

DIMENSIONAL DATA

OVERALL DIMENSIONS AND PANEL CUTOUT

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

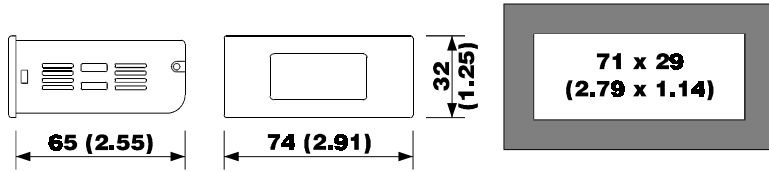


Fig. 3
ds3ve.wmf

INSTALLATION

WITH THE FIXING SYSTEMS SUGGESTED BY THE BUILDER

Panel mounting, with the equipped screw (Fig. 4) or spring brackets (Fig. 5) (third-scale drawing).

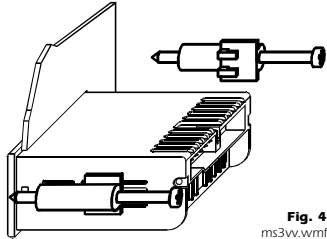


Fig. 4
ms3vv.wmf

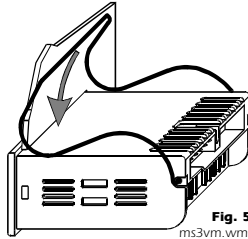


Fig. 5
ms3vm.wmf

ELECTRICAL CONNECTION

CONNECTIONS TO DERIVE

Instance of typical application.

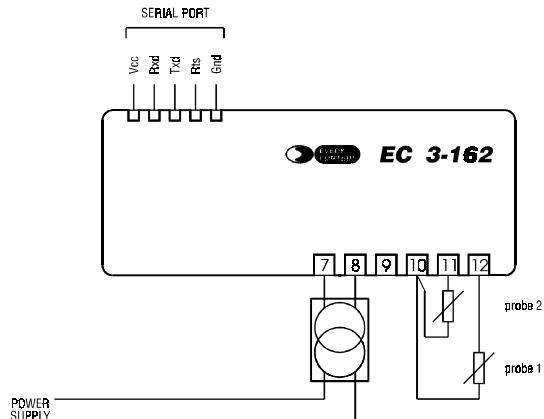


Fig. 6
c3-162e.wmf

BUILDER DATA

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EC 3-162

Digital thermometer with two measure inputs

Operating instructions

Release 1/98 of December the seventh 1998

Code EC 3-162 DOC E000

File 3162e.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
f3-162.wmf

GENERAL INFORMATIONS

WHAT IS THE USE

EC 3-162 is a digital thermometer with two measure inputs able to cover a temperature range from -50 to +150 °C (-58 to +302 °F).

In factory the instrument gets preset to accept at the measure inputs PTC probes used in this field of applications at the moment; through the key present on the instrument frontal panel it is possible to select the modality with which to display the temperatures read by the probes (automatic or manual).

EC 3-162 is available in the 74 x 32 mm (2.91 x 1.25 in.) case and it is studied for panel mounting with the equipped screw or spring brackets.

GETTING STARTED

INSTALLATION

EC 3-162 was studied for panel mounting, panel cutout 71 x 29 mm (2.79 x 1.14 in.), with the equipped screw or spring brackets (the overall dimensions and the panel cutout are related in Fig. 3, the fixing systems suggested by the builder are related respectively in Fig. 4 and in Fig. 5).

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 magnets (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
- if not differently specified at the time of order, the instrument will be equipped with screw brackets.

ELECTRICAL CONNECTION

EC 3-162 is provided with one screw terminal block for cables up to 2.5 mm² (0.38 in.²), for the connection to the power supply and measure inputs) and it is provided with one five poles single line male connector (for the connection to the CLONE configurator/cloner and RICS supervision systems), located on the instrument back panel (the connections to derive are related in Fig. 6 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 7 and 8 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
- 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. 6, during the normal functioning the instrument displays the temperatures read by the probes.

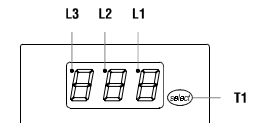


Fig. 2
iu3162.wmf

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 3-162 is provided with two modality with which to display the temperatures read by the probes (automatic and manual, see the paragraphs SELECTION OF THE MODALITY, AUTOMATIC MODALITY and MANUAL MODALITY).

The LED L1 is associated to the probe 1, it is turned ON during the display of the temperature read by the probe 1 and it is turned OFF during the display of the temperature read by the probe 2.

The LED L2 is associated to the probe 2, it is turned ON during the display of the temperature read by the probe 2 and it is turned OFF during the display of the temperature read by the probe 1.

The LED L3 is associated to the modality with which to display the temperatures read by the probes, it is turned ON during the automatic modality and it is turned OFF during the manual modality.

SELECTION OF THE MODALITY

To select a modality keep pushed for four seconds at least the key T1 (passed four seconds the LED L3 turning ON or turning OFF).

ADDITIONAL INFORMATIONS

- for the whole period of a corrupted memory data alarm the selection of the modality with which to display the temperatures read by the probes is refused
- the selected modality gets stored in a non volatile memory even if a lack of power supply happens.

AUTOMATIC MODALITY

The instrument displays the temperature read by the probe 1 alternated to the temperature read by the probe 2.

ADDITIONAL INFORMATIONS

- the temperature read by a probe gets displayed for five seconds.

MANUAL MODALITY

The instrument displays the temperature read by the probe 1.

To display the temperature read by the probe 2 push and release the key T1 (to the release of the key T1 the LED L1 turning OFF and the LED L2 turning ON).

To display the temperature read by the probe 1 again push and release the key T1 (to the release of the key T1 the LED L1 turning ON and the LED L2 turning OFF).

ADDITIONAL INFORMATIONS

- the selection of the temperature read by a probe gets stored in a non volatile memory even if a lack of power supply happens.

SIGNALS AND ALARMS

SIGNALS

If the LED L1 is turned ON it means that the display of the temperature read by the probe 1 is running.

If the LED **L2** is turned ON it means that the display of the temperature read by the probe 2 is running.

If the LED **L3** is turned ON it means that the automatic modality is selected.

ALARMS

If the instrument displays the indication "E2" flashing (**corrupted memory data alarm**) it means that there is a corruption of the configuration data in the memory (turn OFF and turn ON again the instrument: if to the turning ON again the alarm does not disappear the instrument must be replaced); during this alarm the selection of the modality with which to display the temperatures read by the probes is refused.

If the instrument displays the indication "E0" flashing (**probe 1 failure alarm**) it means that: the kind of connected probe 1 is not proper (verify the kind of connected probe 1), the probe 1 is faulty (verify the probe 1 integrity), there is a mistake in the instrument-probe 1 connection (verify the instrument-probe 1 connection integrity), the temperature read by the probe 1 is outside the limits permitted by the probe 1 in use (verify that the temperature near the probe 1 be inside the limits permitted by the probe 1); inactive.

If the instrument displays the indication "E1" flashing (**probe 2 failure alarm**) it means that there is one of the faults saw in the previous case but referred to the probe 2; inactive.

ADDITIONAL INFORMATIONS

- *the alarm codes are related in order of precedence*
- *a probe 1 failure alarm gets displayed during the display of the temperature read by the probe 1*
- *a probe 2 failure alarm gets displayed during the display of the temperature read by the probe 2.*

TECHNICAL DATA

TECHNICAL DATA

| | |
|-----------------------------|--|
| Case: | plastic black (PC-ABS), self-extinguishing. |
| Size: | 74 x 32 x 65 mm (2.91 x 1.25 x 2.55 in.). |
| Installation: | panel mounting, panel cutout 71 x 29 mm (2.79 x 1.14 in.), with the equipped screw or spring brackets. |
| Type of protection: | IP 54. |
| Connections: | screw terminal block with pitch 5 mm (0.19 in., power supply and measure inputs) for cables up to 2.5 mm ² (0.38 in. ²), five poles single line male connector with pitch 5.08 mm (0.2 in., serial port). |
| Ambient temperature: | from 0 to +60 °C (+32 to +140 °F, 10 ... 90 % of not condensing relative humidity). |
| Power supply: | 12 Vac/dc or 12-24 Vac/dc, 50/60 Hz, 1.5 VA. |
| Insulation class: | II. |
| Measure inputs: | 2 for PTC probes. |
| Working range: | from -50 to +150 °C (-58 to +302 °F). |
| Resolution: | 1 °C (1 °F). |
| Display: | 3-digit display 12.5 mm (0.49 in.) high red LED display with automatic minus sign, functioning status indicators, programming status indicator. |
| Serial port: | TTL with EVC0BUS protocol communication, for the connection to the CLONE configurer/cloner and RICS supervision systems. |

HOW TO ORDER

CODING SYSTEM

| | |
|-------------------------------|--|
| Instrument name: | EC 3-162. |
| Desired measure input: | P (for PTC probes). |
| Desired power supply: | 012 (12 Vac/dc) 024 (12-24 Vac/dc). |
| Options: | other values of the frequency with which to display the temperatures read by the probes during the automatic modality, presetting to accept at the measure inputs NTC or Pt 1000 probes, temperature display in °F, green LED display. |