

## Cooling Controller

### ESM-3712-C



- Cooling Applications
- Economic
- Functional Internal Buzzer
- 3 Digits display
- NTC, PTC Input, 2 Wire PT-100 Input or 2 Wire PT-1000 Input  
(It must be determined in order)
- 3 output for compressor, defrost and fan controls
- 2 sensor input for cabinet and evaporator
- Configurable digital input
- ON / OFF Control
- Separately adjustable 2 offset value for cabinet and evaporator sensor
- Set value boundaries
- Operation selection of compressor operate continuously, stops or operates periodically in case of cabinet probe defect
- Compressor protection delays
- Selectable defrost function (hot gas or electric )
- Adjustable defrost time from front panel
- Manual defrost from front panel
- Defrost parameters
- Alarm parameters
- Fan can be operated depending on compressor and defrost
- Fan can be operated depending on evaporator temperature or ( cabinet - evaporator ) temperature
- Adjustable internal buzzer according to the defrost, cabinet probe defect and alarm status
- Button protection
- Password protection for programming mode

#### Specifications

##### Inputs

**PTC:** PTC (1KOhm @ 25°C)

**NTC:** NTC (10KOhm @ 25°C)

**Thermoresistances (RTD):** 2 wire Pt-100, Pt-1000 (IEC 751) (ITS90)

**Measurement Range:** It is ordering information.

**Accuracy:** ±%1 of scale

**Cold Junction Compensation:**Automatically ±0.1°C / 1°C.

**Sensor Break Protection:** Upscale

**Sampling Cycle:** 3 samples per second

**Control**

Control Form: ON/OFF

ON/OFF hysteresis :It can be configured by the user

**Output**

Compressor Output: Relay (10A@250Vac at resistive load) or

SSR Driver Output (Maximum 10mA@24Vdc)

Defrost Output: Relay (5A@250Vac at resistive load) or

SSR Driver Output (Maximum 10mA@24Vdc)

Fan Output: Relay (5A@250Vac at resistive load) or

SSR Driver Output (Maximum 10mA@24Vdc)

**Supply**

Supply Voltage:

24Vac/Vdc (-%15,+%10) 50/60 Hz -1.5VA

**Environmental Rating and Physical Specification**

Operation Temperature:0...50°C

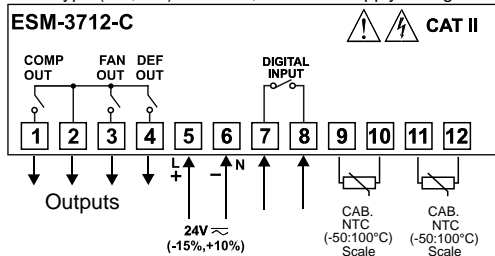
Humidity:0-90%RH (none condensing)

Protection Class:IP65 at front, IP20 at rear

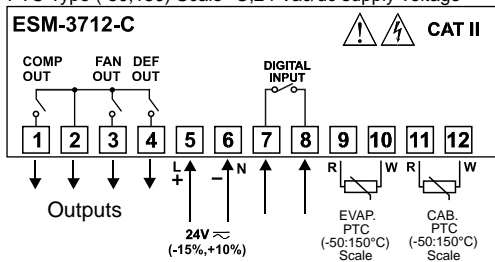
Dimension:77x35mm,Depth:62.5mm.

**Electrical Wiring**

NTC Type (-50;100) Scale °C,24 Vac/dc supply voltage



PTC Type (-50;150) Scale °C,24 Vac/dc supply voltage



**Ordering Information**

ESM-3712-C (77x35 DIN Size)	A	BC	D	E	/	FG	HI	/	U	V	W	Z
			0		/	00	00	/	1		0	0

A Supply Voltage	
2	24Vdc/Vac (-15%;+%10) 50/60Hz
BC Input Type	Scale (°C)
11	Pt-100, IEC751 (ITS90) -50 ... 400°C
09	Pt-100, IEC751 (ITS90) -19,9 ... 99,9°C
12	PTC-1K (Note-1) -50 ... 150°C
15	PTC-1K (Note-1) -19,9 ... 99,9°C
14	Pt-1000, IEC751 (ITS90) -50 ... 400°C
13	Pt-1000, IEC751 (ITS90) -19,9 ... 99,9°C
18	NTC-10K (Note-1) -50 ... 100°C
19	NTC-10K (Note-1) -19,9...99,9°C

Note-1 : If input type is selected PTC or NTC (BC = 12, 15, 18, 19 ),Temperature sensor is given with the device. For this reason,If input type is selected as PTC, sensor type (V = 0,1 or 2) or If input type is selected as NTC, sensor type (V = 0,3 or 4) must be declared in ordering information.

E Compressor Output	
1	Relay Output ( Resistive load 10 A@250 Vac, 1 NO )

FG Defrost Output	
01	Relay Output ( Resistive load 5 A@250 Vac, 1 NO )

HI Fan Output	
01	Relay Output ( Resistive load 5 A@250 Vac, 1 NO )

V Temp.Sensor which is given with ESM-3712-C	
0	None
1	PTC-M6L40.K1.5 (PTC Air Probe 1.5m silicon cable)
2	PTCS-M6L30.K1.5.1/8" (PTC Liquid Probe with 1.5 m silicon cable)
3	NTC-M5L20.K1.5 (NTC Probe, thermoplastic moulded with 1.5 m cable for cooling application)
4	NTC-M6L50.K1.5 (NTC Probe, stainless steel housing with 1.5 m cable for cooling application)
9	Customer