

## ► Brunata Futura<sup>+</sup>

### Electronic heat cost allocator of the two-sensor measuring principle with radio module for remote reading

Brunata Futura<sup>+</sup> is an electronic metering device for recording the heat consumption from radiators in a building, where all consumers are to share and allocate between them the total heating costs for a common heating system over a fixed period of time. The heating cost of each individual resident can thus be added up as a consumption-based share of the total heating costs in the building – i. e. as the total metered consumption on the radiators available to each consumer during the laid down period of metering and billing.



#### Brunata Futura<sup>+</sup>

- is designed for both high temperature and the still more common low temperature heating systems
- records not only the heat emitted by the radiator ('plus heat') but also outbalances the heat absorbed by the radiator from the surroundings ('minus heat'). Thus, for example, it is avoided that heat absorbed due to in-falling sunlight or wood-burning stoves is erroneously recorded as consumption.
- ensures that consumers merely pay for the heat delivered by the heat supplier
- offers a clear and easy-to-read display, showing the added-up consumption for the ongoing metering period and the consumption total for the previous, closed metering period. Further, a 10 years-reading history is stored in the memory
- is equipped with a radio transmission module which enables frequent collection of readings without disturbing service visits from reading personnel
- is powered by a replacable battery with a life time of min. 10 years, so that the allocator can continue operation with a new battery without being replaced

#### Measures correctly the whole year

Brunata Futura<sup>+</sup> works along the two-sensor measuring principle, and both sensors may be employed within the temperature range from 0 °C to 125 °C. All temperatures are processed in the allocator with a 0,1 K. Continuously, measurements of the radiator's average temperature and of the room temperature are carried out for current calculation of the radiator's heat emission from the difference between those temperatures.

The patented measuring principle further ensures that absorbed and later emitted heating energy from sunlight and other heating sources than the radiator does not imply erroneous and unwanted registration of a non-existing heat consumption. Merely the heating from the central heating system itself is thus recorded as consumption for billing by the Brunata Futura<sup>+</sup>.

Brunata Futura<sup>+</sup> is notable in not using its calendar function to raise the excess temperature limit for registration start as to heat consumption in dependence of the season. This ensures that e. g. heat consumption in cold periods of early and late summers is recorded too. This is important in particular for central heating systems with low supply temperatures or systems with automated temperature reduction during summers.

The recording of heat consumption is thus correct around the year in all types of heating installations.

#### Useful data storage memory

Brunata Futura<sup>+</sup> The allocator stores recorded consumption totals at the end of all to weeks-periods in a historical memory which reaches back 26 months.

For each period, along with the current consumption total, data are stored on radiator and room temperatures along with other information on the operational conditions of the allocator.

*Brunata is a Danish owned company. We have more than 90 years of experience within developing and producing meters, heat cost allocators, consumption accounts, meter services and latest substations. Today meters are often remotely read with access to the internet. We have a quality control system fulfilling DSIEN ISO 9001 and 14001.*

The data history offers important advantages:

- the organization of the data history renders extraordinary readings superfluous, e. g. when it comes to changes of residents
- a system of codes for operational conditions detects damages or tampering attempts against the allocator, which stores code indication along with calendar date and clock time
- as the seasonal consumption totals are stored in a 10 years-history, the 26 months-history makes it possible to analyze extraordinary consumption patterns on radiator level
- on remote reading by radio transmission module each telegram provides the following data:

Consumption for current 2 weeks-period

Consumption for previous 2 weeks-period

Consumption for pre-previous 2 weeks-period


Consumption current season as per reading date

Allocator-ID-no.

## Clear and easy-to-read display


Brunata Futura<sup>+</sup> is easy to read for the user and requires no keystrokes. In a cyclic way, the different data are displayed along with simple icons:

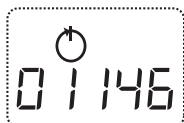
### Units

 The heat consumption is measured in units, accumulated in a counter unit and shown as "Consumption this year" on the allocator's display. On the first day of a new heat accounting year, the measurement of "Consumption this year" automatically starts at zero.




### Units last year

 Last year's heat consumption is read precisely at the terminal date, stored in the memory and shown on the display as illustrated on the right. In this way, the consumers can keep an eye on their heat consumption and compare it with the consumption during the preceding year. The consumption during the past ten years is stored in the allocator's internal memory.



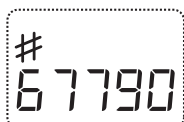
### Scale and control figure

 When installed, each allocator is adjusted to the radiator capacity by means of a scale. This ensures that the heat consumption is measured correctly and is comparable with the consumption in other locations where Brunata Futura Heat<sup>+</sup> cost allocators are installed. In addition, the allocator is equipped with a control figure, which provides extra security for correct reading of the consumption.



### # Allocator no.

Each allocator has its own unique number. As a result, Brunata can always find details of consumption, installation location, etc.



## Technical data

### Operating principle

Electronic heat cost allocator with two-sensor measurement. One sensor records the radiator surface temperature, the other records the room temperature.

### Standards

Danish type approval DS/EN 834

System designation TS 27. 21 027

The Danish type approval does not include metering of floor heating.

European standard ETSI 300 220-2

European standard EN301489, EN60950, EN62311

### Application area

Ordinary types of one and two piped heating systems, incl. low temperature systems and buildings insulated post-construction.

### Criteria of consumption recording

$t_c - t_i > 0 \text{ }^\circ\text{C}$	In conformity with DS/EN 834 item 5.3
+ and - heat (patented)	Only heat supplied to the radiator from the central heating system is recorded as consumption
$t_{\text{min}} = 20 \text{ }^\circ\text{C}$	Measures correctly by very low temperatures
$t_{\text{room}}$	Range 0 $^\circ\text{C}$ - 105 $^\circ\text{C}$
$t_{\text{rad}}$	Range 0 $^\circ\text{C}$ - 105 $^\circ\text{C}$

### Type designations

E1	with external radiator temperature sensor $t_{\text{rad}}$ Range 0 $^\circ\text{C}$ - 125 $^\circ\text{C}$
E2	with external radiator and room temperature sensor $t_{\text{rad}}$ Range 0 $^\circ\text{C}$ - 125 $^\circ\text{C}$
K	with rear piece for convector
G	with floor heating temperature sensor





### Transmission frequency

Brunata Futura<sup>+</sup> sends a telegram every 2nd - 4th hour.  
Brunata Futura<sup>+</sup> ver2 sends a telegram every 2 minutes.

### Protocol

Brunata Futura<sup>+</sup> ver2 uses BrunataNet ver2 protocol

### Display

 "Units",  "Units last year",  "Scale" and  "Allocator no." are shown by turns.

### Protection class

IP42

### Memory

The latest 52 measurements from the 1st and 15th day of the month (heat consumption, radiator and average room temperature). The closing date for heating accounts. Dated log of operation conditions and error conditions. Statistics of operation conditions (function modes) and annual consumption for the past ten years

### Measures and weight

Brunata Futura<sup>+</sup>: 131 x 39 x 19 mm, approx. 65 g

### Battery

The batteries are replaceable. All allocators are supplied with a battery for ten years' normal use + one year.

Disposal according to WEEE directive:



### Caution

Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.