

GE700



Energy
Management

Electronic heat cost allocator with Wireless M-Bus data transmission complying with OMS standard

Datasheet
0560EN 10/2020



GE700 electronic heat cost allocators comply with the UNI EN 834 standard and are based on the 2-sensors temperature reading principle.

They can be used in radiator systems with single-pipe or twin-pipe distribution.

They can transmit data remotely through the Wireless M-Bus according to the OMS standard (868 MHz radiofrequency - ISM European band - Industrial, Scientific, Medical) and with a long-life battery.

The wide range of accessories enables to install them on the most common types of radiators available on the market.

➤ Indirect thermal energy metering characteristics

The heat metering of the thermal consumptions through the GE700 electronic heat cost allocators, allows the **restructuring of radiator systems** with centralized production and distribution with risers, **making them more modern and adequate to times**.

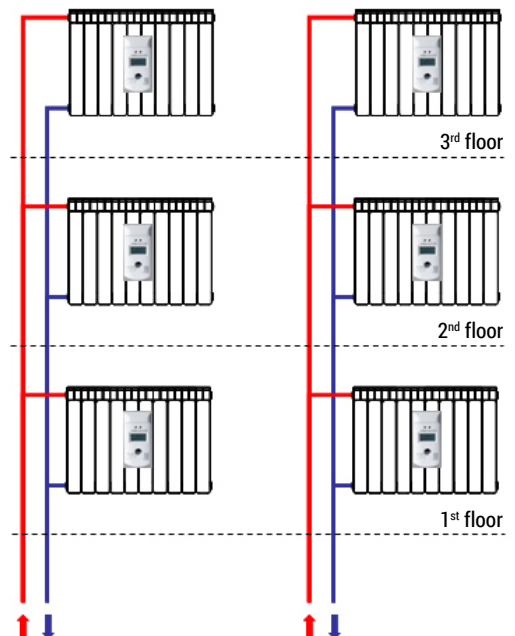
The comfort and energy saving offered by individual thermoregulation through thermostatic heads and valves add up to the possibility to allocate heating costs based on the consumptions actually sustained, with greater equity compared to traditional metering criteria.

Requalified radiator systems with thermal energy metering and thermoregulation also encourage more responsible individual behaviors when managing energy. **By paying only for the share actually consumed**, every user is motivated to **prevent energy waste** and to adjust the temperature of the various house rooms according to their actual needs. No more uselessly heated rooms and open windows; **a great benefit for the environment and energy bill**.

The indirect thermal energy metering has been designed to satisfy the exigencies of detecting the energy consumptions in radiator heating systems with risers.

In this type of systems, the terminals of a same apartment **are not** served by the same circuit. Apartments **do not have** one single interception point to install a thermal energy meter.

The heat cost allocator does not measure the thermal energy, but it elaborates a calculation that is directly proportional to it. The calculation (incremental) depends on the temperature change of the radiator and the environment (heat cost allocator having 2 sensors). A reliable estimate of the energy given up by the radiator to the room can be done, depending on the calculation and on the features of the radiator.



➤ Versions and product codes

PRODUCT CODES	CHARACTERISTICS
GE700Y030	-
GE700Y033	With remote sensor

NOTE. GE700Y033 heat cost allocators with remote sensor can be used for installations where access to the heating terminal is difficult or there is not enough space to mount a normal heat cost allocator.

In such cases, the heat cost allocator and sensor can be installed separately with the remote sensor flush to the heating terminal surface.

Sensor and wall-mount fitting kit included.

Remote sensor wire length: 3 m.

Completion codes

- **GE700-1:** fitting elements for GE700 heat cost allocators
- **GE700-2:** optical key for configuration of heat cost allocators
- **GE552-W:** components for Wireless M-Bus centralization

➤ Technical data

- Principle of operation: 2-sensors reading the temperature variations of the radiator and room
- Heating temperature range (min.T for metering start - max.T): 21÷90 °C
- Metering start temperature: 21 °C ($\Delta t \geq 3$ °C *); 38 °C (optional, summer mode)
* Δt = temperature difference between radiator and room.
- Storage warehouse temperature range: 10÷30 °C
- Transmission power: ≤ 10 mW
- Display: 6-digits LCD
- Battery: 3,6 V
- Battery life: typically 10 years
- Reading mode: radio Wireless M-Bus according to OMS (radiofrequency 868 MHz)
- Types of centralized heating systems: twin-pipe/single-pipe
- Radiator max. power: 12500 W
- Measuring accuracy: 1 %
- Tampering alarm: yes, with data saving
- Configuration: through software and optical key
- Configuration parameters: activation date, calculation period parameters (disabled calculation months, summer mode), comfort reading enabling

➤ Main features

- Metering of radiator consumption
- Monthly reading and indication of consumption units (up to 12 months of the previous calculation period)
- Room average temperature reading (thermal comfort) included in monthly configuration (up to 12 months of the previous calculation period) and as total average of the calculation period
- Statistic record of temperature readings carried out during specific intervals along the current and previous metering period:
21-28 °C, 28-35 °C, >35 °C radiator temperature
< 16 °C room comfort temperature
- Central hole to fit the main bracket
- Anti-tampering seal closing the central hole

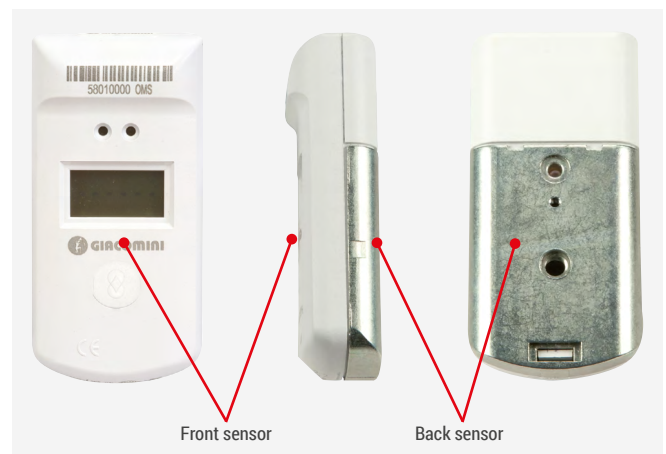
➤ Operation

GE700 heat cost allocator is equipped with two sensors:

- the back sensor reads the radiator surface temperature.
- the front sensor reads the front temperature of the heat cost allocator thanks to its special insulation.

The **benefits** offered by thermal energy metering:

- reading of consumption data during pre-configured intervals without access to private properties;
- correct allocation of heat consumption costs among joint owners inside a building;
- changing from a thermal energy metering system purely millesimal to one based on heat distributors, combined to individual thermoregulation, encourages users to adopt virtuous behaviors and enables to valorize the effects of energy saving interventions.



➤ Display reading

Display automatic reading (every 3 secs.) of consumption data and distributor.

123456	Serial n. of the heat cost allocator (last 6 digits)
C 143	Indication of consumption units during the current metering period
U 176	Indication of unit total consumption for the previous metering period
Ad 01.01	Current date (dd.mm)
H 12345	Control code to verify the accuracy of the transmitted data in case of automatic reading
1P 1.000	Radiator coefficient Kc
2P 1.000	Nominal power coefficient Kq

➤ Installation

Configuration of the heat cost allocators

The heat cost allocator must be configured to start working. Failing this step, the metering unit display will show a series of dashes "-----" prompting its configuration.

Every type of failure is shown on the display as "Err". In these cases the metering unit can be replaced.

The caption cannot be deleted.

The heat cost allocator can be configured using the GE700Y150 optical key and the GESWY001 software.

The configuration cannot be carried out remotely (only reading can be carried out via radio).

To configure the heat cost allocators, follow these steps:

- 1) Place every single heat cost allocator near the GE700Y150 optical key connected to a computer.
- 2) Download the desired configuration to the heat cost allocator, setting the GESWY001 software parameters.
- 3) Follow these steps for all heat cost allocators installed in the building.

➤ Data transmission and reading

- OMS-complying wire
- Data encryption (individual key for each heat cost allocator) according to AES128.
- Data encryption (global key for all heat cost allocators) according to AES128.

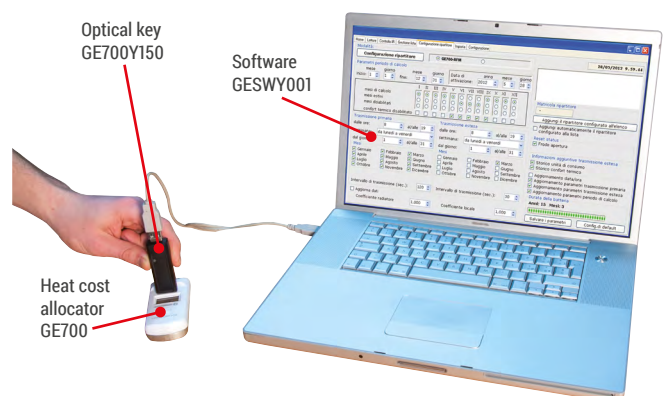
- Two types of transmission available:

AMR:

- transmission from 0 to 12 a.m. (not editable);
- transmission 7/7 dd (not editable)
- frequency set on 120 secs. (not editable)

WALK-BY:

- transmission from 6 a.m. to 8 p.m. (not editable);
- transmission on working days (possibility to enter Saturdays and Sundays as well)
- transmission of historical data (up to 12 previous months)
- frequency set on 60 secs. (not editable)

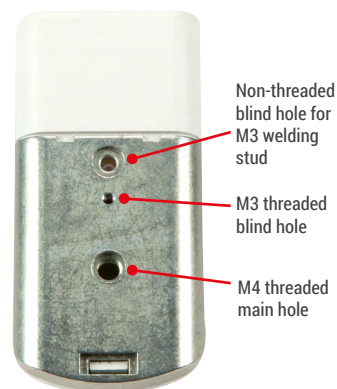


Fitting of heat cost allocators to radiators

Fitting systems are designed to install the heat cost allocators on every type of radiator. These systems prevent tampering and damaging of the heat cost allocators.

The screws cannot be loosened from the back of the radiator and a safety seal can be inserted to protect the system from possible fraud attempts.

- The heat cost allocator (or the remote sensor) must be installed at 66 % of the radiator height and halfway its width.
- If the radiator has an odd number of elements (that is an even number of spaces between the elements which would prevent the installation of the heat cost allocator halfway its width) the installer will have to work on the space closer to the delivery valve. If for any other reason (e.g. a shelf to mount the radiator on the wall) the heat cost allocator (or the remote sensor) cannot be installed in this point, the installer will have to work in the direction opposite to the delivery valve.
- Should the radiator be larger than 2,2 m, it will have to be considered as two radiators large as half of the original one and therefore two heat cost allocators will be installed.
- The heat cost allocator (or remote sensor) fitting point is identified by the hole where the fitting screw is inserted on the heat cost allocator (or the remote sensor plate).
- The heat cost allocator must be firmly installed (it should not move and it should not be possible to loosen the screws).

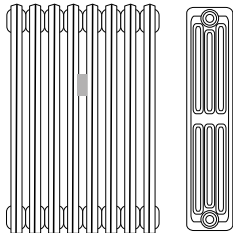
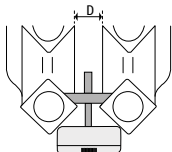
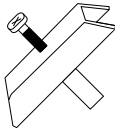
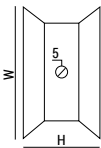
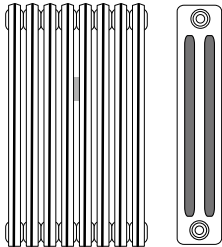
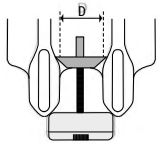
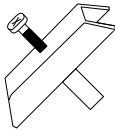
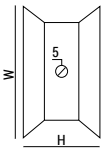
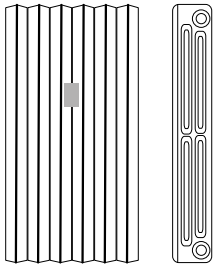
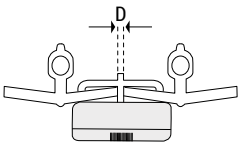
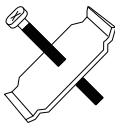
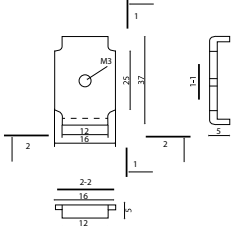
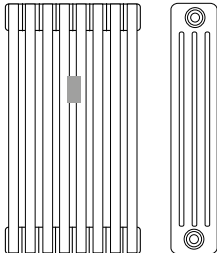
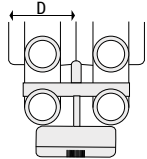
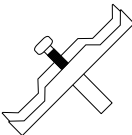
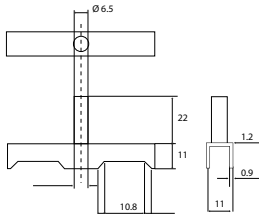


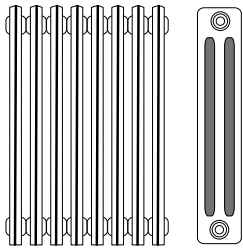
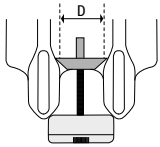
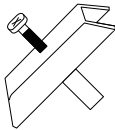
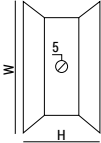
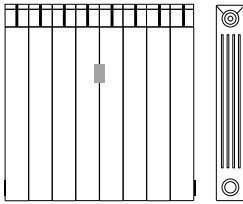
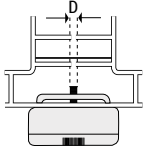
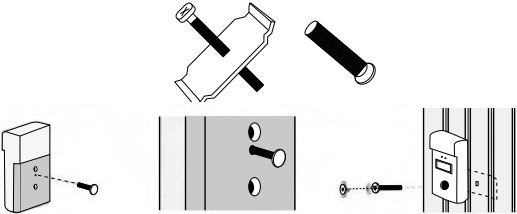
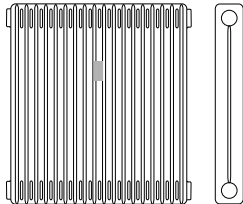
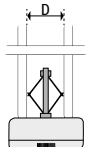

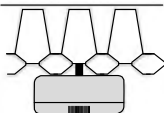
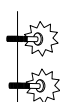

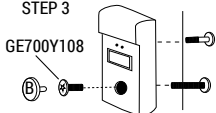
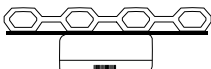

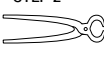
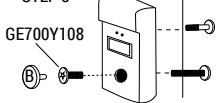
GE700Y030 HEAT COST ALLOCATOR FLUSH TO THE RADIATOR	GE700Y033 HEAT COST ALLOCATOR WITH REMOTE SENSOR
<p>1 Safety seal</p>	<p>1 Safety seal</p>
<p>2 Fitting screw</p>	<p>2 Fitting screw</p>
<p>3 Heat cost allocator</p>	<p>3 Plate</p>
<p>4 Bracket</p>	<p>4 Bracket</p>
	<p>5 Sensor</p>
	<p>6 Heat cost allocator</p>

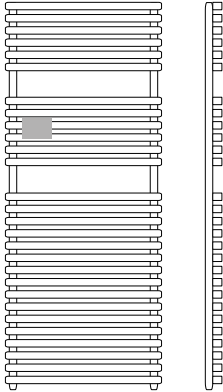
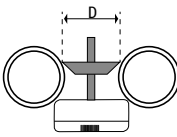
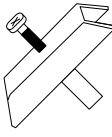
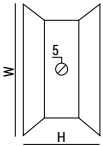
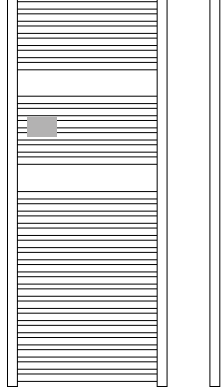
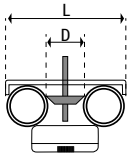
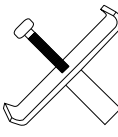
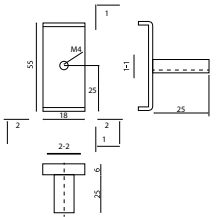
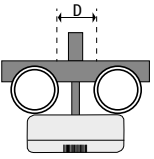
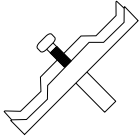
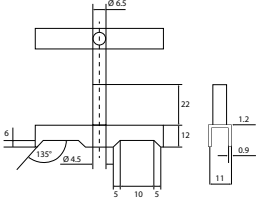
➤ Heat cost allocator fitting elements, series GE700-1

GE700-1 fitting elements are suitable for heat cost allocators with no sensor and heat cost allocator plates with remote sensor.


PRODUCT CODE	DESCRIPTION	PRODUCT CODE	DESCRIPTION
GE700Y100	Fitting bracket 35 mm, screw M4x30	GE700Y106	Expansion bracket
GE700Y101	Fitting bracket 43 mm, screw M4x30	GE700Y107	Threaded stud M3 x 10 mm
GE700Y102	Fitting bracket 53 mm, screw M4x30	GE700Y108	Nut for welding
GE700Y103	Fitting bracket 55 mm, screw M3x30	GE700Y109	GE700Y108 nut tightening wrench
GE700Y104	Fitting bracket 37 mm, screw M3x30	GE700Y110	Additional plate for installation on radiators with large distance between elements
GE700Y105	Fitting bracket 67 mm, screw M4x30	GE700Y801	Welder

TYPE OF RADIATOR	FITTING ELEMENTS		
	D = DISTANCE BETWEEN ELEMENTS (TOP VIEW)	BRACKET CODE	H = FITTING HEIGHT W = FITTING WIDTH
<p>NEOCLASSIC CAST IRON</p> 	 <p>25 mm < D < 33 mm 34 mm < D < 41 mm 44 mm < D < 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Vite M4-30 H = 22 mm, W = 43 mm, Vite M4-30 H = 22 mm, W = 53 mm, Vite M4-30</p>
<p>CAST IRON WITH DIAPHRAGM</p> 	 <p>25 mm < D < 33 mm 34 mm < D < 41 mm 44 mm < D < 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Vite M4-30 H = 22 mm, W = 43 mm, Vite M4-30 H = 22 mm, W = 53 mm, Vite M4-30</p>
<p>CAST IRON PLATE</p> 	 <p>3 mm < D < 10 mm</p>	 <p>GE700Y104</p>	 <p>H = 16 mm, W = 25-37 mm, Vite M3-30</p>
<p>STEEL TUBULAR</p> 	 <p>D = 45-46 mm</p>	 <p>GE700Y105</p>	 <p>H = 11 mm, W = 67 mm, Vite M4-30</p>

TYPE OF RADIATOR	FITTING ELEMENTS		
	D = DISTANCE BETWEEN ELEMENTS (TOP VIEW)	BRACKET CODE	H = FITTING HEIGHT W = FITTING WIDTH
<p>STEEL WITH DIAPHRAGM</p> 	 <p>25 mm < D < 33 mm 34 mm < D < 41 mm 44 mm < D < 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Vite M4-30 H = 22 mm, W = 43 mm, Vite M4-30 H = 22 mm, W = 53 mm, Vite M4-30</p>
<p>ALUMINIUM</p> 	 <p>3 mm < D < 10 mm</p>	 <p>Threaded stud GE700Y107 + GE700Y104</p>	
<p>LAMELLAR</p> 	 <p>D > 24 mm</p>	 <p>GE700Y106</p>	On demand
<p>RIBBED PANEL</p>  <p>Welding</p>	<p>Threaded stud bolt GE700Y107 + nut GE700Y108</p>	<p>STEP 1</p>  <p>STEP 2</p>  <p>STEP 3</p>  <p>GE700Y108</p>	
<p>SMOOTH PANEL</p>  <p>Welding</p>	<p>Threaded stud bolt GE700Y107 + nut GE700Y108</p>	<p>STEP 1</p>  <p>STEP 2</p>  <p>STEP 3</p>  <p>GE700Y108</p>	

TYPE OF RADIATOR	FITTING ELEMENTS		
	D = DISTANCE BETWEEN ELEMENTS (TOP VIEW)	BRACKET CODE	H = FITTING HEIGHT W = FITTING WIDTH
 <p>HEATED TOWELDRYER</p>	 <p>25 mm < D < 33 mm 34 mm < D < 41 mm 44 mm < D < 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Vite M4-30 H = 22 mm, W = 43 mm, Vite M4-30 H = 22 mm, W = 53 mm, Vite M4-30</p>
 <p>HEATED TOWELDRYER</p>	 <p>L < 53 mm</p>	 <p>GE700Y103</p>	 <p>H = 18 mm, W = 55 mm, Vite M4-30</p>
	 <p>D = 45-46 mm</p>	 <p>GE700Y105</p>	 <p>H = 11 mm, W = 67mm, Vite M4-30</p>

➤ Accessories for heat cost allocator, series GE700-2

PRODUCT CODE	DESCRIPTION
 <p>GE700Y150</p>	<p>Optical key for GE700 heat cost allocator configuration. Connectable to USB port and programmable through software specific for metering units (GESWY001).</p>



➤ Wireless M-Bus data centralization, series GE552-W

The Wireless M-Bus (868 MHz) data centralization complies with the EN 13757 standard. Consumption data can be transmitted **remotely** or in **walk-by** mode.

Remote mode


The data received by the GE552Y053 antenna is sent to the GE552Y052 datalogger, which enables to:

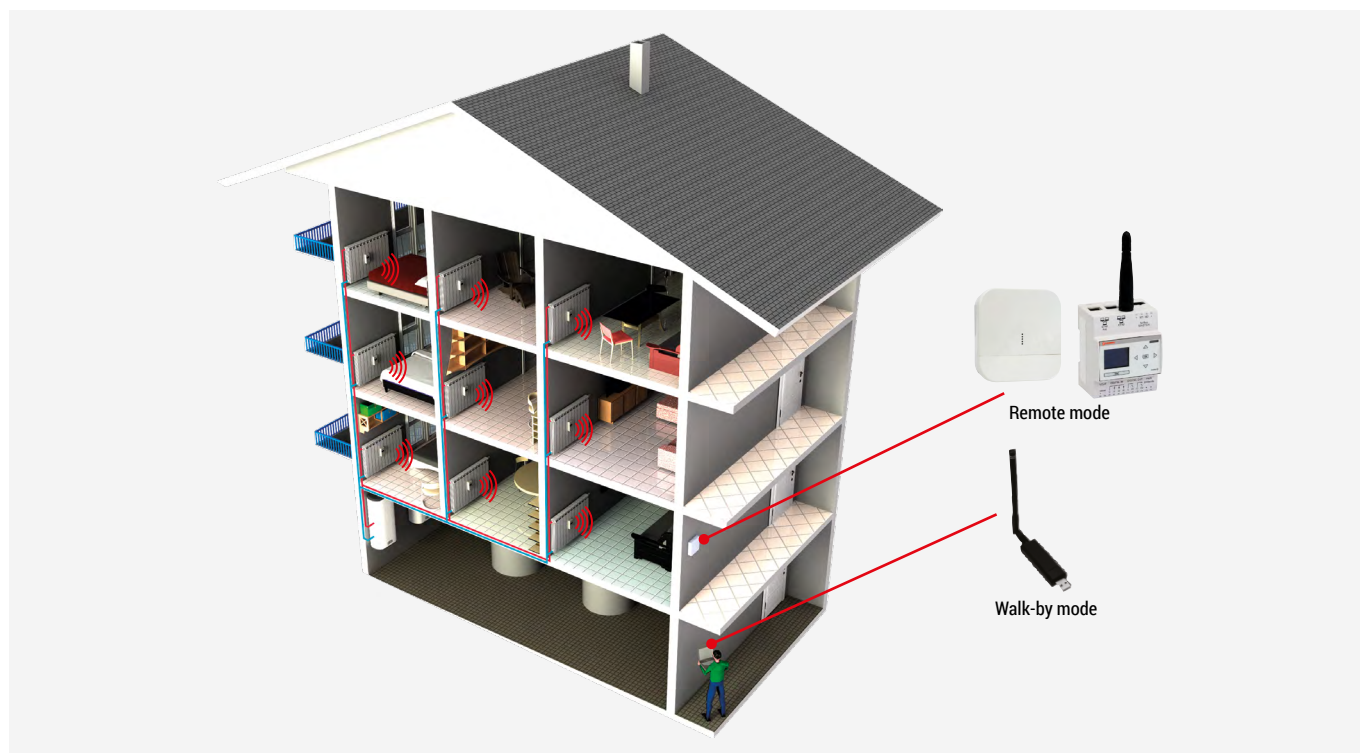
- transmit the reading data remotely to programmable e-mail addresses;
- control and display data on a computer, smartphone or tablet, via integrated web server if connected to GSM/GPRS network;

PRODUCT CODE	DESCRIPTION
 GE552Y052	Datalogger M-Bus/Wireless M-Bus to acquire, process, read the data coming from wired or wireless M-Bus devices. Controls up to 500 wireless devices and directly up to 20 wired devices.
 GE552Y053	Antenna and wireless concentrator to extend the radio range of the devices and to send data to the GE552Y052 datalogger.

Walk-by mode

Data sent to a computer, reception through GE552Y043 data receiver connected to USB port.

PRODUCT CODE	DESCRIPTION
 GE552Y043	<p>Wireless data receiver for devices installed on the system (heat cost allocators, wireless modules for meters). Connectable to computers through USB port. Range up to 400 m.</p> <p>Operation is guaranteed by the same software (GESWY001) used to program the heat cost allocators.</p>



➤ Reference Standards

- UNI EN 834 - Heat cost allocators to determine radiator consumptions. Electric-powered devices.
- UNI EN13757-4 - Meter wireless reading (via radio reading of meters for operation within SRD band from 868 MHz to 870 MHz).

➤ Product specifications

GE700Y030

Radio heat cost allocator to read thermal energy consumptions. EN 834 compliance certificate. Wireless M-Bus data transmission at 868 MHz according to OMS standard. 6-digits display for direct reading. Two temperature sensors, with automatic commutation to one sensor under critical temperature reading conditions. Optical interface for programming/reading through special configuration key. Anti-tampering seal and disassembly alarm with data saving. Daily data saving with monthly historical record. Lithium battery, battery life typically 10 years. Types of centralized system: twin-pipe/single-pipe. Sensor accuracy: 1 %. Operational temperature range (min.T for metering start - max.T) 21÷90 °C. Radiator max. power 12500 W. Programmable data transmission frequency. Warehouse storage temperature range 10÷30 °C.

GE700Y033

Radio heat cost allocator with remote sensor to read thermal energy consumptions. For use when access to the heating terminal is difficult or there is not enough space to install the metering unit. In these cases, the metering unit and probe can be installed separately with the remote sensor flush to the surface of the heating element. Includes fitting kit for probe and wall-mount metering unit. Use to read thermal energy consumptions in convectors. Remote probe wire length: 3 m. EN 834 compliance certificate. Wireless M-Bus data transmission at 868 MHz according to OMS standard. 6-digits display for direct reading. 2 temperature sensors with automatic commutation to one sensor under critical temperature reading conditions. Optical interface for programming/reading through special configuration key. Anti-tampering seal and disassembly alarm with data saving. Data daily saving with historical monthly record. Lithium battery, battery life typically 10 years. Types of centralized system: twin-pipe / single-pipe. Sensor accuracy: 1 %. Operation temperature range (metering start min.T - max.T) 21÷90 °C. Radiator max. power 12500 W. Programmable data transmission frequency. Warehouse storage temperature range 10÷30 °C.

⚠ Safety Warning. Installation, commissioning and periodical maintenance of the product must be carried out by qualified operators in compliance with national regulations and/or local standards. A qualified installer must take all required measures, including use of Individual Protection Devices, for his and others' safety. An improper installation may damage people, animals or objects towards which Giacomini S.p.A. may not be held liable.

♻ Package Disposal. Carton boxes: paper recycling. Plastic bags and bubble wrap: plastic recycling.

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♻ Product Disposal. Do not dispose of product as municipal waste at the end of its life cycle. Dispose of product at a special recycling platform managed by local authorities or at retailers providing this type of service.