MI7022
Digital temperature meter

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FEATURES

- Temperature measuring range from -50° to +200° C
- LCD display
- High accuracy
- Two types of connection probes
- Low power consumption (500 hours of uninterrupted use)
- Appropriate for food temperature measurement according to HACCP system

OPERATION

Temperature meter MI7022 is intended for temperature measurement in the range between -50° and +200°C. Probe for in-depth temperature measurement can be attached to the instrument (two types of tip probes – for direct connection and with connection cable). Meter is appropriate for control of the food relevance according to HACCP system. Temperature measurement displays on 3½ digit LCD display. Low power consumption assures long time use. Automatic switch-off after 45 minutes protects batteries.

DESCRIPTION

The most advanced microprocessor technology is used in the temperature meter MI7022. Through SMA connector temperature sensor Pt100 can be connected, but SMA connector also enables direct connection of the probe to the instrument, which simplifies the usage. Meter has built-in probe disconnection indication. When probe is disconnected, "err" appears on display. Two batteries, 1.5 V each, assure appropriate functioning of the instrument. Sum voltage of the two batteries can not drop below 2.4 V. In the left upper corner of the display appears "LO BAT", if the voltage of the batteries is to low. In this case batteries must be replaced. Automatic switch-off, after 45 minutes of work, prevents unnecessary emptying of the batteries. To switch instrument again on, ON-OFF switch must first be switched OFF and then ON.

TECHNICAL DATA

INPUT:

- Sensor: Pt100
- Connection type: two wires connection SMA connector
- Measuring range: -50°...+200° C
- Divisibility of the measurement: 0.1° C
- Linearization: built-in
- Pt100 disconnection indication: built-in
  ("err" appears on the display)

Figure 1: Digital temperature meter MI7022

ACCURACY CLASS:

- Error at reference conditions: < 0.2°K ± 1 digit
  Error of the sensor is not count in!
- Ambient temperature influence: < 0.2°K / 10 K

Reference conditions:

- Ambient temperature: 23° C ± 10 K
- Relative humidity: 45…75 % r.h. without condensation

DISPLAY:

- Type: LCD
- Number of digits: 3½
- Characters' height: 12.7 mm

ENVIRONMENT CONDITIONS:

- Temperature operating range: from -20 to +50 °C
- Temperature storage range: from -40 to +70 °C
- Average annual humidity: ≤ 75% r.h.

POWER SUPPLY:

- Batteries: 2 x 1,5 V
- Dimensions: LR03 (AAA, micro)
- Typical consumption: 1.7 mA
- Low battery voltage indication: built-in
  ("LO BAT" appears on the display)

HOUSING:

- Material of housing: PC/ABS
  non-flammable according to **UL 94 V-0**
- Dimensions: 135 x 69 x 28 mm
- Weight: < 140 g

CE STANDARDS AND DIRECTIVES COMPATIBILITY:

Low voltage directive **73/23/EEC**:
EN 61010-1: 1993 and **EN 61010-A3**: 1995
Safety requirements for electrical equipment for measurement, control and laboratory use Part 1: General requirements

Council Directive of the 3rd of May 1989 on the approximation of the laws of Member States (EMC) **89/336/EEC**:
EN 61326-1: 1997
Electrical equipment for measurement control and laboratory use - EMC requirements - Part 1: General requirements

BATTERY EXCHANGE

Switch off meter before battery exchange. To exchange the batteries, you have to unscrew four screws on the rear side of the instrument and open the instrument. In the lower part of the case is separate compartment for placing the batteries. Check the tidiness and reliability of the contacts before connecting the batteries. Standard connectors assure correct polarity connection of the batteries. We strongly suggest use of the batteries protected against electrolyte leakage.

Always obey battery's producer instructions about storing and lifetime of the batteries.

MEASUREMENT

On the instrument is built-in connector for connecting probe types: AT0621 or AT0622.

Producer prescribes the probe. Thermal persistency of the probe and thermal capacity of the measured medium must be considered at the measurement. Accurate result of the measurement is achieved when temperature of the tip of the probe is equal to the temperature of the medium. On display you can see this when result of the measurement becomes stable.

You can get accurate temperature measuring result, for example for the meat in the refrigerating room, after approximately 30 seconds.

MAINTENANCE

Except for battery exchange, additional maintenance is not necessary.

TECHNICAL DATA OF THE PROBES

GENERAL:

The probe is peaky and is used for stabbing into measured medium.

- Usage range: from -50° C to +200° C
- Error 1/3 B:
  from -50° C to +100° C $\pm$ 0.3° C
  from +100° C to +200° C $\pm$ 0.5° C
- Sensor: complies IEC-751
- Response time: (up to 90% of the value) 10s
- Tip length: min. 15 mm, max 150 mm
- Probe length: approx. 150 mm
- Connection: SMA connector

TIP PROBE AT0621 (short):
- Max. dimensions: Ø 3 x 150 mm
- Max. tip force: $\leq$ 8 kg

TIP PROBE AT0622 (long):
- Max. dimensions: Ø 3 x 150 mm, connection cable length approx. 1400 mm
- Max. tip force: $\leq$ 10 kg

MEASURING EXAMPLE

Instrument shows temperature 4°C. Correct result is achieved by summing both errors (of the meter $\pm$ 0.2° and of the probe $\pm$ 0.3°).
Actual temperature is in the range between 3.5° C and 4.5°C.

ORDERING DATA

State at the ordering: meter type and tip probe type.

MI7022   Digital temperature meter

ATO0621   Tip probe length 150 mm for direct connection

ATO0622   Tip probe length 150 mm with cable

Figure 2: Probe types: AT0621 above and AT0622 below