E-ITN 40

Electronic heat cost allocator E-ITN 40 with integrated radio transmitter

E-ITN 40 is modern electronic device intended for ratio-based allocation of heat cost in buildings with central heating system. The heat cost allocator **E-ITN 40** uses the two-sensor measuring principle. One sensor measures the temperature of the radiator and the second sensor measures the temperature of the room. Using this principle, allocator ensures exact measurement of consumption value only when the radiator really emits heat.

Data reading

Due to integrated radio transmitter, presence of flat-occupant is not required when data are read. No strangers also enter the flat.

Data reading can be made by billing company employee using mobile receiving unit. Data can be also read by central reading system CRS 40 permanently installed in the building if required.

If water meters with radio modules E-RM 30 are also used, data are read simultaneously.

Protection agains cheating

Heat cost allocator E-ITN 40 is equipped with electronic seal. This seal is able to recognize unauthorized manipulation and record its exact date. Data about unauthorized manipulation is transmit in radio signal.

When thermally influenced, allocator is switched to single-sensor mode. Allocator is switched back to standard two-sensor mode when thermal influence is finished.

Application

E-TIN 40 is intended to be installed in one-tube horizontal/vertical and two-tube heating systems with the lowest mean design heating medium temperature 35°C and highest mean design heating medium temperature 105°C.

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Technical data

Application	$t_{max} <= 105°C$ (max. temperature of the heating medium)
	$t_{min} >= 35°C$ (min. temperature of the heating medium)
Conditions for registration	temperature of the sensor of the radiator temperature 23°C difference of mean temperature of heating medium and surroundings temperature 4°C
Power supply	lithium battery 3,0 V
Calculated battery lifetime	10 years + 2 years reserve
Display	5 digits LCD + 2 special symbols
Data backup	daily backup of measured values including real time
Function control	automatic, can be activated and controlled by user
Electronic seal	Yes
NFC interface	Yes
Infra rozhrani	No
IP protection	IP42
Conformity	ESN EN 834
Data coding	Yes
Transmission rage	up to 300 m (without entering the building, with additional panel antenna) Rem.: it is necessary to consider that all metal parts of construction (switch rooms, armouring, lifts, etc.) can negatively affect the range of radio signal

Calendar functions

Consumption
- total consumption (from beginning of operation or reset)
- consumption for billing period (current yearly + 6 previous)
- consumption for previous monthly billing period (current + 24 previous)
- date of beginning of measuring total consumption (DD:MM:YY)
- date of beginning of billing period (DD:MM)
- date of beginning of heating season (DD:MM)
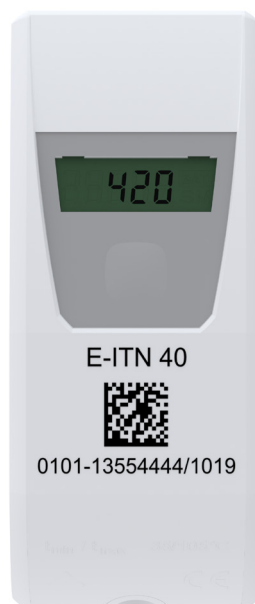- date of beginning of summer season (DD:MM)

Temperature of radiator
- max. temperature of sensor of radiator for past billing period (current yearly + past yearly)
- max. temperature for sensor of radiator for past monthly billing period (current monthly + 12 previous)
- min. temperature of sensor of radiator for past yearly billing period (current yearly + past yearly)
- min. temperature of sensor of radiator for monthly billing period (current monthly + 12 previous)
- average temperature of sensor of radiator for past monthly billing period (current monthly + 12 previous)
- date of record of highest temperature of sensor of radiator for past yearly billing period
- date of record of lowest temperature of sensor of radiator for past yearly billing period
- average temperature of sensor of radiator for previous day
- current temperature of sensor of radiator

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Environment temperatures

- average temperature of environment for yearly billing period (current yearly + past yearly) (just 1.11. to 31. 3.)
- average temperature of environment for past monthly billing period (current monthly + 12 previous)
- current average temperature of environment $Ti(ss)$ for yearly billing period (current yearly + past yearly) (only 1.10. to 30. 4.)
- average temperature of environment $Ti(ss)$ for monthly billing period (current monthly + 12 previous)
- number of dates with change of temperature $Ti(ss)$ (current monthly + 12 previous); day of activation is registered when allocator during day at least lx updates value $sTi(ss)$
- average temperature of environment $Ti(ss)$ for previous day
- average temperature of environment for previous day
- current temperature of environment

Other features

- number of days of allocator operation for monthly billing period (current monthly + 12 previous); day of operation is registered if allocator during days at least lx registers increase of consumption
- state of electronic seal of allocator and external sensor
- date of broken electronic seal (DD:MM)
- total consumption at the moment of broken electronic seal
- error state (E0000)
- date of error state
- total consumption at the moment of error state
- number of changing to single sensor mode (current yearly + 1 previous)
- number of changing to single sensor mode (current monthly + 1 previous)
- option to turn off measuring in summer season
- adjustable start temperature of radiator in summer season that allocator starts to measure
- option to turn off one way transmission in summer period
- power of radiator (default 1000)
- Kc coefficient (default 1)

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0101-13554444/1019

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