

INTEGRATOR OF THERMAL ENERGY & CONSUMPTION OF DHW

C ←BUS

IEB 744 C1 Eng.

- **Energy metering:**
 - metering thermal energy
 - metering DHW consumption
 - signalling anomalous situations
 - saving data in event of power failure
- **Data transmission:**
 - C-Bus parallel connection with central display unit or computer or modem
- **Mounting on DIN rail or on pipework**
- **Power supply 24 V~**



1. APPLICATION

IEB 744 integrator, in combination with a volumetric meter with pulse transmitter of 100 or 10 liters/pulse on heating circuit and one of 10 liters/pulse on DHW distribution circuit, is designed for metering thermal energy in heating installations and the consumption of DHW.

By means of the C-Bus parallel connection IEB 744 is able to communicate all the data to UMC 734 central display unit or to a computer or to a modem for transmission of data via PSTN.

2. OPERATION

Calculates and meters the thermal energy consumed by the installation according to the temperature difference between flow and return measured by the two detectors supplied ; and the flow of circulating fluid measured by the volumetric meter on the heating circuit.

Meters the consumption of DHW measured by the volumetric meter on the DHW circuit .

WARNING :

*If the integrator is used to meter water volumes it is necessary to replace the detectors by fixed resistances; **for the flow: 1.2 KΩ; for the return: 1 KΩ**. Unless the detectors or resistances are connected the integrator will not carry out any integration or metering.*

The display shows :

- Total count of thermal energy in MW/h.
- Total count of volume of heating fluid in m³.
- Instantaneous temperature of flow and return in °C.
- Instantaneous temperature difference in °C.
- Number of liters/pulse of heating volumetric meter established by the programmer (10 liters/pulse or 100 liters/pulse).
- Total count volume DHW in m³.
- Number of liters/pulse of volumetric meter DHW circuit (10 liters/pulse).
- Address for telemanagement.
- Functional anomalies.

In the event of a fault or power failure memorizes the last data recorded.

3. TEMPERATURE DETECTORS

IEB 744 is supplied with two Pt 1,000 type detectors, calibrated as a pair, with an electric connecting cable about 1.5 m long (N.B. *Length cannot be changed*). Should a longer cable be indispensable please contact COSTER direct.

4. TECHNICAL DATA

Power supply	24 V~	Ambient humidity	Class F DIN 40040
Consumption	0.35 VA	Radio disturbances	VDE0875/0871
Case	Modulare DIN 6E	Vibration test	with 2g (DIN 40 046)
Case protection	IP 54	Construction standards	Italian Electrot. Committee (CEI)
Base	ABS	Dimensions	83 x 105 x 46 mm
Cover	ABS	Weight	0.4 kg
Display	LCD, 8 digits	Two detectors supplied :	
Max number pulses - heating	1,200 imp/h	- type	Pt 1,000
Max measurable heating flow	120 m ³ /h	- accuracy	0.1 °C
Max measurable DHW flow	12 m ³ /h	- measurement range	0 ... 130 °C
Temperature range	1 ... 130 °C	- cross section cable	2 x 0.5 mm ²
Differential temperature range	0 ... 99.9 °C	- length cable	1.5 m
Accuracy differential	0.01 °C	Essential accessories:	
Ambient temperature:		Pair of pockets for detectors	GIS 045
- operating	0 ... 45 °C	- pocket thread	1/2"
- storage	- 25 ... + 60 °C	- pocket depth	59 mm

5. DISPLAY PAGES

IEB 744 has an 8-digit display and a page-scrolling key →.
To change pages tap →, key: a cursor indicates the measurement symbol displayed. In IEB 744 there is a basic metering which has been memorized during testing.

On the first page appears **total thermal energy**.
Cursor indicates the red symbol **MWh**.

00000.000

On the second page appears **total volume heating fluid**.
Cursor indicates the red symbol **m³**.

00000.000

On the third page appears **flow temperature**.
Cursor indicates the red symbol **°C**.


000.0

On the fourth page appears **return temperature**.
Cursor indicates the red symbol **°C**.

000.0

On the fifth page appears **temperature difference**.
Cursor indicates the red symbol **Δ°C**.


00.00

On the sixth page appears **number of liters / pulse** selected by the internal programmer (9), which must coincide with the pulse transmitter of the heating volumetric meter..
Cursor indicates the red symbol 

L.0010

On the seventh page appears **total volume DHW**.
Cursor indicates the orange symbol **m³**.

00000.000

On the eighth page appears **number of liters / pulse** which must coincide with the pulse transmitter of the DHW volumetric meter .
Cursor indicates the orange symbol 

L.0010

On the ninth page appears the telematic address assigned by means of the central display unit UMC 734.

H.0001

On the tenth page appears the indication of any **functional anomalies** of the integrator shown by an **E** placed above the symbol concerned :

- **E** above the red or blue symbol **MWh** : Integrator faulty.
- **E** above the grey symbol **°C** or **c°** : Flow or return detector faulty : replace detectors with a new pair of calibrated detectors.

6. ASSIGNING ADDRESS WITHOUT UMC

IEB integrators can be connected to a C-Bus communication system even without the use of UMC 734. To be able to communicate with the computer each single IEB must be addressed as must all the other devices connected in the system.

- By means of →, key, display the ninth page :

H.0001

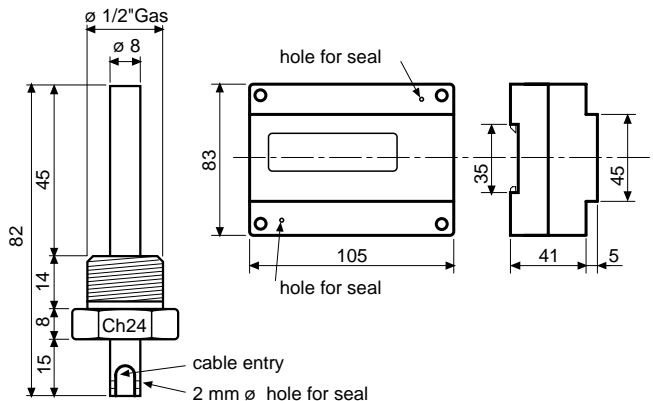
- Press → key until on display appears :

• RELEASE → KEY.

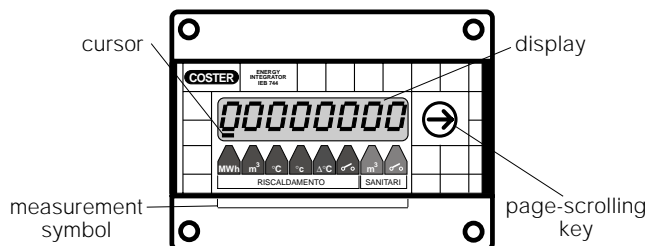
- Tap → key until on display appears address number required (1 ... 239).

H.0001

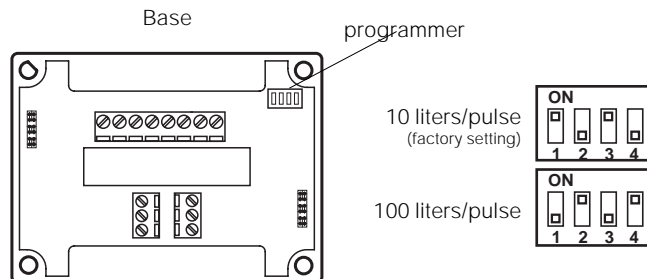
7. OVERALL DIMENSION



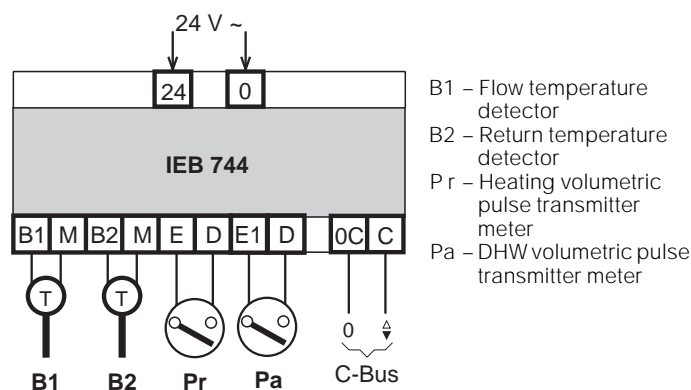
8. FACIA



9. PROGRAMMER



10. WIRING DIAGRAM



11. INSTALLAZIONE

IEB 744 can be installed on a DIN rail or on standardized panels or directly on the insulated pipework. The detectors must be installed with the pocket aligned against the flow of fluid. The volumetric meter must be installed on the return pipe.

At the conclusion of installation program the number of pulses / liter.

Finally, in order to prevent tampering, it is advisable to seal the integrator using the holes provided.



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