Heat cost allocators
MONITOR 2.0
MONITOR 2.0 E with remote probe

7200 series

01218/14 GB

ISO 9001 FM 21654

ISO 9001 No. 0003

CE 0470

Function

MONITOR 2.0 and MONITOR 2.0 E are cutting-edge electronic heat cost allocators that can be applied to radiators and convectors to measure user heat consumption in buildings with centralised systems featuring vertical heating distribution.
When combined with a thermostatic or chrono-thermostatic valve, both temperature regulation and metering of heat consumption are performed, ensuring greater comfort and fair allocation of costs. Heat consumption data can be collected via radio and processed directly by the building administrator / manager.

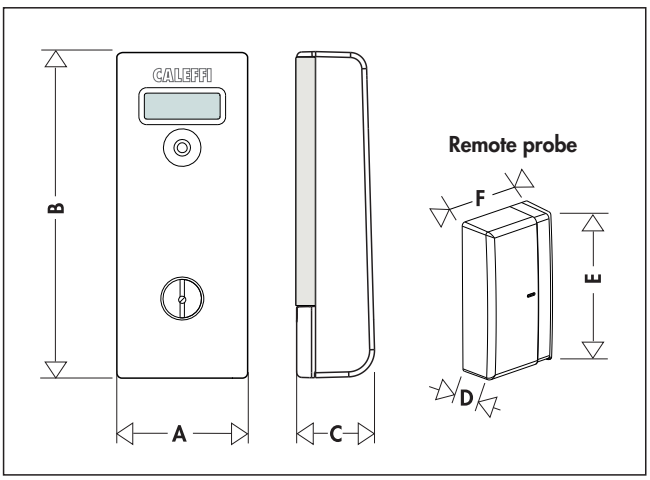
Product range

Code 720020	Heat cost allocator MONITOR 2.0
Code 720025	Heat cost allocator MONITOR 2.0 E with remote probe (cable length = 1,5 m). **Complete with mounting kit**.
Code 72005./6.	Mounting kit for MONITOR 2.0
Code 720090	USB/radio transmission device + SW7200 software for reading and processing consumption data.

Radiator valves and controls

338/342 series	Convertible radiator valve / lockshield valve, angled connections for copper, single-layer or multi-layer plastic pipes
339/343 series	Convertible radiator valve / lockshield valve, straight connections for copper, single-layer or multi-layer plastic pipes
401/431 series	Convertible radiator valve / lockshield valve, angled connections for iron pipes
402/432 series	Convertible radiator valve / lockshield valve, straight connections for iron pipes
421/422 series	Convertible radiator valve with pre-setting for iron pipes
425/426 series	Convertible radiator valve with pre-setting for copper, single-layer or multi-layer plastic pipes
224/225/ 226/227 series	Thermostatic valves
204/200/ 201/202 series	Thermostatic control heads
741 series	Electronic actuator with radio receiver
740 series	Radio chrono-thermostat / radio thermostat

Dimensions



Code	A	B	C	D	E	F	Mass (kg)
720020/25	39	98	24	14	53	29	0,051

Features

- Heat consumption metering through operation with 2 sensors: one ambient sensor and one for measuring the surface temperature of the radiator.
- Automatic switching to one sensor metering when detecting critical ambient temperature conditions.
- Daily data logging.
- Two-way radio communication.
- Radio transmitted heat consumption readouts from outside the apartment.
- Battery operated.
- 6-digit display with display select key.
- Stable mounting with protection against tampering guaranteed by an internal microswitch that detects opening, a seal and a special fitting kit.
- **Fitted for centralised readouts** by means of a building remote datalogger.

Advantages

- Transparency in consumption data reading thanks to the parameterisation of the actual installed capacity of the radiator.
- The installation requires no masonry work or external electrical power supply.
- Ultra low-emission radio system, in line with European standards.
- Does not require periodic maintenance.
- Fair allocation of heating costs, based on actual energy consumption.
- Energy saving and increased comfort when combined with temperature regulation (thermostatic valves).

Technical specifications

3 V lithium battery (⎓) max 20 mA, max battery life 10 years (under normal usage conditions).

Material

Casing:	PC, ABS

Metering

Operation with two sensors and switching to one sensor mode if critical ambient temperature conditions are detected.

Switching ΔT:	4,5 K
Single sensor metering start temp. (plate average):	30°C
Metering cycle:	2 mins

Heating system design flow temperature limits

Tmax:	90°C
Tmin:	35°C

Radiator heating capacity

Settable thermal power range:	10–20,000 W

Certification

Directive 1999/5/EEC (R&TTE)
EN 834

Display

Display readout: display test, alarms and faults, current and previous heating season total consumption (with logging date), operating status, serial number, operation start date.

Transmission

Two-way wireless transmission, ONLY enabled during readouts for 0.1 seconds, 868.0-868.5 MHz, 20 mW.

Other specifications

Regular operating efficiency auto-check
Select key

Protection class:	IP 31 (mounted cost allocator)

Tamper-proof internal seal and microswitch
Programmable operation start date
Daily consumption log for a period of 18 months
6-digit LCD display

Cable length for code 720025:	1,5 m

Ambient conditions

Transport and warehouse storage temperature:	0–40°C
Working temperature:	5–60°C
Maximum non-condensing relative humidity:	65%

Installation

Installation with tamper-proof mounting KIT, adapted to suit a specific radiator (refer to the installation manual).

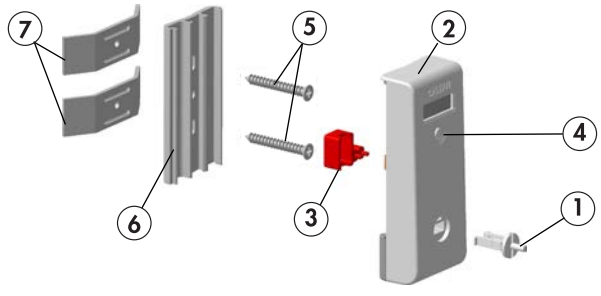
Mounting kit components

Thermal coupling plate:	aluminium alloy
Screws and expanding corner pieces:	galvanised steel
Stud bolts:	copper
Anchoring element:	galvanised steel
Threaded plate:	galvanised steel / brass

Remote probe mounting for code 720025: stainless steel screw clamps

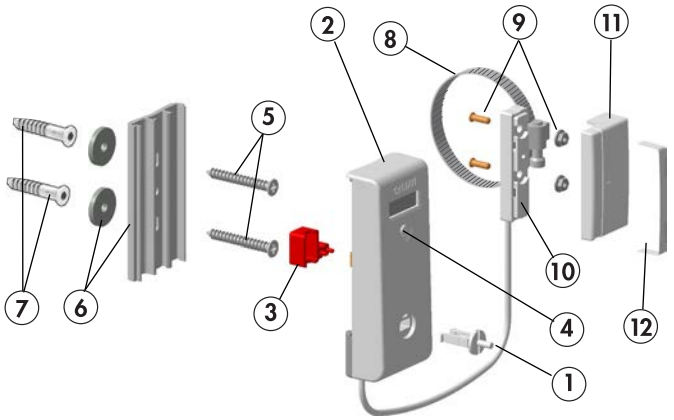
Mounting diagrams

MONITOR 2.0 - code 720020



1. Tamper-proof seal
2. Heat cost allocator complete with PCB
3. Protection for tamper-proof element (to be removed during installation)
4. Display selection key
5. Mounting screws (tightening torque 0,8-1 N·m)
6. Aluminium thermal coupling plate
7. Anchoring elements

MONITOR 2.0 E (remote probe) - code 720025



1 Tamper-proof seal
2 Heat cost allocator complete with PCB
3 Protection for tamper-proof element (to be removed during installation)
4 Display selection key
5 Wall mounting screws
6 Aluminium plate + spacers
7 Wall mounting wall anchors
8 Metal radiator/convector mounting clamp for remote probe
9 Copper stud bolts + nuts for welding
10 Remote probe
11 Remote probe cover
12 Tamper-proof label

Warnings

Installation and user obligations. Installation, parameterisation and commissioning of the metering system and the individual devices must only be carried out be specialised installers. The specific installation manual must therefore be consulted during the installation process.
The user should not modify or tamper with individual devices. If indoor renovation or painting work is required, the final user must contact a specialised and certified installer to intervene on the system.

Safety information. Please read the simple safety standards below. Failure to observe these standards could result in a hazardous situation (i.e. may cause personal injury or damage possessions).

Hazardous malfunctioning. If the device emits any smoke, unusual odours or anomalous noise, do not touch it as it may cause burns. Contact the Service Centre or your installer for assistance.

Inappropriate use. Do not drop, hit or shake the device, as this may damage its internal circuits and components. Do not paint the device, do not insert any objects, keep the device dry, do not open or attempt to open the plastic shell, as doing so may damage the device, affect its operating features, or even cause personal injury.
Only use the devices in accordance with the instructions provided in the corresponding documentation.

Accessories. Only use the accessories supplied or those specifically approved by CALEFFI S.p.A.

Radio interference. Devices communicating via radio are subject to interference which could affect their operation. Avoid intense electromagnetic fields near the devices.

Hearing aids. Radio devices may interfere with some hearing aids.

Medical equipment. The use of any receiver/transmitter devices may interfere with the operation of medical equipment that is not fitted with suitable protection. Consult a doctor or the manufacturer of the medical equipment to find out whether it is compatible with the heat cost allocator wireless device.

Cleaning. Use a clean, soft cloth slightly dampened with a mild detergent solution to clean the device, making sure no liquids get inside it. Do not use solvents, corrosive or abrasive chemicals, aggressive detergents, alcohol, petrol, turpentine, spray products, etc.

Qualified assistance. Only qualified and authorised personnel may install and service the devices.

Completion codes

7200

Mounting kit for code 720020.

N.B.: When ordering the mounting kit, make sure that the number of pieces is a multiple of the minimum pack content.

Code	Description	Min. pack content
720050	plate (39 mm) + anchor (20 / 39 mm)	5
720052	plate (55 mm) + anchor (20 / 39 mm) + anchor (59 mm)	5
720053	plate (55 mm) + anchor (75 mm)	5
720054	plate (88 mm) + anchor (39 mm)	5
720055	plate (88 mm) + anchor (59 mm) + anchor (75 mm)	1
720060	plate (39 mm) + self-tapping screw	5
720061	plate (39 mm) + threaded plate	5
720062	plate (39 mm) + weld-end stud bolts	5
720063	plate (39 mm) + expanding corner pieces	1

The tightening torque for the screws used in the mounting kits must be between 0,8 and 1 N·m.

7200

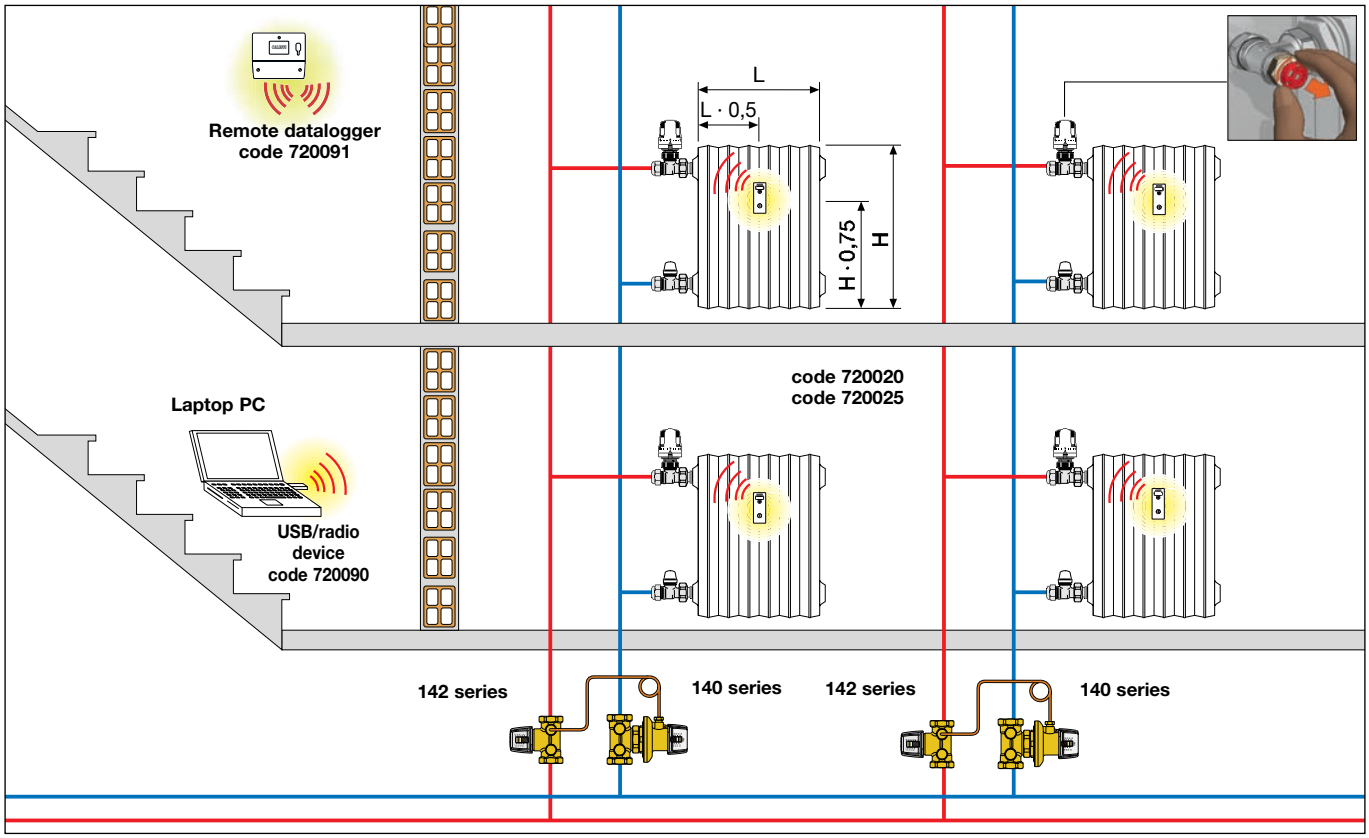
USB/radio transmission device + SW7200 software for reading and processing consumption data.
Two-way wireless communication 868.0-868.5 MHz, 20 mW.
Software developed for Microsoft® Windows.

Code	
720090	USB/radio device + SW7200

Possible faults and solutions

Problem/Fault	Likely cause	Operations to be performed
Device disconnected from the radiator	Impact, other	Contact certified installer
Missing seal	Tampering	Contact certified installer
Device position has changed since it was installed	Tampering, impact, other	Contact certified installer
The display shows alarm code FL8888 or Fr8888	Internal self-test has detected a fault	Contact an authorised installer and quote code FL8888 or Fr8888
Shown heat consumption is null	No consumption	This is not a fault. If the radiator is off no energy emission will be recorded.
Low operating consumption values are shown	New heating season started recently	This is not a fault. When the season start date has passed, shown heating consumption is reset to zero
No information on display when key is pressed	Internal problem	Contact certified installer to have the device checked

Consumption data acquisition via USB/radio device or building remote datalogger.



Hydraulic adjustment

The application of thermostatic control heads, where not already present, prompts balancing of the risers in the central heating system. Every riser should, for example, be equipped with a differential pressure regulator (140 series) combined with a pre-regulation and shut-off valve (142 series).
It is also advisable to use thermostatic valves with pre-setting.

It is wise to entrust the heating engineer with the assessment of any adjustments to the central heating system.

SPECIFICATION SUMMARY

Code 720020 and Code 720025

MONITOR 2.0/2.0 E heat cost allocator for use in centralised systems featuring vertical heating distribution, with the following features: 6-digit display for viewing consumption data; ambient working temperature 5–60°C; protection class IP 31 (mounted cost allocator); electric supply via 3 V lithium battery (⎓) max 20 mA, maximum life 10 years (under normal display and radio transmission usage conditions); two-way radio transmission 868.0-868.5 MHz, 20 mW; metering with 2 sensors; automatic switching to one sensor when detecting critical ambient conditions; daily data logging; settable heat cost allocator by means of parameterisation and consumption data readouts via USB/radio device; with remote sensor with cable length 1,5 m (code 720025 only); fitted for centralised readouts by means of a remote datalogger.

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