MT-518

TWO STAGES CONTROLLER

Version 10

MT-518R

MT-518C

Find manuals of all line on Web
www.fullgauge.com
fullgauge@fullgauge.com
Phone/Fax: (55 51) 475-3308
BRAZILIAN PRODUCT

DESCRIPTION

The **MT-518** controls and indicates the temperature.It has one sensor and two outputs that allow the drive of refrigeration, heating or both according to configuration.

Application: In refrigeration it controls two stages. In air-conditioning, it works in winter/summer automatic system with neutral zone.In a third application, it controls temperature in the first stage and haves the second stage that can be configured for alarm (inside or outside the range).

TECHNICAL SPECIFICATIONS

- **Power supply with internal transformer:** 220 VAC (50/60 Hz)
  Other available under request: 127 VAC or 12 VCC/VAC - 24 VCC/VAC
- **Control temperature:** -50 to 105 °C (hysteresis from 0.1 to 20 °C)
- **Load Current:** 10 A (resistive load)
- **Dimensions:** Rectangular: 70 x 28 x 60 mm
  Cylindrical: Diameter= 60 mm / Depht= 40 mm
- **Operation temperature:** 0 to 60°C
- **Operation humidity:** 10 to 90% RH (without condensation)

HOW TO CONFIGURE

CONTROL TEMPERATURE ADJUST (SETPOINT):

-Press SET for 2 seconds unitl SEt appears, release after that. Will St1 appear and the control temperature for the first stage.

-Use the keys ▼ and ▲ to change the value and then press SET.

-This time St2 appears and the control temperature for the second stage.

-Use the keys ▼ and ▲ to change the value, ans then press SET

PARAMETER CONFIGURATION

-Press the keys ▼ and ▲ at the same time for 2 seconds until Fun appears,and release then immediately.

-When F01 appears on the display press quickly SET and use the keys ▼ and ▲ to enter the acess code (123) and then press SET.

-Use the keys ▼ and ▲ to acess the desired function.

-After select the function, press SET (short touch) to display the value configured for that function.

-Use the keys ▼ and ▲ to change the value and then press SET to save the configured value and return to functions menu.

-To return to the normal operation, press SET (long touch) unitl --- to be showed.

INFORMATION WITH FACILITATED ACCESS:

Registers of minimum and maximum temperature

Press ▲ .The registered minimum temperature appears and after soon the registered maximum temperature.

Note: To reset the registers, keep the key ▲ pressed and during the visualization of the minimum and maximum temperatures until rSt appears.

.

If configured as alarm, establish in F09 e F10 the drive points and disdains **ST2** and F11. Case the temperature is outside the specified range and sounds the alarm, press ▼ and **SET** to inhibit the sound for the configured period in the function F13.

ADVANCED FUNCTIONS

Configuration parameters protected by access code.

Funtion	Description	Minimum	Maximum	Unit
F01	Access code: 123	-	-	-
F02	Offset	-5.0	5.0	°C
F03	Operation mode in the 1°stage(1)	0	1	-
F04	Minimum set allowed in the 1° stage	-50	105	°C
F05	Maximum set allowed in the 1° stage	-50	105	°C
F06	Control differential (hysteresis) of the 1° stage	0.1	20.0	°C
F07	Minimum delay to turn the output on and off the 1°stage	0	999	seg.
F08	Operation mode of 2°stage(2)	0	4	-
F09	Minimum set allowed in the 2° stage	-50	105	°C
F10	Maximum set allowed in the 2°stage	-50	105	°C
F11	Control differential (hysteresis) in the 2° stage	0.1	20.0	°C
F12	Minimum delay to turn the output on and off the 2°stage	0	999	seg.
F13	Alarm inhibition time when turning the instrument on	0	999	min.
F14	On time of the alarm output	0	999	seg.
F15	Off time of the alarm output	0	999	seg.

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

If zero was configured in the functions F14 and F15 the alarm output will keep on while persist the alarm condition.

LEDS:

ST1 - *1º stage output on*

ST2 - *2º stage output on*

Err - *Sensor detached or temperature out the specified range*

(1)Operation mode of the 1° stage:

0 - refrigeration
1 - heating

(2)Operation mode of the 2° stage:

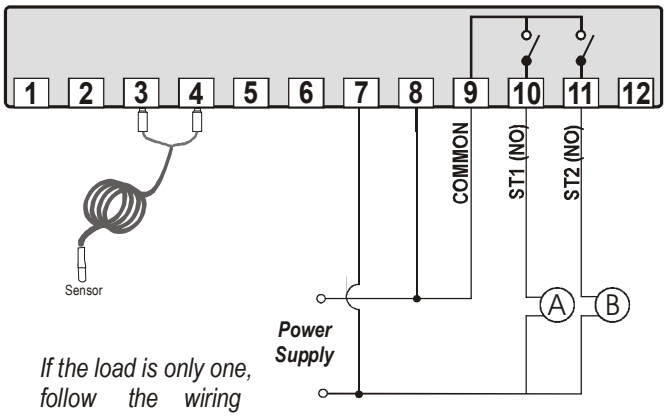
0 - refrigegeration
1 - heating
2 - alarm (inside range)
3 - alarm (outside range)
4 - relative alarm (outside range)

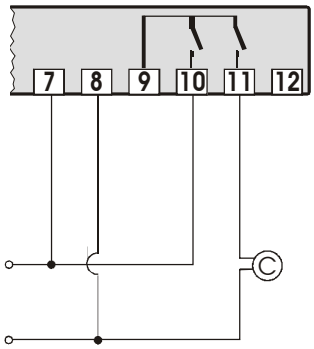
With F08=4 the output **ST2** is drive while temperatures reach a value equal **ST1** minus the configured value in F09 (**ST1** - F09), or when the temperature reach a value equal **ST1** more the configured value in F10

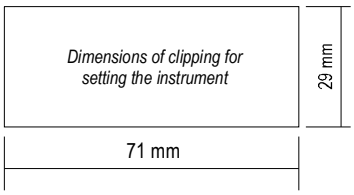
-Temperature in St1= 25 °C
-Value in F08= 4
-Value in F09= 2
-Value in F10= 5

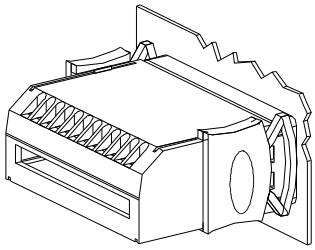
The output **ST2** still on with values below 23ºC (25-2) and above 30ºC (25+1).
If **ST1** are modify to 24ºC the new values of alarm are temperatures below 22ºC and above 29ºC.

Wiring diagram to MT-518 (rectangular form)









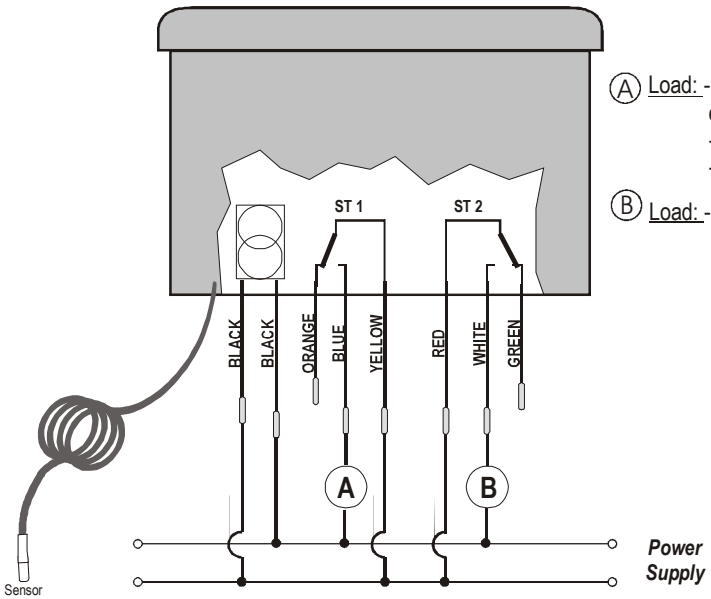
If the load is only one, follow the wiring diagram beside.

Ⓐ Load: -Refrigerator or Heater
-Contactor
-Solenoid

Ⓑ Load: -Refrigerator or Heater
-Contactor
-Solenoid

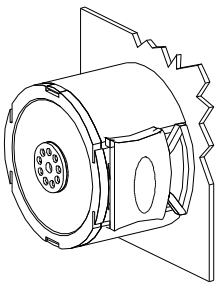
Sensor:
Black cable parallel (2 x 24 AWG) with metallic capsule of 5,3mm diameter.

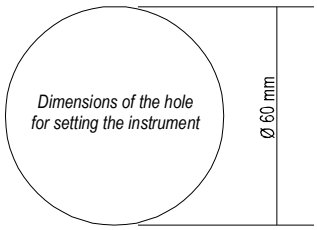
Wiring diagram for MT-518 (cylindrical form)



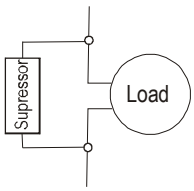
Ⓐ Load: -Refrigerator or Heater
-Contactor
-Solenoid

Ⓑ Load: -Refrigerator or Heater
-Contactor
-Solenoid



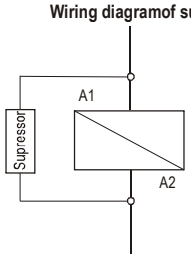


Wiring diagram of supressor directly



For direct drive pay attention at the load current specified.

Wiring diagramof supressors in contactors.



A1 and A2 are the contactor coil

Note: In both formats, sensor cable lenght can be increased by the user until 200 meters, using 2x24 AWG cable.

The withdrawal or substitution of the adhesive panel frontal as well as alterations in the electronic circuit on the part of the user implies in the cancellation of guarantee.

IMPORTANT

As chapters of IEC 60 364 norm:

1: Install protectors against over voltage on power supply

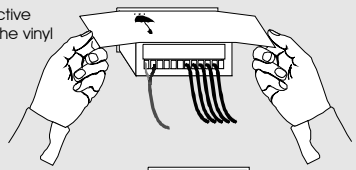
2: Sensor cables and computer signals can be together, however not at the same place where power supply and load drive pass for.

3: Install suppressor of transient in parallel to loads, as for to increase the usefull life of the relays.

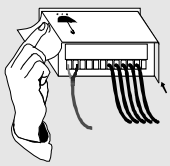
For more information contact our Application Eng. Department through e-mail ***support@ fullgauge.com*** *or dial (5551) 4753308.*

PROTECTIVE VINYL:
It Protects the instruments installed in local subdued to water drops, like in refrigeration balconies, for example. This adhesive vinyl follow the instrument, inside of its packing. Only makes the application after to conclude the eletric connections.

Remove the protective paper and place the vinyl on all the superior surface of the instrument.



Set now in the laterals
Do not remove and do not fold the small border of the adhesive that surplus in the back side, therefore will form a dripping that will result in additional protection.



Keep the border without fold it