Pioneering for You

Wilo-Stratos MAXO/-D/-Z



en Installation and operating instructions

2226400 • Ed.03/2025-08

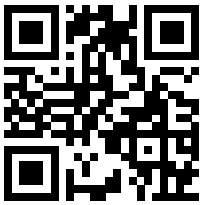




Stratos MAXO
https://qr.wilo.com/171



Stratos MAXO-D
https://qr.wilo.com/172



Stratos MAXO-Z
https://qr.wilo.com/173

Fig. 1a:

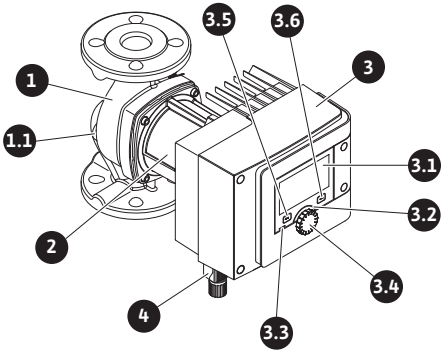


Fig. 1b:

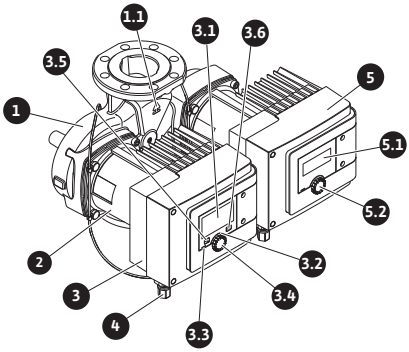


Fig. 2:

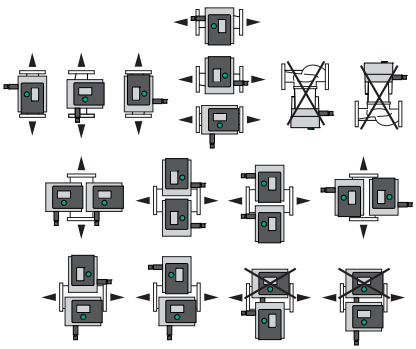


Fig. 3:

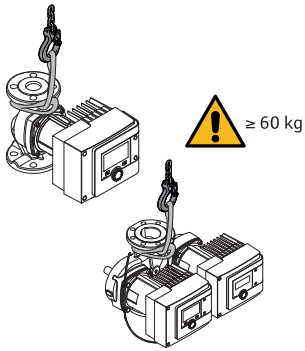


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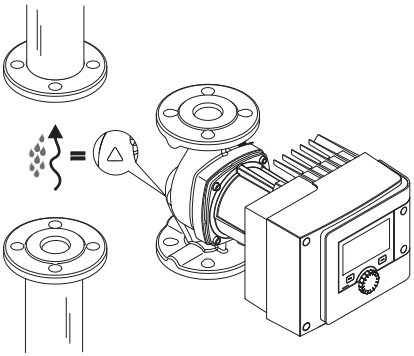


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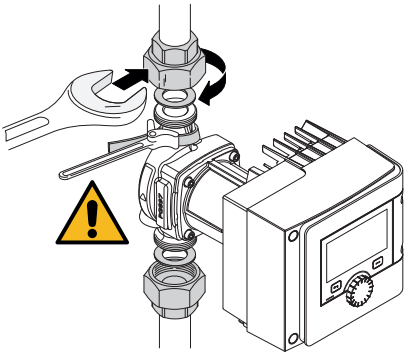


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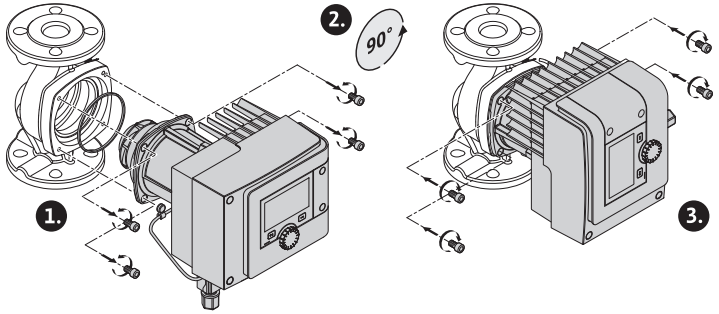


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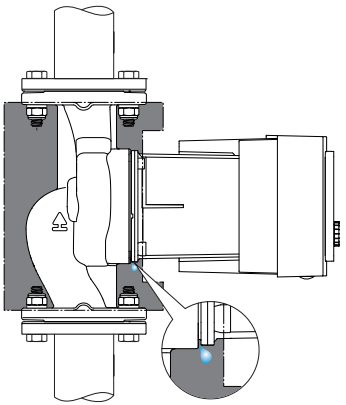


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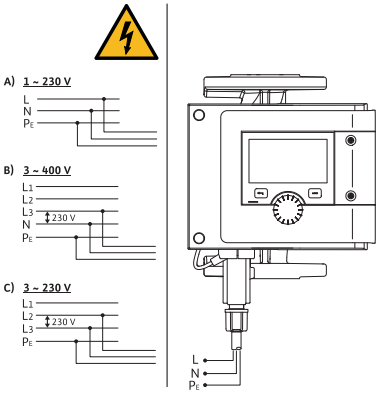


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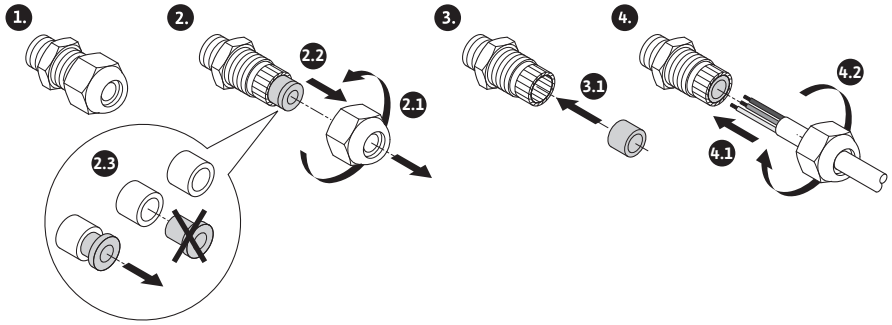


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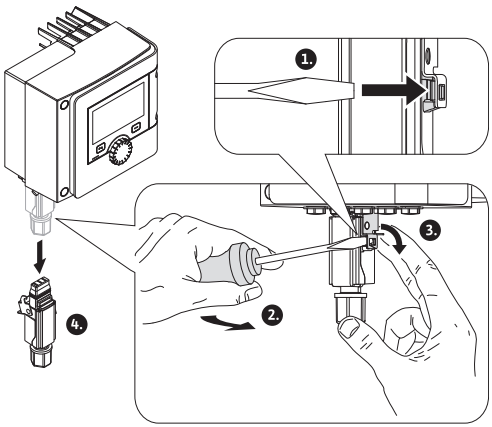


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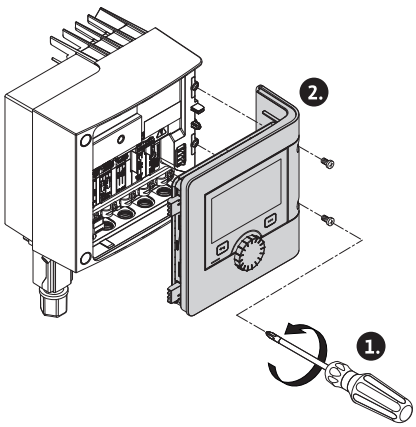


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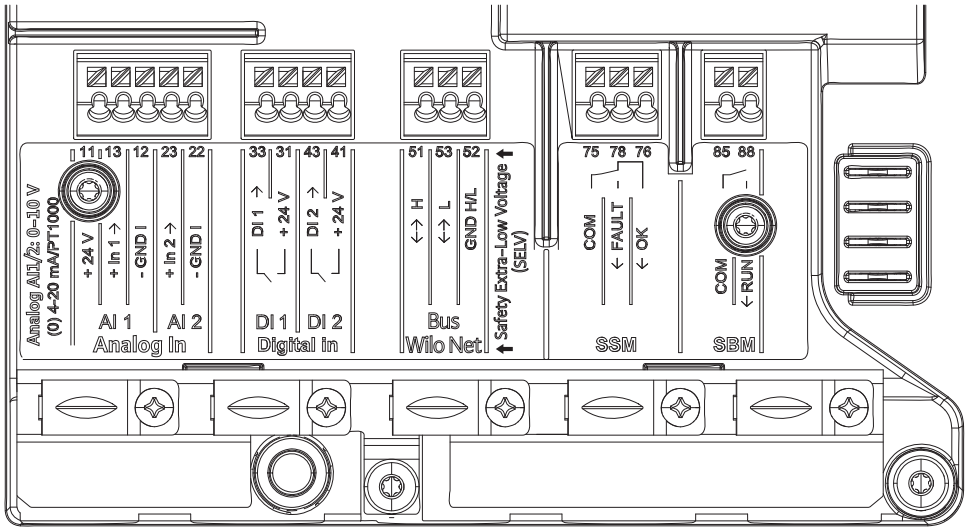




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1 General

1.1 About these instructions

These instructions form part of the product. Compliance with the instructions is essential for correct handling and use:

- Read the instructions carefully before all activities.
- Keep the instructions in an accessible place at all times.
- Observe all product specifications.
- Observe the markings on the product.

The language of the original operating instructions is German. All other languages of these instructions are translations of the original operating instructions.

1.2 Copyright

WILO SE © 2025

The reproduction, distribution and utilisation of this document in addition to communication of its contents to others without express consent is prohibited. Offenders will be held liable for payment of damages. All rights reserved.

1.3 Subject to change

Wilo shall reserve the right to change the listed data without notice and shall not be liable for technical inaccuracies and/or omissions. The illustrations used may differ from the original and are intended as an exemplary representation of the product.

1.4 Exclusion from warranty and liability

Wilo shall specifically not assume any warranty or liability in the following cases:

- Inadequate configuration due to inadequate or incorrect instructions by the operator or the client
- Non-compliance with these instructions
- Improper use
- Incorrect storage or transport
- Incorrect installation or dismantling
- Insufficient maintenance
- Unauthorised repairs
- Inadequate construction site
- Chemical, electrical or electrochemical influences
- Wear

2 Safety

This chapter contains basic instructions for the individual life cycles of the product. Failure to observe this information carries the following risks:

- Danger to persons from electrical, mechanical and bacteriological effects as well as electromagnetic fields
- Environmental damage from discharge of hazardous substances
- Damage to property
- Failure of important product functions
- Failure of required maintenance and repair procedures

Failure to observe the instructions will result in the loss of any claims for damages.

The directions and safety instructions in the other sections must also be observed!

2.1 Identification of safety instructions

These installation and operating instructions set out safety instructions for preventing personal injury and damage to property. These safety instructions are shown differently:

- Safety instructions relating to personal injury start with a signal word, are **preceded by a corresponding symbol** and are shaded in grey.



DANGER

Type and source of the danger!

Consequences of the danger and instructions for avoidance.

- Safety instructions relating to property damage start with a signal word and are displayed **without** a symbol.

CAUTION

Type and source of the danger!

Consequences or information.

Signal words

- **DANGER!**
  Failure to follow the instructions will result in serious injuries or death!
- **WARNING!**
  Failure to follow the instructions can lead to (serious) injury!
- **CAUTION!**
  Failure to follow the instructions can lead to potentially irreparable property damage.
- **NOTICE!**
  Useful information on handling the product

Symbols

These instructions use the following symbols:


General danger symbol


Danger of electric voltage


Warning of hot surfaces


Warning of magnetic fields


Notices

Identifying Cross References

The name of the section or table is in inverted commas [“ ”]. The page number follows in square brackets [ ].

2.2 Personnel qualifications

Staff must:

- be instructed about locally applicable regulations governing accident prevention,
- have read and understood the installation and operating instructions.

Personnel must have the following qualifications:

- Electrical work: a qualified electrician must carry out the electrical work.
- Installation/dismantling: The technician must be trained in the use of the necessary tools and fixation materials.
- The product must be operated by persons who have been instructed on how the complete system functions.
- Maintenance work: The technician must be familiar with the use of operating fluids and their disposal.

Definition of "qualified electrician"

A qualified electrician is a person with appropriate technical education, knowledge and experience who can identify **and** prevent electrical hazards.

The operator must confirm and ensure the field of authority, the competence and the monitoring of the personnel. If the personnel do not possess the necessary knowledge, they must be trained and instructed. If required, this can be carried out by the product manufacturer at the operator's request.

2.3 Electrical work

- Have electrical work carried out by a qualified electrician.
- When connecting to the local power supply system, comply with the nationally applicable guidelines, standards and regulations as well as specifications issued by the local energy supply companies.
- Before commencing work, disconnect the product from the mains and secure it against being switched on again.
- Give personnel training on how to establish the electrical connection and the methods for switching off the product.
- Observe the technical information in these installation and operating instructions as well as on the rating plate.
- Earth the product.
- Comply with the manufacturer's specifications when connecting the product to electrical switching systems.
- Have a defective connection cable replaced immediately by a qualified electrician.
- Never remove operating elements.
- If radio waves (Bluetooth) lead to hazards (e.g. in hospitals), they must be switched off if they are not desired or prohibited at the installation location.

2.4 Operator responsibilities

Operators must:

- Provide installation and operating instructions in a language the personnel can understand.
- Have all work carried out by qualified personnel only.
- Make sure that personnel are suitably trained for the specified work.
- Verify the area of responsibility and individual responsibilities of personnel.
- Train personnel with regard to the operating principles of the system.
- Provide the necessary protective equipment and make sure that personnel wear it.
- Eliminate any risk from electrical current.
- Equip hazardous components (extremely cold, extremely hot, rotating, etc.) with a guard to be provided by the customer.
- Have defective gaskets and connection cables replaced.
- Keep highly flammable materials at a safe distance from the product.
- Ensure compliance with the regulations for accident prevention.

- Ensure compliance with local directives or general directives [IEC, VDE, etc.] and instructions from local energy supply companies.

Follow all information that appears on the product and ensure that it remains permanently legible:

- Warning and hazard notices
- Rating plate
- Direction of rotation arrow/symbol for direction of flow
- Labelling of connections

This device can be used by persons with limited physical, sensory or mental capabilities or lack of experience and knowledge provided they are supervised or have been instructed in the safe use of the device and understand the dangers that may arise. Children must not use or play with this device. Cleaning and user maintenance must not be carried out by children.

3 Description of the pump

The Stratos MAXO smart-pumps, in threaded pipe union or flange connection versions, are glandless pumps with a permanent magnet rotor.

Pump and operating element description (Fig. 1a and Fig. 1b).

Item	Name	Explanation
1.	Pump housing	
1.1	Direction of flow symbol	The fluid should flow in this direction.
2.	Motor	Drive unit
3.	Electronic module	Electronic unit with graphic display.
3.1	Graphic display	Provides information about settings and pump status. Self-explanatory user interface for setting the pump. The display screen cannot be rotated.
3.2	Green LED indicator	LED lights up, pump supplied with power. There are no warnings and no faults.
3.3	Blue LED indicator	LED lights up, pump is externally controlled via an interface, e.g. by: • Bluetooth remote control • Setpoint specification via analogue input AI1 or AI2 • Intervention of building automation via control input DI1, DI2 or bus communication. – Flashes with active twin-head pump connection
3.4	Operating button	Navigate menus and edit content by turning and pressing.
3.5	Back button	Menu navigation: • To go back to the previous menu level (briefly press once). • To go back to the previous setting (briefly press once). • To go back to the main menu (press once and hold for > 1 s once). Turns key lock on or off in combination with the context button > 5 s.
3.6	Context button	Opens the context menu with additional options and functions. Turns key lock on or off in combination with the back button > 5 s.

Item	Name	Explanation
4.	Wilo-Connector	Electrical plug for mains connection
5.	Base module	Electronic unit with LED display
5.1	LED display	Indicates error code and Bluetooth PIN.
5.2	LED display operating button	Triggers the pump venting function when pressed. Turning is **not** possible.

Table 1: Description of operating elements

There is an electronic module (Fig. 1a/b, item 3) on the motor housing, which controls the pump and provides interfaces. Depending on the chosen application or control function, speed, differential pressure, temperature or volume flow will be controlled.

For all control functions, the pump continuously adapts to the system's changing power requirements.

3.1 Permissible installation

Observe permissible installation positions (Fig. 2).

3.2 Type key

Example: Stratos MAXO-D 32/0,5-12	
Stratos MAXO	Pump designation
	Single pump (without code letter)
-D	Twin-head pump
-Z	Single pump for domestic hot water circulation systems
32	Flange connection DN 32
	Screwed connection: 25 (RP 1), 30 (RP 1¼)
	Flange connection: DN 32, 40, 50, 65, 80, 100
	Combination flange: DN 32, 40, 50, 65
0.5 – 12	Continuously adjustable setpoint height
	0.5: minimum delivery head in m
	12: maximum delivery head in m
	at Q = 0 m³/h
-P1	"PWIS-free" version
-R7	Version without an internal temperature sensor (spare part/accessories)

Table 2: Type key

3.3 Technical data

Technical data for heating/air conditioning/cooling

Technical data	
Permissible fluid temperature	-10 … +110 °C -10 … +90 °C (for -R7 version)*

Technical data	
Permissible ambient temperature	-10 … +40 °C
Protection class	IPX4D
Maximum relative humidity	95 % (non-condensing)
Mains voltage	1~ 230 V +/-10 % 50/60 Hz
Residual current ΔI	≤ 3.5 mA
Electromagnetic compatibility	Interference emission in accordance with: EN 61800-3:2018 / residential environment (C1) Interference immunity in accordance with: EN 61800-3:2018 / industrial environment (C2)
Emissions sound-pressure level	P_2 ≤ 160 W: ≤ 29 dB(A) P_2 > 160 W … 890 W: ≤ 41 dB(A) P_2 > 890 W … 1520 W: ≤ 50 dB(A)
Energy efficiency index (EEI)**	≤ 0.17 … ≤ 0.19 (depending on type)
Temperature class	TF110 (see IEC 60335-2-51)
Pollution degree	2 (IEC 60664-1)
Max. permitted operating pressure	PN 6/10 [1], PN 16 [2]

*Increase of the fluid temperature to +110 °C possible by retrofitting the internal temperature sensor (spare part/accessory)

**EEI value of the pump is achieved when the display is switched off.

[1] Standard version
[2] Special version or auxiliary equipment (at additional charge)

Table 3: Technical data for heating/air conditioning/cooling

Technical data for drinking water

Technical data	
Permissible fluid temperature	0 … +80 °C
Permissible ambient temperature	0 … +40 °C
Maximum relative humidity	95 % (non-condensing)
Protection class	IPX4D
Mains voltage	1~ 230 V +/- 10 % 50/60 Hz
Residual current ΔI	≤ 3.5 mA
Electromagnetic compatibility	Interference emission in acc. with: EN 61800-3:2018 / residential environment (C1) Interference immunity in acc. with: EN 61800-3:2018 / industrial environment (C2)

Technical data	
Emissions sound-pressure level	P_2 ≤ 160 W: ≤ 29 dB(A) P_2 > 160 W ... 890 W: ≤ 41 dB(A) P_2 > 890 W ... 1520 W: ≤ 50 dB(A)
Energy efficiency index (EEI)*	≤ 0.17 ... ≤ 0.19 (depending on type)
Temperature class	TF80 (see IEC 60335-2-51)
Pollution degree	2 (IEC 60664-1)
Max. permitted operating pressure	PN 6/10 [1], PN 16 [2]

*EEI value of the pump is achieved when the display is switched off.

[1] Standard version
[2] Special version or auxiliary equipment (at additional charge)

Table 4: Technical data for drinking water

For further instructions see rating plate and catalogue.

3.4 Bluetooth radio interface

The pump has a Bluetooth interface for connecting to mobile devices. Using the Wilo-Smart Connect function from the Wilo Assistant app (for IOS and Android) and a smartphone, you can operate and adjust the pump and read out pump data. Bluetooth is active by factory default and can, if required, be deactivated via the Settings / Device settings / Bluetooth menu.

- Frequency band: 2400 MHz – 2483.5 MHz
- Maximum radiated transmission power: < 10 dBm (EIRP)

3.5 Min. inlet pressure

Minimum inlet pressure (above atmospheric pressure) at the pump's suction port to avoid cavitation noises at fluid temperature:

Nominal diameter	Fluid temperature			
	-10 °C to +50 °C	+80 °C	+95 °C	+110 °C
Rp 1, Rp 1¼, DN 32 (H_{max} = 8 m, 10 m, 12 m) DN 40 (H_{max} = 4 m, 8 m, 10 m) DN 50 (H_{max} = 6 m, 10 m)	0.3 bar	0.8 bar	1.0 bar	1.6 bar
DN 32 (H_{max} = 16 m) DN 40 (H_{max} = 12 m, 16 m) DN 50 (H_{max} = 8 m, 9 m, 12 m) DN 65 (H_{max} = 6 m, 9 m)	0.5 bar	1.0 bar	1.2 bar	1.8 bar
DN 50 (H_{max} = 14 m, 16 m) DN 65 (H_{max} = 12 m, 16 m) DN 80, DN 100	0.7 bar	1.2 bar	1.5 bar	2.3 bar

Table 5: Min. inlet pressure

NOTICE

Effective up to 300 m above sea level. For higher altitudes +0.01 bar/100 m.

For higher fluid temperatures, fluids of lower density, higher flow resistances or lower air pressure, adjust the values accordingly.

The maximum installation height is 2000 metres above MSL.

3.6 Accessories

Accessories have to be ordered separately.

See catalogue for detailed list.

NOTICE

The Stratos MAXO mains angle plug (accessories) can be used as an alternative to the supplied Wilo-Connector in confined connection situations.

3.7 Special features of the R7 version

The Wilo-Stratos MAXO (-D)-R7 is not equipped with the factory-configured integrated temperature sensor. This results in functional differences to Wilo-Stratos MAXO pumps with an integrated temperature sensor.

Control functions that can only be used to limited degree without an internal temperature sensor

The following functions of the “R7” version are limited or unusable compared to the Wilo-Stratos MAXO:

- T-const.
- ΔT-const.

NOTICE

The control functions T-const. and ΔT-const. can be operated with external sensors (e.g. PT1000) connected to the analogue inputs AI1 and AI2.

NOTICE

In the temperature-controlled control modes T-const. and ΔT-const., the “Internal sensor” is not available as sensor source T1 or T2.

NOTICE

The temperature-controlled control functions can be selected in the setup assistant (menu). The unconnected internal sensor issues a warning (W576).

Control functions that cannot be used without an internal temperature sensor

- Wilo-Stratos MAXO pumps with **SW ≤ 01.04.31.00**:
  The following functions of the "R7" version are reduced compared to the Wilo-Stratos MAXO, so that they **cannot** be used:
  - Night setback
  - Heating/cooling switchover (automatic)
  - Heat/cooling quantity measuring

NOTICE

The "Night setback", automatic "Heating/cooling switchover", and "Heat/cooling quantity measuring" functions depend on the internal temperature sensor signal.

The "Night setback" function is not available in the menu under "Settings/Set control mode".
To use this function, order the internal temperature sensor as an accessory, install it and connect the sensor cable to the electronics. Then, the "Night setback" option is shown in the menu again.

NOTICE

If the automatic "Heating/cooling switchover" option is selected in the menu, the warning message W576 is displayed.

NOTICE

In the "Heat/cooling quantity measurement" function, "Internal sensor" cannot be selected as a sensor source in the feed and return. Only sensors connected to AI1 and AI2 can be selected.

- Wilo-Stratos MAXO pumps with **SW ≤ 01.05.10.00**:
  The following functions of the "R7" version are reduced compared to the Wilo-Stratos MAXO, so that they **cannot** be used:
  - Night setback
  - Heating/cooling switchover (automatic)

The "heating/cooling quantity measurement" function no longer relies on the signal from the internal temperature sensor.

With the "heating/cooling quantity measurement" function, two temperature sensors can be connected to the AI1 and AI2 analogue inputs and configured as temperature sources. The assumption here is that the temperature sensor for the feed temperature is also the temperature sensor for the fluid temperature.

NOTICE

In some installations where the feed temperature is not the same as the fluid temperature, the accuracy of the heat/cooling quantity measurement may deviate.

Temperature display

No fluid temperature is shown as a value on the display of the "-R7" version. A crossbar ("-") appears at this point. The feature stands for an uninstalled temperature sensor.

NOTICE

The fluid temperature on the display is shown exclusively via the signal of the internal temperature sensor. A configuration or display option via external sensors at the analogue inputs (AI1 or AI2) is not possible with the "-R7" version.

NOTICE

For the temperature-controlled control modes with externally connected temperature sensors, either one or both temperatures are displayed depending on the selected control mode.

Maximum fluid temperature

Technical data	
Permissible fluid temperature	-10 ... +90 °C(*)
Permissible ambient temperature	-10 ... +40 °C

Table 6: Technical data

(*) An increase of the fluid temperature to +110 °C is possible by retrofitting the internal temperature sensor.

Option to upgrade the Wilo-Stratos MAXO-R7 to the Wilo-Stratos MAXO

If the functionalities of the temperature sensor are desired, the Wilo-Stratos MAXO-R7 can be functionally upgraded to the range of functions of the Wilo-Stratos MAXO. By retrofitting the internal temperature sensor (spare part/accessories), the Wilo-Stratos MAXO-R7 again corresponds to a Wilo-Stratos MAXO in terms of its range of functions.

NOTICE

Once the temperature sensor has been installed and connected to the electronics, it is no longer possible to return to the "R7" version.

4 Intended use and misuse

4.1 Intended use

Pumps for heating/air conditioning/cooling applications

Stratos MAXO/-D series smart-pumps are intended to circulate fluids in the following application areas:

- Hot-water heating systems
- Cooling and cold water circulation systems
- Closed industrial circulation systems
- Solar installations
- Geothermal systems

- Air-conditioning systems

The pumps do not fulfil the requirements of the ATEX directive and are not suitable for pumping explosive or easily flammable fluids!

Intended use includes compliance with these instructions as well as the information and markings on the pump.

Any use beyond the intended use is considered misuse and will void any warranty claims.

Permitted fluids

Heating pumps:

- Heating water in accordance with VDI 2035 part 1 and part 2
- Demineralized water in accordance with VDI 2035-2, "Water quality" section
- Water-glycol mixtures, max. mixing ratio of 1:1
  If glycol is added, the pumping data of the pump must be corrected according to the higher viscosity, depending on the mixing ratio percentage.
- Ethylene/propylene glycol with corrosion inhibitors.
- No oxygen binding agents, no chemical sealants (ensure system is closed in terms of corrosion according to VDI 2035); fix leaky spots.
- Commercially available corrosion protection agents[1)] without corrosive anodic inhibitors (underdosing due to consumption!).
- Commercially available combination products[1)] without inorganic or polymer film formers.
- Commercially available cooling brines[1)].



WARNING

Personal injury and property damage caused by impermissible fluids!

Impermissible fluids can damage the pump and also cause personal injury.

- Use only branded products with corrosion protection inhibitors!
- Comply with the chloride content of the top-up water according to the manufacturer's instructions! Soldering pastes containing chloride are **not** permitted!
- Follow the safety data sheets and manufacturer's instructions!

[1)] Add additives to the fluid on the discharge side of the pump, even if this is contrary to the recommendations of the additive manufacturer.

Salty fluids

CAUTION

Property damage due to salty fluids!

Salty fluids (e.g. carbonates, acetates or formates) are very corrosive and can damage the pump!

- Fluid temperatures above 40 °C are not permitted for salty fluids!
- Use a corrosion inhibitor and constantly check its concentration!

NOTICE

Use other fluids only after approval by WILO SE.

CAUTION

Property damage can occur due to the accumulation of chemicals!

When changing, refilling or replenishing the fluid with additives, there is a risk of property damage caused by the accumulation of chemicals.

- Rinse the pump separately and thoroughly. Ensure the old fluid has been completely removed from the interior of the pump!
- Remove pump before pressure swing purging!
- For chemical flushing measures:
  - Remove the pump from the system for the duration of cleaning!

Drinking water pumps:

WARNING

Health hazard due to fluids not approved for drinking water!

Because of the materials used in their construction, pumps of the Stratos MAXO/-D series are unsuitable for use in applications involving drinking water or foodstuffs.

The smart-pumps of the Wilo-Stratos MAXO-Z series are specially adapted to the operating conditions in domestic hot water circulation systems through the selection of materials and their design, taking into account the guidelines of the German Environment Agency (UBA):

- Drinking water acc. to EC Drinking Water Directive.
- Clean, non-aggressive, low-viscosity fluids in accordance with national drinking water provisions.

CAUTION

Property damage due to chemical disinfectants!

Chemical disinfectants can result in damage to material.

- Comply with the specifications of DVGW-W 551-3! **Or:**
- Remove the pump for the duration of the chemical disinfection process!

4.2 Misuse

WARNING! Misuse of the pump can lead to dangerous situations and damage.

- Never use fluids other than those approved by the manufacturer.
- Highly flammable materials/fluids should always be kept at a safe distance from the product.
- Never allow unauthorised persons to carry out work.
- Never operate the pump beyond the specified limits of use.

- Never carry out unauthorised conversions.
- Use authorised accessories and genuine spare parts only.
- Never operate with phase angle control/reverse phase control.

4.3 Safety instructions

Electrical current



DANGER

Electric shock!

The pump is operated electrically. An electric shock poses danger of death!

- Have only qualified electricians carry out work on electrical components.
- Before all work, deactivate the power supply (if necessary, SSM and SBM) and safeguard against accidental switch-on. Due to the presence of dangerous contact voltage, work on the electronic module must not be started until 5 minutes have elapsed.
- Only operate the pump with intact components and connecting cables.

Magnetic field



DANGER

Magnetic field!

The permanent magnet rotor inside the pump can pose mortal danger for people with medical implants (e.g. pacemakers) during dismantling.

- Never open the motor and never remove the rotor.

Hot components



WARNING

Hot components!

Pump housing, motor housing and lower module housing can get hot and cause burns if touched.

- When in operation, only touch the user interface.
- Allow the pump to cool down before commencing any work.
- Keep highly flammable materials away.

5 Transportation and storage

The pump and its packaging must be protected against moisture, frost and mechanical damage during transport and temporary storage.

WARNING

Risk of injury from sodden packaging!

Packaging that has been sodden loses its strength and can cause injury to persons if the product falls out.

WARNING

Risk of injury from ripped plastic strips!

Ripped plastic strips on the packaging render transport protection void. Products falling out may cause personal injury.

5.1 Transport inspection

Check delivery immediately for damage and completeness. Where necessary make a complaint immediately.

5.2 Transport and storage conditions

- Store in original packaging.
- Storage of pump with horizontal shaft on a horizontal surface. Observe the packaging icon  (top).
- Only carry on motor or pump housing. If necessary use hoisting gear with sufficient bearing capacity.
- Protect against moisture and mechanical load.
- Permissible temperature range: -20 °C ... +70 °C
- Relative humidity: 5 ... 95 %
- Dry pump thoroughly following use (e.g. function test) and store for a maximum of 6 months.

Domestic hot water circulators:

- Dirt and contamination should be avoided once the product is removed from its packaging.

5.3 Transport

CAUTION

Improper lifting of the pump by the electronic module can cause damage to the pump.

- Never lift the pump by the electronic module.

- Only carry by the motor or pump housing.
- If necessary, use hoisting gear with sufficient bearing capacity (Fig. 3).

6 Installation

- Installation/dismantling: The technician must be trained in the use of the necessary tools and fixation materials.

6.1 Operator responsibilities

- Observe national and regional regulations!

- Observe locally applicable accident prevention and safety regulations of professional and trade associations.
- Provide protective equipment and ensure that the protective equipment is worn by personnel.
- Observe all regulations for working with heavy loads.

6.2 Safety



WARNING

Risk of burns from hot surfaces!

Pump housing and glandless motor can get hot and cause burns when touched.
- Only touch the control module during operation.
- Allow the pump to cool down before commencing any work.



WARNING

Risk of scalding from hot fluids!

Hot fluids can cause scalding.
Before the installation or removal of the pump or the dismantling of the housing screws, observe the following:
- Allow the heating system to cool down completely.
- Close shut-off devices or drain the heating system.



DANGER

Risk of fatal injury from falling parts!

The pump itself and pump parts can have a very high net weight. Falling parts pose a risk of cuts, crush injuries, bruises or impacts which can be fatal.
- Always wear suitable protective equipment (e.g. helmet, gloves).
- Always use suitable lifting equipment and secure parts against falling.
- Never stand below a suspended load.
- During storage and transport, as well as before all installation and assembly work, ensure that the pump is in a safe and secure position.

6.3 Preparing the installation

1. Attach pipes to the floor, ceiling or wall using appropriate fittings so that the pump does not bear the weight of the piping.
2. Branch off the safety feed ahead of the pump when installing in feed of open systems (EN 12828).
3. Install the pump at an easily accessible point so that it can be easily checked or replaced at a later time.
4. Complete all welding and soldering processes.
5. Flush system.
6. Provide shut-off valves upstream and downstream of the pump.
7. Comply with the inlet and outlet sections in front of and behind the pump.
8. Make sure that the pump can be installed free of mechanical stresses.
9. Allow a 10 cm distance around the electronic module so that it does not overheat.

10. Observe permissible installation positions.

Installation within a building

The pump should be installed in a dry, well ventilated and dust-free room – in accordance with the protection class (see rating plate of the pump).

CAUTION

Exceeding/dropping below the permissible ambient temperature!

In case of excessive temperature, the electronic module will switch off!

- Provide adequate ventilation/heating!
- Never cover the electronic module and pump with objects!
- Observe permissible ambient temperatures (see “Technical data” [▶ 13] table).

Inside a building, condensation may form in the pump depending on the application.

NOTICE

To avoid condensation forming in the electronics, run the pump continuously or install a trace heating.

Installation outside a building (outdoor installation)

- Observe permissible environmental conditions and protection class.
- Install the pump in a housing as weather protection. Observe permissible ambient temperatures (see “Technical data” [▶ 13] table).
- Protect the pump against the effects of weather, for example, direct sunlight, rain and snow.
- Protect the pump so that the condensate drain openings remain free of dirt.
- Take suitable measures to prevent the formation of condensation water.

NOTICE

To avoid condensation forming in the electronics, run the pump continuously or install a trace heating.

6.4 Installation

- Perform installation so that the pump shaft is horizontal and voltage-free!
- Make sure that the pump is installed in a permissible installation position and with the correct flow direction: Follow the direction of flow symbol on the pump housing (Fig. 4)!
- Installation of pump only in permissible installation position (Fig. 2)!
- If necessary, rotate the motor including the electronic module, see “Aligning the motor head [▶ 26]” section

CAUTION

Electronics breakdown due to drips

If the module is in a position that is not permitted, there is a risk of water drips entering the module. This can lead to a defect/breakdown of the electronics.

- The module is not allowed to be positioned with the cable connection pointing upwards!

6.4.1 Install threaded pipe union pump



WARNING

Risk of burns from hot surfaces!

The piping can get hot and cause burns when touched.

- Allow the heating system to cool down before commencing any work.
- Wear protective gloves.

Installation steps

1. Install suitable threaded pipe unions.
2. Close the shut-off devices in front of and behind the pump.
3. Insert the pump into the pipe together with the supplied flat gaskets (Fig. 5). **Observe direction of flow!** The arrow-shaped flow indicator on the pump housing must point in the direction of flow (Fig. 4).
4. Screw together the pump with the union nuts. To do so, use a pipe wrench to hold it up against the pump housing.
5. Open the shut-off devices in front of and behind the pump.
6. Check impermeability.

6.4.2 Flange-end pump installation



WARNING

Risk of burns from hot surfaces!

The piping can get hot and cause burns when touched.

- Allow the heating system to cool down before commencing any work.
- Wear protective gloves.



WARNING

Risk of injury and scalding due to improper installation!

The flange connection can be damaged and develop leaks if the pump is not installed correctly. Risk of scalding due to escaping hot fluid!

- Never interconnect two combination flanges!
- Pumps with combination flanges are not permitted for operating pressures PN 16!

- The use of securing elements (e.g. spring lock washers) can result in leakages at the flange connection. They are therefore not permissible. Use the washers supplied (scope of delivery) between screw heads/nut heads and the combination flange!
- The permissible tightening torques listed in the table below must not be exceeded, even if screws of higher strength (≥ 4.6) are used, since splintering may otherwise occur at the edges of the long holes. This may cause the screws to lose their prestress and leakage can occur in the flange connection. Risk of scalding!
- Use screws of sufficient length. The screw thread must project by at least one pitch of screw thread from the screw nut.
- Perform leakage test at maximum permissible operating pressure!

Screws and tightening torques

Flange-end pump PN 6

	DN 32 ... DN 65	DN 80 ... DN 100
Screw diameter	M12	M16
Strength class	≥ 4.6	≥ 4.6
Tightening torque	40 Nm	95 Nm

Table 7: Flange fixation PN 6

Flange-end pump PN 10 and PN 16 (no combination flange)

	DN 32 ... DN 100
Screw diameter	M16
Strength class	≥ 4.6
Tightening torque	95 Nm

Table 8: Flange fixation PN 10 and PN 16

Installation steps

1. Close the shut-off devices in front of and behind the pump.

2. Insert the pump into the pipe together with two suitable flat gaskets in such a way that the flanges can be screwed to the pump inlet and outlet. **Observe direction of flow!** The arrow-shaped flow indicator on the pump housing must point in the direction of flow (Fig. 4).

3. Screw the flange together in a crosswise manner, in 2 steps using suitable screws and the supplied washers. Observe specified tightening torques!

4. Open the shut-off devices in front of and behind the pump.

5. Check impermeability.

6.5 Aligning the motor head

The motor head must be aligned according to installation position.

NOTICE

Check permissible installation positions (see section “Permissible installation positions” [▶ 13]).

NOTICE

In general, rotate the motor head before the system is filled!

NOTICE

After the motor head has been aligned, perform impermeability test. Perform leakage check at the highest operating pressure possible (see rating plate)!

Different methods may be required depending on the pump type.
Case 1: access to motor fastening screws restricted.

Single pump

1. Remove thermal insulation shell by pulling the two half shells apart.
2. Carefully unplug the sensor cable from the electronic module (does not apply to "-R7" version).
3. Loosen the screws of the module cover (HMI).
4. Remove the module cover including display and carefully put it to one side.
5. Loosen interior hexagonal head screws M4 in the electronic module.
6. Remove electronic module from the motor.

DANGER

Risk of fatal electrical shock! Generator or turbine operation during pump flow!

Even without the module (without electrical connection), there may be dangerous contact voltage at the motor contacts!

7. If required, loosen cable loop by removing the cable retention clip.
8. Undo the screws on the motor housing and carefully turn the motor head. **Do not** remove from pump housing (Fig. 6)!

WARNING

Leakage!

Damage to the gasket causes leakage.

- Do not remove the gasket.
- Replace the damaged gasket.

9. Subsequently, tighten motor fastening screws diagonally. Observe the tightening torques! (Table "Tightening torques")
10. Place the electronic module on the motor head (guide pins specify the exact position).
11. Secure the electronic module using M4 interior hexagonal head screws. (torque: 1.2 ± 0.2 Nm)
12. Push the module cover including display forward into the grooves using the guide bars, close cover and fasten with screws.



CAUTION

Hot components!

Damage to the sensor cable caused by hot motor head!

- Lay the sensor cable in a way that the cable does not touch the motor head.

13. Insert sensor cable plug into the connector in the module (does not apply to "-R7" version).
14. Place both the half shells of the thermal insulation shell around the pump housing and press together.

Case 2: access to motor fastening screws unrestricted.

- Carry out steps 1 ... 2, 8 ... 9 and 13 ... 14 in sequence.
  Steps 3 ... 7 and 10 ... 12 are not absolutely necessary.

Twin-head pump



NOTICE

In general, rotate the motor head before the system is filled!

If you are forced to rotate one or both motor heads, undo the twin-head pump cable connecting both electronic modules.

Carry out steps as described for the single pump:

Case 1: access to motor fastening screws restricted.

- Carry out steps 2 ... 13 in sequence.

Case 2: access to motor fastening screws unrestricted.

- Carry out steps 2, 7 ... 9 and 13 in sequence.
  Steps 1, 3 ... 6, 10 ... 12 and 14 are not absolutely necessary.

Reconnect both electronic modules with the twin-head pump cable. If required, loosen cable loop by removing the cable retention clip.

Tightening torques for motor fastening screws

Stratos MAXO, Stratos MAXO-D, Stratos MAXO-Z	Tightening torques [Nm]
25(30)/0.5-4; 25(30)/0.5-6; 25(30)/0.5-8; 25(30)/0.5-10; 25(30)/0.5-12; 30/0.5-14; 32/0.5-8; 32/0.5-10; 32/0.5-12; 32/0.5-16; 40/0.5-4; 40/0.5-8; 40/0.5-10; 40/0.5-12; 40/0.5-16; 50/0.5-6; 50/0.5-8; 50/0.5-9; 50/0.5-10; 50/0.5-12; 65/0.5-6; 65/0.5-9	8 ... 10
50/0.5-14; 50/0.5-16; 65/0.5-12; 65/0.5-16; 80(100)/0.5-6; 80(100)/0.5-12; 80/0.5-16	18 ... 20

Table 9: Tightening torques

6.6 Insulation

Insulation of the pump in heating systems and domestic hot water circulation applications (only single pump)



WARNING

Risk of burns from hot surfaces!

The entire pump can become very hot. When retrofitting the insulation during ongoing operation, there is a risk of burns!

- Allow the pump to cool down before commencing any work.

Thermal insulation shells are only available for single pumps.



NOTICE

Insulating the pump housing, the connection flanges and the pipes can reduce heat losses and save energy.

Place both the half shells of thermal insulation around the pump housing before commissioning and press together. For this purpose, pre-install the four retaining pins (scope of delivery) in the drilled holes of one half shell.

Insulation of the pump in cooling/air-conditioning systems



NOTICE

The thermal insulation shells included in the scope of delivery are exclusively permitted in heating and domestic hot water circulation applications with fluid temperatures > 20 °C!

Single pumps can be insulated for use in cooling and air conditioning applications using Wilo cold water insulation shells (Wilo-ClimaForm) or any other commercially available, diffusion-proof insulation materials. There are no prefabricated cold water insulation shells for twin-head pumps. For this purpose, use commercially available, diffusion-proof insulation materials provided by the customer.

CAUTION

Electrical defect!

Condensate that accumulates in the motor can cause an electrical defect.

- Insulate the pump housing only up to the separating gap to the motor!
- Keep the condensate drain grooves unobstructed to ensure that condensate that develops in the motor can drain off unobstructed (Fig. 7)!

6.7 Following installation

1. Check impermeability of the pipe/flange connection.

7 Electrical connection

Electrical connection may only be carried out by a qualified electrician and in accordance with the applicable regulations!

The “Safety” [▶ 9] section must be strictly observed!



DANGER

Risk of fatal electrical shock!

Immediate danger of death if live components are touched!
In particular, persons with medical aids, such as cardiac pacemakers, insulin pumps, hearing aids, implants or similar are at risk.
Death, severe injury and property damage may be the result.
For such persons, a professional medical assessment is always necessary!

- Before commencing work, switch off the power supply and secure it against being switched on again.
  - Due to the presence of dangerous contact voltage, work on the electronic module must not be started until 5 minutes have elapsed!
- Check whether all connections (including potential-free contacts) are voltage-free.
- Only connect or operate the pump with the electronic module installed.
- Never remove configuration and operating elements.
- Never put the pump into operation if the electronic module/Wilo-Connector is damaged!
- Never apply incorrect voltage.
- Applying an incorrect voltage to SELV lines will result in incorrect voltage in all pumps and on-site building automation devices that are connected to SELV lines.



CAUTION

Property damage caused by improper electrical connection!

An inadequate mains design can lead to system failures and cable fires due to mains overload!

If the wrong voltage is applied, the pump can be damaged!

Applying incorrect voltage to SELV lines will result in incorrect voltage in all pumps and on-site building automation devices, which are connected to the SELV line, and can damage them!

- When designing the mains supply with regard to the used cable cross-sections and fuses, pay special attention to the fact that, in multi-pump operation, it is possible that all pumps operate at the same time for short periods!
- When switching the pump on or off using an external control device, deactivate any mains voltage pulse (e.g. burst-fired control)!
- Check switching the pump via triacs/solid-state relays on a case-by-case basis!
- Make sure that the SELV lines have a maximum voltage of 24 V!

7.1 Requirements

NOTICE

Nationally applicable guidelines, standards and regulations as well as the requirements of local energy supply companies must be observed!

DANGER

Risk of fatal electrical shock!

Even if the LED is not illuminated, voltage may be present inside the electronic module! Failure to install protection devices (e.g. module cover of electronic module) can cause electric shock, potentially resulting in life-threatening injuries!

- Always deactivate the power supply from the pump and if necessary SSM and SBM!
- Never operate the pump without having closed the module cover!

CAUTION

Danger of material damage caused by improper electrical connection!

- Ensure that the current type and voltage of the mains connection correspond to the specifications on the pump rating plate.

- Observe the current type and voltage on the rating plate.
- In the case of twin-head pumps, individually connect and secure both motors.
- During electrical installation of the pump, comply with the national regulations regarding the requirements for residual-current devices (RCDs) and their selection.
  - **Pumps with a rated power of P1 ≤ 200 W** (see rating plate or data sheet):
    In the event of an insulation fault, the residual current may appear as pulsating DC.
  - **Pumps with a rated power of P1 > 200 W** (see rating plate or data sheet):
    In the event of an insulation fault, the residual current may appear as DC or pulsating DC.
- Consider the leakage current per pump Ieff ≤ 3.5 mA.
- Connect to 230 V low-voltage mains. When connecting to IT networks (Isolé Terre electrical system), always make sure that the voltage between the live wires (L1-L2, L2-L3, L3-L1 ➔ Fig. 8) does not exceed 230 V.
  In case of error (earth fault), the voltage between the live wire and PE must not exceed 230 V.
- Establish electrical connection via a fixed connection cable equipped with a connector device or an all-pole switch with a contact opening width of at least 3 mm (VDE 0700/Part 1).
- The pump can be operated on an uninterruptible power supply.
- During external connection of the pump, deactivate a pulse of the voltage (for example phase angle control).
- Switching the pump via triacs/solid-state relays must be examined on a case-by-case basis.
- During deactivation with on-site power relay: Rated current ≥ 10 A, rated voltage 250 V AC.
  Irrespective of the rated current of the pump, peak currents of up 10 A may occur every time the power supply is switched on!
- Observe the switching frequency:
  – Switch-on/off procedures via mains voltage ≤ 100/24 h

- Increased number of switch-on/off procedures ≤ 20/h (≤ 480/24 h) permissible with:
  - Digital input with Ext. OFF function
  - Analogue setpoint input (0 ... 10 V) with switch-off function
  - Switch signals using communication interfaces (e.g. CIF module, Wilo Net or Bluetooth)
- To protect against leakage and for strain relief to the threaded cable gland, use a connection cable with sufficient outer diameter.
- Bent the cables near the screwed connection to form a drain loop to drain any accumulated drips.
- Use a heat-resistant connection cable if fluid temperatures exceed 90 °C.
- Lay the connection cable in such a way that it touches neither the pipes nor the pump.

Cable requirements

Terminals are intended for rigid and flexible conductors with or without ferrules.

Connection	Cable cross-section in mm² Min.	Cable cross-section in mm² Max.	Cable
Mains plug	3x1.5	3x2.5	
SSM	2x0.2	2x1.5 (1.0**)	*
SBM	2x0.2	2x1.5 (1.0**)	*
Digital input 1 (DI 1)	2x0.2	2x1.5 (1.0**)	*
Digital input 2 (DI 2)	2x0.2	2x1.5 (1.0**)	*
24 V output	1x0.2	1x1.5 (1.0**)	*
Analogue input 1 (AI 1)	2x0.2	2x1.5 (1.0**)	*
Analogue input 2 (AI 2)	2x0.2	2x1.5 (1.0**)	*
Bus Wilo Net	3x0.2	3x1.5 (1.0**)	shielded

*Cable length ≥ 2 m: Use shielded cables.

**When using ferrules, the maximum cross-section for communication interfaces is reduced to 1 mm². All combinations up to 2.5 mm² are permissible in the Wilo-Connector.

Table 10: Cable requirements



DANGER

Electric shock!

When connecting SSM/SBM lines, care should be taken to separate the SELV section, thus ensuring SELV protection is maintained!

At cable cross-sections of 5 – 10 mm, remove the inner seal ring from the threaded cable gland before installing the cable (Fig. 9).

NOTICE

- Tighten the threaded cable gland M16x1.5 on the electronic module with a torque of 2.5 Nm.
- Tighten nuts with a torque of 2.5 Nm to ensure strain relief.
- Remove the inner seal ring of the threaded cable gland when installing cables with a diameter ≥ 5 mm.

7.2 Connection options

CAUTION

Risk of property damage!

Never connect the power supply to two phases with 400 V! This may destroy the electronic system.

- Exclusively connect the power supply to 230 V (phase to neutral conductor)!

The pump can be connected to power supplies with the following voltage ratings (Fig. 8):

- 1~ 230 V
- 3~ 400 V with neutral conductor
- 3~ 230 V

All communication interfaces in the terminal room (analogue inputs, digital inputs, Wilo Net, SSM and SBM) comply with the SELV standard.

7.3 Connecting and removing the Wilo-Connector

WARNING

Risk of fatal electrical shock!

- **Never** connect or remove the Wilo-Connector under mains voltage!

CAUTION

Property damage due to improper fixation of the Wilo-Connector!

Improper fixation of the Wilo-Connector may cause contact problems and electrical damage!

- Exclusively operate the pump when the metal clamp of the Wilo-Connector is locked!
- Disconnection of the Wilo-Connector under voltage is not permitted!

Connecting

1. Prepare the cable.
2. Unscrew the cable bushing of the supplied Wilo-Connector.
3. Remove the upper part of the Wilo-Connector.

4. Open WAGO “Cage Clamp” by pressing.
5. Guide the cable through the cable duct to the connection sockets.
6. Connect the wires in the correct position.

NOTICE

For cables without ferrules, make sure that no cores protrude from the terminal!

7. Close WAGO “Cage Clamp”.
8. Push the upper part of the Wilo-Connector into the lower part by using position bars and close the socket.
9. Screw on cable bushing with a torque of 0.8 Nm.
10. Insert the Wilo-Connector and lock the metal clamp over the retaining pins.

NOTICE

The metal clamp on the side of the Wilo-Connector housing can only be unlocked using tools!

11. Restore the power supply.

Disconnecting (Fig. 10)

1. Disconnect mains voltage.
2. Undo the metal clamp from the mechanical lock on the housing using suitable tools.
   For this purpose, move the tools towards the outside and simultaneously open the metal clamp towards the housing.
3. Pull off the Wilo-Connector.

NOTICE

For confined installation situations (e.g. shut-off valves directly below the electrical connection), an angle plug is available as an alternative. Angle plug to be ordered separately!

7.4 Connecting the communication interfaces

Observe all warnings in the “Electrical Connection” section!
Make sure that all power supplies of the pump and connected communication interfaces, especially that of SSM and SBM, are switched off!

1. Loosen the screws of the module cover (Fig. 11).
2. Remove the module cover and carefully put it to one side.
3. Unscrew the required number of screw plugs (M16x1.5) with the tool.
4. Undo the required number of shield clamps (see notice).
5. Screw in the threaded cable gland M16x1.5 and tighten with a torque of 2.5 Nm.
6. Strip communication cables to the required length.
7. Push the nut of the threaded cable gland over the cable and insert the cable into the inner seal ring of the threaded cable gland and under the shield clamp.
8. Spring clips: Open WAGO “Cage Clamp” by pressing it with a screwdriver and guide the stripped lead into the terminal.

9. Fasten communication cables using shield clamps (see notice).
10. To ensure strain relief, tighten the nut of the threaded cable gland with a torque of 2.5 Nm.
11. Push the module cover forward into the grooves using the guide bars, close cover and fasten with screws.

NOTICE

• Remove the inner seal ring of the M16x1.5 threaded cable gland when installing cables with a diameter ≥ 5 mm.

Position the cable shielding on only one end of the cable to prevent circulating current in the event of potential difference via the communication cable!

To loosen the leads: Open the WAGO “Cage Clamp” spring clip! Then pull out leads!

External interfaces (Fig. 12)

- Analogue IN (purple terminal block)
- Digital IN (grey terminal block)
- Bus Wilo Net (green terminal block)
- SSM (red terminal block)
- SBM (orange terminal block)

All communication interfaces in the terminal room (analogue inputs, digital inputs, Bus Wilo Net, SSM and SBM) comply with the SELV standard.

SSM and SBM can also be operated with/at non-SELV compliant connections/voltage ratings (up to 250 V AC) without this negatively influencing the SELV compliance of the remaining communication connections in the terminal room.
Make sure to install cables correctly and ensure separation in the terminal room to maintain SELV conformity for all other cables.

NOTICE

For cable requirements, see “Requirements [▶ 31]” section

7.5 Analogue input (AI1) or (AI2) – purple terminal block

Analogue signal sources connected to terminals 12 and 13 for use with AI1 and connected to terminals 22 and 23 for use with AI2
Note correct polarity for signals 0 – 10 V, 2 – 10 V, 0 – 20 mA and 4 – 20 mA.
Use the pump to supply 24 V DC to an active sensor. For this purpose, pick off the voltage at +24 V (11) and GND I (12) terminals.

NOTICE

The 24 V DC power supply is only available when the analogue input AI1 or AI2 has been configured for a type of use and a signal type.

The analogue inputs can be used for the following functions:

- External setpoint specification
- Sensor connection:

- Temperature sensor
- Differential pressure sensor
- PID sensor

Analogue input for following signals:

- 0 – 10 V
- 2 – 10 V
- 0 – 20 mA
- 4 – 20 mA
- PT1000

Technical data:

- Analogue input load (0) 4 – 20 mA: ≤ 300 Ω
- Load resistance at 0 – 10 V, 2 – 10 V: ≥ 10 kΩ
- Dielectric strength: 30 V DC / 24 V AC
- Terminal for supplying active sensors with 24 V DC – maximum power load: 50 mA

NOTICE

For more information, see “Application and function of the analogue inputs AI1 and AI2” section of the Stratos MAXO user manual (see QR code at the beginning of these installation and operating instructions).

CAUTION

Overload or short-circuit

In case of overload or short-circuit of the 24 V connection, all input functions will fail (analogue inputs and digital inputs).
The input functions will be available again when the overload or short-circuit situation is resolved.

CAUTION

Overvoltages destroy the electronics

Analogue and digital inputs are protected for overvoltages up to 30 V DC / 24 V AC. Higher overvoltages destroy the electronics.

7.6 Digital input (DI1) or (DI2) – grey terminal block

The pump can be controlled with the following functions via external potential-free contacts (relay or switch) at the DI1 (terminals 31 and 33) or DI2 (terminals 41 and 43) digital inputs:

- Not used
- External OFF
- External MAX
- External MIN
- External MANUAL
- External key lock

- Heating/cooling switchover

Technical data:

- Maximum voltage: < 30 V DC / 24 V AC
- Maximum loop current: < 5 mA
- Operating voltage: 24 V DC
  Operating loop current: 2 mA (per input)

NOTICE

See “Settings menu – Manual operation” and “Application and function sections of the digital control inputs DI1 and DI2” in the installation and operating instructions for a description of the functions and their priorities

NOTICE

The 24 V DC power supply is not available until the digital input DI1 or DI2 has been configured.

CAUTION

Overload or short-circuit

In case of overload or short-circuit of the 24 V connection with GND, all input functions will fail (analogue inputs and digital inputs).
The input functions will be available again when the overload or short-circuit situation is resolved.

CAUTION

Overvoltages destroy the electronics

Analogue and digital inputs are protected for overvoltages up to 30 V DC / 24 V AC. Higher overvoltages destroy the electronics.

CAUTION

Digital inputs must not be used for safety-oriented shutdowns!

7.7 Bus Wilo Net (green terminal block)

Wilo Net is a Wilo system bus used for establishing communication between Wilo products:

- two single pumps as a twin-head pump in the Y-piece or one twin-head pump in a twin-head pump housing
- several pumps used with Multi-Flow Adaptation control mode

In order to establish the Wilo Net connection, the three **H, L, GND** terminals must be wired with a communication cable from pump to pump. Use shielded cables for cable lengths ≥ 2 m.
Connect incoming and outgoing cable in one terminal.



NOTICE

Incoming and outgoing cables must be fitted with double-wire end sleeves.

Cable for Wilo Net communication:

To ensure interference immunity in industrial environments (IEC 61000-6-2), use a shielded CAN bus cable and an EMC-compatible cable entry for the Wilo Net cables. Earth the shielding on both ends. For optimum transmission, the data cable pair (H and L) must be twisted at Wilo Net and have a characteristic impedance of 120 ohms. Maximum cable length 200 m.



NOTICE

For more information, see “Application and function of the Wilo Net interface” section of the Stratos MAXO user manual (see QR code at the beginning of these installation and operating instructions).

7.8 Collective fault signal (SSM) – red terminal block

An integrated collective fault signal is applied at the SSM terminals as a potential-free changeover contact.
Contact load:

- Permitted minimum: SELV 12 V AC / DC, 10 mA
- Permitted maximum: 250 V AC, 1 A, AC1 / 30 V DC, 1 A



NOTICE

For additional information, see “Application and function of SSM relay [▶ 43]” section.

7.9 Collective run signal (SBM) – orange terminal block

An integrated collective run signal is available at the SBM terminals as a potential-free normally open contact.
Contact load:

- Permitted minimum: SELV 12 V AC / DC, 10 mA
- Permitted maximum: 250 V AC, 1 A, AC1 / 30 V DC, 1 A



NOTICE

For additional information, see “Application and function of SBM relay [▶ 44]” section.

7.10 CIF module



DANGER

Risk of fatal electrical shock!

Immediate danger of death if live components are touched!

- Check whether all connections are voltage-free!

CIF modules (accessories) are used for communication between pumps and building management systems. CIF modules are attached in the electronic module.

- For twin-head pumps, only the main pump must be equipped with a CIF module.
- For pumps in Y-pipe applications in which the electronic modules are connected to each other through the Wilo Net, only the main pump also requires a CIF module.

Installation

- Lever out the cover plate in the terminal room from the slot using suitable tools.
- Insert the CIF module into the exposed slot with the pin contacts facing forwards and permanently screw it to the electronic module. (Screws: included in CIF module scope of delivery)



NOTICE

Explanations on commissioning as well as application, function and configuration of the CIF module on the pump are described in the installation and operating instructions for the CIF modules.

8 Commissioning

- Electrical work: a qualified electrician must carry out the electrical work.
- Installation/dismantling: The technician must be trained in the use of the necessary tools and fixation materials.
- The product must be operated by persons who have been instructed on how the complete system functions.



DANGER

Danger of death due to lack of protective devices!

Due to missing protection devices of the electronic module, an electric shock can lead to life-threatening injuries.

- Before commissioning, protection devices such as electronic module covers that were removed must be reinstalled!
- An authorised technician must check the functionality of the safety devices on the pump and motor prior to commissioning!
- Never connect the pump without the electronic module!

8.1 Filling and venting

Fill and vent the system correctly.

NOTICE

The pump has an automatic venting system. During commissioning, the automatic pump venting function of the pump can be put into operation. This vents the pump hydraulics. All further pump adjustments can be made in parallel.

NOTICE

- Always keep to the minimum pressure!

- To avoid cavitation noises and damage, a minimum inlet pressure must be guaranteed at the suction port of the pump. The minimum inlet pressure depends on the operating situation and the pump's duty point. Accordingly, the minimum pressure must be determined.
- The main parameters for defining the minimum inlet pressure are the NPSH value of the pump at its duty point and the vapour pressure of the fluid. The NPSH value can be found in the technical documentation of the respective pump type.

NOTICE

When pumping from an open tank (e.g. cooling tower), ensure that there is always a sufficient liquid level above the pump's suction port. The minimum inlet pressure must be observed.

8.2 Flush

CAUTION

Property damage!

While using fluids with admixtures, property damage can occur due to the accumulation of chemicals.

- Flush system before commissioning.
- Flush out the pump before pouring in, refilling or replacing fluid.
- Remove the pump before pressure swing purging.
- Do not perform any chemical flushes.

8.3 Procedure after switching on the power supply during initial commissioning

As soon as the power supply is switched on, the display starts. This process can take up to one minute. After the start-up process has been completed, settings can be configured (see separate user manual* on the internet).
At the same time, the motor starts running.

*Separate user manual (see QR code at the beginning of these installation and operating instructions).

8.4 Pump operation

Settings on pump

Carry out settings by turning and pressing the operating button. Turn the operating button to the left or right to browse the menus or configure settings.

NOTICE

If there are no warning or error messages, the display on the electronic module will switch off 2 minutes after the last time it was operated.

• If the operating button is pressed or turned again within 7 minutes, the previously exited menu will appear. You can continue to configure settings.

• If the operating button is not pressed or turned for more than 7 minutes, any unconfirmed settings will be lost. Pressing the button again opens the home screen on the display and the pump can be operated from the main menu.

Initial settings menu

The settings menu will appear in the display during initial commissioning of the pump.

- Stratos MAXO/Stratos MAXO-D: The pump runs in the factory setting → Application: Radiator; Control mode: Dynamic Adapt plus.
- Stratos MAXO-Z: The pump runs in the factory setting → Application: Domestic hot water circulation; control mode: Temperature T-const.

If necessary, press the Context button and go to the Language menu to change the language.

The pump runs in factory setting when the initial commissioning menu is open.

- The initial settings menu is exited when “Start with factory settings” is activated by pressing the operating button. The display changes to the main menu. The pump continues to run in the factory setting.
- If venting has been started, other settings can be made in the meantime.
- In the “First settings” menu, settings that can be selected and adjusted include language, units, applications and night setback.
  The chosen initial settings are confirmed by activating “Finish initial settings”. The display changes to the main menu.

NOTICE

Additional information regarding operation, control functions / additional control functions, setting menu / setting assistant, saved configuration/ saved data, Wilo Net, device settings, twin-head pump operation display, further settings on the pump, and firmware updates are available in a separate user manual on the internet. See QR code at the beginning of these installation and operating instructions.

9 Setting the control functions

9.1 Basic control functions

Depending on the application, basic control functions are available.
The control functions can be selected with the setting assistant:

- Differential pressure Δp-c
- Differential pressure Δp-v

- Index circuit Δp-c
- Dynamic Adapt plus (factory setting of single and twin-head pump)
- Volume flow constant (Q-const.)
- Multi-Flow Adaptation
- Temperature constant (T-const.) (factory setting for drinking water pump)
- Differential temperature (ΔT-const.)
- Speed constant (n-const.)
- PID control

9.2 Additional control functions

NOTICE

Additional control functions are not available for all applications!

These additional control functions are available depending on the application:

- Night setback
- No-Flow Stop
- Q-Limit$_{Max}$
- Q-Limit$_{Min}$
- Nominal duty point Q
- Gradient of the Δp-v characteristic curve
- Multi-Flow Adaptation mixer (from SW ≥ 01.05.10.00)

10 Double pump operation

10.1 Function

All Stratos MAXO pumps are equipped with an integrated dual pump management.

In the “Twin-head pump operation” menu, a twin-head pump connection can be established or disconnected. The twin-head pump function can also be set here.

- **Pump cycling:**
  The actively operated pump is regularly changed automatically to guarantee even usage of both pumps in the event of single pump operation. If only one pump (main/standby, peak load or night setback) is running, the pump being operated is changed after a running time of 24 h at the latest. Both pumps run at the time of pump changeover so that operation is not interrupted. The operated pump can be replaced at least every 1 hour and can be set in length increments up to a maximum of 36 hours.

NOTICE

The remaining time until the next pump cycling is recorded via a timer.
The timer stops if there is a mains interruption. After switching the mains voltage on again, the remaining time until the next pump cycling continues to run.
The count does not start again from scratch!

- **Communication between pumps:**
  Communication for a twin-head pump has been set at the factory.
  First, the bus Wilo Net must be installed with a cable between both electronic modules when connecting two single pumps of the same type to a twin-head pump (in the Y-piece joint).

Then set the termination as well as the Wilo Net address in the menu under “Settings/External interfaces/ Wilo Net setting”. Then configure the settings “Connecting twin-head pump” in the “Settings menu”, sub-menu “Twin-head pump operation”.

- In case of **breakdown/fault/communication interruption**, the functional pump takes over complete operation. The pump runs as a single pump according to the set operating modes of the twin-head pump. The standby pump starts immediately after detecting a fault.

Twin-head pump in the Wilo Net network

If twin-head pumps are added to a larger Wilo Net system (e.g. Multi-Flow Adaptation), the local Wilo Net twin-head pumps must be adapted to the large system.

Motor replacement (RMOT) for twin-head pumps

If a twin-head pump with **SW < 01.04.00.00** is replaced with a motor (RMOT) with **SW ≥ 01.04.19.00**, a SW update is mandatory for the other pump head (see separate user manual on the internet; QR code at the beginning of these installation and operating instructions).

11 Communication interfaces: Setting and function

In the “Settings” menu , select

1. “External interfaces”.

Possible selection:

External interface
▸ Function SSM relay
▸ Function SBM relay
▸ Function control input (DI1)
▸ Function control input (DI2)
▸ Function analogue input (AI1)
▸ Function analogue input (AI2)
▸ Setting Wilo Net

Table 11: Selection “External interfaces”

11.1 Application and function of SSM relay

The contact of the collective fault signal (SSM, potential-free changeover contact) can be connected to a building automation system. The SSM relay can either switch on only in case of fault or for faults and warnings.

- When the pump does not have electricity or if there is no fault, the contact between the terminals COM (75) and OK (76) is closed. The contact is open in all other cases.
- If there is a fault, the contact between the terminals COM (75) and Fault (78) is closed. It is open in all other cases.

In the “Settings” menu , select

1. “External interfaces”
2. “SSM relay function”.

Possible settings:

Selection option	Function SSM relay
Only fault (factory setting)	SSM relay connects only in case of fault. Fault means: The pump is not running.
Faults and warnings	SSM relay connects only in case of fault or a warning.

Table 12: Function SSM relay

After confirming one of the selection options, the SSM trigger delay and SSM reset delay are entered.

Setting	Range in seconds
SSM trigger delay	0 s ... 60 s
SSM reset delay	0 s ... 60 s

Table 13: Trigger and reset delay

NOTICE

SSM trigger and SSM reset delay is set to 5 seconds as a factory setting.

- **SSM/ESM (collective fault signal/individual fault signal) in twin-head pump operation:**
  - The **SSM function** must preferably be connected to the main pump. The SSM contact can be configured as follows:
    the contact reacts either only in the event of a fault or in the event of a fault and a warning.
    Factory setting SSM only reacts in the event of a fault.
    Alternatively or additionally, the SSM function can also be activated on the standby pump. Both contacts work in parallel.
  - **ESM:** The ESM function of the twin-head pump can be configured on each head of the twin-head pump head as follows: The ESM function on the SSM contact only signals faults of the respective pump (individual fault signal). In order to record all faults of the two pumps, both contacts must be assigned.

11.2 Application and function of SBM relay

The contact of the collective run signal (SBM, potential-free normally open contact) can be connected to a building automation system. The SBM contact signals the operating status of the pump. The SBM relay can either switch on for “Motor in operation”, “Ready for operation” or for “Power supply ready”.

- When the pump is running in the set operating mode and based on the next settings, the contact between the terminals COM (85) and RUN (88) are closed.

In the “Settings” menu , select

1. “External interfaces”
2. “SBM relay function”.

Possible settings:

Selection option	Function SSM relay
Motor in operation (factory setting)	SBM relay connects only when motor is running. Closed relay: The pump is supplying.
Power supply ready	SBM relay connects for power supply. Closed relay: Voltage available.
Ready for operation	SBM relay connects when there is no fault. Closed relay: Pump can supply.

Table 14: Function SBM relay

NOTICE

The following applies from **SW ≥ 01.05.10.00**:
If SBM is set to “Motor in operation”, the SBM relay switches when No-Flow Stop is active.
If SBM is set to “Ready for operation”, the SBM relay does not switch when No-Flow Stop is active.

After confirming one of the selection options, the SBM trigger delay and SBM reset delay are entered.

Setting	Range in seconds
SBM trigger delay	0 s to 60 s
SBM reset delay	0 s to 60 s

Table 15: Trigger and reset delay

NOTICE

SBM trigger and SBM reset delay is set to 5 seconds as a factory setting.

SBM/EBM (collective run signal/individual run signal) in twin-head pump operation

- **SBM:** The SBM contact can be assigned to any of the two pumps. Both contacts signal the operating status of the twin-head pump in parallel (collective run signal).
- **EBM:** The SBM function of the twin-head pump can be configured so that the SBM contacts signal only operational messages of the respective pump (individual run signal). In order to record run signals of both the pumps, both contacts must be assigned.

11.3 SSM/SBM relay forced control

An SSM/SBM relay forced control is used as function test of the SSM/SBM relay and electrical connections.

In the “Diagnostics and measured values” menu , select

1. “Diagnostics help”
2. “SSM relay forced control” or “SBM relay forced control” in sequence.

Selection options:

SSM/SBM relay Forced control	Help text
Normal	**SSM:** Depending on the SSM configuration, fault and warnings influence the SSM relay switching status. **SBM:** Depending on the SBM configuration, the pump status influences the SBM relay switching status.
Forced active	SSM/SBM relay switching status is forced ACTIVE. **CAUTION:** **SSM/SBM does not display the pump status!**
Forced inactive	SSM/SBM relay switching status is forced INACTIVE. **CAUTION:** **SSM/SBM does not display the pump status!**

Table 16: Selection option SSM/SBM relay forced control

The “Forced active” setting permanently activates the relay. A warning/operating note (light) is permanently displayed/indicated.
The “Forced inactive” setting leaves the relay permanently without a signal. No warning/operating note can be confirmed.

11.4 Application and function of the digital control inputs DI1 and DI2

The pump can be controlled through external potential-free contacts at the digital inputs DI1 and DI2. The pump can be

- switched on or switched off,
- controlled to maximum or minimum speed,
- set manually into an operating mode,
- protected against changes of settings through control or remote control or
- switched between heating and cooling.

In the “Settings” menu , select

1. “External interfaces”
2. select “Function control input DI1” or “Function control input DI2”.

Possible settings:

Selection option	Function control input DI1 or DI2
Not used	The control input does not have a function.
External OFF	**Contact open:** Pump is switched off. **Contact closed:** Pump is switched on.
External MAX	**Contact open:** Pump is running in the mode set on the pump. **Contact closed:** Pump is running with maximum speed.
External MIN	**Contact open:** Pump is running in the mode set on the pump. **Contact closed:** Pump is running with minimum speed.
External MANUAL	**Contact open:** Pump is running in the mode set on the pump or in mode requested via bus communication. **Contact closed:** Pump is set to MANUAL.

Selection option	Function control input DI1 or DI2
External key lock	**Contact open:** Key lock is deactivated. **Contact closed:** Key lock is activated.
Heating/cooling switchover	**Contact open:** “Heating” active. **Contact closed:** “Cooling” active.

Table 17: Function control input DI1 or DI2

To guarantee the heating/cooling switchover function operates correctly at the digital input:

1. Select the “Heating & cooling” application in the menu “Settings”, “Set control mode”, “Setting assistant”, **and**
2. Select the “Binary input” option in the menu “Settings”, “Set control mode”, “Heating/cooling switchover” as switchover criterion.

12 Maintenance

12.1 Shutdown

The pump must be shut down before carrying out maintenance, repair or dismantling work.



DANGER

Electric shock!

There is danger of death from electric shock when working on electrical devices.

- Work on electrical components may only be carried out by qualified electricians!
- Switch off the voltage on all-poles of the pump and secure against unauthorised restart!
- Always deactivate the power supply from the pump and if necessary SSM and SBM!
- Due to the presence of dangerous contact voltage, work on the module must not be started until 5 minutes have elapsed!
- Check whether all connections (even potential-free contacts) are voltage-free!
- The pump may still be live even in voltage-free state. The rotor induces a contact voltage, which is also present at the motor contacts. Close the existing shut-off valves in front of and behind the pump!
- Do not operate the pump if the electronic module/Wilo-Connector is damaged!
- In case of impermissible removal of operating and settings elements on the electronic module, there is a risk of electric shock if inner electrical components are touched!



WARNING

Risk of burns!

Depending on the operating status of the pump and the system (fluid temperature), the entire pump can get hot.

- Risk of burns when touching the pump!
- Allow the system and pump to cool to room temperature!

Follow all safety instructions described in the “Safety [▶ 9]” to “Electrical connection [▶ 30]” sections! After successful maintenance and repair work, install and connect the pump in accordance with the “Installation [▶ 22]” and “Electrical connection [▶ 30]” sections. The pumps are activated in accordance with the “Commissioning [▶ 39]” section.

12.2 Dismantling/installation

Before any dismantling/installation operation, make sure that the section “Shutdown” has been taken into consideration!



WARNING

Risk of burns!

Incorrect dismantling/installation can result in personal injury and property damage.
Depending on the operating status of the pump and the system (fluid temperature), the entire pump can get very hot.
There is a severe risk of burns from simply touching the pump!

- Allow the system and pump to cool to room temperature!



WARNING

Risk of scalding!

The fluid is under high pressure and can be very hot.
There is a risk of scalding due to escaping hot fluid!

- Close shut-off devices on both sides of the pump!
- Allow the system and pump to cool to room temperature!
- Drain the shut-off branch of the system!
- If no shut-off valves are fitted, drain the system!
- Follow the manufacturer’s instructions and safety data sheets for possible additives in the system!



WARNING

Risk of injury!

Danger of injury caused by falling motor/pump after loosening the fastening screws.

- Comply with national regulations for accident prevention and also with the operator’s internal work, company and safety regulations. If necessary, wear protective clothing and equipment!



DANGER

Danger of death!

The permanent magnet rotor inside the pump can be a danger to life for people with medical implants during dismantling.

- Removal of rotor from the motor housing is permissible only for authorised and qualified personnel!
- If the unit consisting of impeller, bearing plate and rotor is pulled out of the motor, persons with medical aids, such as cardiac pacemakers, insulin pumps, hearing aids, implants or similar are at risk. Death, severe injury and damage to property may be the result. For such persons, a professional medical assessment is always necessary!
- There is a crushing hazard! When removing the rotor from the motor, it can be pulled back into its original position by the strong magnetic field!
- If the rotor is outside the motor, magnetic objects may be attracted very suddenly. This may cause bodily injury and property damage!
- Electronic devices can be impaired or damaged by the strong magnetic field of the rotor!

When assembled, the rotor's magnetic field is guided in the motor's iron core. However, there is no magnetic field outside the machine that is harmful to health or has a negative impact.



DANGER

Risk of fatal electrical shock!

Even without the module (without electrical connection), there may be dangerous contact voltage at the motor contacts.
It is not permissible to dismantle the module!

12.2.1 Dismantling/installation of the motor

Take the "Shutdown" section into account before dismantling/installing the motor!



DANGER

Risk of fatal electrical shock! Generator or turbine operation during pump flow!

Even without the module (without electrical connection), there may be dangerous contact voltage at the motor contacts.

- Avoid flow in the pump during dismantling/installation work!
- Close the existing shut-off devices in front of and behind the pump!
- If no shut-off devices are fitted, drain the system!

Dismantling the motor

1. Remove sensor cable carefully from the electronic module.
2. Loosen motor fastening screws.

CAUTION

Property damage!

If the motor head is separated from the pump housing during maintenance or repair work:

‣ Insert the O-ring between the motor head and pump housing!
‣ Install the O-ring without torsion in the edge of the bearing plate facing towards the impeller!
‣ Make sure the O-ring has been installed correctly!
‣ Carry out a leak test at the highest permissible operating pressure!

Installing the motor

The motor is installed in reverse order of dismantling.

1. Tighten motor fastening screws diagonally. Observe the tightening torques! (Table, see the “Aligning the motor head [▶ 26]” section).
2. Insert sensor cable into the electronic module interface.



NOTICE

If access to the screws on the motor flange is not guaranteed, the electronic module can be separated from the motor (see “Aligning the motor head” [▶ 26] section).

In case of twin-head pumps, the twin-head pump cable, which connects the motors, must be loosened or inserted.

For the commissioning of the pump, see “Commissioning [▶ 39]” section.

If only the electronic module has to be brought into another position, the motor need not be pulled out of the pump housing completely. The motor can be rotated in the pump housing into the desired position (follow permissible installation positions). See the “Aligning the motor head” [▶ 26] section.



NOTICE

In general, turn the motor head before the system is filled.

Perform an impermeability test!

12.2.2 Dismantling/installing the electronic module

Take the “Shutdown” section into account before dismantling/installing the electronic module!



DANGER

Risk of fatal electrical shock! Generator or turbine operation during pump flow!

Even without the module (without electrical connection), there may be dangerous contact voltage at the motor contacts.

- Avoid flow in the pump during dismantling/installation work!
- Close the existing shut-off devices in front of and behind the pump!
- If no shut-off devices are fitted, drain the system!
- Do not place any objects (e.g. nail, screwdrivers, wire) in the contact area of the motor!



WARNING

Personal and property damage!

Incorrect dismantling/installation can lead to injuries and damage to property.
An incorrect module will cause the pump to overheat.

- In case of module replacement, ensure correct assignment of pump/electronic module!

Dismantling the electronic module

1. Loosen handle grip of the Wilo-Connector using a screwdriver and pull out plug (Fig. 10).
2. Carefully remove sensor cable/twin-head pump cable from the electronic module.
3. Loosen the screws of the module cover (Fig. 11).
4. Remove the module cover.
5. Disconnect all positioned/connected cables in the terminal room, undo the shield clamp and nut of the threaded cable gland.
6. Pull out all cables from the threaded cable gland.



NOTICE

To loosen the leads: Open the WAGO “Cage Clamp” spring clip! Then pull out leads!

7. If necessary, undo and remove the CIF module.
8. Loosen M4 interior hexagonal head screws in the electronic module.
9. Remove electronic module from the motor.

Installing the electronic module

The electronic module is installed in reverse order of dismantling.

12.2.3 Dismantling/installation of the sensor on pump housing

Take into account the “Shutdown” section before dismantling/installing the sensor on the pump housing!

The sensor at the pump housing is used to measure temperature.



WARNING

Hot components!

Pump housing, motor housing and lower module housing can get hot and cause burns if touched.

- Allow the pump to cool down before commencing any work!



WARNING

Hot fluids!

There is a risk of scalding caused by escaping, hot fluid at high fluid temperatures and system pressure values.
Residual pressure in the pump between the shut-off devices may suddenly push the loose sensor out of the pump housing.

- Close shut-off device or drain unit!
- Follow the manufacturer’s instructions and safety data sheets for possible additives in the system!

Dismantling the sensor

1. Dismantle the two-part thermal insulation from the pump housing of single pumps.

2. Pull sensor socket from sensor.
3. Loosen screws of the fixing plate.
4. Pull out sensor. If required, lift the sensor into the groove with a flat screwdriver.

Installation of the sensor on pump housing

The installation of the sensor on pump housing is done in reverse order of dismantling.

NOTICE

Ensure correct positioning during sensor installation!

1. Push the bar, which is located on sensor, into the groove at the sensor opening.

13 Faults, causes, remedies

WARNING

Have faults remedied by qualified personnel only! Observe safety instructions.

In the event of faults, fault management only provides feasible pump outputs and functionalities.
Any occurred faults are permanently checked and, if possible, emergency operation or control mode are activated.
Flawless pump operation is only resumed once the fault cause no longer applies. Example: The control module has once again cooled down.

Configuration warnings indicate that an incomplete or wrong configuration is preventing execution of a desired function.

NOTICE

If the pump behaves incorrectly, check that the analogue and digital inputs are configured correctly.

The influence of faults on SSM (collective fault signal) and SBM (collective run signal) see section “Communication interfaces: Setting and function [▶ 43]”.

13.1 Diagnostics help

In order to support fault analysis, the pump provides additional help apart from fault notifications:

Diagnostics help is used for diagnosis and maintenance of electronics and interfaces. Apart from hydraulic and electrical overviews, information about interfaces, device information and manufacturer’s contact data are provided.

In the “Diagnostics and measured values” menu , select

13.2 Mechanical faults without error messages

Faults	Causes	Remedies
Pump is not running.	Electric fuse defective.	Check fuses.
Pump is not running.	Pump has no voltage.	Reconnect the voltage.
Pump makes noises.	Cavitation through insufficient suction pressure.	Increase system feed pressure within permissible range.
Pump makes noises.		Check delivery head setting, set to lower delivery head if required.

Table 18: Faults with external interference sources

13.3 Error messages

Displays an error message on the display

- The status display will be in red colour.
- Error message, error code (E...), cause and remedy are described as text.

Error messages displayed on the LED display with seven segments

- An error code (E...) is displayed.



The pump does not pump if an error has occurred. If the pump identifies as part of permanent monitoring that the cause of the error no longer applies, the error message is revoked and operation resumes.

If an error message is output, the display is permanently on and the green LED indicator is off.

13.4 Warning messages

Warning displayed:

- The status display is marked in yellow.
- Warning message, warning code (W...), cause and remedy are described as text.

Display of a warning in 7-segment LED display:

- The warning is displayed with a red coloured warning code (H...).



Warnings indicate restricted pump function. The pump continues to operate in restricted mode (emergency operation).
Depending on the cause of the warning, emergency operation leads to a restriction of the control function and even reactivation of a fixed speed.
If the pump identifies as part of permanent monitoring that the cause of the warning no longer applies, the warning is revoked and operation resumes.

If a warning message is output, the display is permanently on and the green LED indicator is off.

13.5 Configuration warnings

Configuration warnings occur if an incomplete or contradictory configuration has been made.

Example:
The “Hall temperature control” function requires a temperature sensor. The corresponding source is not specified or not correctly configured.

14 Spare parts

Original spare parts may only be obtained from local installers and/or Wilo customer service. To avoid queries and order errors, please provide all data on the rating plate with every order.

15 Disposal

15.1 Information on the collection of used electrical and electronic products

Proper disposal and appropriate recycling of this product avoids environmental damage and risks to personal health.



NOTICE

Disposal in domestic waste is prohibited!

In the European Union this symbol may be included on the product, the packaging or the accompanying documentation. It means that the electrical and electronic products in question must not be disposed of along with domestic waste.

Please note the following points to ensure proper handling, recycling and disposal of the used products in question:

- Hand over these products at designated, certified collection points only.
- Observe the locally applicable regulations!

Please consult your local municipality, the nearest waste disposal site, or the dealer who sold the product to you for information on proper disposal. Further recycling information at http://www.wilo-recycling.com.

Subject to change without prior notice!

15.2 Batteries/rechargeable batteries

Batteries and rechargeable batteries must not be disposed of with domestic waste and must be removed before the product is disposed of. End consumers are legally obliged to return all used batteries and rechargeable batteries. For this purpose, you can return used batteries and rechargeable batteries free of charge at municipal collection points or specialist dealers.



NOTICE

Built-in lithium battery!

The electronic module of Stratos MAXO contains a non-replaceable lithium battery. For reasons of safety, health and data back-up, do not remove the battery yourself! Wilo offers voluntary take-back of affected end-of-life products and guarantees eco-friendly recycling and recovery processes. Further recycling information at www.wilo-recycling.com.

Subject to change without prior notice!









wilo



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