

Operating instructions



Base module

Product family CosiTherm®

Type: BM

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1 About these operating instructions

These operating instructions describe the base module "BM" (also referred to as "product" in these operating instructions). These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



DANGER indicates a hazardous situation, which, if not avoided, will result in death or serious injury.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:



This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.



This symbol alerts to hazardous electrical voltage. If this symbol is used in a safety message, there is a hazard of electric shock.

2.2 Intended use

The base module is a part of CosiTherm®. This product may only be used to control the room temperature (heat/cool) of individual rooms with underfloor heating system.

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- Hazardous area (EX)
 - If the product is operated in hazardous areas, sparks may cause deflagrations, fires or explosions
- In conjunction with products which are used for health-saving or life-saving purposes or whose operation may incur hazards to humans, animals or property.

2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment.

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

INCORRECT HANDLING

- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

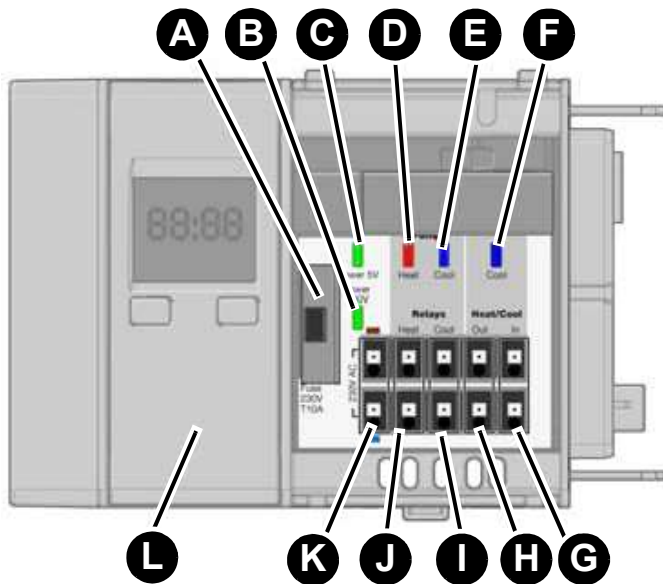
Failure to follow these instructions can result in equipment damage.

4 Product description

4.1 Overview of the individual CosiTherm® components

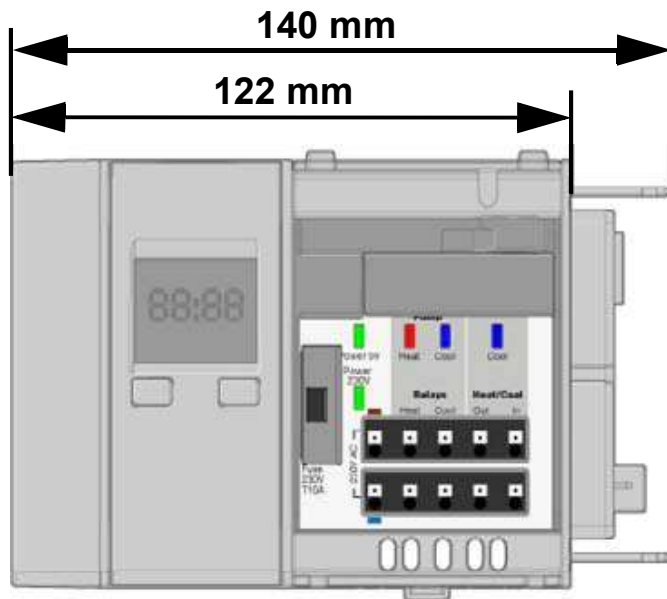
Component	Versions	Explanation
Base module	BM	-
Timer module	UM	-
Wireless module for timer module	FM	With internal antenna
	FMA	With external antenna
Room temperature sensor	D	Wire
	FT	Wireless, temperature
	FTF	Wireless, temperature and humidity
Controller module	D2	Wired with 2 control circuits
	D6	Wired with 6 control circuits
	F2	Wireless with 2 control circuits
	F6	Wireless with 6 control circuits
	F2A	With external antenna and 2 control circuits
	F6A	With external antenna and 6 control circuits

4.2 Overview



- A. Fuse compartment
- B. Operation mains voltage (LED green)
- C. Operation 5 V (LED green)
- D. Pump Heating (LED red)
- E. Pump Cooling (LED blue)
- F. Cooling (LED blue)
- G. Input switchover Heating/ Cooling
- H. Cascading output Heating/Cooling
- I. Relay contact pump Cooling
- J. Relay contact pump Heating
- K. Mains voltage 230 V AC
- L. Timer module (optional)

4.3 Dimensions



4.4 Application example(s)

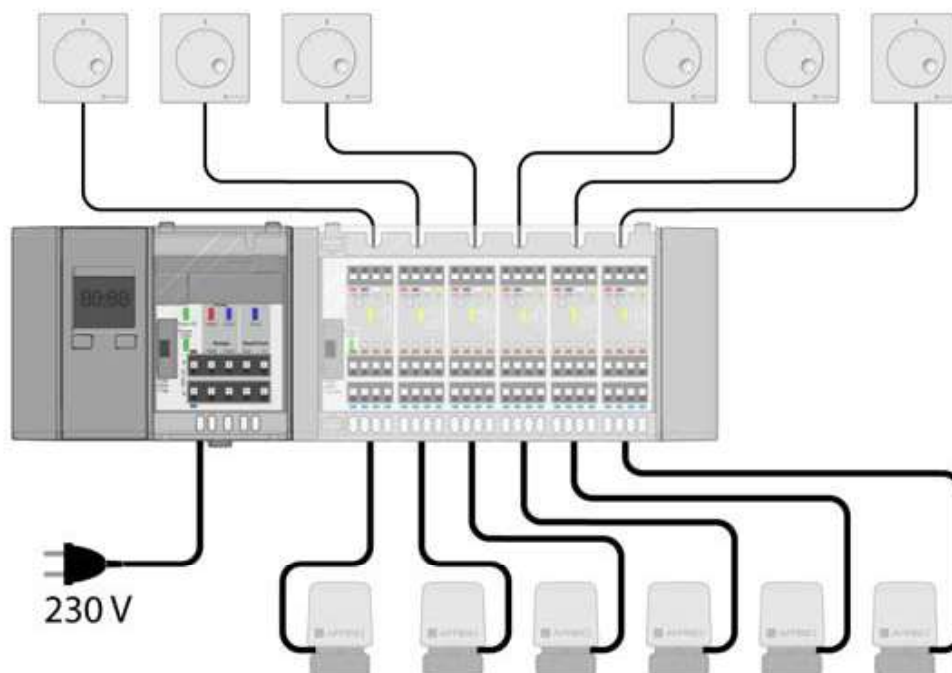


Figure 1: Base module, controller module, timer module, room temperature sensors D and actuators

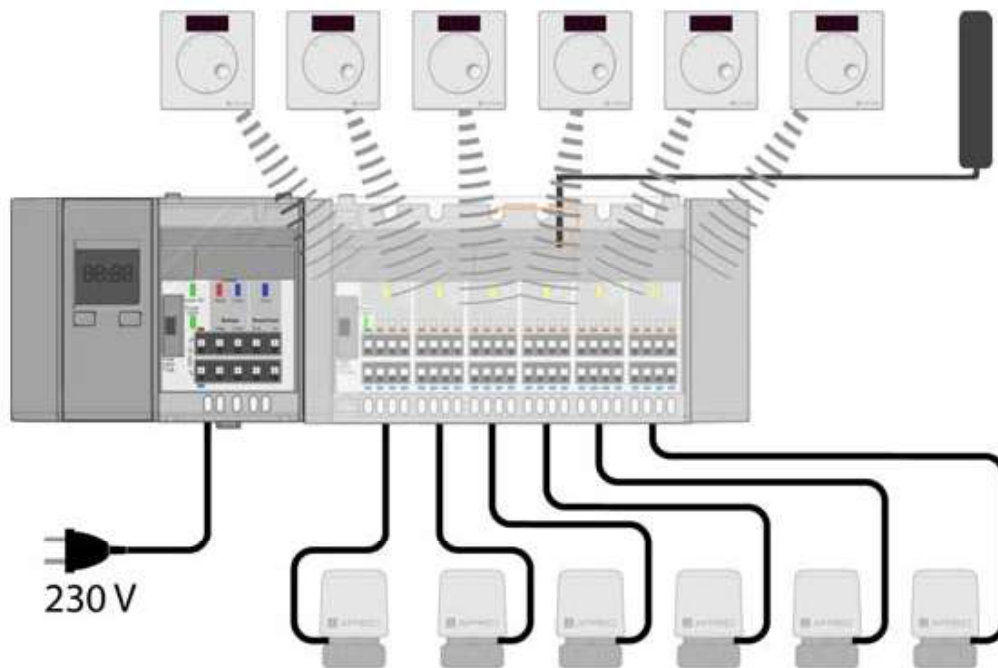


Figure 2: Base module, controller module F , timer module, room temperature sensors F, external antenna and actuators



Figure 3: Base module with wireless module for timer module and external antenna

4.5 Function

CosiTherm® is a single room temperature controller used to control the temperature in rooms with underfloor heating system (heat/cool). The base module is the central component of CosiTherm®. The controller modules can be connected to the product.

The product supplies the room temperature sensors D with 5 V DC and the thermal actuators with 230 V AC via the controller modules.

The control circuit pumps can be controlled via the product. In conjunction with controller modules F, only the thermal actuators are supplied with 230 V AC.

4.6 Approvals, conformities, certifications

The product complies with:

- EMC Directive (2014/30/EU)
- Low Voltage Directive (2014/35/EU)
- Radio Equipment Directive, RED (2014/53/EU)
- RoHS-Richtlinie (2011/65/EU)

4.7 Technical specifications

Parameter	Value
General specifications	
Dimensions housing (W x H x D)	122 x 92 x 45 mm
Weight	215 g
Housing material	PC/ABS
Colour	Light grey, similar to RAL 7047
Operating temperature range	
Ambient	-20 ... 60 °C
Storage	-20 ... 60 °C
Max. humidity	Non-condensing

Parameter	Value
Supply voltage	
Nominal voltage	AC 230 V, 50 Hz to 60 Hz
Nominal power (base module only)	1 VA
Mains fuse	T 10 A
Relay load	Max. 230 V, max. 2 A, power factor ≥ 0.6
Permissible cable type	H03 VV-H2-F 2 x 0.75 mm ²
The following components may be connected to one product	
Controller modules D6 (6 x)	Max. 3
Controller modules D2 (2 x)	Max. 9
Total number of control circuits	Max. 18
Total number of thermal actuators	Max. 72 *
Electrical safety	
Protection class (EN 60730-1)	II
Degree of protection (EN 60529)	IP 20

***) Note**

AFRISO recommends the use of AFRISO actuators to ensure optimum system performance. If actuators from other manufacturers are used, the following limit values must be met:

Operating voltage	AC 230 V ± 10 %, 50/60 Hz
Ma. operating current	9 mA
Max. inrush current	140 mA / 200 ms
Max. operating power	2 W
Special characteristic	Short-circuit proof, protected against overvoltage
Actuators of other manufacturers connected per control circuit	Max. 2

4.8 Information on CosiTherm® as per DIN EN 60730-1:2017-05

- CosiTherm® is an electronic control type C as per EN 60730-1.
- CosiTherm® is suitable for continuous operation.
- The type of disconnection of the actuators and pumps is micro disconnection.
- The PTI value of the insulation (PCBs) is 175.
- CosiTherm® corresponds to installation category 3.
- CosiTherm® corresponds to overvoltage category 2.
- The limit value for the SELV circuit is 5 V DC.
- The maximum permissible click rate is 1/minute.
- The test voltage for the EMC noise immunity tests is $\pm 1\text{KV}$ ($\pm 2\text{KV}$).

4.9 Information on CosiTherm® as per EN 15500:2008-12

- Type: Fixed point function
- Zone type:
- Application groups: Individual zone control equipment
- Output types: On/off actuators
- Sensor type: NTC $\pm 5\%$.
- Certified value of control accuracy: 0.6 K (0.5 K).

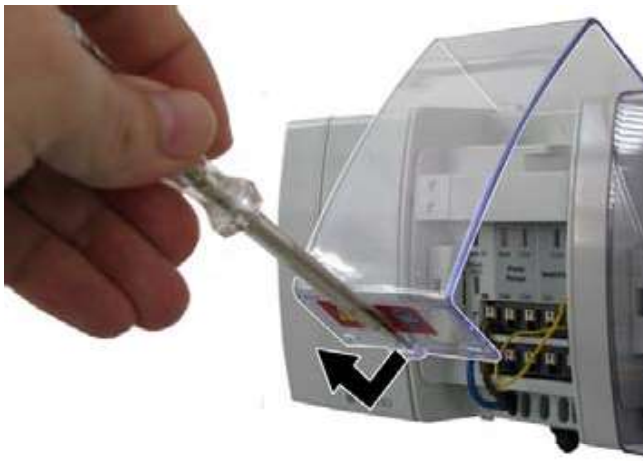
5 Mounting

5.1 Installation site

The product (CosiTherm®) must be mounted in the vicinity of the heating circuit manifold.

5.2 Mounting the product

⇒ Verify that the product is disconnected from mains.



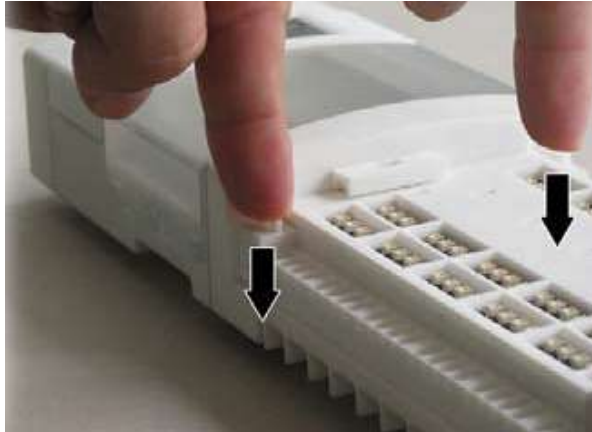
1. Open the cover using a screwdriver.



2. Pull off the end cover.

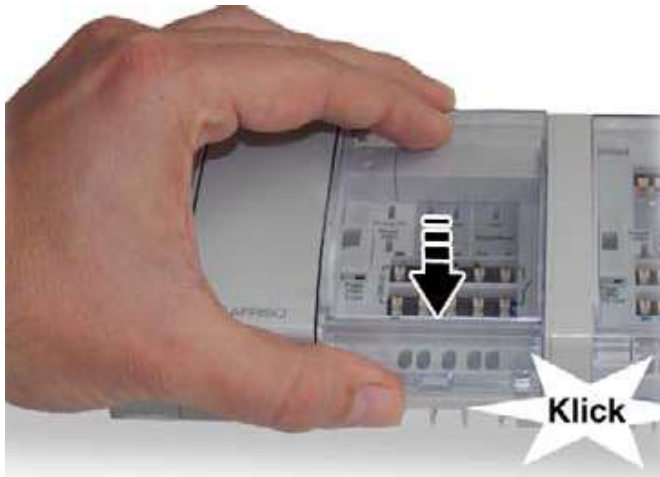
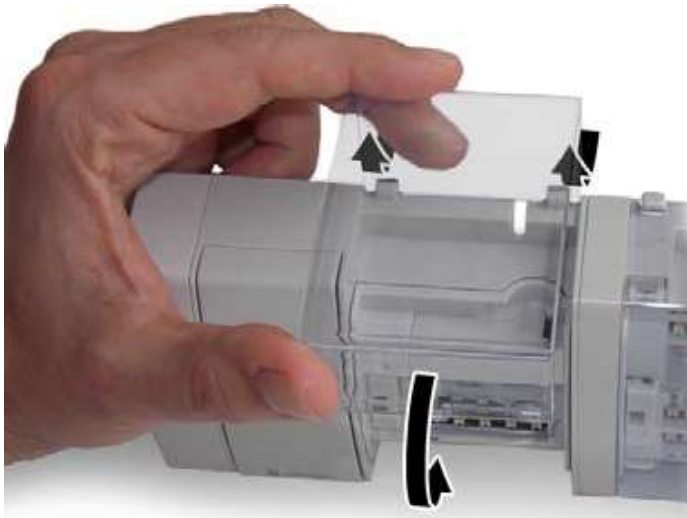


3. Connect the controller module(s) to the product module and secure with the catch.



4. Refit the end cover onto the last controller module.

5. Refit the cover and close it.



5.3 Electrical connection



DANGER

ELECTRIC SHOCK

- Verify that the degree of protection against electric shock (protection class II, double insulation) is not reduced by the type of electrical installation.

Failure to follow these instructions will result in death or serious injury.

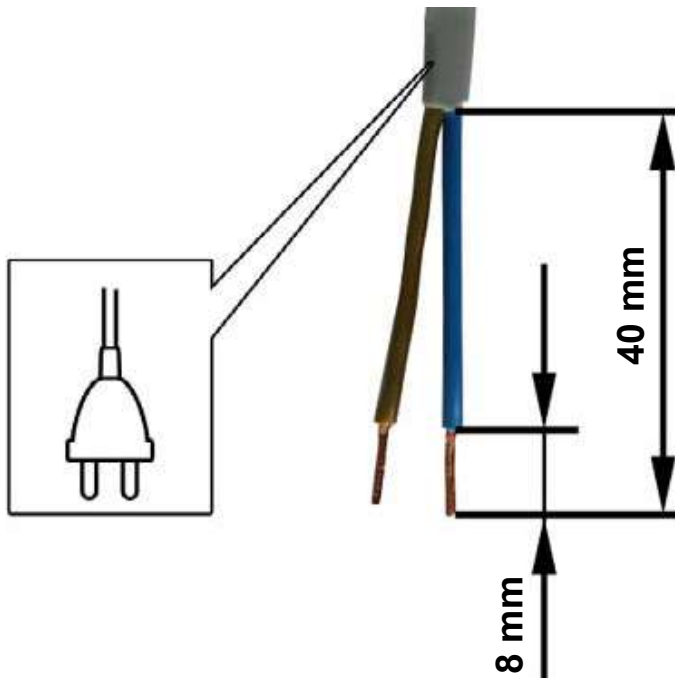


DANGER

ELECTRIC SHOCK CAUSED BY LIVE PARTS

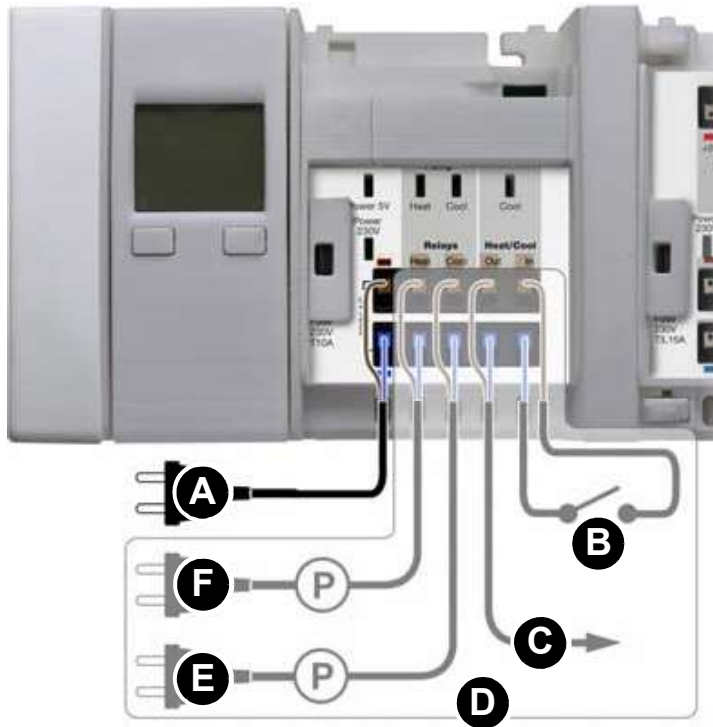
- Disconnect the mains voltage supply before performing the work and ensure that it cannot be switched on.
- Verify that no hazards can be caused by electrically conductive objects or media.

Failure to follow these instructions will result in death or serious injury.



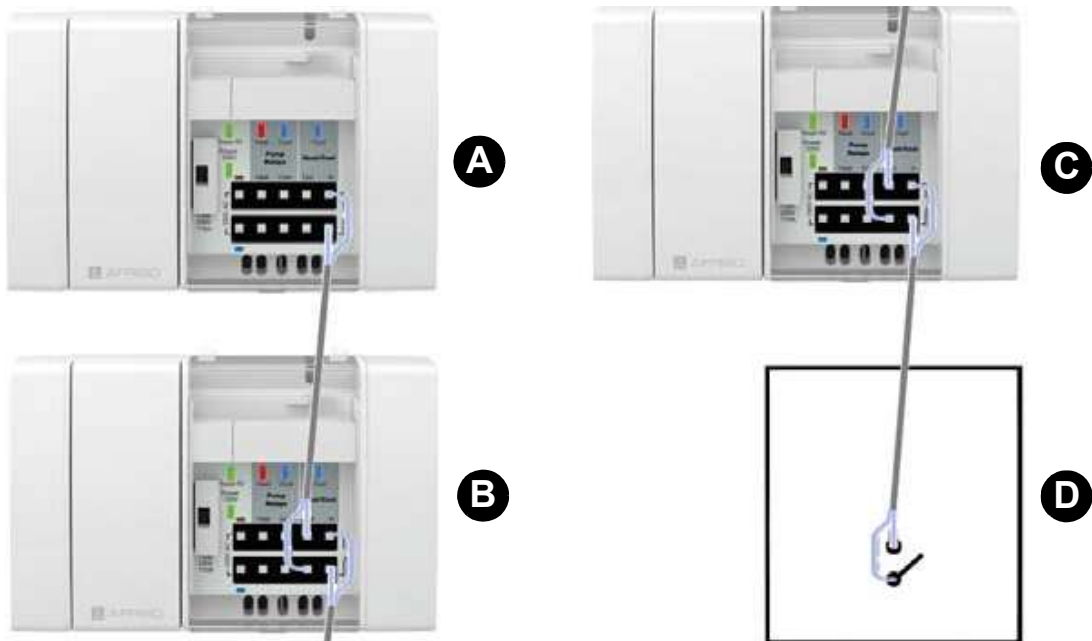
- ⇒ Verify that a connection concept has been created.
 - Verify that the correct assignment of the switching channels for the timer module has been considered.
- ⇒ Verify that all cables are disconnected from power.
 1. Strip the cables as shown.

5.3.1 Connection diagram



- A. 230 V AC supply
- B. Input
Heating/Cooling
Open: Heating
Closed: Cooling
Internal control voltage:
5 V DC
- C. Cascading output
Voltage-free relay contact
Max. 250 V AC, 3 A
Max. 30 V DC, 3 A
- D. Options
- E. Pump Cooling
max. 250 V AC, 3 A
- F. Pump Heating
max. 250 V AC, 3 A

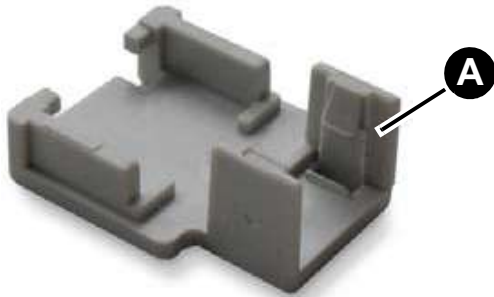
5.3.2 Connection diagram in the case of multiple products



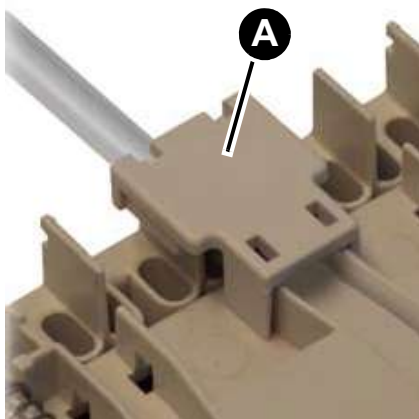
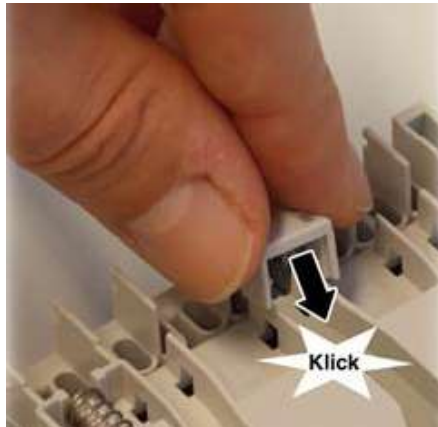
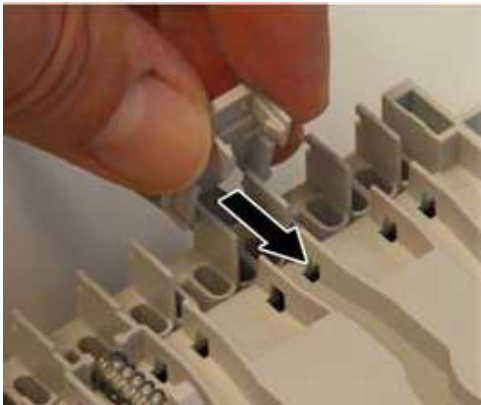
- A. Upper floor
- B. Ground floor

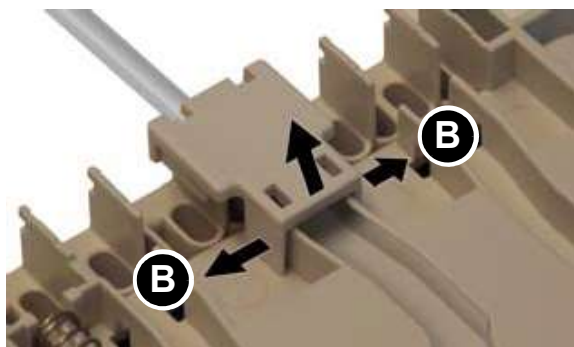
- C. Basement
- D. Heating

5.3.3 Fitting the cable clamp



1. Fix the cable at the rear of the controller module using the cable clamp (A). If room temperature sensors with a wired connection are used, first make the electrical connection of the room temperature sensors and then fit the cable clamp.





2. Repeat this procedure for all other cables.
3. It is possible to open the cable clamps. To do so, pull the two tabs (2) outwards and remove the cable clamp.

5.4 Mounting modules on a DIN rail

- ⇒ Verify that all modules (base module and controller modules) are plugged together and firmly locked.
- ⇒ Verify that all cables are connected.



1. Fit the modules (base module and controller modules) into the DIN rail with the upper hooks.
2. Push the lower end of the modules (base module and controller modules) towards the DIN rail until they snap in with a click.



5.5 Removing modules from a DIN rail



1. Slightly lift the modules (base module and controller modules) and tilt the top away from the DIN rail.

2. Remove the modules (base module and controller modules) towards the bottom.



5.6 Retrofitting a wireless module for a timer module

NOTICE

ELECTROSTATIC DISCHARGE

- Always earth yourself before touching electronic components.
- Do not touch the product to plug it in; use the anti-electrostatic film to plug the product into the slot.

Failure to follow these instructions can result in equipment damage.

⇒ Verify that the base module is disconnected from mains.



1. Press the two outer surfaces of the cover together and pull off the cover.



2. Use the anti-electrostatic film to place the wireless module for timer module straight into the slot and carefully push it into the opening provided.



3. Refit the cover until it snaps in.



4. Mount the antenna to the wireless module for timer module as shown.

5.7 Mounting an external antenna

5.7.1 Adhesive antenna



Transmission power gain: 2 dbi



1. Open/remove the cover of the cabinet.



2. Drill a hole into the inside of the cabinet using a power drill.



3. Route the cable through the drilled hole and screw the connection of the adhesive antenna to the wireless module for timer module.
4. Remove the protective film from the adhesive antenna and push the adhesive antenna onto the outer edge of the cabinet.
5. Close the cover of the cabinet.

5.7.2 Antenna angular SMA connector and coaxial cable



Transmission power gain: 3.5 dbi



1. Open/remove the cover of the cabinet.



2. Drill a hole into the cover of the cabinet using a power drill.



3. Screw one end of the coaxial cable to the wireless module for timer module.
4. Remove the nut at the other end of the coaxial cable and push the connection through the drilled hole.
5. Fit the nut from the outside.



6. Close the cover of the cabinet.
7. Screw on the antenna (angular SMA connector).

5.7.3 Magnetic foot antenna

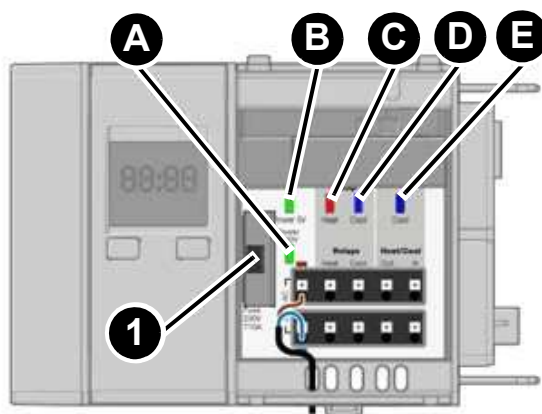


Transmission power gain: 3 dbi

1. The cable of the magnetic foot antenna can be installed on-wall or in-wall.
 - Due to the rather complex installation, this antenna is mainly recommended for major renovation projects or new buildings.

6 Operation

6.1 Overview of the LED signals



	Display	State	Explanation
A.	Operation mains voltage (LED green)	Solid lit	When 230 V AC mains voltage is applied
		Goes off	In the case of power failure If the fuse (1) trips
B.	Operation 5 V (LED green)	Solid lit	If 5 V supply is applied
		Goes off	In the case of power failure If the fuse (1) trips If the 5 V supply fails
C.	Pump Heating (LED red)	Solid lit	If at least one room temperature sensor is requesting heating energy
		Goes off	If no room temperature sensor is requesting heating energy
D.	Pump Cooling (LED blue)	Solid lit	If the controller is set to "Cooling" and if at least one room temperature sensor is requesting cooling
		Goes off	If no room temperature sensor is requesting cooling
E.	Cooling (LED blue)	Solid lit	If the controller is set to "Cooling"
		Goes off	If the controller is set to "Heating"

7 Maintenance

The product is maintenance-free.

8 Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer.

Problem	Possible reason	Repair
LED operation mains voltage not lit (green LED)	No mains voltage	Check the supply voltage
	Fuse defective	Check the fuse
LED 5 V operation not lit (green LED)	No mains voltage	Check the supply voltage
	Fuse defective	Check the fuse
	Power supply unit defective	Contact the AFRISO service hotline
Other malfunctions	-	Contact the AFRISO service hotline

8.1 Replacing the fuse

⇒ Verify that the mains voltage is disconnected and cannot be switched on.



1. Open the cover using a screwdriver.



2. Remove the fuse holder.



3. Replace the defective fuse with a fuse of the same type.



4. Insert the fuse holder into the fuse compartment.

5. Close the cover.

9 Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

Electronic components must not be disposed of together with the normal household waste.



1. Disconnect the product from mains.
2. Dismount the product (see chapter "Mounting", reverse sequence of steps).
3. Dispose of the product.

10 Returning the device

Get in touch with us before returning your product.

11 Warranty

See our terms and conditions at www.afriso.com or your purchase contract for information on warranty.

12 Spare parts and accessories


NOTICE

UNSUITABLE PARTS






- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Part no.	Figure
Base module "BM"	78112	

Spare parts and accessories

Product designation	Part no.	Figure
Timer module "UM"	78113	
Wireless module for timer module "FM"	78121	
Adhesive antenna	78175	
Magnetic foot antenna	78167	
Antenna angular SMA connector and coaxial cable	78168	

13 Information on EnOcean® wireless

13.1 Range of EnOcean® wireless

Visit www.enocean.com for further information on range planning with EnOcean®.

13.2 Additional information on EnOcean® wireless systems

Additional information on planning, installation and operation of EnOcean® wireless systems can be found at www.enocean.com.

- Wireless standard
- Wireless technology
- AN001
- AN102
- AN103




13.3 Features of the EnOcean® technology

Visit www.afriso.com for documents on EnOcean® technologies.

A variety of videos on AFRISO products can also be found on the AFRISO YouTube channel.

14 Appendix

14.1 EU Declaration of Conformity

		
Technik für Umweltschutz Messen. Regeln. Überwachen.		
<p>EU – Konformitätserklärung <i>EC-Declaration of Conformity / Déclaration CE de conformité / Declaración de conformidad CE / Declaração de conformidade CE</i></p>	 <p>Formblatt FB 27 - 03</p>	
<p>Name und Anschrift des Herstellers: <u>AFRISO-EURO-INDEX GmbH, Lindenstr. 20, 74363 Güglingen</u> <i>Manufacturer / Fabricant / Fabricante / Nome e endereço do fabricante:</i></p> <p>Erzeugnis: <u>Einzelraum-Temperaturregelung</u> <i>Product / Produit / Producto / Produto:</i></p> <p>Typenbezeichnung: <u>CosiTherm (Draht / Enocean Funk)</u> <i>Type / Type / Tipo / Tipo:</i></p> <p>Betriebsdaten: <u>230V AC</u> <i>Techn. Details:</i> <i>Caractéristiques / Características / Detalhes técnicos:</i></p> <p>Wir erklären in alleiniger Verantwortung, dass das bezeichnete Erzeugnis mit den Vorschriften folgender Europäischer Richtlinien übereinstimmt: <i>The above mentioned product meets the requirements of the following European Directives</i> <i>Le produit mentionné est conforme aux prescriptions des Directives Européennes suivantes</i> <i>El producto indicado cumple con las prescripciones de las Directivas Europeas siguientes</i> <i>O produto indicado cumpre com as prescrições das seguintes Diretivas Europeias:</i></p> <p>Elektromagnetische Verträglichkeit (2014/30/EU) <i>Directive Electromagnetic Compatibility / Directive compatibilité électromagnétique / Directiva compatibilidad electromagnética / Diretiva sobre compatibilidade eletromagnética</i> - DIN EN 61326-1:2013-07, DIN EN 55014-1:2018-08, DIN EN 55014-2:2016-01</p> <p>Niederspannungsrichtlinie (2014/35/EU) <i>Low Voltage Directive / Directive basse tension / Directiva baja tensión / Diretiva sobre baixa tensão</i> - DIN EN 60730-1:2017-05 (erfüllt auch / meets also DIN EN 60730-1 :2011)</p> <p>RoHS-Richtlinie (2011/65/EU) <i>RoHS Directive / Directive RoHS / Directiva RoHS / Diretiva RoHS</i></p> <p>Radio Equipment Directive, RED (2014/53/EU) <i>RED Directive / Directive RED / Directiva RED / Diretiva RED</i> - EN 301489-3:V1.6.1, EN 61000-3-2:2019, EN 61000-3-3:2020, - EN 300220-2:V3.1.1, EN 62479:2010</p>		
Unterzeichner: <i>Signed / Signataire / Firmante / Assinado por:</i>	<u>Dr. Späth, Geschäftsführer Technik</u> <i>Technical Director / Diretor Técnico</i>	
<u>06.10.2020</u> Datum / Date / Fecha / Data	 Unterschrift / Signature / Firma / Assinatura	
Version: 3 / Index: 0	AFRISO-EURO-INDEX GmbH D-74363 Güglingen	Seite: 1 von 1