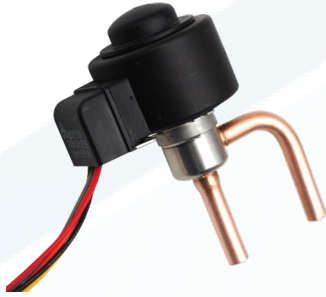


Electronic Expansion Valve – DPF/DBF



DPF (TS1) - Valve

Cooling capacity range (R290): 4kW-32kW

Maximum operation pressure: 49bar

Flow direction: bi-directional

IP class: 67

Full Stroke: 500 steps

Medium Temperature: -40°C/+85°C

Ambient Temperature: -30°C/+60°C

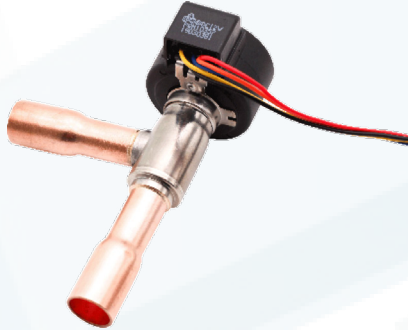
Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF EEV

General Characteristics DPF(TS1)						
Valve Model	Part Number ¹⁾	Design Type	Cooling Capacity @5°C/38°C/5K/5K	Kv	MOPD Direct	MOPD Reverse
			[kW]	[m ³ /h]	[Bar]	[Bar]
DPF(TS1)1.0C-15	10130391602	n	4,2	0,03	35	≥25
DPF(TS1)1.3C-21	10130389302	n	6	0,05		
DPF(TS1)1.65C-36	10130391702	n	10,2	0,08		
DPF(TS1)1.8C-69	10130391802	n	12,1	0,1		
DPF(TS1)2.0C-33	10130392402	n	14,9	0,16		
DPF(TS1)2.2C-24	10130392702	n	16	0,2		
DPF(TS1)2.4C-40	10130392602	n	18,8	0,23		
DPF(TS1)3.0C-29	10130389902	L	31,4	0,39		
DPF(TS1)3.2C-30	10130389502	L	34,4	0,43x		

* Shown valves in above table are selected types. In case of other needed port size or design check our standard catalogue or contact your local support, please.

Electronic Expansion Valve – DPF/DBF



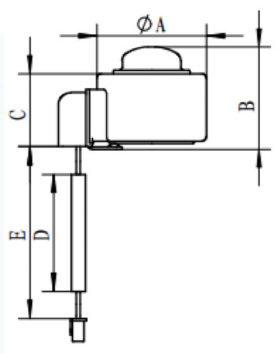
DBF - Valve

Cooling capacity range (R290): 56kW-105kW
 Max- operation pressure: 49bar
 Flow direction: bi-directional
 IP class: 67
 Full Stroke: 500 steps
 Medium Temperature: -30°C/+80°C
 Ambient Temperature: -30°C/+60°C
 Certificates: PED Art. 4.3, LVD (VDE)

TECHNICAL PARAMETERS OF EEV

Valve Model	Part Number ¹⁾	Design Type	Cooling Capacity @5°C/38°C/5K/5K	Kv	MOP ²⁾	MOPD	MOPD
			[kW]	[m3/h]	[Bar]	[Bar]	[Bar]
DBF04H100	10132000702	L	56,2	0,5	49	35	35
DBF05H100	10132000602	L	75,2	0,7			
DBF06H100	10132000802	L	87,1	0,9			
DBF07H100	10132000502	L	105,9	1,1			

* Shown valves in above table are selected types. In case of other needed port size or design check our standard catalogue or contact your local support, please.



PQ - Coil

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TECHNICAL PARAMETERS OF COILS

Coil Model	Part Number	Cable length	Terminal
		mm	
PQ-M10012-001059	10810138802	700	XHP-5
PQ-M10012-001016	10810134602	1500	XHP-5
PQ-M10012-001002	10810130702	2000	XHP-5
PQ-M10012-001268	10810160602	5000	XHP-5

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.

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 +10%/-15%, 50/60Hz (SEC611 & SEC613 only)
 - 24Vdc+10%/-15% (Suitable for all the SEC models)
 - Class II
- Requested transformer: ≥ 15VA
- Inputs: 1 Pressure sensor input
1 Temperature sensor input
1 Communicationinput (RS485 Modbus)
- Output: 1 Auxiliary relay output (30Vdc/3A)
1 EEV output (12V DC±10%), rectangular wave



MODEL DESIGNATION LEGEND

NO.				Model Designation Legend
1	2	3	4	
SEC	6	11	R4	SANHUA electronic Expansion valve Controller
SEC	6	11	R4	Digital means the sixth-generation product
SEC	6	11	R4	Odd means voltage P-sensor, even means current type
SEC	6	11	R4	R4 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(CO2), R744(N2O), R32, R245fa, R23, R407A, R407F, R124, R717, R407H, R454C, R455A, R454B, R452B, R600A.

All the models get a RS485 port for communication.

NO.	Item	Model	Part Number	Details		
				Item	Qty.	
1	Controller Package ¹⁾	SEC611-R4	10680001002	Voltage pressure sensor	°C/Bar	1
		SEC613-R4	10680001202		°F/Psi	1
		SEC612-R4	10680001102	Current pressure sensor	°C/Bar	1
		SEC614-R4	10680001302		°F/Psi	1
2	Temp. Sensor ²⁾	NTC2A1	10665000102	2m Temp. Sensor		
3		NTC5A1	10665000202	5m Temp. Sensor		
4		NTC9A1	10665000402	9m Temp. Sensor		
6	Pressure Sensor ³⁾	YCQB02H01-1	10185001502	0 / 20 bar - Ratio with Solder connection, 2m cable length		
7		YCQB02H18-1	10185015402	0 / 20 bar - Ratio with Solder connection, 4.9m cable length		
8		YCQB02L12-1	10185015502	0 / 20 bar - Ratio with Flare connection, 2m cable length		
9		YCQB02L28-1	10185015602	0 / 20 bar - Ratio with Flare connection, 4.9m cable length		
10		YCQC02L18	10185017102	-1 / 12 bar - Current with Flare connection, Packard connection		
10		YCQC09L02	10185042402	0 / 90 bar - Current with Flare connection, Packard connection		
11	Packard cable	YCQC02-013037	20185051102	2m cable length		
12		YCQC02-013038	20185051202	5m cable length		
13		YCQC02-013039	20185051302	9m cable length		

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

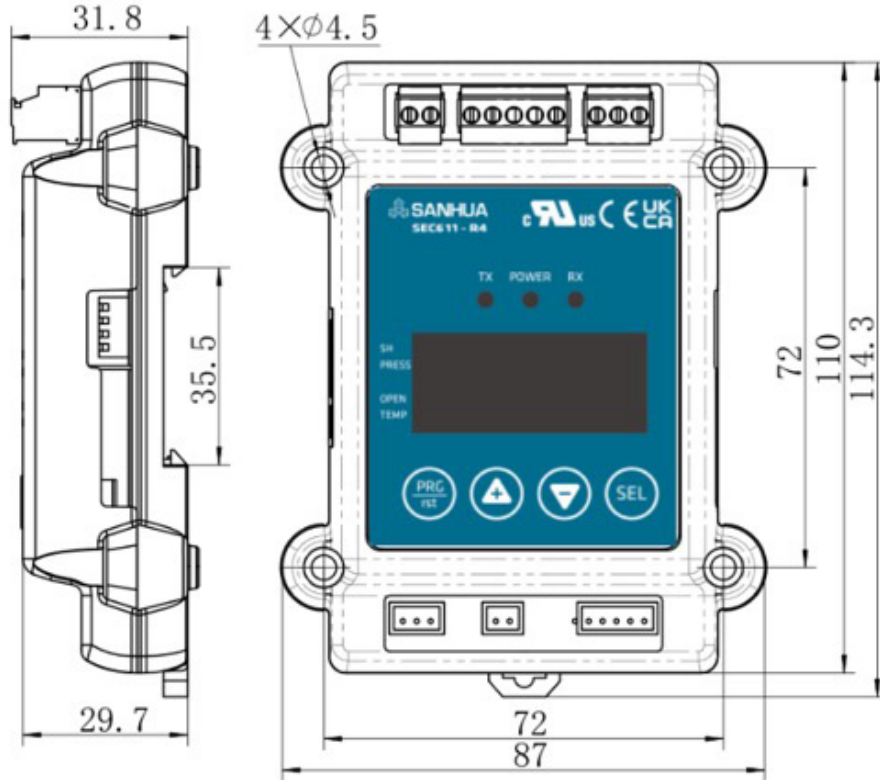


TEMPERATURE AND PRESSURE SENSORS

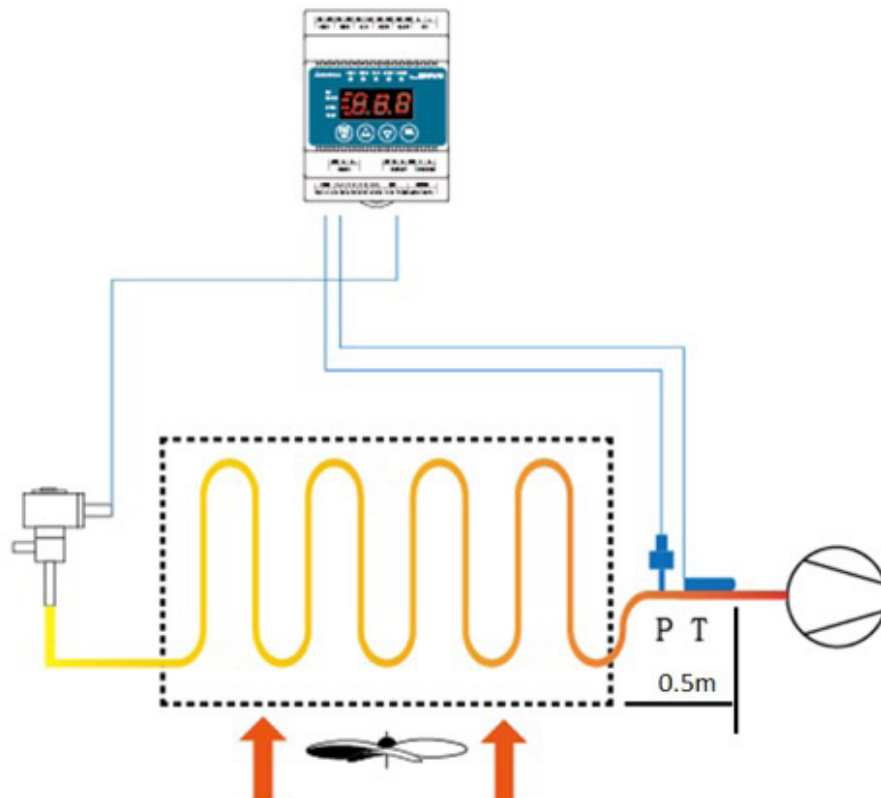
Item	Description	
Temperature Sensor	Type	NTC 5KΩ
	Wire	2×0.5mm ²
	Protection class	IP 67
	Accuracy	±0.3°C (below 25°C)
	Temperature Range	-50 ~ 50°C
	Electrical connector	XH connector
Pressure sensor	Voltage supply	YCQB: 5±0.25 Vdc YCQC: 10-30 Vdc
	Output	YCQB: 0.5~3.5 Vdc YCQC: 4-20mA
	Accuracy	±0.8% 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	XH connector Packard connector



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 (0.2~0.8mm ²)	

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 (0.2~0.8mm ²)	

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



Supercapacitor

Items	Description	
Model	SP01	<p>The diagram shows a rectangular module with a blue label in the center. The label reads 'SANHUA SuperCap Module SP01' and lists specifications: '24Vac 50/60 Hz 26VA', '24Vdc 6W', and 'Class 2'. There are terminals at the top labeled 'OUTPUT' and at the bottom labeled 'POWER'. The module has a width of 80mm, height of 106mm, and depth of 54mm.</p>
Dimension	80 (W)mm x 106 (H)mm x 54(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
SP01	10680001702