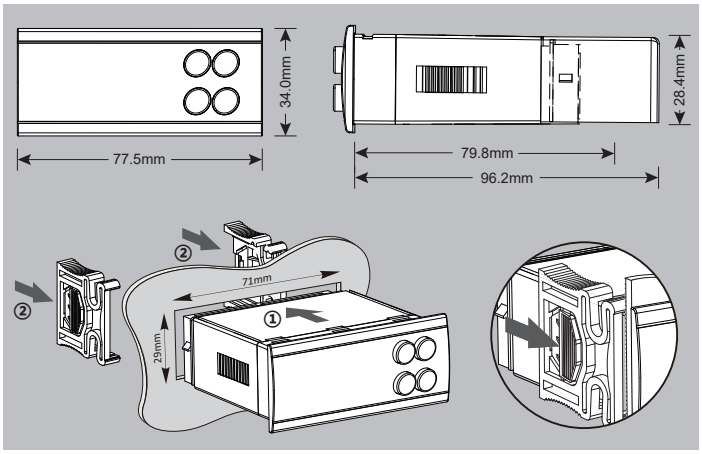
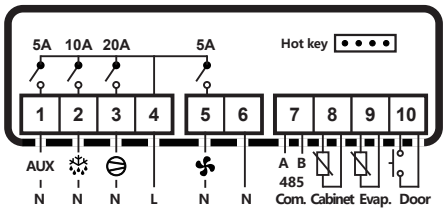
EN184TMOD User Manual

EN184TMOD (Real time clock,Modbus)

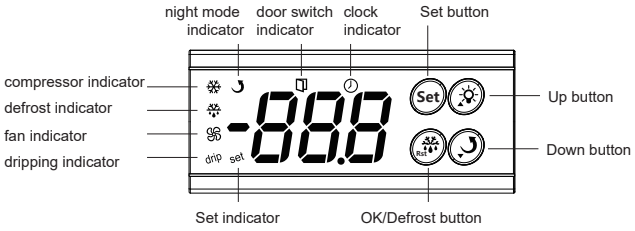
1. Dimensions and installation



2. Electrical connections



3. Panel and operation



3.1 Meaning of indicator lights

-Compressor indicator light: It lights up when the compressor is working, flashes when the compressor is delayed to start, and goes off at other times;

-Defrost indicator light: lights up during defrosting and goes off at other times;

-Fan indicator light: Lights up when the fan is working, and goes off at other times;

-Dripping indicator light: lights up when dripping, and goes off at other times;

-Set indicator light: lights up when setting shutdown temperature or other parameters, and goes off at other times;

-Night mode indicator: lights up during night mode and goes off at other times;

-Door switch indicator: lights up when the door is open and goes off at other times;

-Clock indicator: Lights up when the internal clock is enabled (tEn=1) and at least one effective defrosting time period is set. It flashes when the internal clock is faulty, and goes off in other situations;

3.2 Key functions

Set button | Set

-Pressing SET button for 3s to display the value of set point;

-Switch menu and display interface;

OK/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 and off the lights (effective when A12=2 and do1=0 or 1 or 4);

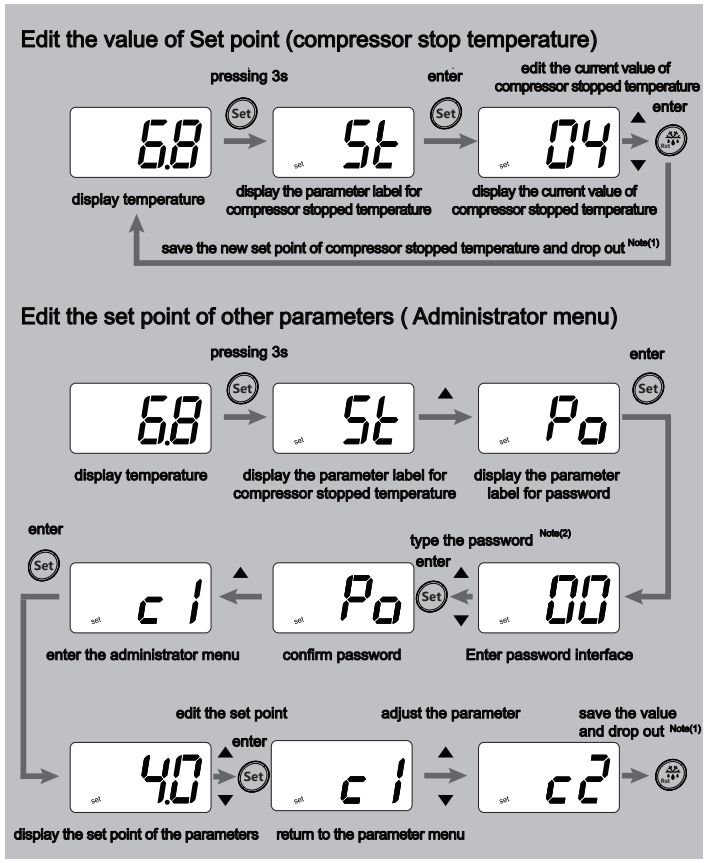
Down button |

-Scrolls through menu items and decreases values;

-Turn on and off the AUX relay (effective when Aux1=0 or 1);

3.3 Operation

How to set shutdown temperature and other parameters



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 。

How to check evaporation probe temperature

Press and release the key to display the evaporative probe temperature.

How to manually start or stop a defrost

Press and hold the key for 3 seconds to manually start or stop the defrost.

How to switch the AUX relay through the button

Press the key to control the AUX relay on/off (only valid when Aux1=0 or 1)

How to turn on and off

In the power-on state, press and hold the Set key and key for 3 seconds to power down the controller, all loads are shut off, and the digital tube displays "---";

In the power-off state, press and hold the Set key and key for 3 seconds, the digital tube will go out, then after 1 second, the digital tube will be fully displayed, and the controller will start to work normally.

4. Parameter

No.	Para.	Default	Description	Range
0	St	4℃	Set point	c5～c6
1	Po	00	Password input	00～255
2	c1	4.0℃	Differential	0.5℃(1℉)～9.0℃(20℉)
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℃	Probe for cold room calibration	-10.0℃(-20℉)～10.0℃(20℉)
6	c5	-2℃	Minimum Set Point	-50℃(-58℉)～St
7	c6	22℃	Maximum Set Point	St～85℃(185℉)
8	c7	0	Max compressor stand by time	0～9 mins, 0: disabled
9	c8	0	Compressor min on time	0～90 mins, 0: disabled
10	c9	5	Night mode set point delta	-20℃(-36℉)～20℃(36℉)
11	d1	1	Enable the evaporator probe	0: disabled 1: enable
12	d2	0.0℃	Probe for evaporator calibration	-10.0℃(-20℉)～10.0℃(20℉)
13	d3	1	Selects the count mode for the defrost interval	0: compressor running time 1: device running time
14	d4	4	Interval between the start of two consecutive defrost cycles	0～90h, 0: defrost disabled
15	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 during the whole period of defrost and draining ; 4:locks recorded value of Pb1 at defrost start until timeout of d9, then display the temperature read by Pb1;
16	d6	25	Determines the maximum defrost duration	1～90 mins
17	d7	32℃	Defrost end temperature	0℃(32℉)～50℃(122℉)
18	d8	2	Draining time after defrost	0～60 mins, 0: disabled
19	d9	10	Timeout time value of delay to display the temperature read by Pb1	0～90 mins
20	d10	0	Defrost delay time after call	0～60 mins, 0: disabled
21	d11	0	Defrost type	0: electric defrost 1: hot gas defrost
22	d12	0	reserve	0~30 mins
23	d13	-40℃	Low temperature forced start temperature	-80℃(-112℉)~0℃(32℉)
24	d14	0	Defrost when the device power on	0:disable 1:enable
25	d15	0	Defrost delay when the device power on	0 ～90 min
26	F1	3	Fan management	0: Start and stop together with the compressor, operate during defrosting and dripping; 1: Start and stop together with the compressor, close during defrosting and dripping, and delay F3 time to start after dripping; 2: Continuously work, turn off during defrosting and dripping; 3: Continuously work, turn off during defrosting and dripping, and delay F3 time to start after dripping; 4: Evaporator probe temperature control (F4/F5); 5: Start together with the compressor, cycle according to F6 working time/F7 stopping time when the compressor stops, close during defrosting and dripping, and delay F3 starting after dripping; 6: Continuous work;
27	F2	0	First time activation delay after power on	0～60 mins
28	F3	2	Activation delay after any defrost	0～60 mins, 0:disabled
29	F4	-12℃	Min working temperature for fan	-50℃(-58℉)～F5
30	F5	-5℃	Max working temperature for fan	F4～85℃(185℉)
31	F6	4	Fan working time during	2 ～10min
32	F7	1	Fan shutdown time during	1 ～10min
33	A1	1	Proportional start-stop mode when the cabinet temperature probe failed	0:disabled 1:enable
34	A2	5	Compressor switch-off time in the event of error probe	1～60 mins
35	A3	30	Compressor switch-on time in the event of error probe	1～60 mins
36	A4	1	Buzzer alarm	0:disabled 1:enable
37	A5	-10℃	Lower temperature alarm	-50℃(-58℉)～A6
38	A6	24℃	Higher temperature alarm	A5～85℃(185℉)
39	A7	20	Alarm active delay time	0～180min
40	A8	40	First time alarm active delay time	0～180min
41	A9	10℃	Higher temperature alarm differential	1℃(1℉)～30℃(60℉)
42	A10	5℃	lower temperature alarm differential	1℃(1℉)～30℃(60℉)
43	A11	0	Alarm calculation method	0: Absolute 1: relative temperature
44	A12	0	Auxiliary relay appointment	0: defrost 1: fan 2: light
45	Au1	1	AUX Relay configuration	0: Manual control (default on when powered on, start/stop controlled by pressing the down button, delay Au3 time to close after pressing the button, delay closing disabled when Au3=600) 1: Manual control (defaults to stop when powered on, remaining the same as Au1=0) 2: Continuous operation 3: Continuous shutdown 4: Start and stop together with the compressor 5: Run in cycles of Au2 and Au3 6: Control according to Au4 and Au5 (cabinet temperature probe) 7: Control according to Au4 and Au5 (evaporation probe) 8: Control according to Au4 and Au5 (condensation probe) 9: External alarm 10: According to clock control 11: Reserved
46	Au2	2	AUX Output stop time	2~30 min
47	Au3	8	AUX Output run Time	3~600 min
48	Au4	10℃	AUX Output shutdown temperature	-30℃(-22℉)～80℃(185℉)
49	Au5	4℃	AUX output startup difference	-30℃(-54℉)～30℃(54℉)
50	do1	0	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: As a synchronous defrost signal, start defrost; 5.Enter night mode when door open
51	do2	0	Delay in buzzer response when opening the door	0～200,delay=do2*3 s, 0=no response
52	cd1	00	Disabled or enabled the Probe for condenser	0: disabled 1: enable
53	cd2	55℃	Higher temperature alarm active value of condenser	30℃(86℉)～90℃(194℉)
54	cd3	5℃	Condenser alarm differential	1℃(2℉)～15℃(30℉)
55	cd4	70℃	the value of condenser temperature to active the protection	30℃(86℉)～90℃(194℉)

	56	tEn	1	Real time clock switch	0: disabled 1: enable
	57	d1d	0	Defrost time band 1st day	00:disable 01:Monday 02~07:Tuesday、..、Sunday 08:from Monday to Friday 09:from Monday to Saturday 10:from Saturday to Sunday 11:everyday
	58	d1h	0	Time band 1st hour	0~23 hour
	59	d1M	0	Time band 1st minute	0~59 minute
	60	d2d	0	Defrost time band 2nd day	0~11(same as d1d)
	61	d2h	0	Time band 2nd hour	0~23 hour
	62	d2M	0	Time band 2nd minute	0~59 minute
	63	d3d	0	Defrost time band 3rd day	0~11(same as d1d)
	64	d3h	0	Time band 3rd hour	0~23 hour
	65	d3M	0	Time band 3rd minute	0~59 minute
	66	d4d	0	Defrost time band 4th day	0~11(same as d1d)
	67	d4h	0	Time band 4th hour	0~23 hour
	68	d4M	0	Time band 4th minute	0~59 minute
	69	d5d	0	Defrost time band 5th day	0~11(same as d1d)
	70	d5h	0	Time band 5th hour	0~23 hour
	71	d5M	0	Time band 5th minute	0~59 minute
	72	d6d	0	Defrost time band 6th day	0~11(same as d1d)
	73	d6h	0	Time band 6th hour	0~23 hour
	74	d6M	0	Time band 6th minute	0~59 minute
	75	nOd	0	Reserve	0~11
	76	nOh	0	Night time ON hour	0~23 hour
	77	nOM	0	Night time ON minute	0~59 minute
	78	nFd	0	Reserve	0~11
	79	nFh	0	Night time OFF hour	0~23 hour
	80	nFM	0	Night time OFF minute	0~59 minute
	81	AOd	0	Reserve	0~11
	82	AOh	0	AUX Output ON hour	0~23 hour
	83	AOM	0	NUX Output ON minute	0~59 minute
	84	AFd	0	Reserve	0~11
	85	AFh	0	AUX Output OFF hour	0~23 hour
	86	AFM	0	NUX Output OFF minute	0~59 minute
	87	yEr	0	Reserve	0~99
	88	Mon	1	Reserve	1~12
	89	dMo	1	Reserve	1~31
	90	dAy	1	Week	1~7
	91	hr	0	Hour	0~23
	92	Min	0	Minute	0~59
	93	HMP	0	Reserve	0~999
	94	HMd	0	Reserve	0~999
	96	u1	01	Unit	00: Fahrenheit 01: Celsius
	97	u2	01	Start stand by model	00: disabled 01: enable
	98	u3	00	Display delay for every 1℃ increase in cabinet temperature	0~90(unit:10 sec), 0: disabled
	99	PAS	22	Password set	0~255, 0: disabled
	100	Adr	01	machine ID	01~127

5. Technical data sheet

Power supply: 100~240VAC，50/60Hz
Resolution: 0.1℃ or 1℉
Temperature measurement range and accuracy:
-50℃～90℃,-40℃～50℃@±1℃, others ±2℃
Input : 2 NTC probes and 1 single input (switch door)
Outputs: Refer to the wiring diagram
Working temperature: 0℃～55℃
Storage temperature: -25℃～75℃
Relative humidity: 20%～85% (no frost)

6. Error code

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	/	/