

2. supplement to TYPE APPROVAL CERTIFICATE 1998-7053-1157	No.: 08-3755
	Issue: 1
	Date: 2008-09-23

Expiry date: 2016-09-23

System designation: TS 27.21 014

HEAT COST ALLOCATOR

EXTENTION OF VALIDITY PERIOD



Manufacturer	Brunata a/s, Vesterlundvej 14, DK-2730 Herlev.
Applicant	Brunata a/s, Vesterlundvej 14, DK-2730 Herlev.
Item	Heat cost allocator with electrical energy supply.
Type	RME 95
Field of application	Recording heat consumed by room heating radiators for the purpose of allocating heating costs

Keld Palner Jacobsen

NOTE: This supplement shall be applied in connection with the original Type Approval Certificate which together with this supplement and prospective other supplements constitutes a whole.


This approval is available in several languages. In the event of differences in meaning between the various languages, the Danish text shall apply.

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TYPE APPROVAL CERTIFICATE		No.: 1998-7053-1157
		Issue: 2
		Date: 1998.09.23
Expiry date: 2008.09.23	System designation: TS 27.21 014	
<p>Type approval and checking provisions issued in accordance with cl. 10 of the Danish Agency for Trade and Industry regulation no. 70 of 28 January 1997 concerning checks of heat cost allocators used as the means of allocating heat consumption.</p> <p>HEAT COST ALLOCATOR</p> 		
Manufacturer	Brunata a/s, Vibevej 26, DK-2400 Copenhagen NV	
Applicant	Brunata a/s, Vibevej 26, DK-2400 Copenhagen NV	
Item	Heat cost allocator with electrical energy supply	
Type	RME 95	
Field of application	Recording heat consumed by room heating radiators for the purpose of allocating heating costs	
	Type tested in accordance with DS/EN 834:1994.	
NOTE: Meters which are not completely identical with that described in this certificate can only be verified subject to a separate approval by a supplement to this certificate.		

This approval is available in several languages. In the event of differences in meaning between the various languages, the Danish text shall apply.

TYPE APPROVAL CERTIFICATE	No.: 1998-7053-1157
	System designation: TS 27.21 014
1. LEGAL METERING DATA	
Equipment	Heat Cost Allocator (Compact meter)
Method of measurement	2-sensor measurement
Reference conditions	Average heating medium temperature $t_m = 55^\circ\text{C}$ Reference room temperature $t_r = 20^\circ\text{C}$
Fixing point	The allocator is to be placed at 66.7% of the height of the radiator.
Range	$t_{\max} = 77^\circ\text{C}$ $t_{\min} = 20^\circ\text{C}$
Battery	A battery of similar quality to a mercury-free alkaline battery with a minimum voltage of 3.25V and maximum voltage of 4.7V and a capacity of 1050 mAh. Life: minimum 2 years' operation.
2. CHECKING PROVISIONS	
2.1 Declaration of conformity	A declaration of conformity with the type approval shall be made by an authorised meter supplier. The void label shall state the year of the declaration and the registration number of the meter supplier.
2.2 Functional checks	In accordance with DS/EN 834 and the manufacturer's instructions.
2.3 Marking	The type of the heat cost allocator is printed on the front of the meter, t_{\max} and t_{\min} and the TS number on the bottom of the meter. The serial number, which is a unique identification number, is programmed into the memory of the meter and displayed at programmable fixed intervals on the display of the meter. A verification symbol and year are applied to the front of the meter.
2.4 Sealing	The casing is sealed to the compact meter and remote sensor meter by affixing a plastic seal. The sealing label states the year of sealing and the identity of the authorised meter supplier.
3. CONSTRUCTION	
3.1 Manufacture	RME 95 is a compact format electronic heat cost allocator based on the 2-sensor principle. The NTC type temperature sensors are located, along with the other metering electronics and display unit, in the sealable meter housing of the unit. One temperature sensor on the unit measures the radiator temperature via a conducting rear piece, and the other sensor, thermally separated from the first, measures the room temperature. After connection, the meter carries out an auto-function test and then commences cyclical measurements of the room and radiator temperature and carries out checks, calculations and notation of counter states when required. These measurements and a number of programmed metering and radiator data are stored in the EEPROM type memory.

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RME 95 measures the heat transferred to the room by the radiator from the boiler system as the difference between the heat emitted to the room from the radiator and the heat absorbed by the radiator from the room. Calculations are carried out based on the temperature measurements when the difference between radiator temperature and room temperature (Δt) is other than zero.

RME 95 is also provided with a calendar function, whose purpose is to (1) calculate units consumed during the current billing period, (2) auto-read into a separate record on a pre-programmed cut-off date, and (3) record the total units consumed and data concerning operational state 1½ years back in 14-day periods from the current date. The calendar function of the meter, which works from the starting date and cut-off date for the metering period, is not used to alter the measuring capacity of the meter or to put it periodically out of operation.

An LCD display unit shows, in a programmable cycle, units consumed in the current and previous metering period plus the identification number and scale.

Using an optical connection on the front of the meter, all data in the RME 95 can be read using a special reading device.

3.2 Installation

Installation of the meter is carried out in accordance with DS/EN 834 and instructions issued by the manufacturer specific to the meter and radiator. These fitting instructions must be closely complied with to ensure reproducible heat transmission between the radiator and allocator and thus correct recording of heat consumption.

4. DOCUMENTATION

Project no. 270-83017
Danish Technological Institute, DTI Energy

Issue no. 2 incorporates issue no. 1 of 23.09.1998 and supplement 1 of 19.09.2000.

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