

DIMENSIONAL DATA

OVERALL DIMENSIONS AND PANEL CUTOUT

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

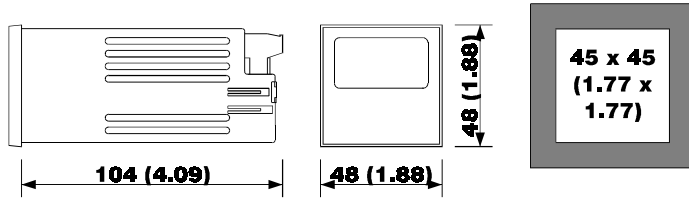


Fig. 3
ds4e.wmf

INSTALLATION

WITH THE FIXING SYSTEM SUGGESTED BY THE BUILDER

Panel mounting, with the equipped U-bracket (third-scale drawing).

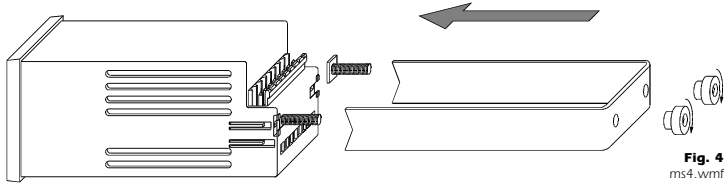


Fig. 4
ms4.wmf

ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE

Instance of typical application.

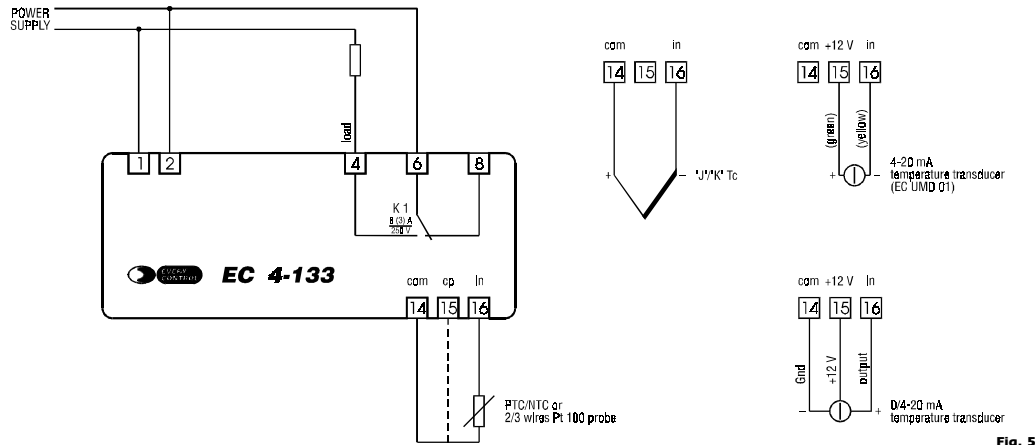


Fig. 5
c4-133e.wmf

BUILDER DATA

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EC 4-133

ON-OFF single output digital thermoregulator

Operating instructions

Release 1/99 of March the twelfth 1999

Code EC 4-133 DOC E000

File 4133e.p65

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
f4-133.wmf

GENERAL INFORMATIONS

WHAT IS THE USE

EC 4-133 is an ON-OFF single output digital thermoregulator able to cover a temperature range from -99 to +999 °C (-99 to +999 °F).

In factory the instrument gets preset to accept at the measure input PTC/NTC probes or "J"/"K" thermocouples or 2/3 wires Pt 100 probes or 2 and 3 wires 0/4-20 mA temperature transducers (in this last case it is possible to set the reading scale).

Some parameters permit to set the thermoregulator for "cooling" or "heating" functioning, to protect the connected load against overloads due to several starts repeated in a short time, to signal working conditions outside the safety limits.

EC 4-133 is available in the 48 x 48 mm (1.88 x 1.88 in.) case and it is studied for panel mounting with the equipped U-bracket.

GETTING STARTED

INSTALLATION

EC 4-133 was studied for panel mounting, panel cutout 45 x 45 mm (1.77 x 1.77 in.), with the equipped U-bracket (the overall dimensions and the panel cutout are related in Fig. 3, the fixing system suggested by the builder is related in Fig. 4).

ADDITIONAL INFORMATIONS

- the panel thickness must be included from 1 to 5 mm (0.04 to 0.19 in.)
- 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 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 4-133 is provided with one extractable screw terminal block for cables up to 2.5 mm² (0.38 in.², for the connection to the power supply and output) and with one screw terminal block for cables up to 2.5 mm² (0.38 in.², for the connection to the measure input), located on the instrument back 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 1 and 2 are derived to the local power supply, even if the instrument is apparently turned off
- give the probe a protection able to insulate it against possible contacts with metal parts or use insulated probes
- give the output a protection able to protect it 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 probe.

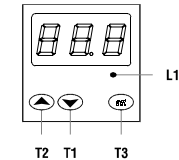


Fig. 2
iu4-133.wmf

If an alarm should be active the instrument displays the alarm code flashing as long as the cause that has given it does not disappear (see the chapter SIGNALS AND ALARMS).

EC 4-133 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 working setpoint, it remains activated continuously as long as the temperature read by the probe reaches the working setpoint and when it rises above (if the output was set for "cooling" functioning) or it falls below (if the output was set for "heating" functioning) the working setpoint of the hysteresis value (differential) the output gets reactivated.

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 the working setpoint setting procedure).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the access to the working setpoint setting procedure is refused
- the working setpoint is programmable within the limits established with the parameters rA1 and rA2
- if the parameter rA5 has value 1 the working setpoint can not be modified as long as the parameter rA5 gets set to 0
- the working setpoint value gets stored in a non volatile memory even if a lack of power supply happens.

CONFIGURATION PARAMETERS SETTING

Configuration parameters are arranged on two levels, to protect the most tricky settings against undesirable violations and they are arranged in families that can be recognized through the initial letter of the label.

To gain access to the first level keep pushed at the same time for four seconds at least the keys T1 and T2 (passed four seconds the instrument displays the label PA).

To select a parameter of the first level push and release over and over the key T1 or T2 as long as the instrument displays the label of the desired parameter.

To modify the parameter 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 (to the release of the key T3 the instrument displays the label of the parameter again).

To gain access to the second level enter inside the first level and select the label PA.

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 -19 (keeping

