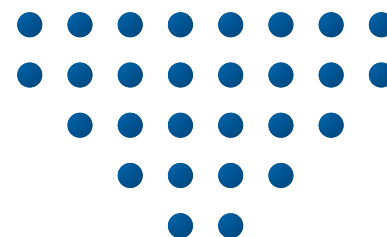
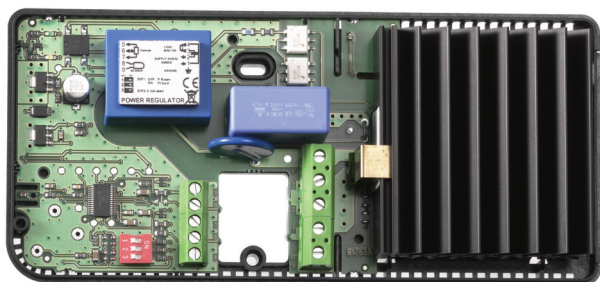


Regulator

EFH



HVAC CONTROLS AND POWER

Power Controller for DIN Rail Mounting

EFH is a series of power controllers designed to control temperature via electric heating batteries in ventilation systems, electric radiators and electric underfloor heating systems.

EFH is particularly suitable for building in and is typically installed in an electrical panel or direct in the ventilation system heating battery control unit.

EFH is designed to control room temperature or the ventilation supply air temperature. The setpoint can be set remotely, allowing users to adjust the temperature for optimum comfort.

With EFH, our customers receive the perfect combination of exceptional quality and accurate control.

EFH FUNCTIONS

Room temperature control

If an external room temperature sensor is installed, or a temperature sensor fitted in the ventilation system extraction duct, EFH can be used to control room temperature via the built-in P-controller.

Supply air temperature control

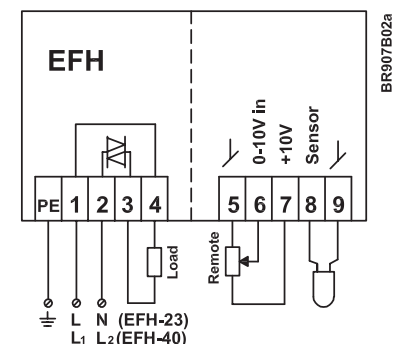
If an external temperature sensor is fitted in the supply air duct, EFH can provide PI-control of supply air temperature. Conversion from room temperature control to supply air temperature control is extremely easy and simply requires that a single DIP switch setting be changed.

Remote setpoint setting

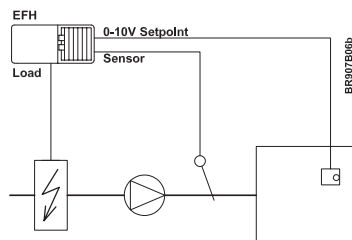
The temperature setpoint is set by means of an external potentiometer or a 0-10 V signal. A wall-mounted temperature sensor with built-in potentiometer is available as an accessory, providing a simple, elegant solution.

Galvanically separated control circuit

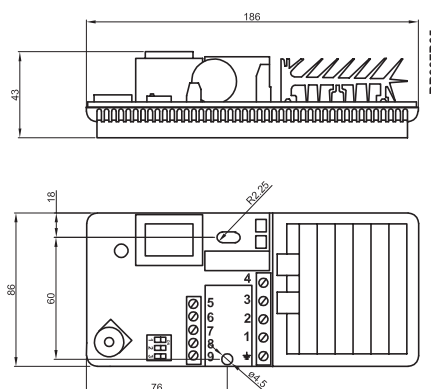
The EFH control circuit is galvanically separated from the mains supply. Consequently, neither the external temperature sensor nor the potentiometer need be double insulated or installed as if they were mains carrying.



Connections



Application example



Dimensions

EFH FUNCTIONS

Internal temperature protection

If EFH is overloaded, output is automatically reduced to prevent controller temperature from becoming excessive. Soft start without overheating cut-outs is thus ensured, even when room temperature is extremely low.

No electrical interference

EFH causes no electrical interference as the electric heat source is always activated during mains voltage zero crossing. This provides the additional benefit of allowing the supply cable to be dimensioned with a very low installation factor.

TECHNICAL DATA

Supply voltage	EFH-23: 230 V AC +/-10% 50 Hz EFH-40: 400 V AC +/-10% 50 Hz
Power output	EFH-23: Max. 3,6 kW (16 A) EFH-40: Max. 6,4 kW (16 A)
Min. power loading	600 W
Temperature range	+10 / +30 °C
External sensor	NTC (ETF-xx99)
External setpoint	0-10 V
Insulation voltage	2500 V RMS
P-controller	P-bånd 1 K
PI-controller	P-bånd 20 K I time 8 min.
Triac period	42 sec @ 50 Hz
Load type	Ohmic
Emission of heat	1.3 W/A
Ambient temperature	-10 / +40 °C (operation) -50 / +70 °C (storage)
Power consumption	2 VA
Enclosure	IP20
Dimensions (W/D/H)	186 x 43 x 86 mm
Weight	360 g

CE MARKNING

EMC DIRECTIVE	LOW-VOLTAGE DIRECTIVE
EN 61000-6-2 EN 61000-6-3	EN 60730-2-9

INSTALLATION

EFH installation

EFH can be mounted direct on a DIN rail if, for example, the controller is to be installed in an electrical panel. Alternatively, EFH can be screwed to a flat surface within a suitable enclosure. Irrespective of where the controller is mounted, the enclosure must have a suitable protection rating.

Control signal cable installation

External sensor and control signal cables may be up to 50 m in length. Such cables should not be run parallel to mains carrying cables as voltage signals may be produced that can interfere with controller function.

PRODUCT PROGRAMME

TYPE	PRODUCT
EFH-23	Power controller 1x16 A, 230 V / 3,6 kW
EFH-40	Power controller 1x16 A, 400 V / 6,4 kW

ACCESSORIES	
ETFVP-999	Room sensor with potentiometer, white, IP20
ETF-944/99-H	Room sensor for wall mounting, white, IP20
ETF-744/99	Room sensor, waterproof, IP54
ETF-1144/99	Duct sensor Ø6,5 mm, L200 mm, flange mounting
EFT-144/99A	Floor sensor