

EM-HB1 extension


HIO electronics module

Function extension for connection of an external heat generator


EM-HB1 extension




Safety instructions

-  Please follow these safety instructions closely to prevent accidents and material losses.

Safety instructions explained

-  **Danger**
This symbol warns against the risk of injury.

Note
Details identified by the word "Note" contain additional information.

-  **Please note**
This symbol warns against the risk of material losses and environmental pollution.

Target group

These instructions are exclusively intended for qualified contractors.

- Work on gas installations must only be carried out by a registered gas fitter.
- Work on electrical equipment must only be carried out by a qualified electrician.
- The system must be commissioned by the system installer or a qualified person authorised by the installer.

Regulations to be observed

- National installation regulations
- Statutory regulations for the prevention of accidents
- Statutory regulations for environmental protection
- Codes of practice of the relevant trade associations
- Relevant country-specific safety regulations

Safety instructions for working on the system

Working on the system

- Where gas is used as the fuel, close the main gas shut-off valve and safeguard it against unintentional reopening.
- Isolate the system from the power supply, e.g. by removing the separate fuse or by means of a mains isolator, and check that it is no longer 'live'.
- Safeguard the system against reconnection.
- Wear suitable personal protective equipment when carrying out any work.

Safety instructions (cont.)**Danger**

Hot surfaces and fluids can result in burns or scalding.

- Before maintenance and service work, switch OFF the appliance and let it cool down.
- Never touch hot surfaces on the boiler, burner, flue system or pipe-work.

**Please note**

Electronic assemblies can be damaged by electrostatic discharge. Prior to commencing work, touch earthed objects such as heating or water pipes to discharge static loads.

Repair work**Please note**


Repairing components that fulfil a safety function can compromise the safe operation of the system. Replace faulty components only with genuine Viessmann spare parts.

Auxiliary components, spare and wearing parts**Please note**


Spare and wearing parts that have not been tested together with the system can compromise its function. Installing non-authorised components and making non-approved modifications or conversions can compromise safety and may invalidate our warranty. For replacements, use only original spare parts supplied or approved by Viessmann.

Safety instructions for operating the system


If you smell gas


-  **Danger**
Escaping gas can lead to explosions which may result in serious injury.
- Do not smoke. Prevent naked flames and sparks. Never switch lights or electrical appliances on or off.
 - Close the gas shut-off valve.
 - Open windows and doors.
 - Evacuate any people from the danger zone.
 - Notify your gas or electricity supply utility from outside the building.
 - Have the power supply to the building shut off from a safe place (outside the building).

If you smell flue gas


-  **Danger**
Flue gas can lead to life threatening poisoning.
- Shut down the heating system.
 - Ventilate the installation site.
 - Close doors to living spaces to prevent flue gases from spreading.

What to do if water escapes from the appliance

-  **Danger**
When water escapes from the appliance there is a risk of electrocution.
Switch off the heating system at the external isolator (e.g. fuse box, domestic power distribution).


-  **Danger**
If water escapes from the appliance, there is a risk of scalding. Never touch hot heating water.

Condensate

-  **Danger**
Contact with condensate can be harmful to health.
Never let condensate touch your skin or eyes and do not swallow it.

Flue systems and combustion air

Ensure that flue systems are clear and cannot be sealed, for instance due to accumulation of condensate or other external causes.
Ensure an adequate supply of combustion air.
Instruct system users that subsequent modifications to the building characteristics are not permissible (e.g. cable/pipe-work routing, cladding or partitions).

-  **Danger**
Leaking or blocked flue systems, or an inadequate supply of combustion air can cause life threatening poisoning from carbon monoxide in the flue gas.
Ensure the flue system is in good working order. Vents for supplying combustion air must be non-closable.

Extractors

Operating appliances that extract air to the outside (extractor hoods, extractors, air conditioning units, central vacuum cleaning systems, etc.) can create negative pressure. If the boiler is operated at the same time, this can lead to a reverse flow of flue gas.

Safety instructions (cont.)**Danger**

The simultaneous operation of the boiler and appliances that extract air to the outside can result in life threatening poisoning due to reverse flow of the flue gas. Fit an interlock circuit or take suitable steps to ensure an adequate supply of combustion air.










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Disposal of packaging

Please dispose of packaging waste in line with statutory regulations.

Symbols

Symbol	Meaning
	Reference to other document containing further information
	Step in a diagram: The numbers correspond to the order in which the steps are carried out.
	Warning of material losses and environmental pollution
	Live electrical area
	Pay particular attention.
	<ul style="list-style-type: none"> ▪ Component must audibly click into place. or ▪ Acoustic signal
	<ul style="list-style-type: none"> ▪ Fit new component. or ▪ In conjunction with a tool: Clean the surface.
	Dispose of component correctly.
	Dispose of component at a suitable collection point. Do not dispose of component in domestic waste.

Intended use

The appliance is only intended to be installed and operated in sealed unvented heating systems that comply with EN 12828, with due attention paid to the associated installation, service and operating instructions as well as the details in the datasheet. It is only designed for the heating of heating water.

Commercial or industrial usage for a purpose other than the heating up of heating water shall be deemed inappropriate.

Intended use presupposes that a fixed installation in conjunction with permissible components designed for this purpose has been carried out. Every other use will be deemed to be inappropriate. Any resulting losses are excluded from the manufacturer's liability.

Any usage beyond this must be approved by the manufacturer for the individual case.

Intended use also includes the adherence to maintenance and inspection intervals.

Product information

Function extension EM-HB1 enables an external heat generator to be connected electronically to the heat pump. This means that the control methods are also available on the heat pump control unit.

System examples

Available system examples: See www.viessmann-schemes.com.

Spare parts lists

Information about spare parts can be found at www.viessmann.com/etapp or in the Viessmann spare part app.



Wall mounting

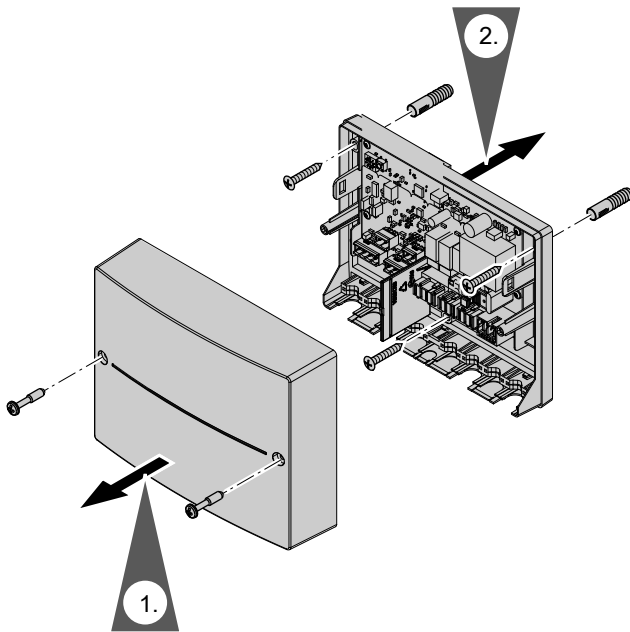


Fig. 1

Overview of electrical connections

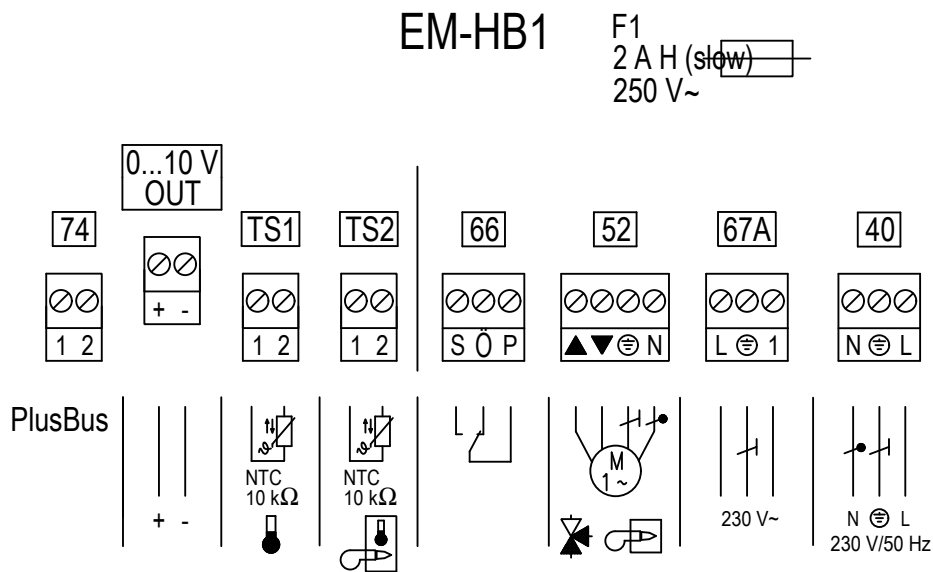



Fig. 2

230 V~ connections


Plug	Component	Explanation
40	Power supply	Power supply via the heat pump  Heat pump installation and service instructions
52	Mixer motor, system flow	

Overview of electrical connections (cont.)

230 V~ connections

Plug	Component	Explanation
66	Enable external heat generators	<p>Switching contact as N/O contact: P — S is closed when there is a demand.</p> <p>Note</p> <ul style="list-style-type: none"> ▪ Never route extra low voltage (ELV) via this contact. For that, a relay must be fitted on site. ▪ The boiler temperature sensor in the external heat generator (plug TS2) must capture the boiler water temperature of the external heat generator. <ul style="list-style-type: none"> ▪ Switching voltage: 230 V~ ▪ Switching current: 0.01 to 1 A <p>Recommended connecting cable:</p> <ul style="list-style-type: none"> ▪ 3 x 1.5 mm² ▪ Max. cable length: 25 m
67A	Fault message input of external heat generator	<ul style="list-style-type: none"> ▪ Voltage: 230 V~ ▪ Max. switching current: 2 A <p>Recommended connecting cable:</p> <ul style="list-style-type: none"> ▪ 3 x 0.75 mm² with max. cable length 25 m or ▪ 3 x 1.5 mm² with max. cable length 50 m

Extra low voltage (ELV) connections < 42 V

Plug	Component	Explanation
74	PlusBus	<p>PlusBus connection to the heat pump</p> <p> Heat pump installation and service instructions</p>
0 ... 10 V	Control of external heat generator	<p>0 to 10 V output for control voltage</p> <p>Recommended connecting cable:</p> <ul style="list-style-type: none"> ▪ 2 x 0.75 mm² ▪ Max. cable length: 50 m
TS1	System flow temperature sensor	<p>Sensor type: NTC 10 kΩ Cores are interchangeable</p> <p>Recommended connecting cable:</p> <ul style="list-style-type: none"> ▪ 2 x 1.5 mm² ▪ Max. cable length: 35 m
TS2	Boiler temperature sensor, external heat generator Or Temperature sensor, low loss header	<p>Sensor type: NTC 10 kΩ Cores are interchangeable</p> <p>Recommended connecting cable:</p> <ul style="list-style-type: none"> ▪ 2 x 1.5 mm² ▪ Max. cable length: 35 m

Overview of electrical connections (cont.)**Please note**

Electronic assemblies can be damaged by electrostatic discharge.
Prior to commencing any work, touch earthed objects such as heating or water pipes to discharge any static.

Note

*Apply strain relief to on-site cables.
Secure individual wires directly to each plug using cable ties.
Seal any unnecessary apertures with cable grommets (not cut open).*

Connection and wiring diagram

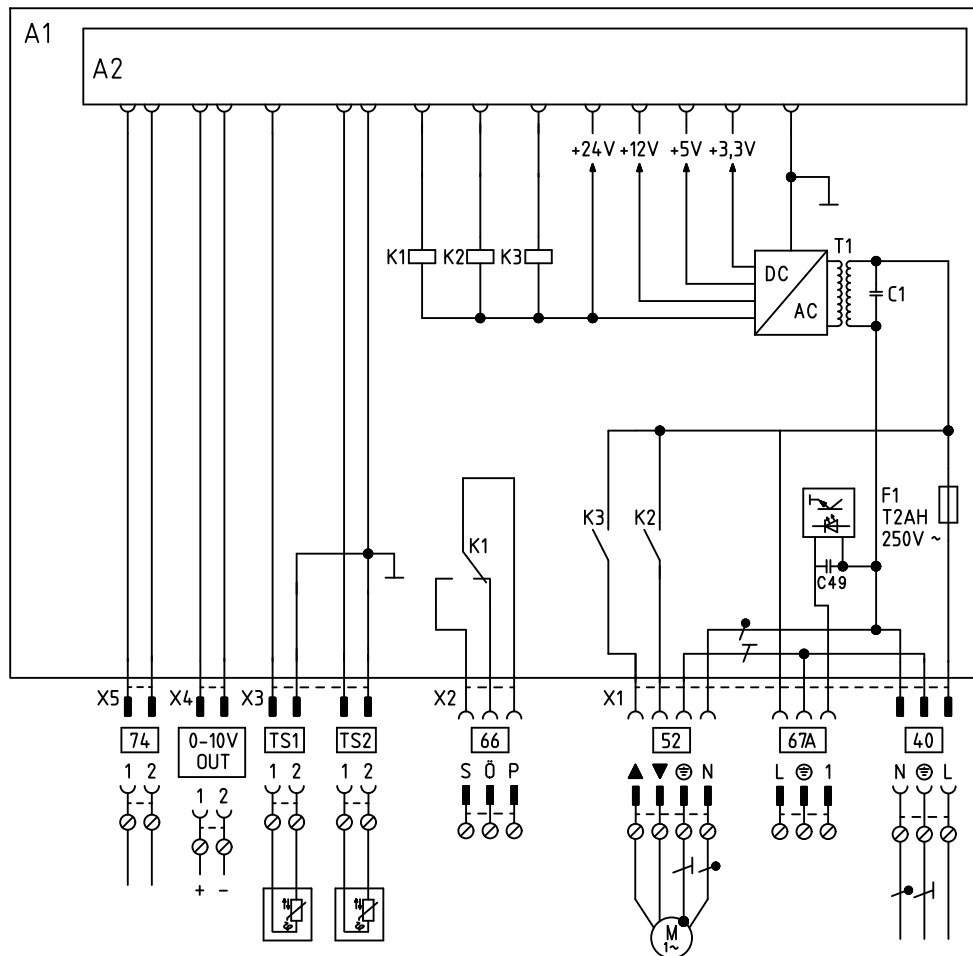


Fig. 3

- 0-10V OUT 0 to 10 V output for actuating the external heat generator
- 40 Power supply
- 52 Mixer motor, system flow
- 66 Enable external heat generators
- 67A Fault message input of external heat generator
- 74 PlusBus
- F1 Fuse 2 A H (slow)
- TS1 System flow temperature sensor
- TS2 Boiler temperature sensor, external heat generator

Specification

Rated voltage	230 V~
Rated frequency	50 Hz
Rated current	2 A
Power consumption – electronics	2 W
Current drawn	9 mA
Permissible ambient temperature	
▪ Operation	0 to +40 °C
▪ Storage and transport	-20 to +65 °C
Rated relay output breaking capacity	
▪ Plug 52	1 A, 230 V~
▪ Plug 66 (floating)	1 A, 230 V~

Temperature sensors

Sensor type	NTC 10 kΩ
IP rating	IP 53 to EN 60529; ensure through design/installation.
Permissible ambient temperature	
▪ Operation	0 to +120 °C
▪ Storage and transport	-20 °C to +70 °C

Curve

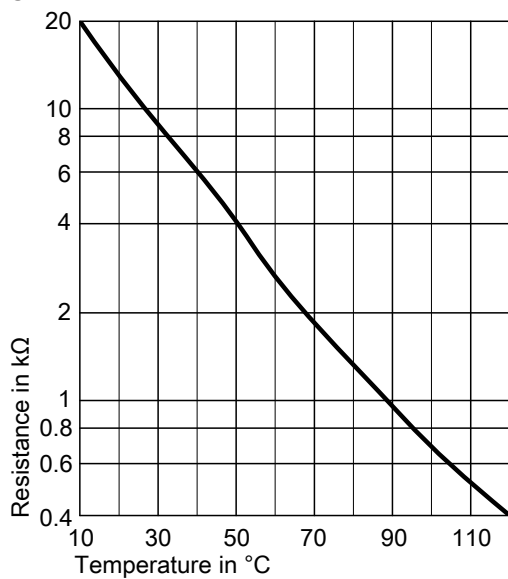


Fig. 4

Certificates

Declaration of conformity

We, Viessmann Climate Solutions SE, D-35108 Allendorf, declare as sole responsible body that the named product complies with the European directives and supplementary national requirements in terms of its design and operational characteristics.

Using the serial number, the Declaration of Conformity can be found on the following website:
www.viessmann.co.uk/eu-conformity

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