MT-518R*i*

DIGITAL TEMPERATURE CONTROLLER WITH TWO STAGES

Ver. 12

MT518V12-01T-10873

1. DESCRIPTION

MT-518R*i* is a temperature controller with two outputs that can be configured as double stage of refrigeration, double stage of heating or heating and refrigeration. Its second output also can be configured for alarm intra, extra-range or, even , relative extra-range.
Product complies with CE (European Union) and UL Inc. (United States and Canada).

2. APPLICATION

• Winter/Summer automatic system in air conditioning

3. TECHNICAL SPECIFICATIONS

- Power supply: MT-518Ri ⟶ 115 or 230 Vac ± 10% (50/60Hz)
MT-518RiL ⟶ 12 or 24 Vac/dc
- Control temperature: -50 to 105ºC (decimal resolution between -10 and 100 ºC)
- Input: NTC sensor
- Load current: 8(3)A/250Vac 1/4HP each output
- Dimensions: 71 x 28 x 71mm
- Operation temperature: 0 to 50 ºC
- Operation humidity: 10 to 90% RH (without condensation)

CLASSIFICATION ACCORDING TO IEC60730-2-9 STANDARD:
- Temperature limit of the installation surface: 50°C
- Type of construction: Built-in electronic controller
- Automatic action: Type 1
- Control of pollution: Level 2
- Impulse voltage: 1,5kV
- Temperature for the test of sphere pressure: 75°C and 125°C
- Insulation: Class II

4. CONFIGURATIONS

4.1 - Control temperatures adjust (SETPOINTS)

- Press SET for 2 seconds until SEt appears, then release it. St1 will appear and the adjusted temperature for 1st stage.
- Use the keys ▼ and ▲ to change the value and then press SET to record it.
- Now St2 and the adjusted temperature for 2st stage will appear. (only if F08 = 0 or F08 = 1).
- Use the keys ▼ and ▲ to change the value and then press SET again.

4.2 - Parameters table

Configuration parameters protected by access code.

Fun	Description	Min	Max	Unit
F01	Access code 123 (one hundred and twenty-three)	-	-	-
F02	Display (offset)	-5.0	5.0	°C
F03	1st stage operation mode(1)	0	1	-
F04	Minimum setpoint allowed to the end user (1st stage)	-50	105	°C
F05	Maximum setpoint allowed to the end user (1st stage)	-50	105	°C
F06	Control differential (hysteresis) of 1st stage	0.1	20.0	°C
F07	Minimum delay to turn on the 1st stage output	0	999	sec.
F08	2nd stage operation mode(2)	0	4	-
F09	Minimum setpoint allowed to the end user (2nd stage)	-50	105	°C
F10	Maximum setpoint allowed to the end user (2nd stage)	-50	105	°C
F11	Control differential (hysteresis) of 2nd stage	0.1	20.0	°C
F12	Minimum delay to turn on the 2nd stage output	0	999	sec.
F13	Alarm delay when the instrument is powered on	0	999	min.
F14	Alarm output time on	0	999	sec.
F15	Alarm output time off	0	999	sec.

(1)First stage operation mode:
0 - refrigeration
1 - heating

(4)2nd stage operation mode:
0 - refrigeration
1 - heating
2 - alarm (inside of range)
3 - alarm (outside of range)
4 - relative alarm (outside of range)

Note: F02 function allows to correct eventual shuting lines in the reading, proceeding of the sensor exchange or alteration of sensor length.

4.3 - Parameters alteration

Access the function F01 pressing simultaneously the keys ▼ and ▲ for 2 seconds until appearing Fun , releasing after that. Soon it will appear F01 , and then press SET (short touch).
- Use the keys ▼ and ▲ to enter with the access code (123), and then press SET to enter.
- Use the keys ▼ and ▲ to access the desired function.
- After selecting the function, press SET (short touch) to display the configured value for that function.
- Use the keys ▼ and ▲ to change the value and then press SET to record the new value and return to the functions menu.
- To return to the normal operation, press SET until --- appear.

5. FUCTIONS WITH FACILITATED ACCESS

Registers of minimum and maximum temperatures

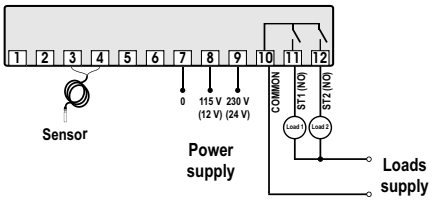
Press ▲ . The minimum registered temperature appears and after soon the maximum registered temperature.
Nota: To reset the registers, keep the key ▲ pressed during the visualization of the minimum and maximum temperatures until rSt to be showed.

If the instrument is configured as alarm, set the F09 and F10 act points normally and ignore **ST2** and F11. If the temperature goes out the specified range and ring the alarm, press ▼ and SET to inhibit the sound.

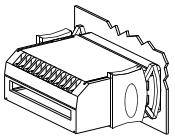
6. SIGNALING

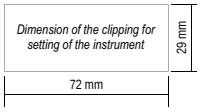
ST1 - 1st stage output on
ST2 - 2nd stage output on
Err - Detached sensor or temperature outside the specified range
With F08=4 the ST2 output is activated when the temperature reaches a value equal **ST1** minus the configurated value in F09 (**ST1**-F09), or when the temperature reaches a value equal **ST1** plus the configurated value in F10 (**ST1**+F10)
Ex.:
- Temperature in ST1 = 25 ºC
- Value in F08 = 4
- Value in F09 = 2
- Value in F10 = 5
The **ST2** output will be kept on when the temperature is below 23 ºC (25-2) or above 30 ºC (25+5). If **ST1** value is changed to 24 ºC the alarm values will be automatically modified to 22 and 29 ºC.
IF the functions F14 and F15 are set with zero, the ST2 output will be kepped on while the alarm condition persist.

7. WIRING DIAGRAM



	MT-518Ri	MT-518RiL
7 - 8	115V~	12V≂
7 - 9	230V~	24V≂





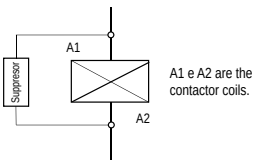
Load 1 - Refrigerator
- Heating
- Contactor
- Solenoid

Load 2 - Refrigerator
- Heating
- Contactor
- Solenoid

Above specified current use contactors.

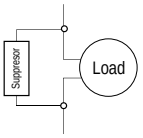
IMPORTANT
According to the chapters of norm IEC 60364:
1: Install protector against overvoltage on the power supply
2: Sensor cables and signal cables of the computer may be joined, but not in the same electric conduit through which the electric input and the activation of the loads run
3: Install transient suppresors (RC filters) parallel to the loads as to increase the product life of the relays.
For more information contact our application eng. department through e-mail ***support@ fullgauge.com*** *or dial +55 51 3475.3308.*

Contact suppresor connection diagram



A1 e A2 are the contactor coils.

Diagram for suppresor installation for direct drive load inputs



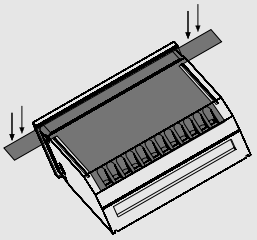
For direct activation the maximum specified current should be taken into consideration.

Note: The user can increase the length of the sensor cable to up to 200 meters, by using PP 2 X 24 AWG cable. For immersion in water, use thermometric well.

PROTECTIVE VINYL:

This adhesive vinyl (included inside the packing) protects the instruments against water drippings, as in commercial refrigerators, for example.
Do the application after finishing the electrical connections.

Remove the protective paper and apply the vinyl on the entire superior part of the device, folding the flaps as indicated by the arrows.



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