



GEBÄUDETECHNIK  
INTELLIGENT  
GEREGELT

[www.ta.co.at](http://www.ta.co.at)

# PMG1

## PUMP/MIXER ASSEMBLY

---



Installation  
Commissioning  
Operation



# Table of contents

Manual version 1.01

<b>Safety requirements</b>	<b>4</b>
Disposal	4
<b>Function description</b>	<b>5</b>
<b>Step-by-step instructions</b>	<b>5</b>
<b>Components</b>	<b>8</b>
Mixer motor, mixer manual mode	10
Rotate thermometers (shut-off valve)	11
Pipe reducers	11
Pump mode	12
<b>Dimensions</b>	<b>13</b>
<b>Installation</b>	<b>14</b>
<b>Commissioning</b>	<b>14</b>
<b>Electrical connection</b>	<b>15</b>
High limit safety cut-out HLSC	15
<b>Operation of the controller and LED indicators</b>	<b>16</b>
Reset button	16
Manual/automatic switch	16
LED indicators	16
"Status" LED	16
"Pump" LED	16
<b>Data transfer with CORA</b>	<b>17</b>
<b>Programming</b>	<b>17</b>
Input variables	17
Parameters	17
Output variables	18
Programming example	19
Firmware update	19
<b>Wireless system</b>	<b>20</b>
Principles	20
Pairing devices	20
Relaying wireless signals	20
<b>Technical data</b>	<b>21</b>
Pump curve	21
Information on the Ecodesign Directive 2009/125/EC	21

# Safety requirements



All installation and wiring work on the controller must only be carried out in a zero-volts state. The device may only be opened, connected and commissioned by specialist personnel. When doing so, all local safety requirements must be adhered to. The device must not be opened.

## Intended use

The freshwater module must only be installed in heating systems between the buffer cylinder and the DHW circuit. The technical limits stated in these instructions must be observed.

Any other use will automatically void all warranty rights.

## Electrical connection

Any electrical connections must be made by qualified electricians. Connection cables must be routed in the recesses provided in the insulated base in such a way that direct contact with the pump casing and the pipes is prevented.

Check before switching on, whether the supply voltage matches that stated on the power rating plates of the pump and the controller. All connections must correspond to the local regulations. Before opening the controller, all poles of the power supply must be isolated.

If you are connecting the PMG1 to an electrical system via a residual current device (RCD), use an RCD of type A which will detect pulsating direct currents and bears the following marking:



Checking using a high voltage insulation tester may cause damage to the pump and the control electronics.

## Safety standards during installation, commissioning and maintenance

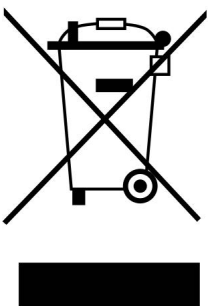
Installation, commissioning and maintenance may only be carried out by qualified persons who are familiar with these operating instructions. Before starting work on the system, ensure that the system is switched off and all components have cooled down. When replacing the pump, turn the 2 ball valves to the locked position. Heat-sensitive system components (e.g. plastic pipes) must be equipped with safety devices (e.g. thermal high limit safety cut-out for underfloor heating), which prevent overheating in the event of a fault in the controller or another system component.



**CAUTION: Depending on the pump and system operating conditions, the surface temperatures can be very high. Direct contact with the pump or the pipes may result in scalding!**

For cooling applications, the PMG1 must be mounted vertically!

## Disposal



- Devices that are no longer used or cannot be repaired must be disposed of in an environmentally sound manner at an authorised collection point. Under no circumstances must they be treated like normal residual waste.
- On request we can undertake the environmentally sound disposal of devices sold by Technische Alternative.
- Packaging material must be disposed of in an environmentally sound manner.
- Incorrect disposal may significantly damage the environment, as the multitude of materials used necessitates professional separation.

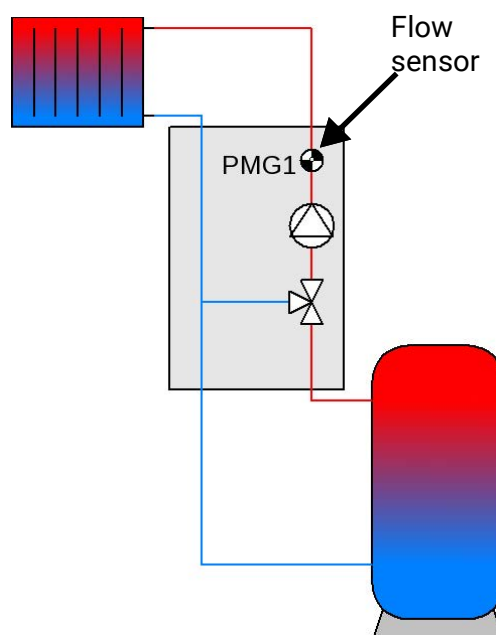
## Function description

The pump/mixer assembly **PMG1** is used to control the temperature of the supplied heating water.




The integral controller **PMR1** is not used to independently control the PMG. Instead, it needs to be connected to a freely programmable controller (via **CORA-DL** or **CORA wireless**) and incorporated into the controller programming. Autonomous operation is generally not possible.




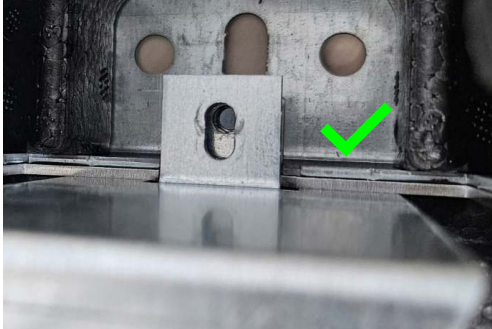
The integral controller can initiate anti-corrosion measures for the pump and mixer. The blocking protection can be customised, see **parameters** on page 17.



Either an FTS flow sensor (without DL) or a PT1000 sensor (e.g. outside temperature sensor) can be connected to the integrated controller.



## Step-by-step instructions

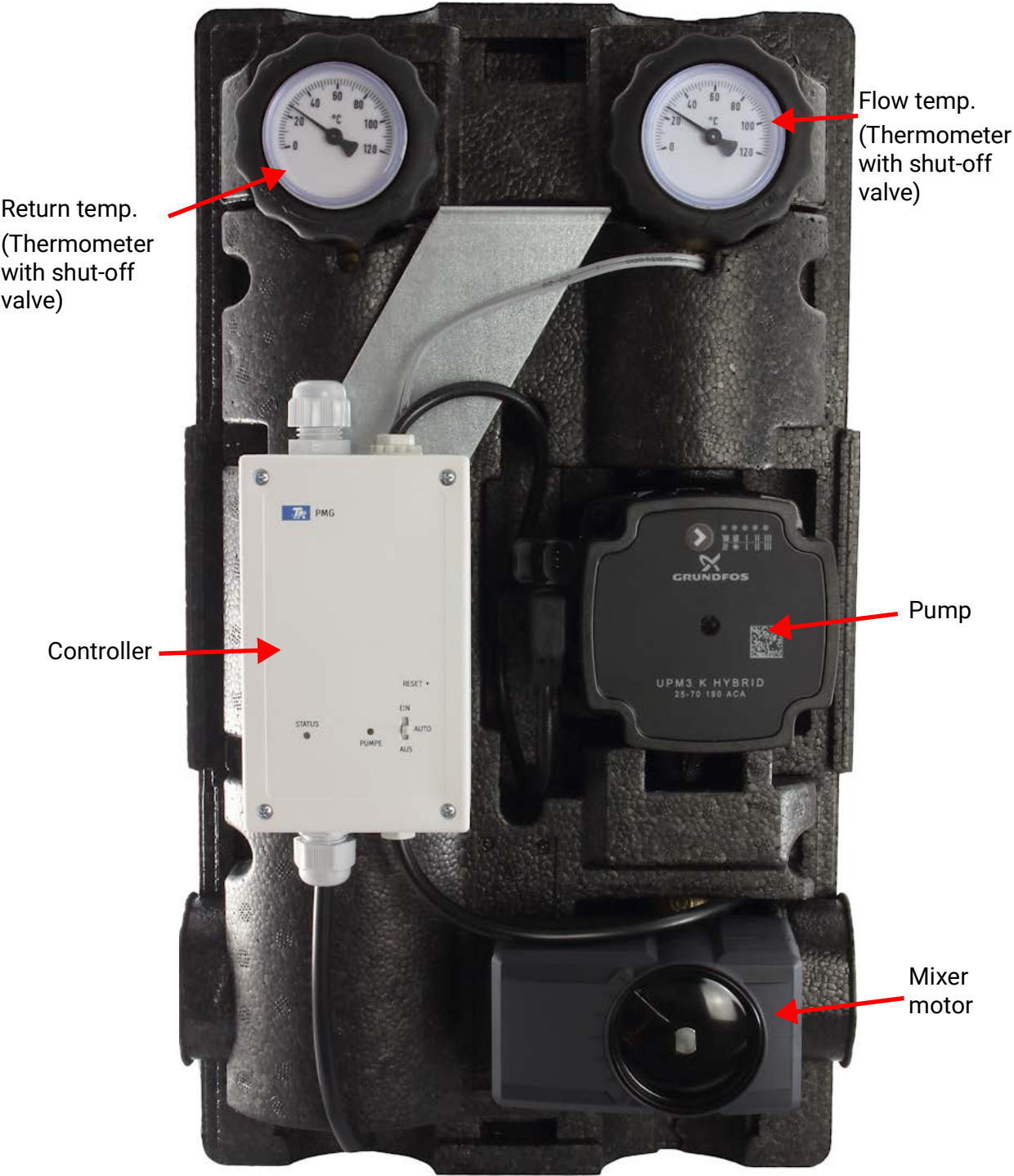
1.	Remove thermal insulation cover.	
2.	Remove mixer motor (see page 10).	
3.	Remove top thermal insulation section.	

4.	Unscrew mounting plate of controller.	
5.	Remove inner thermal insulation section.	
6.	Install PMG1 on the wall; fit pipes. For cooling applications, the PMG1 must be mounted vertically!	
7.	Insert flow sensor in the sensor well (above the pump) and secure it carefully (M2 Allen key).	
8.	Refit inner thermal insulation section.	
9.	Re-attach mounting plate of controller. The plate with the controller goes behind/below the plate in the pump assembly.	<div></div>

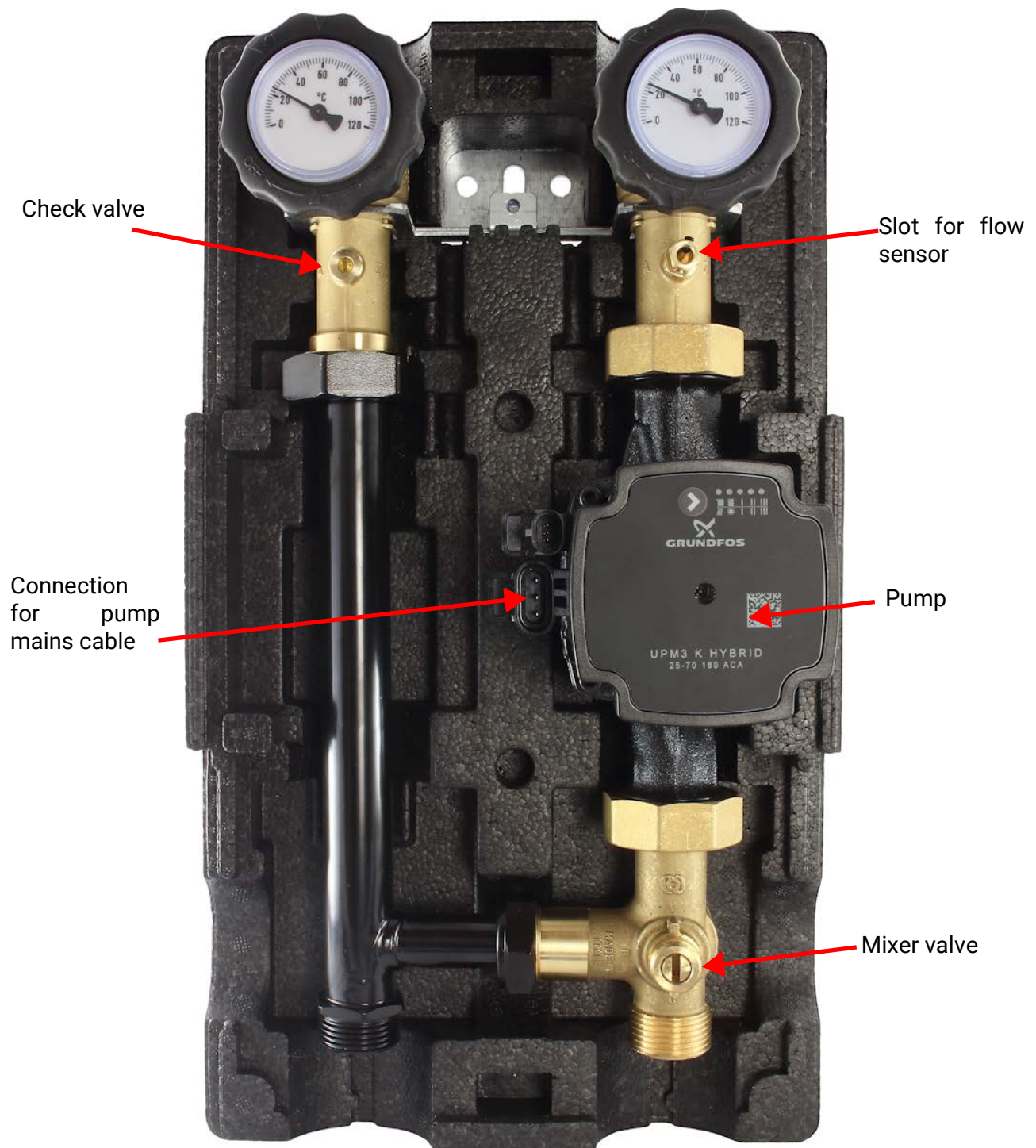
10.	Re-install mixer motor (see page 10).	
11.	Refit upper thermal insulation section.	
12.	Plug in pump cable.	
13.	<p>Connect PMG1 to the used x2 controller.</p> <ul style="list-style-type: none"> <li>For <b>wireless</b> operation: first plug in the mains cable. When ready, press the button for pairing (see page 16) and start the pairing process on the controller.</li> <li>For <b>wired</b> operation (<b>CORA-DL</b>): Undo 4 screws on the controller, install the CORA-DL wiring (see page 15) and re-fit the controller cover. Finally, plug in the mains cable.</li> </ul> <p>In every case, the PMG1 must be incorporated into the programming of the connected x2 controller (see page 17).</p>	
14.	Fit thermal insulation cover.	



# Components

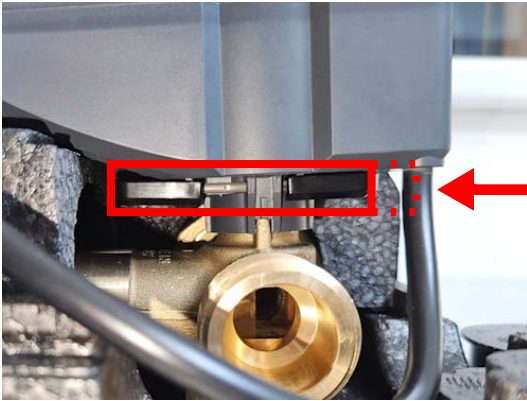




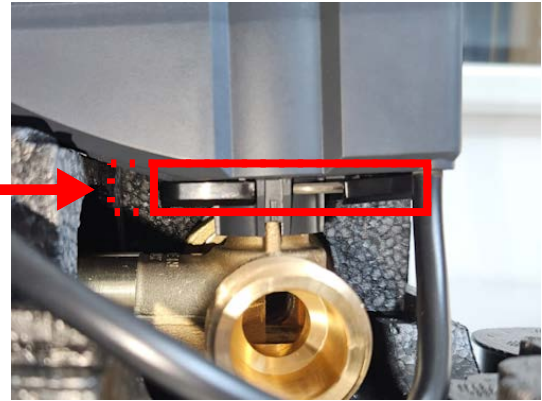


## Mixer motor, mixer manual mode

The mixer motor can be removed by pressing the retaining clip located underneath to the left. Once unlocked, the mixer motor can be removed by pulling it upwards.

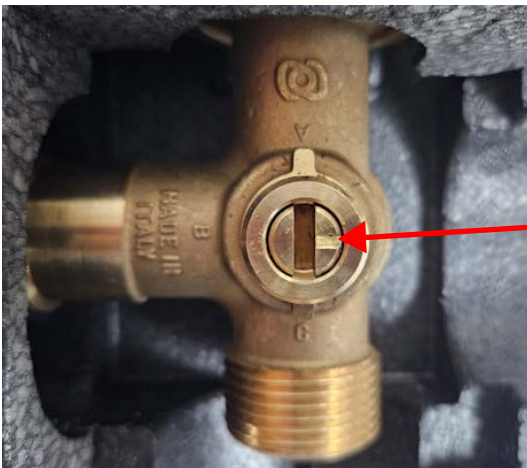


Retaining clip to **left** = open  
Mixer motor can be removed

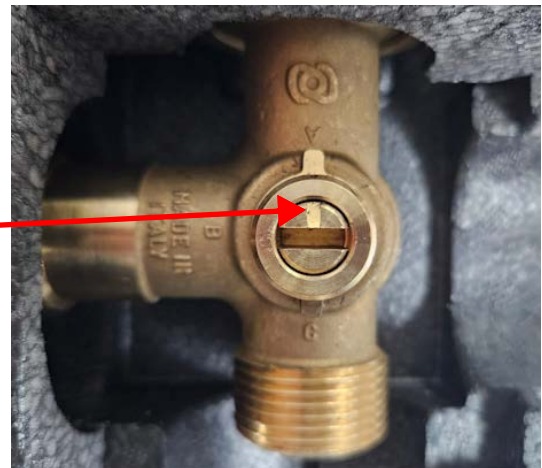


Retaining clip to **right** = closed  
Mixer motor locked in place and ready to operate

In an emergency, the mixer motor can be moved manually using a slotted screwdriver. The notch is used for guidance:



Notch **to right** = mixer fully opened



Notch **at top** = mixer fully closed

Notch for guidance

Do not move the mixer beyond this 90° range.



When re-installing the mixer motor, ensure that the motor and valve slot are at the same angle. Place mixer motor in position and push retaining clip to the right.

## Rotate thermometers (shut-off valve)

Both thermometers have a shut-off valve that can be shut off by rotating it 90° clockwise.

To turn the thermometers themselves (independently of the shut-off valve), they are removed from the holder and reinserted. The retainer for the thermometers has 2 holes on the rear side. Simply press firmly through both holes to remove the thermometer, then reinsert it with the required rotation.



View with thermometer removed



## Pipe reducers

The pipe reducers supplied (2 units) reduce the **lower** threads from a 1" internal thread to a **1.5" external thread** (flat-sealing).



x2





## Pump mode

The installed pump has various control modes. Press the button next to the LEDs to switch to the next mode.



**The correct mode for standard applications is already set at the factory.**

A PWM cable is not included or installed because it is not required for factory operation.

The pump indicates its status (including control mode) with different combinations of the 5 LEDs. LEDs are either illuminated steadily, flash once every second, flash 12 times per second or are not illuminated. The colour of the LED corresponds to the colours of the boxes.

### Example

	Continuous light (red)
	LED not illuminated
1	Flashes once every second (green)
12	Flashes 12 times every second (green)

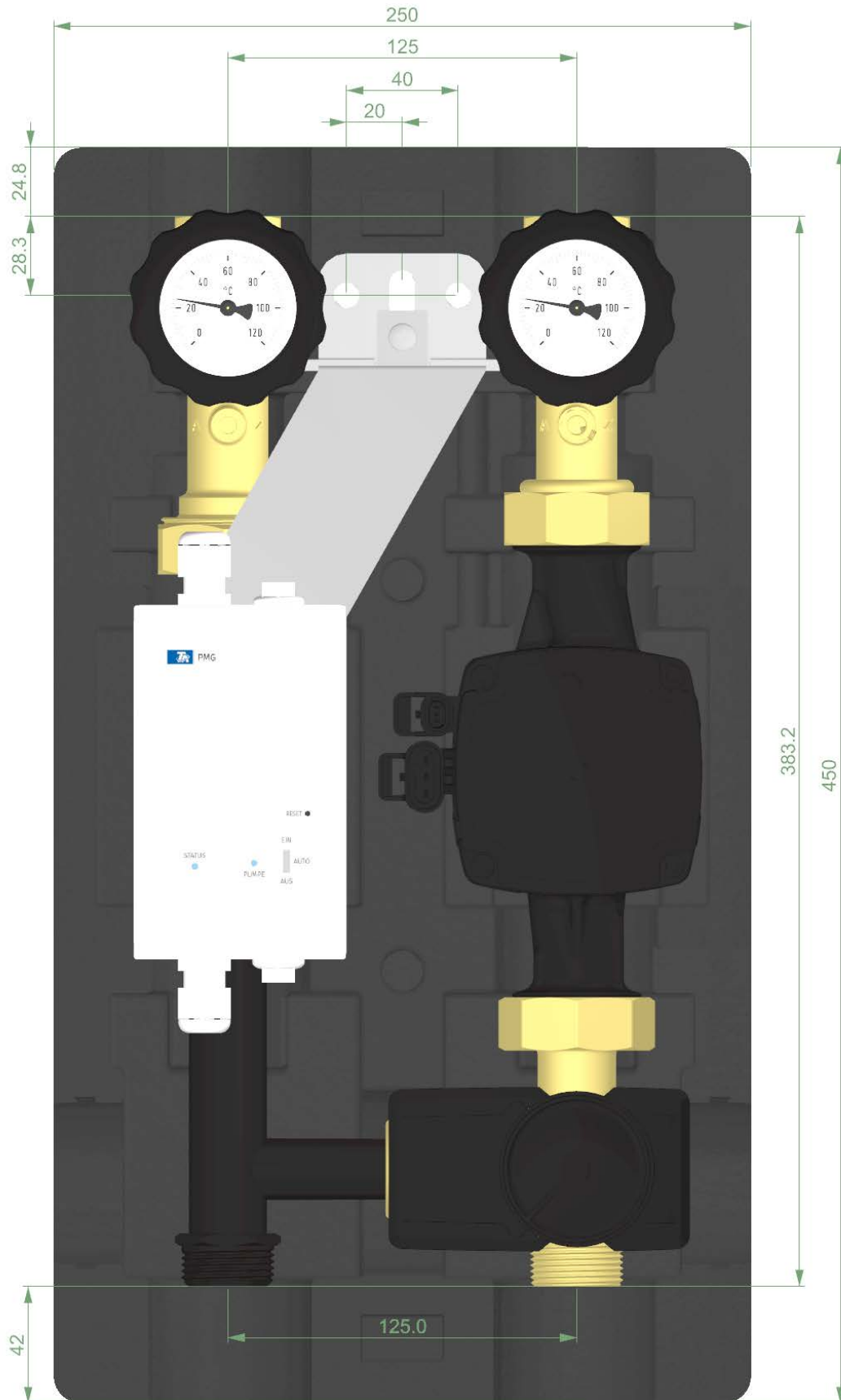
### Control modes

LEDs					Control mode
					Differential pressure Auto Adapt
					Constant pressure control automatic
					Differential pressure 1
					Differential pressure 2
					Differential pressure 3 - max <b>Factory setting</b>
					Constant pressure control 1
					Constant pressure control 2
					Constant pressure control 3 - max
					Constant curve 1
					Constant curve 2
					Constant curve 3 - max
	1				PWM Profile C – Signal off
	12				PWM Profile C – Signal on
1					PWM Profile A 1 – Signal off
12					PWM Profile A 1 – PWM signal on
1					PWM Profile A 2 – Signal off
12					PWM Profile A 2 – PWM signal on
1					PWM Profile A 3 – Signal off
12					PWM Profile A 3 – PWM signal on

### Fault states

LEDs					Error message
					Pump blocked
					Low voltage
					Electrical fault

## Dimensions



### Dimensions of enclosure (thermal insulation cover)

W x H x D = 250 x 450 x 200 mm

## Installation

- Any installation direction (vertical or other).
- Remove insulation cover, select fixing points, insert rawl plugs, secure module to wall.
- Install and connect pipe connections (1" external thread connection).
- Check all PMG connections for leaks and ensure that they are securely fitted.
- Electrical connection

The PMG comes fully pre-wired; it is connected to the mains on site:

- at a wall socket with a plug or
- in the form of a fixed connection using a 2-pin isolator.

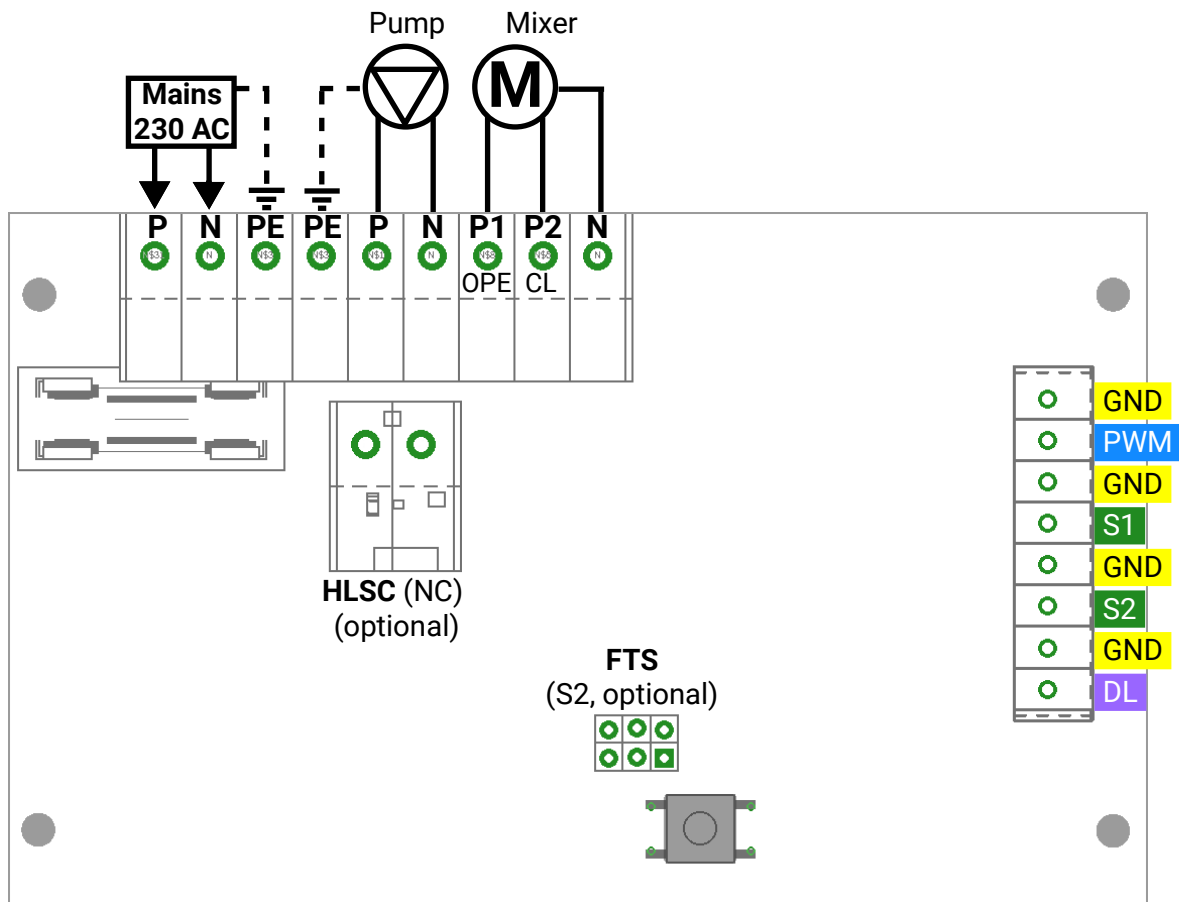
If the PMG is operated via a cable (CORA-DL), this connection must be made (see Electrical connection on page 15).

## Commissioning

- Flush the system through thoroughly before filling.
- Fill the system **slowly** with heating water via the ball valves.
- Switch pump to continuous operation and check pump operation. Audible noise when the circulating pump is operating indicates air in the system. **Caution!** Only operate the pump when it is full.
- Check all connections, including in the PMG, for leaks and ensure that they are securely fitted. If necessary, tighten to the required torque.
- Fit insulation cover.
- Switch pump to automatic mode.
- Incorporate PMG into the programming of the connected freely programmable x2 controller (see Programming on page 17).

## Electrical connection

The integral controller is ready wired at the factory. Only the connection to the x2 controller via **DL** may be required.



The integral controller is connected with an x2 controller via **CORA-DL** (cable) or where applicable via **CORA wireless**. The cable connection is made via **DL** and **GND**.

Sensor S2 is optional and is not included. The following **connection options** are possible:

- A PT1000 sensor can be connected on the right-hand strip (**S2** & **GND**), or:
- A flow sensor **FTS** (without DL) can be connected via the 6-pin connector.

If using an FTS, the version of the FTS must be entered when programming (with the parameters for the PMG CORA device).

For heat metering, an S2 sensor needs to be installed in the return. If a PT1000 sensor is used for this purpose, a fixed volume flow must be specified. An FTS sensor supplies flow and temperature data.

## High limit safety cut-out HLSC

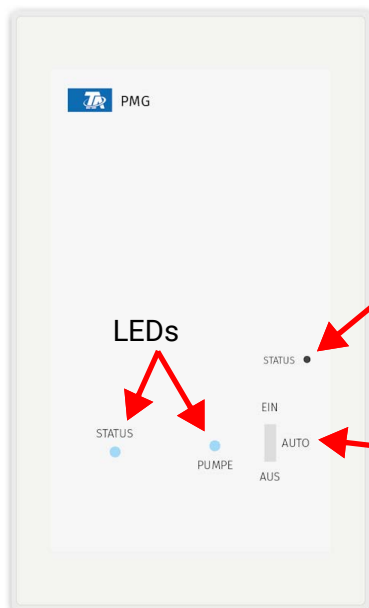
A **contact thermostat** (not included) can be connected to the controller as a **High Limit Safety Cut-out**. The contact of the HLSC is **Normally Closed**. When the HLSC trips (when a set maximum temperature is reached), the pump stops in all circumstances, even in manual mode.

If an HLSC sensor is used, this is connected to an **HLSC** connection where a terminal for bridging the contact has been set at the factory.

If no HLSC sensor is used, the factory-connected terminal for bridging the contact must be set.



## Operation of the controller and LED indicators



The controller is accessible after removing the thermal insulation cover.

There are few setting options on the integral controller. Parameters such as set temperature are specified in the programming of the x2 controller.

### Reset button

On the integral controller there is a hole behind which is a button.

Double click (two clicks within 2 seconds)	Allow pairing for 5 minutes (see chapter "Wireless system") The LED flashes green rapidly for 3 seconds to confirm.
10-second click	Total reset (hold until the LED shows a green light for 1 second) After a total reset, pairing is allowed until the first successful pairing attempt, with no time limit.
Click once	Reset (software restart)

### Manual/automatic switch

<b>OFF</b>	The pump is permanently switched off. Mixer controls acc. to parameter under <b>"when pump = OFF"</b>
<b>AUTO</b>	Pump and mixer operate as specified by the controller.
<b>ON</b>	The pump is permanently switched on at full speed. The mixer continues to work as in AUTO mode.

### LED indicators

#### "Status" LED

<b>Green</b>	Controller working normally
<b>Steady orange light</b>	Timeout (no information received via CORA for 2 minutes)
<b>Flashing orange</b>	HLSC active

#### "Pump" LED

This LED is illuminated when the pump is running, whether in automatic or manual mode. If it isn't lit, the pump is not running.

# Data transfer with CORA

Connection with an x2 controller is possible via **CORA-DL** or where applicable via **CORA wireless**. Both simultaneously is not possible.

## Programming

The pump assembly is incorporated into the programming of the x2 controller used. We recommend using the **TAPPS2** programming software. Version **1.20** is required as a minimum.

For programming, the corresponding CORA device ("Pump assembly PMG") is used.

<b>PMG pump assembly</b>	1	
<b>Pump assembly</b>		
✗ Set temperature	Timeout	✗
✗ Pump (OFF)	Flow temp.	✗
✗ Cooling (OFF)	Return temp.	✗
	Flow rate	✗

## Input variables

<b>Set temperature [°C]</b>	Set temperature (S1)
<b>Pump</b>	Actuation of pump
<b>Speed</b>	Specification for pump speed
<b>Cooling</b>	ON = inverting of mixer control for cooling operation

## Parameters

<b>Connection</b>	<b>CORA-DL</b> (cable) or <b>CORA wireless</b>
<b>CORA ID</b>	Details of the CORA ID

<b>Flow sensor</b>	Details of the optional flow sensor
--------------------	-------------------------------------

### Mixer control

<b>Set temperature</b>	Temperature to which the system is to be controlled
<b>Mode</b>	Selection: <b>Standard</b> or <b>Inverse</b>
<b>Control speed</b>	Matching of the control speed to the control loop (setting range 20.0 - 500.0 %). The percentage figure changes the length of the pulses that are output for opening/closing the mixer (but not the intervals between pulses).
<b>Runtime</b>	Mixer runtime from 00:10 to 30:59 [mm:ss]
<b>Runtime limit (Yes/No)</b>	When the runtime limit is active, mixer actuation is terminated if the remaining runtime of 20 minutes has counted down to 0. The remaining runtime is reloaded when the mixer is switched to manual mode. If the runtime limit is deactivated, the remaining runtime only counts down to 10 seconds and mixer actuation is not terminated.

### when HLSC active

<b>Mixer</b>	<b>Mixer action</b> if high limit safety cut-out trips
--------------	--

### when pump = OFF

<b>Mixer</b>	<b>Mixer action</b> when pump = OFF
--------------	-------------------------------------

### Blocking protection

Pump (Yes/No)	Activation of blocking protection for pump/mixer
Mixer (Yes/No)	
Interval time	If the pump/mixer (depending on above setting) has not moved for this period of time, the respective component is activated briefly (and the meter reset) to prevent corrosion. This takes place while ensuring that there is no DHW demand.

### Speed / PWM

Input variable	Process variable of input signal for pump speed (" <b>Pump</b> " input variable)
Input value	Set to "I.V." if <b>Speed</b> input variable is in use.

### Scaling

Input value 1	Used to scale the input signal
Target value 1	
Input value 2	
Target value 2	

### Pump status

ON if	The "Pump status" output variable is adjusted here.
Threshold	

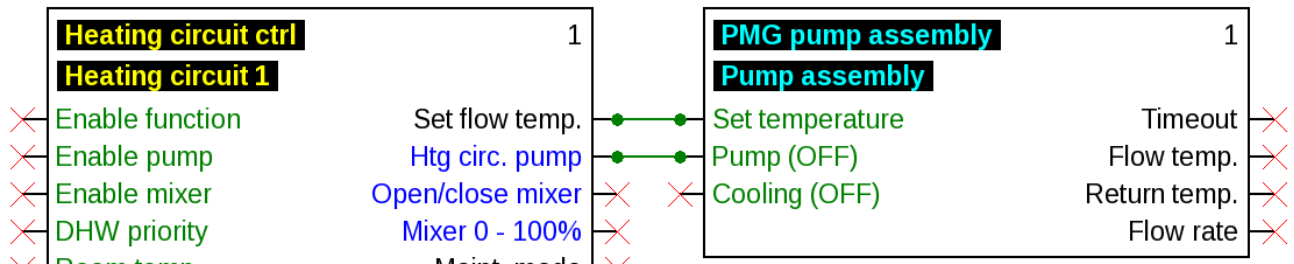
### Manual mode

Pump operation	<ul style="list-style-type: none"><li>• <b>Automatic:</b> Pump is actuated according to function</li><li>• <b>Manual/Off:</b> Pump never runs</li><li>• <b>Manual/On:</b> Pump runs continuously</li></ul>
Pump correcting variable	Correcting variable for manual mode (only adjustable if <b>Pump operation</b> is set to <b>Manual/ON</b> )
Mixer operation	<ul style="list-style-type: none"><li>• <b>Automatic:</b> Mixer regulates to set temperature</li><li>• <b>Manual/Open:</b> Mixer opens steadily</li><li>• <b>Manual/Close:</b> Mixer closes steadily</li><li>• <b>Manual/Off:</b> The mixer is not actuated</li></ul>

## Output variables

<b>Timeout</b> [Yes/No]	Digital value <b>Yes/No</b> (Yes if connection lost)
<b>Flow temp.</b> [°C]	Measured on the S1
<b>Return temp.</b> [°C]	Measured on the S2 (optional, not factory-fitted)
<b>Flow rate</b>	Measured on the S2 if FTS (optional, not factory-fitted)
<b>HLSC active</b> [Yes/No]	ON if HLSC for maximum temperature monitoring is active
<b>Pump status</b>	ON when pump is running (even if in manual mode ON)
<b>Pump corr. var.</b> [%]	Correcting variable for pump in percent
<b>Mixer 0-100 %</b>	Mixer position, 100 % = fully open
<b>Mixer open</b>	Status ON if mixer is fully open
<b>Mixer closed</b>	Status ON if mixer is fully closed

## Programming example



Example of typical PMG actuation via a heating circuit control function.

## Firmware update

For the PMR1 firmware update, the controller to which the device is linked via CORA-DL or CORA wireless must have an inserted SD card with the required firmware. On this controller, navigate to data admin.

The CMI requires a minimum version of **1.42.1** for firmware updates via CMI.

UVR16x2/CAN-MTx2		UVR610/CAN-EZ3
	Select the green arrow/plus symbol next to the firmware.	
	From the drop-down menu, select the button to share the firmware.	
	Here, select the CORA device. Ensure appropriate naming during programming.	

## Wireless system

The integral controller can be connected by cable (**CORA-DL**) or with wireless-capable x2 devices via **CORA wireless**. In all cases, a freely programmable x2 device is required. This chapter refers to the wireless system.

## Principles

The wireless system comprises at least two devices (e.g. CAN-EZ3 and PMG1), which communicate with one another, exchange data or send firmware/function data.

The wireless range is around 1000 m outdoors, and typically 30 m in buildings (through approx. 2 walls/ceilings, depending on thickness and material). Up to 3 additional wireless-capable devices can be used as a bridge to enable data to be exchanged under deviating conditions.

RCV-DL, GBS-F and RAS-F devices **cannot** be used.

## Pairing devices

Two steps are carried out to pair two devices:

1. **Allow** pairing on the **target device**
2. **Initiate** pairing on the **control device**

To allow pairing on the PMG1 (= target device), **double click** on the button on the front of the integral controller (= 2 clicks within 2 seconds). Pairing is then enabled for **5 minutes**.

For pairing, you will need to enter the **CORA ID** of the PMG1 on the control device. This can be found on a label on the front of the integral controller.

The pairing process on other devices (control device) can be found in the corresponding operating instructions.

## Relaying wireless signals

Wireless-capable devices can relay signals of other devices. All required settings for this are carried out at the device that transmits the signal to be relayed.

The PMG1 can also be used to relay wireless signals from other devices. If the device receives signals via a relay, it automatically returns data via the same relay. No settings are therefore required for the relay on the controller of the PMG1.

**Example:** The **CORA 1** device should control the **CORA 3** wirelessly, but cannot reach it due to the local conditions. However, **CORA 1** can reach **CORA 2**, and **CORA 2** can reach **CORA 3**.



CORA ID <input type="text" value="00000003"/>	During parameterisation on <b>CORA 1</b> (= pairing with <b>CORA 3</b> ), the CORA ID of <b>CORA 3</b> is entered under <b>CORA ID</b> , and the CORA ID of <b>CORA 2</b> is entered under <b>HOP1</b> .
HOP1 ID <input type="text" value="00000002"/>	No settings are required on <b>CORA 2</b> . This device relays the signals independently.
	No settings are required on <b>CORA 3</b> either.

The only change to the pairing process is that CORA IDs are entered under **HOP1-3**.

To enable additional devices to relay the signal, they should be specified in the corresponding order under **HOP2** and then under **HOP3**. A data packet is sent by the transmitter to HOP1, HOP2, HOP3 and then to the target device (= "CORA ID"), where defined.

The entry **00000000** means that no relaying will occur.

Subject to technical modifications as well as typographical and printing errors. This manual is only valid for devices with the corresponding firmware version. Our products are subject to constant technical advancement and further development. We therefore reserve the right to make changes without prior notice.

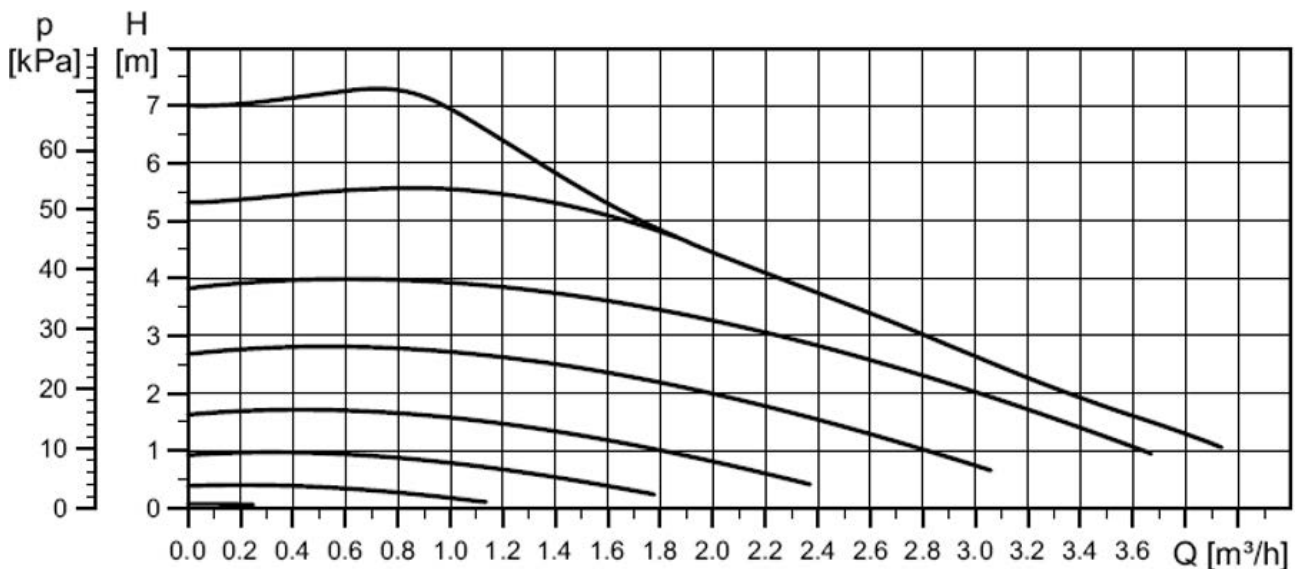
© 2025

## Technical data

Max. operating pressure	8 bar
Max. operating temperature	Continuously 95 °C, briefly up to 120 °C
Connection thread	1" external thread
DL bus load	10 %
Maximum electrical rating, (pump + controller + mixer)	90 W
Pump	Grundfos UPM3 K Hybrid 25-70
Mixer motor	NVM08 KVS 5.5
Mixer runtime	30 sec. for 90°
Primary sensor	PT1000

## Pump curve

(1 kPa = 10 mbar)



The pump operates in heating mode, meaning that at a 5 % PWM value, the pump will run at full speed. A break in the PWM lead therefore results in full pump speed.

The 8 curves shown refer to the following PWM values: 5 % (max.), 20 %, 31 %, 41 %, 52 %, 62 %, 73 %, 88 % (min.).

## Information on the Ecodesign Directive 2009/125/EC

Product	Class <sup>1,2</sup>	Energy efficiency <sup>3</sup>	Standby max. [W]	Power consumption, typ. [W] <sup>4</sup>	Power consumption, max.[W] <sup>4</sup>
PMR1	1	1	1.0	0.88 / 0.90	1.0 / 3.0

<sup>1</sup> Definitions according to Official Journal of the European Union C 207 dated 03/07/2014

<sup>2</sup> The classification applied is based on optimum utilisation and correct use of the products. The actual applicable class may differ from the classification applied.

<sup>3</sup> Contribution of the temperature controller to seasonal central heating efficiency in percent, rounded to one decimal place

<sup>4</sup> No output active = standby / all outputs active

# EU - Konformitätserklärung

Document- No. / Date: TA23002 / 05.09.2023  
Company / Manufacturer: Technische Alternative RT GmbH  
Address: A-3872 Amaliendorf, Langestraße 124

***This declaration of conformity is issued under the sole responsibility of the manufacturer.***

Product name: PMG1  
Product brand: Technische Alternative RT GmbH  
Product description: Pump/mixer assembly

***The object of the declaration described above is in conformity with Directives:***

2014/35/EU Low voltage standard  
2014/30/EU (11/09/2018) Electromagnetic compatibility  
2011/65/EU (01/10/2022) RoHS Restriction of the use of certain hazardous substances  
2009/125/EU (04/12/2012) Ecodesign directive

***Employed standards:***

EN 60730-1:2021-06	Automatic electrical controls - Part 1: General requirements
EN IEC 61000-6-3:2022-06	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments
EN IEC 61000-6-2:2019-11	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity standard for industrial environments
EN IEC 63000:2019-05	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

***For Grundfos pumps:*** EN 60335-1:2012/AC:2014, EN 60335-2-51:2003/A1:2008/A2:2012, EN 55014-1:2006/A1:2009, EN 55014-2:1997/A1:2001/A2:2008, EN 16297-1:2012, EN 16297-2:2012, EN 16297-3:2012

***Position of CE - label:*** On packaging, manual and type label



Issuer: Technische Alternative RT GmbH  
A-3872 Amaliendorf, Langestraße 124

***This declaration is submitted by***

A handwritten signature in black ink, appearing to read 'Schneider Andreas'.

Dipl.-Ing. Andreas Schneider, General manager,  
06.11.2023

This declaration certifies the agreement with the named standards, contains however no warranty of characteristics.

The security advices of included product documents are to be considered.





## Warranty conditions

**Note:** The following warranty conditions do not in any way limit the legal right to warranty, but rather expand your rights as a consumer.

1. The company Technische Alternative RT GmbH provides a one-year warranty from the date of purchase for all the devices and parts which it sells. Defects must be reported immediately upon detection and within the guarantee period. Technical support knows the correct solution for nearly all problems. In this respect, contacting us immediately will help to avoid unnecessary expense or effort in troubleshooting.
2. The warranty includes the free of charge repair (but not the cost of on site troubleshooting, removal, refitting and shipping) of operational and material defects which impair operation. In the event that a repair is not, for reasons of cost, worthwhile according to the assessment of the Technische Alternative company, the goods will be replaced.
3. Not included is damage resulting from the effects of over-voltage or abnormal ambient conditions. Likewise, no warranty liability can be accepted if the device defect is due to: transport damage for which we are not responsible, incorrect installation and assembly, incorrect use, disregard of operating and installation instructions or incorrect maintenance.
4. The warranty claim will expire, if repairs or actions are carried out by persons who are not authorised to do so or have not been so authorised by us or if our devices are operated with spare, supplementary or accessory parts which are not considered to be original parts.
5. The defective parts must be sent to our factory with an enclosed copy of the proof of purchase and a precise description of the defect. Processing is accelerated if an RMA number is applied for via our home page [www.ta.co.at](http://www.ta.co.at). A prior clarification of the defect with our technical support is necessary.
6. Services provided under warranty result neither in an extension of the warranty period nor in a resetting of the warranty period. The warranty period for fitted parts ends with the warranty period of the whole device.
7. Extended or other claims, especially those for compensation for damage other than to the device itself are, insofar as a liability is not legally required, excluded.

### Legal notice

These assembly and operating instructions are protected by copyright.

Use outside the copyright requires the consent of the company Technische Alternative RT GmbH.

This applies in particular to reproductions, translations and electronic media.

## Technische Alternative RT GmbH

A-3872 Amaliendorf, Langestraße 124

Tel.: +43 (0)2862 53635

Fax +43 (0)2862 53635 7

E-Mail: [mail@ta.co.at](mailto:mail@ta.co.at)

— [www.ta.co.at](http://www.ta.co.at) —



©2025