

**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



**MODEL DESIGNATION LEGEND**

NO.				Model Designation Legend
1	2	3	4	
<b>SEC</b>	6	11	R6	SANHUA electronic Expansion valve Controller
SEC	<b>6</b>	11	R6	Digital means the sixth-generation product
SEC	6	<b>11</b>	R6	Odd means voltage P-sensor, even means current type
SEC	6	11	<b>R6</b>	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<sub>2</sub>), R744(N<sub>2</sub>O), 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	<b>Voltage</b> pressure sensor	<b>°C/Bar &amp; °F/Psi</b> <b>1</b>
	SEC612-R6	10680005002	<b>Current</b> pressure sensor	<b>°C/Bar &amp; °F/Psi</b> <b>1</b>
Temp. Sensor	NTC2A1	10665000102	<b>2m</b> Temp. Sensor (5kΩ)	
	NTC5A1	10665000202	<b>5m</b> Temp. Sensor (5kΩ)	
	NTC9A1	10665000402	<b>9m</b> Temp. Sensor (5kΩ)	
	NTCX	-	<b>2m</b> Temp. Sensor (10kΩ)	
Pressure Sensor*	YCQB02H01-1	10185001502	<b>0/20 bar – Ratiometric (0,5-3,5V)</b> with <b>Solder</b> connection, <b>2m</b> cable length	
	YCQB02H18-1	10185015402	<b>0/20 bar - Ratiometric (0,5-3,5V)</b> with <b>Solder</b> connection, <b>4.9m</b> cable length	
	YCQB02L12-1	10185015502	<b>0/20 bar - Ratiometric (0,5-3,5V)</b> with <b>Flare</b> connection, <b>2m</b> cable length	
	YCQB02L28-1	10185015602	<b>0/20 bar - Ratiometric (0,5-3,5V)</b> with <b>Flare</b> connection, <b>4.9m</b> cable length	
	YCQB03H06	10185046502	<b>0/30 bar – Ratiometric (0,5-4,5V)</b> with <b>Solder</b> connection, <b>2m</b> cable length	
	YCQB04H50	10185004602	<b>0/34,5 bar – Ratiometric (0,5-4,5V)</b> with <b>Solder</b> connection, <b>Packard</b> connection	
	YCQB02L01	10185004902	<b>0/20 bar - Ratiometric (0,5-4,5V)</b> with <b>Flare</b> connection, <b>2m</b> cable length	
	YCQB03L157	10185046202	<b>0/30 bar - Ratiometric (0,5-4,5V)</b> with <b>Flare</b> connection, <b>Packard</b> connection	
	YCQC02L18	10185017102	<b>-1/12 bar - Current</b> with <b>Flare</b> connection, <b>Packard</b> connection	
YCQC09L02	10185042402	<b>0/90 bar – Current</b> with <b>Flare</b> connection, <b>Packard</b> connection		
Packard cable	YCQB02-013251	20185108201	<b>2m</b> cable length for YCQB & YCQC pressure sensors	
	YCQB02-013252	20185108101	<b>5m</b> cable length for YCQB & YCQC pressure sensors	
	YCQB02-013253	20185108001	<b>9m</b> 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



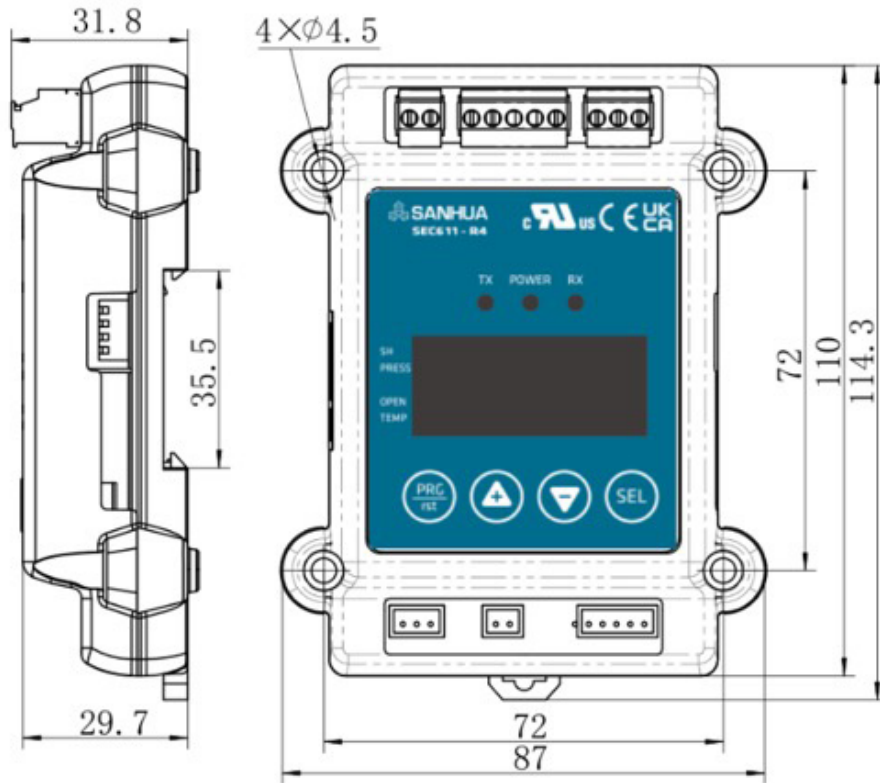
**TEMPERATURE AND PRESSURE SENSORS**

Item	Description	
Temperature Sensor	Type	NTC 5KΩ
	Wire	2×0.5mm <sup>2</sup>
	Protection class	IP 67
	Accuracy	±0.3°C (below 25°C)
	Temperature Range	-50 ~ 50°C
	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. (-40~40°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

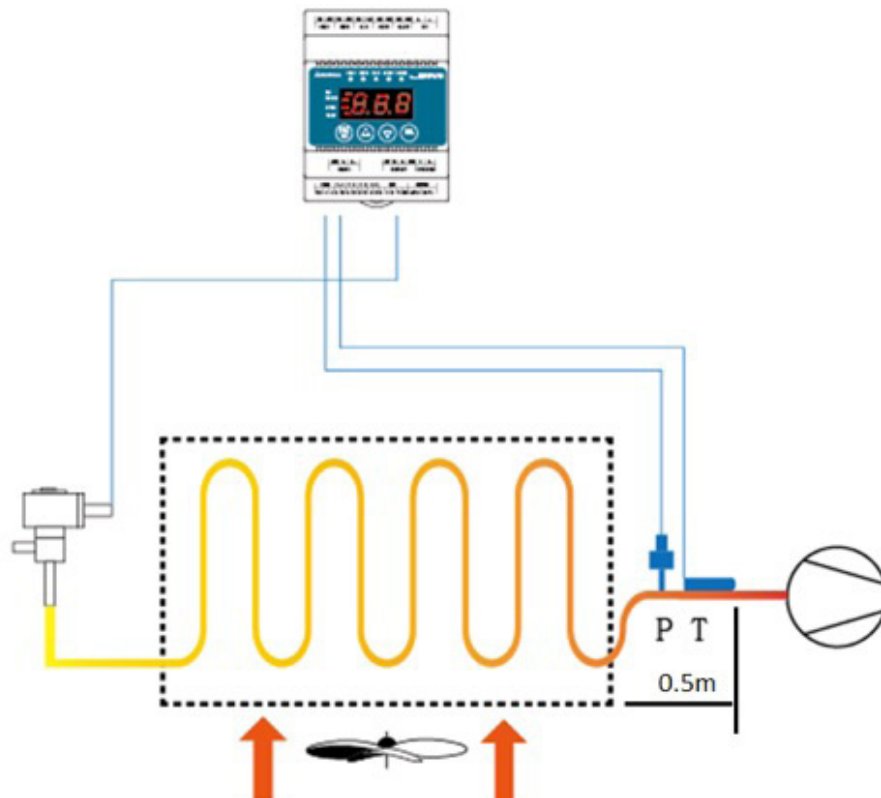
# ELECTRONIC EXPANSION VALVE CONTROLLER



## 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 (0.2~0.8mm <sup>2</sup> )	

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 <sup>2</sup> )	

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