

## DIMENSIONAL DATA

### OVERALL DIMENSIONS

The dimensions are expressed in millimetres and inches (third-scale drawing).

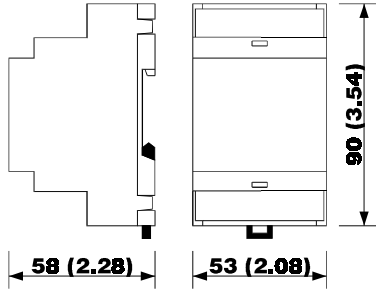


Fig. 3  
ds63me.wmf

## INSTALLATION

### WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

On DIN EN 50022 standard rail according with DIN 43880 norms (third-scale drawing).

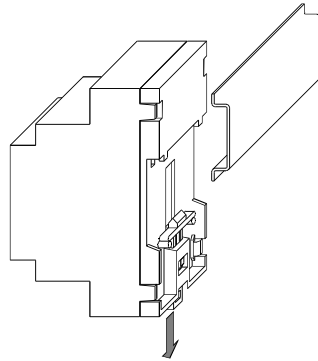


Fig. 4  
ms63m.wmf

## ELECTRICAL CONNECTION

### CONNECTIONS TO DERIVE

Instance of typical application.

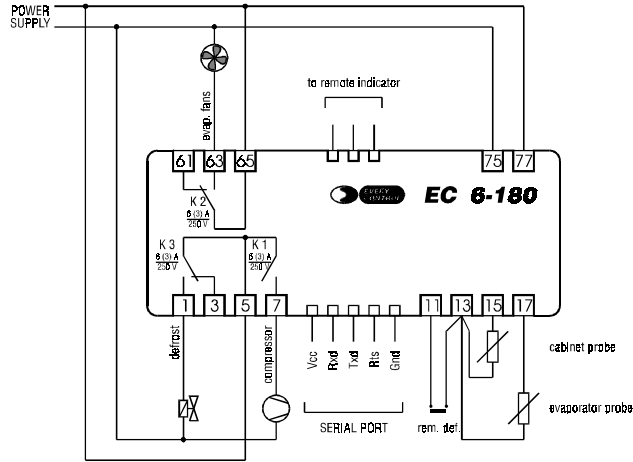


Fig. 5  
c6-180e.wmf

## BUILDER DATA

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# EC 6-180

## ON-OFF digital thermostat for compressor, evaporator fans and defrost (for temperature-time) management

### Operating instructions

Version 1.00 of November the fourteenth 2002

File ec6180e\_v1.00.pdf

PT

### IMPORTANT:

The use of this new instrument is easy; but for safety reasons, it is important read these instructions carefully before the installation or before the use and follow all additional informations.

It is very important keep these instructions with the instrument for future consultations.



Fig. 1  
f6-180.wmf

## GENERAL INFORMATIONS

### WHAT IS THE USE

EC 6-180 is an ON-OFF digital thermostat studied for refrigerating systems management through the compressor, evaporator fans and defrost (for temperature-time) management.

In factory the instrument gets preset to accept at the measure inputs PTC/NTC probes used in refrigeration field at the moment.

Some parameters permit to set the thermostat to protect the compressor against overloads due to several starts repeated in a short time, to manage the defrost according with one's requirements, to establish the evaporator fans output functioning, to signal working conditions outside the safety limits.

EC 6-180 is available in the 53 x 90 mm (2.08 x 3.54 in., 3 DIN modules) case and it is studied for DIN standard rail installation.

## GETTING STARTED

### INSTALLATION

EC 6-180 was studied for DIN EN 50022 standard rail installation according with DIN 43880 norms (the overall dimensions are related in Fig. 3, the fixing system suggested by the builder is related in Fig. 4).

### ADDITIONAL INFORMATIONS

- verify if the using conditions (ambient temperature, humidity, etc.) are within the limits indicated by the builder (see the chapter TECHNICAL DATA)
- install the instrument in a location with a suitable ventilation, to avoid the internal overheating of the instrument
- do not install the instrument near surfaces that can to obstruct the air-grating (carpets, covers, etc.), heating sources (radiators, hot air ducts, etc.), locations subject to direct sunlight, rain, humidity, excessive dust, mechanical vibrations or bumps, devices with strong magnetos (microwave ovens, big speakers, etc.)
- according with the safety norms, the protection against possible contacts with electrical parts and parts protected with functional insulation only must be ensured through a correct installation procedure of the instrument; all parts that ensure the protection must be fixed so that they can not be removed if not with a tool.

### ELECTRICAL CONNECTION

EC 6-180 is provided with four screw terminal blocks for cables up to 2.5 mm<sup>2</sup> (0.38 in.<sup>2</sup>, for the connection to the power supply, inputs and outputs), it is provided with one three poles single line male connector (for the connection to the remote indicator) and it is provided with one five poles single line female connector (for the connection to the CLONE configurer/cloner and RICS supervision systems), located on the instrument frontal panel (the connections to derive are related in Fig. 5 and they are checkable on the polyester label stuck on the instrument case).

### ADDITIONAL INFORMATIONS

- if the instrument is brought from a cold to a warm location, the humidity may condense inside the instrument; wait about an hour before supply the instrument
- verify if the operating power supply voltage, electrical frequency and power of the instrument correspond to the local power supply (see the chapter TECHNICAL DATA)
- do not supply more instruments with the same transformer
- if the instrument is installed on a vehicle, its power supply must be derived directly from the battery of the vehicle
- give the instrument a protection able to limit the current absorbed in case of failure
- the instrument remains connected to the local power supply as long as the terminals 75 and 77 are derived to the local power supply, even if the instrument is apparently turned off
- give the probes a protection able to insulate them against possible contacts with metal parts or use insulated probes
- give the outputs a protection able to protect them against short circuit and overload
- do not try to repair the instrument; for the repairs apply to highly qualified staff
- if you have any questions or problems concerning the instrument please consult

Every Control (see the chapter BUILDER DATA).

## USE

### PRELIMINARY INFORMATIONS

After derived the connections related in Fig. 5, during the normal functioning the instrument displays the temperature read by the cabinet probe.

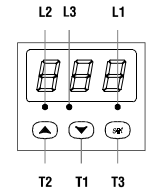


Fig. 2  
iu6180.wmf

If an alarm should be active the instrument displays the alarm code flashing and the buzzer utters an intermittent beep as long as the cause that has given it does not disappear (see the chapter SIGNALS AND ALARMS); pressure on the key T1 during an alarm permits to silence the buzzer.

EC 6-180 is provided with one working setpoint and with some configuration parameters that get stored in a non volatile memory and that permit to set the instrument according with one's requirements (see the chapter CONFIGURABILITY).

The output K 1 is associated to the compressor and to the working setpoint, it remains activated continuously as long as the temperature read by the cabinet probe reaches the working setpoint and when it rises above the working setpoint of the hysteresis value (differential) the output gets reactivated, except during a defrost and a dripping.

The output K 2 is associated to the evaporator fans and it is forced to the status ON, except during a dripping and except what established with the parameters of the family F.

Passed the defrost interval from the moment of the instrument start or from the moment in which the instrument presents a request of a defrost cycle, if the conditions permit it (the temperature read by the evaporator probe must be below the defrost stopping setpoint) the instrument automatically presents the following request of a defrost cycle.

A defrost cycle provides three phases (defrost, dripping and evaporator fans stoppage) connected in cascade since the end of one automatically determines the passage to the following one.

The output K 3 is associated to the defrost and it remains continuously activated during the defrost as long as the temperature read by the evaporator probe reaches the defrost stopping setpoint when the defrost ends and the instrument automatically moves to the dripping; if the instrument was set to manage defrost to resistances (electrical) during a defrost the output K 1 gets forced to the status OFF, if the instrument was set to manage hot gas defrost (reversal of cycle) during a defrost the output K 1 remains continuously activated.

Passed the dripping length from the moment of the defrost end the instrument automatically moves to the evaporator fans stoppage; during a dripping the outputs K 1 and K 2 get forced to the status OFF.

Passed the evaporator fans stoppage length from the moment of the dripping end the defrost cycle ends; during an evaporator fans stoppage the output K 2 activation gets disabled.

If the conditions permit it (the temperature read by the evaporator probe must be below the defrost stopping setpoint) keeping pushed the key T2 for four seconds at least or activating the remote defrost digital input the instrument presents a request of a defrost cycle.

### WORKING SETPOINT SETTING (WORKING TEMPERATURE)

To modify the working setpoint value keep pushed the key T3 (the instrument displays the actual value) and at the same time push and release over and over the key T1 or T2 as long as the instrument displays the desired value (keeping pushed the key T1 or T2 the value gets decreased or increased more quickly); after the modification release the key T3 last; during the pressure of the key T3 the LED L1 flashes quickly to indicate that a working setpoint setting procedure is running (to the release of the key T3 the instrument automatically turns out from

