

FXV 3***: Electric distributor for control signals



FXV3210F002

FXV

How energy efficiency is improved

Distributor for intelligent, energy-efficient control

Areas of use

Distribution of the power supply, the positioning signals and a shared time programme for room devices (analogue or with display) and thermal actuators.

Features

- For easy wiring of up to 6 or 10 zones in a panel heating system
- For transferring switching signals from the unitary controllers for heating or heating/cooling
- Individual forwarding of time commands or night set-back to the appropriate actuators; max. two time channels
- With pump and boiler control
- Pump logic with adjustable follow-on time for actuating the circulation pump
- Integrated valve protection function
- Input for temperature limiter or dew point monitor
- LED status indicator
- Pump control direction switching for NC/NO actuators
- For connecting up to 18 actuators
- Cable guidance, standard-compliant cord grip and screwless terminal connections
- Easy, intuitive wiring and installation

Technical data

Power supply		
	Power supply 230 V~	±10%, 50...60 Hz
	Power supply 24 V~	±20%, 50...60 Hz
	Distributor fuse 24 V	T2A
	Distributor fuse 230 V	T4AH
Parameters		
	Circuits/zones	6 or 10
	Time channels/reduction	2
Ambient conditions		
	Admissible ambient temperature	0...50 °C
	Admissible storage temperature	-20...70 °C
	Admissible ambient humidity	< 80% rh
Inputs/outputs		
Outputs	Number of actuators	6-channel: Max. 15 10-channel: Max 18.
	Pump connection	Max. 6 (2) A
	Boiler connection	Max. 6 (2) A
Inputs	Decrease	Potential-free contact input
	Heating/cooling	Potential-free contact input
	TB or dew point	Potential-free NC contact
Construction		
	Housing material	Flame-retardant ABS plastic, black RAL9005
	Cover	Transparent grey plastic
	Connection terminals	Automatic, max. 1.5 mm ²
	Fitting	Mounted on wall or DIN rail
Connection terminals / cable		
	Connection terminals	Terminals with spring technology for 0.2 to 1.5 mm ² vertical cable entry



Power cable	Solid: NYM-J/NYM-O (max. 5 × 1.5 mm ²) Flexible: H03V2V2H2-F / H05V2V2H2-F
Cord grip	Integrated in housing

Standards and directives

Type of protection	IP 20 (EN 60529)
Protection class 24 V	II (EN 60730)
Protection class 230 V	III (EN 60730)
EMC Directive 2004/108/EC	EN 61000-6-1/EN 61000-6-2 EN 61000-6-3/ EN 61000-6-4
EMC Directive 2006/95/EC	EN 60730-1

Overview of types

Type	Nominal voltage	Properties	Kanäle	Weight
FXV3006F001	24V~ / 230V~	Heating, with decrease	6	482 g
FXV3110F001	230V~	Heating/cooling, with decrease and pump control	10	515 g
FXV3110F002	24V~	Heating/cooling, with decrease and pump control	10	515 g
FXV3210F001	230V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	550 g
FXV3210F002	24V~	Heating/cooling, with decrease, pump logic, boiler control and LED indicator	10	534 g

Accessories

Type	Description
0450573001	Transformer 230 / 24 V, 42 VA

Description of operation

The electric distributor is installed in the cabinet of the underfloor-heating distributor and serves as a distributor for the power supply, for the individual positioning signals and for a shared time programme (max. 2 channels). The distributor forwards the room controller command and the decrease signal to the thermal actuators.

Terminals A and B serve as time channels for decreasing the set temperature. The time programme can be defined either using a TRA421 or via an external timer. The corresponding connection can be used to reduce all the other zones depending on the time.

A pump can be activated directly via the two terminals provided. The pump logic is used to activate the pump according to requirements. The pump starts operating as soon as an actuator is active. So if none of the connected actuators are activated (i.e., the valves are closed), the pump is switched off. With the FXV3210 version, the pump logic can be set with a time delay. The factory setting for the lead time is fixed at 2 minutes. The factory setting for the follow-on time is 2 minutes and can be adjusted to 7 minutes, 12 minutes or 17 minutes using the DIP switch.

A temperature limiter can be connected via the two TB terminals.

FXV3110 version: The thermal actuators are switched off when the water temperature is too high or the dew point has been reached. The pump continues running.

FXV3210 version: The pump (and the water circuit), the boiler and the thermal actuators are switched off immediately when the water temperature is too high or the dew point has been reached.

An EGH102 dew point monitor (with 24 V only) can be connected as an alternative to the temperature limiter or in addition to it. It uses condensation in cooling mode. As soon as the dew point is reached, the pump and the thermal actuators are switched off. If no device is connected to these terminals, the existing jumper must be left where it is, as otherwise the pump logic will not work and the outputs of the thermal actuators will be interrupted.

If a temperature limiter and a dew point monitor are required, they must be connected in series.

Pump protection function (on FXV3210)

If the pump is not actuated by a heating or cooling requirement for 14 days, it is automatically activated for 10 minutes. The boiler relay remains inactive.

Boiler relay output (on FXV3210)

If there is a heat requirement from a connected room thermostat on one of the 10 channels, the boiler relay is activated with a delay of 2 minutes (factory setting). As soon as there is no longer a heat requirement on any of the 10 channels, the boiler relay is switched off again after a follow-on delay of 2 minutes. The boiler relay is always activated at the same time as the pump relay and uses the DIP switch settings of 2, 7, 12 or 17 minutes.

The boiler relay is not activated during the pump protection function.

Valve protection function (on FXV3210)

The valve protection function is always active and is activated for 10 minutes every 14 days. The actuator is activated and opens the valve. This is a static function that takes place independently of the actual activation of the actuators. The pump relay and the boiler relay are not activated during the valve protection function.

Switching the pump control direction to normally open (on FXV3210)

You can use the coding switch to change the pump control direction from normally closed (NC) to normally open (NO). To ensure this function, room thermostats with direction switching must be used, e.g. TSO or TRA. In this case, the valves on the hydraulic distributor are open when the thermal actuator is not energised. To ensure that the pump logic functions, jumpers must be attached between L/L1 and the thermal actuator output (symbol →) on the channels that are not used.

Overview of functions for each type

Function	FXV3006F001	FXV3110F001	FXV3110F002	FXV3210F001	FXV3210F002
230 V	✓	✓		✓	
24 V	✓		✓		✓
Number of channels	6	10	10	10	10
Heating	✓			✓	✓
Heating/cooling		✓	✓	✓	✓
Set-back in 2 zones	✓	✓	✓		
Pump control		✓	✓	✓	✓
Pump logic with delay				✓	✓
Heating/cooling input		✓	✓	✓	✓
TB or rH% input		✓	✓	✓	✓
Boiler control output				✓	✓
NC/NO switching				✓	✓
LED indicator				✓	✓
Pump protection function				✓	✓
Valve protection function				✓	✓

LED indicator on type FXV3210F002

LED	Description
Power LED (green):	When the power is connected, the LED lights up continuously. When the valve protection function is active, the Power LED slowly flashes once per second. The channel LEDs light up continuously.
Red LED:	If the control distributor is energised and the fuse is defective or not installed, the red LED lights up continuously.
C/O LED (blue):	When the CO input is closed, the LED lights up continuously.
Pump/boiler LED (green):	The LED is activated at the same time as the pump/boiler relay. When the TB/%H input is open (temperature limit/dew point reached), the pump LED flashes rapidly 8 times per second.
Channel LED (green):	As soon as the output is active, the corresponding channel LED lights up continuously.

Number of connection terminals for thermal actuators

Type	Chan- nel 1	Chan- nel 2	Chan- nel 3	Chan- nel 4	Chan- nel 5	Chan- nel 6	Chan- nel 7	Chan- nel 8	Chan- nel 9	Channel 10
FXV3006	5	0	2	0	1	1	0	2	0	4
FXV3110	5	2	2	1	1	1	1	2	2	4
FXV3210	5	2	2	1	1	1	1	2	2	4

Information on the number of thermal actuators

Depending on the version, there are up to 21 connection terminals. It is possible to connect from 15 up to a maximum of 18 thermal actuators.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the "Description of operation" section. All related product documents must also be adhered to. Modifying or converting the product is not admissible.

Engineering and fitting notes

Outdoor installation:

The devices are not designed for use outdoors, and are only intended for dry, enclosed indoor rooms.

Cord grip

Feed the cable through the cord grip into the housing. Make sure the cable jacket is not damaged.

Standards and directives

The electrical distributor is tested to standards – the necessary EU standards are taken into account.

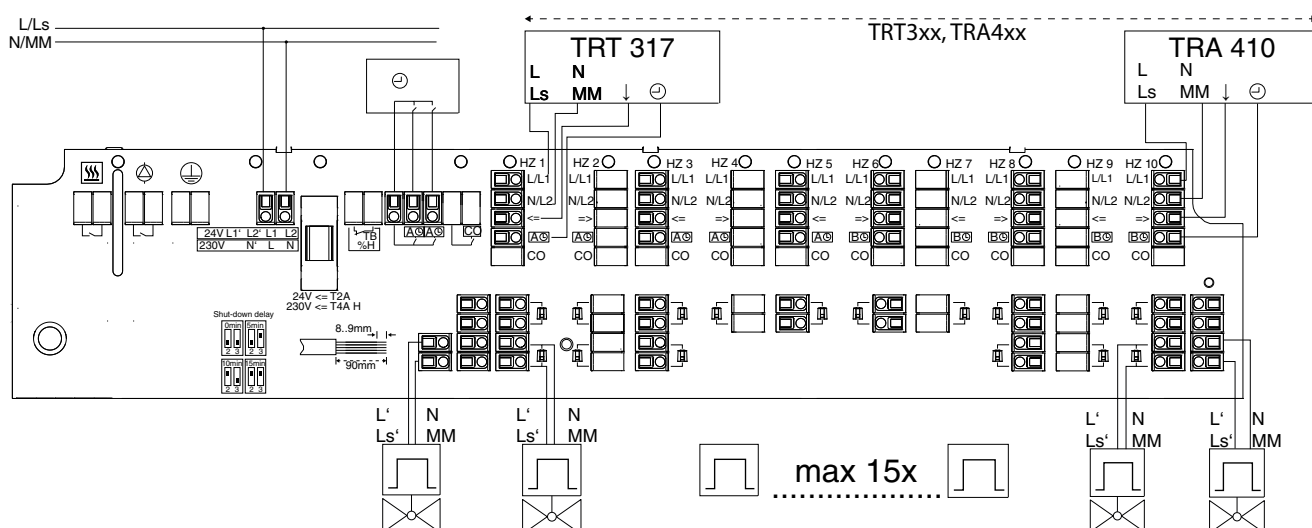
Disposal

Standards and directives

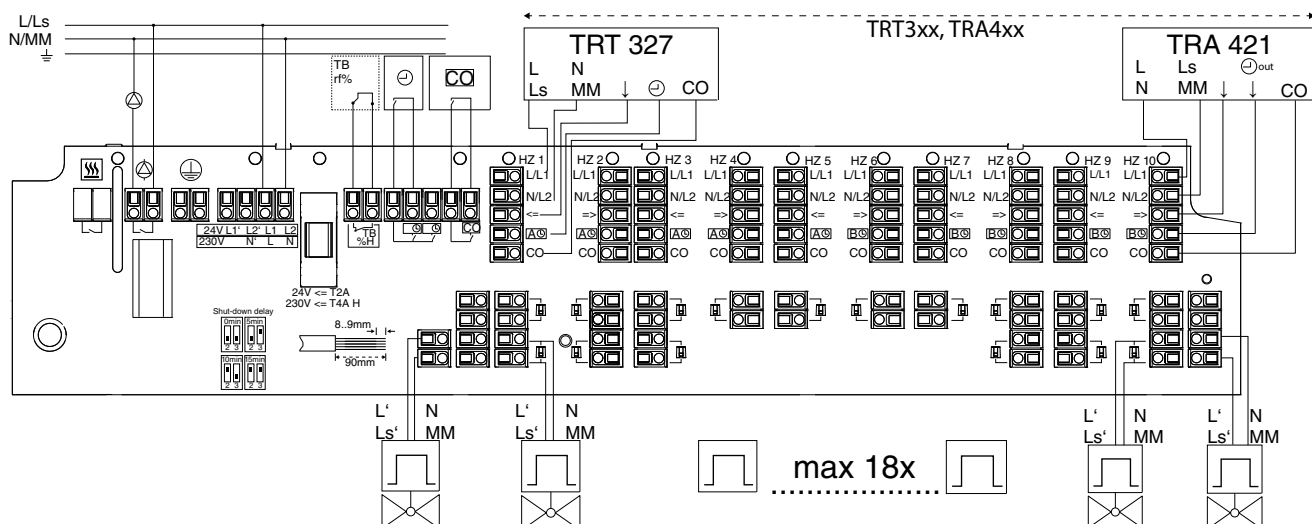
The local, currently valid laws must be observed when disposing of the device. You will find more information on the materials and substances in the Declaration on materials and the environment for this product.

Connection diagram

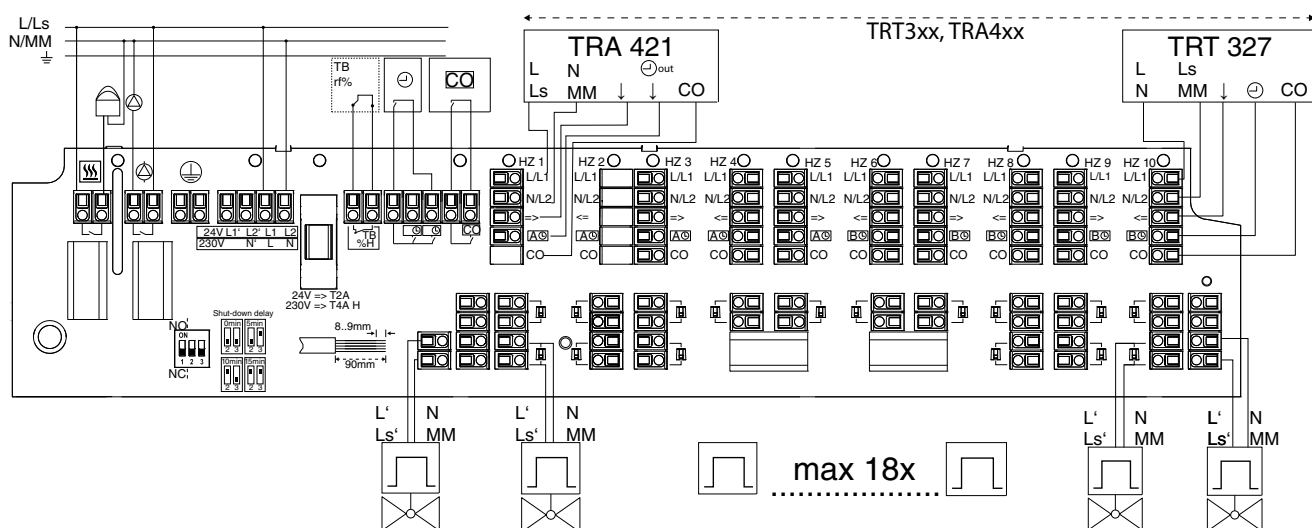
FXV 3006



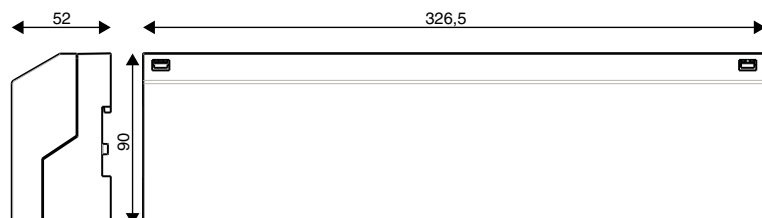
FXV 3110



FXV 3210



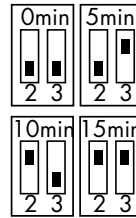
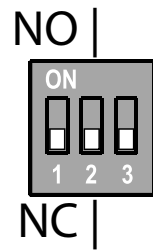
Dimension drawing



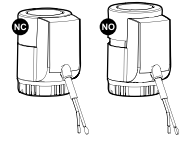
FXV 3210 coding switch

NC/NO switching

Follow-on time for pump



Switch 1 = ON NO
Switch 1 = OFF NC



Switch 2	Switch 2	Time	
OFF	OFF	2 min	
OFF	ON	7 min	
ON	OFF	12 min	
ON	ON	17 min	→...t