MEASURING SOLUTIONS

E-ITN 30.6

DOUBLE-SENSORED ELECTRONIC HEATING COST ALLOCATOR

A new generation heating cost allocator equipped with a wireless data transmission system, characterised by the perfect use of operational potential contained in microprocessor technology, modern design and the data encryption with AES method.

USE

Heating costs allocator E-ITN 30.6 has been designed for settlements carried out monthly and yearly as well. E-ITN 30.6 calculates the cost of heating in space. Recommended scope of application includes horizontal or vertical heating systems with one or two pipes with an average minimum design temperature of heat-transfer medium no less than 35°C and maximum one no more than 90°C.

COMPLIANCE WITH STANDARDS

- PN-EN 13757-4:2005 (U) Communication systems for meters and remote reading of meters - Part 4: Wireless meter readout (radio meter reading for operation in the 868-870 MHz SRD band).
- PN-EN 834:1999 Heating costs allocators to record heat consumption by heaters

APATOR

CHARACTERISTICS

- The wireless data transmission system is implemented by: an IR port - a direct readout with a reader; and a radio interface - a remote readout implemented outside the premises with allocators installed.
- The allocator is equipped with an ergonomically located LCD display that enables the user to easily read out the values of current heat consumption. In addition, these data are recorded in the internal memory, so it is possible to make a full analysis of heat consumption and the conditions in which the heat allocator worked in a whole heating season.
- Heat allocator E-ITN 30.6 provides a precise measurement of heater temperature. The installation and configuration of any additional devices is not required. HCA calculation is based on the software that allows a fair settlement of the cost to heat used for the specific apartment
- Any attempt of unauthorised manipulation (broken e-locks), an attempt to remove heater with attached allocator or the use thermal barriers before heater (furniture, curtains, etc.), is recorded with the exact date of its occurrence. The information about the manipulation is transmitted during the forthcoming radio readout.

Table 1. TECHNICAL DATA

Heating costs allocator	
Start of the readout	Temperature of heating system sensor ≥23°C and temperature difference between average temperature of heat-transfer medium and ambient temperature ≥5°C
Response to ambient temperature	Regular checking ambient temperature. With the attempt of manipulating, the allocator is automatically switched to a single-sensor mode of operation.
Calendar functions	■ Indication of the value of measurements: current and previous annual billing period; current and previous monthly billing period; average temperature of the radiator surrounding; date of the read-out and date of the eventual seal tampering (readout: IR, radio, screen). ■ Indication of the value of measurements from the last 11 months period, and selected parameters of the radiator (readout: IR, screen). ■ Indication of the radiator temperature: maximum, minimum and average from the last 11 months (readout: IR).
Display	Five-digit liquid crystal display + 2 special characters. Data Archive: archiving measurements including the time of event occurrence.
General billing factor	Individual scale
Function monitoring	Automatic, activated and controlled from the outside
Power supply	3 V lithium battery
Operation life of the device	10 years + 1 year of reserve
E-lock	Yes
Infra contact	Yes
Radio module	Yes
Dimensions	100 x 37 x 33 mm
Material	ABS + PC / Al – F22
Safety class	IP42
Scope of use	$t_{max} \leq 90°C$, $t_{min} \geq 35°C$ (t - temperature of heat-transfer medium)

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Integrated data transmission system by radio:	
Operating frequency/data format	868,95 MHz Wireless M-Bus
Transmitter power	~ 1 mW
Transmission time	< 5 ms
Data transmission scope (radius, range)	Up to 200 m (depending on local conditions) **Note**: You have to pay attention to all the metal structural components such as: concrete reinforcement, Lifts, etc. because they can affect adversely the radio range (the may be reduce the emitted signal).
Transmission period	■ Every 45 seconds – for the period of 30 days from the finishing of the yearly settlement period, and 6 days after every monthly settlement (not including the summer period). ■ Every 12 minutes – for the summer period (minimum 3 months). ■ Every 251 seconds, transmission without encryption – all others months (beside the summer period) of the yearly settlement. ■ Every 413 seconds, transmission with encryption - all others months (beside the summer period) of the yearly settlement.
Transmitted data encryption	Optional: AES-128 (encrypted data block length: 128 bits, key size: 128 bits) or data transmission without encryption