Application:

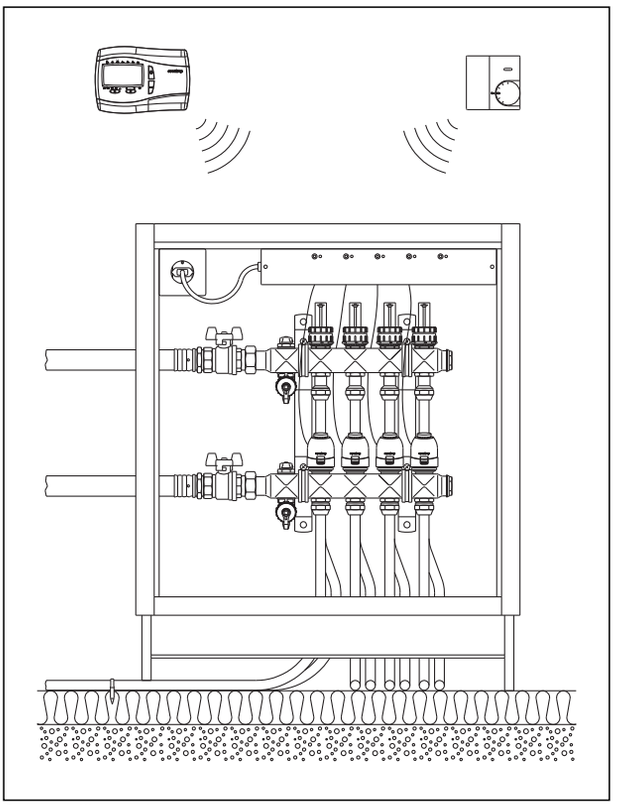
The range of Oventrop wireless controls includes a room thermostat and a room thermostat-clock with wireless transmitter, wireless receivers with 1, 4 and 6 channels as well as a wireless receiver with time switch for 8 channels.

On the one hand, the wireless controls are suitable for use in surface cooling systems and on the other hand they are part of the Oventrop “Cofloor” surface heating system.

Combined with a wireless receiver, electrothermal two point actuators and stainless steel distributors/collectors “Multidis SF”, the room thermostat with wireless transmitter serve the individual room temperature control of hot water surface heating and cooling systems.

As no cabling between the room thermostats and the receiver block is required, existing systems may subsequently be equipped with the radio control.

Other applications are wall heating systems and radiant ceiling panels in which the flow rates are regulated at a distributor/collector with actuators.



System illustration

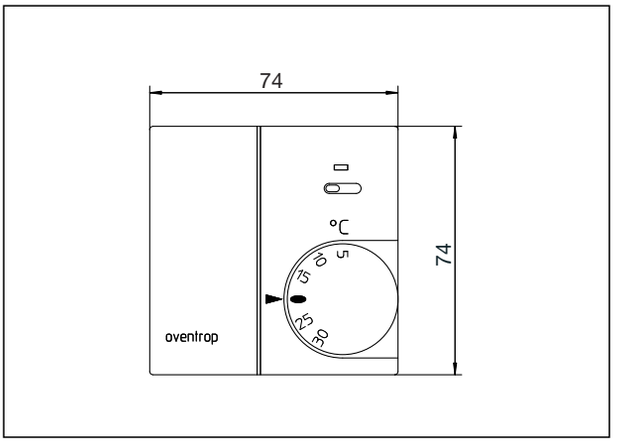
Tender specifications:

Room thermostat with wireless transmitter,
including 2 batteries, 1.5 V each
(round cells, alkaline, type LR03 or AAA)

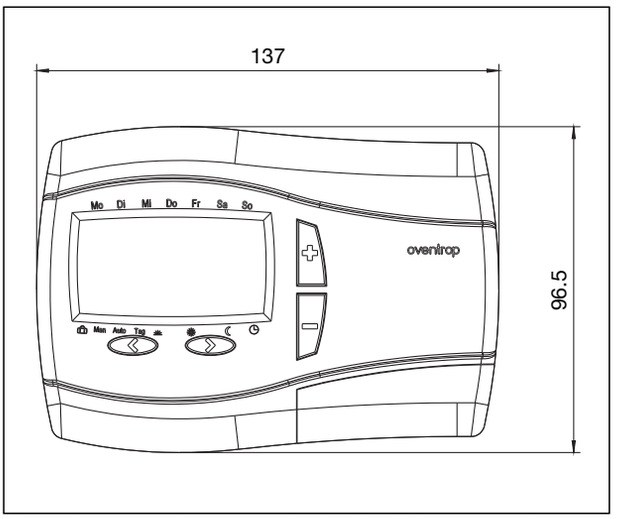
Operating current:	3 V
Batteries life span:	about 3 years
Transmitter frequency:	868.95 MHz
Transmitting power:	about 10 mW
Transmission interval:	10 min.
Antenna:	internal
Radio range:	100 m of open air or 1 ceiling and 2 or 3 walls
Types of operation:	automatic operation, permanent comfort temperature, permanent temperature setback, controller inactive
Functions:	heating or cooling, convertible
Timer function:	1 to 15 h, in steps of 1 h
Light:	function display for adaptation mode, timer, battery replacement, reset
Temperature range:	5 °C up to 30 °C, setting by turning the rotary knob
Limitation of nominal value:	concealed inside the control knob
Temperature setback/ increase:	2 K or 4 K, convertible
Regulation behaviour:	pulse-width-modulation (PWM, preset) or two point, convertible
Hysteresis PWM:	about ± 5 K
Hysteresis two point:	about ± 1 K
Valve protection function:	switched on for 3 min. every 24 h, can be switched off
Operating temperature:	-25 °C up to +40 °C
Storage temperature:	-25 °C up to +70 °C
Protection:	IP 30 (condensation not allowed)
Wall attachment:	e.g. on flush socket
Colour of casing:	white, RAL 9010, base: black
Item no.:	1150551

Room thermostat-clock with wireless transmitter:

including 2 batteries, 1.5 V each (round cells, alkaline, type LR6 or AA)	
Power supply:	2 x AA 1.5 V alkaline batteries
Operating current:	3 V
Batteries life span:	about 2 years
Temperature range:	5 °C up to 32 °C
Transmitter frequency:	868.95 MHz
Antenna:	internal
Transmission interval:	10 min.
Radio range:	100 m of open air or 1 ceiling or 3 walls
Types of operation:	automatic operation (choice of 3 preset programmes with up to 6 switching times per day and individual temperature setting), holiday function, party function, manual operation, inactivate thermostat
Operation:	via 4 setting keys
LDC display:	room temperature or nominal temperature, time, weekday, type of operation, switching times
Functions:	heating or cooling, self-learning heating curve
Regulation behaviour:	pulse-width-modulation (PWM) or two point, convertible
Operating temperature:	0 °C up to 40 °C
Storage temperature:	-20 °C up to +85 °C
Ambient humidity:	operation and storage 45% up to 93% (without condensation)
Protection:	IP 30
Colour of casing:	white, RAL 9010
Item no.:	1150553



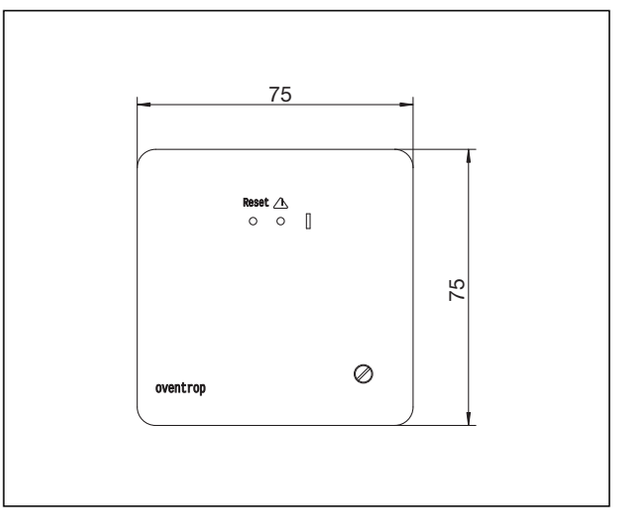
Dimensions room thermostat with wireless transmitter



Dimensions room thermostat-clock with wireless transmitter

Wireless receiver, 1 channel:

Operating current:	230 V
Power consumption:	< 1.5 W
Load circuit:	relay, 1 closing contact volt free, AC 24 – 250 V max. 16 A cos φ = 1 max. 2 A cos φ = 0.6
Number of actuators:	(electrothermal, 3 W)
230 V:	max. of 20
24 V:	max. of 8
Received frequency:	868.95 MHz
Antenna:	internal
Functions:	heating or cooling, convertible, valve test function, master/slave function, pump logic function
Key button:	1 for adaptation 1 for reset function
Indicator lights:	1
Operating temperature:	0 °C up to 40 °C
Storage temperature:	-20 °C up to +60 °C
Protection:	IP 30
Wall attachment:	e.g. on flush socket
Colour of casing:	white, RAL 9010
Item no.:	1150560



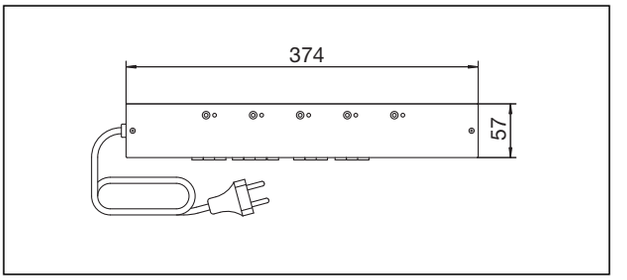
Dimensions wireless receiver, 1 channel

Wireless receiver, 4 channels/6 channels:

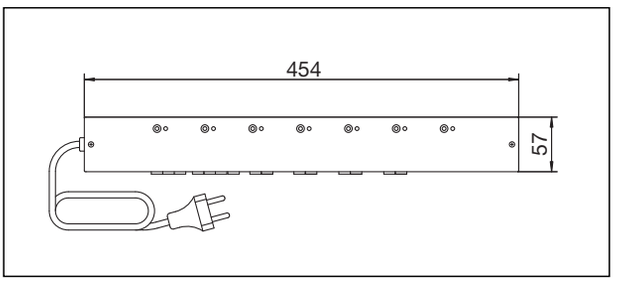
ready for plug-in	
Operating current:	230 V
Power consumption:	3 VA
Load circuits:	4/6 change-over contacts AC 24-230 V, volt free 8 A cos φ = 1. 2 A cos φ = 0.6
Number of actuators:	(electrothermal, 3 W each)
230 V:	max. of 10 per contact
24 V:	max. of 4 per contact
Received frequency:	868.95 MHz
Antenna:	internal
Functions:	heating or cooling, convertible, valve test function, time switch signals on channel 1 can be used as master for channels 2 to 4/6, channel 4/6 can be used as pump logic
Key buttons:	4/6 for adaptation 1 for reset function
Indicator lights:	4/6 for adaptation 1 for operating current
Operating temperature:	0 °C up to 50 °C
Storage temperature:	-20 °C up to +60 °C
Protection:	IP 40
Wall attachment:	e.g. on top rail
Colour of casing:	white, RAL 9010
Item no.:	1150561 (4 channels)
Item no.:	1150562 (6 channels)

Wireless receiver with time switch, 8 channels:

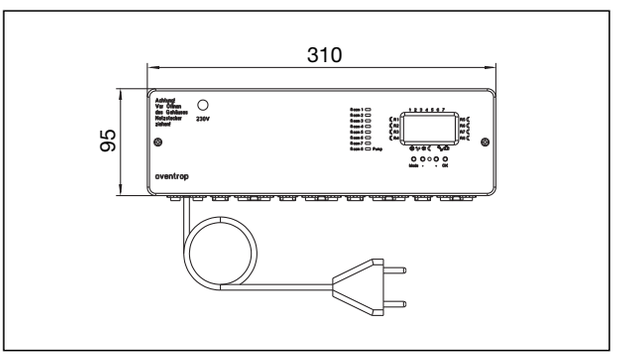
ready for plug-in	
Operating current:	230 V 50 Hz
Power consumption:	4 VA
Fuse:	4 A time-lag
Loading circuits:	7 contacts sum of all currents ≤ 2 A
Channel 8 pump logic:	1 contact, volt free, 4 (2) A the pump must not be supplied by the device
Number of actuators:	3 W per channel, max. of 10, a max. of 15 actuators can be connected to one device (fuse)
Received frequency:	868.95 MHz
Antenna:	internal
Functions:	preset clock, programming of the clock and adaptation of the transmitter after having removed the cover, heating/ cooling convertible via external signal, pump logic, valve test function, valve protection, deactivation of cooling via external signal in case of condensation
Indicator lights:	8 for adaptation 1 for operating current
Batteries life span:	about 4 years
Operating temperature: (without condensation)	0 °C up to 50 °C
Storage temperature:	-20 °C up to +60 °C
Protection:	IP 40 / shockproof
Wall attachment:	on top rail
Colour of casing:	white
Item no.:	1150563



Dimensions wireless receiver, 4 channels



Dimensions wireless receiver, 6 channels



Dimensions wireless receiver with time switch, 8 channels

Function:

The room thermostats and room thermostats-clocks with wireless transmitter detect the temperature, compare the nominal and actual temperature and transmit the information required for the drive of the actuators to the wireless receiver.

To guarantee an optimum temperature control, the short-time transmission of the information at intervals of 10 minutes is sufficient and also environmentally friendly.

The wireless receiver converts the information of the transmitter into control signals for the electrothermal two point actuators which serve to control the flow rates of the individual heating and cooling circuits.

The room thermostat with wireless transmitter, item no. 1150551, is easy to use. Temperature is set by turning the rotary knob, the type of operation is chosen via a switch.

During automatic operation, the switching times for comfort temperature and temperature setback are specified by an external time switch, for instance by the room thermostat-clock with wireless transmitter, item no. 1150553.

The room thermostat supports two control systems:

- An almost constant room temperature is achieved with the pulse-width modulation being comparable to a constant control.
- The two point control is recommended for pump or burner controls if operation shall only be switched when the room temperature is exceeded or not reached. When used for room temperature control, the switching times are more diverging; the temperature of the given value is higher.

The functions heating or cooling can be chosen via a concealed switch.

The valve protection function avoids blocking of the valves. The actuators are switched on once a day. The room thermostat provides a means to test the function control of the transmitter.
To guarantee a perfect regulating function, the room thermostat has to be mounted in such a way that it is not influenced by other heat sources.

Beyond the functions of the room thermostat, item no. 1150551, the room thermostat-clock, item no. 1150553, not only allows a comfortable timed room temperature control but also offers extensive programming options for an individual adaptation of the room climate. The menu command on the LCD display and the setting via few a key, allow an easy operation. As standard setting, the room thermostat-clock works with a self-learning heating curve. As a result, room temperature is reached at the set time. The function can be inactivated. The time switch signals can be used for the control of further room thermostats.

The wireless receivers with 1, 4 and 6 channels as well as the 8 channel wireless receiver with time switch are the connecting link between the room thermostats and the actuators. A clear allocation between the transmitter and the receiving channel is made with the help of a self-learning addressing (adaptation mode). The wireless receivers offer multiple options regarding control.

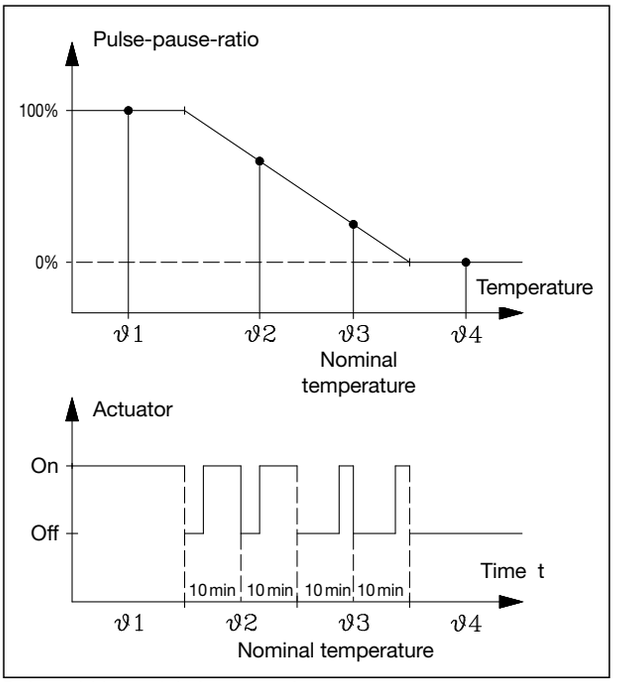
As for the wireless receivers with 4 or 6 channels, one room thermostat and up to 10 electrothermal actuators 230 V can be allocated to each receiving channel. Alternatively, a maximum of 4 actuators 24 V can be connected. The current supply of 24 V has to be made via a separate power pack.

An incoming time switch signal on channel 1 may also control the remaining channels. During automatic operation, one room thermostat-clock and up to 5 room thermostats can thus simultaneously switch between comfort temperature and temperature setback.

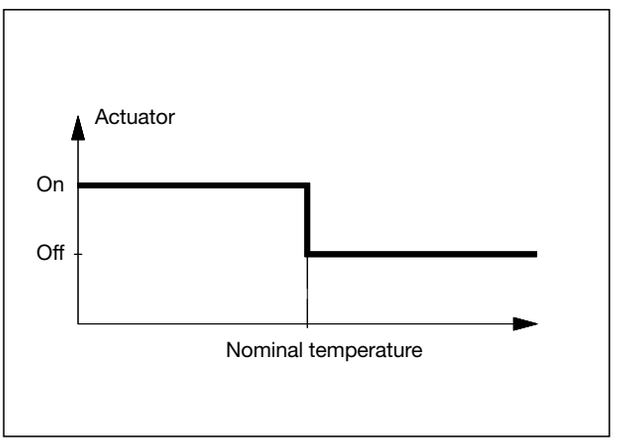
Channel 4 or 6 can work as pump logic. The pump is switched off if the transmitters connected to the remaining channels do not request more heat. In case of malfunction, an acoustic signal is to be heard.

Regarding the wireless receiver with 1 channel, one room thermostat and up to 20 electrothermal actuators 230 V can be allocated to the receiving channel. Alternatively, a maximum of 8 actuators 24 V can be connected. The current supply must also be made via a separate power pack.

One room thermostat and up to 10 electrothermal actuators 230 V can be allocated to each receiving channel of the 8 channel wireless receiver with time switch, whereas a maximum of 15 actuators can be connected to it. Several receiving channels can be controlled by one transmitter.



Pulse-width-modulation control



Two point control

The integrated 8 channel time switch allows a timed temperature control. Programming of the time switch and adaptation of the transmitter can only be carried out after having removed the cover (device must be disconnected from the power supply).
Only the room thermostat without clock (item no. 1150551) follows the time profile of the 8 channel wireless receiver.
If a room thermostat-clock (item no. 1150553) is "teached in", all succeeding channels will follow the time switches of the room thermostat-clock (master-slave). The time switch in the 8 channel wireless receiver will not be taken into account for these channels.
Further functions, such as switching from heating to cooling and switching off of cooling in case of condensation are possible via external signals.

Installation and fitting:

Detailed information regarding the installation and operation of the Oventrop wireless controls can be taken from the enclosed installation and operating instructions. All functions and other applications are also described therein.

Examples of installation:

System illustration 1 shows a wireless receiver with 4 channels for a surface heating system. The receiver works with a supply voltage of 230 V. The bridges BR4 and BR5 are separated. A voltage of 24 V for corresponding electrothermal actuators is supplied via the terminals 7 and 8. The example shows actuators 24 V "open with current off". The model "closed with current off" is connected to the terminals b and c.

A room thermostat-clock is allocated to channel 1 allowing an automatic, timed setback of the room temperature via the room thermostats allocated to channels 2, 3 and 4.

System illustration 2 also shows a wireless receiver with 4 channels. The supply voltage for the receiver and the electrothermal actuators ("open with current off") is 230 V.

Room thermostats are allocated to the channels 1, 2 and 3, similar to system illustration 1.

Channel 4 controls the circulation pump via the integrated pump logic. If none of the room thermostats requests heat, i.e. all valves close, the pump is switched off.

System illustration 3 shows a wireless receiver with 6 channels. The supply voltage for the receiver and the electrothermal actuators ("open with current off") is 230 V.

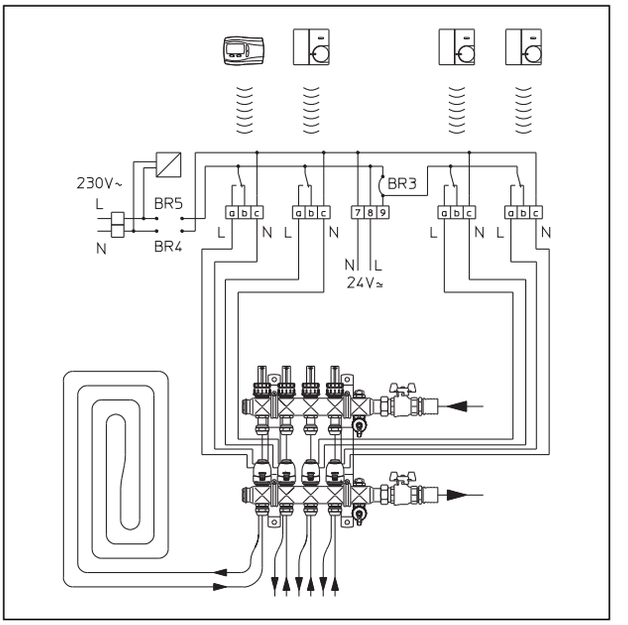
Room thermostats are allocated to the channels 1, 2, 3 and 4 as in system illustration 1.

Channel 5 is controlled by a further room thermostat-clock. This way, the temperature in the associated room can be reduced or increased at different time switches.

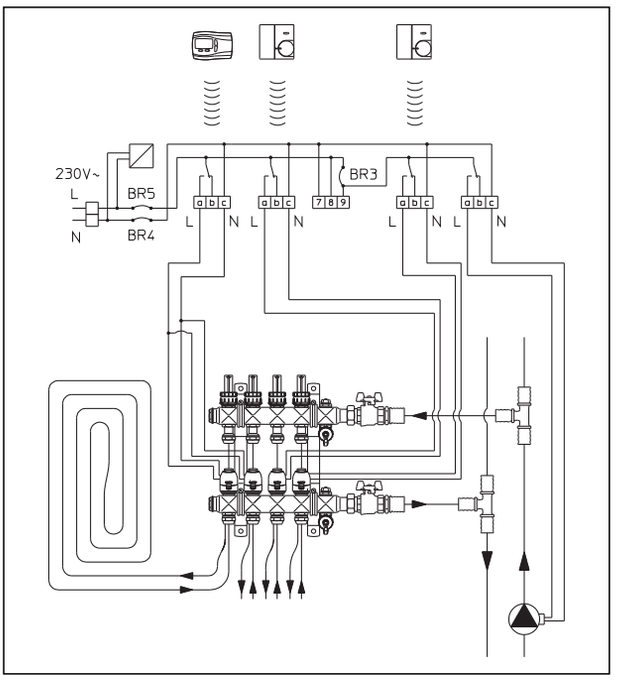
As in system illustration 2, channel 6 controls the circulation pump via the integrated pump logic.

Advantages:

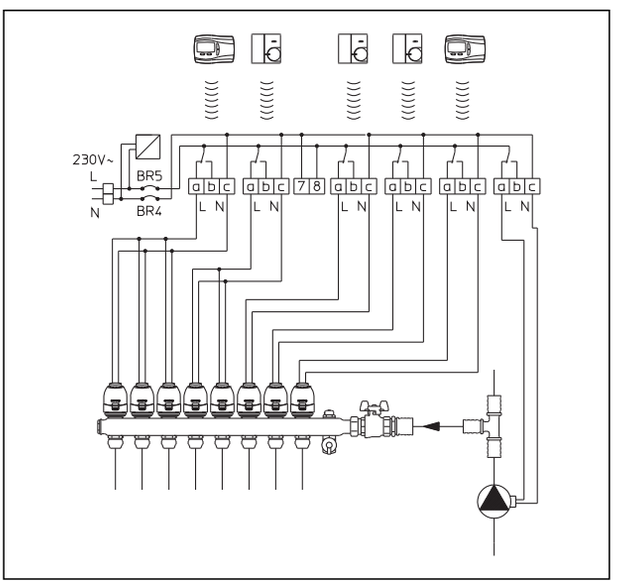
- Part of the Oventrop surface heating system "Cofloor" – all components from one supplier
- Economic possibilities of subsequent installation of a room temperature control in existing surface heating systems
- Time- and cost-saving installation in new systems
- Exact room temperature control
- High safety against disturbances owing to transmitter frequency 868 and multiple transmission methods
- Short-time emitter pulses avoid "electric smog"
- Simple installation and operation
- Multiple programming options and special functions
- Valve protection function



System illustration 1 with connection diagram



System illustration 2 with connection diagram



System illustration 3 with connection diagram

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