OUMAN EH-200 SERIES

- *For all size of facilities*
- *Automatic configuration*
- *GSM / Web controlled*
- *Versatile alarm functions*

OUMAN®

www.ouman.fi

OUMAN EH-200

Ouman is number 1.

An uncomprimising effort towards simplicity and precise control has put Ouman products on the road to success. Our products combine knowledge of customer needs and control technology as well as innovative ideas and finnish hi-tech knowhow.
Our products help preserve the environment by conserving energy and increase your living comfort level of security. In addition to our top-of-the-line products, Ouman's strengths include customer service, fast delivery times and a reasonable price level.

Ouman has recieved numerous awards:

- *First prize in the regional INNOSUOMI competition in 2000.*
- *The year 2001 building product*
- *Tekniologiasta Tuotteiksi (technology to products) foundation's honorable mention in 2004.*
- *The region's succesful enterprise in 2004, 2005, 2006, 2007*
- *The strongest regional company in 2007*

Ouman Finland Oy was granted the ISO 9001:2000 certificate in 2007.

A clear user manual

An excellent, illustrated user manual comes with the regulator that also includes an installation and maintenance guide for maintenance persons authorised by Ouman.

GSM/Web controlled controller

Ouman EH-200 is a new generation heating regulator whose versatility, intelligence and clarity have made it the favourite regulator for hot water heating systems. From the beginning, user friendliness has been one factor in making Ouman EH-200 a success; it has an instructive display and now GSM text messages. The EH-net server makes browser-based remote use easy.

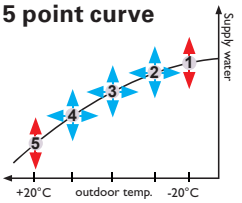
A logical user interface

The Ouman EH-200 menus have been made so understandable that in a normal situation the user can get along without a user manual. The user can select the desired language for the menu.

Displays a true characteristic heating curve

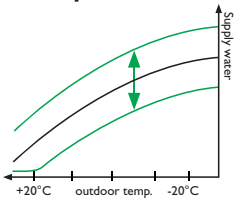
EH-200 helps the user by displaying a curve showing settings when the user sets the supply water temperature according to different outdoor temperatures. If necessary, the regulator automatically makes an adjustment if the user sets an unusual curve. This prevents typical user errors, which are often the reason for temperature systems not functioning in a desirable manner.

5 point curve



The new EH-203 controllers also have a 5 point heating curve with improved control characteristics.

Characteristic heating curve parallel shift



The new EH-203 controllers have a curve with a parallel shift. The parallel shift changes the supply water temperature the same amount in each setting point of the curve.

Easy to use

A heating regulator controlled by a mobile phone

You can use a GSM phone to carry out many of the user level functions of the EH-203 and EH-201/L controllers. The controllers have a patented GSM Control readiness making remote control via a mobile phone possible. When a GSM modem is connected to the controller you can send text message key words via your GSM phone.

Use a GSM phone to:
* receive and acknowledge alarms
* read measurement information
* check the supply water info to see what factors ar determining the present supply water temperature
* check and adjust settings and curve settings
* check and adjust control modes of control circuits and time controlled relays

Enter text message key words into your phone!

Users comments

Pekka Salakka, a managing director
LVI-Heltecon Oy
Helsinki

"Multifunctional and easy to plan"

"The goal of our planning service is to plan the most sensible and energy conserving HVAC system possible for facilities, and our other services ensure that our customer's goals are met. We accomplish this by working together with our customers to get the best results for facilities and the people that use them. We have achieved common goals with the help of the EH-200 series controllers because of their multiple functions and precise control. The GSM control function is inexpensive and reliable. Alarm centres for facilities are no longer needed. Alarms can now be directed through the Ouman EH-200 series controller to maintenance personnel via mobile phones using the latest GSM control technology. In addition, it is easy to connect Ouman EH-200 controllers to other control systems. The planner must make sure that the product can also be used in the future!

Timo Wilenius, a maintenance technician
Helsinki

"Can be taken into use quickly",

Säätölaitehuolto Oy (a company that services control devices) is a well-known building automation firm. Its know-how is based on its long experience from the year 1972 and continuous training of personnel.

"The Ouman EH-200 controllers can be easily and quickly taken into use. They are fixed controllers but because of their versatility they can be used in all sizes and types of facilities. You can also easily connect the controller later to larger units without having to know anything about programming. Precise instructions and connection diagrams make it enjoyable to install. After the controller is installed it is important to have precise instructions for its use. The Ouman controllers make this easy because its menus and user manual are in english. It is important for the person using the controller to know that everything functions the way it is supposed to. The GSM control function is a good help because I can monitor locations from my own phone and see that everything is going well for the user."

Tapio Matila
Apartment house manager
VVO Technical unit/Energy

"Easy-to-use and explicit"

VVO has over 36 000 rental units of different types in 76 different localities. VVO's parent company is VVO incoorporation Oyj. Business operations are divided between several different affiliated companies. VVO has 16 regional offices, VVO home centres in different parts of Finland. VVO has a housing culture based on rentor collaboration which has made VVO units a strong trademark. Apartment house manager Tapio Matila's duties include control of energy consumption of VVO incoorporation's rental units.

"We have used Ouman controllers in many of our locations when we have renewed heating systems and have found them to be good. The controller is easy to use and explicit. It is easy to browse measurement information and adjust settings. The GSM control function enables the controller to operate as an alarm centre and problems can be reacted to quickly. In addition, GSM Control makes it possible to have controller settings and measurement information sent to a mobile phone, and you can make changes at any time and from wherever you happen to be."

Janne Göös
DI
Kempele

Clear savings

In the autumn of 1999 we installed an Ouman EH-203 heating controller into our home when we renovated the plumbing. At first the controller just controlled the water circulation in the radiators but later we realized we needed more efficient control of our supply water. Ouman made it possible to take care of both needs with the same device. When the circulating pump is controlled by the clock program and relay controls we now have enough hot water for our daily needs. I measure our energy consumption carefully and I have noticed that after we did the renovation and installed the Ouman EH-203 our yearly heating oil consumpion fell about 15%.

OUMAN EH-200

Progressive heating regulation technology

The Ouman EH-200 regulators represent new, more intelligent regulator technology. They have numerous qualities that improve regulation and save energy, and have the automatic functions that professionals have hoped for.

Ouman EH-200 series:

EH-203	triple circuit regulator (2 heating, 1 domestic hot water)	●●●
EH-201/L	single circuit heating regulator	●
EH-201/V	single circuit domestic hot water regulator	●

Types of heating systems:
- Radiator heating
- Floor heating
- Air conditioning preregulation
- Hot water regulation

Types of heating production:
- District heating exchangers
- Boiler plants
- Accumulators
- District heating substations

Automatic configuration

The Ouman EH-200 regulator's automatic configuration program eases and speeds up installation. The sensible factory set values are suitable for many locations. The regulator identifies connected sensors and automatically starts using the proper regulating circuits.

If, for example, the other regulating circuit's supply water sensor isn't connected, the regulator automatically leaves the other heating circuit (H2) out of all its menus.

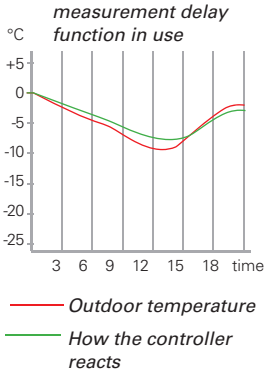
A graphic trend display makes tuning easier

Ouman EH-200 displays trends in supply water temperature changes graphically, so the regulation process is easier to perceive. The trend display especially makes tuning easier for the installer of the regulator.

Takes into account differences in facilities

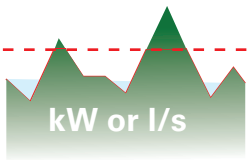
Thick concrete walls retain and release heat differently than light wood walls. An outdoor temperature measurement delaying function can be installed in the Ouman EH-200. During quick outdoor temperature changes, the regulator does not change the temperature of the supply water at the same pace, but instead, functions according to an average that it has measured for a longer period of time.

Outdoor temperature measurement delay function in use



Intelligent energy limiting saves without compromising comfort

Peak energy consumption is costly for the owner of a facility. The energy consumption at the point of hook-up, which is the basis for billing, can be lowered by preventing energy consumption during periods of peak consumption from rising over a preset limit.



Two separate control circuits for heating

With EH-203 it is possible to control two separate heating control circuits independently. This means better energy efficiency and increased living comfort as well as protection of structures.

Set a curve for floor heated damp rooms that also warms the floors in the summer. This prevents dampness and odours and it is pleasant when tiled floors feel slightly warm.

It is a good idea to group the living quarters that are not tiled in the other control circuit. They do not need to be warmed in the summer so by doing this you can prevent warm water from unnecessarily entering the heating network.

Label control circuits according to their use, e,g, washrooms and living quarters

Precision and savings

Floor heating as post regulation of the radiator circuit. During the summer the radiator circuit pump is stopped and sufficient floor heat is insured by leaving the regulation on for both the DH and floor heating regulation valves.

Patented domestic hot water saver strategy

Ouman EH-200 has a highly developed domestic hot water saver algorithm, which guarantees you an enjoyable shower even under difficult regulating conditions. Anticipatory regulating and a quick run function improve regulation in situations when consumption changes quickly.

Automatic changes in the tuning values minimise regulation during a down period when there is no consumption and this lengthens the life of the valve actuator.

Unique supply water information

H1 Supply temp	°C
› Follow curve	45
Outdoor delay	-2
Reduced temp	0
Max lim.eff.	0
Min lim.eff.	12
Result	=55

The supply water information is in the form of a table that informs its user of the factors that effect the supply water temperature at that moment. The supply water information also makes it easy to detect faulty settings. If, for example, the supply water temperature is too high even though the curve has been set correctly, the user can see from the supply water information that the minimum limit is too high.

Circulation pump controls

Summertime pump stop: To conserve energy the controller stops the pump when there is no need for heating.

Backup pump: The controller automatically starts the backup pump if the main pump malfunctions.

Alternating pump function: The controller controls the alternating pumps so they are both used the same amount of time. When one pump is being used as the main pump the other one functions as the backup pump.

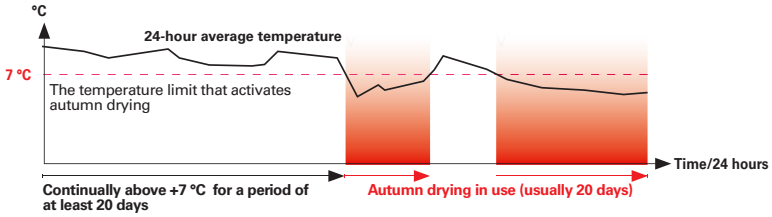
Manual control ON/OFF: If necessary, the pumps can be force controlled directly form the controller.

Monitoring the service water network for leaks:

This function identifies fair-sized leaks, e.g., from a toilet seat.

The autumn drying function

The autumn drying function raises the supply water temperature for a certain period of time in the autumn. This decreases building dampness so it doesn't feel as chilly as it often does at the end of the summer. As a result, the residents in the buildings are satisfied.



More than a heating regulator

The numerous temperature measurements and valve gearings of the Ouman EH-200 make it possible to use the regulator in many different types of central water heating systems.

In addition, the EH-200 has extra features that allow you to control and supervise building technical systems in many ways. The many alarm indicator connection capabilities increase security and help daily living. Monitoring water and energy usage usually leads to savings. With the help of the regulator's relays, it is possible to automate control of facility technical systems.

Versatile measurements and digital inputs

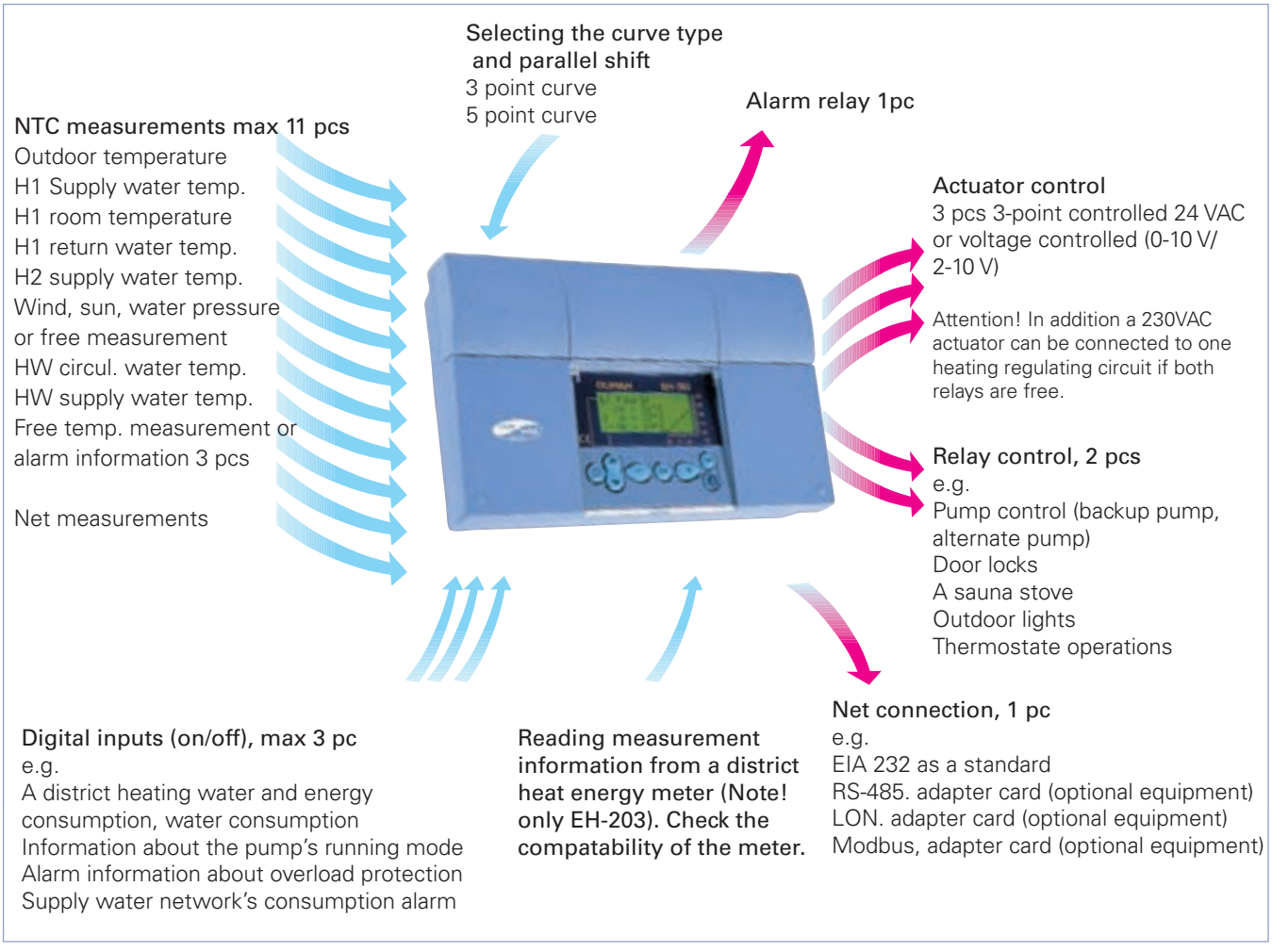
The Ouman EH-203 has 11 NTC measurements and 3 digital inputs. The EH-201 models correspondingly have: 7 NTC measurements and 2 digital inputs. Measurement data can also be read from the channel with the help of a separate adapter card.

Versatile alarm functions

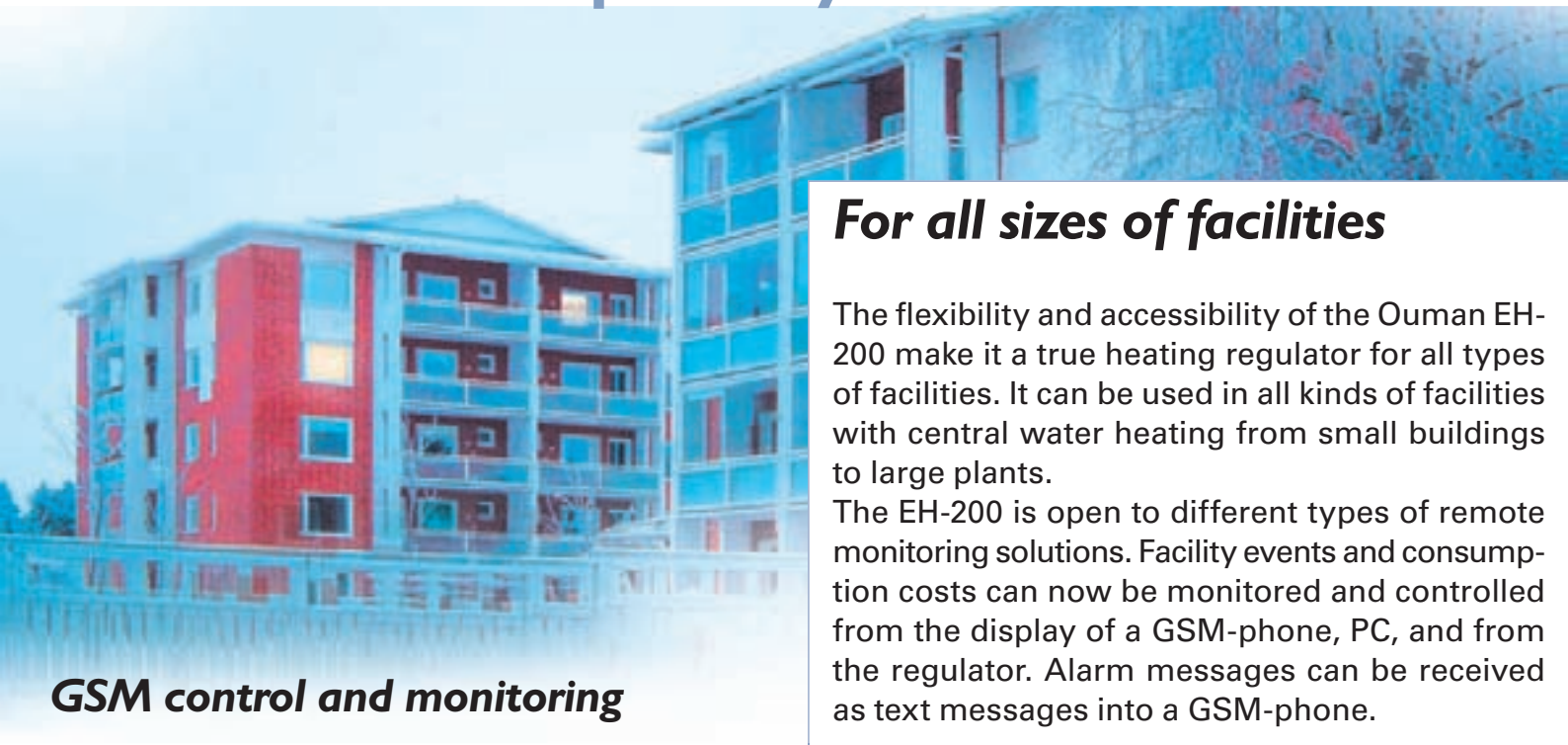
The regulator's display indicates what caused the alarm. In addition, the regulator's internal buzzer goes off.
In the event of an alarm the controller can send a message directly to the user's GSM phone or through the EH-net informing what caused the alarm and where it came from. The controller's closing contact can turn on an indicator light or send alarm information to the facility's alarm centre.

Internal alarms
Sensor fault
Danger of overheating
Deviation alarm
Danger of freezing

External alarms
Network pressure alarm
Domestic hot water network consumption alarm
Alarm information about the pump's running mode
Alarm information about the pump's overcurrent protection



Extensive adaptability to different locations



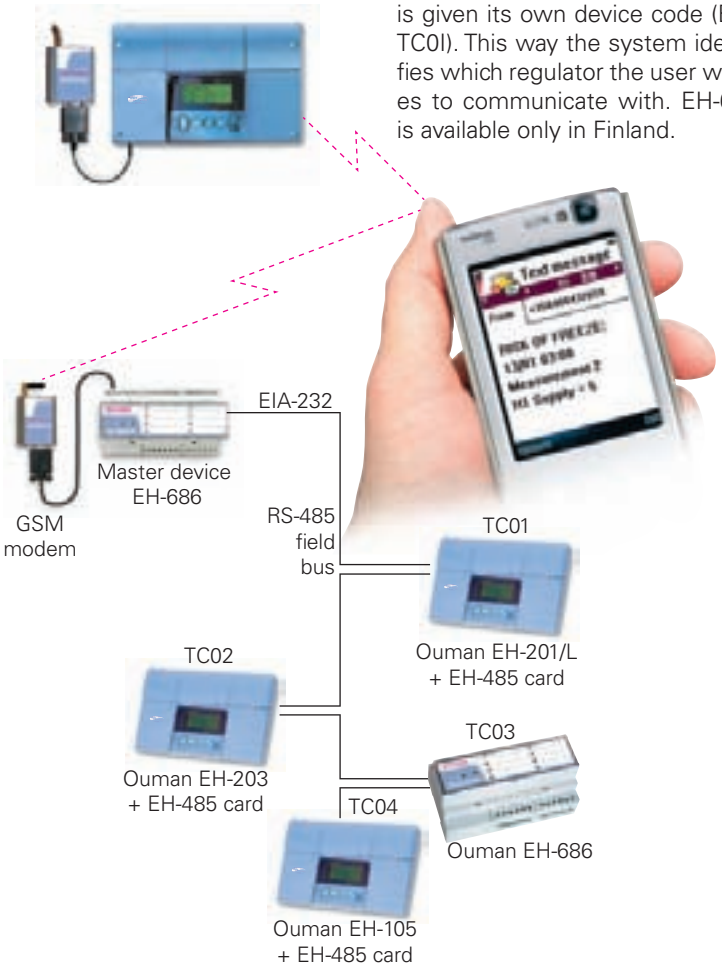
GSM control and monitoring

1. One controller

You can control the EH-203 or EH-201/L controller via a GSM phone if a GSM modem is connected to the controlller. You can send the controller's alarms to two GSM numbers and acknowledge the alarms via text message.

2. Connecting several EH-200 regulators to GSM-monitoring

GSM-monitoring can be done through the RS-485 field bus. Many regulators can be connected to the field bus by installing a bus adapter card unto each regulator. The GSM-modem is connected to the RS-485 field bus with the help of the EH-686 master device that direct traffic in the net. Each device connected to the channel is given its own device code (E.g. TC0I). This way the system identifies which regulator the user wishes to communicate with. EH-686 is available only in Finland.



For all sizes of facilities

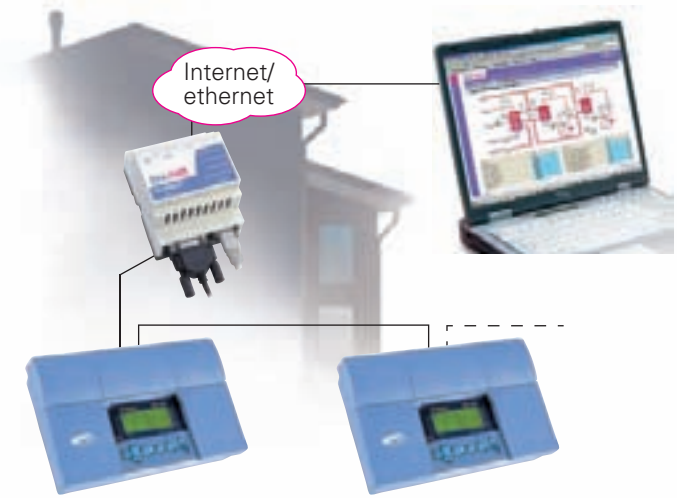
The flexibility and accessibility of the Ouman EH-200 make it a true heating regulator for all types of facilities. It can be used in all kinds of facilities with central water heating from small buildings to large plants.
The EH-200 is open to different types of remote monitoring solutions. Facility events and consumption costs can now be monitored and controlled from the display of a GSM-phone, PC, and from the regulator. Alarm messages can be received as text messages into a GSM-phone.

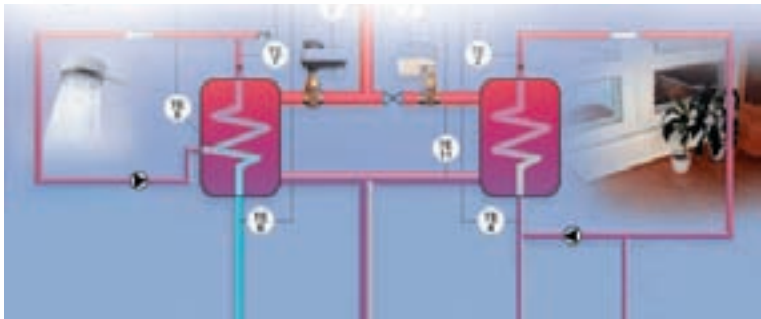
The EH-net

You can also control and monitor the EH-200 controller via an inexpensive web user interface. Even quite large Ouman building automation systems can be easily controlled and monitored remotely using a web browser at any time and from wherever you are. To use a browser you must have a Modbus adapter card for the controller, an EH-net server connection as well as a functioning network solution and sufficient information protection.

Other monitoring systems

The EH-controllers can be connected to other monitoring systems using a Modbus or LON.bus. In that case either a Modbus or LON bus adapter card must be installed into each controller to be connected to the bus depending on the bus type.





OUMAN EH-200



TECHNICAL INFORMATION:	**OUMAN EH-203** ●●● **Triple circuit regulator** for two heating circuit and one domestic hot water circuit	**OUMAN EH-201/L** ● **Single circuit temperature regulator** for one heating circuit	**OUMAN EH-201/V** ● **Single circuit temperature regulator** for one domestic hot water circuit
Operat. voltage:	230 VAC, 50 Hz, 0,2 A		
Casing:	PC/ABS		
Protection class:	IP 41		
Width, height, depth:	width 230 mm, height 145 mm, depth 60 mm (with spacers 65 mm)		
Weight:	1.2 kg	1.1 kg	1.1 kg
Cabling direct:	From above or below (turnable display and keyboard). Through holes on the bottom.		
Regulator type:	Heating circuit's PID DHW circuit PID+exchange + quick run	PID	PID + exchange + quick run
Measurements:	11 st (NTC 10 kΩ) + 3 digital inputs	7 st (NTC 10 kΩ) + 2 digital inputs	7 st (NTC 10 kΩ) + 2 digital inputs
Clock programs:	Max.7 program phases/regul.circuit (The regul.circuits have 14 all together), Max 7 program phases/ relay (begins - ends = 1 program phase)		
Digital inputs:	3 pcs	2 pcs	2 pcs
	The potential free contact is connected to the digital input (load 6...9 VDC/ 20 mA)		
Actuator control outputs:	3 (combined output power maks. **25 VA**)	1 (maks. **19 VA**)	1 (maks. **19 VA**)
	3-point (24 VAC) or voltage control 0...10 V (2...10 V)		
GSM Control readiness:	yes	yes	no
Web readiness:	yes		
Relay outputs:	1 break before make contact relay 230 VAC / 6(1)A and 1 norm. open contact relay 230 VAC / 6(1)A		
Alarm relay outputs:	1 st 24 VAC / 1A		
Inform. transfer connection:	EIA-232C, RS-485 or LON		
Operating temperature:	0 ... +50 °C		
Storing temperature:	–20 ... +70 °C		
APPROVALS:			
EMC-directive	89/336/EEC, 92/31/EEC		
-Interference toler.	EN 50082-1		
-Interf. emissions:	EN 50081-1		
Small voltage directive:	73/23/EEC		
-Safety	EN 60730-1		
Warranty:	2 years		
Manufacturer:	Ouman Oy, Kempele Finland		

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EH-200 SERIES ACCESSORIES

OUMAN EH-485, LON-200 and MODBUS-200

EH-485, LON-200 and Modbus-200 are channel adapter cards with which regulators of the EH-200 series traffic route are made to be compatible with an RS-485, LON or Modbus-field channel. The RS-485 channel is an inexpensive way to connect several Ouman regulating units to the GSM control. Remote use of EH-200 series controllers is possible using a web browser when the controller is connected to a Modbus which is connected to an EH-server.

OUMAN EH-686

An input/output unit that contains relays, analogue and digital inputs as well as analogue outputs. The unit makes it possible to carry out time-controlled relay functions and transfer alarms using digital inputs. EH-686 can also function as a master in the Ouman RS-485 bus by directing traffic in the net.

GSM-modem

With a GSM-modem you can communicate with the EH-203 and EH-201/L controllers via a GSM phone. With browser-based remote control alarms can be sent as text messages to a GSM phone.
You can also purchase from Ouman a business level GSM connection for machine communication (available only in Finland).

EH-net

The EH-200 series controller can be used remotely and browser-based in the Ethernet using an EH-net server.
A Modbus adapter card must be added to the controller to enable connection to an EH-net service. You can also obtain network and information securiyt solutions from Ouman.

EMR-200

EH-203 has a plug connection for the energy meter read head. When a district heating energy meter is connected to the EH-203 controller using an EMR-200 energy meter read head, the district heating meter measurement information can be read from the EH-203 controller.

C01A

In houses with floor heating is important to make sure that excessively hot water that could damage structures or surfaces does not enter the network. The C01A surface thermostat is a mechanical thermostat that can be installed on a supply water pipe that stops the circulation pump in the event of overheating.

OUMAN®

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