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EC Declaration of Conformity

Name of the issuer:	**WITA-Wilhelm Taake GmbH** **Pumpen-, Armaturen- und Regeltechnik** **Böllingshöfen 85** **D-32549 Bad Oeynhausen**
Subject of the declaration:	**Heat circulation pump**
Type:	**WITA go.future 2**
Design:	**40-XX LED, 60-XX LED** **40-XX LCD, 60-XX LCD** **light 40-XX, light 60-XX**

We declare with sole responsibility that the products specified above, to which this EC Declaration of Conformity refers, fulfil the following standards and guidelines:

Electromagnetic Compatibility Directive 2014/30/EU
EN 55014-1 : 2006 + A1 : 2009 + A2 : 2011
EN 55014-2: 1997 + A1 : 2001 + A2 : 2008
EN 61000-3-2 : 2014
EN 61000-3-3 : 2013
Low Voltage Guideline 2014/35/EU
Guideline for Energy-Consuming Products 2009/125/EG
Eco-design requirements 641/2009 and 622/2012.
EN 16297-1 : 2012
EN 16297-2 : 2012
EN 60335-1 : 2012
EN 60335-2-51 : 2003 + A1 : 2008 + A2 : 2012
RoHS 2011/65/EU

This declaration is submitted for and on behalf of the manufacturer by:

Frank Kerstan
Management

Bad Oeynhausen, 10.03.2019

2 Safety Instructions

2.1 General

These installation and operating instructions are a part of the product, and contain basic information that must be observed during installation, operation and maintenance. For this reason, the installer and specialist personnel or operators must read these instructions prior to set-up.
Please observe both the general safety instructions listed under section 2 and the special safety instructions detailed in the other sections.
A copy of the EC Declaration of Conformity is provided with these instructions. This declaration shall be deemed void in the event of a modification that has not been agreed with us.

2.2 Identification of notes in the operating instructions



**General hazard symbol
Warning! Danger of personal injury!
Observe the relevant accident prevention regulations.**



Warning! Danger from electrical voltage! Prevent hazards arising from electrical energy. Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.

Note

This symbol indicates useful information for handling the product. It indicates potential difficulties and aims to ensure safe operation.

Signs attached directly on the product, such as:
- direction of rotation arrow
- type plate
- identification of connections must be strictly observed and kept in an easily legible state.

2.3 Personnel qualification

The personnel used for mounting, operation and maintenance must have relevant qualifications. Areas of responsibility and monitoring of personnel must be guaranteed by the owner/operator. If personnel do not have the necessary know-how, they must be trained or instructed accordingly. This device can be used by children at or above the age of 8 years, as well as by persons with reduced physical, sensory or mental capabilities, or who lack experience and knowledge, if they are supervised or have been instructed concerning the safe use of the device and if they understand the hazards arising from its use. Children may not play with the device. Cleaning and maintenance operations may not be carried out by children without supervision.



2.4 Danger of not observing safety instructions

Not observing the safety information can endanger persons, the environment and the system. Not observing the safety instructions shall result in the loss of any and all claims to warranty.
Potential dangers include:

- Hazards to persons through electrical and mechanical effects.
- Failure of important system functions.
- Hazard to the environment from escaping fluids resulting from a leak.
- Failure of prescribed repair and maintenance work.

2.5 Safety-conscious working

Observe the safety instructions detailed in this manual, along with the current national accident prevention regulations. Should the system operator also have their own internal regulations, these must also be observed.

2.6 Safety instructions for the operator

- Any existing touch guard protecting moving parts may be neither removed nor shut down while the system is in operation.
- In the event of a fluid leak, any fluids must be collected or diverted in a way that prevents hazards to persons and the environment from arising.



- Prevent hazards arising from electrical energy.
- Observe the instructions in local or general regulations (e.g. IEC, VDE, etc.), and those of the local energy supplier.
- In the event of hazards arising from the system due to contact with hot or cold parts, these parts must be fitted with a touch guard.
- Keep flammable substances away from the product.

2.7 Safety instructions for installation and maintenance work

The system operator is responsible for ensuring that all installation and maintenance work is carried out by qualified personnel. These persons must also have familiarised themselves in advance with the product using the operating instructions. Conducting work on the pump is only permitted when the system is shut down.

Ensure that the device is securely disconnected from the power supply. Disconnect the device plug to achieve this. Prescribed instructions for shutting down the device can be found in the operating instructions. All protective mechanisms, such as a touch guard, must be correctly reattached after work.

2.8 Unauthorised conversion and production of spare parts

Modification or conversion of the product is only permitted after prior consultation with the manufacturer. Only use original spare parts for repairs. Only use accessories that have

been approved by the manufacturer. The manufacturer shall bear no liability for any consequences resulting from the use of other parts.

2.9 Unpermitted operation

If the pump is disconnected from the power supply, wait at least 1 minute before reactivating. Otherwise, the pump's inrush current limit has no effect, which can lead to functional errors or damage to any connected heating controller. The pump's operational safety can only be ensured if it is used as intended. Please observe section 4 of these operating instructions here. Ensure compliance with the limit values detailed in the technical data.



3 Transport and Storage

After receiving the product, inspect it immediately for damage caused in transport. Should you detect any transport damage, assert a claim with the haulier.

Incorrect transport and storage can lead to personal injury or damage to the product.

- **Protect the product against frost, moisture and damage during transport and storage.**
- **Only carry the pump by the pump housing, and never by the connection cable or terminal box.**
- **If the packaging weakens due to moisture, this can lead to the pump falling out and causing severe injury**

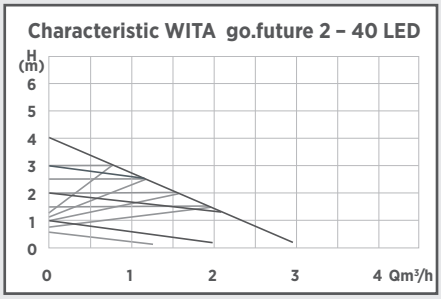


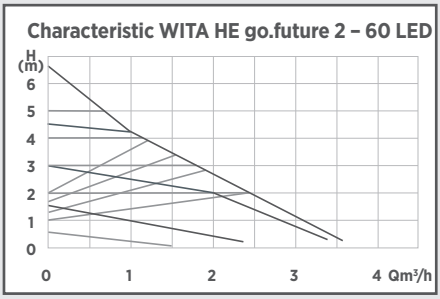
4 Intended Use

The WITA Delta Midi high-efficiency pumps are designed for circulating hot water in central heating systems, and are also suitable for conveying thin liquid media in industry and commerce. They can also be used in photovoltaic systems.

5 Information About the Product

5.1 Technical data WITA go.future 2 - 40 LED | 60 LED





	go.future 2 – 40 LED	go.future 2 – 60 LED
Max. pump lift	4.0 m	6.0 m
Max. flow rate	2.800 l/h	3.600 l/h
Power consumption P1 (W)	3 - 23	3 - 41
Supply voltage	1 x 230V 50Hz	
Emission sound pressure level	< 40 dB(A)	
EEI	≤ 0.18	≤ 0.20
Protection rating	IP 42	
Heat class	TF 110	
Ambient temperature	0 °C to 40 °C	
Media temperaturer	+5 to 110 °C	
Max. system pressure	10 bar (1 MPa)	
Permitted pumping media	Heating water as per VDI 2035 Water/glycol mixture 1:1	

Inlet pressure

fluid temperature	Minimum inlet pressure		
< 75 °C	0.05 bar	0.005 MPa	0,5 m
75 °C - 90 °C	0.3 bar	0.03 MPa	3,0 m
90 °C - 110 °C	1.1 bar	0.11 MPa	11,0 m

Permissible range of application

Temperature range at maximum temperature ambient	Permissible fluid temperature
25 °C	5 °C bis 110 °C
40 °C	5 °C bis 95 °C

Caution!
Unpermitted pumping media can destroy the pump and cause personal injury.
Respect the manufacturer's information and safety data sheets!

Note

5.2 Scope of delivery

- Original installation and operating instructions
- Pump
- 2 flat gaskets
- Pump plug
- Insulation

6 Description of the Pump

In an average household, around 10 to 20% of the energy consumption is caused by common standard pumps. With the Delta Midi series of pumps, we have developed a circulation pump with an energy efficiency index of ≤ 0.20. The Delta Midi pump can reduce energy consumption by up to 80% compared to a standard circulation pump, whilst maintaining the same level of hydraulic power. The pump output can be adjusted to the actual needs of the system, as it works according to the proportional pressure process.

7 Pump settings and output

Description of operating elements

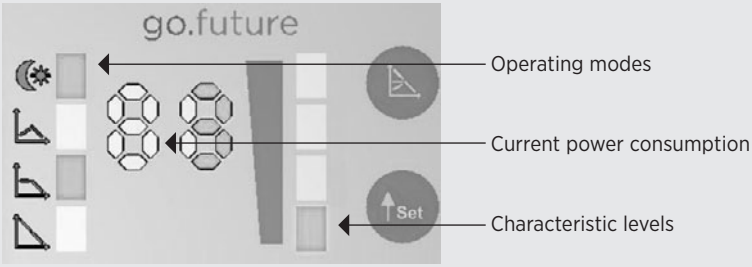
7.1 The buttons

All functions of the pump can be controlled with only two buttons. With the lower "Set" button the night setback can be switched on and off and if the pump is in setting mode also the operating level can be changed.

The top button triggers different functions depending on the length of the button press.

- short press (<1 sec.): Switch the pump to setting mode
- long press (1 - 3 sec.): Special function automatic air vent on or off
- long press (3 - 5 sec.): Switch on special function external control (PWM / 0-10V)
- long press (> 6 sec.): Special function key lock on and off

7.2 The display



If the pump is connected to the mains voltage, the firmware version and the type are displayed at intervals of approx. 1 second.
(for example: 01, 04 this means: firmware 01, 4m pump or for example: 01, 06 this means: firmware 01, 6m pump)
Thereafter, the pump switches to the normal operation. Delivered condition is constant speed level 4.

If no change is made to the pump for more than 3 seconds, the display brightness will decrease. As soon as a key is pressed, it automatically increases.

7.3 Selection of operating mode and operating level

1. **Constant speed control**
   In this operating mode, the pump turns at a constant speed over the entire characteristic curve.

2. **Constant pressure control**
   In this type of control, the pressure generated by the pump is kept constant. This control type is particularly suitable for operation in underfloor heating systems.

3. **Proportional pressure control**
   The pump is controlled according to the proportional pressure method. Here, the pressure generated by the pump is adapted to the changing flow rate. This operating mode is particularly suitable if the pump is intended for use as a heating circulating pump.

On delivery, the pump is set to the highest constant speed level. After a reset (page 42), the pump also starts at this stage.

By briefly pressing the upper button (<1 sec.), The electronics are signaled that the setting is to be changed. The LEDs flash to indicate the operating mode and operating level.

By repeated short pressing of the upper button, the operating modes Constant speed, Constant pressure and Proportional pressure can be continuously switched through. The selected operating mode is indicated by the respective LED next to the characteristic symbols.



(LED 4 special function night reduction)

LED 3 proportional pressure levels

LED 2 Constant pressure levels

LED 1 constant speed levels



By briefly pressing the lower "Set" button, the operating levels are continuously switched through. In the respective operating mode, there is a choice between four different operating levels (characteristic curves). The set level is indicated by the position of the green LED. The further up it lights, the higher the set level.



LED 8 highest level

LED 7

LED 6

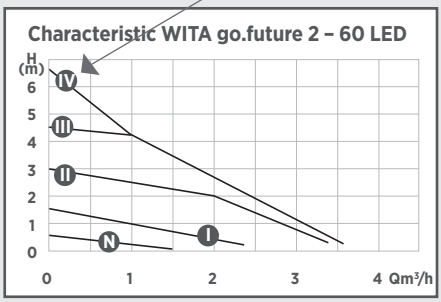
LED 5 lowest level

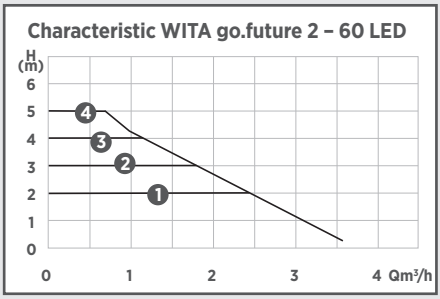


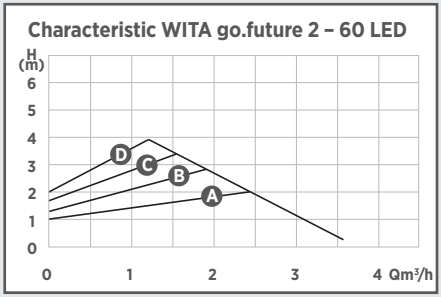
After about 3 seconds without pressing a button, the LEDs light up permanently and the setting is accepted.

The following table shows which LED is lit at which level:

	Constant level I	Constant level II	Constant level III	Constant level IV	Constant pressure level 1	Constant pressure level 2	Constant pressure level 3	Constant pressure level 4	Proportional level A	Proportional level B	Proportional level C	Proportional level D	Night reduction level N
LED 8				X				X				X	
LED 7			X				X				X		
LED 6		X				X				X			
LED 5	X				X				X				
LED 4													X
LED 3									X	X	X	X	
LED 2					X	X	X	X					
LED 1	X	X	X	X									







7.4 Automatic night reduction

Requirements for automatic night reduction: Pumps installed in gas water heaters that have only a small water content should never be set to automatic night reduction.

If the heating system does not supply enough heat to the radiators, check whether the automatic night reduction mode is activated. If necessary, deactivate the automatic night reduction.

In order to ensure the correct function of the night reduction, the following conditions must be met:

1. The pump must be installed in the flow.
2. The heating system must be equipped with an automatic flow temperature control.

How the automatic night economy function works

To activate the night reduction, press the lower "Set" button. If the top left LED is lit with the sun / moon symbol, the night reduction mode is activated and the pump automatically switches between normal operation and night reduction mode. The changeover depends on the flow temperature.

The pump will automatically switch to night reduction if the flow temperature drops by more than 15 ° -20 ° C within 1 hour. Switching to normal operation takes place without delay as soon as the flow temperature has risen again by 3 ° C. To deactivate the night reduction, press the lower "Set" button again.

7.5 Permanent night reduction

The night reduction can also be switched on permanently. After activating the automatic night reduction, the lower "Set" button must be pressed again for 3 seconds. After releasing the key, the upper left LED flashes with the sun / moon symbol.

The pump is now running at the lowest possible power. (Minimum operation)

The pump remains permanently in lowered operation until

- to the next print of the lower "Set" button
- to increase the flow temperature

then the automatic night reduction is activated, as well after a power failure.

7.6 Venting programme

To start the ventilation program, the upper button must be kept pressed until the outer LEDs in the left-hand field of the power display begin to glow in the circle as running light. (about 1-3 seconds).

In order to start the deaeration program, the lower "Set" button must now be pressed within 5 seconds to confirm. In the right display of the power display is now counted down from 9 to 1 and the program goes through 9 stages with different speeds and different durations. When

these 9 stages are finished, the pump returns to the level set before starting the deaeration program. The sequence can be ended prematurely by pressing the upper button again for about 3 seconds. The pump then returns to the step back that was set before starting the venting program.

7.7 Tastensperre

Nachdem die Pumpe eingestellt worden ist gibt es die Möglichkeit eine Tastensperre einzuschalten. Hierdurch wir ein unbeabsichtigtes Verstellen der Pumpe verhindert.
Zum Einschalten der Sperre muss die obere Taste solange gedrückt gehalten werden, bis in der Leistungsanzeige L1 angezeigt wird (> 6 Sek.) (L1 = Lock ON).
Soll die Tastensperre deaktiviert werden muss die obere Taste solange gerückt gehalten werden bis L0 angezeigt wird (L0 = Lock OFF).
Die Tastensperre kann auch durch ein Zurücksetzten der Pumpe in den Auslieferungszustand deaktiviert werden. (Siehe Kapitel 13 Störungen, Ursachen und Beseitigungen)

8 Optional special function PWM / 0-10V input

This function allows the speed control of the pump by an external control. In order to use this function, the pump must be equipped with a corresponding input. (Either PWM or 0-10V)
This external input can be recognized by an additionally existing two-pole connection cable, to which a corresponding external control can be connected.
The cable length may not exceed 3m!
A polarity of the PWM signal does not have to be considered.
The polarity of the 0-10V line must be BLUE = GND / ground and BROWN = 0-10V signal.
The PWM / 0-10V connection cable must be designed for operation at a rated operating voltage of 230V AC.

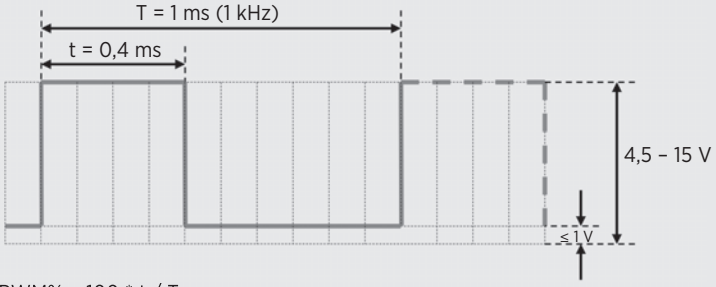


The remote station to be connected:

- **must prevent the direct contact of the cable wires when installed safely. This means that the terminals must be protected against contact and the terminal connections must be protected against accidental contact with a permanently mounted cover.**
- **must comply with protection class I (connection with protective conductor). The device may only be put into operation if the PWM / 0-10 V signal has been connected correctly.**

The PWM signal is a digital signal in which the speed information is included in the pulse width. The control signal must meet the following requirements:

Example of a 40% PWM signal:

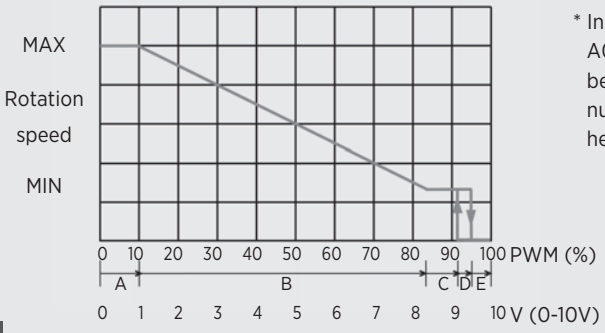


PWM% = 100 * t / T
PWM% = 100 * 0.4 / 1 = 40%
For T, frequencies between 100 Hz and 1 kHz are permissible.

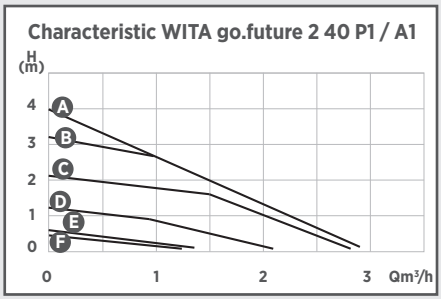
The 0-10 V signal is an analog control signal in which the speed information is included in the voltage level. The control signal must meet the following requirements:
The permissible input voltage range is 0 V to +10 V. The input impedance of the measuring circuit is 13.3 kOhm.

8.1 Heating characteristic curve P1 (PWM version) or A1 (O-10V version)

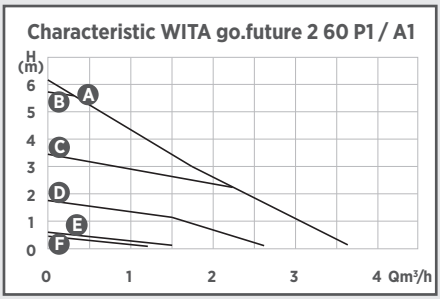
To set the heating characteristic curve of the upper button must be pressed until P0 * or * A0 is displayed. (P0 = PWM control off / A0 = Analog control off)
By pressing the lower "Set" button, this value can be changed to P1 or A1.
After 5 seconds without pressing a button, the function is activated and the display alternately shows the current consumption and P1 or A1. If an external control is no longer required, set P0 or A0.



* In the delivery state, this is P0 or A0. (If changes have already been made in the settings, the number 1 or 2 can also be listed here)



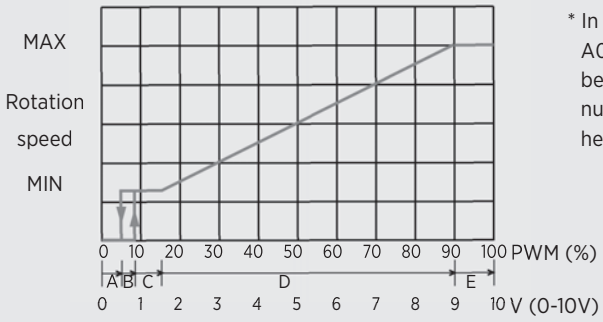
A < 10% PWM / < 1V (MAX Characteristic)
B 20% PWM / 2V
C 40% PWM / 4V
D 60% PWM / 6V
E 80% PWM / 8V
F 90% PWM / 9V (MIN Characteristic)
100% PWM / 10V → Pump is switched off



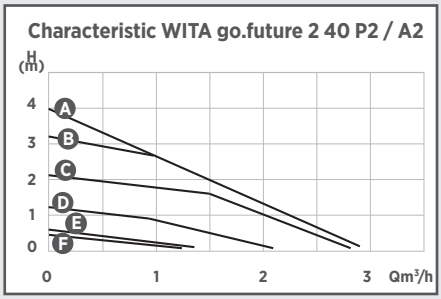
A < 10% PWM / < 1V (MAX Characteristic)
B 20% PWM / 2V
C 40% PWM / 4V
D 60% PWM / 6V
E 80% PWM / 8V
F 90% PWM / 9V (MIN Characteristic)
100% PWM / 10V → Pump is switched off

8.2 Solar characteristic P2 (PWM version) or A2 (O-10V version)

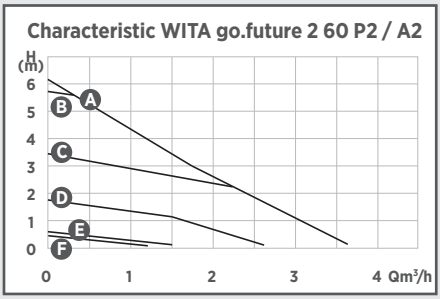
To set the solar characteristic, press the upper key until P0 * or A0 * is displayed. (P0 = PWM control off / A0 = Analog control off) By repeatedly pressing the lower "Set" key, this value can be changed to P2 or A2.
After 5 seconds without pressing a key, the function is activated and the display alternately shows the current consumption and P2 or A2. If an external control is no longer required, set P0 or A0.



* In the delivery state, this is P0 or A0. (If changes have already been made in the settings, the number 1 or 2 can also be listed here)



A > 90% PWM / > 9V (MAX Characteristic)
B 80% PWM / 8V
C 60% PWM / 6V
D 40% PWM / 4V
E 20% PWM / 2V
F 10% PWM / 1V (MIN Characteristic)
<5%% PWM / < 0,5V → Pump is switched off



A > 90% PWM / > 9V (MAX Characteristic)
B 80% PWM / 8V
C 60% PWM / 6V
D 40% PWM / 4V
E 20% PWM / 2V
F 10% PWM / 1V (MIN Characteristic)
<5%% PWM / < 0,5V → Pump is switched off

9 Installation

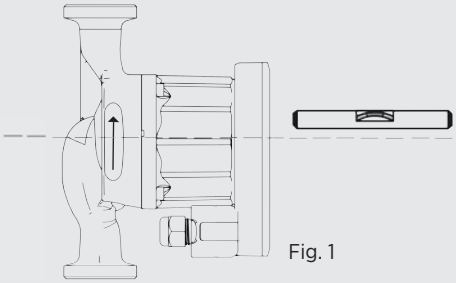


Fig. 1

Install the device with the power supply disconnected and with the pump motor lying horizontally (the arrow on the pump housing shows the direction of flow) (Fig.1). When performing insulation work, ensure that the pump motor and the electronics housing are not covered in insulation. If the installation location changes, you must rotate the motor housing as follows (Fig. 2a to 2d):

- Unscrew the socket screw
- Rotate the motor housing
- Re-insert the socket screw and tighten

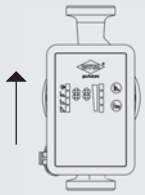


Fig. 2a

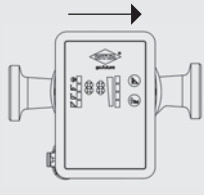


Fig. 2b

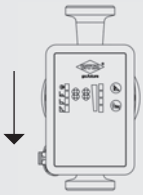


Fig. 2c

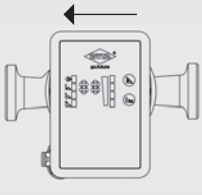


Fig. 2d

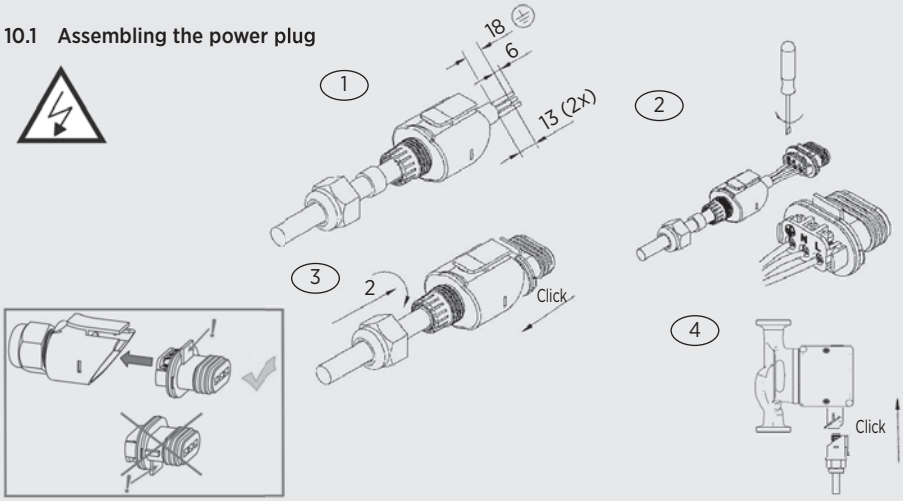
10 Electrical connection

Warning: Risk of death!

Improper installation and improper electrical connection can present a fatal hazard. Hazards posed by electrical power must be eliminated.

- **Only have installation and electrical connection work performed by specialist staff and in accordance with the applicable regulations (e.g. IEC, VDE etc.).**
- **Incorrect installation and electrical connection can pose a fatal risk. Prevent hazards arising from electrical energy.**
- **Only have installation and electrical connection performed by a specialist and in line with the valid regulations (e.g. IEC, VDE, etc.)!**
- **The current type and voltage must correspond with the information on the type plate.**
- **Observe the specifications of local energy supplier!**
- **Observe accident prevention regulations!**
- **Never pull on the power cable**
- **Do not bend the cable**
- **Do not place any objects on the cable**
- **When using the pump in systems at temperatures over 90 °C, use a connection line that is suitably heat resistant.**
- **Hazards such as sharp edges and burrs arise during installation.**
- **When transporting the pump, never hold it by the power cable.**
- **The pump could cause an injury if it falls.**

10.1 Assembling the power plug



Connect the power cable to the pump as shown. Caution: Line voltage! Observe the required protective measures, national body regulations and local provisions at all times. The cable crosssection may be no smaller than 0.75 mm2. Use ferrules if using fine-wire cables.

11 Filling and Venting the System



Fill and vent the system correctly. To vent the pump, loosen the indicated screw by turning it anti-clockwise. Caution! Hot water may escape here, depending on the system's operating state. Afterwards, re-tighten the screw and start the venting programme (see section 7.6 on page 37).
After this process, you can start the pump inthe desired control mode. Incomplete venting can lead to noises in the pump and system.

Note

Warning! Risk of burns! The entire pump can be very hot, depending on the operating state of the system.

12 Service and Maintenance



Switch off the power to the system before performing maintenance, cleaning or repair work, and secure it against unauthorised reactivation.



Allow the pump to cool down in the event of high temperatures and system pressures. There is a risk of scalds!

13 Faults, Causes and Remedies

Maintenance work or repair attempts may only be undertaken by qualified persons. Switch off the power to the system before performing maintenance, cleaning or repair work, and secure it against unauthorised reactivation. Allow the pump to cool down in the event of high temperatures and system pressures. There is a risk of scalds!

Error indication or Error code in the display of the pump	**Possible causes**	**Remedy**
Pump does not suply; Display does not light up	Error in the power supply	Check the power supply at the pump if necessary switch on the protective switch again
Pump is running; but does not suply water	Air in the system	Vent the pump (see chapter 7.6 and chapter 14 in the manual)
	Valve closed	Open the Valve
Noises in the system	Air in the system	Vent the system
	Capacity of the pump too high	Check the pump settings
Pump is making noises	Air in the pump	Vent the pump (see chapter 7.6 and chapter 14 in the manual)
	Too low system pressure	Increase the supply pressure
	Expansion tank is damaged	Check the gas volume in the expansion tank
Building does not get warm	Pumpeneinstellung fehlerhaft	Increase the set point (see chapter 7.3 in the manual)
Pump settings can not be changed	Error in the program operation	Pump reverse into the factory settings (reset) *disconnect the pump from the power supply and wait min. 15 minutes *restore the power supply while holding down the button until all LED's light up. *After releasing the button the pump has got back the factory settings. *(highest constant characteristic) - the pump can be reset
No automatic regulation of the power in the proportional pressure stages	One in the system mounted and opened overflow valve (discharge valve) prevents the regulation	If possible remove the overflow valve (discharge valve) or close it.

Error indication or Error code in the display of the pump	Possible causes	Remedy
The consumption display shows E3	Rotor blocked	Switch the pump off and secure against being switched back on. If possible, close the shut-off valve in front of and behind the pump or drain the water.
		Depending on the operating condition of the system, hot water can escape! Risk of burns! Depending on the operating condition of the system, hot water can escape! Risk of burns! Unscrew the 4 head cap screws and remove the pump head by loosening the motor head. Pump impeller must be able to rotate easily. Remove any impurities or foreign bodies and reassemble the pump. In case of slightly blocking could it be sufficient if the shaft will be moved manual with a screwdriver The shaft does have a notch for these purpose and is accessible after loosening of the vent screw. **ATTENTION ! Hot water could come out !!! Risk of Scalding !!!** Is the error still existing the pump must be replaced
The power indicator flashes every second	The pump will not supplied with system voltage The flashing of the display arises from the fact that the pump rotor itself through the movement if the water turns and the pumps feels like a generator	Check mains voltage at the pump.
The consumption display shows E1	Electronic error / overvoltage	Replace the pump
The consumption display shows E2	Overtemperature	Lower the temperature in the system Press any key or disconnect the pump for minimum 1 minute from the power supply Is the error still existing the pump must be replaced
The consumption display shows E4	Overvoltage / undervoltage	Inspect mains voltage (The pump may not be operated with leading edge, trailing edge or pulse control)
The consumption display shows E5	Electronic error	Replace the pump

Please contact a specialist technician should it not be possible to eliminate the fault.

14 Disposal

Do not dispose of the pump and/or individual parts in household waste!
Dispose of the pump and/or parts in an environmentally conscious way.
To do this, please contact a public or private disposal organisation.
A list of the materials used in our products is provided in the download area of our website. (www.wita.de)

Note