UNIT FOR MEASUREMENTS, ALARMS & RECORDING OF FLUE GASE TEMPERATURES

C ← BUS

UBF 348 C1 Eng.

- **Four temperature measurements by Pt 1 kΩ (0…500 °C) sensors**
- **Alarm triggered for minimum and maximum temperature limits and sensor faults**
- **C-Bus communication for Telemanagement**
- **Power supply : 230 V AC (or 240 V AC for UK market). 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 an 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 of one or more sensors.

Possibility of using a maximum of four inputs (setting only by Telemanagement PC):
    – 4 Pt 1 kΩ (0…500 °C), sensors, without switches for disabling alarms (factory setting).
    – 3 Pt 1 kΩ (0…500 °C), sensors, + one switch for disabling alarms
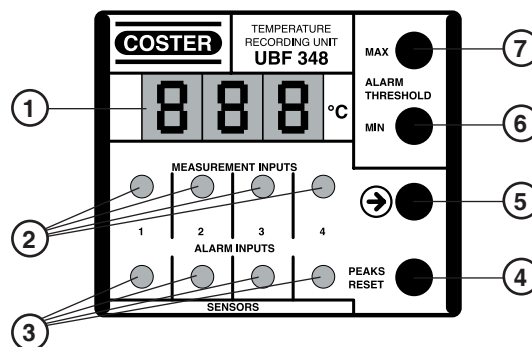   – 2 Pt 1 kΩ (0…500 °C), sensors, + two switches for disabling alarms.
C-Bus connection for data transmission using local PC or remote Telemanagement PCs.

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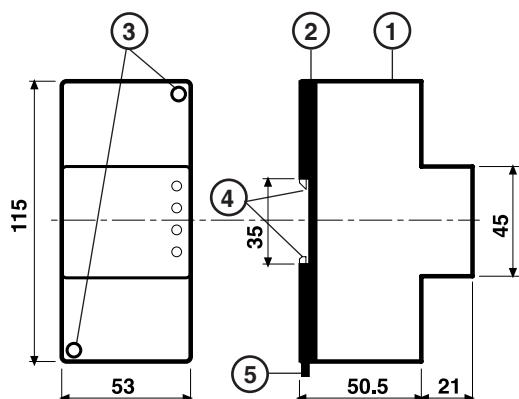
1 – Protective cover for electronic components
2 – Base with transformer, relay and terminal blocks
3 – Screws for securing base and cover
4 – DIN rail securing elements
4 – DIN rail release lever

3. FACIA

1 - Three-figure numeric display
2 - LEDs for measurement shown on display
3 - LEDs for measurement triggering alarm
4 - Key for re-setting 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
STF 001	Flue gases temperature sensors	0…500 °C	Pt 1 kΩ	N 165

5. TECHNICAL DATA

Power supply	230 V AC ± 10%	Ambient humidity	Class F DIN 40040
	or 240 V AC for UK market	Weight	0.27 kg
Frequency	50 ... 60 Hz	Measurement ranges (Pt 1 kΩ)	0…500 °C
Consumption	2 VA	Max. number of recordings	240
Protection	IP40	Settings by PC :	
Radio disturbances	VDE0875/0871	Recording frequency	5…**30**…240 min
Vibration test	with 2g (DIN 40 046)	Delay receiving alarm (exceeding threshold)	0…**1**…255 min
Construction standards	Italian Elech. Committee (CEI)	Delay receiving end alarm (exceeding threshold)	0…**1**…255 min
Enclosure	DIN 3E module	Attempts alarm calls	2…**5**…200
Installation	on DIN 35 rail	Interval between calls	2…**10**…210 min
Materials:		Enabling alarm sensor fault	SI / **NO**
base	NYLON	Enabling alarm for exceeding threshold	SI / **NO**
cover	ABS		
Ambient temperature:			
operating	0 ... 45 °C		
storage	– 25 ... + 60 °C		

6. INSTALLATION

UBF 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
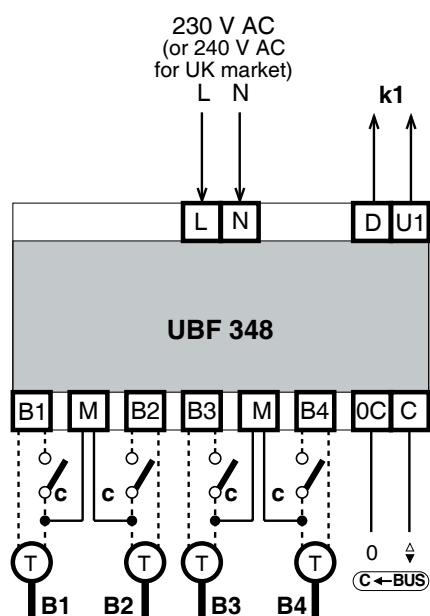
B 1…4 – Pt 1 kΩ sensor (0…500 °C)
c – On-Off switches (max. 2) to disable the alarms for exceeding thresholds of one or more sensors (as alternative to same number of sensors) Switch closed = alarm disabled.
k1 – Input alarm contact to be connected to terminals D and E1/E2/E3 of the equipment C-Bus
L – 230 V AC (or 240 V AC for UK market)
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 AC, or 240 V AC for UK market) 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 an external terminal block.

9. OPERATION

Each input (B1…4 – M) can be used as a measurement input (sensor Pt 1 kΩ , 0…500 °C) or as a digital input (max. 2) for On-Off disabling switches (with switch closed or open) for the limit alarms of one or more measurements.

From the facia, for each measurement input, you can :

- • Display :   - The actual temperatures measured by the sensors :
  Press, for less than 10 seconds, the → key (3.5) : with each depression the measurement changes and the "MEASUREMENT" LED (3.2) for the relative sensor lights.
  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 it is closed (alarms excluded).
  If, instead of the measurement, on the display appears a running dash, this means that the sensor is not connected or there is a break or short-circuit in the wiring.
  - The minimum and maximum values measured by the sensors :
  Press the → key (3.5) until the "MEASUREMENT" LED (3.2) for the relative sensor lights, press the "PEAKS" button (3.4), alternately are displayed the minimum and maximum values reached by the measurements.
  To cancel the values, keep pressed the "PEAKS" button (3.4) for 10 seconds or until the three dashes appear.

- • Set :   - The minimum and maximum limits for triggering the alarm :
  Press the → (3.5) until the "MEASUREMENT" LED (3.2) for the relative sensor lights. Press the "MIN" key (3.6) to see displayed the minimum value or the "MAX" key (3.7) for the maximum; if excluded OFF appears;
  To adjust, press the relative key (MIN or MAX) for at least five seconds: the "MEASUREMENT" LED (3.2) for the sensor concerned flashes and "- - -" appears, release and press again: the limit value appears; continuing to press, this is adjusted and when the required value is reached do not depress the keys 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 and wait about 10 seconds until the measured temperature again 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 change it, do not press any key. After 10 seconds normal operation is resumed. If you want to make adjustments, tap the → (3.5) key until the desired address appears; leave the keys untouched for 10 seconds: the address is stored and normal operation re-starts..

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

- • When UBF 348 is powered, for four seconds on the display appears the version number (e.g. 001) and all the LEDs flash; the value measured by sensor B1 then appears.

- • When UBF 348 is sending an alarm, "ALL" appears on the display.

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 the limit alarms (max. two)
  - identifying name of each measurement
  - minimum and maximum limit values for signalling the alarm for exceeding the threshold
  - delay in triggering the alarms for exceeding the threshold (from 0 to 255 min)
  - delay in ending the alarm for exceeding the threshold (from 0 to 255 min);
  - frequency of recording the measurements
  - Telemanagement password
- • Display and store the recordings of measurements
- • Display and cancel the minimum and maximum values reached by the measurements
- • Enable the signalling of alarms triggering the threshold.
- • Enable the signalling of alarms for sensor fault
- • Receive alarms triggering 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 10.09.08 MM	**01**	various 2	Various 7. Wiring diagram	Updated devices list. Update "k1" description		