



MTC35-F40 Temp. & Humi. Controller Instruction Manual

1. Introduction

MTC35-F40 Temp. & Humi. controller is a particularly flexible controller, which allows On/Off control of your refrigeration(dehumidification) or heating(humidification) plant.

The controller has two output which is controlled by a MCU according to value programmed for the parameters in Parameter List.

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

Humidity sensor : HM1500, range: 0~100% RH.

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

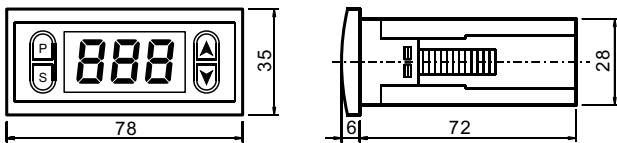
2. Coding

MTC35-F40-1T1H-2R-220V

① Software Function	③ Output
F40 Temperature & humidity controller	2R 2 Relays
② Input	④ Power Supply
1T1H 1 Temp. + 1 Humi. sensor	220V 220V AC

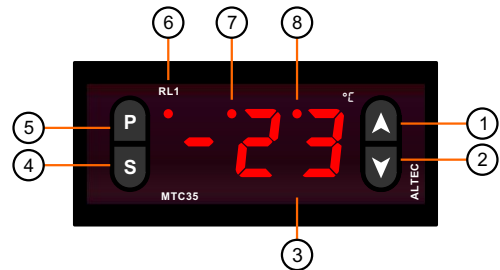
3. Dimensions and Mounting

- 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.



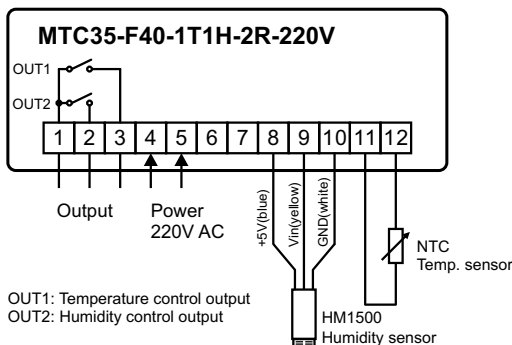
Note:
Please completes waterproof processing properly, in order to avoid seeps causes the instrument damage.

4. Front Panel Layout



- ①. Up Key
- ②. Down Key
- ③. Display
Indicates PV, Parameters and Values
- ④. Setting Key(S)
- ⑤. Parameter Key(P)
- ⑥. Temp. control output indicator(RL1)
lit when OUT1 is 'ON'
- ⑦. Humidity control output indicator
lit when OUT2 is 'ON'
- ⑧. Humidity displaying indicator
lit when humidity value is displaying

5. Electrical Connection



6. Operation

6.1 Viewing the PV

Mounting and wire up the controller and switch on, 3 seconds later, the measured temperature will appear on display. Temperature and humidity value displaying can be exchange by pressing S key. When the 'Humidity displaying indicator' is lit, the display indicates measured humidity.

6.2 Setpoint Adjusting

During the basic functioning, press key 'P' and hold for 1 second, temperature setpoint L1 appears on the display. Press key 'S', the value of L1 appears; press keys ▲ or ▼ to increase or decrease setpoint. Keeping it pressed results in a progressively faster variation. Press key 'P' again, next parameter H1 appears, setting its value in the same way.

Use the same method, humidity setpoint L2 and hysteresis H2 can be set.

6.3 Output Action

$Rt1 = d, r$, OUT1 as cooling control output;

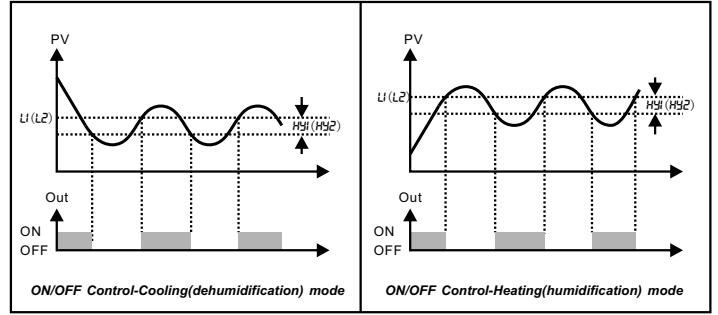
$Rt1 = rEu$, OUT1 as heating control output;

$Rt2 = d, r$, OUT2 as dehumidification control output;

$Rt2 = rEu$, OUT2 as humidification 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, temperature setpoint is $L1$, hysteresis is $H1$; Humidity setpoint is $L2$, hysteresis is $H2$.



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 $5PH$ 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	$L1$	Temperature setpoint	$5PH-5PL$	Operation parameter
2	$H1$	Temp. hysteresis	1~10°C	
3	$L2$	Humidity setpoint	0~100% RH	
4	$H2$	Humi. hysteresis	1~20% RH	
5	$5PH$	Temp. setpoint high limit	-50°C~150°C	
6	$5PL$	Temp. setpoint low limit	-50°C~150°C	
7	$rt1$	OUT1 relay Min. off time	0~10 minutes	Compressor protection
8	$PF1$	Temperature sensor failure output	on OFF	OUT1 'ON' while sensor failure OUT1 'OFF' while sensor failure
9	$Rd1$	Temp. sensor adjustment	-5~5°C	
10	$Rt1$	Temperature control action	d, r rEu	Direct(cool) Reverse(heat)
11	$rt2$	OUT2 relay Min. off time	0~10 minutes	Compressor protection
12	$PF2$	Humidity sensor failure output	on OFF	OUT2 'ON' while sensor failure OUT2 'OFF' while sensor failure
13	$Rd2$	Humi. sensor adjustment	-10~10% RH	
14	$Rt2$	Humidity control action	d, r rEu	Direct(Dehumidificate) Reverse(Humidificate)

6.5 Sensor Failure

While temperature sensor connection breakdown ur is displayed, or while overrange $5nb$ is displayed.

At this time, temperature control output(OUT1) is determined by $PF1$ as shown in the parameter list.

While humidity sensor connection breakdown error code $i00$ is displayed, or while overrange 0 is displayed.

In this case, humidity control output(OUT2) is determined by $PF2$ as shown in the parameter list.

Technical Data

Temperature sensor	NTC, PVC Wire, 2.0m Range: -50~150 °C Accuracy: 1 °C
Humidity sensor	HM1500 Range: 0~100% RH Accuracy: 3% RH
Sample rate	125ms
Relay contact rating	5(8)A/250VAC
Control algorithm	ON/OFF
Power supply	220VAC, ≤2.0W
Dimensions	W78×H35×D78mm
Environmental	Temp: -20~55 °C, Rel. Humidity: ≤85%