

Electronic Expansion Valve Controller

SEC series



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: $-30 \sim 55^{\circ}\text{C}$
- Storage temperature: $-30 \sim 55^{\circ}\text{C}$
- Relative humidity: $\leq 95\%\text{RH}$
- Certification: UL, CE Declaration according to EMC
- Installation method: DIN rail snap-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 (12Vdc±10%), rectangular wave

Model Designation Legend

NO.	Model Designation Legend
1 2 3 4	
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SEC611-R6	→ SANHUA electronic Expansion valve Controller
SEC611-R6	→ Digital means the sixth-generation product
SEC611-R6	→ Odd means voltage P-sensor, even means current type
SEC611-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(CO2), R744A(N2O), 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	10680001002	Voltage pressure sensor	°C/Bar & °F/Psi	1
	SEC612-R6	10680001102	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 - Ratio 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		

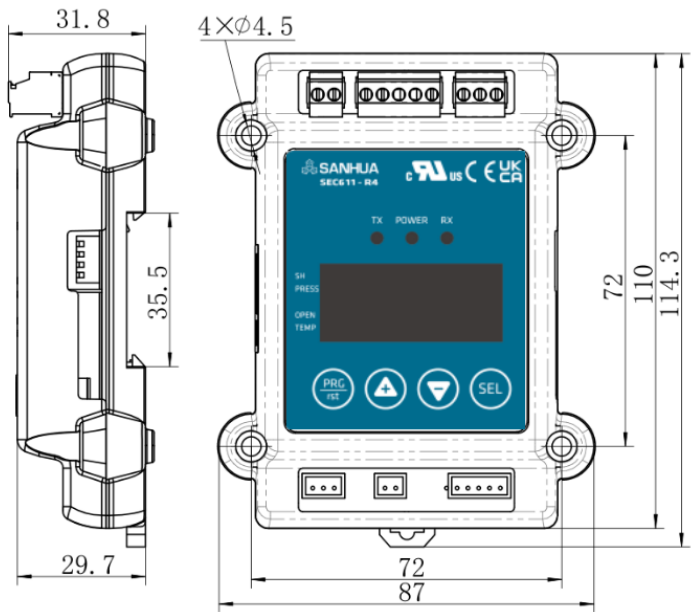
Note : The temperature & pressure sensors should be ordered separately.

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

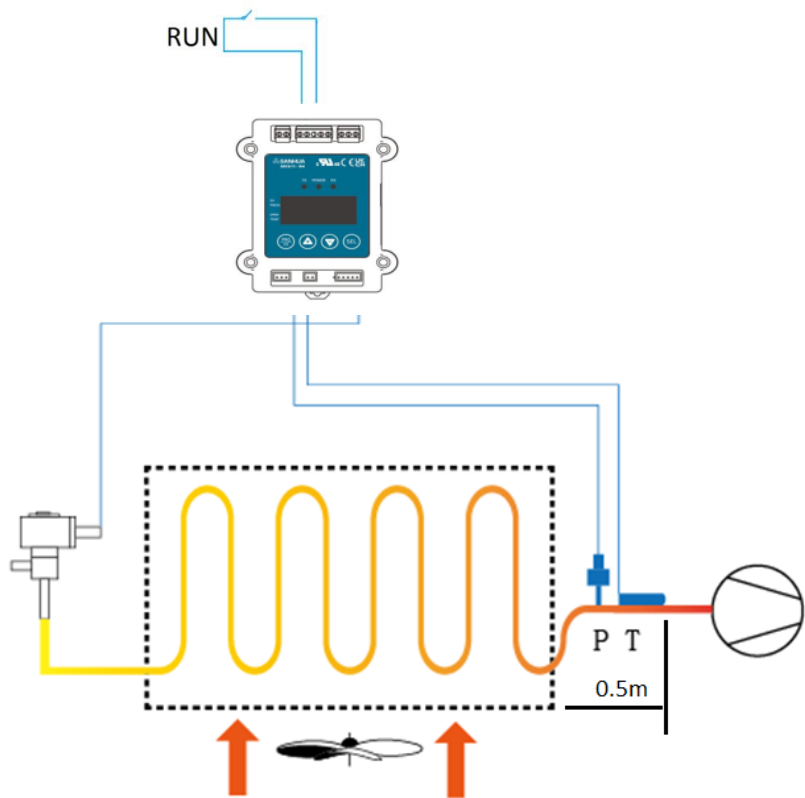
Temperature and pressure sensors

Item	Description	
Temperature sensor	Type	NTC 5KΩ
	Wire	2×0.5mm ²
	Protection class	IP 67
	Accuracy	±0.3℃ (below25℃)
	Temperature Range	-50 ~50℃
	Electrical connector	XHP connector
Pressure transmitter	Voltage supply	YCQB: 5±0.25 Vdc YCQC: 10-30Vdc
	Output	YCQB: 0.5~3.5 Vdc or 0.5~4.5 Vdc YCQC: 4-20mA
	Accuracy	±0.8% F.S.(-40~40℃)
	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



Installation Diagram

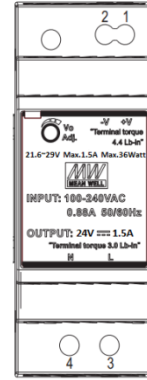


Accessories

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, $\pm 1.0\%$	
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)	

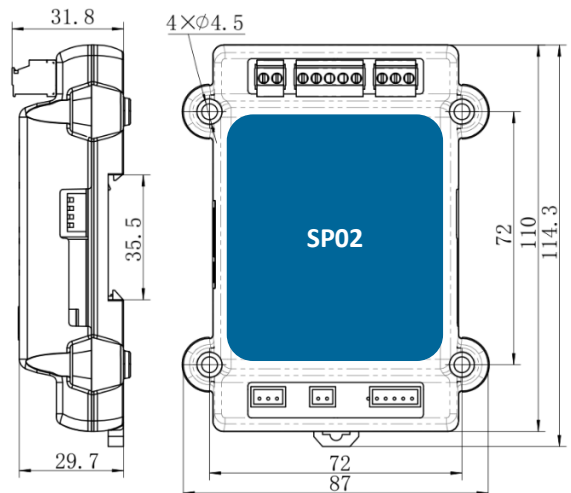
Items	Description	
Model	TM02	
Dimension	35(W)mm x 90 (H)mm x 58.3 (D)mm	
Voltage input	85 ~ 264VAC, 47 ~ 63Hz	
Current AC	0.5A/115VAC, 0.25A/230VAC	
Rated voltage output	24Vdc, $\pm 1.0\%$	
Rated current output	1.5A	
Rated power	36W	
Operation	-30~+70°C, 20~90%RH (Non-condensing)	
Storage	-40~+85°C,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