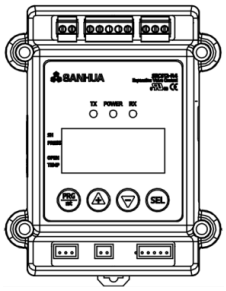
SEK series EEV Kit
Installation Guide

Part Ⅰ : Components of SEK kit

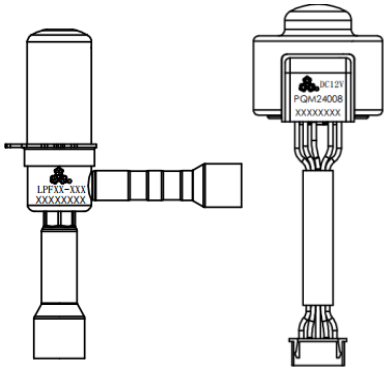
Controller

Items	Description
Dimension	87(W)mm x 114(H)mm x 30 (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



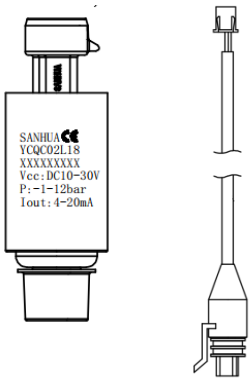
LPF and Coil with 3m cable length:

Items	Description
Rated voltage	12Vdc (± 10%)
Excitation mode	1-2 phase excitation, uni-polar–500stps
Excitation rate	30 - 90pps for LPF08~32 30-40 pps for LPF45~62
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 for LPF08~32 -30°C / +60°C for LPF45~62
Relative humidity	0 to 95% RH
Design Pressure	42 bar for LPF 08~32 49 bar for LPF 45~62
MOPD	35 bar



Pressure transducer and Packard cable with 2m length:

Items	Description
Voltage supply	10-30Vdc
Output	4-20mA
Pressure range	-1~12 Bar
Test Pressure	52.5Bar
Accuracy	±0.8% F.S.(-40~+40°C)
Protection class	IP 67
Connection Type	Flare 1/4" SAE - 7/16-20UNF
Electrical connector	Packard connector



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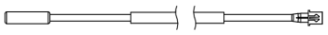
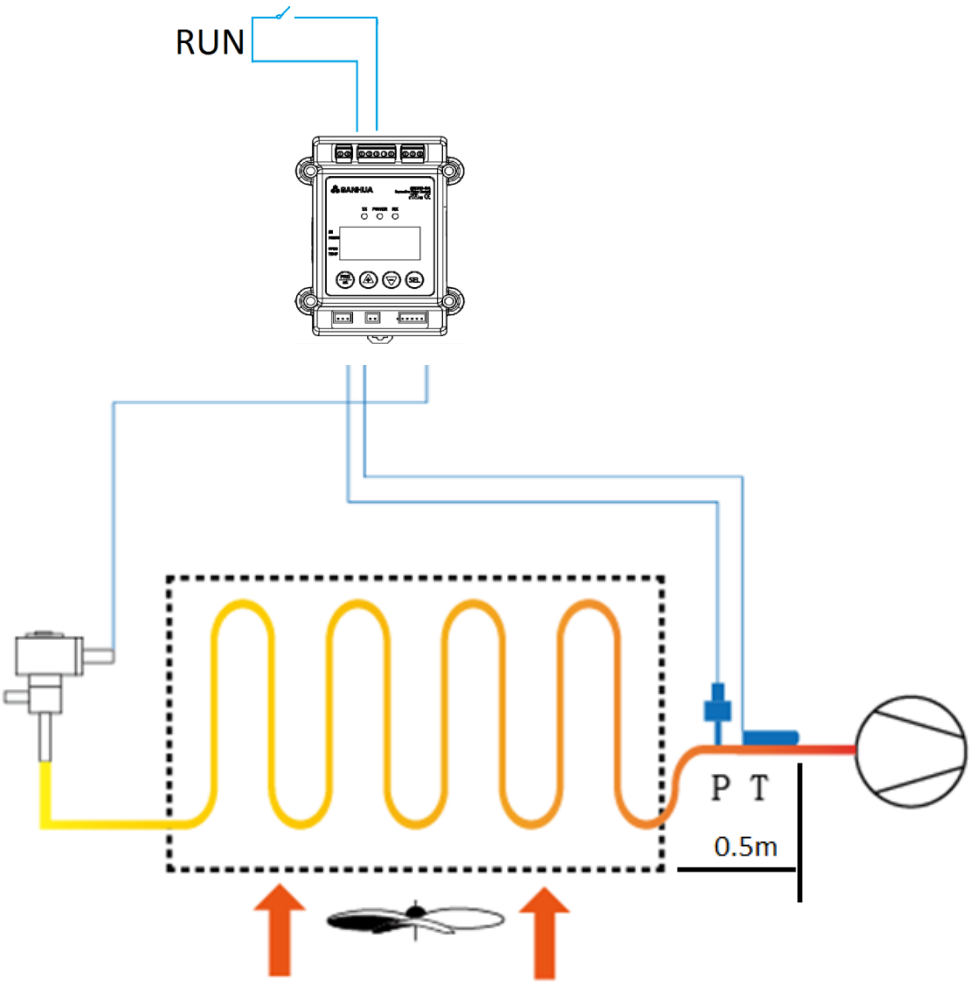
Temperature sensor

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

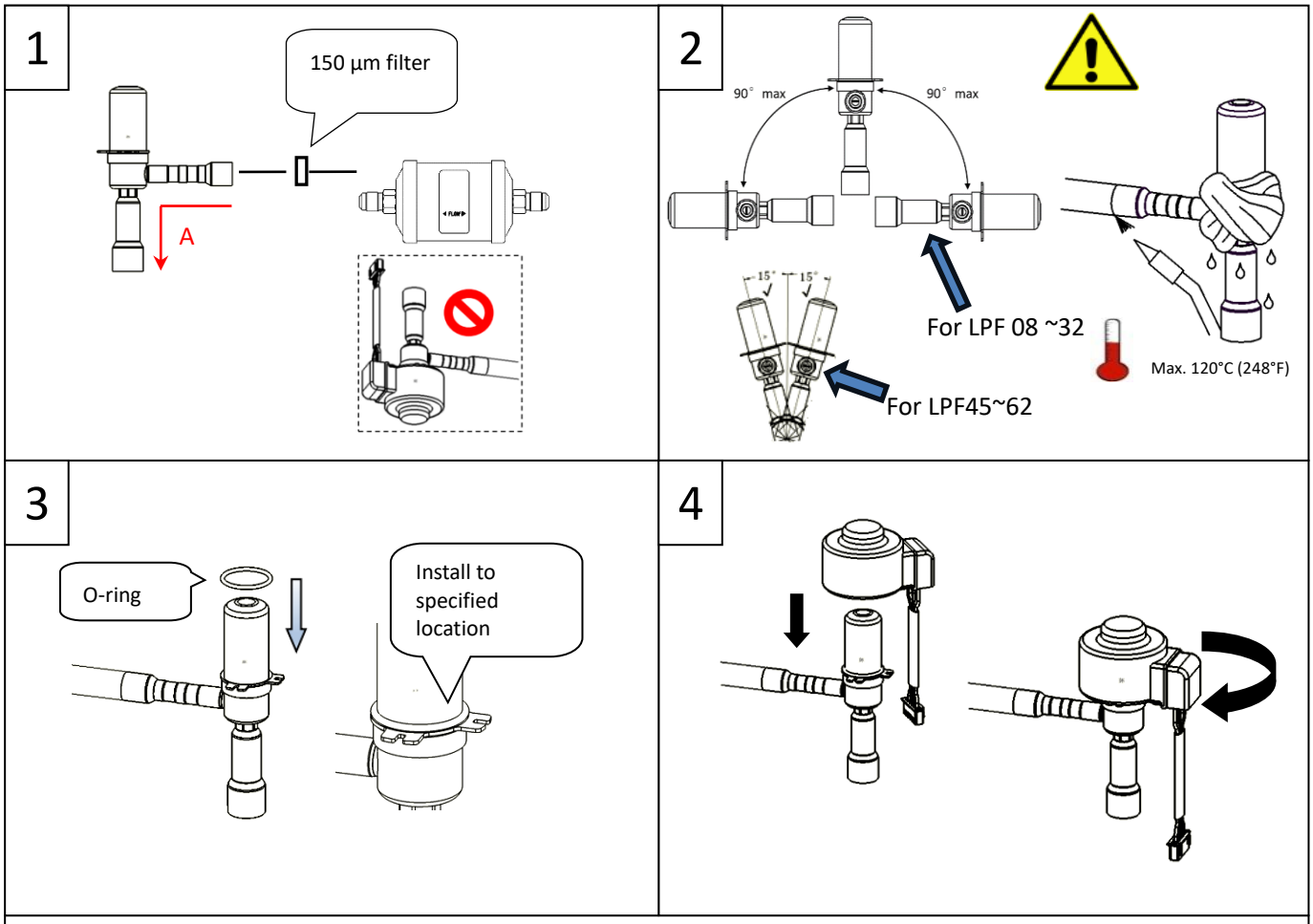
Part Ⅱ : Components installation

1. System installation location



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

2. Install guide for LPF series EEV



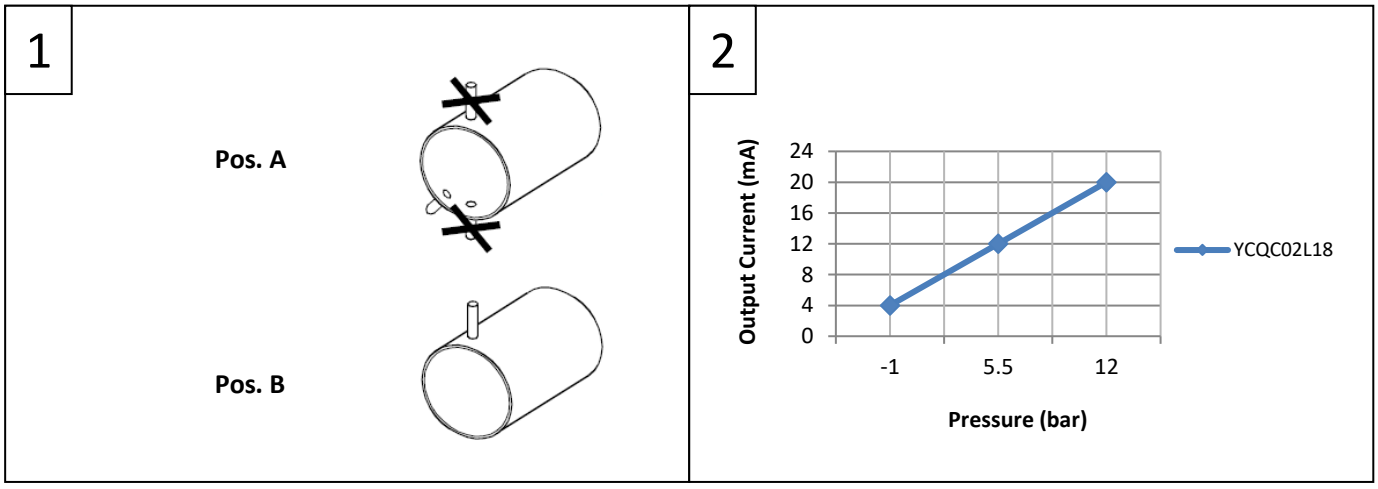
1. Install a filter drier and 150 µm sieve before the inlet of the valve. Flow direction according to A . Do not install coil pointed downwards.

2. Remove the coil and O-ring before soldering.
Using a wet rag during the soldering process to ensure the valve body below 120°C.

3. Ensure no residual water stain on O-ring or shell. Move the O-ring to specified location.

4. Install the coil on the valve body. Whirling the coil to fix it correctly.

3. Install guide for YCQC series pressure transmitter



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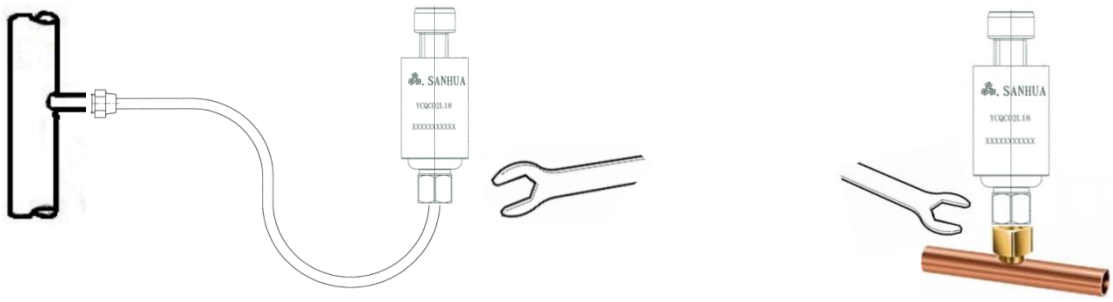
Size	Torque (Nm)	Torque（lbf.ft）
7/16-20UNF	12.7 ~ 16.7	9.3 ~ 12.2



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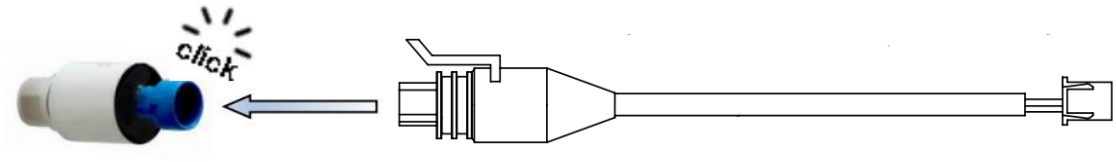
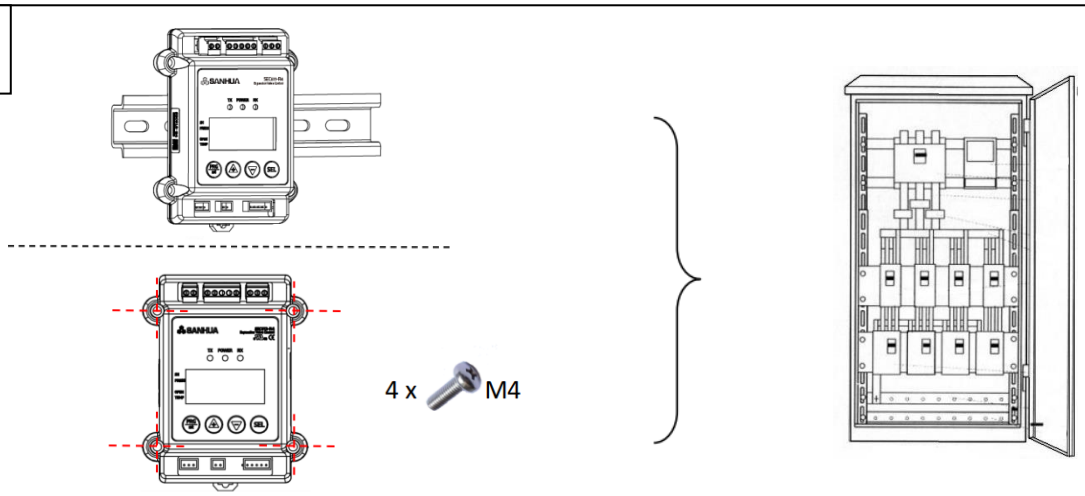


1. (Pos. A): Pressure measure for liquid, tapping point should be at the side, near the bottom of the pipe.
   (Pos. B): Pressure measure for gas, tapping point should be at the top so that no condensate will reach the sensor.

4. Install guide for SEC series controller

1



Part Ⅲ: Controller wire connection

1.Safety Tips:

① Do not turn on the power before completing the wiring, cut off the power before changing the wiring.

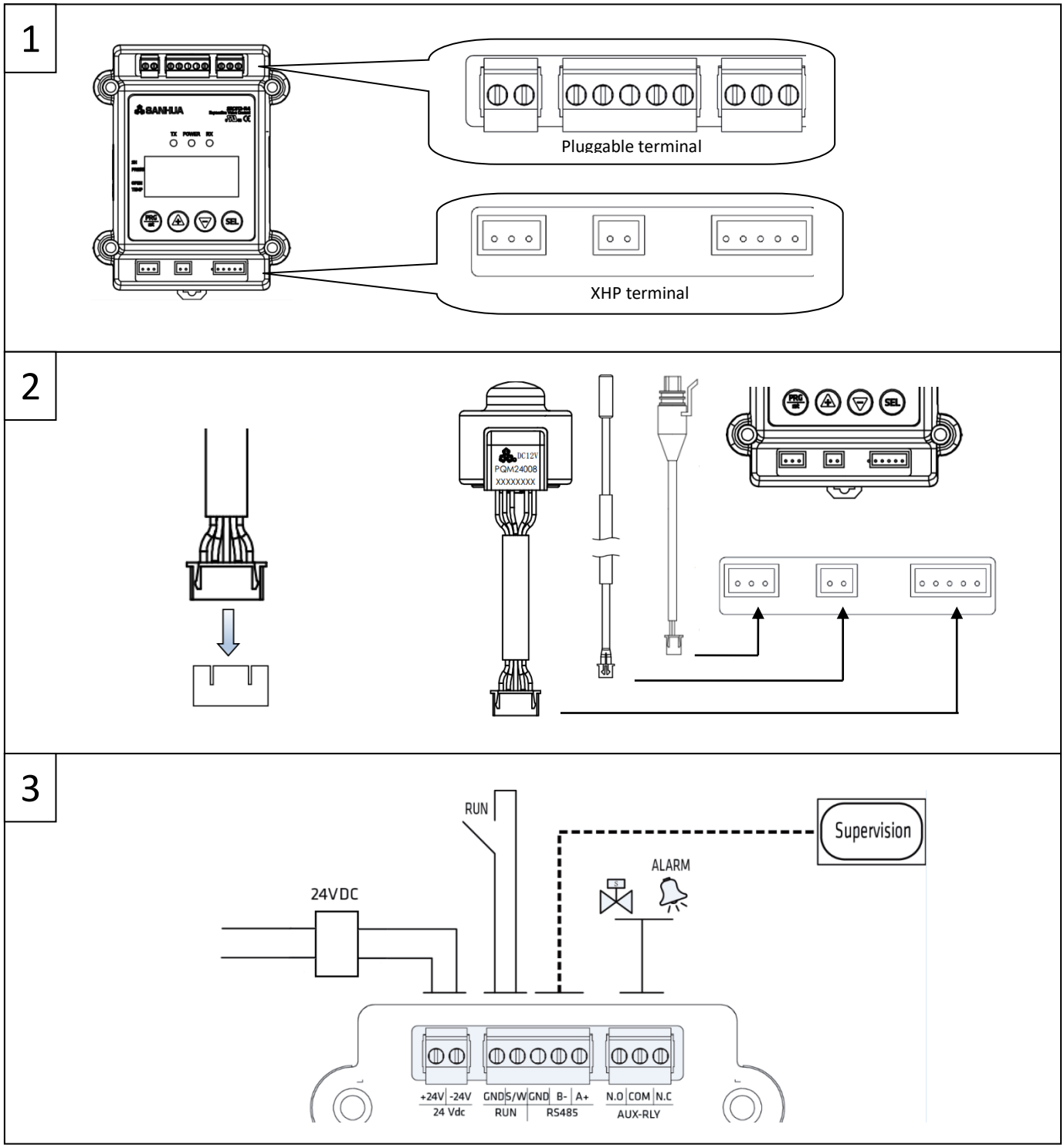
② The RUN port (compressor signal) is a passive port. If add a voltage it may cause the controller burn out.

③ Ultra capacitor please series connected to the power supply wire. (Coming soon)

④ If you use a transformer, please ensure the minimum power is 9W (for 1 controller + 1 EEV).

⑤ Min/max wire diameter: 0.08mm²~1.3 mm²

2. Wire connection



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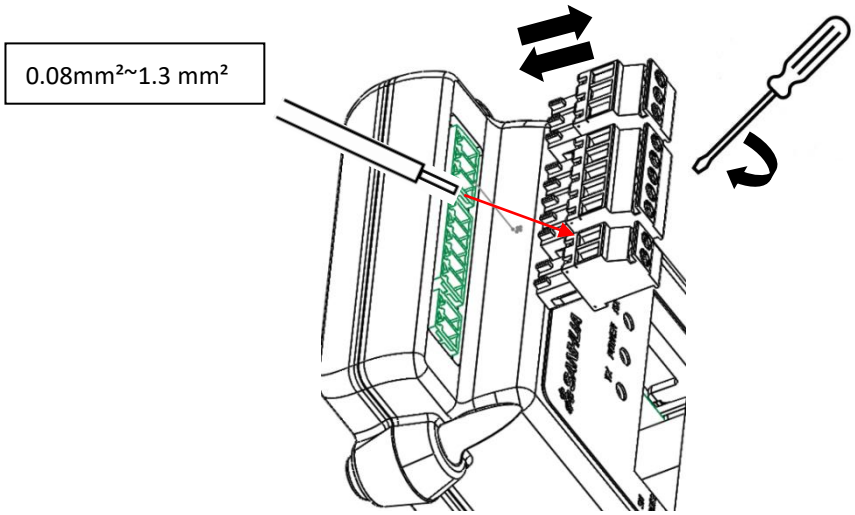

3. SEC have 3 pluggable terminal (from left to right)

Power is 24Vdc only, use 24Vac may cause pressure transmitter value error or even transmitter damage!

Pluggable terminal	Power supply	24Vdc	24V+	24Vdc only for SEC612 series
			24V-	
	Compressor signal and comm. port	RUN	GND	Passive switching signal, open or close synchronously with the compressor, close when using manual mode
			S/W	
		RS485	GND	GND
			B-	TRX-(B)
			A+	TRX+(A)
	Auxiliary relay output	AUX-RLY	N.O	Normal Open contact
			COM	common
			N.C	Normal Close contact

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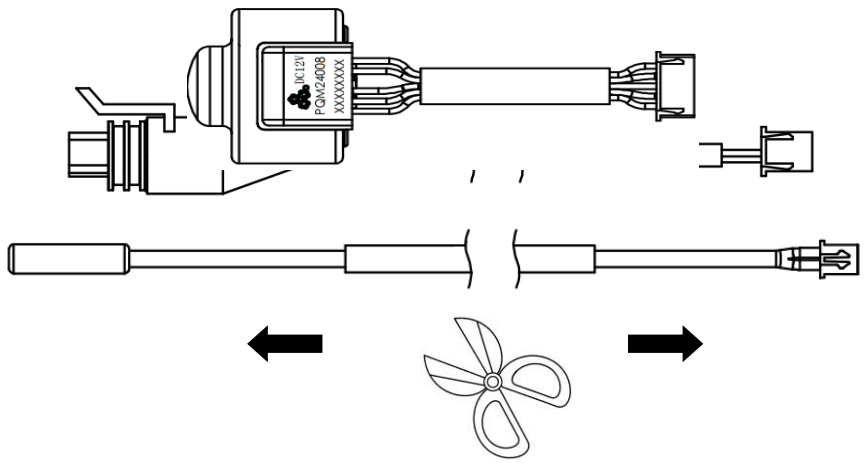
3. The solutions to increase the distance

1



1. If you want to extend the cable length, please follow below tips:

a. EEV coil cable: 24AWG tinned copper wire, recommend max wire length ≤10m to reduce transmission loss

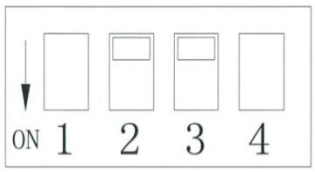
b. Pressure transmitter cable: 24AWG tinned copper wire, resistance ≤ 94.2Ω/km(20°C)

c. Temperature sensor: 24AWG tinned copper wire, chip 5000Ω at 20°C, ensure wire resistance won't influence chip，recommend max wire length ≤50m

d. Waterproof treatment should be done on cut point to prevent electrical failure

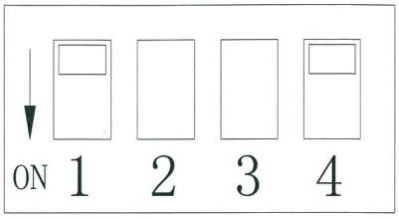
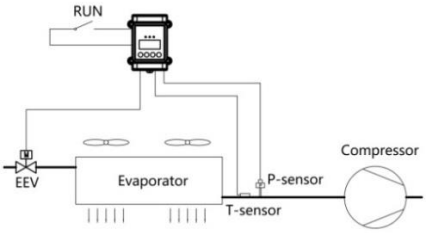
Part Ⅳ: Controller basic setting

1. EEV type selecting



DIP SW2: OFF, DIP SW3: OFF
1-2 phase, 500 steps, 30pps
for LPF

2. Control method selecting

DIP SW position	Description	Schematic
	-DIP SW1: OFF, DIP SW4: OFF -Superheat control (Default mode) -Temp./pressure signal ensures system SH stable	

3.Buttons and operation

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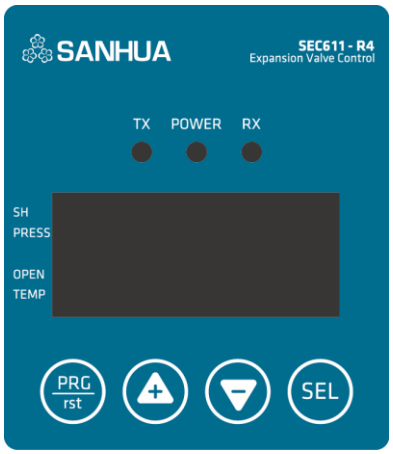


LED	Description
SH	Display current superheat
PRESS	Display pressure sensor value
OPEN	Display current EEV opening
TEMP	Display temperature sensor value
oC /bar	Unit of temp./pressure
⚠	Lighting when alarming
🔧	Flickering at compulsory open mode
POWER	Lighting at power up
TX,RX	Flickering at communication

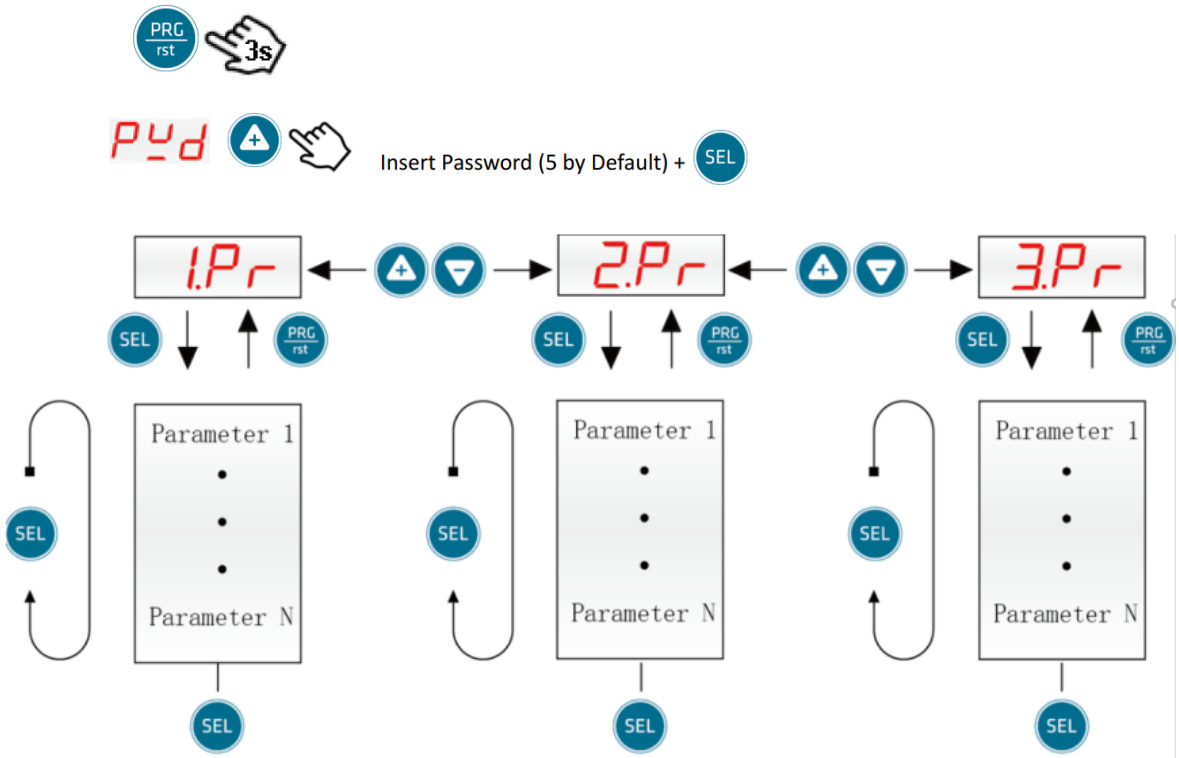
2

Enter the parameter setting interface / return parameter list

Switch screen display parameters, increase/decrease parameters

Confirm key, parameter switch in parameter table, long press save parameter

3



4.Key parameter setting

Refrigerant setting

Refrigerant setting is in 2.Pr menu, use to fing the parameter rFY

Add.	Code	Description	Default
40062	rFY	Refrigerant	0(R22)

Select your refrigerant value in the refrigerants list below:

0	R22	7	R1234YF	14	R744(CO2)	21	R124
1	R404A	8	R290	15	R744(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		
6	R1234ZE	13	R452A	20	R407F		

Target superheat setting

Target superheat is in 1.Pr, use to fing the parameter SH and set you wished value.

Add.	Code	Description	Default
40001	SH	Target superheat	6

If the pressure value doed not match your gauge, you need check the sensor range

Add.	Code	Description	Default
40063	PSH	Pressure sensor MAX. range	12
40064	PSL	Pressure sensor MIN. range	-1

5. Alarm information

Code	Description	Code	Description
StP	RUN signal disconnected	ñoP	MOP high pressure alarm
PoP	Pressure transmitter disconnected	LoP	LOP Low pressure alarm
PSt	Pressure transmitter short circuit	HSH	High superheat alarm
toP	Temperature sensor disconnected	LSH	Low superheat alarm
tSt	Temperature sensor short circuit	FrE	Low temperature freezing alarm

Note StP s not alarm, just reminding the compressor RUN signal is disconnected.

For more details about parameter please refer to the complete SEC controller manual available on our website.

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