MTC35-F11 Temperature Controller
Instruction Manual

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1. Introduction

MTC35-F11 Temperature Controller is a particularly flexible controller, which allows ON/OFF control of your refrigeration or heating plant.

To get the best performance, before installing and using it, read this instruction manual carefully.

The controller has one output and one alarm output which are controlled by a MCU according to value programmed for the parameters in Parameter List.

Temperature sensor : NTC, range: -50~150 °C.

2. Coding

MTC35-F11-1T-2R-220V
① ② ③ ④

① Software Function

F11	Single input temperature controller

② Input

1T	1 temperature sensor

③ Output

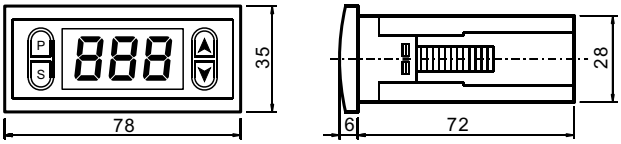
2R	2 Relays

④ Power Supply

220V	220V AC
24V	24V AC/DC
12V	12V DC

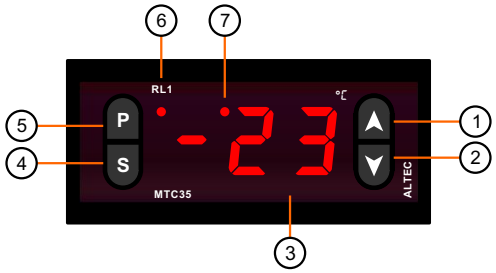
3. Dimensions and Mounting

1) Prepare a rectangular cut-out in the mounting panel to the size 72×30mm.
2) Insert the controller from the front panel cut-out.
3) From behind of the panel, slide the mounting brackets into the guides on the side of the housing. The flat faces of the mounting brackets must lie against the housing.
4) Push the mounting brackets up to the back of the panel, and tighten them evenly.



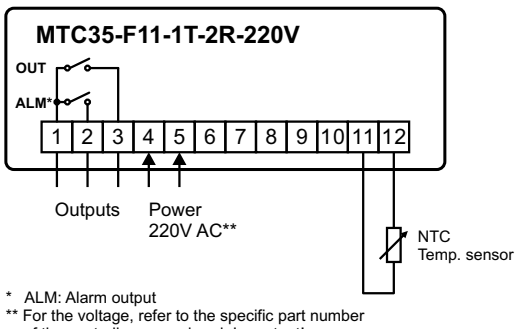
Note:
Please completes waterproof processing properly, in order to avoid seeps causes the instrument damage.

4. Front Panel Layout



①. Up Key
②. Down Key
③. Dispaly
Indicates PV, Parameters and Values
④. Setting Key(S)
⑤. Parameter Key(P)
⑥. Output 1 indicator(RL1)
lit when OUT is 'ON'
⑦. Alarm output indicator
lit when ALM is 'ON'

5. Electrical Connection



* ALM: Alarm output
** For the voltage, refer to the specific part number of the controller you ordered. Important!

6. Operation

6.1 Viewing the PV

Mounting and wire up the controller and switch on, 3 seconds later, the measured temperature(PV) will appear on display.

6.2 Setpoint Adjusting

During the basic functioning, press key 'P' and hold for 1 second, setpoint SP appears on the display. Press key 'S', the value of SP appears; press keys ▲ or ▼ to increase or decrease setpoint. Keeping it pressed results in a progressively faster variation. Press key 'P' again, next parameter HYS appears, setting its value in the same way.

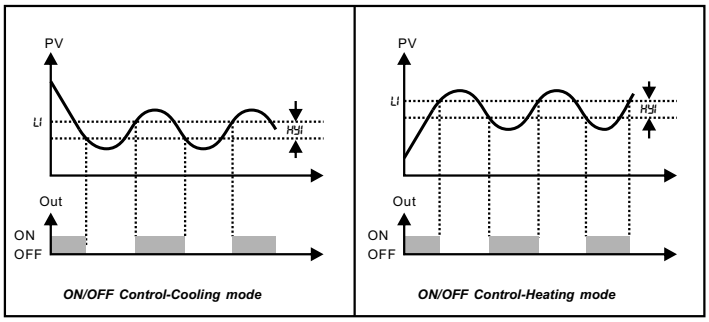
6.3 Output Action

Ac1 = dir, OUT1 as cooling control output;

Ac1 = rEv, OUT1 as heating control output;

While the controller was configured for cooling applications, to avoid compressor switch off and on frequently, must set the minimum off time(rt1) between the switch OFF and switch on, regardless of the input value.

The control algorithm is ON/OFF, SV is Li, Hysteresis is HY1.



ON/OFF Control-Cooling mode *ON/OFF Control-Heating mode*

6.4 Parameter List

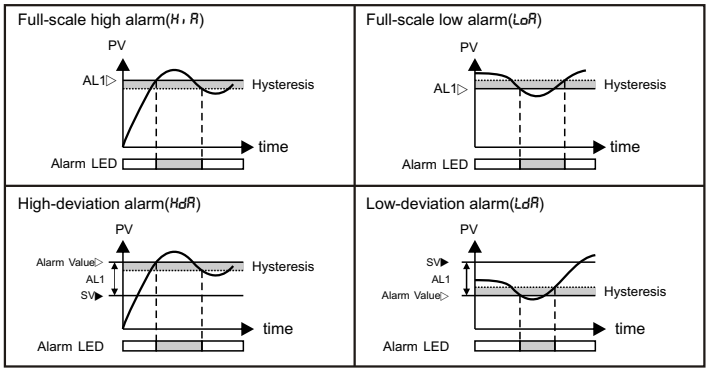
Switch off the controller; press keys ▲ and ▼ at the same time and hold on, then switch the controller on again. Parameter SPH appears on display. Parameter selection and the display of the value is obtained by pressing key P repeatedly; change with keys ▲ and ▼ and store with S.

SN	Mnemonic	Parameter	Adjustable Range	Parameter Description
1	Li	Temperature setpoint	SPL~SPH	Operation parameter
2	HY1	Temp. hysteresis	1~10°C	
3	AL1	Alarm value	SPL~SPH	
4	HY2	Alarm hysteresis	1~10°C	
5	SPH	Setpoint high limit	-50~150°C	limit the temperature adjustable range Li
6	SPL	Setpoint low limit	-50~150°C	
7	rt1	OUT relay minimum off time	0~10 minutes	Compressor protection
8	PF1	Temperature sensor failure output	on oFF	OUT 'ON' while sensor failure OUT 'OFF' while sensor failure
9	Adj	Temp. sensor adjustment	-5~5℃	
10	Act	Output action	dir rEv	Direct(cool) Reverse(heat)
11	ALo	Alarm mode	oFF HiA LoA HdA LdA	Alarm off Full-scale high alarm Full-scale low alarm High-deviation alarm Low-deviation alarm

6.5 Alarms

Four different types of alarm can be configured with ALo: HiA, LoA, HdA, LdA as the right table shows. The hysteresis is HY2.

Hysteresis is used to provide a definite indication of the alarm condition and to prevent alarm relay chatter.



6.6 Sensor Failure

While sensor connection breakdown or is displayed, or while overrange Snb is displayed.

In this case, relay output is determined by PF1 as shown in the parameter list.

Technical Data

Measurement range	-50~150 °C
Resolution	1 °C
Sample rate	125ms
Temperature sensor	NTC, PVC Wire, 2.0m
Relay contact rating	5(8)A/250VAC
Control algorithm	ON/OFF
Power supply	220V AC, 24V AC/DC, 12V DC, ≤2.0W
Dimensions	W78×H35×D78mm
Environmental	Temp: -20~55 °C, Rel. Humidity: ≤85%