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

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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

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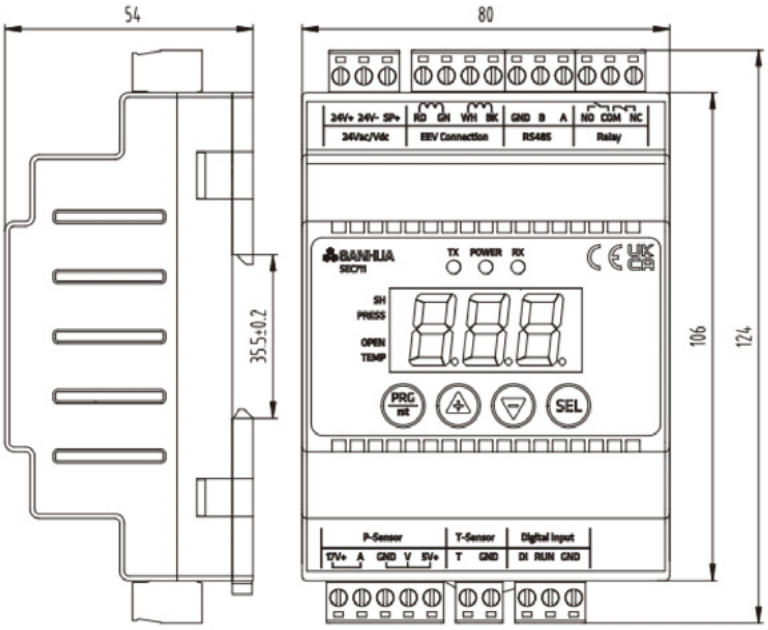
TEMPERATURE AND PRESSURE SENSORS

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



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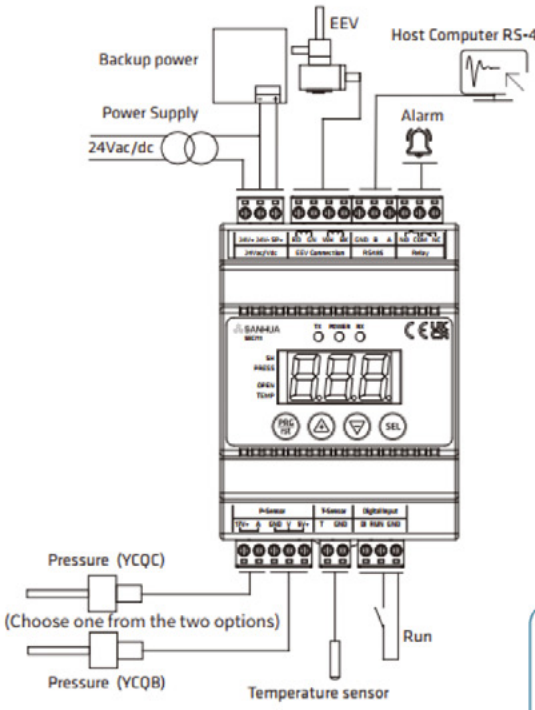
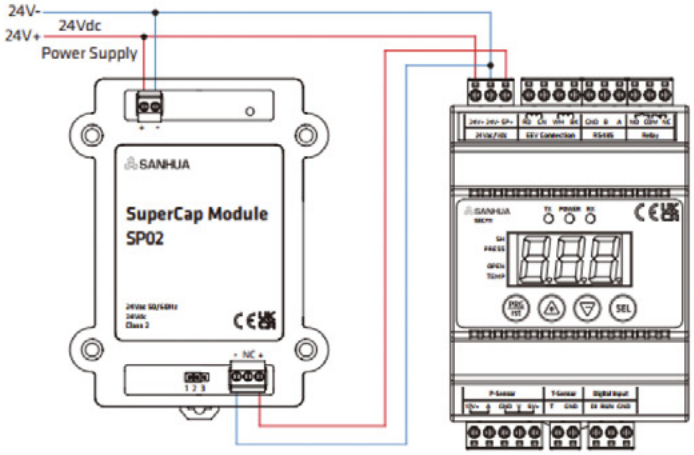
INSTALLATION DIAGRAM



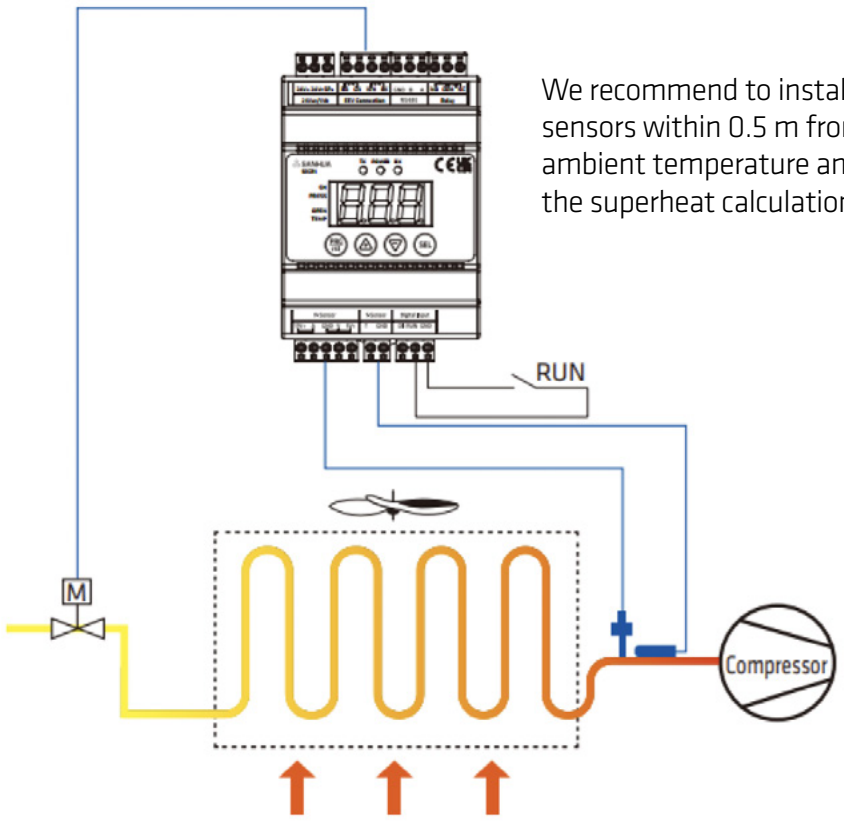
System Wiring Diagram



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.



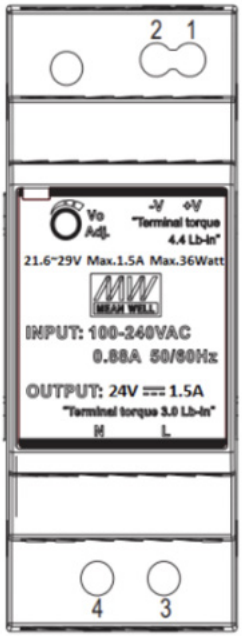
We recommend to install the temperature and pressure sensors within 0.5 m from the evaporator to prevent ambient temperature and pressure drop interference for the superheat calculation.

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