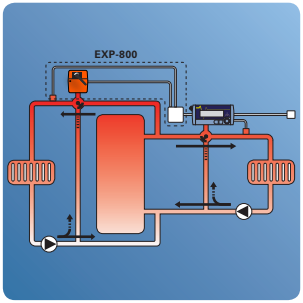
Installation guide



SUITABLE FOR HYBRID HEATING

OUMAN® EXP-800

External unit for the EH-800 series controllers

www.ouman.fi

NOTES

CONTENTS

EXP-800 for control of another heating circuit

This guide explains how to connect another heating circuit to the EH-800 series controller and take it into use using the EXP-800 package. **Make sure that power supply is not connected!**

1. Attach the EXU-800 unit so that its valve actuator can be connected to the heating circuit's mixing valve, its surface sensor can be connected to the supply water pipe which is after the mixing valve and the EXU-800's RJ-45 cable can be connected to the EH-800 controller.
2. Check the direction of the mixing valve and, if necessary, change the direction of the actuator to correspond to it. To change the direction of the actuator, look in the actuator's instructions. The factory set actuator opens clockwise and its range is 0…10V control.
3. Attach the actuator to the valve using the fitting piece.
   - MS-NRE: Fitting pieces for Esbe and Termomix mixing valves, black: Esbe, white: Termomix
   - MS-NRE6; Fitting piece for Esbe VRG or VRB valves
4. Follow the instructions in the product package to attach the TMS-3m surface sensor to the heating source's supply water pipe after the mixing valve.
5. Connect the other end of the EXU-800's RJ cable to the RJ-45-2 connection on the left side of the EH-800 controller. Make sure that it "clicks" shut!

> **!** If a GSM modem is connected to the RJ-45-2 connection, it must be disconnected and reconnected to the EXU-800 expansion unit as follows: Go to "Device settings" -> "text message settings" in the controller's menu. Then go to "Text message settings" in the controller's user manual, connect the GSM modem according to the instructions and check the text message settings.

6. In the controller's menu go to "Device settings" -> "H2 Process settings". Then go to "H2 Process Settings" in the controller's user manual. Follow the instructions. Installation and initiation are completed when the functions have been tested and they function correctly.

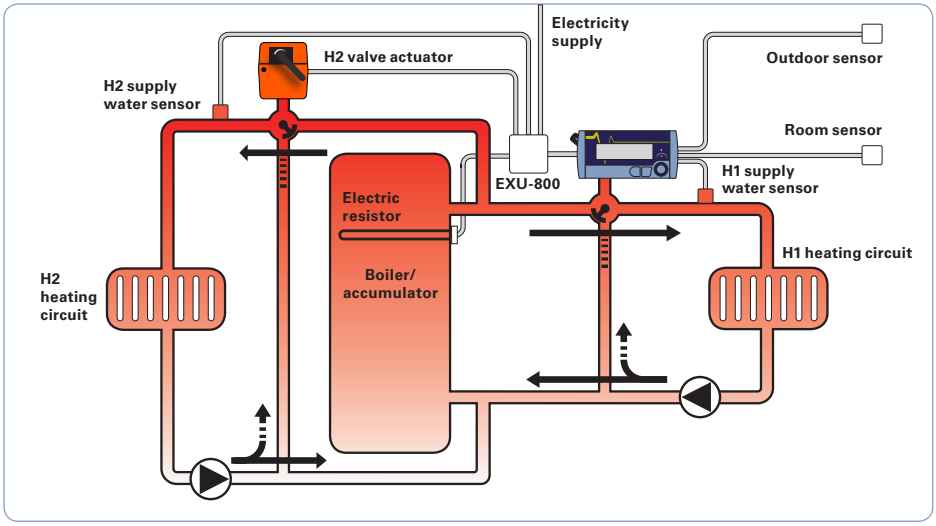


Diagram 1.
A basic diagram for connecting two heating circuits. The controller controls both heating circuits on the basis of the same outdoor temperature measurement but different supply water temperature measurements. Each heating circuit has its own curve and other settings that effect control.

EXP-800 for parallel control of another source of heat

This guide explains how the EH-800 series heating controller can take parallel control of a second heating source into use using the EXP-800 package. The surface temperature sensor (TMS-3M) included in the product package is not needed, so you can install it wherever you want to obtain an informative measurement. (number 4). **Make sure that power supply is not connected!**

1. Attach the EXU-800 unit so that its valve actuator can be connected to the mixing valve and the EXU-800's RJ-45 cable can be connected to the EH-800 controller.
2. Check the direction of the mixing valve and, if necessary, change the direction of the actuator to correspond to it. To change the direction of the actuator, see the actuator's instructions. The factory set actuator opens clockwise and its range is 0…10V control.
3. Attach the actuator to the valve using the fitting piece.
   - MS-NRE: Fitting pieces for Esbe and Termomix mixing valves, black: Esbe, white: Termomix
   - MS-NRE6; Fitting piece for Esbe VRG or VRB valves
4. Follow the instructions in the product package to attach the TMS-3m surface sensor to e.g., the water pipe coming from the accumulator. In the controller's menu go to "Device settings" -> Measurement channel settings -> Measurement 5 ". Select the correct label for the measurement channel (in this case "accumulator temperature") or label it yourself. Go to "Alarms" in the controller's menu and check the measurement channel's alarm limits
5. Connect the other end of the EXU-800's RJ cable to the RJ-45-2 connection on the left side of the EH-800 controller. Make sure that it "clicks" shut!

! If a GSM modem is connected to the RJ-45-2 connection, it must be disconnected and reconnected to the EXU-800 external unit as follows: Go to "Device settings" -> "text message settings" in the controller's menu. Then go to "Text message settings" in the controller's user manual, connect the GSM modem according to the instructions and check the text message settings.

6. In the controller's menu go to "Device settings" -> "Cascade control" and select "In use, actuator control 0-10v. Process Settings" in the controller's user manual. Installation and initiation are completed when the functions have been tested and they function correctly.

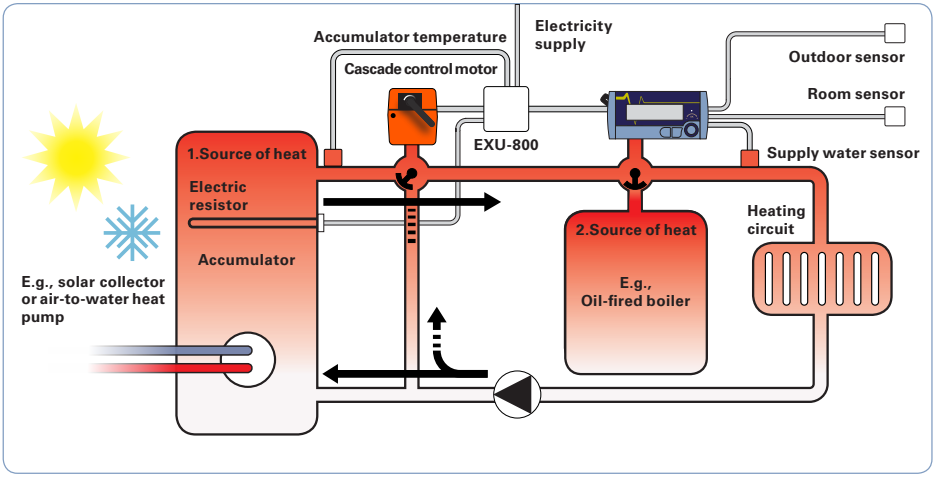


Diagram 2.
A basic diagram for hybrid heating, with the cascade control actuator getting its power from the first source of heat. When the power is depleted from first source of heat, the controller begins taking additional power from the second source of heat. The surface temperature sensor measures the temperature of the accumulator (1. heat source)

Solar collector's charging pump control EH-800 + EXU-800

This guide explains how to connect the EH-800 series so it controls the charging pump between the solar collector and accumulator. The function can be taken into use when two measurement channels (3/4/5) and relay control of the EXU-800 external unit are in use. **Make sure that power supply is not connected!**

1. Attach the EXU-800 external unit in an accessible place so it is easy to connect things to it.
2. Connect the charging pump according to EXU-800 diagram 3.
3. Connect the temperature sensors: The sensor that measures the temperature of the solar collector can be, e.g., the Ouman TME/NTC10, connected to measurement channel 3 or 4 (connecting cable). The sensor that measures the temperature of the lower part of the accumulator can be the Ouman TME/NTC10, connected to the EXU-800 measurement channel 5 or EH-800's measurement channel 3 or 4.
4. Connect the other end of the EXU-800's RJ cable to the RJ-45-2 connection on the left side of the EH-800 controller. Make sure that it "clicks" shut!

! If a GSM modem is connected to the RJ-45-2 connection, it must be disconnected and reconnected to the EXU-800 expansion unit as follows: Go to "Device settings" -> "text message settings" in the EH-800 heating controller's menu. Then go to "Text message settings" in the controller's user manual, connect the GSM modem according to the instructions and check the text message settings.

5. In the controller's menu go to "Device settings" -> "Measurement channel settings", select the correct labels for the measurements you have connected. Go to "Alarms" in the controller's menu and check the measurement channel's alarms.
6. Go to "Device settings" -> "Relay control" in the controller's menu, select " According to temperature difference". Then go the corresponding place in the controller's user manual and follow the instructions.
7. Installation and initiation are completed when the functions have been tested and they function correctly.

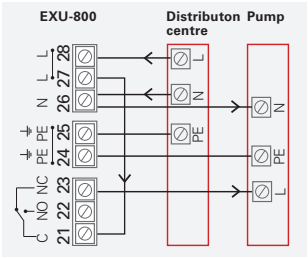


Diagram 3.
Relay control of the sun collector's charging pump.

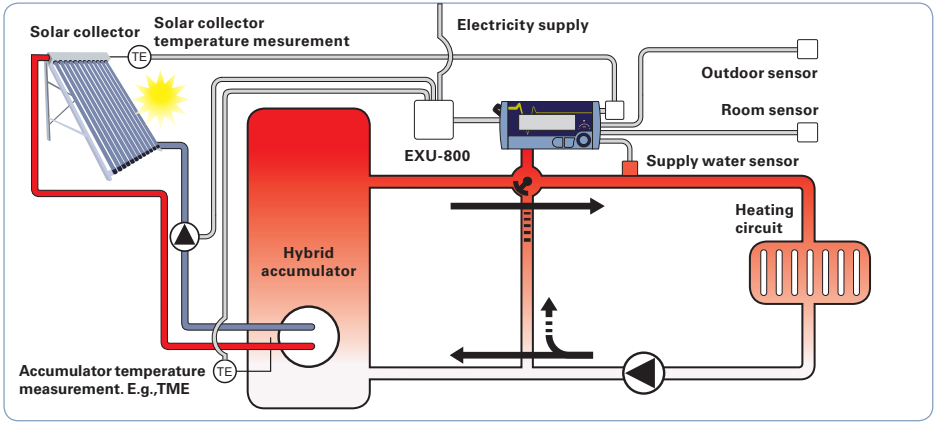
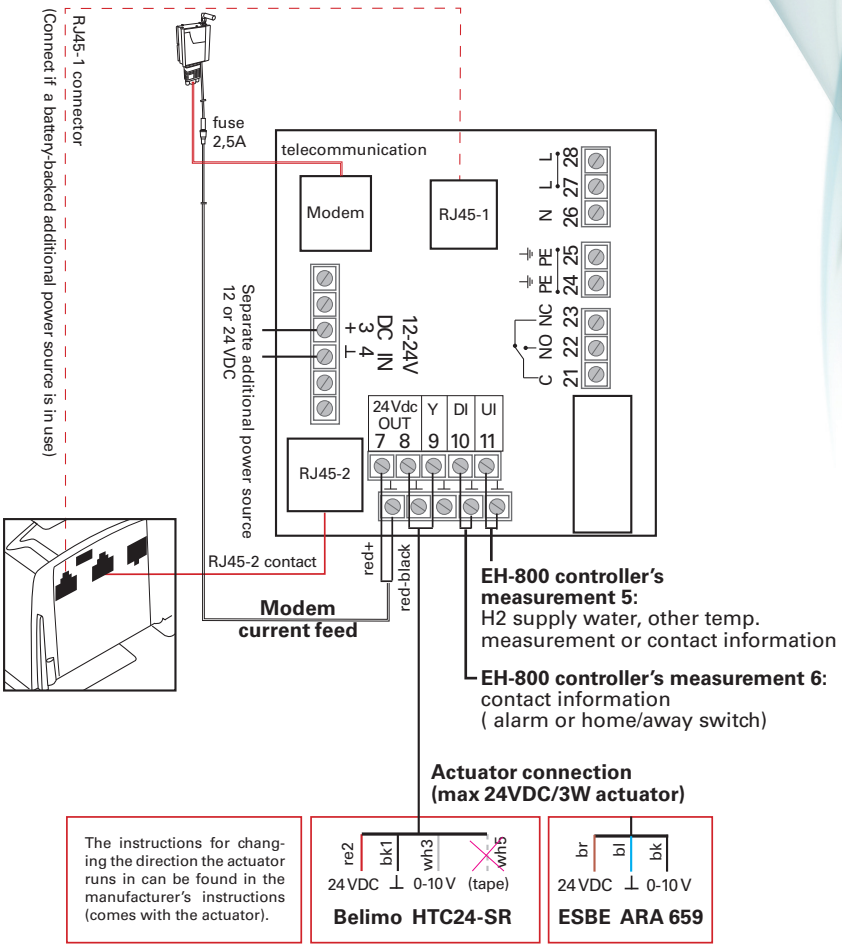


Diagram 4.
Basic diagram of hybrid heating, with the heating controller controlling the charging pump between the solar collector and accumulator and controlling the heating system according to the outdoor temperature and supply water temperature.

Other connections for the EXU-800 external unit

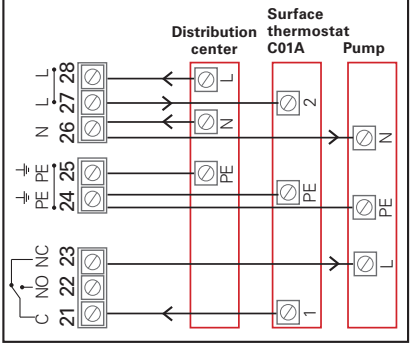
Make sure that power supply is not connected!



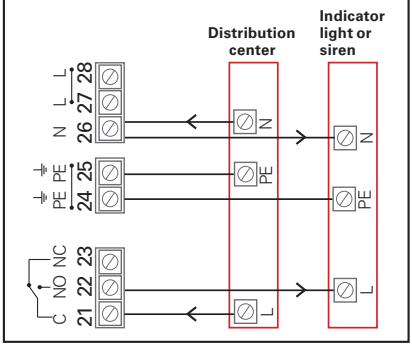
Other connections for the EXU-800 external unit

Make sure that power supply is not connected!

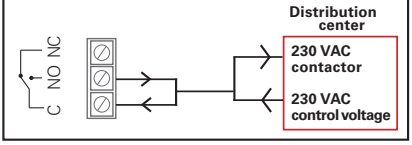
Relay control is used for pump summer stop



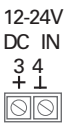
Relay control used for giving alarms (general alarm)



Control of th 230 VAC contactor e.g., control of the heating resistor



A separate 12 VDC or 24 VDC power source e.g., for battery backup or additional power source



With 12 VDC's the controller operates and sends alarms
With 24 VDC's the controller operates normally
Connect the RJ45-1 using the battery backup

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