

1. APPLICATION

FT-01 and FT-102 are the freezer thermostat with precise temperature control and all enhanced features such as Defrost, Compressor delay protection, etc. The size is according to DIN standard.



FT-101 is equipped with 1 temperature sensor while FT-102 is equipped with 2 sensors, temperature and defrost sensors.

	FT-101	FT-102
Compressor relay (A)	8(3) ¹	8(3)
Fan relay (A)	-	8(3)
Defrost relay (A)	-	8(3)
Light relay (A)	8(3)	-

Remark : 1. Relay s'rating is 8A resistive load and 3A inductive load.

2. FEATURES

2.1 TEMPERATURE SETTING

- q Press and hold **SET** button for 3 seconds, the display will change from showing the temperature inside the freezer to be the setting temperature in blinking.
- q Press **▲** or **▼** button for temperature setting.

Note : The temperature range can be selected see Program 01 & 02 of Section 3.

2.2 COMPRESSOR OPERATION

The compress will be turned on if


$$\text{Temp. inside freezer (T)} \geq \text{Setting temp. (T}_{\text{set}}) + \text{Hysterisis temp. (T}_{\text{hys}})$$

Hysterisis temperature can be chosen in a range of 1 - 9 °C , see Program 03 of Section 3.

2.3 DEFROST

Defrost processor are different in models FT-101 & FT-102. They are

FT-101

Enter into defrost process	While in Defrost process	Exit from Defrost process
q Press  button to start process or the Defrost cycle is reached	q Compressor stops	q Defrost duration is reached



Note :

- q Defrost cycle can be set in a range of 0-15 hours (0 = no activate), see Program 04 of Section 3.
- q Defrost duration can be set in a range of 5-60 minutes, see Program 05 of Section 3.

After exiting from the process, the compressor is automatically turned on.

FT-102

This model has an extra Defrost sensor and relay to turn on/off the heating equipment for Defrost process. In case no heater this model can also be used. See Program 09 of Section 3.


Heater installed	Enter into Defrost process	While in Defrost process	Exit from Defrost process
Yes	q Press  button to start process or the Defrost cycle is reached	q Compress and fan stop q Heater is turned on	q Defrost cycle is reached or $T_{coil} \geq T_{stop\ defrost}$
No	q Press  button to start process or the Defrost cycle is reached	q Compressor stops q Fan is ON	q Defrost cycle is reached or $T_{coil} \geq T_{stop\ defrost}$

Note : $T_{stop\ defrost}$ can be programmed, see Program 06 of Section 3.

After existing from the process

- q Heater stops.
- q Compressor is ON.
- q In case of heater installed, the fan will start after the duration set in Program 07, Section 3.

2.4 LIGHT (MODEL FT-101 ONLY)

Press **SET** and  buttons to turn on/off the light inside the freezer.

2.5 COMPRESSOR DELAY

Compressor delay time can be programmed in a range of 1-5 minutes, see Program 08 Section 3.

2.6 FAN MODE (MODEL FT-102 ONLY)

Fan can be programmed to operate with the same sequence of compressor (Auto) or operate continuously (Con), see Program 10 section 3.

2.7 KEYBOARD LOCK

To lock/unlock the keyboard is by pressing  and  at the same time for 3 seconds.

2.8 SENSOR ERROR

- q If the temperature sensor is failed (open or short circuit), the alarm **E1** is displayed and the compressor will be turned on 5 minutes and turned off 5 minutes in sequence.
- q If the defrost sensor is failed (open or short circuit), the alarm **E2** is displayed.

2.9 MEMORY






All setting parameters are kept in the non-volatile memory.

3. PROGRAMING

There are 10 programs for parameter setting.

Program	Description	Range
01	Lowest temperature setting	$3 \sim 50\text{ }^{\circ}\text{C}$
02	Highest temperature setting	$\text{E} \sim 40\text{ }^{\circ}\text{C}$
03	Hysterisis temperature setting (T_{hys})	$1 \sim 9\text{ }^{\circ}\text{C}$
04	Defrost cycle time setting	$0 \sim 15\text{ hours}$ (0 = not activate)
05	Defrost duration setting	$5 \sim 60\text{ minutes}$
06	Stop-defrost temperature setting	$0 \sim 15\text{ }^{\circ}\text{C}$
07	Fan delay time setting after defrost	$0 \sim 10\text{ minutes}$
08	Compressor delay time	$1 \sim 5\text{ minutes}$
09	Heater installed	YES or NO
10	Fan mode (Auto or continuous)	Auto or Con

Programing can be done as follows :

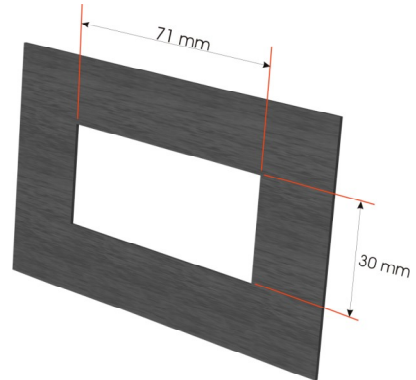
- a) Press and hold **SET** and  buttons at the same time for 3 seconds, the display will show **PROG**,
- b) Press **SET** button, the display will show Program Number, such as **P01**,
- c) Press  or  button until the Program Number required is shown,
- d) Press **SET** button,
- e) Press  or  button for parameter setting,
- f) Press **SET** button to confirm, the display will show next Program Number,
- g) Repeated (c) to (f) for other parameter setting.

Note : If no button is pressed within 10 seconds, it will automatically exit from the programing process.

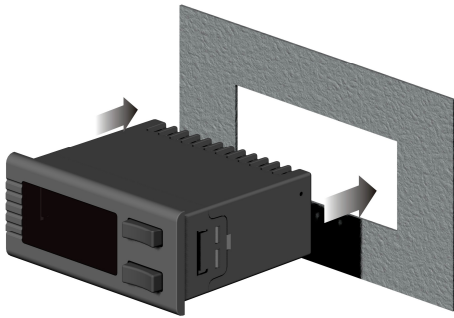
4. INSTALLATION



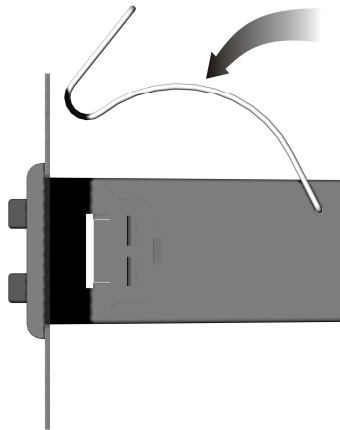
Take out the spring lock



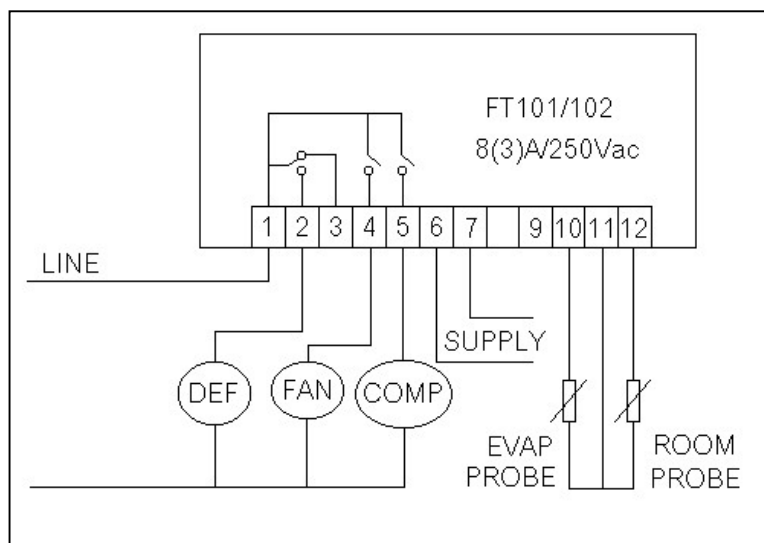
Making the 30X71 mm. hole at the freezer



Insert the thermostat



Put the spring back and push until it is locked



Wiring diagram