# T 255

10.09.08 MM

**REV. 01**

# UNIT FOR RECORDING REFRIGERATION TEMPERATURE

C←BUS

## UMF 348 C2 Eng.

- **Four temperature measurements by NTC 1 kΩ (–40…40 °C) sensors**
- **Alarm LEDs for minimum and maximum temperature limits and sensor fault**
- **C-Bus communication for Telemanagement**
- **Power supply : 230 V~. Installation: on DIN rail**

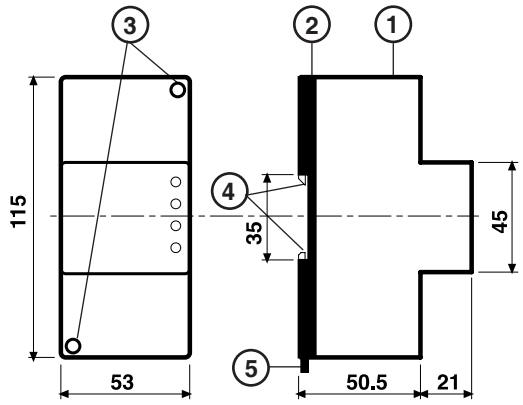
CE

### 1. APPLICATION

Records at regular intervals a maximum of four temperature measurements and, if required, minimum and maximum limits for triggering alarm.
It is possible to connect a maximum of two On-Off switches (as alternative to the same number of sensors) in order to disable the limit alarms for one or more sensors.
Possibility of using a maximum of four inputs (setting only by Telemanagement PC):

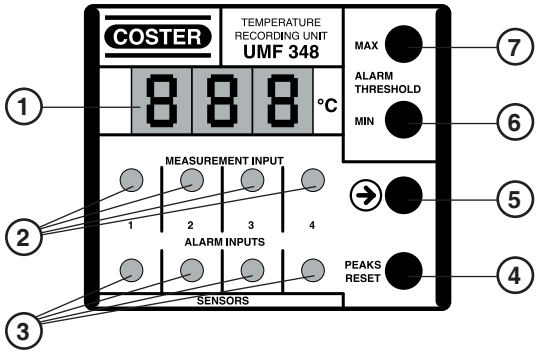
– 4 NTC 1 kΩ (–40…40 °C), sensors, without switches for disabling alarms (factory setting).
– 3 NTC 1 kΩ (–40…40 °C), sensors, + one switch for disabling alarms
– 2 NTC 1 kΩ (–40…40 °C), sensors, + two switches for disabing alarms C-Bus connection for data transmission using local PC or remote Telemanagement PC.

### 2. OVERALL DIMENSIONS




1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal blocks
3 – Screws for securing base and cover
4 – DIN rail securing elements
5 – DIN rail release lever

### 3. FACIA




1 - Three-figure numerical display
2 - LEDs for measurement shown on display
3 - LEDs for measurement triggering alarm
4 - Reset key for measurement peaks
5 - Key for selecting measurement & setting address
6 - Key for setting minimum temperature threshold
7 - Key for setting maximum temperature threshold

### 4. ACCESSORIES

| Code | Description | Range | Sensing element | Data sheet |
|---|---|---|---|---|
| **SAF 001** | Cable-type temperature sensor (15 m cable) | – 40…40 °C | NTC 1 kΩ | N 145 |
| **SAA 001** | Waterproof room sensor | – 40…40 °C | NTC 1 kΩ | N 115 |

## 5. TECHNICAL DATA

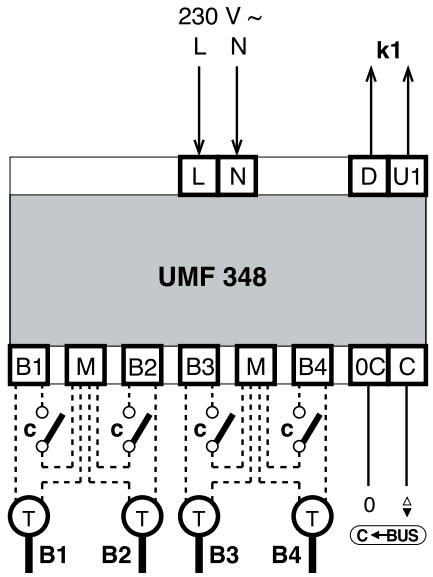
| | |
|---|---|
| Power supply | 230 V~ ± 10% |
| Frequency | 50 ... 60 Hz |
| Consumption | 2 VA |
| Protection | IP40 |
| Radio disturbances | VDE0875/0871 |
| Vibration test | with 2g (DIN 40 046) |
| Construction standards | Italian Electrotech. Comm. (CEI) |
| Enclosure | DIN 3E module |
| Installation | on DIN 35 rail |
| Materials: | |
| base | NYLON |
| cover | ABS |
| Ambient temeprature: | |
| operation | 0 ... 45 °C |
| storage | – 25 ... + 60 °C |
| Ambient humidity | Class F DIN 40040 |
| Weight | 0.27 kg |
| Measurement ranges (NTC 1 kΩ) | –40…40 °C |
| Max. number of recordings. | 240 |
| Settings by PC : | |
| Recording frequency | 5…**30**…240 min |
| Delay receiving alarm (exceeding threshold) | 0…**1**…255 min |
| Delay receiving end alarm (exceeding threshold) | 0…**1**…255 min |
| Attempts alarms calls | 2…**5**…200 |
| Interval between calls | 2…**10**…210 min |
| Enabling alarm sensor fault | YES / **NO** |
| Enabling alarm for exceeding threshold | YES / **NO** |

## 6. INSTALLATION

UMF 348 must be installed in a dry location that respects the relevant ambient conditions given under 5.TECHNICAL DATA. If installed in a location classified as “Hazardous” it must be installed in a cabinet for electrical equipment constructed according to the regulations in force for the class of danger concerned.

The controller can be mounted on a DIN rail and housed in a standard DIN enclosure.

## 7. WIRING DIAGRAM




B 1…4 – NTC 1 kΩ (–40…40 °C) sensor
c – On-Off switches (max. 2) to disable the alarms for exceeding thresholds of one or more sensors (as alternative to same number of sensors). Switch closed = alarm disabled.
k1 – Input alarm contact to be connected to terminals D and E1/E2/E3 of the equipment C-Bus
L – 230 V~
N – Neutral
C-Bus – Telemanagement data transmission

## 8. ELECTRICAL CONNECTIONS

Proceed as follows :
- Separate the base and cover after removing the securing screws
- Mount the base on the DIN rail and check that the securing elements (2.4) anchor it securely
- Make the electrical connections strictly according to the diagram and to the safety regulations in force, using the following cables:
  - 1.5 mm² for power supply.
  - 1 mm² for sensors and alarm switch.
  - 1 mm² for C-Bus. For length limits see Technical Data Sheet T 021.
- Switch on power (230 V~) and check its presence at terminals L and N.
- Switch off power, replace the cover on the base/terminal block and secure it with the two screws supplied(2.3).

You are advised not to insert more than two cables in a single terminal and, if necessary, to use a terminal block.

## 9. OPERATION

Each input (B1…4 - M) can be used as a measurement input (sensor NTC 1 kΩ , –40…+40 °C) or as a digital input (max. 2) for On-Off switches for disabling (switch closed) the limit alarms for one or more measurements.

From the facia, for each measurement input, it is possible :

- To display : - The actual temperatures measured by the sensors :
  Press for less run 10 seconds the → key (3.5); each depression changes the measurement and the switching on of the "MEASUREMENT" LED (3.2) corresponding to the relative sensor.
  If an input has been used as a disabling switch for the alarms, on the display appears "Off" if the switch is open, or "On" if the switch is closed (alarms excluded).
  If, instead of the measurement, on the display appears a running dash, this means the sensor is not connected or that there is a short or open circuit.
  - The minimum and maximum values measured by the detectors :
  Press → key (3.5) until the "MEASUREMENT" LED (3.2) for the sensor concerned lights; press the "PEAKS" key (3.4) : on the display appears alternately the minimum and maximum values reached by the measurement.
  To cancel the values, keep pressed the "PEAKS" key (3.4) for 10 seconds or until three dashes appear.

- To set : - The minimum and maximum limit values for triggering the alarm :
  Press → key (3.5) until the "MEASUREMENT" LED (3.2) for the sensor concerned lights; press the "MIN" key (3.6) to display the minimum value or the "MAX" key (3.7) for the maximum value; if excluded OFF appears .
  To adjust, press the relative key (MIN or MAX) for at least five seconds: the "MEASUREMENTS" LED (3.2) for the sensor concerned flashes and "- - -", appears; release and press again: the limit value appears; by continuing to press the value is adjusted and when the desired value is reached do not press any key for five seconds. The value is stored and the measurement is again displayed.
  To exclude the limit, press the "MIN" (3.6) or "MAX" (3.7) key until the dashes appear and then release it and wait about 10 seconds until the measured temperature appears on the display.
  - Telemanagement address :
  Press → key (3.5) for more than 10 seconds: the current address appears. Release the key: "– – –", appears. If you do not want to make any changes, do not press any key. After 10 seconds normal operation re-starts. If you want to adjust, tap the → (3.5) until the desired address appears; do not touch the keys for10 seconds: the address is stored and normal operation re-starts.

- To recover the factory settings, power the device keeping pressed the → (3.5) and "MIN" (3.6) keys until "ini" appears on the display.

- When UMF348 is powered, on the display appears the version number (e.g. 001) for four seconds and all the LEDs flash; then the value measured by sensor B1 appears.

- When UMF348 is sending an alarm, on the display appears "ALL".

From the Telemanagement PC it is possible:

- To set : - identifying name of the site
  - type of use of each B input : - measurement (factory setting)
    - disabling switch for limit alarms (max. two)
  - identifying name of each measurement
  - minimum and maximum limit values for triggering the alarm for exceeding threshold
  - delay in acquiring the alarms for exceeding threshold (from 0 to 255 min)
  - delay in acquiring the ceased alarms for exceeding threshold (from 0 to 255 min)
  - frequency of recording the measurements
  - Telemanagement password
- To display and store the recordings of the measurements
- To display and cancel the minimum and maximum values reached by the measurements
- To enable the signalling of the alarm for exceeding the threshold.
- To enable the signalling of the alarm for sensor fault
- To receive the alarms for exceeding the threshold for every measurement and for short or open sensor circuits

**Amendments to data sheet**

| Data | **Revision No.** | Page | Section | Details of amendment | Firmware version | Software version |
|---|---|---|---|---|---|---|
| 10.10.05 LB<br>10.09.08 MM | **01** | various<br>2 | Various<br>7. Wiring diagram | Version C2: added delay ending alarm.<br>Update "k1" description | | |

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