



**KM203**

**Description**

The KM203 control and supervision unit is a device designed for use in a Giacoklima bus system for the control of radiant systems for underfloor or ceiling heating in combination with K481 and K483 environment thermostats, the KPM20 unit, the KD300/200 display unit and the KSMS module.

**Versions and product codes**

The controller is available in four versions which differ in terms of their available interfaces. The Giacoklima KD200 display unit can be connected to the KM203 versions using a RS485 port. The KSMS module for sending and receiving SMS messages can only be used in combination with the KM203 control and supervision unit.

Product code	Modem integrated	Port RS232	Port RS485
KM203Y001	NO	-	3

**Principle and auxiliary functions**

The KM203 controller performs 2 main functions:

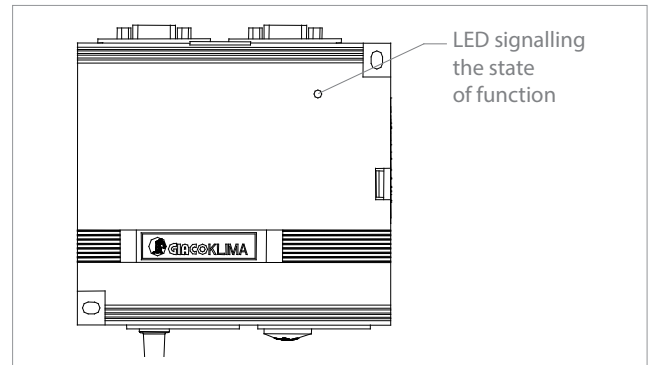
- manages and coordinates the function of all of the Giacoklima bus devices connected to the system and widens their function with respect to stand-alone operation;
- acts as an interface for local supervision (through the use of a KD200 display unit or PC) and for telemanagement.

The controller is also able to perform the following auxiliary functions:

- connection to input/output-type networks (64 input / 32 output "broadcasts" available). These permit the user to read information from the Giacoklima bus devices (to be used as input data for auxiliary functions) and to write the results of the auxiliary functions in the Giacoklima bus devices;
- calculation of enthalpy and dew point temperature;
- summer and winter compensation;
- comparison operations;
- calculation operations (sum, difference, multiplication, division);
- selection operations, between constants and variables;
- time programmes;
- optimisation of the start up and shut down phases with learning capability.

**Signalling elements**

On the front of the device housing, there is a red LED which signals the state of function of the KM203 controller.



**Analogue alarms**

Up to 32 analogue alarms can be configured for each Giacoklima bus device connected. For each alarm, a set of parameters must be defined, including:

- type of alarm (distinguishing between maximum and minimum);
- priority level (low, medium or high);
- hysteresis band.

**Digital alarms**

Up to 32 digital alarms can be configured for each Giacoklima bus device connected. For each alarm, a set of parameters must be defined, including:

- priority level (low, medium or high);
- the significant transition (rising/falling).

**Communication alarms**

In addition to analogue and digital alarms, the controller also manages communication alarms. If in operating mode, in the course of a cyclic polling, the controller does not receive a response from a Giacoklima bus device, it assumes that the device is no longer functioning and generates a corresponding alarm communication. This type of alarm does not require any form of configuration, is always taken into consideration and is classed as belonging to the highest priority level.



## Telemanagement

To function as an interface for telemanagement, the KM203 controller must be connected to the telephone network via an external or integrated modem. The main functions of the controller are:

- Alarm reports. The controller performs a continuous assessment, for each Giacoklima bus device connected, of the state of a set of alarms (up to 1,024 digital and/or 1,024 analogue) with automatic telephone call function in cases where one or more alarms with a sufficient priority level is activated (and unacknowledged);
- Memorising trends. The controller periodically memorises the values of a set of up to 32 programmable analogue quantities. For digital trends, the memorising function is activated by events of a set of programmable digital values (e.g. switching ON/OFF).

## Working mode

At a given moment, the KM203 Controller can only be in one of two modes of operation, as follows:

- operation mode (default)
- configuration mode

## Operation mode

When a KM203 controller is switched on, it defaults to operation mode.

In this working mode, the KM203 controller performs two main functions:

- periodic reading of the alarms configured in each Giacoklima bus device connected;
- real-time assessment of each alarm and alarm flag generation;
- comparison between the state of the alarms and their acknowledgement. In cases where an alarm has a sufficiently high priority, and has not yet been acknowledged, the controller will trigger a telephone call to the Giacomini service centre;
- periodic reading of configured trends and storing in the EEPROM memory. When close to saturation, the controller can be programmed to call the Giacomini service centre and transfer the contents of the memory onto the web server;
- generation of a communication alarm if a Giacoklima bus device does not respond to an alarm value request;
- management of messages from the Giacomini service centre.

## Configuration mode

In contrast to the operation mode, the configuration mode is temporary: if no change is made to a configuration after 3 minutes, the controller automatically reverts to operation mode. It should be noted that:

- normally the configuration of the controller is performed at the factory or during the initial start-up of the system, without the use of a modem;
- for configuration, a PC must be connected via a standard serial cable (9-pin) to the RS-232 auxiliary serial port (AUX) on the controller, and the configuration tool will launch;
- it is nonetheless still possible, during normal function of the system, to reconfigure (partially or wholly) the controller, in the same way, through the telephone line.

## Safety

The KM203 controller is equipped with an internal clock which is able to function for at least 10 days from the moment in which the device is switched off. This clock is used to calculate the effective time. The time can be adjusted through the configuration tool or through the KD200 control unit.

## Synchronising the device

A password of 8 characters can be set using the auxiliary (AUX) serial port. When a telephone call to the controller is activated, the controller will not accept the message until the correct password is entered. The password must be entered within a certain time (for example: 30 seconds), otherwise the controller will break the telephone connection.

## Installation

The KM203 controller is housed in a plastic container with dimensions conforming to the DIN 43880 standard, and is ideal for installation on a CEI EN 50022 standard rail. Alternatively, the controller can be mounted protruding from the wall, using the slotted holes for the fixing screws provided with the housing.



### Warning.

The KM203 controller does not have an ON/OFF switch. For this reason, it is important to provide a suitable device for isolation and control on the controller power supply circuit. The installation of the device must only be carried out by qualified personnel.

## Connections

The KM203 controller is equipped with terminals for connection to various input and output devices. A rapid-connection terminal, such as the fastom (2 pole) type, is designed for connection to a 230 V~ power network. The BUS terminal (4 poles: RT+, RT-, com, Vs) is dedicated to bus connections.

Terminal identifier	Description
1	Input for connection of primary bus (V)
2	Input for connection of primary bus (com)
3	Input for connection of primary bus (RT-)
4	Input for connection of primary bus (RT+)
5-6	Analogue input 1
7-8	Analogue input 2
9-10	Analogue input 3
11-12	Analogue input
13-14	Active sensor power supply

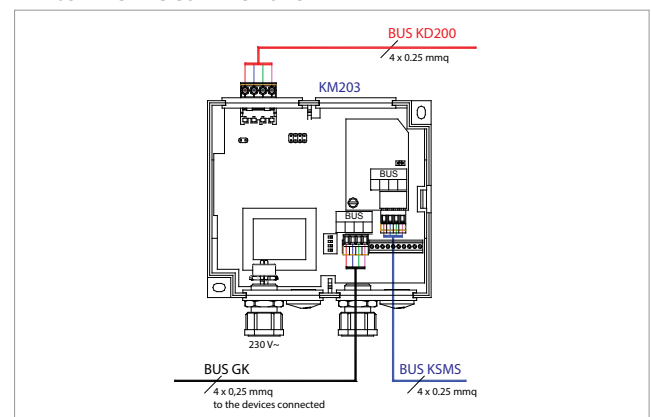
The RS-485 connector is designed for the connection of a KD200 display unit or a PC for device configuration. In this last case, a RS232/RS485 is necessary for the connection.



### Note.

The controller can only be connected to the primary bus on the Giacoklima system.

## KM203 ELECTRIC CONNECTIONS

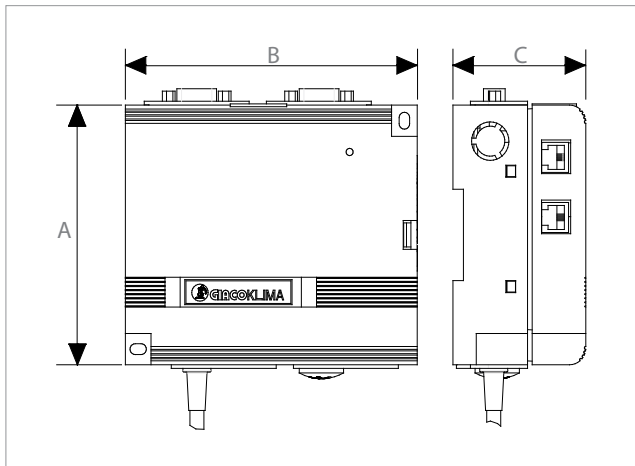


### Warning.

Ensure that the power supply is suspended while the connections are being carried out.



**Dimensions**



**Product specifications**

**KM203**

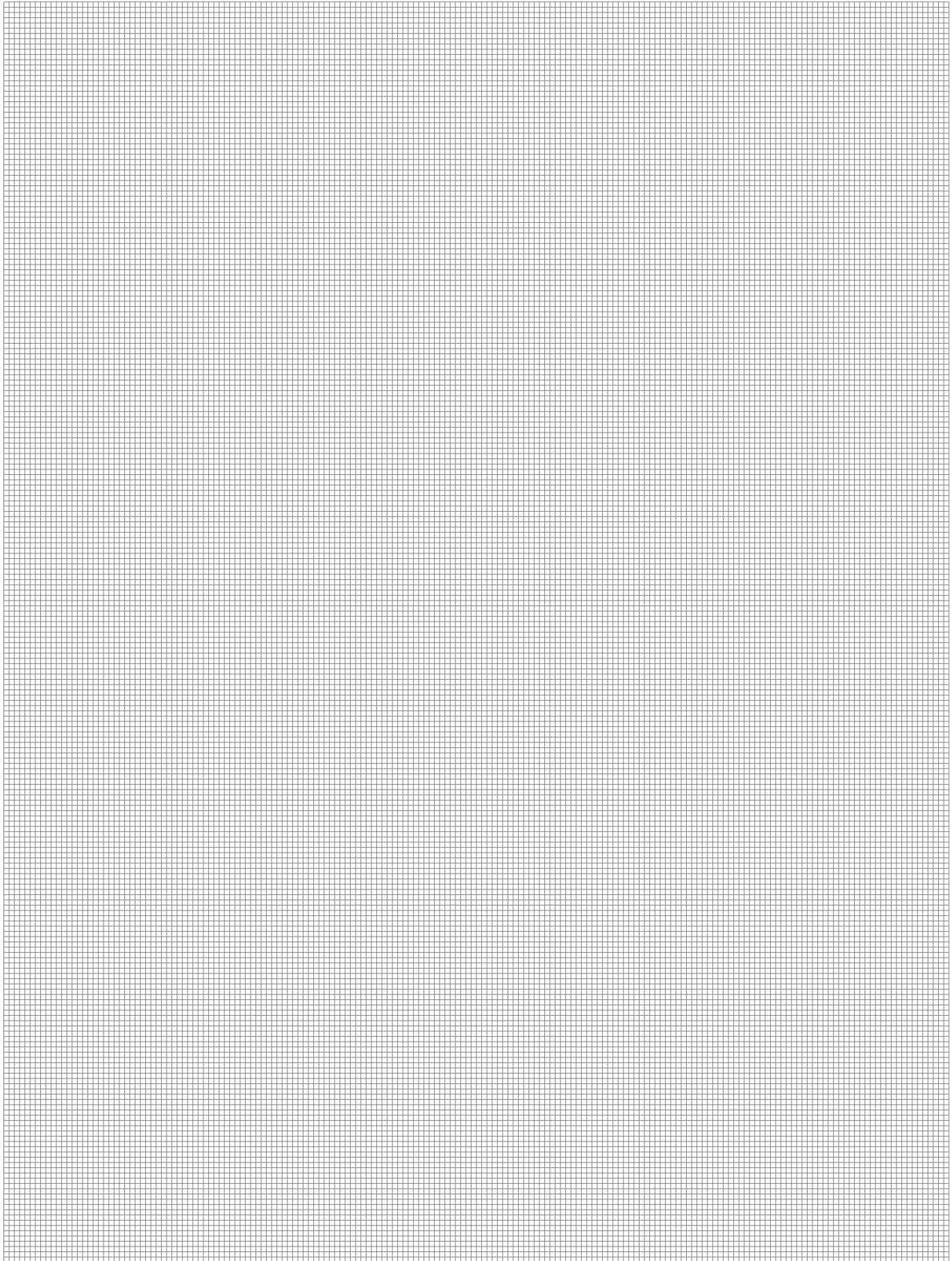
Control and supervision unit and supervisor for Giacoklima devices. The possibility to manage up to 32 Giacoklima bus devices linked on the primary bus. Power supply 230 V, 50-60 Hz. Absorption 6 VA. 4 analogue inputs for the connection of sensors (2 active and 2 passive). A RS485 serial interface for connection of display unit KD200 or KD300. A serial RS485 interface for connection of the KSMS module for sending and receiving SMS messages on the GSM telephone line. Environmental operating conditions from 0÷40 °C, 10÷90 % R.H. (without condensation). Environmental storage conditions from -25÷70 °C, 10÷90 % R.H. (without condensation). Protection degree IP30. EC marking. Dimensions 125x108x57 mm. CE marked.

**Technical data**

	<b>KM203Y001</b>
<b>Power supply</b>	230 V~ 50-60 Hz
<b>Transmission:</b>	
AUX port	RS485 – 19200 baud (1)
MAIN port	n.a.
tel. A port	telephonic device
tel. B port	2400 baud
<b>Inputs analogues:</b>	
A1 (terminals 5-6)	0 - 10 Vcc
A2 (terminals 7-8)	0 - 10 Vcc
A3 (terminals 9-10)	(NTC) 0 - 50 °C
A4 (terminals 11-12)	(NTC) 0 - 50 °C
<b>Active sensor power supply</b> (terminals 9-10 and 11-12)	+15 Vcc
<b>Primary bus</b> (terminals 1, 2, 3, 4)	RS485 – 9600 Baud
<b>Max protected cable length</b> from AUX port to PC	10 m
<b>Max no. of devices</b> that can be connected to bus	32
<b>Transformer</b>	VDE standards
<b>Absorption</b>	6 VA
<b>Environmental operating for operation</b>	from 0 to 40 °C
<b>Relative humidity</b>	from 10 to 90 %, non-condensing
<b>Environmental operating for storage</b>	from -25 to 70 °C
<b>Dimensions</b> (AxBxC)	125x108x57 mm
<b>Weight</b>	0,6 Kg
<b>Housing material</b>	ABS/ self-extinguishing polycarbonate
<b>Level of protection</b>	IP30
<b>Approvals – EC markings</b>	EN55022, EN55024, EN60950, EN61000-3-2, EN61000-3-3

(1) Reserved for the connection of KD200 display units

(2) Reserved for the connection of the external modem (not supplied) for the telemanagement of the system. The transmission speed can be set to one of the following values: 2400, 4800, 9600, 19200 Baud. It is advisable to use a 3Com U.S. Robotics® 56K external modem



**Additional information**

For further information, visit the website [www.Giacomini.com](http://www.Giacomini.com) or contact the technical service: ☎ +39 0322 923372 📠 +39 0322 923255 ✉ [consulenza.prodotti@Giacomini.com](mailto:consulenza.prodotti@Giacomini.com)  
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