

► Brunata Futura

Electronic heat cost allocator with genuine 2-sensor measurement

- Brunata Futura is developed for both low and high temperature systems
- Brunata Futura not only records the heat emitted by the radiator (plus heat), but also the heat supplied to the radiator from its surroundings (minus heat). This means that heat from the sun or a wood-burning stove is not recorded as consumption
- The easy-to-read display shows the consumption this year and last year in the form of icons
- Replaceable, environmentally friendly batteries



Accurate measurement of heating

Brunata Futura is a heat cost allocator used to record the heat consumption in buildings where a number of consumers have to share the heating costs. In this way, the individual consumer's heating costs can be calculated and settled as a fair, consumption-dependent share of the total heating costs of the building.

Patented measurement concept

Brunata Futura applies genuine 2-sensor measurement. It means that two measurements are carried out continuously – of the radiator's surface temperature and of the room temperature respectively. The heat consumption is then regularly calculated on the basis of the difference between these two temperatures.

Brunata Futura not only measures the heat emitted by the radiator to the room (plus heat), but also the heat supplied to the radiator from the room, e.g. on a hot summer day (minus heat). The heat consumption is then calculated as the difference between plus heat and minus heat.

Accordingly, no consumption is recorded when the radiator is not receiving heat from the central heating system. Recording only takes place when there is a positive difference between plus heat and minus heat over a 24 hour period. The number of hours when the radiator is not in use is stored in the allocator's memory.

Brunata Futura also can be used to measure floor heating. See section "Technical data".

Measures correctly the whole year

Unlike other electronic heat cost allocators, Brunata Futura does not use its calendar function to raise the starting temperature when recording the heat consumption during the summer. That would mean that a significant part of the heat consumption would not be recorded, especially in the common low temperature systems, which have a low inlet temperature, and in central heating systems where the temperature is automatically reduced during the summer period.

Brunata Futura measures the heat consumption correctly 365 days a year – also in low temperature systems.

Data stored in the memory

Readings for the 1st and 15th of every month are stored in the allocator's memory. Altogether, data are stored for 52 log periods, corresponding to data for 26 months.

The following data are stored for each period:

- Current heat consumption
- Radiator temperature
- Room temperature

All temperatures are stored in Kelvin with a resolution of 0.1K.

Brunata is a 100 % Danish owned company. We have more than 85 years of experience within developing and producing heat cost allocators and heating accounts. We have a quality system fulfilling EN ISO 9001. Please contact us for further information on our products.

Memory with advantages

One of the advantages of the memory function is that the allocator does not have to be read on a specific day in connection with removals.

If Brunata Futura is exposed to attempts at tampering or other damage, this is also recorded in the memory together with information on date and time.

The allocator recordings are checked in connection with the annual reading and when residents are moving in or out. The many stored measurements also make it possible to evaluate if exceptional energy consumption is caused by bad consumer habits, failures in the heating system or inadequate insulation of the building.

The annual heat consumption is stored in the allocator's memory for ten years.

Easy-to-read display

Brunata Futura is easy to read and it is not necessary to press any buttons. Brunata Futura shows the different recordings by turns alongside easy-to-understand icons.

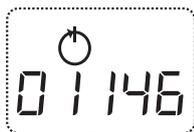
Units

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 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 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.



Environmentally compatible with long life

Brunata Futura has a very long life, because its battery is replaceable.

Most other electronic heat cost allocators on the market are disposable. This means the entire allocator has to be replaced when the battery runs out.

Technical data

Operating principle:

Electronic heat cost allocator with 2-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 comprise measuring of floor heating.

European standard ETSI 300 220-2 v2.1.1 (2006-04)

Application area:

Ordinary types of 1 and 2 piped heating systems, including the so-called low temperature systems and buildings insulated post-construction.

The Danish type approval does not comprise measuring of floor heating.

Criterion of recording of consumption:

$t_z - t_1 > 0 \text{ }^\circ\text{C}$	In conformity with DS/EN 834 item 5.3
+ and - heat	Only heat supplied to the radiator from the (patented) central heating system is measured as consumption
$t_{\min} = 20 \text{ }^\circ\text{C}$	Measures correctly by very low temperatures
t_{room}	Range of measurement $0 \text{ }^\circ\text{C} - 105 \text{ }^\circ\text{C}$
t_{rad}	Range of measurement $0 \text{ }^\circ\text{C} - 105 \text{ }^\circ\text{C}$

Type designations:

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

Display:

○ "Units", ○ "Units last year",
▣ "Scale" og # "Allocator no." are shown by turns.

Degree of protection of enclosures: IP42

Memory:

The last 52 measurements from the 1st and 15th day of the month (heat consumption, radiator and average room temperature). The cut-off 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: 91 x 39 x 19 mm, approx. 43 g

Battery:

The batteries are replaceable. All allocators are supplied fitted with battery for ten years' normal use + 1 year