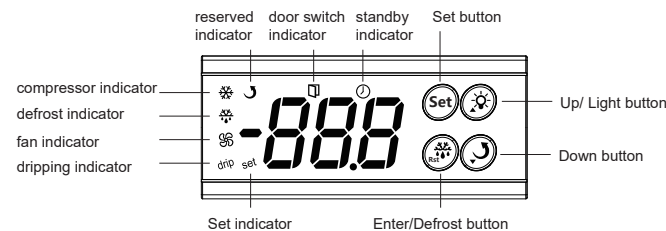


4. Panel and operation



Set button | Set

- Pressing SET button for 3s to display the value of set point;
- Switch menu and display interface;

Enter/Defrost button |

- Check the temperature of evaporator sensor ( If enabled ) ;
- Save the parameters and exit the parameter setting interface ;
- Pressing the key for 3 seconds to start manual defrost, or manually terminate defrost/defrost drip state ;

Up/Light button |

- Scrolls through menu items and decreases values ;
- Turn on or off the light ( if the controller with the light function ) ;
- Transfer the data from the controller to copy key ;

Down button |

- Scrolls through menu items and decreases values ;
- Transfer the date from the copy key to the controller ;

Key combination | Set +

- Pressing both SET button+Enter button for 3s to switch between the start model and stand by model ;

Key combination | Set +

- Pressing Set button+ light button for 10s to restore to factory setting and will display "rSt"code ;

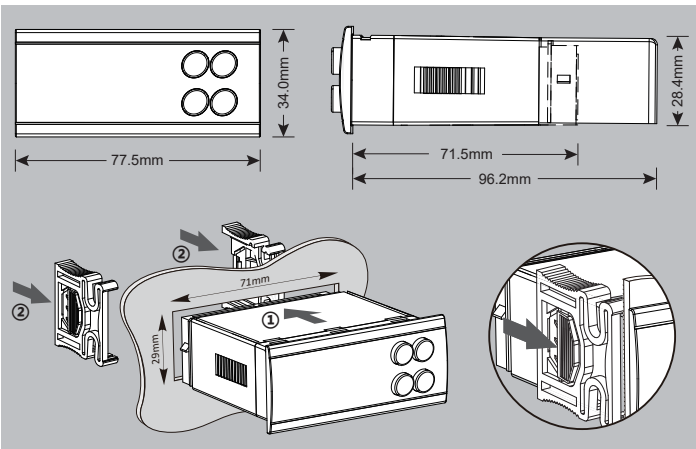
Note(1): Only light is working if the controller in the stand by model and the user can turn on/off by pressing light button.

Note(2): Pressing both SET button+Enter button for 3s to switch to the start model if the controller is in the stand by model.

**Dangerous : Please cut off the electrical connection before repairing it.**

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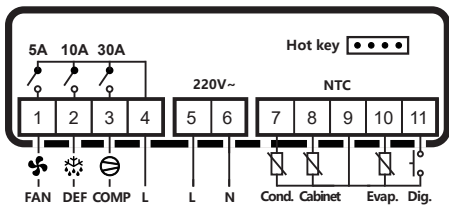
1. Dimensions and Panel mounting



Installation Precautions

- The thickness of the mounting panel should be in the range from 0.8 to 2.0mm ;
- Please ensure that the working environment of the controller meets the requirements in the technical parameters before installation ;
- Do not install the instrument in damp or dirty places; in fact, it is suitable for use in places with ordinary or normal levels of pollution. Keep the area around the instrument cooling slots adequately ventilated.

2. Wiring diagrams

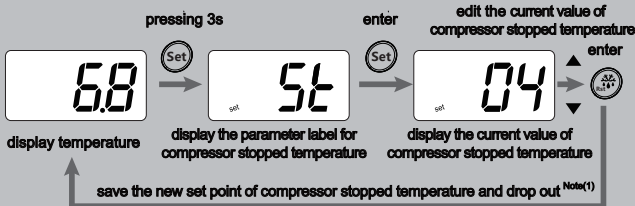


3. Technical data sheet

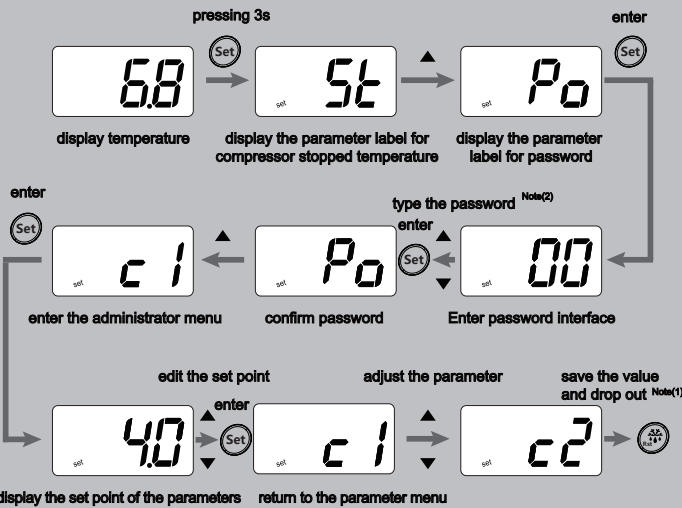
Dimensions and Panel mounting:

- please check the No.1 chapter
- Power supply: 220VAC±10%, 50/60Hz
- power consume: 3.0VA max
- Display : Three-digit digital tube and symbol light
- Resolution: 0.1°C or 1°F
- Temperature measurement range and accuracy: -50°C ~ 90°C, -40°C ~ 50°C@±1°C, others ±2°C
- Input : 3 NTC probes and 1 single input ( switch door)
- Outputs: Refer to the wiring diagram
- Working temperature: 0°C ~ 55°C
- Storage temperature: -25°C ~ 75°C
- Relative humidity: 20% ~ 85% ( no frost)

Edit the value of Set point (compressor stop temperature)






Edit the set point of other parameters ( Administrator menu)







Note(1): the new value will be saved and drop out auto if no operations more than 30s;

Note(2): the factory password is : 22 .

5. Parameter table

	No.	Para.	Default	Description	Range
	0	St	4.0°C	Set point	c5 ~ c6
	1	Po	00	Password	00 ~ 255
	2	c1	4.0°C	Differential	0.1°C(1°F) ~ 20.0°C(36°F)
	3	c2	3	Compressor min OFF time	0 ~ 60 mins
	4	c3	0	Output activation delay at start-up	0 ~ 90 mins
	5	c4	0.0°C	Probe for cold room calibration	-10.0°C(-20°F) ~ 10.0°C(20°F)
	6	c5	-2.0°C	Minimum Set Point	-50.0°C(-58°F) ~ St
	7	c6	22.0°C	Maximum Set Point	St ~ 85.0°C(185°F)
	8	c7	0	Max compressor stand by time (if c7≠0,when the compressor off, the compressor will start to work after c7+c2 time even if the cabinet temperature is lower than St+c1 )	0 ~ 9 mins, 0: disabled
	9	c8	0	Compressor min on time	0 ~ 90 mins, 0: disabled
	10	d1	1	Enable the evaporator probe	0: disabled    1: enable
	11	d2	0.0°C	Probe for evaporator	-10.0°C(-20°F) ~ 10.0°C(20°F)
	12	d3	1	Selects the count mode for the defrost interval	0: compressor running time 1: device running time
	13	d4	6	Interval between the start of two consecutive defrost cycles	0 ~ 90h, 0: defrost disabled
	14	d5	2	Display mode during defrost	0:displays the temperature read by probe Pb1; 1:display dEF until timeout of d9, then display the temperature read by Pb1; 2: display dEF during the whole period of defrost and draining; 3: locks recorded value of Pb1 at defrost start until the cabinet temperature is lower than the set point, then display the temperature read by Pb1; 4:locks recorded value of Pb1 at defrost start until timeout of d9, then display the temperature read by Pb1;
	15	d6	25	Determines the maximum defrost duration	0 ~ 240 mins, 0:disable
	16	d7	12°C	Defrost end temperature	0°C(32°F) ~ 50°C(122°F)
	17	d8	3	Draining time after defrost	0 ~ 60 mins, 0: disabled
	18	d9	10	Timeout time value of delay to display the temperature read by Pb1	0 ~ 90 mins
	19	d10	0	Defrost delay time after call	0 ~ 60 mins, 0: disabled
	20	d11	0	Defrost type	0: natural defrost 1: electric defrost 2: reverse cycle defrost
	21	d12	5	Defrost Minimum Time	0 ~ 240 mins
	22	d13	8°C	Defrost start temperature (if temperature of evap. >d13, the defrost will not start)	-50°C(-58°F) ~ 20°C(68°F) -50:disable
	23	F1	0	Fan management	0:working with the step of compressor and fan on/off according to F6 and F7 when compressor is off, always on during the period of defrost and draining(regardless of the status of the door open or closed) 1: working with the step of compressor,off when defrost enable, restart when time out of F3 after defrost 2:always on 3:always on until defrost enable; restart when time out of F3 after defrost 4:Determined by evaporator probe (F4/F5) 5: fan follow compressor and fan on/off according to F6 and F7 when compressor is off,off when defrost enable, restart when time out of F3 after defrost

	24	F2	0	First time activation delay after power on	0 ~ 60 mins
	25	F3	2	Activation delay after any	0 ~ 60 mins, 0:disable
	26	F4	-12°C	Min working temperature for	-50°C(-58°F) ~ F5
	27	F5	-5°C	Max working temperature for	F4 ~ 85°C(185°F)
	28	F6	3	Fan on cycle when the compressor is off	1 ~ 60 mins
	29	F7	0	Fan off cycle when the compressor is off	0 ~ 60 mins,0:fan always on
	30	A1	1	Proportional start-stop mode when the cabinet temperature probe failed	0:disable    1:enable
	31	A2	5	Compressor switch-off time in the event of error probe	1 ~ 60 mins
	32	A3	30	Compressor switch-on time in the event of error probe	1 ~ 60 mins
	33	A4	1	Buzzer alarm	0:disable    1:enable
	34	A5	-10°C	Lower temperature alarm	-50°C(-58°F) ~ A6
	35	A6	24°C	Higher temperature alarm	A5 ~ 85°C(185°F)
	36	A7	60	Alarm active delay time	0 ~ 180 mins
	37	A8	120	First time alarm active delay	0 ~ 180 mins
	38	A9	10°C	Higher temperature alarm differential	1°C(1°F) ~ 30°C(60°F)
	39	A10	5°C	lower temperature alarm differential	1°C(1°F) ~ 30°C(60°F)
	40	A11	0	Alarm calculation method	0: Absolute    1: relative
	41	A12	0	Auxiliary relay appointment	0: defrost
	42	do1	4	Disabled or enabled door switch	0: disabled 1: Turn off the fan when the door is open; 2: Turn on the light when the door is open, and turn off the light when the door is closed; 3: Turn on the light when the door is open and turn off the fan; turn off the light when the door is closed, and the fan will return to the state before the door is opened; 4: Turn off the compressor and fan when the door is open;
	43	do2	1	Alarm delay when door open(when do1=1,2,3)	0~60min,0: alarm disabled
	44	do3	2	Door delay after door close to trigger entering ECO (energy saving mode)	0~240min,0: disabled ECO
	45	do4	5.0°C	Set point offset in Eco mode	-25.0°C(-45°F) ~ 25.0°C(45°F)
	46	do5	4.0°C	Differential in Eco mode	0.1°C(1°F) ~ 20.0°C(36°F)
	47	do6	1	Compressor Door Open Delay (sets the delay in minutes before the compressor stops when the door is opened)	0~15 mins
	48	do7	5	Faulty Door Switch alarm delay(door open for more than do7 time.Controller understood that door switch is broken and work as there is no door switch. Compressor and fan start.)	0~60 mins,0: disabled
	49	cd1	0	Disabled or enabled the Probe for condenser	0: disabled    1: enable
	50	cd2	55°C	Higher temperature alarm active value of condenser	30°C(86°F) ~ 90°C(194°F)
	51	cd3	5°C	Condenser alarm differential	1°C(2°F) ~ 15°C(30°F)
	52	cd4	70°C	the value of condenser temperature to active the protection	30°C(86°F) ~ 90°C(194°F)
	53	cd5	10°C	Differential of condenser temperature to deactivate the protection	1°C(2°F) ~ 30°C(54°F)

<div>!!! www</div>	54	AuH	0	Automatic Heater Mode Enable	0: disabled 1: enable
	55	End	60	Energy Mode Delay	0~360 mins
	56	AHs	6.0°C	Auto Heat set point	0.0°C(32°F) ~ 90.0°C(194°F)
	57	AHd	4.0°C	Auto heat differential	0.5°C(1°F) ~ 20.0°C(36°F)
<div>✓</div>	58	u1	1	Unit	0: Fahrenheit 1: Celsius
	59	u2	1	ON/OFF function enable	0: disabled 1: enable
	60	u3	0	When the cabinet temperature rises, the display delay is displayed for every 1°C increase (For example:u3=2, and cabinet temperature is 4°C, and the cabinet door is opened, the real temperature is 9°C now, but the controller will show 5°C after 20s(u3*10 s), and 6°C after another 20s...Until the actual temperature is displayed. The compressor is controlled according to the real temperature.)	0~90(unit:10 seconds)
	61	u4	0°C	Offset display	-50°C(-90°F) ~ 50°C(90°F)
	62	PAS	22	Password set	0~255, 0: disabled

## 6. Alarm label and description

Label	Description	Cause	Problem solving
E1	Probe 1 in error	1.Measured values are outside operating range 2.Probe inoperable/short circuited/open	Verify probe type Verify probe wiring Replace probe
E2	Evaporator probe error		
E3	Condenser probe error		
rH	Alarm due to HIGH Temperature Pb1	If A11=0, the cabinet temperature>A6(If A11=1, cabinet temperature> St+A9) and the cabinet continues Temperature alarm delay time;	If A11=0,wait for value read by Pb1 to return < A6; If A11=1,wait for value read by Pb1 to return < ST + A9;
rL	Alarm due to LOW Temperature Pb1	If A11=0, the cabinet temperature <A5(If A11=1, cabinet temperature <St-A10) and the cabinet continues Temperature alarm delay time;	If A11=0,wait for value read by Pb1 to return > A5; If A11=1,wait for value read by Pb1 to return > ST – A10;
cH	Alarm due to HIGH condenser temperature	Value read by condenser probe ≥ cd2 and last more than 30minutes	Wait for value read by condenser probe ≤ cd2 - cd3
cP	Alarm due to HIGH condenser temperature protection	Value read by condenser probe ≥cd4	Wait for value read by condenser probe ≤ cd4-cd3 and last more than 15 minutes
dEF	Defrosting or draining	/	/
uP	The data success transfer to device from copy key	/	/
do	The data success transfer to copy key from device	/	/
Er	Copy key failed to edit	/	/
EP	Data of copy key error	/	/
rSt	Success to recovery to factory set	/	/

Note(1): if d1=1 while the defrost probe is not connected , will display E2; adjust the d1=0 to solve such problem. Please do the same operation for E3;

Note(2): Only display cH when condenser High temperature , no effect for output. And the alarm will stop when the temperature of condenser below to set point;

Note(3): Will display cP if the device active the protection because of higher temperature of condenser and the outputs will be closed until the temperature of condenser return to the normal condition, while the device will be displaying cP until cut off and return on the power of the device or enable the stand by model first and restart the device again.