230017302	5	82	5/8	16	69	76	124	450	Art. 4.3
DTGF082s	DTG-F08 020-901	10230018102	DTG-F08 061-901	10230018602	8	131	1/4	6	69	98	136	550	Art. 4.3
DTGF0825s	DTG-F08 250-901	10230018202	DTG-F08 250-901	10230018202	8	131	5/16	8	69	98	136	550	Art. 4.3
DTGF083s	DTG-F08 030-901	10230018302	DTG-F08 101-901	10230018702	8	131	3/8	10	69	98	136	550	Art. 4.3
DTGF084s	DTG-F08 040-901	10230018402	DTG-F08 121-901	10230018802	8	131	1/2	12	69	98	146	550	Art. 4.3
DTGF085s	DTG-F08 050-901	10230018502	DTG-F08 050-901	10230018502	8	131	5/8	16	69	98	146	550	Art. 4.3
DTGF162s	DTG-F16 020-901	10230019302	DTG-F16 061-901	10230020002	16	262	1/4	6	69	118	156	660	Art. 4.3
DTGF1625s	DTG-F16 250-901	10230019402	DTG-F16 250-901	10230019402	16	262	5/16	8	69	118	156	660	Art. 4.3
DTGF163s	DTG-F16 030-901	10230019502	DTG-F16 101-901	10230020102	16	262	3/8	10	69	118	156	660	Art. 4.3
DTGF164s	DTG-F16 040-901	10230019602	DTG-F16 121-901	10230020202	16	262	1/2	12	69	118	166	660	Art. 4.3
DTGF165s	DTG-F16 050-901	10230019702	DTG-F16 050-901	10230019702	16	262	5/8	16	69	118	166	660	Art. 4.3
DTGF166s	DTG-F16 060-901	10230019802	-	-	16	262	3/4	-	69	118	178	660	Art. 4.3
DTGF167s	DTG-F16 070-901	10230019902	DTG-F16 070-901	10230019902	16	262	7/8	22	69	118	178	660	Art. 4.3
DTGF303s	DTG-F30 030-901	10230020902	DTG-F30 101-901	10230021502	30	492	3/8	10	81	193	231	1550	Art. 4.3
DTGF304s	DTG-F30 040-901	10230021002	DTG-F30 121-901	10230021602	30	492	1/2	12	81	193	241	1550	Art. 4.3
DTGF305s	DTG-F30 050-901	10230021102	DTG-F30 050-901	10230021102	30	492	5/8	16	81	193	241	1550	Art. 4.3
DTGF306s	DTG-F30 060-901	10230021202	-	-	30	492	3/4	-	81	193	253	1550	Art. 4.3
DTGF307s	DTG-F30 070-901	10230021302	DTG-F30 070-901	10230021302	30	492	7/8	22	81	193	253	1550	Art. 4.3
DTGF309s	DTG-F30 090-901	10230021402	DTG-F30 281-901	10230021802	30	492	1 1/8	28	81	193	263	1550	Art. 4.3
DTGF414s	DTG-F41 040-901	10230022402	DTG-F41 121-901	10230022802	41	672	1/2	12	94	194	242	2050	Art. 4.3
DTGF415s	DTG-F41 050-901	10230022502	DTG-F41 050-901	10230022502	41	672	5/8	16	94	194	242	2050	Art. 4.3
DTGF417s	DTG-F41 070-901	10230022602	DTG-F41 070-901	10230022602	41	672	7/8	22	94	194	254	2050	Art. 4.3
DTGF419s	DTG-F41 090-901	10230022702	DTG-F41 281-901	10230023002	41	672	1 1/8	28	94	194	264	2050	Art. 4.3
DTGF757s	DTG-F75 070-901	10230023102	DTG-F75 070-901	10230023102	75	1229	7/8	22	94	333	393	3400	Art. 4.3
DTGF759s	DTG-F75 090-901	10230031102	DTG-F75 281-901	10230023302	75	1229	1 1/8	28	94	333	403	3400	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Delivery time on request
3) Dimensions are rounded up to integral mm
4) PED Directive 2016/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

UNI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity [kW] 1) 3)					Moisture Absorption (gram H_2O)							
	R134a	R404A / R507A	R22	R407C 2	R410A	R134a		R404A / R507A		R407C 2 / R410A		R22	
						75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
						23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C
DTGB032s	7,7	6,7	8,1	8,1	8,1	4,2	3,8	5,7	3,4	3,4	3,1	3,7	3,4
DTGB0325s	9,5	6,7	9,8	9,8	9,8	4,2	3,8	5,7	3,4	3,4	3,1	3,7	3,4
DTGB033s	12,3	8,8	12,7	12,7	12,7	4,2	3,8	5,7	3,4	3,4	3,1	3,7	3,4
DTGB034s	24,6	17,2	25,0	25,0	25,0	4,2	3,8	5,7	3,4	3,4	3,1	3,7	3,4
DTGB052s	9,5	6,0	9,1	9,1	9,1	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DTGB0525s	9,5	6,7	9,8	9,8	9,8	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DTGB053s	20,0	14,1	20,8	20,8	20,8	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DTGB054s	25,3	17,9	25,7	25,7	25,7	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DTGB055s	34,8	24,6	35,5	35,5	35,5	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DTGB082s	9,1	6,3	9,5	9,5	9,5	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DTGB0825s	10,6	7,4	10,9	10,9	10,9	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DTGB083s	21,5	15,1	22,2	22,2	22,2	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DTGB084s	25,7	17,9	26,4	26,4	26,4	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DTGB085s	44,7	31,7	46,1	46,1	46,1	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DTGB162s	10,9	7,7	11,3	11,3	11,3	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB1625s	10,6	7,4	10,9	10,9	10,9	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB163s	21,5	15,1	22,2	22,2	22,2	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB164s	27,8	19,3	28,8	28,8	28,8	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB165s	43,3	30,6	44,3	44,3	44,3	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB166s	46,4	32,7	47,8	47,8	47,8	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB167s	47,1	33,4	48,5	48,5	48,5	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DTGB303s	25,7	17,9	26,4	26,4	26,4	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB304s	33,1	23,2	34,1	34,1	34,1	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB305s	45,7	32,0	46,8	46,8	46,8	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB306s	62,6	44,0	64,4	64,4	64,4	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB307s	63,0	44,3	64,7	64,7	64,7	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB309s	70,0	49,2	72,5	72,5	72,5	51,4	48,7	83,4	51,4	51,3	43,7	52,1	44,1
DTGB414s	35,2	24,6	36,2	36,2	36,2	63,7	59,7	103,5	55,7	63,7	58,9	70,2	59,4
DTGB415s	60,8	42,9	61,9	61,9	62,9	63,7	59,7	103,5	55,7	63,7	58,9	70,2	59,4
DTGB417s	90,4	63,7	92,5	92,5	92,5	63,7	59,7	103,5	55,7	63,7	58,9	70,2	59,4
DTGB419s	92,1	64,7	94,6	94,6	94,6	63,7	59,7	103,5	55,7	63,7	58,9	70,2	59,4
DTGB757s	91,4	64,0	93,9	93,9	93,9	123,3	115,6	200,3	107,9	123,3	114,0	135,8	114,9
DTGB759s	95,3	67,2	98,1	98,1	98,1	123,3	115,6	200,3	107,9	123,3	114,0	135,8	114,9

Note: 1) the above data is based on clean system at ideal conditions: with impurities, accumulated in the filter, the capacity may decrease
2) R407C capacity is based on dew point conditions
3) given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

UNI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity[1) 2)] [kW]						
	R407A	R407F	R448A	R449A	R452A	R450A	R513A
DTGB032	7,27	8,02	7,29	7,20	5,52	7,04	6,28
DTGB0325	8,81	9,72	8,83	8,72	6,68	8,53	7,61
DTGB033	11,47	12,64	11,50	11,35	8,7	11,10	9,90
DTGB034	22,55	24,86	22,61	22,32	17,10	21,82	19,48
DTGB052	8,24	9,08	8,26	8,15	6,25	7,97	7,11
DTGB0525	8,85	9,76	8,87	8,76	6,71	8,57	7,64
DTGB053	18,78	20,70	18,83	18,59	14,24	18,17	16,22
DTGB054	23,17	25,54	23,22	22,93	17,57	22,42	20,01
DTGB055	32,02	35,30	32,10	31,69	24,28	30,99	27,65
DTGB082	8,58	9,46	8,60	8,49	6,51	8,31	7,41
DTGB0825	9,85	10,86	9,88	9,75	7,47	9,53	8,51
DTGB083	20,01	22,06	20,06	19,80	15,18	19,37	17,28
DTGB084	23,83	26,26	23,88	23,58	18,07	23,05	20,57
DTGB085	41,53	45,78	41,63	41,09	31,49	40,19	35,86
DTGB162	10,20	11,24	10,22	10,09	7,73	9,87	8,81
DTGB1625	9,85	10,86	9,88	9,75	7,47	9,53	8,51
DTGB163	20,01	22,06	20,06	19,80	15,18	19,37	17,28
DTGB164	25,98	28,64	26,04	25,71	19,70	25,14	22,43
DTGB165	39,95	44,04	40,05	39,53	30,29	38,66	34,50
DTGB166	43,07	47,48	43,17	42,62	32,66	41,68	37,19
DTGB167	43,69	48,16	43,79	43,23	33,13	42,27	37,72
DTGB303	23,83	26,26	23,88	23,58	18,07	23,05	20,57
DTGB304	30,79	33,94	30,86	30,47	23,35	29,79	26,59
DTGB305	42,15	46,46	42,24	41,70	31,96	40,78	36,39
DTGB306	58,04	63,98	58,18	57,43	44,01	56,16	50,12
DTGB307	58,31	64,28	58,45	57,70	44,22	56,42	50,35
DTGB309	65,36	72,04	65,51	64,67	49,56	63,24	56,43
DTGB414	32,64	35,98	32,72	32,30	24,75	31,58	28,18
DTGB415	55,77	61,48	55,90	55,19	42,29	53,97	48,16
DTGB417	83,21	91,73	83,41	82,34	63,10	80,52	71,85
DTGB419	85,22	93,93	85,41	84,32	64,62	82,46	73,58
DTGB757	84,60	93,26	84,80	83,71	64,15	81,86	73,05
DTGB759	88,37	97,41	88,58	87,44	67,01	85,51	76,31

Note: 1) the above data is based on filter driers with inch connections and clean system at ideal conditions: with impurities accumulated in the filter, the capacity may decrease

2) given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

SELECTION FORMULAS

Filter Driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R22, R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water absorption is based on the following EPD (method: ASHRAE Standard 63.1):

- 60ppm R22
- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A

STG *SERIES*

BI-FLOW FILTER DRIERS



(Standard range: for fluids GROUP 2 according to Directive 2014/68/EU or GROUP A1 according to ANSI-ASHRAE 34-2016)

The filter driers of series STG are used in refrigeration system with bidirectional flow to absorb moisture and acid in the system and to filter out the impurities.

FEATURES

- HIGH EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- HYBRID DESICCANT
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μm
- CORROSION RESISTANT PAINTING CAN SURVIVE SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: FLARE OR SOLDER

GENERAL SPECIFICATIONS

- Applicable for all common HCFC, HFC, HFO refrigerants such as: R22, R134a, R404A, R407C, R410A, R507, R407A/F, R448A/R449A, R452A, R450A/R513A
- Ambient temperature min./max.: -30°C / +70°C
- Medium temperature TS min./max.: -30°C / +120°C
- Max. operating pressure PS: 4,83 MPa (48,3 bar)
- Installation position: preferably installed in liquid line
- Certifications: UL/CSA and PED declaration

TECHNICAL PARAMETERS *Desiccant Selection Table*

	Medium Type	80% 3Å Desiccant and 20% Active Alumina	100% 3Å Desiccant
Refrigerant	HFC	Applicable	Applicable
	HCFC	Applicable	Applicable
	HFO	Applicable	Applicable
Oil[1)]	Mineral oil or AB	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable
	POE or PAG with additive	Not Applicable	Applicable

Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina

BI-FLOW FILTER DRIERS



Model Designation Legend

1	**Product Code**	**Filter Drier Series**	
	STG	Indicates bidirectional filter drier	
2	**Filter Core**	**Structure and Material**	
	B	Solid core, 100%3Å desiccant	
	F	Solid core, 80% 3Å desiccant and 20% active alumina	
3	**Internal Volume**	**Expressed in [inch³]**	**Expressed in [cm³]**
	05	5	82
	08	8	131
	16	16	262
	30	30	492
4	**Connection Size**	**Pos. 5 shows "0": Solder [inch]**	**Pos. 5 shows "4": SAE Flare [inch]**
	02	1/4	1/4
	25	5/16	-
	03	3/8	3/8
	04	1/2	1/2
	05	5/8	5/8
	06	3/4	3/4
	07	7/8	7/8
	09	1 1/8	-
	Connection Size	**Pos. 5 shows "1": Solder [mm]**	
	06	6	
	(08) *	(5/16" version can be used e.g. STG-B08 **25**0)	
	10	10	
	12	12	
	(16) *	(5/8" version can be used e.g. STG-B16 **05**0)	
	(22) *	(7/8" version can be used e.g. STG-B16 **07**0)	
	28	28	
5	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1 *	Solder with metric connections	
	4	SAE flare connections	
6	**Version Number**	**Description**	
	901	Standard product	

Note: * Solder connections which fit to metric and inch are marked with inch product codes e.g. 8, 16 and 22 mm.

BI-FLOW FILTER DRIERS



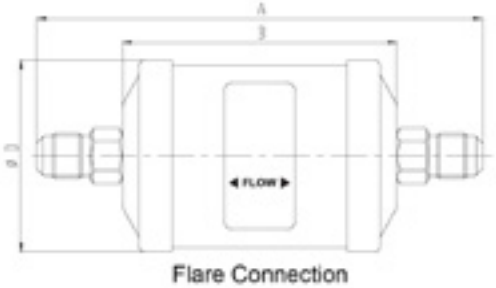
MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
STG	B	05	06	1	901	Bidirectional filter drier
STG	**B**	05	06	1	901	Solid filter core with 100% 3Å desiccant
STG	B	**05**	06	1	901	5 inch³ internal volume
STG	B	05	**06**	1	901	When Pos. 5 is "1": connection size 6mm
STG	B	05	06	**1**	901	Solder connection metric
STG	B	05	06	1	**901**	Standard product

GENERAL CHARACTERISTICS OF STG-B FILTER - FLARE CONNECTION

Filter	Model	Part Number (multi package)[1]	Nominal Volume		Connection	Dimensions & Weight[2]				PED Category[3] (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[g]	
STGB052	STG-B05 024-901	10235009002	5	82	1/4	69	76	123	450	Art. 4.3
STGB053	STG-B05 034-901	10235009102	5	82	3/8	69	76	137	450	Art. 4.3
STGB054	STG-B05 044-901	10235009202	5	82	1/2	69	76	145	450	Art. 4.3
STGB082	STG-B08 024-901	10235008702	8	131	1/4	69	98	145	580	Art. 4.3
STGB083	STG-B08 034-901	10235008802	8	131	3/8	69	98	159	580	Art. 4.3
STGB084	STG-B08 044-901	10235008902	8	131	1/2	69	98	167	580	Art. 4.3
STGB163	STG-B16 034-901	10235009302	16	262	3/8	81	118	179	900	Art. 4.3
STGB164	STG-B16 044-901	10235009402	16	262	1/2	81	118	187	900	Art. 4.3
STGB165	STG-B16 054-901	10235008602	16	262	5/8	81	118	196	900	Art. 4.3
STGB303	STG-B30 034-901	10235009502	30	492	3/8	81	193	254	1700	Art. 4.3
STGB304	STG-B30 044-901	10235009602	30	492	1/2	81	193	262	1700	Art. 4.3
STGB305	STG-B30 054-901	10235009702	30	492	5/8	81	193	271	1700	Art. 4.3
STGB306	STG-B30 064-901	10235009802	30	492	3/4	81	193	271	1700	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Dimensions are rounded up to integral mm
3) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Flare Connection

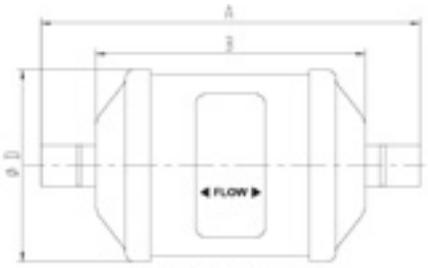
BI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF STG-B FILTER - SOLDER CONNECTION

Filter	Model [inch]	Part Number (multi package)[1] [inch]	Model [mm]	Part Number (multi package)[1] [mm]	Nominal Volume		Connection		Dimensions & Weight[2]				PED Category[3] (Fluid Group 2)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
STGB052s	STG-B05 020-901	10235005902	STG-B05 061-901	10235007602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGB053s	STG-B05 030-901	10235006002	STG-B05 101-901	10235007802	5	82	3/8	10	69	76	114	450	Art. 4.3
STGB054s	STG-B05 040-901	10235006102	STG-B05 121-901	10235007902	5	82	1/2	12	69	76	124	450	Art. 4.3
STGB082s	STG-B08 020-901	10235006202	STG-B08 061-901	10235007702	8	131	1/4	6	69	98	136	580	Art. 4.3
STGB0825s	STG-B08 250-901	10235007402	STG-B08 250-901	10235007402	8	131	5/16	8	69	98	136	580	Art. 4.3
STGB083s	STG-B08 030-901	10235006302	STG-B08 101-901	10235008002	8	131	3/8	10	69	98	136	580	Art. 4.3
STGB084s	STG-B08 040-901	10235006402	STG-B08 121-901	10235008102	8	131	1/2	12	69	98	146	580	Art. 4.3
STGB163s	STG-B16 030-901	10235006602	STG-B16 101-901	10235008202	16	262	3/8	10	81	118	156	900	Art. 4.3
STGB164s	STG-B16 040-901	10235006502	STG-B16 121-901	10235008402	16	262	1/2	12	81	118	166	900	Art. 4.3
STGB165s	STG-B16 050-901	10235006702	STG-B16 050-901	10235006702	16	262	5/8	16	81	118	166	900	Art. 4.3
STGB167s	STG-B16 070-901	10235006802	STG-B16 070-901	10235006802	16	262	7/8	22	81	118	178	900	Art. 4.3
STGB303s	STG-B30 030-901	10235006902	STG-B30 101-901	10235008302	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGB304s	STG-B30 040-901	10235007002	STG-B30 121-901	10235008502	30	492	1/2	12	81	193	241	1700	Art. 4.3
STGB305s	STG-B30 050-901	10235007102	STG-B30 050-901	10235007102	30	492	5/8	16	81	193	241	1700	Art. 4.3
STGB306s	STG-B30 060-901	10235007202	-	-	30	492	3/4	-	81	193	253	1700	Art. 4.3
STGB307s	STG-B30 070-901	10235007302	STG-B30 070-901	10235007302	30	492	7/8	22	81	193	253	1700	Art. 4.3
STGB309s	STG-B30 090-901	10235007502	STG-B30 281-901	10235010202	30	492	1 1/8	28	81	193	263	1700	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Dimensions are rounded up to integral mm
3) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

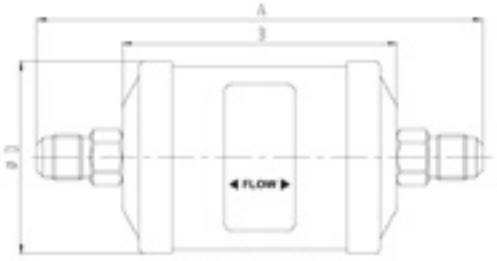
BI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF STG-F FILTER - FLARE CONNECTION

Filter	Model[1]	Part Number (multi package)[2]	Nominal Volume		Connection	Dimensions & Weight[3]				PED Category[4] (Fluid Group 2)
					SAE Flare	ØD	B	A	Weight	
			[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[g]	
STGF052	STG-F05 024-901	10235010902	5	82	1/4	69	76	123	450	Art. 4.3
STGF053	STG-F05 034-901	10235011002	5	82	3/8	69	76	137	450	Art. 4.3
STGF054	STG-F05 044-901	10235011102	5	82	1/2	69	76	145	450	Art. 4.3
STGF082	STG-F08 024-901	10235011902	8	131	1/4	69	98	145	580	Art. 4.3
STGF083	STG-F08 034-901	10235012002	8	131	3/8	69	98	159	580	Art. 4.3
STGF084	STG-F08 044-901	10235012102	8	131	1/2	69	98	167	580	Art. 4.3
STGF163	STG-F16 034-901	10235014902	16	262	3/8	81	118	179	900	Art. 4.3
STGF164	STG-F16 044-901	10235015002	16	262	1/2	81	118	187	900	Art. 4.3
STGF165	STG-F16 054-901	10235015102	16	262	5/8	81	118	196	900	Art. 4.3
STGF303	STG-F30 034-901	10235013802	30	492	3/8	81	193	254	1700	Art. 4.3
STGF304	STG-F30 044-901	10235013502	30	492	1/2	81	193	262	1700	Art. 4.3
STGF305	STG-F30 054-901	10235013602	30	492	5/8	81	193	271	1700	Art. 4.3
STGF306	STG-F30 064-901	10235013702	30	492	3/4	81	193	271	1700	Art. 4.3

Note:
1) Delivery time on request
2) Available also as industrial package. Contact Sanhua for more details
3) Dimensions are rounded up to integral mm
4) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Flare Connection

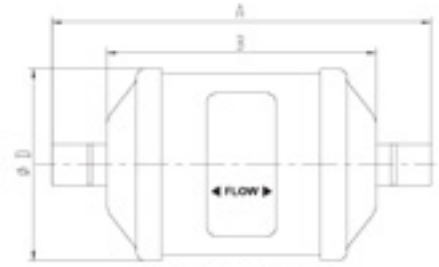
BI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF STG-F FILTER - SOLDER CONNECTION

Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[3] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 2)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
STGF052s	STG-F05 020-901	10235010302	STG-F05 061-901	10235010602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGF053s	STG-F05 030-901	10235010402	STG-F05 101-901	10235010702	5	82	3/8	10	69	76	114	450	Art. 4.3
STGF054s	STG-F05 040-901	10235010502	STG-F05 121-901	10235010802	5	82	1/2	12	69	76	124	450	Art. 4.3
STGF082s	STG-F08 020-901	10235011202	STG-F08 061-901	10235011602	8	131	1/4	6	69	98	136	580	Art. 4.3
STGF0825s	STG-F08 250-901	10235011302	STG-F08 250-901	10235011302	8	131	5/16	8	69	98	136	580	Art. 4.3
STGF083s	STG-F08 030-901	10235011402	STG-F08 101-901	10235011702	8	131	3/8	10	69	98	136	580	Art. 4.3
STGF084s	STG-F08 040-901	10235011502	STG-F08 121-901	10235011802	8	131	1/2	12	69	98	146	580	Art. 4.3
STGF163s	STG-F16 030-901	10235012202	STG-F16 101-901	10235012602	16	262	3/8	10	81	118	156	900	Art. 4.3
STGF164s	STG-F16 040-901	10235012302	STG-F16 121-901	10235012702	16	262	1/2	12	81	118	166	900	Art. 4.3
STGF165s	STG-F16 050-901	10235012402	STG-F16 050-901	10235012402	16	262	5/8	16	81	118	166	900	Art. 4.3
STGF167s	STG-F16 070-901	10235012502	STG-F16 070-901	10235012502	16	262	7/8	22	81	118	178	900	Art. 4.3
STGF303s	STG-F30 030-901	10235013902	STG-F30 101-901	10235013102	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGF304s	STG-F30 040-901	10235014002	STG-F30 121-901	10235013202	30	492	1/2	12	81	193	241	1700	Art. 4.3
STGF305s	STG-F30 050-901	10235014102	STG-F30 050-901	10235014102	30	492	5/8	16	81	193	241	1700	Art. 4.3
STGF306s	STG-F30 060-901	10235014202	-	-	30	492	3/4	-	81	193	253	1700	Art. 4.3
STGF307s	STG-F30 070-901	10235012902	STG-F30 070-901	10235012902	30	492	7/8	22	81	193	253	1700	Art. 4.3
STGF309s	STG-F30 090-901	10235013002	STG-F30 281-901	10235013402	30	492	1 1/8	28	81	193	263	1700	Art. 4.3

Note:
1) Delivery time on request
2) Available also as industrial package. Contact Sanhua for more details.
3) Dimensions are rounded up to integral mm
4) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

BI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity [kW] 1) 3)					Moisture Absorption (gram H_2O)							
	R134a	R404A / R507A	R22	R407C 2	R410A	R134a		R404A / R507A		R407C 2 / R410A		R22	
						75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C
STGB052	7,4	5,3	7,7	7,7	7,7	4,3	4,0	4,1	3,8	3,7	3,4	4,1	3,7
STGB053	16,5	11,6	16,9	16,5	16,9	4,3	4,0	4,1	3,8	3,7	3,4	4,1	3,7
STGB054	25,0	17,6	25,3	25,0	25,3	4,3	4,0	4,1	3,8	3,7	3,4	4,1	3,7
STGB082	8,8	6,0	8,8	8,8	8,8	9,8	9,0	9,2	8,6	8,5	7,8	9,2	8,5
STGB0825	15,8	10,9	16,2	15,8	16,2	9,8	9,0	9,2	8,6	8,5	7,8	9,2	8,5
STGB083	17,2	12,0	17,6	17,2	17,6	9,8	9,0	9,2	8,6	8,5	7,8	9,2	8,5
STGB084	25,7	17,9	26,4	26,0	26,4	9,8	9,0	9,2	8,6	8,5	7,8	9,2	8,5
STGB163	19,7	13,7	20,0	19,7	20,0	17,6	16,3	16,6	15,5	15,2	14,0	16,6	14,2
STGB164	30,2	21,5	30,9	30,6	30,9	17,6	16,3	16,6	15,5	15,2	14,0	16,6	14,2
STGB165	34,1	23,9	34,8	34,5	35,2	17,6	16,3	16,6	15,5	15,2	14,0	16,6	14,2
STGB167	42,2	29,9	42,9	42,6	43,3	17,6	16,3	16,6	15,5	15,2	14,0	16,6	14,2
STGB303	25,0	17,6	25,3	25,0	25,7	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB304	30,9	21,8	31,7	31,7	32,0	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB305	35,5	25,0	36,2	35,9	36,6	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB306	39,6	28,1	40,1	39,7	40,4	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB307	46,4	32,4	47,1	46,8	47,5	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1
STGB309	54,2	38,0	55,2	54,5	55,6	41,3	38,4	38,9	36,5	35,9	32,9	39,1	33,1

Note:
1) The above data is based on filter driers with inch connections and clean system at ideal conditions; with impurities accumulated in the filter, the capacity may decrease.
2) R407C data based on dew point conditions
3) given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

BI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity[1) 2)] [kW]						
	R407A	R407F	R448A	R449A	R452A	R450A	R513A
STGB052	7.1	7.85	7.15	7.05	5.4	6.85	6.15
STGB053	15.9	17.5	15.9	15.7	12.1	16.5	13.7
STGB054	24	26.5	24.1	23.8	18.3	23.3	20.8
STGB082	8.45	9.3	8.5	8.35	6.45	8.2	7.3
STGB0825	15.2	16.7	15.2	15	11.55	14.7	13.1
STGB083	16.5	18.2	16.6	16.4	12.6	16	14.3
STGB084	24.7	27.3	24.7	24.5	18.8	23.8	21.4
STGB163	19	20.8	19	18.7	14.4	18.3	16.4
STGB164	29	32	29	28.7	22.1	28	25
STGB165	32.7	36	32.8	32.5	25	31.6	28.4
STGB167	40.6	44.6	40.6	40.2	30.8	39.2	35
STGB303	24	26.4	24.1	23.8	18.3	23.3	20.7
STGB304	29.7	32.7	29.7	29.4	22.6	28.7	25.6
STGB305	34.2	37.5	34.2	33.8	26	33	29.5
STGB306	38	42	38.2	37.8	29	36.8	33
STGB307	44.6	49	44.6	44	34	43	38.6
STGB309	52	57.5	52.4	51.7	39.6	50.2	45

Note: 1) the above data is based on clean system at ideal conditions: with impurities accumulated in the filter, the capacity may decrease
2) given capacity is for all available types of connection for the same model: flare/solder [inch] and equivalent solder [mm]

SELECTION FORMULAS

Filter driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R22, R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water absorption is based on the following EPD (method: ASHRAE Standard 63.1):

- 60ppm R22
- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A

STG *SERIES*

BI-FLOW FILTER DRIERS

(GreenTech range: for fluids GROUP 1 according to Directive 2014/68/EU or GROUP A3/A2L according to ANSI-ASHRAE 34-2016)



FEATURES

- HIGH EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- HYBRID DESICCANT
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μm
- CORROSION RESISTANT PAINTING CAN SURVIVE SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: SOLDER

GENERAL SPECIFICATIONS

- Applicable for HC, HFC, HFO refrigerants such as: R290, R1234ze(E), R1234yf, R447A, R452B, R454B, R454C
- Ambient temperature min./max.: -30°C / +70°C
- Medium temperature TS min./max.: -30°C / +120°C
- Max. operating pressure PS: 4,83 MPa (48,3 bar)
- Installation position: preferably installed in liquid line
- Certifications: UL/CSA and PED declaration (all products have been covered by Art.4.3 PED Directive 2014/68/EU)

TECHNICAL PARAMETERS *Desiccant Selection Table*

	Medium Type	80% 3Å Desiccant and 20% Active Alumina	100% 3Å Desiccant
Refrigerant	HFC	Applicable	Applicable
	HCFC	Applicable	Applicable
	HFO	Applicable	Applicable
Oil[1)]	Mineral oil or AB	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable
	POE or PAG with additive	Not Applicable	Applicable

Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina

BI-FLOW FILTER DRIERS



Model Designation Legend

1	**Product Code**	**Filter Drier Series**	
	STG	Indicates bidirectional filter drier	
2	**Filter Core**	**Structure and Material**	
	B	Solid core, 100%3Å desiccant	
	F	Solid core, 80% 3Å desiccant and 20% active alumina	
3	**Internal Volume**	**Expressed in [inch³]**	**Expressed in [cm³]**
	05	5	82
	08	8	131
	16	16	262
	30	30	492
4	**Connection Size**	**Pos. 5 shows "0": Solder [inch]**	
	02	1/4	
	25	5/16	
	03	3/8	
	04	1/2	
	05	5/8	
	06	3/4	
	07	7/8	
	09	1 1/8	
	Connection Size	**Pos. 5 shows "1": Solder [mm]**	
	06	6	
	(08) *	(5/16” version can be used e.g. STG-B08 **25**0)	
	10	10	
	12	12	
	(16) *	(5/8” version can be used e.g. STG-B16 **05**0)	
	(22) *	(7/8” version can be used e.g. STG-B16 **07**0)	
	28	28	
5	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1 *	Solder with metric connections	
6	**Version Number**	**Description**	
	901	Standard product	

Note: * Solder connections which fit to metric and inch are marked with inch product codes e.g. 8, 16 and 22 mm.

BI-FLOW FILTER DRIERS



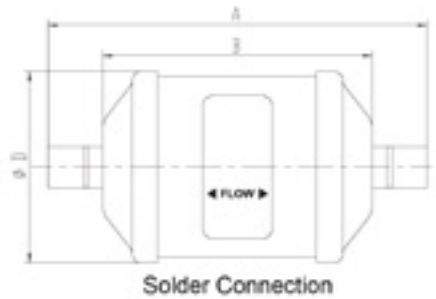
MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
STG	B	05	06	1	901	Bidirectional filter drier
STG	**B**	05	06	1	901	Solid filter core with 100% 3Å desiccant
STG	B	**05**	06	1	901	3 inch³ internal volume
STG	B	05	**06**	1	901	When Pos. 5 is "1": connection size 6mm
STG	B	05	06	**1**	901	Solder connection metric
STG	B	05	06	1	**901**	Standard product

GENERAL CHARACTERISTICS OF STG-B FILTER - SOLDER CONNECTION

Filter	Model [inch]	Part Number (multi package)[1] [inch]	Model [mm]	Part Number (multi package)[1] [mm]	Nominal Volume		Connection		Dimensions & Weight[2]				PED Category[3] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
STGB052s	STG-B05 020-901	10235005902	STG-B05 061-901	10235007602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGB053s	STG-B05 030-901	10235006002	STG-B05 101-901	10235007802	5	82	3/8	10	69	76	114	450	Art. 4.3
STGB054s	STG-B05 040-901	10235006102	STG-B05 121-901	10235007902	5	82	1/2	12	69	76	124	450	Art. 4.3
STGB082s	STG-B08 020-901	10235006202	STG-B08 061-901	10235007702	8	131	1/4	6	69	98	136	580	Art. 4.3
STGB0825s	STG-B08 250-901	10235007402	STG-B08 250-901	10235007402	8	131	5/16	8	69	98	136	580	Art. 4.3
STGB083s	STG-B08 030-901	10235006302	STG-B08 101-901	10235008002	8	131	3/8	10	69	98	136	580	Art. 4.3
STGB084s	STG-B08 040-901	10235006402	STG-B08 121-901	10235008102	8	131	1/2	12	69	98	146	580	Art. 4.3
STGB163s	STG-B16 030-901	10235006602	STG-B16 101-901	10235008202	16	262	3/8	10	81	118	156	900	Art. 4.3
STGB164s	STG-B16 040-901	10235006502	STG-B16 121-901	10235008402	16	262	1/2	12	81	118	166	900	Art. 4.3
STGB165s	STG-B16 050-901	10235006702	STG-B16 050-901	10235006702	16	262	5/8	16	81	118	166	900	Art. 4.3
STGB167s	STG-B16 070-901	10235006802	STG-B16 070-901	10235006802	16	262	7/8	22	81	118	178	900	Art. 4.3
STGB303s	STG-B30 030-901	10235006902	STG-B30 101-901	10235008302	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGB304s	STG-B30 040-901	10235007002	STG-B30 121-901	10235008502	30	492	1/2	12	81	193	241	1700	Art. 4.3
STGB305s	STG-B30 050-901	10235007102	STG-B30 050-901	10235007102	30	492	5/8	16	81	193	241	1700	Art. 4.3
STGB306s	STG-B30 060-901	10235007202	-	-	30	492	3/4	-	81	193	253	1700	Art. 4.3
STGB307s	STG-B30 070-901	10235007302	STG-B30 070-901	10235007302	30	492	7/8	22	81	193	253	1700	Art. 4.3
STGB309s	STG-B30 090-901	10235007502	STG-B30 281-901	10235010202	30	492	1 1/8	28	81	193	263	1700	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) Dimensions are rounded up to integral mm
3) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

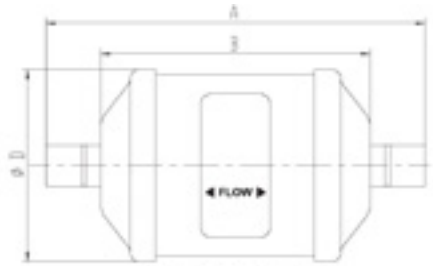
BI-FLOW FILTER DRIERS



GENERAL CHARACTERISTICS OF STG-F FILTER - SOLDER CONNECTION

Filter	Model[1] [inch]	Part Number (multi package)[2] [inch]	Model[1] [mm]	Part Number (multi package)[2] [mm]	Nominal Volumen		Connection		Dimensions & Weight[3]				PED Category[4] (Fluid Group 1)
							Solder		ØD	B	A	Weight	
					[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
STGF052s	STG-F05 020-901	10235010302	STG-F05 061-901	10235010602	5	82	1/4	6	69	76	114	450	Art. 4.3
STGF053s	STG-F05 030-901	10235010402	STG-F05 101-901	10235010702	5	82	3/8	10	69	76	114	450	Art. 4.3
STGF054s	STG-F05 040-901	10235010502	STG-F05 121-901	10235010802	5	82	1/2	12	69	76	124	450	Art. 4.3
STGF082s	STG-F08 020-901	10235011202	STG-F08 061-901	10235011602	8	131	1/4	6	69	98	136	580	Art. 4.3
STGF0825s	STG-F08 250-901	10235011302	STG-F08 250-901	10235011302	8	131	5/16	8	69	98	136	580	Art. 4.3
STGF083s	STG-F08 030-901	10235011402	STG-F08 101-901	10235011702	8	131	3/8	10	69	98	136	580	Art. 4.3
STGF084s	STG-F08 040-901	10235011502	STG-F08 121-901	10235011802	8	131	1/2	12	69	98	146	580	Art. 4.3
STGF163s	STG-F16 030-901	10235012202	STG-F16 101-901	10235012602	16	262	3/8	10	81	118	156	900	Art. 4.3
STGF164s	STG-F16 040-901	10235012302	STG-F16 121-901	10235012702	16	262	1/2	12	81	118	166	900	Art. 4.3
STGF165s	STG-F16 050-901	10235012402	STG-F16 050-901	10235012402	16	262	5/8	16	81	118	166	900	Art. 4.3
STGF167s	STG-F16 070-901	10235012502	STG-F16 070-901	10235012502	16	262	7/8	22	81	118	178	900	Art. 4.3
STGF303s	STG-F30 030-901	10235013902	STG-F30 101-901	10235013102	30	492	3/8	10	81	193	231	1700	Art. 4.3
STGF304s	STG-F30 040-901	10235014002	STG-F30 121-901	10235013202	30	492	1/2	12	81	193	241	1700	Art. 4.3
STGF305s	STG-F30 050-901	10235014102	STG-F30 050-901	10235014102	30	492	5/8	16	81	193	241	1700	Art. 4.3
STGF306s	STG-F30 060-901	10235014202	-	-	30	492	3/4	-	81	193	253	1700	Art. 4.3
STGF307s	STG-F30 070-901	10235012902	STG-F30 070-901	10235012902	30	492	7/8	22	81	193	253	1700	Art. 4.3
STGF309s	STG-F30 090-901	10235013002	STG-F30 281-901	10235013402	30	492	1 1/8	28	81	193	263	1700	Art. 4.3

Note: 1) Delivery time on request
2) Available also as industrial package. Contact Sanhua for more details
3) Dimensions are rounded up to integral mm
4) PED Directive 2014/68/EU. Category evaluated considering product as a "vessel"



Solder Connection

BI-FLOW FILTER DRIERS



SELECTION TABLE

Model	Capacity[1) 2)] [kW]		
	R290	R1234yf	R1234ze(E)
STGB052s	9	5.45	6.6
STGB053s	20.1	12.1	14.7
STGB054s	30.4	18.4	22.3
STGB082s	10.7	6.45	7.85
STGB0825s	19.2	11.6	14.1
STGB083s	21	12.6	15.3
STGB084s	31.2	18.85	23
STGB163s	24	14.5	17.6
STGB164s	36.8	22.2	27
STGB165s	41.6	25	30.4
STGB167s	51.4	31	37.6
STGB303s	30.4	18.4	22.3
STGB304s	37.6	22.7	27.5
STGB305s	43.2	26	31.6
STGB306s	48.3	29	35.2
STGB307s	56.6	34	41.4
STGB309s	66	39.8	48.3

SELECTION TABLE

Model	Capacity[1) 2)] [kW]		
	R290	R1234yf	R1234ze(E)
STGF052s	9	5.45	6.6
STGF053s	20.1	12.1	14.7
STGF054s	30.4	18.4	22.3
STGF082s	10.7	6.45	7.85
STGF0825s	19.2	11.6	14.1
STGF083s	21	12.6	15.3
STGF084s	31.2	18.85	23
STGF163s	24	14.5	17.6
STGF164s	36.8	22.2	27
STGF165s	41.6	25	30.4
STGF167s	51.4	31	37.6
STGF303s	30.4	18.4	22.3
STGF304s	37.6	22.7	27.5
STGF305s	43.2	26	31.6
STGF306s	48.3	29	35.2
STGF307s	56.6	34	41.4
STGF309s	66	39.8	48.3

Note: 1) the above data is based on clean system at ideal conditions; with impurities, accumulated in the filter, the capacity may decrease
2) given capacity is for all available types of connection for the same model: solder [inch] and equivalent solder [mm]

SELECTION FORMULAS

Filter Driers for liquid line are manufactured in compliance with ARI Standard 710. Flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of refrigerant is -15°C (5°F).

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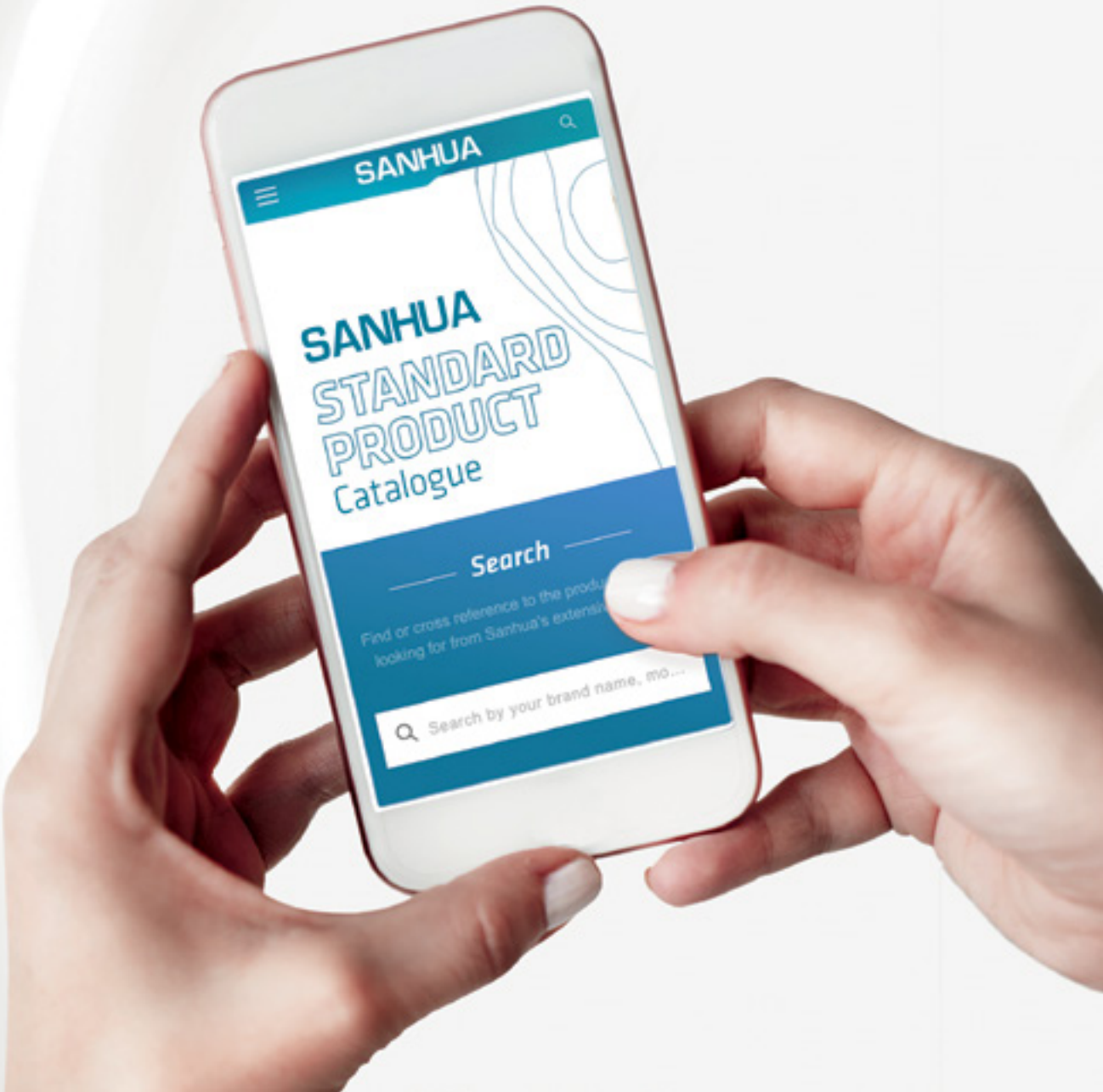
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NR. 1907/2006
CONFORMITY DECLARATION

BEST SUPPLIER AWARDS

B/S/H/ Carrier TRANE



***HTG** SERIES*

FILTER DRIERS WITH REPLACEABLE CORE



The filter driers with replaceable core (HTG series) are used as drier in liquid line and suction line of refrigerating, freezing and air conditioning system. The filter housing allows to choose different kinds of cores. It's sealed by bottom cover for an easy removal and replacement of core from the bottom. The core holder requires minimum free space to remove the core for replacement.

FEATURES

- HIGH EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, ACID, PAINT REMAINS AND MUD REMOVAL
- DIFFERENT TYPES OF FILTER CORES
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μm
- CORROSION RESISTANT PAINTING CAN SURVIVE SALT SPRAY TEST OF 500 HOURS
- CONNECTION TYPE: SOLDER

FEATURES OF FILTER ELEMENT

- **SH48-A80 FILTER ELEMENT:**
  80% 3A DESICCANT AND 20% ACTIVATED ALUMINA,
  It provides a good desiccation ability and an acid absorption capability in a wide temperature range. The core resistance is guaranteed with high level of vibration thanks to an anti-shock design. Suggested installation position on liquid line
- **SH48-A00 FILTER ELEMENT:**
  100% 3A DESICCANT
  It provides the maximum level of desiccation ability in a wide temperature range. The core resistance is guaranteed with high level of vibration thanks to an anti-shock design. Suggested installation position on liquid line
- **SH48-A30 FILTER ELEMENT:**
  30% 3A DESICCANT, 70% ACTIVATED ALUMINA
  This solid filter element provides an excellent acid absorption together with a standard desiccation ability in a wide temperature range. The suggested installation position is on the suction line; it is suitable after compressor burnout because it removes acid, impurities and other harmful substance avoiding the damage of the new compressor.
  SH48-A30 filter core is compatible with HCFC / HFC refrigerants and its design optimizes the flow passage generating low internal pressure drop. The core resistance is guaranteed with high level of vibration thanks to an anti-shock design.
- **SH48-B00 FILTER ELEMENT:**
  Strainer core for filtering dirt particles. Compatible with HCFC, HFC refrigerants. Suggested installation position on suction line.

FILTER DRIERS WITH REPLACEABLE CORE



GENERAL SPECIFICATION

- Applicable for all common HCFC and HFC, HFO[1] refrigerants such as: R22, R134a, R404A, R407C, R410A, R507, R407A/F, R448A/R449A, R452A, R450A/R513A, R1234ze[1].
- Ambient temperature min./max.: -30°C / +55°C
- Medium temperature TS min./max.: -40°C / +70°C
- Max. operating pressure PS: from 4,5 MPa (45 bar) (see table 1)
- Installation position:
  HTG with SH48-A80 or SH48-A00 in liquid line,
  HTG with SH48-A30 or mechanical strainer SH48-B100 in suction line
- Certifications: UL/CSA and PED declaration

Note: 1) Please contact Sanhua representative regarding applications with HFO
For liquid capacity of filters with R407A/F, R1234ze, R448A/R449A, R452A, R450A/R513A please contact Sanhua.

TECHNICAL PARAMETERS

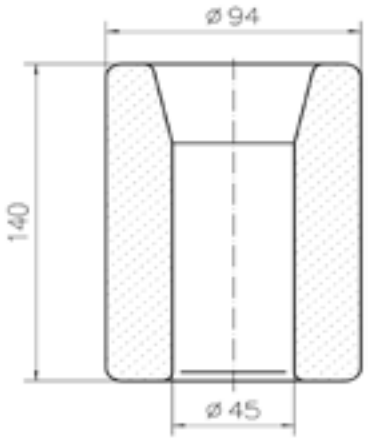
Desiccant Selection Table

	Medium Type	30% 3A desiccant 70% active alumina	80% 3A desiccant 20% active alumina	100% 3A desiccant	Mechanical strainer
Core Model	-	SH48-A30	SH48-A80	SH48-A00	SH48-B00
With flange gasket suitable for Sanhua shells: Ø115 mm x Ø121,4 mm	-	20225000102	20225000902	20225001102	20225003302
With flange gasket suitable for Sanhua and other shells: Ø115 mm x Ø121,4 mm and Ø105,6 mm x Ø115 mm	-	20225028602	20225027702	20225028502	20225028702
Suggested Installation position	-	Suction Line	Liquid Line	Liquid Line	Suction Line
Refrigerant	HFC	Applicable	Applicable	Suggested	Suggested
	HCFC	Suggested	Suggested	Applicable	Applicable
	HC/HFO	Applicable	Applicable	Applicable	-
Oil [1]	Mineral oil or AB	Suggested	Suggested	Applicable	Applicable
	Pure POE or PAG	Applicable	Applicable	Suggested	Suggested
	POE or PAG with addictive	Not applicable	Not applicable	Applicable	Applicable

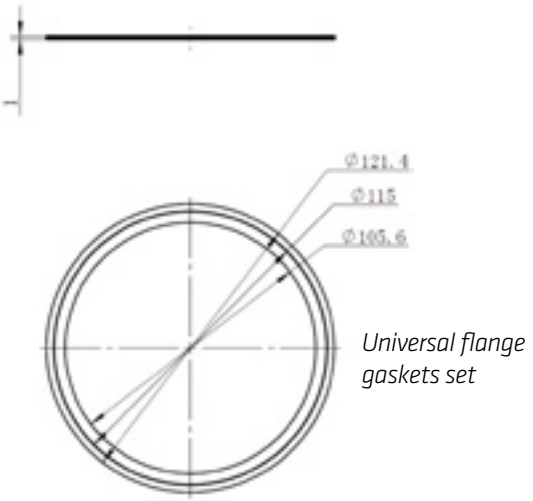
Note: 1) When the systems use oil with additive, it is not recommended to use a core with alumina.

Accessories and spare parts:

Universal flange gaskets set	Model	Part Number (multi package)
	HTG-000-024006	20225027601



Filter core dimensions



Universal flange gaskets set

FILTER DRIERS WITH REPLACEABLE CORE



MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
HTG	A96	28	1	901		Replaceable core filter drier
HTG	**A96**	28	1	901		96 inch³ internal volume
HTG	A96	**28**	1	901		When Pos. 4 is "1": connection size 28mm
HTG	A96	28	**1**	901		Solder connection metric
HTG	A96	28	1	**901**		Standard product

Model Designation Legend

1	**Product Code**	**Filter Drier Series**	
	HTG	Indicates replaceable core filter drier	
2	**Internal volume**	**Expressed in inch³**	**Expressed in cm³**
	A48	48	787
	A96	96	1573
	B44	144	2360
	B92	192	3146
3	**Connection size**	**Pos. 4 shows "0": Solder [inch]**	
	05	5/8	
	07	7/8	
	09	1 1/8	
	11	1 3/8	
	13	1 5/8	
	17	2 1/8	
	21	2 5/8	
	Connection size	**Pos. 4 shows "1": Solder [mm]**	
	05	16 - (5/8" version can be used e.g. HTG-A48 050)	
	07	22 - (7/8" version can be used e.g. HTG-A48 070)	
	28	28	
	11	35 - (1 3/8" version can be used e.g. HTG-A48 110)	
	42	42	
	17	54 - (2 1/8" version can be used e.g. HTG-A48 170)	
4	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1 *	Solder with metric connections	
5	**Version Number**	**Description**	
	901	Standard product	

Note: * Solder connections which fit to metric and inch are marked with inch product codes e.g. 16, 22, 35 and 54mm

FILTER DRIERS WITH REPLACEABLE CORE



GENERAL CHARACTERISTICS OF FILTER *Table 1*

Series	Model	Part Number*	Solder Connections ODF		Number of cores	Dimensions & Weight					Design Pressure (MPa)	PED category
						A	B	L	G	Weight[1)]		
			[inch]	[mm]		[mm]	[mm]	[mm]	[mm]	[kg]		
HTG A48s	HTG-A48050-901	10225004502	5/8	16	1	250	164	170	116	5,1	4,5	Cat. I
	HTG-A48070-901	10225004402	7/8	22		249	163	170	116	5,1	4,5	
	HTG-A48090-901	10225004302	1 1/8	-		254	168	170	121	5,1	4,5	
	HTG-A48281-901	10225004202	-	28		254	168	170	121	5,1	4,5	
	HTG-A48110-901	10225004102	1 3/8	35		253	167	170	121	5,1	4,5	
	HTG-A48130-901	10225004002	1 5/8	-		272	186	170	141	5,1	4,5	
	HTG-A48421-901	10225003802	-	42		272	186	170	141	5,1	4,5	
	HTG-A48170-901	10225003902	2 1/8	54		275	182	170	145	5,1	4,5	
	HTG-A48210-901	10225003702	2 5/8	-		277	177	170	149	5,1	4,5	
HTG A96s	HTG-A96050-901	10225003602	5/8	16	2	391	305	310	116	6,2	4,5	
	HTG-A96070-901	10225003502	7/8	22		390	304	310	116	6,2	4,5	
	HTG-A96090-901	10225003302	1 1/8	-		395	309	310	121	6,2	4,5	
	HTG-A96281-901	10225003402	-	28		395	309	310	121	6,2	4,5	
	HTG-A96110-901	10225003202	1 3/8	35		394	308	310	121	6,2	4,5	
	HTG-A96130-901	10225003102	1 5/8	-		413	327	310	141	6,2	4,5	
	HTG-A96421-901	10225003002	-	42		413	327	310	141	6,2	4,5	
	HTG-A96170-901	10225002902	2 1/8	54		416	323	310	145	6,2	4,5	
	HTG-A96210-901	10225002802	2 5/8	-		418	318	310	149	6,2	4,5	
HTG B44s	HTG-B44050-901	10225002702	5/8	16	3	532	446	310	116	7,6	4,5	
	HTG-B44070-901	10225002602	7/8	22		531	445	310	116	7,6	4,5	
	HTG-B44090-901	10225002502	1 1/8	-		536	450	310	121	7,6	4,5	
	HTG-B44281-901	10225002402	-	28		536	450	310	121	7,6	4,5	
	HTG-B44110-901	10225002302	1 3/8	35		535	449	310	121	7,6	4,5	
	HTG-B44130-901	10225002202	1 5/8	-		554	468	310	141	7,6	4,5	
	HTG-B44421-901	10225002102	-	42		554	468	310	141	7,6	4,5	
	HTG-B44170-901	10225001902	2 1/8	54		557	464	310	145	7,6	4,5	
	HTG-B44210-901	10225001802	2 5/8	-		559	459	310	149	7,6	4,5	
HTG B92s	HTG-B92050-901	10225001702	5/8	16	4	677	591	310	116	9,1	4,5	
	HTG-B92070-901	10225001602	7/8	22		676	590	310	116	9,1	4,5	
	HTG-B92090-901	10225001502	1 1/8	-		681	595	310	121	9,1	4,5	
	HTG-B92281-901	10225004602	-	28		681	595	310	121	9,1	4,5	
	HTG-B92110-901	10225001402	1 3/8	35		680	594	310	121	9,1	4,5	
	HTG-B92130-901	10225002002	1 5/8	-		699	613	310	141	9,1	4,5	
	HTG-B92421-901	10225001302	-	42		699	613	310	141	9,1	4,5	
	HTG-B92170-901	10225001202	2 1/8	54		702	609	310	145	9,1	4,5	
	HTG-B92210-901	10225001102	2 5/8	-		704	604	310	149	9,1	4,5	

Note: * Available also as industrial package. Contact Sanhua for more details.
1) Weight of filter shell (must be added the filter core weight: 0.6 kg)

FILTER DRIERS WITH REPLACEABLE CORE



SELECTION TABLE - WITH CORE SH48-A00 *Table 2*

Model	Acid Absorption capacity (g)	Capacity [kW] [1]					Moisture Absorption [gram H_2O]							
		R134a	R404A / R507A	R22	R407C[2]	R410A	R134a		R404A / R507A		R407C [2] / R410A		R22	
							75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
							23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C
HTG-A48050-901		78,6	55,8	80,7	80	81,5								
HTG-A48070-901		125,6	89,2	128,9	128	130,3								
HTG-A48090-901		180,6	128,2	185,4	183,9	187,2								
HTG-A48281-901		180,6	128,2	185,4	183,9	187,2								
HTG-A48110-901	-	243,2	172,6	249,6	247,7	252,2	87,4	75,3	94,1	77,3	73,9	67,2	80,6	73,9
HTG-A48130-901		298,7	212	306,5	304,2	309,7								
HTG-A48421-901		298,7	212	306,5	304,2	309,7								
HTG-A48170-901		424,2	301,1	435,4	432	439,8								
HTG-A48210-901		471,2	334.4	483,6	479,9	488,6								
HTG-A96050-901		80,6	57,2	82,7	82	83,5								
HTG-A96070-901		128,8	91,4	132,2	131,2	133.5								
HTG-A96090-901		185,1	131,4	190	188,5	191,9								
HTG-A96281-901		185,1	131,4	190	188,5	191,9								
HTG-A96110-901	-	249,3	176,9	255,9	253,9	258,5	174,7	150,5	188,2	154,6	147,8	134,4	161,3	147,8
HTG-A96130-901		306,1	217,3	314,2	311,8	317,4								
HTG-A96421-901		306,1	217,3	314,2	311,8	317,4								
HTG-A96170-901		434,8	308,6	446,3	442,8	450,8								
HTG-A96210-901		483	342,8	495,7	491,9	500,8								
HTG-B44050-901		82,5	58,6	84,7	84	85,6								
HTG-B44070-901		131,9	93,6	135,4	134,3	136,8								
HTG-B44090-901		189,6	134,6	194,6	193,1	196,6								
HTG-B44281-901		189,6	134,6	194,6	193,1	196,6								
HTG-B44110-901	-	255,4	181,3	262,1	260,1	264,8	262,1	225,8	282,2	231,8	221,8	201,6	241,9	221,8
HTG-B44130-901		313,6	222,6	321,9	319,4	325,1								
HTG-B44421-901		313,6	222,6	321,9	319,4	325,1								
HTG-B44170-901		445,4	316,1	457,1	453,6	461,8								
HTG-B44210-901		494,8	351,2	507,8	503,9	513,0								
HTG-B92050-901		84,5	60	86,7	86	87,6								
HTG-B92070-901		135,1	95,9	138,6	137,5	140								
HTG-B92090-901		194,1	137,8	199,3	197,7	201,3								
HTG-B92281-901		194,1	137,8	199,3	197,7	201,3								
HTG-B92110-901	-	261,5	185,6	268,4	266,3	271,1	349,4	301,1	376,3	309,1	295,7	268,8	322,6	295,7
HTG-B92130-901		321,1	227,9	329,5	327	332,9								
HTG-B92421-901		321,1	227,9	329,5	327	332,9								
HTG-B92170-901		456	323,6	468	464,4	472,8								
HTG-B92210-901		506.6	359,5	519,9	515,9	525,2								

FILTER DRIERS WITH REPLACEABLE CORE



SELECTION TABLE - WITH CORE SH48-A80 *Table 3*

Model	Acid Absorption capacity (g)	Capacity [kW] [1]					Moisture Absorption [gram H_2O]							
		R134a	R404A / R507A	R22	R407C[2]	R410A	R134a		R404A / R507A		R407C [2] / R410A		R22	
							75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
							23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C
HTG-A48050-901	10	78,6	55,8	80,7	80	81,5	74,3	64	80	65,7	62,8	57,1	68,5	62,8
HTG-A48070-901		125,6	89,2	128,9	128	130,3								
HTG-A48090-901		180,6	128,2	185,4	183,9	187,2								
HTG-A48281-901		180,6	128,2	185,4	183,9	187,2								
HTG-A48110-901		243,2	172,6	249,6	247,7	252,2								
HTG-A48130-901		298,7	212	306,5	304,2	309,7								
HTG-A48421-901		298,7	212	306,5	304,2	309,7								
HTG-A48170-901		424,2	301,1	435,4	432	439,8								
HTG-A48210-901		471,2	334.4	483,6	479,9	488,6								
HTG-A96050-901	20	80,6	57,2	82,7	82	83,5	148,5	128	159,9	131,4	125,7	114,2	137,1	125,7
HTG-A96070-901		128,8	91,4	132,2	131,2	133.5								
HTG-A96090-901		185,1	131,4	190	188,5	191,9								
HTG-A96281-901		185,1	131,4	190	188,5	191,9								
HTG-A96110-901		249,3	176,9	255,9	253,9	258,5								
HTG-A96130-901		306,1	217,3	314,2	311,8	317,4								
HTG-A96421-901		306,1	217,3	314,2	311,8	317,4								
HTG-A96170-901		434,8	308,6	446,3	442,8	450,8								
HTG-A96210-901		483	342,8	495,7	491,9	500,8								
HTG-B44050-901	30	82,5	58,6	84,7	84	85,6	222,8	191,9	239,9	197,1	188,5	171,4	205,6	188,5
HTG-B44070-901		131,9	93,6	135,4	134,3	136,8								
HTG-B44090-901		189,6	134,6	194,6	193,1	196,6								
HTG-B44281-901		189,6	134,6	194,6	193,1	196,6								
HTG-B44110-901		255,4	181,3	262,1	260,1	264,8								
HTG-B44130-901		313,6	222,6	321,9	319,4	325,1								
HTG-B44421-901		313,6	222,6	321,9	319,4	325,1								
HTG-B44170-901		445,4	316,1	457,1	453,6	461,8								
HTG-B44210-901		494,8	351,2	507,8	503,9	513,0								
HTG-B92050-901	40	84,5	60	86,7	86	87,6	297	255,9	319,9	262,8	251,3	228,5	274,2	251,3
HTG-B92070-901		135,1	95,9	138,6	137,5	140								
HTG-B92090-901		194,1	137,8	199,3	197,7	201,3								
HTG-B92281-901		194,1	137,8	199,3	197,7	201,3								
HTG-B92110-901		261,5	185,6	268,4	266,3	271,1								
HTG-B92130-901		321,1	227,9	329,5	327	332,9								
HTG-B92421-901		321,1	227,9	329,5	327	332,9								
HTG-B92170-901		456	323,6	468	464,4	472,8								
HTG-B92210-901		506.6	359,5	519,9	515,9	525,2								

Note: 1. The data reported in the Table 2 and 3 is based on filter driers in a clean system at ideal conditions; with impurities accumulated in the filter, the capacity may decrease.

2. R407C data based on dew point conditions

3. Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)

FILTER DRIERS WITH REPLACEABLE CORE



SELECTION FORMULAS

Filter driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R22, R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water absorption is based on the following EPD (method: ASHRAE Standard 63.1):

- 60ppm R22
- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A

SUCTION LINE FILTER-DRIERS:

Any pressure loss in the suction line also reduces system capacity significantly. Obtaining a low pressure drop is particularly important for energy savings on all the air conditioning and refrigeration systems. Therefore, suction line filter-driers should be sized generously on these systems. Sanhua suggests that the pressure drop across it should not exceed the values given in the table below (table 4: DP limits in metric units; table 5: DP limits in imperial units)

Table 4

Suction Line Filter Drier Maximum Recommended Pressure Drop (bar)					
System	Evaporator Saturated Suction Temperature[4] (°C)	Permanent Installation		Temporary Installation	
		Refrigerant			
		R22; R404A; R407C; R410A, R507	R134a	R22; R404A; R407C; R410A, R507	R134a
Air conditioning	4	0,21	0,14	0,56	0,42
Commercial	-7	0,14	0,105	0,28	0,21
Low temperature	-29	0,07	0,035	0,14	0,07

Table 5

Suction Line Filter Drier Maximum Recommended Pressure Drop (psi)					
System	Evaporator Saturated Suction Temperature[5] (°F)	Permanent Installation		Temporary Installation	
		Refrigerant			
		R22; R404A; R407C; R410A, R507	R134a	R22; R404A; R407C; R410A, R507	R134a
Air conditioning	40	3	2	8	6
Commercial	20	2	1,5	4	3
Low temperature	-20	1	0,5	2	1

FILTER DRIERS WITH REPLACEABLE CORE



SUCTION LINE FLOW CAPACITY WITH CORE SH48-A30 (KW)[1] *Table 6*

Model	Capacity (kW)											
	Evaporation temperature (°C)											
	-40	-20	4,4	-30	-20	4,4	-40	-20	4,4	-40	-20	4,4
	Pressure drop (bar)											
	0,04	0,10	0,21	0,04	0,07	0,14	0,04	0,10	0,21	0,04	0,10	0,21
	R22/R407C			R134a			R404A/R507			R410A		
HTG-A48050-901	3,0	8,5	20,0	2,9	5,1	12,4	2,3	6,7	16,6	3,0	8,5	20,0
HTG-A48070-901	5,5	15,5	36,0	5,3	9,4	22,2	4,3	12,3	29,6	5,5	15,3	36,0
HTG-A48090-901	7,4	20,5	48,5	7,1	12,6	30,0	5,7	16,3	40,0	7,4	20,5	48,5
HTG-A48281-901	7,4	20,5	48,5	7,1	12,6	30,0	5,7	16,3	40,0	7,4	20,5	48,5
HTG-A48110-901	9,5	26,0	61,0	9,1	16.0	37.5	7.3	20.7	50.0	9.5	26.0	61.0
HTG-A48130-901	9.5	26.0	61.0	9,1	16.0	37.5	7.3	20.7	50.0	9.5	26.0	61.0
HTG-A48421-901	9.5	26.0	61.0	9,1	16.0	37.5	7.3	20.7	50.0	9.5	26.0	61.0
HTG-A48170-901	9.5	26.0	61.0	9,1	16.0	37.5	7.3	20.7	50.0	9.5	26.0	61.0
HTG-A48210-901	9.5	26.0	61.0	9,1	16.0	37.5	7.3	20.7	50.0	9.5	26.0	61.0
HTG-A96050-901	3.1	8.6	20.3	3.0	5.4	12.7	2.4	7.0	17.1	3.1	8.7	20.5
HTG-A96070-901	5.5	15.4	36.2	5.3	9.4	22.4	4.3	12.3	29.8	5.5	15.4	36.2
HTG-A96090-901	8.3	23.4	55.4	8.0	14.3	34.1	6.5	18.7	46.0	8.3	23.4	56.0
HTG-A96281-901	8.3	23.4	55.4	8.0	14.3	34.1	6.5	18.7	46.0	8.3	23.4	56.0
HTG-A96110-901	11.3	32.0	76.0	10.8	19.4	46.5	8.8	25.5	63.0	11.3	32.0	76.0
HTG-A96130-901	13.5	38.0	91.0	13.0	23.1	55.6	10.5	30.4	75.0	13.4	38.0	91.0
HTG-A96421-901	13.5	38.0	91.0	13.0	23.1	55.6	10.5	30.4	75.0	13.4	38.0	91.0
HTG-A96170-901	13.5	38.0	91.0	13.0	23.1	55.6	10.5	30.4	75.0	13.4	38.0	91.0
HTG-A96210-901	13.5	38.0	91.0	13.0	23.1	55.6	10.5	30.4	75.0	13.4	38.0	91.0
HTG-B44050-901	3.3	9.5	21.7	3.2	5.7	13.3	2.6	7.3	16.5	3.3	9.5	21.7
HTG-B44070-901	6.3	18.0	41.0	6.0	10.6	25.1	4.8	13.8	34.0	6.3	18.0	41.0
HTG-B44090-901	8.4	24.0	55.0	8.0	14.3	34.0	6.5	18.5	46.0	8.4	24.0	55.0
HTG-B44281-901	8.4	24.0	55.0	8.0	14.3	34.0	6.5	18.5	46.0	8.4	24.0	55.0
HTG-B44110-901	12.5	36.5	89.0	12.1	22.0	54.0	9.8	29.2	73.0	12.5	36.5	89.0
HTG-B44130-901	12.5	36.5	89.0	12.1	22.0	54.0	9.8	29.2	73.0	12.5	36.5	89.0
HTG-B44421-901	12.5	36.5	89.0	12.1	22.0	54.0	9.8	29.2	73.0	12.5	36.5	89.0
HTG-B44170-901	12.5	36.5	89.0	12.1	22.0	54.0	9.8	29.2	73.0	12.5	36.5	89.0
HTG-B44210-901	12.5	36.5	89.0	12.1	22.0	54.0	9.8	29.2	73.0	12.5	36.5	89.0
HTG-B92050-901	4.0	10.9	25.9	3.8	6.7	16.0	3.0	8.7	21.6	4.0	10.9	25.9
HTG-B92070-901	7.5	20.5	48.8	7.2	12.7	30.0	5.8	16.5	40.6	7.5	20.5	48.8
HTG-B92090-901	10.1	27.5	66.0	9.7	17.1	40.0	7.8	22.1	54.3	10.1	27.5	66.0
HTG-B92281-901	10.1	27.5	66.0	9.7	17.1	40.0	7.8	22.1	54.3	10.1	27.5	66.0
HTG-B92110-901	14.1	39.7	95.0	13.6	24.2	58.1	11.0	31.9	78.1	14.1	39.7	95.0
HTG-B92130-901	17.1	49.0	118.0	16.5	30.0	72.0	13.4	39.0	97.0	17.1	49.0	118.0
HTG-B92421-901	17.1	49.0	118.0	16.5	30.0	72.0	13.4	39.0	97.0	17.1	49.0	118.0
HTG-B92170-901	17.1	49.0	118.0	16.5	30.0	72.0	13.4	39.0	97.0	17.1	49.0	118.0
HTG-B92210-901	17.1	49.0	118.0	16.5	30.0	72.0	13.4	39.0	97.0	17.1	49.0	118.0

FILTER DRIERS WITH REPLACEABLE CORE



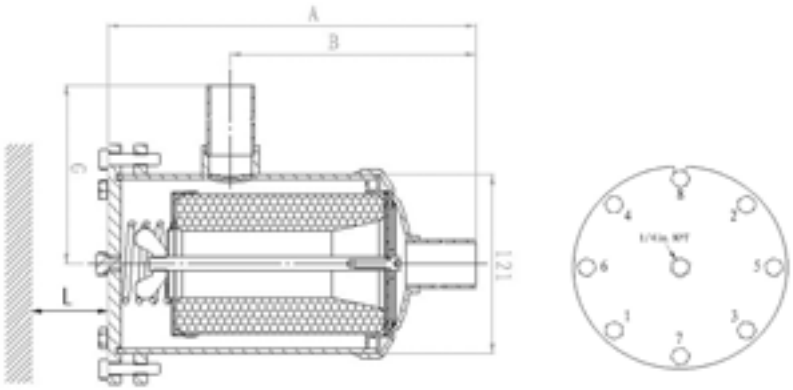
The capacities listed in the table 6 are rated at the maximum recommended pressure drop for permanent installation.
Suction line Filter-Driers guarantees an acid removal and a drying capacity described in table 7:

Table 7

Drying capacity: SH48-A30[1]					
Filter Type		**HTG-A48**	**HTG-A96**	**HTG-B44**	**HTG-B92**
Number of cores		**1**	**2**	**3**	**4**
Acid Adsorption capacity (g)[3]		**28,0**	**56,0**	**84,0**	**112,0**
Refrigerant	**Evaporating Temp. (°C)[4]**	**Moisture Absorption [gram H2O]**			
R22/ R407C[2]	-40,0	26,0	52,0	78,0	104,0
	-20,0	18,0	36,3	54,0	72,0
	4,4	11,0	22,0	32,0	43,0
R134a	-30,0	43,0	86,0	129,0	172,0
	-20,0	36,0	72,0	108,0	144,0
	4,4	25,0	50,0	75,0	100,0
R404A / R507	-40,0	45,0	90,0	135,0	180,0
	-20,0	28,0	56,0	84,0	112,0
	4,4	18,0	36,0	54,0	72,0
R410A	-40,0	40,0	80,0	120,0	160,0
	-20,0	33,0	66,0	99,0	132,0
	4,4	24,0	48,0	72,0	96,0

Drying capacity is expressed during drying in:
R22: EPD = 10 ppm W, corresponding dew point temperature is -50°C
R134a: EPD = 50 ppm W, corresponding dew point temperature is -37°C
R404A: EPD = 10 ppm W, corresponding dew point temperature is -40°C
R407C: EPD = 10 ppm W, corresponding dew point temperature is -40°C

Note:
1. The data reported in the Table 2, 3, 6 and 7 are based on filter driers in a clean system at ideal conditions; with impurities accumulated in the filter, the capacity may decrease.
2. R407C data based on dew point conditions
3. Adsorption capacity of oleic acid at 0.05 TAN (Total Acid Number)
4. Standard Evaporating Temperature defined by ANSI.AHRI Standard 731 (SI)-2013
5. Standard Evaporating Temperature defined by ANSI.AHRI Standard 730 (I-P)-2013

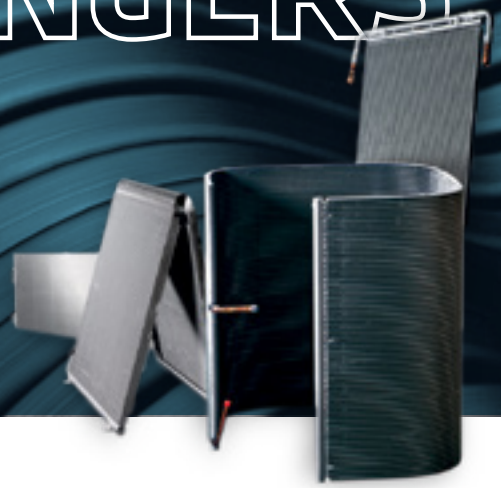


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***DSG** SERIES*

LIQUID LINE FILTER DRIER WITH SIGHT GLASS



DSG Series liquid line filter drier/sight glass combination is a liquid line filter drier with a sight glass connected to the outlet side of the filter drier are used in refrigeration system with unidirectional flow to absorb moisture in the system and to filter out the impurities. Observe property changes of the refrigerant (liquid / vapor) and indicate the moisture level by the sight glass as well.

FEATURES

- HIGHLY EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY, PAINT REMAINS AND MUD REMOVAL
- DURABLE AND SOLID FILTER CORES
- FILTERING FINENESS: 20μm
- CORROSION RESISTANT PAINTING SURVIVES SALT SPRAY TEST OF 500 HOURS
- SIGHT GLASS WITH NEW ANNULAR HUMIDITY COLOR INDICATOR TO REALIZE HIGH PRECISION AND FULL PORT PASSAGE WITH LOW PRESSURE DROP
- COMPACT UNIT: REDUCE CUSTOMER INSTALLATION TIME AND REDUCE POTENTIAL LEAKAGE RISK

GENERAL SPECIFICATION

- Applicable for all common HFC, HFO refrigerants such as: R134a, R404A, R407A/F, R407C, R410A, R448A, R449A, R450A, R452A, R513A, R507A
- Ambient temperature min./max.: -30°C / +55°C
- Medium temperature TS min./max.: -30°C / +80°C
- Max. operating pressure PS max.: 4,6 MPa
- Installation position:
  - Flow direction corresponds to the arrow
  - Preferably installed in liquid line
- Certifications: UL/CSA and PED declaration

LIQUID LINE FILTER DRIER WITH SIGHT GLASS



TECNHICAL PARAMETERS *Desiccant Selection Table*

	Medium Type	100% 3Å Desiccant
Refrigerant	HFC	Applicable
	HFO	Applicable
Oil[3]	Mineral oil or AB	Applicable
	Pure POE or PAG	Applicable
	POE or PAG with additive	Applicable

Model Designation Legend

1	**Product Code**	**Product Series**	
	DSG	Indicates unidirectional filter drier with Sight glass	
2	**Filter Core**	**Structure and Material**	
	B	Solid core, 100%3Å desiccant	
3	**Internal Volume[1)]**	**Expressed in [inch³]**	**Expressed in [cm³]**
	05	5	82
	08	8	131
	16	16	262
4	**Connection Size**	**Pos. 5 shows "4": SAE Flare [inch]**	
	02	1/4	
	03	3/8	
	04	1/2	
5	**Pipe Connection**	**Type**	
	4	SAE flare connections	
6	**Version Number**	**Description**	
	002	Series number	

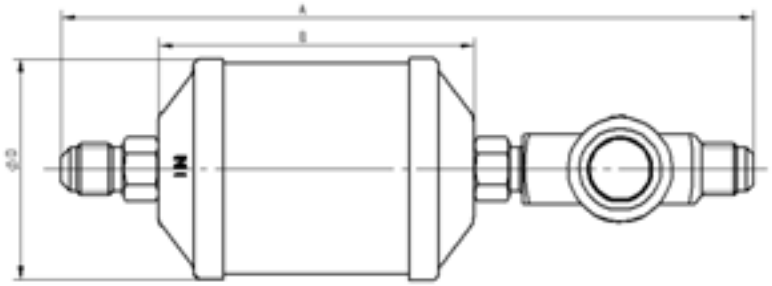
MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
DSG	B	05	02	4	002	Unidirectional filter drier & sight glass assembly
DSG	**B**	05	02	4	002	Solid filter core with 100% 3Å desiccant
DSG	B	**05**	02	4	002	5 inch³ internal volume
DSG	B	05	**02**	4	002	When Pos. 5 is "4": SAE flare connection size 1/4"
DSG	B	05	02	**4**	002	SAE flare connection
DSG	B	05	02	4	**002**	Series number

LIQUID LINE FILTER DRIER WITH SIGHT GLASS



VERSION WITH MALE/MALE FLARE CONNECTIONS



Series	Model	Part Number[1)]	Nominal Volume		Connection	Dimensions & Weight				PED Category [2)]
					SAE Flare	ØD	A	B	Weight	
			[inch³]	[cm³]	[inch]	[mm]	[mm]	[mm]	[g]	
DSGB 052	DSG-B05 024-002	10221000102	5	82	1/4	69	168	76	620	Art. 4.3
DSGB 082	DSG-B08 024-002	10221000202	8	131	1/4	69	190	89	640	Art. 4.3
DSGB 083	DSG-B08 034-002	10221000302	8	131	3/8	69	214	89	640	Art. 4.3
DSGB 163	DSG-B16 034-002	10221000402	16	262	3/8	69	234	118	700	Art. 4.3
DSGB 164	DSG-B16 044-002	10221000502	16	262	1/2	69	245	118	700	Art. 4.3

Note: 1) Available also as industrial package. Contact Sanhua for more details.
2) PED Directive 2014/68/EU

SELECTION TABLE

Model	Capacity[1)] [kW]					Moisture Absorption (gram H_2O)							
	R134a	R404A / R507A	R22	R407C[2)]	R410A	R134a		R404A / R507A		R407C[2)] / R410A		R22	
						75°F	125°F	75°F	125°F	75°F	125°F	75°F	125°F
						23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C	23,9°C	51,7°C
DSGB 052	8,4	6,0	8,4	8,4	8,4	11,6	10,9	10,9	8,9	10,9	9,5	11,4	9,7
DSGB 082	8,4	6,0	8,4	8,4	8,4	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DSGB 083	25,0	17,6	25,3	25,0	25,7	14,8	14,2	16,3	13,4	14,8	13,0	15,5	13,1
DSGB 163	25,7	17,9	26,0	26,0	26,4	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7
DSGB 164	32,4	22,9	33,1	32,7	33,8	20,6	19,5	33,2	18,3	20,6	17,6	20,9	17,7

Note: 1) The above data is based on clean system at ideal conditions; with impurities accumulated in the filter, the capacity may decrease
2) R407C capacity is based on dew point conditions

LIQUID LINE FILTER DRIER WITH SIGHT GLASS



SELECTION FORMULAS

Filter Driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R22, R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water absorption is based on the following EPD (method: ASHRAE Standard 63.1):

- 60ppm R22
- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A

Moisture Indication Limits

Refrigerant	Moisture Content 25°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R22	<100	100~200	>200
R134a	<90	90~180	>180
R404A	<40	40~100	>100
R410A	<90	90~300	>300
R507	<15	15~90	>90
R407C	<120	120~280	>280

Refrigerant	Moisture Content 40°C: PPM		
	Green/Dry	Middle Color	Yellow/Wet
R22	<140	140~350	>350
R134a	<120	120~330	>335
R404A	<80	80~160	>160
R410A	<200	200~580	>580
R507	<80	80~170	>170
R407C	<100	100~260	>260

DTG-M02 *SERIES*

1.5 IN³ FILTER DRIER



DTG-M02 series 1.5in3 filter drier are mainly used for light commercial refrigeration applications, with unidirectional flow to absorb moisture and filter out the impurities.

FEATURES

- STAINLESS STEEL HOUSING WITH HIGH STRENGTH
- HOUSING SURFACE ADOPTS ADSORPTION PRINCIPLE TO FORM A NANO-SOLID FILM TO ANTI-RUST, SURVIVES MORE THAN 1500 HOURS OF NEUTRAL SALT SPRAY TEST.
- SOLID FILER CORES, HIGHLY EFFICIENT IN MOISTURE ABSORPTION, FILTERING IMPURITY.
- COMPACT DESIGN, MEETING THE STRICT 150G SYSTEM LIMITS FOR FLAMMABLE REFRIGERANTS SUCH AS R290.

GENERAL SPECIFICATION

- Applicable refrigerants: HCFC, HFC, HC, HFO
- Medium temperature: -30°C~+120°C
- Ambient temperature: -30°C~+55°C
- Max. Operation pressure PS max: 4.83MPa (48,3bar) - 700PSI
- Installation position:
  - Flow direction corresponds to the arrow
  - Preferably installed in liquid line
- Certification: UL/CSA and PED declaration

1.5 IN³ FILTER DRIER



Model Designation Legend

1	**Product Code**	**Product Series**	
	DTG	Indicates unidirectional filter drier	
2	**Filter Core**	**Structure and Material**	
	M	Solid core, 100%3Å desiccant, stainless steel housing	
3	**Filter core volume**	**[inch³]**	**[cm³]**
	02	1.5	25
4	**Connection Size**	**Pos. 5 shows "0": Solder [inch]**	
	02	1/4	
	03	3/8	
	04	1/2	
4	**Connection Size**	**Pos. 5 shows "1": Solder [inch]**	
	06	6	
	10	10	
	12	12	
5	**Pipe Connection**	**Type**	
	0	Solder with inch connections	
	1	Solder with metric connections	
6	**Version Number**	**Description**	
	901	Series number	

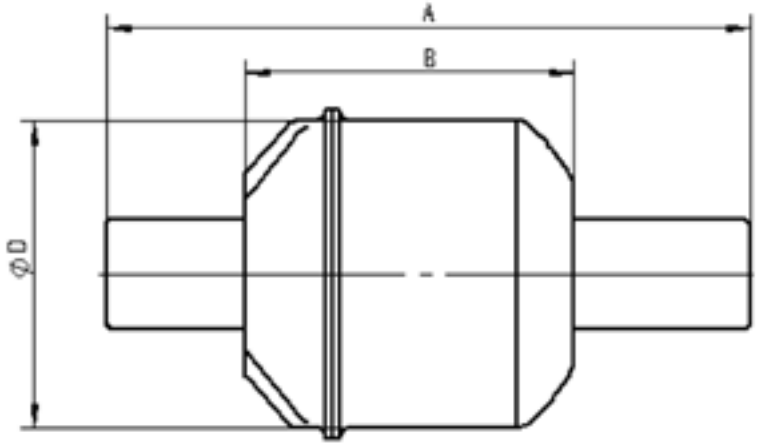
MODEL DESIGNATION EXAMPLE

Position Number						According to Model Designation Legend
1	2	3	4	5	6	
DTG	M	02	02	0	901	Unidirectional filter drier
DTG	**M**	02	02	0	901	Solid filter core with 100% 3Å desiccant, stainless steel
DTG	M	**02**	02	0	901	1.5 inch³ filter core volume
DTG	M	02	**02**	0	901	When Pos. 5 is "0": connection size 1/4 inch
DTG	M	02	02	**0**	901	Solder connection inch
DTG	M	02	02	0	**901**	Series number

1.5 IN³ FILTER DRIER



GENERAL CHARACTERISTICS



Filter	Model	Part Number (Industrial pack)	Solder connection		Dimensions & Weight				PED Category
					ØD	B	A	Weight	
			[inch]	[mm]	[mm]	[mm]	[mm]	[g]	
DTGM022s	DTG-M02020-901	10230041401	1/4	–	42	45	77	95	Art. 4.3
DTGM023s	DTG-M02030-901	10230039601	3/8	–	42	45	77	95	Art. 4.3
DTGM024s	DTG-M02040-901	10230041501	1/2	–	42	45	83	95	Art. 4.3
DTGM022/2.8mms	DTG-M02020-003	10230056701	1/4_2.8 mm		42	45	105,5	97.7	Art. 4.3

1.5 IN³ FILTER DRIER



SELECTION TABLE

Model	Capacity[1] [kW]/[TR]					Moisture Absorption (gram H_2O)							
	R134a	R404A / R507A	R290	R407C[2]	R410A	R134a		R404A / R507A		R407C[2] / R410A		R290	
						75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C	75°F / 23,9°C	125°F / 51,7°C
DTGM022s	2.3/0.66	1.6/0.46	2.6/0.73	2.4/0.68	2.4/0.68	3.2	2.8	3.5	2.9	2.7	2.5	3.0	2.2
DTGM023s	3.5/1	2.5/0.71	3.9/1.1	3.5/1	3.5/1	3.2	2.8	3.5	2.9	2.7	2.5	3.0	2.2
DTGM024s	4.7/1.33	3.3/0.94	5.1/1.45	4.7/1.34	4.8/1.37	3.2	2.8	3.5	2.9	2.7	2.5	3.0	2.2
DTGM022/2.8mms[3]	1.3/0.37	0.9/0.26	1.6/0.46	1.3/0.37	1.4/0.4	3.2	2.8	3.5	2.9	2.7	2.5	3.0	2.2

Note: 1) the above data is based on clean system at ideal conditions; with impurities, accumulated in the filter,the capacity may decrease
2) R407C capacity is based on dew point conditions
3) Preliminary data for liquid line capacity for model DTGM022/2.8mms

SELECTION FORMULAS

Filter Driers for liquid line are manufactured in compliance with ARI Standard 710. Maximum flow rate of liquid refrigerant at a differential pressure of 0,07bar (1psi) is indicated by kW (ton) which is based on the temperature of liquid refrigerant 30°C (86°F), the evaporating temperature of -15°C (5°F) and the following mass flow:

- 0,40 kg/min/kW (3.1 lb/min/ton) R134a
- 0,53 kg/min/kW (4.1 lb/min/ton) R404A, R507A
- 0,39 kg/min/kW (3.0 lb/min/ton) R407C
- 0,36 kg/min/kW (2.8 lb/min/ton) R410A

Note: Data on water absorption is based on the following EPD (method: ASHRAE Standard 63.1):

- 50ppm R134a
- 50ppm R404A
- 50ppm R407C
- 50ppm R410A
- 50ppm R507A

4 WAY REVERSING VALVES



IMPROVES EFFICIENCY BY 5%

SHF SERIES 1KW TO 420 KW

WIDEST RANGE IN THE MARKET WITH SINGLE BODY DESIGN

SANHUA

"Yearly SANHUA supplies over 50 million four way reversing valves to the commercial and residential HVAC&R industry worldwide"

DISCOVER WHY
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***SHF** SERIES*

4 WAY REVERSING VALVE

SHF series four-way reversing valves are applicable for heat pump systems such as central, unitary and room air conditioners to realize switching between cooling mode and heating mode by changing the flow path of refrigerant.



FEATURES

- WIDE APPLICATION RANGE
- SUITABLE FOR COOLING CAPACITIES FROM 3.7 TO 435KW (R410A, CONDITION 2, ΔP=0.1BAR)
- SUITABLE FOR COOLING CAPACITIES FROM 3.8 TO 445KW (R290, CONDITION 2, ΔP=0.1BAR)
- SEVERAL DESIGNS AVAILABLE

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO, HC refrigerants such as: R22, R407C, R404A, R507, R134a, R410A, R290, R1270, R600a, R32, R450A/R513A, R1234ze(E), R1234yf, R454B, R454C, R455A, R452A, R448A, R449A
- Medium temperature TS min./max.: -30°C / +135°C
- Ambient temperature min./max.: -30°C / +50°C
- Relative humidity: 0 to 95% RH
- Max. operating pressure PS: ≥4.5Mpa (45bar)
- Installation position:
  - Coil upwards or with body axis in horizontal alignment
  - Flow direction according to installation instruction
- Certifications: UL/CSA and declaration according to LVD or PED

4 WAY REVERSING VALVE



TABLE 1: MODELS SUITABLE FOR USAGE ON SYSTEM WITH VARIABLE SPEED (INVERTER)

General Characteristics											
Valve Model	Product Number	Type of System [Variable or Fixed Speed]	Ø Port	Kv	Connections ODF		MOP	OPD		PED Category	
					ØD	ØE/S/C		Max.	Min.	Fluid	Fluid
			[mm]	[m³/h]	[inch]	[inch]	[MPa]	[MPa]	[MPa]	Group 2	Group 1
SHF(L)-3H-12U-52	10180953202	Variable & Fixed	7,4	1,5	1/4	5/16	4,7	4	0,1	4,3	4,3
SHF(L)-4H-23U-52	10180952502	Variable & Fixed	8	1,6	5/16	3/8	4,7	4	0,1	4,3	4,3
SHF(L)-7H-34U-52	10180952602	Variable & Fixed	11,1	2,9	3/8	1/2	4,7	4	0,1	4,3	4,3
SHF(L)-7H-34-52	10180953302	Variable & Fixed	11,1	2,9	3/8	1/2	4,7	4	0,1	4,3	4,3
SHF(L)-7H-35-52	10180950002	Variable & Fixed	11,1	2,9	3/8	5/8	4,7	4	0,1	4,3	4,3
SHF(L)-11H-34U-52	10180953402	Variable & Fixed	11,5	4,5	3/8	1/2	4,7	4	0,1	4,3	4,3
SHF(L)-11H-35U-52	10180952402	Variable & Fixed	11,5	4,5	3/8	5/8	4,7	4	0,1	4,3	4,3
SHF(L)-11H-45D1-52	10180950102	Variable & Fixed	11,5	4,5	1/2	5/8	4,7	4	0,1	4,3	4,3
SHF(L)-11H-46D1-52	10180953502	Variable & Fixed	11,5	4,5	1/2	3/4	4,7	4	0,1	4,3	4,3
SHF-14A-45	10325083002	Variable & Fixed	13,5	6,6	1/2	5/8	4,7	4	0,1	4,3	4,3
SHF-14A-46	10325051402	Variable & Fixed	13,5	6,6	1/2	3/4	4,7	4	0,1	4,3	4,3
SHF-20D-46-02	10325051602	Variable	17,2	9,5	1/2	3/4	4,7	4	0,1	4,3	4,3
SHF-20D-47-02	10325055702	Variable	17,2	9,9	1/2	7/8	4,7	4	0,1	4,3	4,3
SHF-20D-57-02	10325060202	Variable	17,2	9,9	5/8	7/8	4,7	4	0,1	4,3	4,3
SHF-20D-67-02	10325060102	Variable	17,2	9,9	3/4	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-47-04	10325058802	Variable	20	14,7	1/2	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-57-04	10325059002	Variable	20	14,7	5/8	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-59-04	10325059102	Variable	20	14,7	5/8	1 1/8	4,7	4	0,1	4,3	4,3
SHF-35B-67-04	10325050802	Variable	20	14,7	3/4	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-69-04	10325058502	Variable	20,9	14,7	3/4	1 1/8	4,7	4	0,1	4,3	4,3
SHF-35B-79-04	10325058302	Variable	20,9	14,7	7/8	1 1/8	4,7	4	0,1	4,3	4,3
SHF-50A-79	10325059702	Variable & Fixed	22,8	18,3	7/8	1 1/8	4,5	4	0,1	4,3	4,3
SHF(L)-70-810-20	10325049401	Variable	28,6	28,5	1	1 1/4	4,5	4	0,15	4,3	II
SHF(L)-70-810-21	10325048501	Variable	28,6	28,5	1	1 1/4	4,5	4	0,15	4,3	II
SHF(L)-70-911-20	10325048701	Variable	28,6	28,5	1 1/8	1 3/8	4,5	4	0,15	4,3	II
SHF(L)-70-911-21	10325048901	Variable	28,6	28,5	1 1/8	1 3/8	4,5	4	0,15	4,3	II
SHF(L)-70-913-25	10325049301	Variable	28,6	28,5	1 1/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-70-913-23	10325049101	Variable	28,6	28,5	1 1/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-100-911-30P	SHFX0006802	Variable & Fixed	34,8	40,5	1 1/8	1 3/8	4,5	4	0,15	I	II
SHF(L)-100-911-31P	SHFX0006902	Variable & Fixed	34,8	40,5	1 1/8	1 3/8	4,5	4	0,15	I	II
SHF(L)-100-913-30	SHFX0007002	Variable & Fixed	34,8	40,5	1 1/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-100-913-31	SHFX0007802	Variable & Fixed	34,8	40,5	1 1/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-100-1012-30P	SHFX0007102	Variable & Fixed	34,8	40,5	1 1/4	1 1/2	4,5	4	0,15	I	II
SHF(L)-100-1012-31P	10325080002	Variable & Fixed	34,8	40,5	1 1/4	1 1/2	4,5	4	0,15	I	II
SHF(L)-100-1013-30P	SHFX0007202	Variable & Fixed	34,8	40,5	1 1/4	1 5/8	4,5	4	0,15	I	II
SHF(L)-100-1013-31P	SHFX0007302	Variable & Fixed	34,8	40,5	1 1/4	1 5/8	4,5	4	0,15	I	II

4 WAY REVERSING VALVE



TABLE 1: MODELS SUITABLE FOR USAGE ON SYSTEM WITH VARIABLE SPEED (INVERTER)

General Characteristics											
Valve Model	Product Number	Type of System [Variable or Fixed Speed]	Ø Port	Kv	Connections ODF		MOP	OPD		PED Category	
					ØD	ØE/S/C		Max.	Min.	Fluid	Fluid
			[mm]	[m³/h]	[inch]	[inch]	[MPa]	[MPa]	[MPa]	Group 2	Group 1
SHF(L)-140-1113	10325053402	Variable & Fixed	41	58,4	1 3/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-140-1213	10325053502	Variable & Fixed	41	58,4	1 1/2	1 5/8	4,5	4	0,15	I	II
SHF(L)-140-1214	10325053302	Variable & Fixed	41	58,4	1 1/2	1 3/4	4,5	4	0,15	I	II
SHF(L)-140-1313	10325053602	Variable & Fixed	41	58,4	1 5/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-175-1217	10325054902	Variable & Fixed	46,4	70,5	1 1/2	2 1/8	4,5	4	0,15	I	II
SHF(L)-175-1317	10325055002	Variable & Fixed	46,4	70,5	1 5/8	2 1/8	4,5	4	0,15	I	II
SHF(L)-210-1321	10325055102	Variable & Fixed	50	84,4	1 5/8	2 5/8	4,5	4	0,15	I	II
SHF(L)-350-1721	10325055202	Variable & Fixed	59	138,4	2 1/8	2 5/8	4,5	4	0,15	I	II
SHF(L)-420-2125	10325055302	Variable & Fixed	69	177	2 5/8	3 1/8	4,5	4	0,15	I	II

TABLE 2: MODELS OPTIMIZED FOR USAGE ON SYSTEM WITH FIXED SPEED (ON/OFF COMPRESSORS)

General Characteristics											
Valve Model	Product Number	Type of System [Variable or Fixed Speed]	Ø Port	Kv	Connections ODF		MOP	OPD		PED Category	
					ØD	ØE/S/C		Max.	Min.	Fluid	Fluid
			[mm]	[m³/h]	[inch]	[inch]	[MPa]	[MPa]	[MPa]	Group 2	Group 1
SHF-20D-46-01	10325051502	Fixed	17,2	9,5	1/2	3/4	4,7	4	0,1	4,3	4,3
SHF-20D-47-01	10325057402	Fixed	17,2	9,9	1/2	7/8	4,7	4	0,1	4,3	4,3
SHF-20D-57-01	10325057302	Fixed	17,2	9,9	5/8	7/8	4,7	4	0,1	4,3	4,3
SHF-20D-67-01	10325050102	Fixed	17,2	9,9	3/4	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-47-01	10325058702	Fixed	20	14,7	1/2	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-57-01	10325058902	Fixed	20	14,7	5/8	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-59-01	10325050202	Fixed	20	14,7	5/8	1 1/8	4,7	4	0,1	4,3	4,3
SHF-35B-67-01	10325050702	Fixed	20	14,7	3/4	7/8	4,7	4	0,1	4,3	4,3
SHF-35B-69-01	10325058402	Fixed	20,9	14,7	3/4	1 1/8	4,7	4	0,1	4,3	4,3
SHF-35B-79-01	10325052702	Fixed	20,9	14,7	7/8	1 1/8	4,7	4	0,1	4,3	4,3
SHF(L)-70-810-30P	10325070702	Fixed	28,6	28,5	1	1 1/4	4,5	4	0,15	4,3	II
SHF(L)-70-810-31P	10325071502	Fixed	28,6	28,5	1	1 1/4	4,5	4	0,15	4,3	II
SHF(L)-70-911-30P	10325067802	Fixed	28,6	28,5	1 1/8	1 3/8	4,5	4	0,15	4,3	II
SHF(L)-70-911-31	10325087702	Fixed	28,6	28,5	1 1/8	1 3/8	4,5	4	0,15	4,3	II
SHF(L)-70-913-35	10325090702	Fixed	28,6	28,5	1 1/8	1 5/8	4,5	4	0,15	I	II
SHF(L)-70-913-33	10325063002	Fixed	28,6	28,5	1 1/8	1 5/8	4,5	4	0,15	I	II

NOMINAL OPERATING CONDITIONS

Nominal Operating Conditions	Condition 1	Condition 2
Condensing Temperature t_c	38°C	54,4°C
Evaporating Temperature t_o	5°C	7,2°C
Superheat Δt_{sc}	5K	5K
Subcooling Δt_{sr}	0K	5K

Notes for Capacity Selection Tables: 1) Pressure drop is valid for flow from ØC to ØS or from ØE to ØS
2) R407C data based on dew point conditions

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 1 [ΔP: 0.1 BAR]

Capacity Selection Table (1/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.1 bar							
	R407C[2)]	R404A / R507	R134a	R410A	R290	R1270	R600a	R32
SHF(L)-3H	3,2	2,9	2,6	4,1	4,1	4,6	2,6	5,3
SHF(L)-4H	3,4	3,1	2,8	4,4	4,4	4,9	2,8	5,6
SHF(L)-7H	6,2	5,6	5,1	7,9	8,0	8,8	5,0	10,2
SHF(L)-11H	9,6	8,7	7,9	12,3	12,4	13,7	7,8	15,8
SHF-14A-xx	14,1	12,8	11,5	18,1	18,2	20,0	11,4	23,1
SHF-20D-46	20,2	18,4	16,6	26,0	26,2	28,9	16,4	33,3
SHF-20D-xx	21,1	19,1	17,3	27,1	27,3	30,1	17,1	34,7
SHF-35B-xx	31,3	28,4	25,7	40,2	40,6	44,6	25,3	51,5
SHF-50A-xx	39,0	35,4	32,0	50,1	50,5	55,6	31,5	64,1
SHF(L)-70	60,7	55,1	49,8	78,0	78,7	86,6	49,1	99,8
SHF(L)-100	86,3	78,3	70,8	110,8	111,9	123,0	69,8	141,8
SHF(L)-140	124,4	112,9	102,1	159,8	161,3	177,4	100,7	204,5
SHF(L)-175	150,2	136,3	123,2	192,9	194,7	214,1	121,5	246,9
SHF(L)-210	179,8	163,1	147,5	231,0	233,1	256,4	145,5	295,6
SHF(L)-350	294,8	267,5	241,9	378,7	382,2	420,4	238,5	484,7
SHF(L)-420	377,1	342,1	309,4	484,4	488,9	537,6	305,1	619,8

Capacity Selection Table (2/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.1 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF(L)-3H	2,3	2,2	4,4	2,9	2,9	2,8	3,2	3,1
SHF(L)-4H	2,4	2,3	4,7	3,0	3,1	3,0	3,4	3,4
SHF(L)-7H	4,4	4,2	8,5	5,5	5,7	5,4	6,1	6,1
SHF(L)-11H	6,8	6,5	13,2	8,6	8,8	8,4	9,5	9,4
SHF-14A-xx	10,0	9,6	19,3	12,6	13,0	12,3	14,0	13,8
SHF-20D-46	14,4	13,8	27,8	18,1	18,7	17,7	20,1	19,9
SHF-20D-xx	15,0	14,4	29,0	18,9	19,5	18,5	20,9	20,7
SHF-35B-xx	22,2	21,3	43,1	28,0	28,9	27,4	31,1	30,8
SHF-50A-xx	27,7	26,6	53,6	34,9	36,0	34,2	38,7	38,3
SHF(L)-70	43,1	41,4	83,5	54,3	56,0	53,2	60,2	59,7
SHF(L)-100	61,3	58,8	118,6	77,2	79,6	75,6	85,6	84,9
SHF(L)-140	88,4	84,7	171,0	111,3	114,7	109,0	123,4	122,4
SHF(L)-175	106,7	102,3	206,5	134,3	138,5	131,6	149,0	147,7
SHF(L)-210	127,7	122,5	247,2	160,8	165,8	157,5	178,4	176,8
SHF(L)-350	209,4	200,8	405,3	263,7	271,9	258,3	292,6	290,0
SHF(L)-420	267,8	256,8	518,4	337,2	347,8	330,3	374,1	370,9

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 1 [ΔP: 0.2 BAR]

Capacity Selection Table (3/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.2 bar							
	R407C[2)]	R404A / R507	R134a	R410A	R290	R1270	R600a	R32
SHF(L)-3H	4,5	4,1	3,7	5,8	5,9	6,4	3,7	7,4
SHF(L)-4H	4,8	4,4	4,0	6,2	6,2	6,9	3,9	7,9
SHF(L)-7H	8,7	7,9	7,2	11,2	11,3	12,5	7,1	14,4
SHF(L)-11H	13,6	12,3	11,1	17,4	17,6	19,3	11,0	22,3
SHF-14A-xx	19,9	18,0	16,3	25,5	25,8	28,3	16,1	32,7
SHF-20D-46	28,6	26,0	23,5	36,8	37,1	40,8	23,2	47,0
SHF-20D-xx	29,8	27,1	24,5	38,3	38,7	42,5	24,1	49,0
SHF-35B-xx	44,3	40,2	36,3	56,9	57,4	63,1	35,8	72,8
SHF-50A-xx	55,1	50,0	45,2	70,8	71,5	78,6	44,6	90,6
SHF(L)-70	85,9	77,9	70,5	110,3	111,3	122,4	69,5	141,1
SHF(L)-100	122,0	110,7	100,1	156,7	158,2	174,0	98,7	200,6
SHF(L)-140	175,9	159,6	144,4	226,0	228,1	250,9	142,3	289,2
SHF(L)-175	212,4	192,7	174,3	272,8	275,4	302,8	171,8	349,2
SHF(L)-210	254,3	230,7	208,7	326,6	329,7	362,5	205,7	418,0
SHF(L)-350	417,0	378,3	342,2	535,6	540,6	594,5	337,3	685,4
SHF(L)-420	533,2	483,8	437,6	685,0	691,4	760,3	431,4	876,6

Capacity Selection Table (4/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.2 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF(L)-3H	3,2	3,1	6,2	4,0	4,2	4,0	4,5	4,4
SHF(L)-4H	3,4	3,3	6,6	4,3	4,4	4,2	4,8	4,7
SHF(L)-7H	6,2	6,0	12,0	7,8	8,1	7,7	8,7	8,6
SHF(L)-11H	9,6	9,2	18,6	12,1	12,5	11,9	13,5	13,3
SHF-14A-xx	14,1	13,5	27,3	17,8	18,3	17,4	19,7	19,6
SHF-20D-46	20,3	19,5	39,3	25,6	26,4	25,1	28,4	28,1
SHF-20D-xx	21,2	20,3	41,0	26,7	27,5	26,1	29,6	29,3
SHF-35B-xx	31,5	30,2	60,9	39,6	40,8	38,8	43,9	43,6
SHF-50A-xx	39,2	37,6	75,8	49,3	50,9	48,3	54,7	54,2
SHF(L)-70	61,0	58,5	118,0	76,8	79,2	75,2	85,2	84,4
SHF(L)-100	86,7	83,1	167,7	109,1	112,5	106,9	121,1	120,0
SHF(L)-140	125,0	119,8	241,9	157,3	162,3	154,1	174,6	173,0
SHF(L)-175	150,8	144,7	292,0	189,9	195,9	186,1	210,8	208,9
SHF(L)-210	180,6	173,2	349,6	227,4	234,5	222,8	252,3	250,1
SHF(L)-350	296,1	284,0	573,2	372,9	384,6	365,3	413,7	410,1
SHF(L)-420	378,7	363,2	733,1	476,9	491,8	467,1	529,1	524,5

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 2 [ΔP: 0.1 BAR]

Capacity Selection Table (1/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.1 bar							
	R407C[2)]	R404A / R507	R134a	R410A	R290	R1270	R600a	R32
SHF(L)-3H	2,9	2,5	2,4	3,7	3,8	4,2	2,4	4,9
SHF(L)-4H	3,1	2,7	2,6	3,9	4,0	4,5	2,6	5,2
SHF(L)-7H	5,6	4,8	4,7	7,1	7,3	8,2	4,7	9,5
SHF(L)-11H	8,7	7,5	7,3	11,1	11,3	12,7	7,2	14,7
SHF-14A-xx	12,8	11,0	10,6	16,2	16,6	18,6	10,6	21,6
SHF-20D-46	18,5	15,8	15,3	23,3	23,9	26,8	15,3	31,1
SHF-20D-xx	19,2	16,5	16,0	24,3	24,9	27,9	15,9	32,4
SHF-35B-xx	28,6	24,5	23,7	36,1	36,9	41,4	23,7	48,1
SHF-50A-xx	35,6	30,4	29,5	45,0	46,0	51,6	29,5	59,8
SHF(L)-70	55,4	47,4	45,9	70,0	71,6	80,3	45,9	93,2
SHF(L)-100	78,7	67,4	65,3	99,5	101,8	114,2	65,2	132,4
SHF(L)-140	113,5	97,2	94,2	143,5	146,8	164,6	94,1	191,0
SHF(L)-175	137,0	117,3	113,7	173,2	177,2	198,7	113,6	230,5
SHF(L)-210	164,0	140,4	136,1	207,4	212,1	237,9	136,0	276,0
SHF(L)-350	268,9	230,3	223,1	340,0	347,8	390,1	222,9	452,6
SHF(L)-420	343,9	294,5	285,4	434,8	444,8	498,9	285,1	578,8

Capacity Selection Table (2/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.1 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF(L)-3H	2,0	2,0	4,9	2,6	2,6	2,4	2,9	2,9
SHF(L)-4H	2,1	2,1	5,3	2,7	2,8	2,6	3,1	3,1
SHF(L)-7H	3,9	3,8	9,5	4,9	5,1	4,7	5,6	5,5
SHF(L)-11H	6,0	6,0	14,8	7,7	7,9	7,3	8,7	8,6
SHF-14A-xx	8,9	8,7	21,7	11,2	11,6	10,7	12,7	12,6
SHF-20D-46	12,7	12,6	31,2	16,2	16,7	15,4	18,3	18,1
SHF-20D-xx	13,3	13,1	32,5	16,9	17,4	16,0	19,1	18,9
SHF-35B-xx	19,7	19,5	48,3	25,0	25,8	23,8	28,3	28,1
SHF-50A-xx	24,5	24,3	60,1	31,2	32,1	29,6	35,2	34,9
SHF(L)-70	38,2	37,8	93,6	48,6	50,0	46,2	54,9	54,4
SHF(L)-100	54,3	53,7	133,1	69,0	71,1	65,6	78,0	77,3
SHF(L)-140	78,3	77,4	191,9	99,5	102,5	94,6	112,4	111,5
SHF(L)-175	94,6	93,5	231,6	120,1	123,7	114,2	135,7	134,6
SHF(L)-210	113,2	111,9	277,3	143,8	148,1	136,7	162,5	161,1
SHF(L)-350	185,6	183,5	454,7	235,8	242,9	224,1	266,4	264,3
SHF(L)-420	237,4	234,6	581,6	301,6	310,7	286,6	340,7	338,0

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 2 [ΔP: 0.2 BAR]

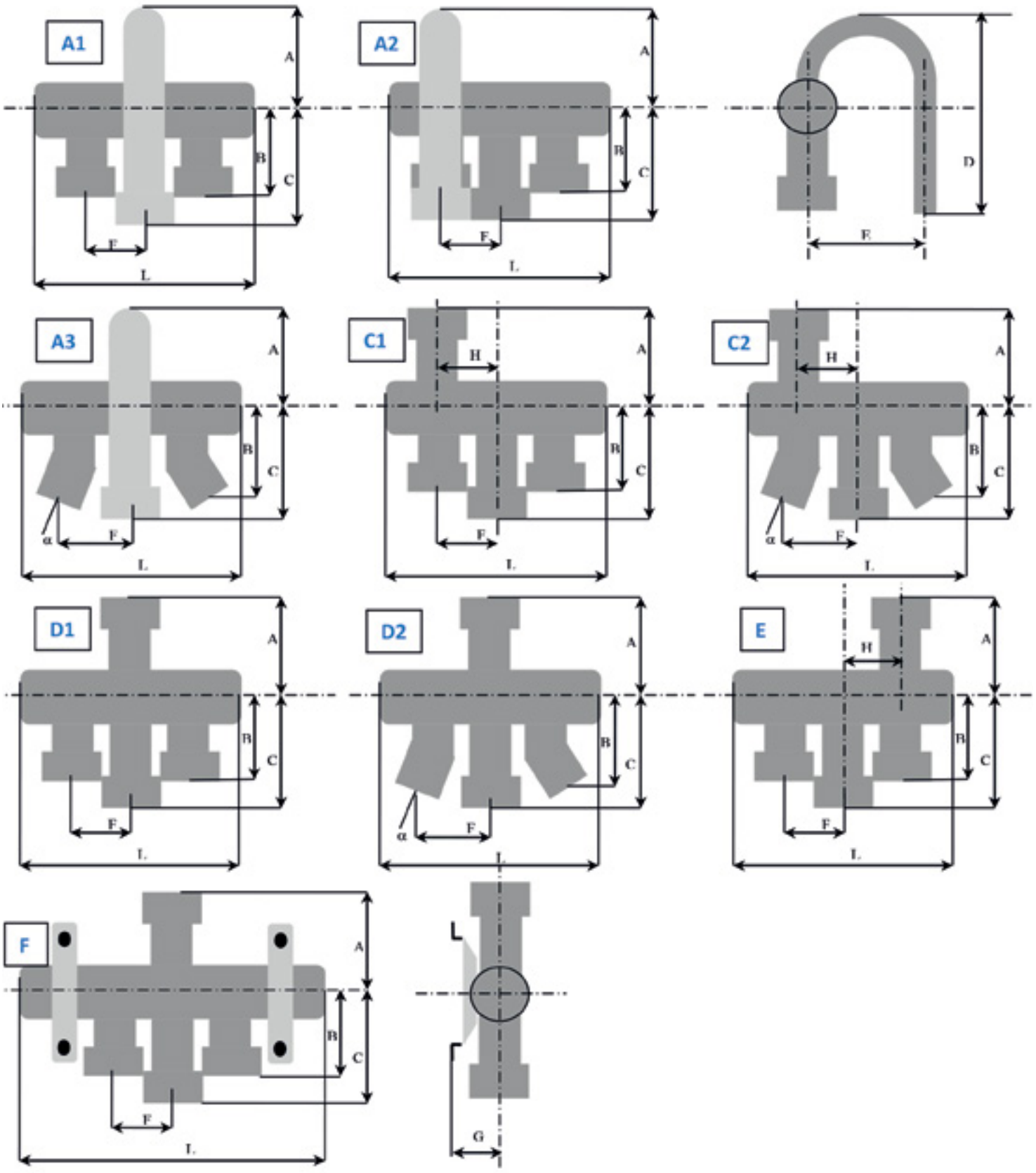
Capacity Selection Table (3/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.2 bar							
	R407C[2)]	R404A / R507	R134a	R410A	R290	R1270	R600a	R32
SHF(L)-3H	4,1	3,5	3,4	5,2	5,3	6,0	3,4	6,9
SHF(L)-4H	4,4	3,8	3,6	5,6	5,7	6,4	3,6	7,4
SHF(L)-7H	8,0	6,8	6,6	10,1	10,3	11,6	6,6	13,4
SHF(L)-11H	12,4	10,6	10,3	15,6	16,0	17,9	10,3	20,8
SHF-14A-xx	18,1	15,5	15,0	22,9	23,5	26,3	15,0	30,5
SHF-20D-46	26,1	22,4	21,7	33,0	33,8	37,9	21,6	43,9
SHF-20D-xx	27,2	23,3	22,6	34,4	35,2	39,5	22,6	45,8
SHF-35B-xx	40,4	34,6	33,5	51,1	52,2	58,6	33,5	68,0
SHF-50A-xx	50,3	43,1	41,7	63,6	65,0	73,0	41,7	84,6
SHF(L)-70	78,3	67,1	65,0	99,0	101,3	113,6	64,9	131,8
SHF(L)-100	111,3	95,3	92,3	140,7	143,9	161,5	92,3	187,3
SHF(L)-140	160,5	137,4	133,2	202,9	207,5	232,8	133,0	270,1
SHF(L)-175	193,7	165,9	160,7	244,9	250,5	281,0	160,6	326,0
SHF(L)-210	231,9	198,6	192,4	293,2	299,9	336,5	192,3	390,3
SHF(L)-350	380,3	325,6	315,6	480,9	491,8	551,7	315,3	640,0
SHF(L)-420	486,4	416,5	403,6	615,0	629,0	705,6	403,2	818,5

Capacity Selection Table (4/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.2 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF(L)-3H	2,8	2,8	7,0	3,6	3,7	3,4	4,1	4,1
SHF(L)-4H	3,0	3,0	7,4	3,9	4,0	3,7	4,4	4,3
SHF(L)-7H	5,5	5,4	13,5	7,0	7,2	6,6	7,9	7,8
SHF(L)-11H	8,5	8,4	20,9	10,8	11,2	10,3	12,3	12,2
SHF-14A-xx	12,5	12,4	30,7	15,9	16,4	15,1	18,0	17,8
SHF-20D-46	18,0	17,8	44,1	22,9	23,6	21,8	25,9	25,7
SHF-20D-xx	18,8	18,6	46,0	23,9	24,6	22,7	27,0	26,7
SHF-35B-xx	27,9	27,6	68,3	35,4	36,5	33,7	40,0	39,7
SHF-50A-xx	34,7	34,3	85,0	44,1	45,4	41,9	49,8	49,4
SHF(L)-70	54,1	53,4	132,4	68,7	70,7	65,3	77,6	77,0
SHF(L)-100	76,8	75,9	188,2	97,6	100,5	92,8	110,3	109,4
SHF(L)-140	110,8	109,5	271,4	140,7	145,0	133,8	159,0	157,7
SHF(L)-175	133,7	132,2	327,6	169,9	175,0	161,5	191,9	190,4
SHF(L)-210	160,1	158,2	392,2	203,4	209,5	193,3	229,8	227,9
SHF(L)-350	262,5	259,5	643,1	333,5	343,5	317,0	376,8	373,7
SHF(L)-420	335,8	331,8	822,5	426,5	439,4	405,4	481,9	477,9

4 WAY REVERSING VALVE



DIMENSIONS - VALVES



4 WAY REVERSING VALVE



TABLE 3: MODELS SUITABLE FOR USAGE ON SYSTEM WITH VARIABLE SPEED (INVERTER)

Dimensions - Valves												
Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle α	Weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]	[kg]
SHF(L)-3H-12U-52	A1	88,2	38,5	38	50	88,5	43	11	-	-	0	0,2
SHF(L)-4H-23U-52	A1	94,4	43	50	62	105	43	12	-	-	0	0,2
SHF(L)-7H-34U-52	A1	113	52	59	71	119	52	16	-	-	0	0,3
SHF(L)-7H-34-52	D1	113	52	59	71	-	-	16	-	-	0	0,3
SHF(L)-7H-35-52	D2	113	52	57	72	-	-	23,5	-	16	0	0,3
SHF(L)-11H-34U-52	A1	115,5	51	59	71	119	52	16	-	-	0	0,3
SHF(L)-11H-35U-52	A3	115,5	51	57	71	119	52	23,5	-	-	15	0,3
SHF(L)-11H-45D1-52	C2	117	52	62	87	-	-	25	-	16	15	0,32
SHF(L)-11H-46D1-52	C2	117	52	82	87	-	-	32,5	-	16	20	0,35
SHF-14A-45	D1	163	65	83	95	-	-	23,8	-	-	0	0,72
SHF-14A-46	D1	163	67	83	95	-	-	23,8	-	-	0	0,72
SHF-20D-46-02	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-47-02	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-57-02	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-67-02	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-35B-47-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-57-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-59-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-67-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-69-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-79-04	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-50A-79	D1	217	91	96	109	-	-	33	-	-	0	2,1
SHF(L)-70-810-20	D1	303	111	117	131	-	-	46	-	-	0	3
SHF(L)-70-810-21	F	303	111	117	154	-	-	46	58	-	0	3
SHF(L)-70-911-20	D1	303	111	117	154	-	-	46	-	-	0	3
SHF(L)-70-911-21	F	321	111	117	131	-	-	49	58	-	0	3,5
SHF(L)-70-913-25	D1	321	111	117	131	-	-	49	-	-	0	3,5
SHF(L)-70-913-23	F	321	111	117	131	-	-	49	58	-	0	3,5
SHF(L)-100-911-30P	D1	321	111	117	131	-	-	49	-	-	0	3,5
SHF(L)-100-911-31P	F	303	111	117	131	-	-	46	58	-	0	3
SHF(L)-100-913-30	D1	303	111	117	154	-	-	46	-	-	0	3
SHF(L)-100-913-31	F	303	111	117	154	-	-	46	58	-	0	3
SHF(L)-100-1012-30P	D1	321	111	117	131	-	-	49	-	-	0	3,5
SHF(L)-100-1012-31P	F	321	111	117	131	-	-	49	58	-	0	3,5
SHF(L)-100-1013-30P	D1	321	111	117	131	-	-	49	-	-	0	3,5
SHF(L)-100-1013-31P	F	321	111	117	131	-	-	49	58	-	0	3,5
SHF(L)-140-1213	F	390	135,6	148,7	168,7	-	-	58	63	-	0	7,2
SHF(L)-140-1214	F	390	135,6	148,7	168,7	-	-	58	63	-	0	7,2
SHF(L)-140-1313	F	390	135,6	148,7	168,7	-	-	58	63	-	0	7,2
SHF(L)-175-1217	F	390	135,6	148,7	198	-	-	58	63	-	0	7,6
SHF(L)-175-1317	F	390	135,6	148,7	198	-	-	58	63	-	0	7,6
SHF(L)-210-1321	F	452	135,6	148,7	198	-	-	71,5	63	-	0	8,7
SHF(L)-350-1721	F	531	176,5	184	240	-	-	75	82,5	-	0	22
SHF(L)-420-2125	F	611,7	176,5	184	240	-	-	93	82,5	-	0	26

4 WAY REVERSING VALVE



TABLE 4: MODELS OPTIMIZED FOR USAGE ON SYSTEM WITH FIXED SPEED (ON/OFF COMPRESSORS)

Dimensions - Valves												
Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle α	Weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]	[kg]
SHF-20D-46-01	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-47-01	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-57-01	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-20D-67-01	D1	183,6	67	83	95	-	-	28,6	-	-	0	0,75
SHF-35B-47-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-57-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-59-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-67-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-69-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF-35B-79-01	D1	212,2	82	87	100	-	-	33	-	-	0	1,3
SHF(L)-70-810-30P	D1	303	111	117	131	-	-	46	-	-	0	3
SHF(L)-70-810-31P	D1	303	111	117	131	-	-	46	-	-	0	3
SHF(L)-70-911-30P	D1	303	111	117	154	-	-	46	-	-	0	3
SHF(L)-70-911-31	F	321	111	117	131	-	-	49	58	-	0	3,5
SHF(L)-70-913-35	D1	321	111	117	131	-	-	49	-	-	0	3,5
SHF(L)-70-913-33	F	321	111	117	131	-	-	49	58	-	0	3,5

4 WAY REVERSING VALVE



Coil Characteristics												
Coil Model [1]	Winding Code	Part Number	Electrical Function/ Connection Type	Cable Length	Power Supply	Rated Voltage	Power Consumption			Protection Clas	Insulat. Class	Max. Op. Temp.
							AC 50Hz	AC 60Hz	DC			
				[mm]	[-]	[V]	[W]	[W]	[W]	[-]	[-]	[°C]
SQ-A37024-000004	SHF-4-10L25	10805357502	Lead Wires	500	AC	24	4,5	3,5	-	IP54	F[2]	155
SQ-A37100-000001	SHF-4-10L21	10805357602	Lead Wires	500	AC	100	4,5	3,5	-			
SQ-A37115-000013	SHF-4-10L24	10805358302	Lead Wires	500	AC	115	4,5	3,5	-			
SQ-A37200-000001	SHF-4-10L22	10805357702	Lead Wires	500	AC	200	4,5	3,5	-			
SQ-A3720D-000001	SHF-4-10L34	10805357902	Lead Wires	500	AC	200	/	3,5	-			
SQ-A37220-000001	SHF-4-10L3	10805341402	Lead Wires	500	AC	220	6	5	-			
SQ-A3722G-000001	SHF-4-10L3	10805341302	Lead Wires	500	AC	220-240	4,5	3,5	-			
SQ-A3726H-000003	SHF-4-10L26	10805359202	Lead Wires	500	AC	265-277	4,5	3,5	-			
SQ-A3722G-000057	SHF-4-10L3	10805349102	Lead Wires	1500	AC	220-240	4,5	3,5	-			
SQ-A37115-000028	SHF-4-10L24	10805372902	Lead Wires	1500	AC	115	4,5	3,5	-			
SQ-A37024-000001	SHF-4-10L25	10805355602	Lead Wires	1550	AC	24	4,5	3,5	-			
SQ-A5022G-000001	SQ-A5022G	10805356002	Spade (Faston) [3]	-	AC	220-240	4,5	3,5	-	IP00	F	155
SQ-A5011A-000001	SQ-A5011A	10805355902	Spade (Faston) [3]	-	AC	110-120	4,5	3,5	-			
SQ-A50024-000001	SQ-A50024	10805355802	Spade (Faston) [3]	-	AC	24	4,5	3,5	-			
SQ-D44 012-00 00015)	SHF-4-10FA8	10805231802	Spade (Faston) [3]	-	DC	12	-	-	10			
SQ-D44 024-00 00015)	SHF-4-10FA9	10805070102	Spade (Faston) [3]	-	DC	24	-	-	11			
SQ-A27 100-00 0001	-	10805063202	Bi-stable/Lead W.	500	AC	100	18	18	-	IP54	B	130
SQ-A27 200-00 0001	-	10805063802	Bi-stable/Lead W.	500	AC	200	18	18	-			
SQ-A27 20K-00 0001	-	10805222902	Bi-stable/Lead W.	500	AC	220-240	18	18	-			
SQ-D27 012-00 0001	-	10805069302	Bi-stable/Lead W.	500	DC	12	-	-	20			

Note: Max ambient temperature up to +50°C

1) Every coil is applicable to all above specified valve models

2a) SQ-A37: insulation class according to UL is "B". Max Operating temperature: +130°C

2b) SQ-A37: insulation class according to VDE is "F". Max Operating temperature: +155°C

3) Wire Harness for coil with Fast-on connector available as accessory

4) SQ-A27 coils can be used only with SHF valves from size 3 to size 100

5) SQ-D44 cannot be used in combination with SHF valves installed in systems operating with A2L and A3 refrigerants.

ACCESSORY

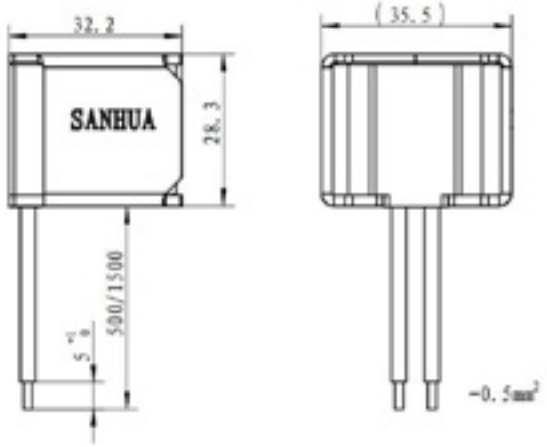
Wire Harness		
Model	Part Number	Cable Length [mm]
SQ-000000-090028	20805136301	1200
SQ-000000-090029	20805149201	2000

4 WAY REVERSING VALVE

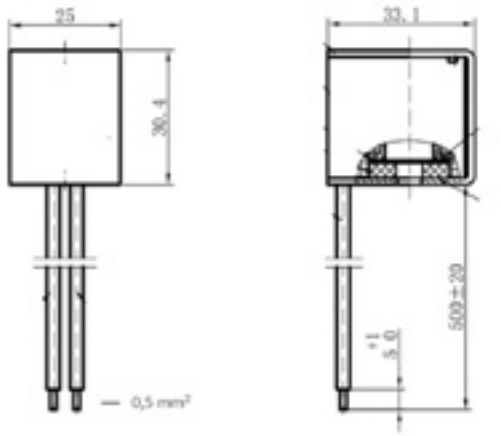


DIMENSIONS - COILS

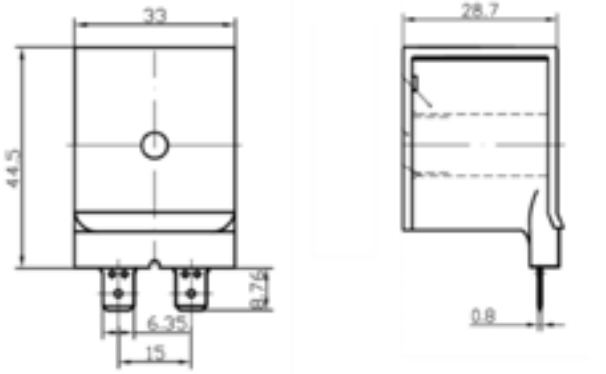
Coils with Lead Wires (SQ-A37 Series)



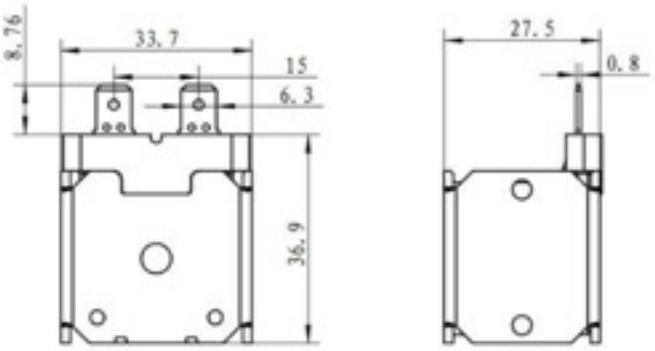
Bistable Coils (SQ-A/D27 Series)



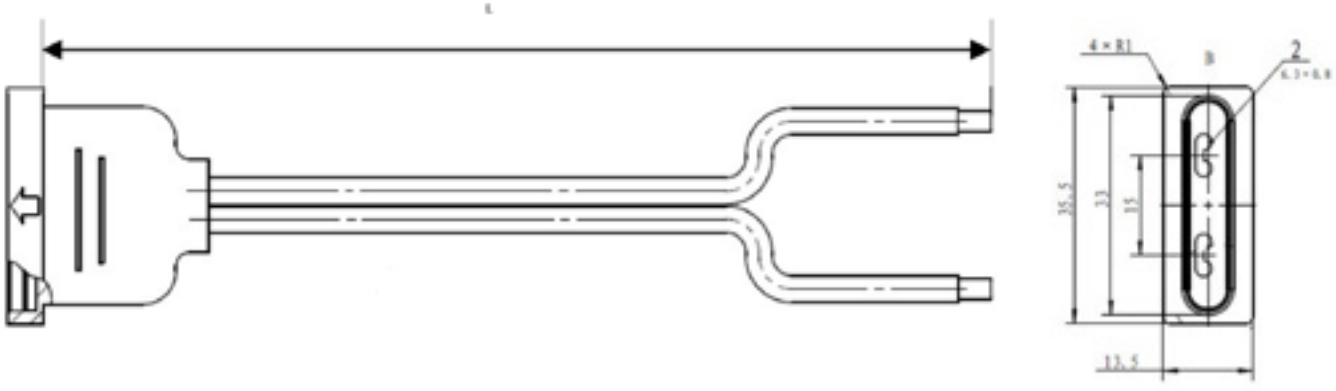
Coils with Spade Connections (SQ-D44 Series)



Coils with Spade Connections (SQ-A50 Series)



Wire Harness (SQ-000000-0900xx)



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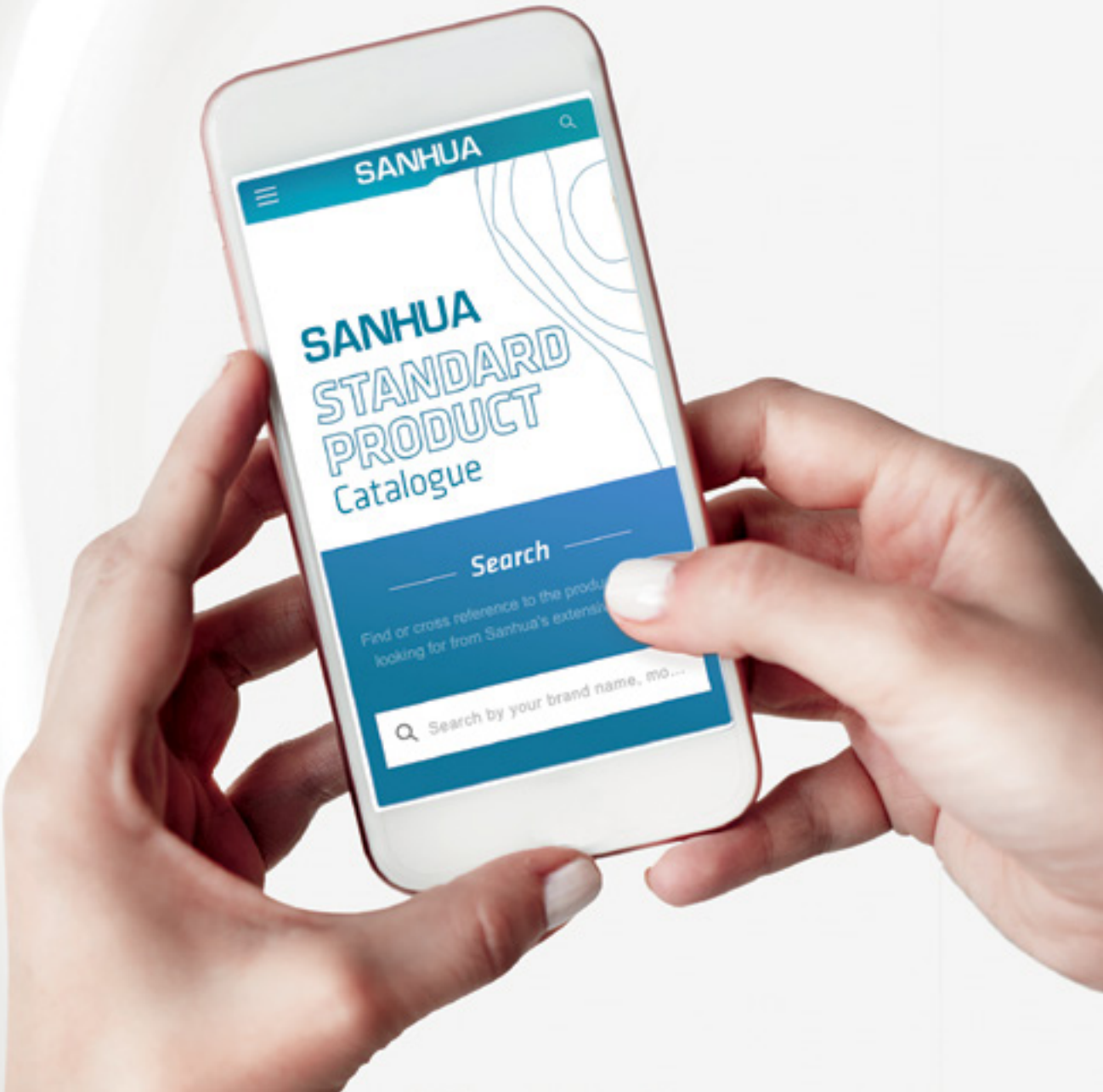
Certificate of registration
ISO 14001:2004

Certificate of registration
ISO 9001:2008

REACH
NR. 1907/2006
CONFORMITY DECLARATION

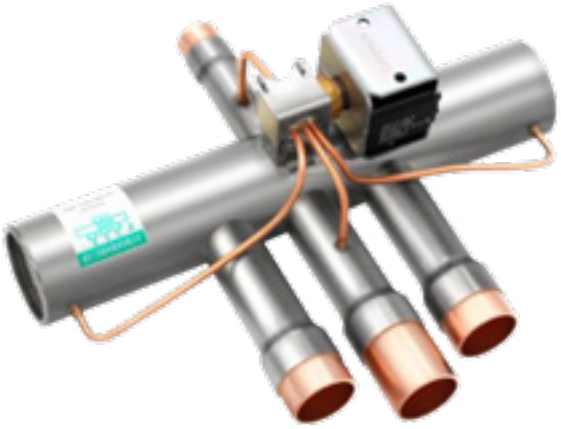
BEST SUPPLIER AWARDS

B/S/H/ Carrier TRANE



SHF-G *SERIES*

4 WAY REVERSING VALVE



SHF-G series four-way reversing valves are applicable for heat pump systems such as central, unitary air conditioners to realize switching between cooling mode and heating mode by changing the flow path of refrigerant. The main body in stainless steel guarantees an increased robustness with a design pressure suitable for all the refrigerant types and the certainly of a lead-free material. A Sanhua patent is related to the bi-metal joint of the four main connections: the pipes material is stainless steel, but the terminal of each connection is in pure copper to allow an easy brazing procedure.

FEATURES

- FULLY STAINLESS-STEEL VALVE BODY AND CONNECTION TUBE MAIN PART, HIGH PRESSURE STRENGTH, LOW WEIGHT AND BETTER ANTI-VIBRATION PERFORMANCE
- LOWER HEAT TRANSFER LOSS THAN BRASS VALVE, ENERGY EFFICIENT
- BRASS CONNECTOR FOR EASY WELDING
- SUITABLE FOR COOLING CAPACITIES FROM 4.2 TO 77.3 KW (R410A, CONDITION 2, ΔP: 0.1 BAR)

GENERAL SPECIFICATION

- Applicable for all common HCFC, HFC, HFO, HC refrigerants such as: R22, R134a, R404A, R407A/C/F, R410A, R507A, R448A, R449A, R450A, R452A, R513A, R32, R1234yf, R1234ze, R454A/B/C, R455A, R290, R1270, R600a, R744
- Ambient temperature range: from -30°C to +50°C
- Medium temperature TS min./max.: -30°C / +135°C
- Relative humidity: 0 to 95% RH
- Max. operating pressure - PS: 4.9 MPa (49 bar) for sizes 4, 7, 13; PS: 4.7 MPa (47 bar) for remaining sizes
- Installation position:
  - Coil upwards or with body axis in horizontal alignment
  - Flow direction according to installation instruction
- Certifications:
  - Declaration of conformity according to LVD and PED
  - Certification issued by Notify Body according to EN60730 and EN60335-2-24/40/89
  - UL/CSA certification (including A2L and A3 refrigerants)

4 WAY REVERSING VALVE



TABLE 1: MODELS SUITABLE FOR USAGE ON SYSTEM WITH VARIABLE SPEED (INVERTER)

General Characteristics											
Valve Model	Product Number	Type of System [Variable or Fixed Speed]	Ø Port	Kv	Connections ODF		MOP	OPD		PED Category	
					ØD	ØE/S/C		Max.	Min.	Fluid	Fluid
			[mm]	[m³/h]	[inch]	[inch]	[MPa]	[MPa]	[MPa]	Group 2	Group 1
SHF(G)-4H-23U-AE	10180963602	UNIVERSAL	8	1.54	5/16"	3/8	4.9	4	0.1	Art.4.3	Art.4.3
SHF(G)-7H-34U-AE	10180963502	UNIVERSAL	10.4	3.17	3/8	1/2	4.9	4	0.1	Art.4.3	Art.4.3
SHF(G)-13H-45-E	10180960302	UNIVERSAL	12.5	4.97	1/2	5/8	4.9	4	0.1	Art.4.3	Art.4.3
SHF-20D-46G36	10325083202	Variable	16.9	9.9	1/2	3/4	4.7	4	0.1	Art.4.3	Art.4.3
SHF-20D-47G36	10325091802	Variable	16.9	9.9	1/2	7/8	4.7	4	0.1	Art.4.3	Art.4.3
SHF-35B-67G48	10325098602	Variable	21	14.7	3/4	7/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF-35B-79G48	10325088902	Variable	21	14.7	7/8	1 1/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF-50-79G44	10325088302	Variable	23	18.3	7/8	1 1/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF(L)-70-810G34	10325084902	Variable	28.6	28.5	1	1 1/4	4.7	4	0.15	Cat.II	Art.4.3
SHF(L)-70-910G34	10325089302	Variable	28.6	28.5	1 1/8	1 1/4	4.9	4	0.15	Cat.II	Art.4.3
SHF(L)-70-911G34	10325090902	Variable	28.6	28.5	1 1/8	1 3/8	4.9	4	0.15	Cat.II	Art.4.3

TABLE 2: MODELS OPTIMIZED FOR USAGE ON SYSTEM WITH FIXED SPEED (ON/OFF COMPRESSORS)

General Characteristics											
Valve Model	Product Number	Type of System [Variable or Fixed Speed]	Ø Port	Kv	Connections ODF		MOP	OPD		PED Category	
					ØD	ØE/S/C		Max.	Min.	Fluid	Fluid
			[mm]	[m³/h]	[inch]	[inch]	[MPa]	[MPa]	[MPa]	Group 2	Group 1
SHF-20D-46G35	10325084302	FIXED	16.9	9.9	1/2	3/4	4.7	4	0.1	Art.4.3	Art.4.3
SHF-20D-47G35	10325091702	FIXED	16.9	9.9	1/2	7/8	4.7	4	0.1	Art.4.3	Art.4.3
SHF-35B-67G49	10325098702	FIXED	21	14.7	3/4	7/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF-35B-79G49	10325098402	FIXED	21	14.7	7/8	1 1/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF-50-79G45	10325087302	FIXED	23	18.3	7/8	1 1/8	4.7	4	0.15	Art.4.3	Art.4.3
SHF(L)-70-810G35	10325084802	FIXED	28.6	28.5	1	1 1/4	4.7	4	0.15	Cat.II	Art.4.3
SHF(L)-70-910G35	10325092702	FIXED	28.6	28.5	1 1/8	1 1/4	4.9	4	0.15	Cat.II	Art.4.3
SHF(L)-70-911G35 x	10325100102	FIXED	28.6	28.5	1 1/8	1 3/8	4.9	4	0.15	Cat.II	Art.4.3

NOMINAL OPERATING CONDITIONS

Nominal Operating Conditions	Condition 1	Condition 2
Condensing Temperature t_c	38°C	54.4°C
Evaporating Temperature t_o	5°C	7.2°C
Superheat Δt_{sh}	5K	5K
Subcooling Δt_{sc}	0K	5K

Notes for Capacity Selection Tables: 1) Pressure drop is valid for flow from ØC to ØS or from ØE to ØS
2) R407C data based on dew point conditions

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 1 [ΔP: 0.1 BAR]

Capacity Selection Table (1/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.1 bar							
	R407C[2)]	R404A/R507	R134a	R410A	R290	R1270	R600a	R32
SHF 4G	3.2	2.9	2.7	4.2	4.2	4.6	2.6	5.4
SHF 7G	6.7	6.0	5.5	8.6	8.7	9.5	5.4	11.1
SHF 13G	10.5	9.4	8.6	13.5	13.6	14.9	8.5	17.3
SHF 20G	20.9	18.8	17.2	26.8	27.1	29.8	16.9	34.5
SHF 35G	31.0	27.9	25.5	39.8	40.2	44.2	25.1	51.2
SHF 50G	38.5	34.8	31.7	49.6	50.1	55.0	31.3	63.8
SHF 70G	60.0	54.2	49.4	77.3	78.0	85.7	48.8	99.4

Capacity Selection Table (2/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.1 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF 4G	2.3	2.2	4.5	2.9	3.0	2.8	3.3	3.2
SHF 7G	4.7	4.5	9.2	6.0	6.2	5.8	6.7	6.6
SHF 13G	7.4	7.1	14.4	9.3	9.6	9.1	10.5	10.4
SHF 20G	14.7	14.2	28.8	18.6	19.2	18.2	20.9	20.7
SHF 35G	21.9	21.1	42.7	27.7	28.5	27.0	31.1	30.8
SHF 50G	27.3	26.2	53.2	34.4	35.5	33.6	38.7	38.3
SHF 70G	42.4	40.9	82.9	53.6	55.3	52.4	60.2	59.7

CAPACITY TABLES AT CONDITION 1 [ΔP: 0.2 BAR]

Capacity Selection Table (3/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.2 bar							
	R407C[2)]	R404A/R507	R134a	R410A	R290	R1270	R600a	R32
SHF 4G	4.6	4.1	3.8	5.9	6.0	6.5	3.7	7.6
SHF 7G	9.4	8.5	7.8	12.2	12.3	13.5	7.7	15.6
SHF 13G	14.8	13.4	12.2	19.1	19.2	21.1	12.0	24.5
SHF 20G	29.5	26.6	24.3	38.0	38.3	42.1	23.9	48.8
SHF 35G	43.8	39.5	36.0	56.4	56.9	62.5	35.6	72.5
SHF 50G	54.5	49.2	44.9	70.2	70.8	77.8	44.3	90.2
SHF 70G	84.9	76.6	69.9	109.3	110.3	121.2	68.9	140.5

Capacity Selection Table (4/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 1) - ΔP: 0.2 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF 4G	3.2	3.1	6.3	4.1	4.2	4.0	4.6	4.6
SHF 7G	6.7	6.4	13.0	8.4	8.7	8.2	9.5	9.4
SHF 13G	10.5	10.1	20.4	13.2	13.6	12.9	14.9	14.7
SHF 20G	20.9	20.1	40.7	26.3	27.2	25.7	29.6	29.3
SHF 35G	31.0	29.8	60.4	39.1	40.3	38.2	43.9	43.6
SHF 50G	38.5	37.1	75.2	48.7	50.2	47.6	54.7	54.2
SHF 70G	60.0	57.8	117.2	75.8	78.2	74.1	85.2	84.4

4 WAY REVERSING VALVE



CAPACITY TABLES AT CONDITION 2 [ΔP: 0.1 BAR]

Capacity Selection Table (1/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.1 bar							
	R407C[2)]	R404A/R507	R134a	R410A	R290	R1270	R600a	R32
SHF 4G	3.0	2.6	2.5	3.8	3.9	4.3	2.5	5.0
SHF 7G	6.2	5.3	5.1	7.8	8.0	8.8	5.1	10.4
SHF 13G	9.7	8.3	8.0	12.2	12.5	13.8	8.0	16.3
SHF 20G	19.2	16.5	16.0	24.3	24.9	27.5	15.9	32.4
SHF 35G	28.6	24.5	23.7	36.1	36.9	40.8	23.7	48.1
SHF 50G	35.6	30.4	29.5	45.0	46.0	50.8	29.5	59.8
SHF 70G	55.4	47.4	45.9	70.0	71.6	79.1	45.9	93.2

Capacity Selection Table (2/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.1 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF 4G	2.1	2.0	4.1	2.6	2.7	2.5	3.0	2.9
SHF 7G	4.3	4.2	8.5	5.4	5.6	5.1	6.1	6.1
SHF 13G	6.7	6.6	13.4	8.5	8.7	8.0	9.6	9.5
SHF 20G	13.3	13.1	26.6	16.9	17.4	16.0	19.1	18.9
SHF 35G	19.7	19.5	39.5	25.0	25.8	23.8	28.3	28.1
SHF 50G	24.5	24.3	49.2	31.2	32.1	29.6	35.2	34.9
SHF 70G	38.2	37.8	76.6	48.6	50.0	46.2	54.9	54.4

CAPACITY TABLES AT CONDITION 2 [ΔP: 0.2 BAR]

Capacity Selection Table (3/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.2 bar							
	R407C[2)]	R404A/R507	R134a	R410A	R290	R1270	R600a	R32
SHF 4G	4.2	3.6	3.5	5.4	5.5	6.0	3.5	7.1
SHF 7G	8.7	7.5	7.2	11.0	11.3	12.4	7.2	14.7
SHF 13G	13.7	11.7	11.3	17.3	17.7	19.5	11.3	23.0
SHF 20G	27.2	23.3	22.6	34.4	35.2	38.9	22.6	45.8
SHF 35G	40.4	34.6	33.5	51.1	52.2	57.7	33.5	68.0
SHF 50G	50.3	43.1	41.7	63.6	65.0	71.9	41.7	84.6
SHF 70G	78.3	67.1	65.0	99.0	101.3	111.9	64.9	131.8

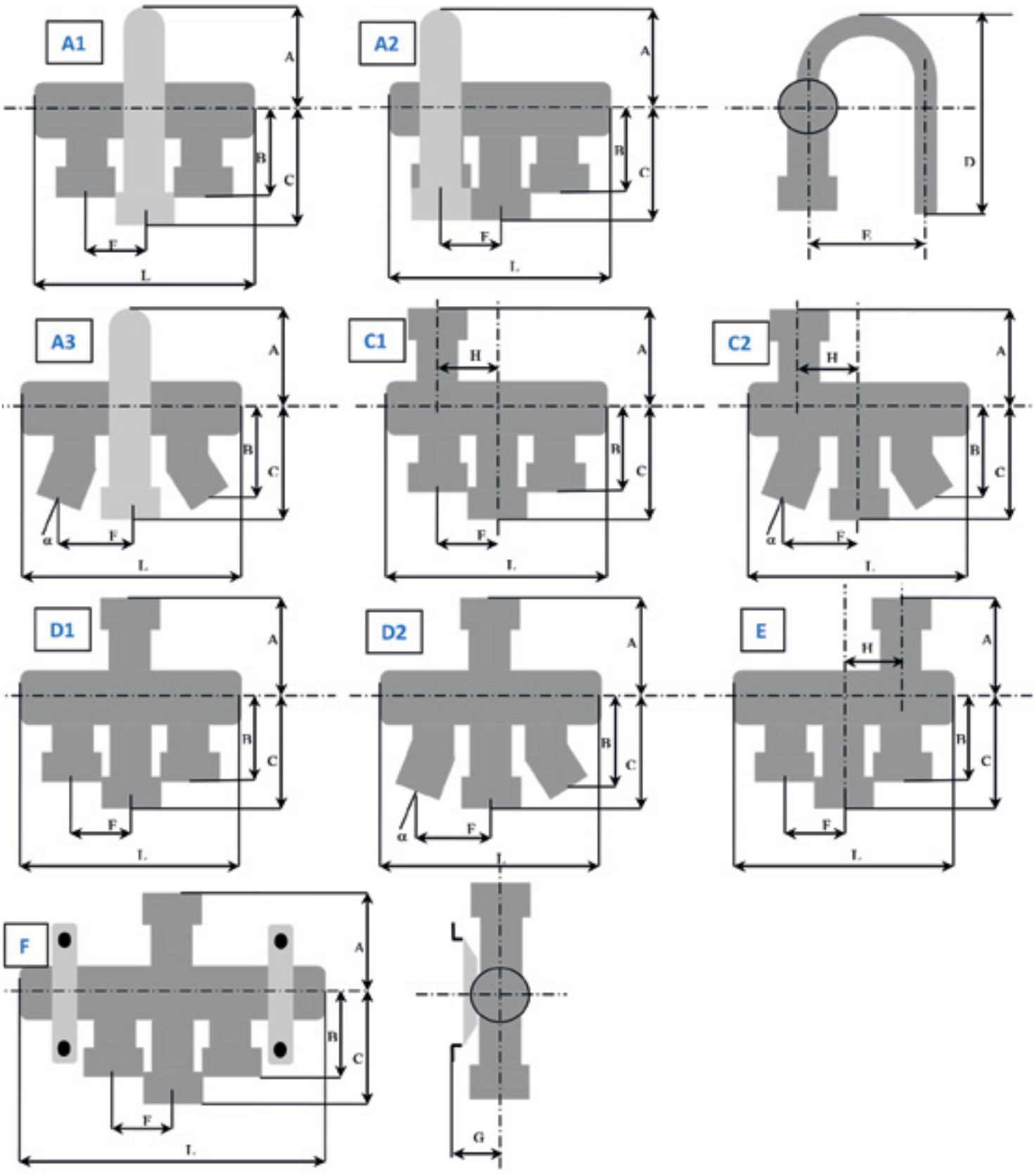
Capacity Selection Table (4/4)								
Valve Model	Nominal Cooling Capacity [kW] (condition 2) - ΔP: 0.2 bar							
	R1234yf	R1234ze	R454B	R454C	R455A	R452A	R448A	R449A
SHF 4G	2.9	2.9	5.9	3.7	3.8	3.5	4.2	4.2
SHF 7G	6.0	5.9	12.0	7.6	7.9	7.3	8.6	8.6
SHF 13G	9.4	9.3	18.9	12.0	12.3	11.4	13.5	13.4
SHF 20G	18.8	18.6	37.6	23.9	24.6	22.7	27.0	26.7
SHF 35G	27.9	27.6	55.9	35.4	36.5	33.7	40.0	39.7
SHF 50G	34.7	34.3	69.6	44.1	45.4	41.9	49.8	49.4
SHF 70G	54.1	53.4	108.3	68.7	70.7	65.3	77.6	77.0

Note: 1) The selection capacity of the four-way valve for R32 systems should be ≥60%. It is not recommended to use the fourway valve in systems with a capacity less than 60% of the nominal capacity. When used in R32 systems, it is essential to ensure the reliability of low-pressure commutation under extreme conditions.

4 WAY REVERSING VALVE



DIMENSIONS - VALVES



4 WAY REVERSING VALVE



TABLE 3: DIMENSIONS AND WEIGHTS

Dimensions - Valves												
Valve Model	Valve Style	L	A	B	C	D	E	F	G	H	Angle α	Weight
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[°]	[kg]
SHF(G)-4H-23U-AE	A1	92	43	50	62	105	43	12	-	-	-	0.15
SHF(G)-7H-34U-AE	A1	110.3	51	50	62	113	52	16	-	-	-	0.2
SHF(G)-13H-45-E	D1	131.5	52	50	62	-	-	20	-	-	-	0.24
SHF-20D-46Gxx	D1	184.6	67	81	93	-	-	28.6	-	-	-	0.52
SHF-20D-47Gxx	D1	184.6	67	81	93	-	-	28.6	-	-	-	0.52
SHF-35B-67Gxx	D1	208.6	78.2	82.3	95.3	-	-	33	-	-	-	0.84
SHF-35B-79Gxx	D1	208.6	78.2	84	97	-	-	33	-	-	-	0.84
SHF-50-79Gxx	D1	230.6	86.1	90.8	103.6	-	-	37	-	-	-	0.96
SHF(L)-70-810Gxx	D1	290	111	117	131	-	-	46	-	-	-	2.48
SHF(L)-70-910Gxx	D1	290	115	117	131	-	-	46	-	-	-	2.48
SHF(L)-70-911Gxx	D1	290	115	122	136	-	-	46	-	-	-	2.48

4 WAY REVERSING VALVE



TABLE 4: ELECTRICAL COILS

Coil Characteristics												
Coil Model [1]	Winding Code	Part Number	Electrical Function/ Connection Type	Cable Length	Power Supply	Rated Voltage	Power Consumption AC 50Hz	Power Consumption AC 60Hz	Power Consumption DC	Protection Clas	Insulat. Class	Max. Op. Temp.
				[mm]	[-]	[V]	[W]	[W]	[W]	[-]	[-]	[°C]
SQ-A37024-000004	SHF-4-10L25	10805357502	Lead Wires	500	AC	24	4.5	3.5	-	IP54	F[2]	155
SQ-A37100-000001	SHF-4-10L21	10805357602	Lead Wires	500	AC	100	4.5	3.5	-			
SQ-A37115-000013	SHF-4-10L24	10805358302	Lead Wires	500	AC	115	4.5	3.5	-			
SQ-A37200-000001	SHF-4-10L22	10805357702	Lead Wires	500	AC	200	4.5	3.5	-			
SQ-A3720D-000001	SHF-4-10L34	10805357902	Lead Wires	500	AC	208-230	/	4.5	-			
SQ-A37220-000001	SHF-4-10L17	10805341402	Lead Wires	500	AC	220	6	5.0	-			
SQ-A3722G-000001	SHF-4-10L3	10805341302	Lead Wires	500	AC	220-240	4.5	3.5	-			
SQ-A3726H-000003	SHF-4-10L26	10805359202	Lead Wires	500	AC	265-277	4.5	3.5	-			
SQ-A3722G-000057	SHF-4-10L3	10805349102	Lead Wires	1500	AC	220-240	4.5	3.5	-			
SQ-A37115-000028	SHF-4-10L24	10805372902	Lead Wires	1500	AC	115	4.5	3.5	-			
SQ-A37024-000001	SHF-4-10L25	10805355602	Lead Wires	1550	AC	24	4.5	3.5	-			
SQ-A5022G-000001	SQ-A5022G	10805356002	Spade (Fast-on) [3]	-	AC	220-240	4.5	3.5	-	IP00	F	155
SQ-A5011A-000001	SQ-A5011A	10805355902	Spade (Fast-on) [3]	-	AC	110-120	4.5	3.5	-			
SQ-A50024-000001	SQ-A50024	10805355802	Spade (Fast-on) [3]	-	AC	24	4.5	3.5	-			
SQ-D44 012-00 00015)	SHF-4-10FA8	10805231802	Spade (Fast-on) [3]	-	DC	12	-	-	10			
SQ-D44 024-00 00015)	SHF-4-10FA9	10805070102	Spade (Fast-on) [3]	-	DC	24	-	-	11			
SQ-A27 100-00 0001	SQ-A27100	10805063202	Bi-stable/Lead W.	500	AC	100	18	18	-	IP54	B	130
SQ-A27 200-00 0001	SQ-A27200	10805063802	Bi-stable/Lead W.	500	AC	200	18	18	-			
SQ-A27 20K-00 0001	SQ-A2720K	10805222902	Bi-stable/Lead W.	500	AC	200-240	18	18	-			
SQ-D27 012-00 0001	SQ-D27012	10805069302	Bi-stable/Lead W.	500	DC	12	-	-	20			

Note: Max ambient temperature up to + 50°C

1) Every coil is applicable to all above specified valve models

2a) SQ-A37: insulation class according to UL is "B". Max Operating temperature: +130°C

2b) SQ-A37: insulation class according to VDE is "F". Max Operating temperature: +155°C

3) Wire Harness for coil with Fast-on connector available as accessory

4) SQ-A27 coils can be used only with SHF valves from size 3 to size 100

5) SQ-D44 cannot be used in combination with SHF valves installed in systems operating with A2L and A3 refrigerants.

ACCESSORY

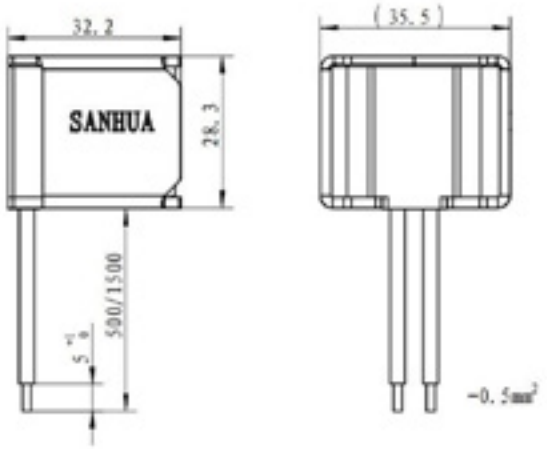
Wire Harness		
Model	Part Number	Cable Length [mm]
SQ-000000-090028	20805136301	1200
SQ-000000-090029	20805149201	2000

4 WAY REVERSING VALVE

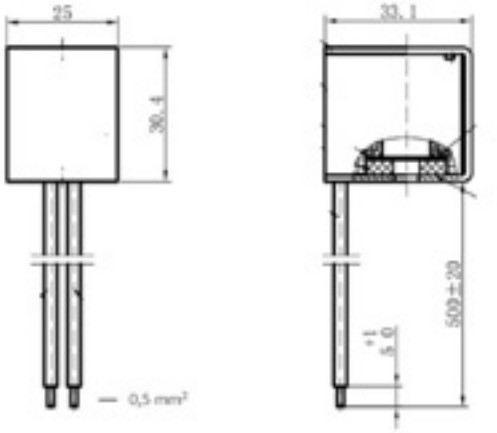


DIMENSIONS - COILS

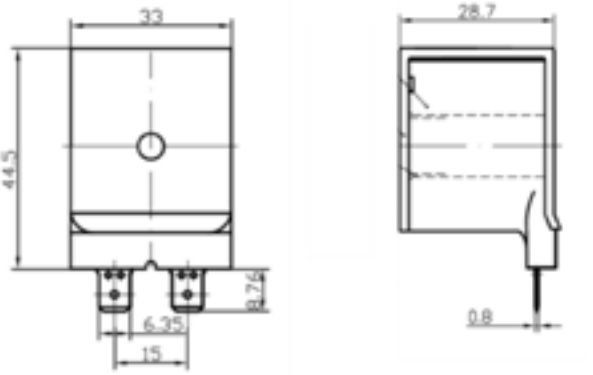
Coils with Lead Wires (SQ-A37 Series)



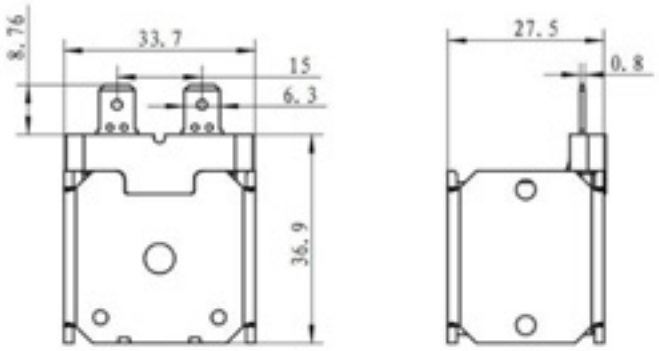
Bistable Coils (SQ-A/D27 Series)



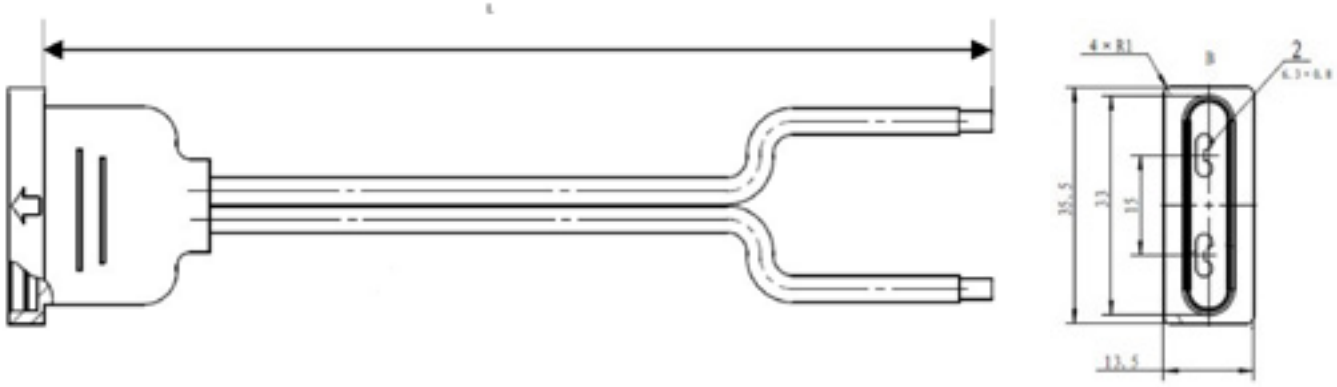
Coils with Spade Connections (SQ-D44 Series)



Coils with Spade Connections (SQ-A50 Series)



Wire Harness (SQ-000000-0900xx)



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