



MT-516C

TEMPERATURE CONTROLLER WITH CYCLICAL TIMER

Ver. 10



MT516C10-02T-10844

1. DESCRIPTION

MT 516C controls and indicates the temperature and can be configured for refrigeration or heating. It also has a cyclical timer.

2. APPLICATIONS

- Milk coolers
- Chambers and balconies
- Heat pumps

3. TECHNICAL SPECIFICATION

- Power supply: 127 or 220 Vac (50/60 Hz)
12 or 24 Vac/dc
- Control temperature: -50 to 105°C (decimal resolution between -10 and 100°C)
- Load current: 10 Amperes each output (resistive load)
- Dimensions: Diameter → 60 mm / Depth → 40 mm
- Operation temperature: 0 to 50°C
- Operation humidity: 10 to 90% RH (without condensation)

4. CONFIGURATIONS

4.1 - Control temperature adjust (SETPOINT)

- Press **SET** for 2 seconds until **SEt** appears. The adjusted control temperature will appear.
- Use the keys **▼** and **▲** to change the value and then press **SET** again to record.

4.2 - Parameters table

Configuration parameters protected by an access code:

Fun	Description	Minimum	Maximum	Unit
F01	Access code 123 (one hundred and twenty-three)	-	-	-
F02	Display (offset)	-5.0	5.0	°C
F03	Operation mode ⁽¹⁾	0	3	-
F04	Minimum setpoint allowed to the user	-50	105	°C
F05	Maximum setpoint allowed to the user	-50	105	°C
F06	Control differential (hysteresis)	0.1	20.0	°C
F07	Delay to turn the compressor on	0	999	sec.
F08	Time base of timer ⁽²⁾	0	3	-
F09	Timer on	1	999	sec. / min.
F10	Timer off	1	999	sec. / min.
F11	Timer initial status	0 - off	1 - on	-
F12	Timer always on while compressor on ⁽³⁾	0 - no	1 - yes	-

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

⁽¹⁾F03 - Operation mode:

- 0 - refrigeration
 - 1 - heating
 - 2 - alarm (inside the range)
 - 3 - alarm (outside the range)
- If configured for alarm, the inferior and superior setting must be adjusted in the functions F04 and F05, respectively.

⁽²⁾F08 - Time base of timer

- | | | |
|-------------|-----------|------------|
| F08 | F09 (ton) | F10 (toff) |
| 0 - seconds | seconds | seconds |
| 1 - minutes | minutes | minutes |
| 2 - seconds | minutes | minutes |
| 3 - minutes | seconds | seconds |

⁽³⁾F12 - Timer always on while THERM on:

This functions serves for some applications, for examples, in milk coolers, when timer commands that agitator. That will keep "on" while refrigeration is "on", if you program "1" (yes).

4.3 - Parameters configuration

- Press the keys **▼** and **▲** together to access F01 function, for 2 seconds until **Fun** appears and release it **F01** will appear in the display and the 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 select 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 configured value and return to functions menu.
- To return to the normal operation, press **SET** until **---** appear.

5. FUNCTIONS WITH FACILITATED ACCESS

Registers of minimum and maximum temperatures

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

Note: To reset the registers, keep the key **SET** pressed and during the visualization of the minimum and maximum temperatures until **SEt** to be showed.

Timer: Change manual of status

- To change the timer output (on ↔ off) keep the key **▼** for 4 seconds, until **---** appear.
- To display actual time
- To see actual time, press **▲**.

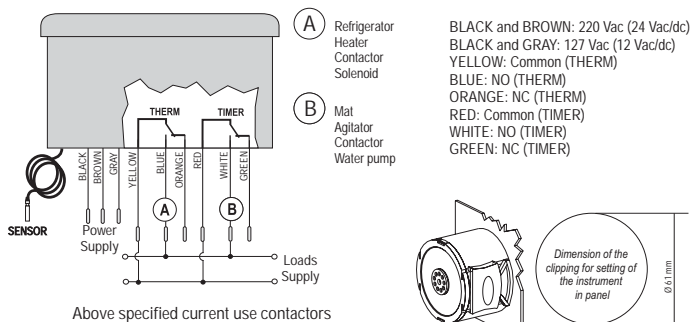
6. SIGNALLING

THERM - Thermostat output on

TIMER - Cyclical timer output on

Err - Detached sensor or temperature outside the specified range

7. WIRING DIAGRAM



Note: The sensor cable length can be increased by the user until 200 meters using the PP 2 x 24 AWG cable. For immersion in water use thermometric well.

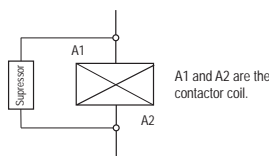
IMPORTANT

According to the chapters from the IEC60364 standard:

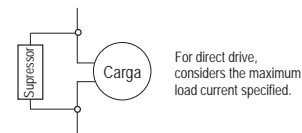
1. Install protectors against over voltage on power supply.
2. Sensor cables and computer signals can be together, however not at the same place where power supply and load wires pass for.
3. Install suppressors of transients (RC filters) in parallel to loads to increase the usefull life of the relays.
4. 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.

For more information contact our application eng. department through e-mail support@fullgauge.com or dial +55 51 3475.3308.

Wiring diagram of suppressor in contactors



Wiring diagram of suppressor linking in loads direct drive



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