E50

DIGITAL ELECTRONIC TEHERMOMETER

OPERATING INSTRUCTIONS

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PREFACE

This manual contains the information necessary for the product to be installed correctly and also instructions for its maintenance and use; we therefore recommend that the utmost attention is paid to the following instructions and to save it.

Ascon Tecnologic S.rl. reserves the right to make any formal or functional changes at any moment and without any notice.

Ascon Tecnologic S.rl. and its legal representatives do not assume any responsibility for any damage to people, things or animals deriving from violation, wrong or improper use or in any case not in compliance with the instrument features.

Whenever a failure or a malfunction of the device may cause dangerous situations for persons, thing or animals, please remember that the plant has to be equipped with additional electromechanical devices which will guarantee safety.

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1. INSTRUMENT DESCRIPTION

1.1 General description

The model **E50** is a microprocessor digital electronic thermometer typically used for refrigeration applications equipped with an **NTC input**.

2. USAGE WARNINGS

2.1 Admitted use

The instrument has been projected and manufactured as a measuring and control device to be used according to EN60730-1 at altitudes operation below 2000 m.

Using the instrument for applications not expressly permitted by the above mentioned rule must adopt all the necessary protective measures. The instrument **MUST NOT BE USED** in dangerous environments (flammable or explosive) without adequate protections.

There is NO INSULATION between power supply and input, therefore, if the probe is accessible, it must be of the double insulation type (Class II insulation).

The installer must ensure that the EMC rules are respected, also after the instrument installation, if necessary using proper filters.

3. INSTALLATION WARNINGS

3.1 Mechanical mounting

The instrument, in case 64 x 31 mm, is designed for flush-in panel mounting. Make a 59 x 25 mm hole and insert the instrument.

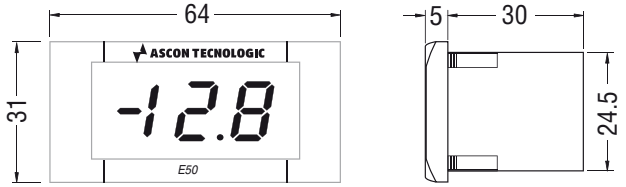
Avoid placing the instrument in environments with very high humidity levels or dirt that may create condensation or introduction of conductive substances into the instrument

Ensure adequate ventilation to the instrument and avoid installation in containers that house devices which may overheat or which may cause the instrument to function at a higher temperature than the one permitted and declared.

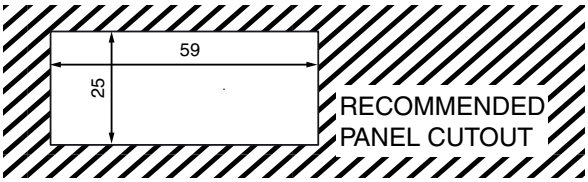
Connect the instrument as far away as possible from sources of electromagnetic disturbances such as motors, power relays, relays, solenoid valves, etc..

3.2 Dimensions [mm]

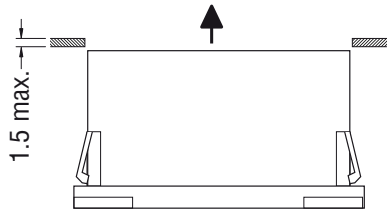
3.2.1 Mechanical dimensions



3.2.2 Panel cut-out



3.3 Mounting



3.4 Electrical connections

Carry out the electrical wiring by connecting only one wire to each terminal, according to the following diagram, checking that the power supply is the same as that indicated on the instrument.

As the instrument is built-in equipment with permanent connection inside housing, it is not equipped with either switches or internal devices to protect against current overloads: the installation will include an overload protection and a two-phase circuit-breaker, placed as near as possible to the instrument and located in a position that can easily be reached by the user and marked as instrument disconnecting device which interrupts the power supply to the equipment.

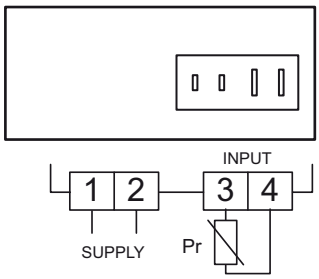
It is also recommended that the supply of all the electrical circuits connected to the instrument must be protect properly, using devices (ex. fuses) proportionate to the circulating currents.

It is strongly recommended that cables with proper insulation, according to the working voltages and temperatures, be used.

Furthermore, the input cable of the probe has to be kept separate from line voltage wiring. If the input cable of the probe is screened, it has to be connected to the ground at only one side.

⚠ **There is <u>NO INSULATION</u> between power supply and input, therefore, if the probe is accessible, it must be of the double insulation type (Class II insulation).**

3.4.1 Electrical wiring diagram



4. PROBLEMS AND MAINTENANCE

4.1 Notifications

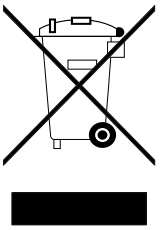
4.1.1 Error messages

Error	Reason	Action
E1 -E1	The probe may be interrupted (**E**) or in short circuit (**-E**) or may measure a value outside the range allowed	Check the probe connection with the instrument and check that the probe works correctly
Err	Fatal memory error	Replace the instrument or ship to factory for repair

4.2 Cleaning

We recommend cleaning of the instrument only with a slightly wet cloth using water and not abrasive cleaners or solvents.

4.3 Disposal



The appliance (or the product) must be disposed of separately in compliance with the local standards in force on waste disposal.

5. WARRANTY AND REPAIRS

The instrument is under warranty against manufacturing flaws or faulty material, that are found within 18 months from delivery date. The warranty is limited to repairs or to the replacement of the instrument.

The eventual opening of the housing, the violation of the instrument or the improper use and installation of the product will bring about the immediate withdrawal of the warranty effects.

In the event of a faulty instrument, either within the period of warranty, or further to its expiry, please contact our sales department to obtain authorisation for sending the instrument to our company. The faulty product must be shipped to Ascon Tecnologic with a detailed description of the faults found, without any fees or charge for Ascon Tecnologic, except in the event of alternative agreements.

6. TECHNICAL DATA

6.1 Electrical characteristics

Power supply: 230 VAC, 115 VAC, 12 VAC/DC ±10%;
AC frequency: 50/60 Hz;
Power consumption: about 1 VA;
Input: **1 inputs** for **temperature probes**:
NTC (103AT-2, 10 kΩ @ 25°C);
Overvoltage category: II;
Protection class: Class II;
Isolation: Reinforced insulation between the low voltage parts and front panel; NO INSULATION between power supply and input.

6.2 Mechanical characteristics

Housing: Self-extinguishing plastic, UL 94 V0;
Ball Pressure Test as described in EN60730: accessible parts 75°C; support live parts 125°C;
Heat and fire resistance category: D;
Dimensions: 64 x 31 mm, depth 30 mm;
Weight: About 45 g;
Mounting: Incorporated flush in panel (thickness max. 1.5 mm) in a 59 x 30 mm hole;
Connections:
Input: 4.8 mm Faston connectors;
Power supply: 2.8 mm Faston connectors;
Pollution degree: 2;
Operating temperature: 0 ÷ 50°C;
Operating humidity: < 95 RH% with no condensation;
Storage temperature: -25 ÷ +60°C.

6.3 Functional features

Measurement range: NTC: -50 ÷ +109°C/-58 ÷ +228°F;
Display resolution: 1° or 0.1° (range -99.9 ÷ +99.9°);
Overall accuracy: ±(0.5% fs + 1 digit);
Sampling rate: 130 ms;
Display: 2½ Digits Red, height 14 mm;
Software class and structure: Class A;
Compliance: Directive 2004/108/CE (EN55022: class B; EN61000-4-2: 8kV air, 4kV cont.; EN61000-4-3: 10V/m; EN61000-4-4: 2kV supply and relay outputs, 1kV inputs; EN61000-4-5: supply 2kV com. mode, 1 kV\diff. mode; EN61000-4-6: 3V),
Directive 2006/95/CE (EN 60730-1, EN 60730-2-9).

7. HOW TO ORDER

MODEL
E50 - = Electronic Digital Themometer

a: **POWER SUPPLY**
V = 230 VAC
Z = 115 VAC
F = 12 VAC/VDC

	-	a	b	c	d	e	f	g	hh	ii

b, c, e, f: RESERVED CODES; **gg, hh**: SPECIAL CODES