



**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.

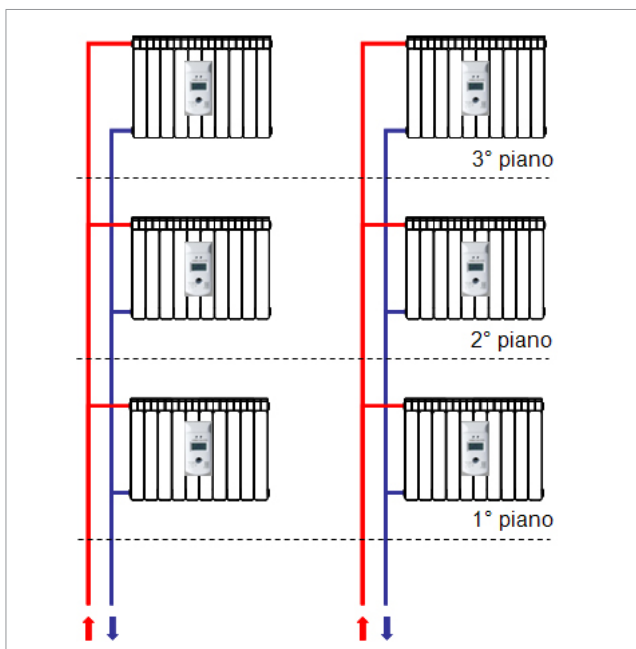
The comfort and energy saving offered by individual thermoregulation through thermostatic heads and valves add up to the possibility to **allocate heating costs based on the consumptions actually sustained**, with greater equity compared to traditional metering criteria.

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.



**Description of GE700 heat cost allocator**

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.

**Versions and product codes**

Product codes	Characteristics
GE700Y030	-
GE700Y033	With remote sensor

**Notes.**  
 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 GE700 heat cost allocators
- **GE552-W:** components for Wireless M-Bus centralization

**Technical data**

- Operational principal: two 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 temp.: 21 °C ( $\Delta t \geq 3 \text{ }^\circ\text{C}^*$ ); 38 °C (optional, summer mode)  
 \*  $\Delta t$  = temperature difference between radiator and room.
- Storage warehouse temperature range: 10÷30 °C
- Transmission power:  $\leq 10 \text{ mW}$
- Display: 6-digits LCD
- Battery: 3,6 V
- Battery life: 10 years plus reserve
- 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 characteristics**

- Metering of heating terminal consumption units
- 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

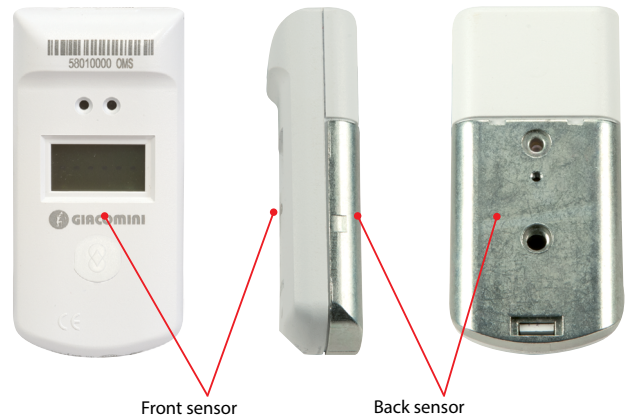
**Operation**

GE700 heat cost allocators are equipped with 2 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.

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

**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)
  - 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)

**Installation**

**Configuration of the heat cost allocator**

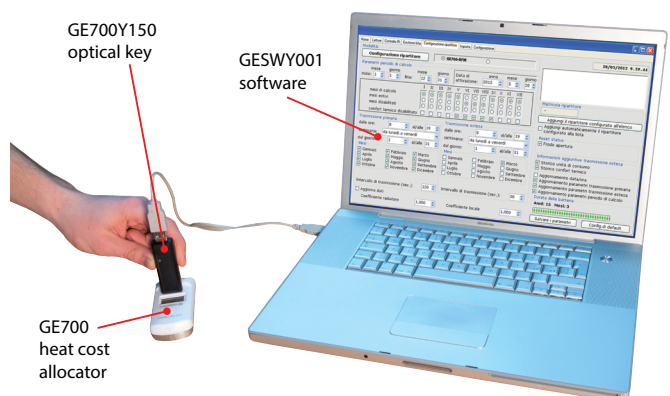
The heat cost allocator must be configured to start working. Failing this step, the metering unit display will show a series of dashes "-----" prompting its configuration.

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:

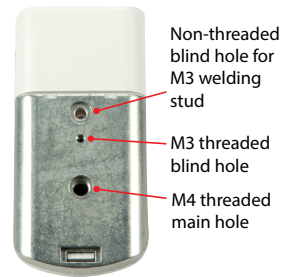
- 1) Place every single heat cost allocator near the GE700Y150 optical key connected to a computer.
- 2) Download the desired configuration to the heat cost allocator, setting the GESWY001 software parameters.
- 3) Follow these steps for all heat cost allocators installed in the building.



**Fitting of heat cost allocators to heating terminal**

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

1	Safety seal
2	Fitting screw
3	Heat cost allocator
4	Bracket

**GE700Y033**  
Heat cost allocator with remote sensor

**i** Before mounting the plate on the radiator, tighten the sensor's blocking screw

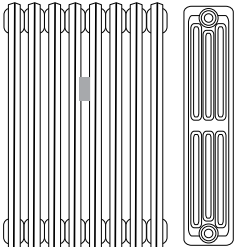
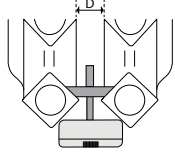
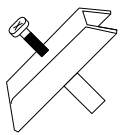
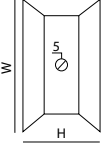
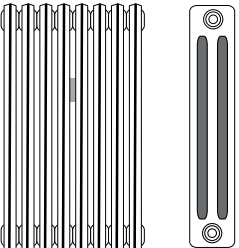
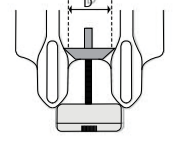
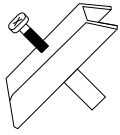
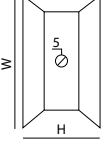
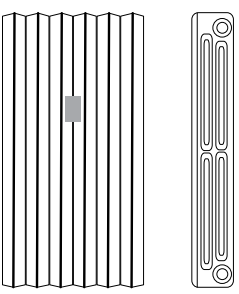
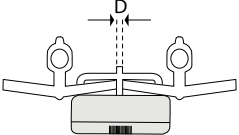
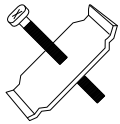
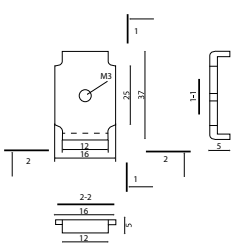
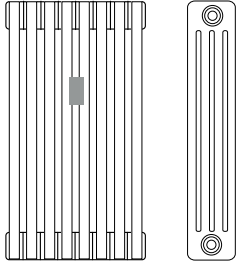
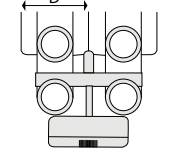
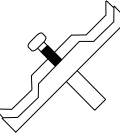
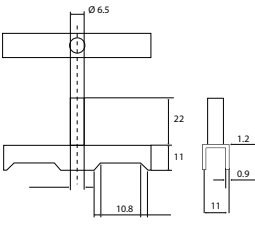
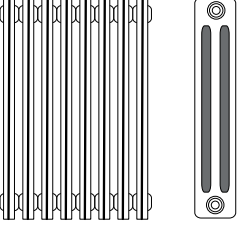
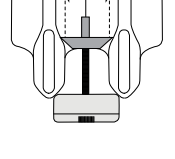
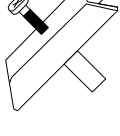
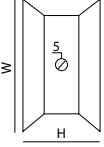
1	Safety seal
2	Fitting screw
3	Plate
4	Bracket
5	Sensor
6	Heat cost allocator

**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
GE700Y100	Fitting bracket 35 mm, screw M4x30
GE700Y101	Fitting bracket 43 mm, screw M4x30
GE700Y102	Fitting bracket 53 mm, screw M4x30
GE700Y103	Fitting bracket 55 mm, screw M3x30
GE700Y104	Fitting bracket 37 mm, screw M3x30
GE700Y105	Fitting bracket 67 mm, screw M4x30


Product code	Description
GE700Y106	Expansion bracket
GE700Y107	Threaded stud M3 x 10 mm
GE700Y108	Nut for welding
GE700Y109	GE700Y108 nut tightening wrench
GE700Y110	Additional plate for installation on radiators with large distance between elements
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 &lt; D &lt; 33 mm 34 mm &lt; D &lt; 41 mm 44 mm &lt; D &lt; 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Screw M4-30 H = 22 mm, W = 43 mm, Screw M4-30 H = 22 mm, W = 53 mm, Screw M4-30</p>
<p>CAST IRON WITH DIAPHRAGM</p> 	 <p>25 mm &lt; D &lt; 33 mm 34 mm &lt; D &lt; 41 mm 44 mm &lt; D &lt; 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Screw M4-30 H = 22 mm, W = 43 mm, Screw M4-30 H = 22 mm, W = 53 mm, Screw M4-30</p>
<p>CAST IRON PLATE</p> 	 <p>3 mm &lt; D &lt; 10 mm</p>	 <p>GE700Y104</p>	 <p>H = 16 mm, W = 25-37 mm, Screw M3-30</p>
<p>STEEL TUBULAR</p> 	 <p>D = 45-46 mm</p>	 <p>GE700Y105</p>	 <p>H = 11 mm, W = 67mm, Vite M4-30</p>
<p>STEEL WITH DIAPHRAGM</p> 	 <p>25 mm &lt; D &lt; 33 mm 34 mm &lt; D &lt; 41 mm 44 mm &lt; D &lt; 51 mm</p>	 <p>GE700Y100 GE700Y101 GE700Y102</p>	 <p>H = 22 mm, W = 35 mm, Screw M4-30 H = 22 mm, W = 43 mm, Screw M4-30 H = 22 mm, W = 53 mm, Screw M4-30</p>

Type of radiator	Fitting elements		
	D = distance between elements (top view)	Bracket code	H = fitting height W = fitting width
<p>ALUMINIUM</p>	<p>3 mm &lt; D &lt; 10 mm</p>	<p>Threaded stud GE700Y107 + GE700Y104</p>	
<p>LAMELLAR</p>	<p>D &gt; 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>	
<p>HEATED TOWEL DRYER</p>	<p>25 mm &lt; D &lt; 33 mm 34 mm &lt; D &lt; 41 mm 44 mm &lt; D &lt; 51 mm</p>	<p>GE700Y100 GE700Y101 GE700Y102</p>	<p>H = 22 mm, W = 35 mm, Screw M4-30 H = 22 mm, W = 43 mm, Screw M4-30 H = 22 mm, W = 53 mm, Screw M4-30</p>
<p>HEATED TOWEL DRYER</p>	<p>L &lt; 53 mm</p>	<p>GE700Y103</p>	<p>H = 18 mm, W = 55 mm, Screw M4-30</p>
	<p>D = 45-46 mm</p>	<p>GE700Y105</p>	<p>H = 11 mm, W = 67mm, Screw M4-30</p>



**Heat cost allocator accessories, series GE700-2**

Product code	Description
 GE700Y150	Optical key for GE700 heat cost allocator configuration. Connectable to USB port and programmable through software specific for metering units (GESWY001).



**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:

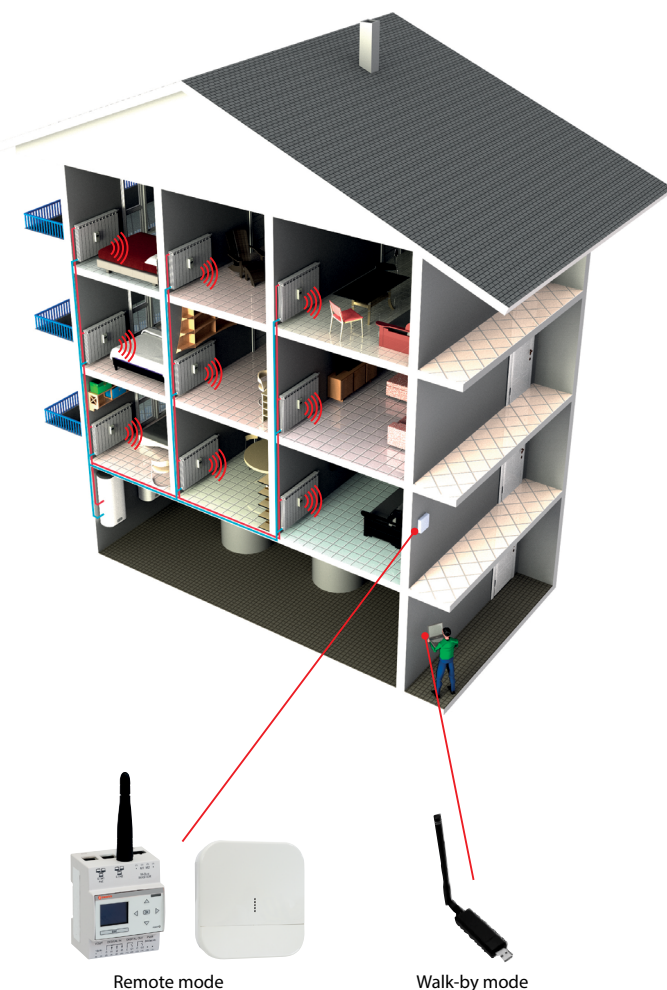
- transmit the reading data remotely to programmable e-mail addresses;
- control and display data on a computer, smartphone or tablet, via integrated web server if connected to GSM/GPRS network;

Product code	Description
 GE552Y052	Datalogger M-Bus / M-Bus Wireless to acquire, process, read the data coming from wired or wireless M-Bus devices. Controls directly up to 500 wireless devices and 20 wired devices.
 GE552Y053	Metering unit 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 datalogger connected to USB port.

Product code	Description
 GE552Y043	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.  Operation is guaranteed by the same GESWY001 software used to program the heat cost allocators.





## 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).

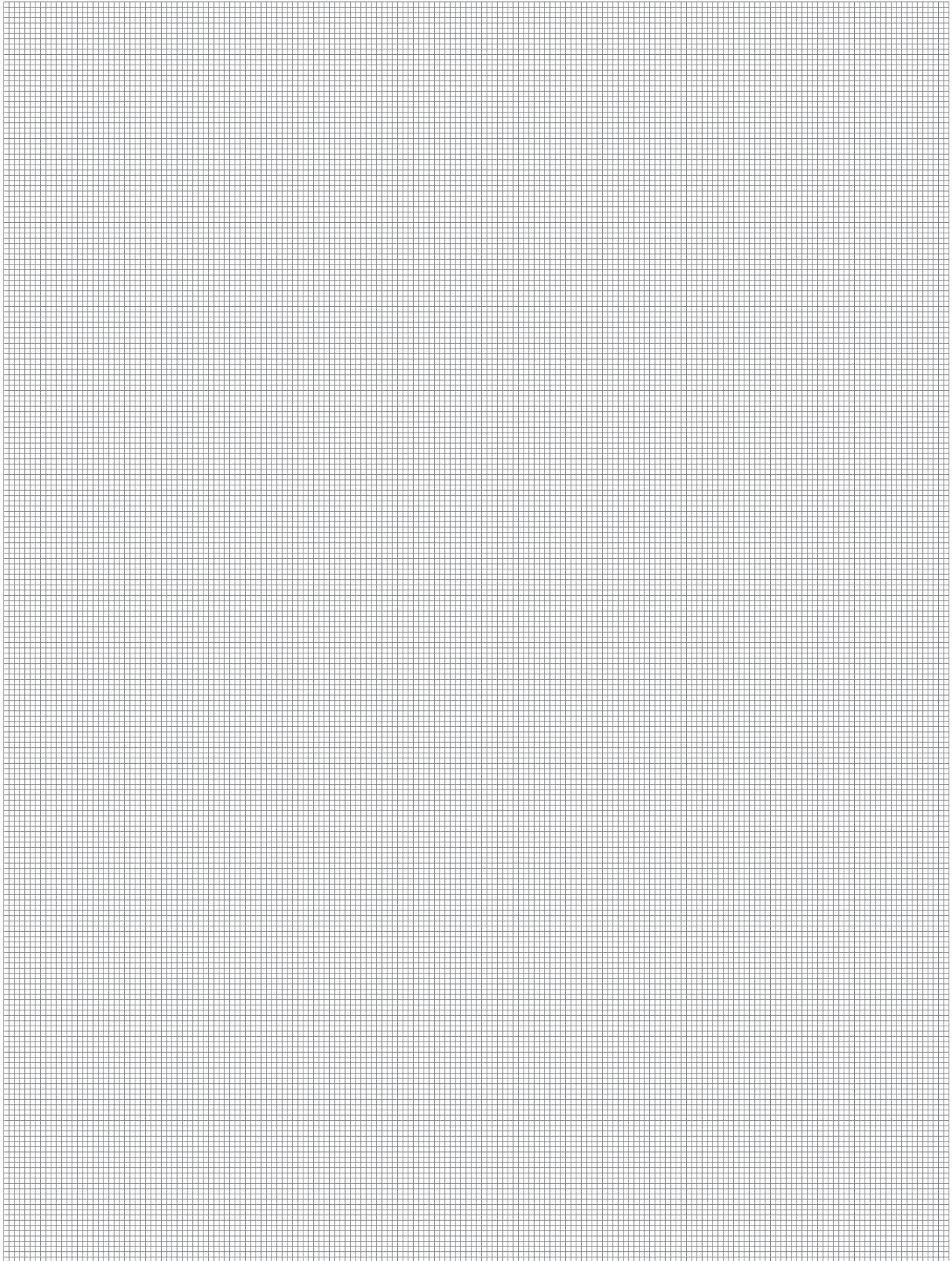
## Product specifications

### **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. 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. Daily data saving with monthly historical record. Lithium battery, standard life 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, standard life 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.



**Additional information**

For more information, go to [www.giacomini.com](http://www.giacomini.com) or contact our technical assistance service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ [consulenza.prodotti@giacomini.com](mailto:consulenza.prodotti@giacomini.com)  
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