Pioneering for You

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Wilo-Varios PICO

ErP READY APPLIES TO EUROPEAN DIRECTIVE FOR ENERGY RELATED PRODUCTS

en Installation and operating instructions

Fig. 1:

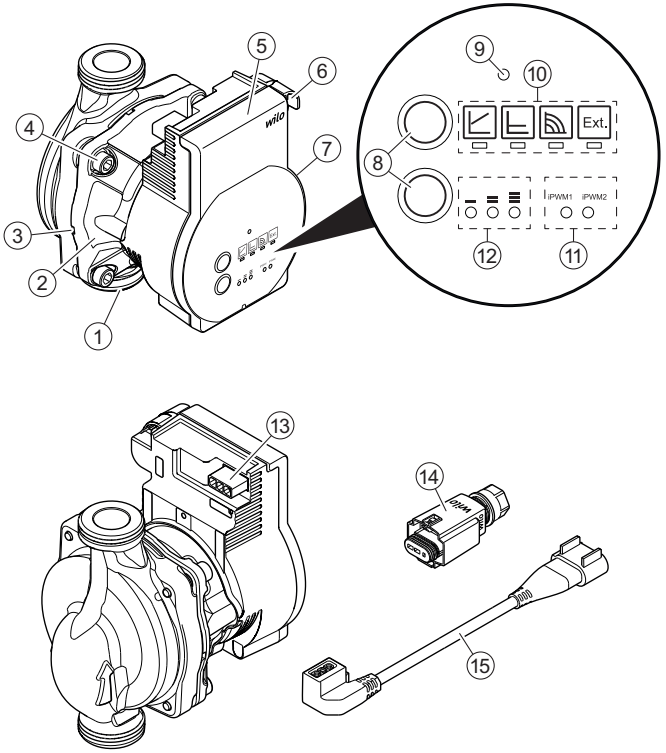


Fig. 2:

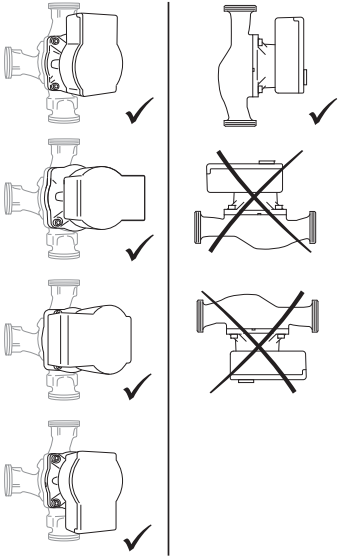
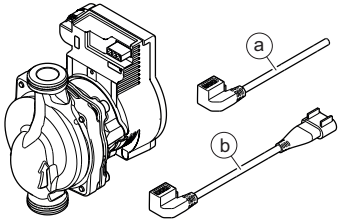


Fig. 3:



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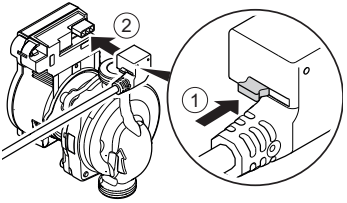


Fig. 5a:

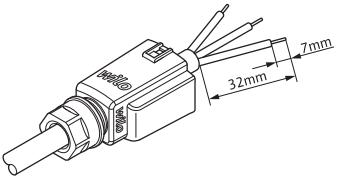


Fig. 5b:

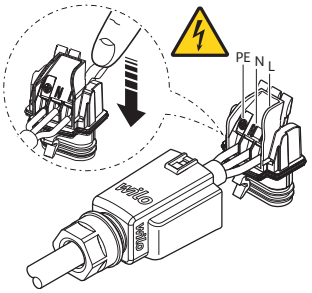


Fig. 5c:

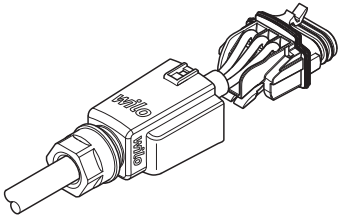


Fig. 5d:

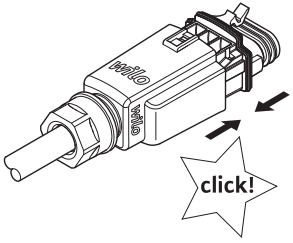


Fig. 5e:

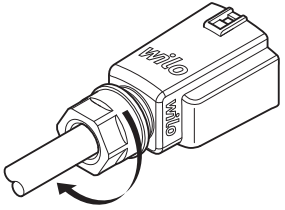


Fig. 5f:

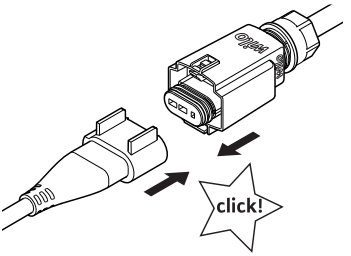
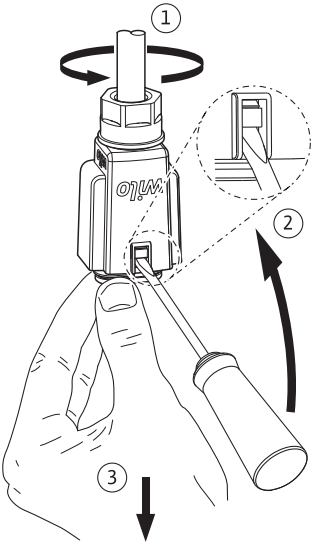


Fig. 6:



1 General

About these instructions

These installation and operating instructions are an integral part of the product. Read these instructions before commencing work and keep them in an accessible place at all times.

Strict adherence to these instructions is a requirement for intended use and correctly operating the product. All specifications and markings on the product must be observed.

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

2 Safety

This section contains basic information which must be adhered to during installation, operation and maintenance. Additionally, the instructions and safety instructions in the other sections must be followed.

Failure to follow the installation and operating instructions will result in the risk of injury to persons and damage to the environment and the product. This will result in the loss of any claims for damages.

Failure to follow the instructions will, for example, result in the following risks:

- Injury to persons from electrical, mechanical and bacteriological factors as well as electromagnetic fields
- Environmental damage from leakage of hazardous substances
- Property damage
- Failure of important functions of the product

Identification of safety instructions

These installation and operating instructions set out safety instructions for preventing personal injury and damage to property, which are displayed in different ways:

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

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

Signal words

DANGER!
Failure to observe safety instructions will result in serious injury or death!

WARNING!
Failure to follow instructions can lead to (serious) injury!

CAUTION!
Failure to follow instructions can lead to property damage and possible total loss.

NOTICE
Useful information on handling the product

Symbols

These instructions use the following symbols:

 Risk of fatal injury from electric voltage

 General danger symbol

 Warning of hot surfaces/fluids

 Warning of magnetic fields

 Notices

Personnel qualifications

Personnel 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 must be carried out by a qualified electrician (in accordance with EN 50110-1).

- Installation/dismantling must be carried out by a qualified technician who is trained in the use of the necessary tools and fixation materials.
- The product must be operated by persons who are instructed on how the complete system functions.

Definition of "qualified electrician"

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

Electrical work

- Electrical work must be performed by a qualified electrician.
- Nationally applicable guidelines, standards and regulations as well as specifications issued by the local energy supply companies for connection to the local power supply system must be observed.
- Before commencing work, disconnect the product from the mains and safeguard it from being switched on again.
- The connection must be protected by means of a residual-current device (RCD).
- The product must be earthed.
- Have defective cables replaced immediately by a qualified electrician.
- Never open the control module and never remove control elements.

Operator responsibilities

- Have all work carried out by qualified personnel only.
- Ensure on-site guard against hot components and electrical hazards.
- Have defective gaskets and connection pipes replaced.

This device can be used by children from 8 years of age as well as by people with reduced physical, sensory or mental capacities or lack of experience and knowledge if they are supervised or instructed in the safe use of the device and they understand the dangers that can occur. Children are not allowed to play with the device. Cleaning and user maintenance is not allowed to be carried out by children without supervision.

3 Product description and function

Overview Wilo-Varios PICO (Fig. 1)

1 Pump housing with screwed connections
2 Glandless motor
3 Condensate drain openings (4x around circumference)
4 Housing screws
5 Control module
6 PWM signal cable connection
7 Rating plate
8 Operating buttons for pump adjustment
9 Fault signal LED
10 Display of control mode
11 Display of PWM signal type
12 Display of set pump curve (I, II, III)
13 Mains connection: 3-pin plug connection
14 Wilo-Connector
15 Connection cable: 3-pin pump plug and Wilo-Connector connection

Function High-efficiency circulator for hot-water heating systems with integrated differential pressure control. Control mode and delivery head (differential pressure) are adjustable. The differential pressure is controlled via the pump speed.

Type key

Example: Wilo-Varios PICO 25/1-7-130	
Varios PICO	High-efficiency circulator
25	Screwed connection DN 25 (Rp 1)
1-7	1 = minimum delivery head in m (adjustable down to 0.5 m) 7 = maximum delivery head in m at Q = 0 m^3/h
130	Port-to-port length: 130 mm or 180 mm

Technical data

Connection voltage	1 ~ 230 V ± 10%, 50/60 Hz
Protection class IP	See rating plate (7)
Energy efficiency index EEI	See rating plate (7)
Fluid temperatures at max. ambient temperature +40 °C	-10 °C to +95 °C
Fluid temperatures at max. ambient temperature +25 °C	-10 °C to +110 °C
Permitted ambient temperature	-10 °C to +40 °C
Max. operating pressure	10 bar (1000 kPa)
Minimum inlet pressure at +95 °C/+110 °C	0.3 bar/1.0 bar (30 kPa/100 kPa)

Indicator lights (LEDs)

- Display of selected control mode Δp-v, Δp-c, constant speed and external speed control

- Display of selected pump curve (I, II, III) or PWM signal type (PWM1, PWM2) within the control mode.

- LED indicator combinations during pump venting function, manual restart and LED coding within the sync function.

- Signal display
  - LED lights up green during normal operation.
  - LED flashes red or green or lights up permanently red in the case of a fault signal.
  - LED lights up red in the event of incorrect LED coding after ending the sync function.

Operating buttons

Top operating button

Press

- Select control mode.
- Activate the pump venting function (press and hold).
- Select the LED during the sync function.

Bottom operating button

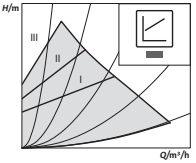
Press

- Selection of pump curve (I, II, III) or PWM signal (PWM1, PWM2) within the control mode.
- Activate manual restart (press and hold).
- Activate or deactivate selected LED during the sync function.

3.1 Control modes and functions

Variable differential pressure Δp-v (I, II, III)

Recommended for two-pipe heating systems with radiators to reduce the flow noise at thermostatic valves.



The pump reduces the delivery head to half in the case of decreasing volume flow in the pipe network.

Electrical energy saving by adjusting the delivery head to the volume flow requirement and lower flow rates.

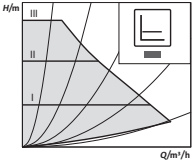
There are three pre-defined pump curves (I, II, III) to choose from.

NOTICE

Factory setting: Δp-v, pump curve II

Constant differential pressure Δp-c (I, II, III)

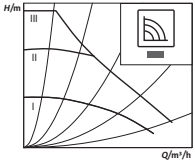
Recommended for underfloor heating.
Or for large-sized pipes, applications without a variable pipe network curve (e.g. storage charge pumps) or single-pipe heating systems with radiators.



The controls keep the set delivery head constant, independent of the delivered volume flow.
There are three pre-defined pump curves (I, II, III) to choose from.

Constant speed (I, II, III)

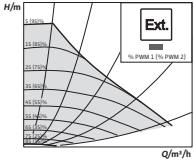
Recommended for systems with fixed system resistance requiring a constant volume flow.



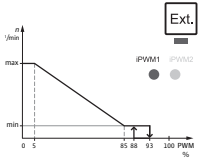
The pump runs uncontrolled in three prescribed fixed speed stages (I, II, III).

External control via a PWM signal

The required setpoint/actual value comparison for control is performed by an external controller.
A PWM signal (pulse-width modulation) is fed as a correcting variable to the pump.



The PWM signal generator gives the pump a periodic sequence of impulses (the duty cycle) in accordance with DIN IEC 60469-1.



PWM 1 mode:

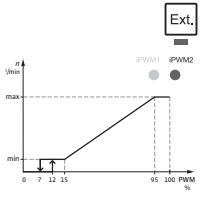
In PWM 1 mode, the pump speed is controlled according to the PWM input signal.

Behaviour in the event of a cable break:

If the signal cable is separated from the pump, e.g. due to a cable break, the pump accelerates to maximum speed.

PWM signal input [%]

< 5:	Pump runs at maximum speed
5–85:	The speed of the pump decreases linearly from n_{max} to n_{min}
85–93:	Pump runs at minimum speed (operation)
85–88:	Pump runs at minimum speed (starting)
93–100:	Pump stops (standby)



PWM 2 mode:

In PWM 2 mode, the pump speed is controlled according to the PWM input signal.

Behaviour in the event of a cable break:

If the signal cable is separated from the pump, e.g. due to a cable break, the pump stops.

PWM signal input [%]

0–7:	Pump stops (standby)
7–15:	Pump runs at minimum speed (operation)
12–15:	Pump runs at minimum speed (starting)
15–95:	The speed of the pump increases linearly from n_{min} to n_{max}
> 95:	Pump runs at maximum speed

Venting

The ***pump venting function*** is activated by pressing and holding the top operating button and automatically vents the pump.

The heating system is not vented.

Manual restart

A ***manual restart*** is activated by pressing and holding the bottom operating button and unblocks the pump as required (e.g. after long idle time in summer).

Sync function

The ***sync function*** is activated by simultaneously pressing the top and bottom operating buttons.

The synchronisation function can be activated if the pump curves of a pump to be replaced need to be reproduced.

The pump curves are reproduced by reprogramming the pump using straightforward LED coding. Information on suitable replacement pumps and LED coding is available in the Wilo replacement guide or in the Wilo Assistant app.

4 Intended use

The high-efficiency circulators in the Wilo-Varios PICO series are exclusively designed for circulating fluids in hot-water heating systems and similar systems with constantly changing volume flows.

Permitted fluids:

- Heating water according to VDI 2035 (CH: SWKI BT 102-01).
- Water-glycol mixtures* with a maximum of 50 % glycol.

* Glycol has a higher viscosity than water. If admixtures of glycol are used, the pumping data of the pump must be corrected to match the mixing ratio.

NOTICE
Only introduce ready-to-use mixtures to the system. The pump must not be used to mix fluid in the system.

Intended use includes observing these instructions and the specifications and markings on the pump.

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

WARNING!
Danger of injury or material damage from improper use!
- Never use non-specified fluids.
- 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 only.
- Never operate with phase angle control.

5 Transportation and storage

Scope of delivery
- High-efficiency circulator
- 2 gaskets
- Mains connection cable with 3-pin pump plug and Wilo-Connector connection
- Wilo-Connector
- Installation and operating instructions

Transport inspection Immediately check for transportation damage and completeness upon delivery, and lodge any complaints immediately.

Transport and storage conditions Protect against moisture, frost and mechanical loads. Permissible temperature range: -10 °C to +50 °C.

6 Installation and electrical connection

6.1 Installation

May only be installed by qualified technicians.

WARNING!
Risk of burns from hot surfaces!
Pump housing (1) and glandless motor (2) may become hot and cause burns if touched.
- During operation, only touch the control module (5).
- Allow the pump to cool down before commencing any work.

WARNING!
Risk of scalding from hot fluids!
Hot fluids can cause scalding. Before installing or removing the pump, or loosening the housing screws (4), note the following:
- Allow the heating system to cool down completely.
- Close shut-off devices or drain the heating system.

Preparation

- Choose an installation point that is as easily accessible as possible.
- Observe the pump's permitted installation position (Fig. 2) and rotate the motor head (2+5) if necessary.

CAUTION!
An incorrect installation position may damage the pump.
- Select the installation point according to the permitted installation position (Fig. 2).
- The motor must always be installed horizontally.
- The electrical connection must never face upwards.

- Install shut-off devices upstream and downstream of the pump to facilitate pump replacement.

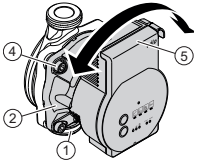
CAUTION!
Leaking water may damage the control module.
- Align the upper shut-off device such that leaking water cannot drip onto the control module (5).

- Align the upper shut-off device laterally.
- When installing in the feed of open systems, the safety supply must branch off upstream of the pump (EN 12828).
- Complete all welding and brazing work.
- Flush the pipe system.

Rotating the motor head

Rotate the motor head (2+5) before installing and connecting the pump.
- If necessary, remove the thermal insulation shell.

WARNING!
Risk of fatal injury from magnetic field!
Risk of fatal injury for people with medical implants due to permanent magnets installed in the pump.
- Never remove the rotor.

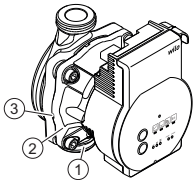


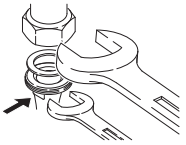
- Hold the motor head (2+5) and unscrew the 4 housing screws (4).

CAUTION!
Damage to the inner gasket causes leakage.
- Carefully rotate the motor head (2+5) without removing it from the pump housing (1).

- Carefully rotate the motor head (2+5).
- Observe the permitted installation position (Fig. 2) and the direction arrow on the pump housing (1).
- Tighten the 4 housing screws (4).

Installing the pump





Observe the following points when installing the pump:

- Note the direction arrow on the pump housing (1).
- Install glandless motor (2) horizontally, without mechanical tension.
- Place gaskets in the screwed connections.
- Screw on threaded pipe unions.
- Use an open-end wrench to secure the pump against twisting and screw tightly to piping.
- Re-mount the thermal insulation shell if required.

CAUTION!
Insufficient heat dissipation and condensation water may damage the control module and the glandless motor.

- Do not thermally insulate the glandless motor (2).
- Ensure all condensate drain openings (3) are kept free.

6.2 Electrical connection

The electrical connection may only be carried out by a qualified electrician.

DANGER!
Risk of fatal injury from electrical voltage!
Immediate risk of fatal injury if live components are touched.

- Before commencing work, switch off the power supply and secure it from being switched on again.
- Never open the control module (6) and never remove control elements.

CAUTION!

Pulsed mains voltage can cause damage to electronic components.

- Never operate the pump with phase angle control.
- When switching the pump on or off using an external control unit, deactivate any voltage pulse (e.g. phase angle control).
- For applications where it is not clear whether the pump is operated with pulsed voltage, get the control/system manufacturer to confirm that the pump is operated with sinusoidal AC voltage.
- Switching the pump on/off via triacs/solid-state relays must be examined on a case-by-case basis.

Preparation

- The current type and voltage must agree with the specifications on the rating plate (7).
- Maximum back-up fuse: 10 A, slow-blow.
- Only operate the pump with sinusoidal AC voltage.
- Note the switching frequency:
  - On/off switching operations via mains voltage ≤ 100/24 h.
  - ≤ 20/h for a switching frequency of 1 min. between switching on/off via mains voltage.
- The electrical connection must be made via a fixed connecting 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).
- Use a connecting cable with sufficient outer diameter (e.g. H05VV-F3G1.5) to protect against leaking water and to ensure strain relief on the threaded cable connection.
- Use a heat-resistant connecting cable where fluid temperatures exceed 90 °C.
- Ensure that the connecting cable does not make contact with either the pipes or the pump.

Pump cable connection

Installing the supplied mains connection cable (15)

- Press down the locking button of the 3-pin pump plug and connect the plug to the plug connection (13) of the control module until it snaps into place (Fig. 4).

Wilo-Connector connection

Installing Wilo-Connector

- Disconnect the connecting cable from the power supply.
- Observe terminal assignment (⏚ (PE), N, L).
- Connect and install the Wilo-Connector (Fig. 5a to 5e).

Connecting the pump

- Earth the pump.
- Connect Wilo-Connector (14) to the connection cable (15) until it snaps into place (Fig. 5f).

Removing the Wilo-Connector

- Disconnect the connecting cable from the power supply.
- Remove the Wilo-Connector using a suitable screwdriver (Fig. 6).

Connection to an existing device

The pump can be directly connected to an existing pump cable with a 3-pin plug (e.g. Molex) when being replaced (Fig. 3, item a).

- Disconnect the connecting cable from the power supply.
- Press down the locking button of the installed plug and remove the plug from the control module.
- Observe the terminal assignment (PE, N, L).
- Connect the existing device plug to the plug connection (13) of the control module.

PWM connection

Connecting the PWM signal cable (accessories)

- Connect the signal cable to the PWM connection (8) until it snaps into place.
- Signal properties:
  - Signal frequency: 100 Hz – 5000 Hz (1000 Hz nominal)

- Signal amplitude: min. 3.6 V at 3 mA to 24 V for 7.5 mA, absorbed by the pump interface.
- Signal polarity: none

CAUTION!

The connection of mains voltage (AC) will destroy the PWM input and cause serious damage to the product.

- At the PWM input the maximum voltage is 24 V pulsed input voltage.

7 Commissioning

Commissioning only by qualified technicians.

7.1 Venting

- Fill and vent the system correctly.

If the pump does not vent automatically:

- Activate the pump venting function via the top operating button: press and hold for 5 seconds, then release.

➥ The pump venting function is initiated and lasts 10 minutes.

➥ The top and bottom LED rows flash in turn.

- Press the top operating button quickly 2x to cancel.

NOTICE

After venting, the LED display shows the previously set values of the pump.

7.2 Setting the control mode

Select control mode

Pressing the top operating button:

➥ LED indicates the set control mode

- 1st pressing of button: set control mode Δp-v.

- 2nd pressing of button: set control mode Δp-c.

- 3rd pressing of button: set constant speed.

- 4th pressing of button: set external control.

Selecting pump curve / PWM signal

Pressing the bottom operating button:

- Setting pump curve

➥LED indicates the set pump curve

Pressing of button	LED	Pump curve	
1st	●	**I**	Δp-v, Δp-c, constant speed
2nd	●	**II**	Δp-v, Δp-c, constant speed
3rd	●	**III**	Δp-v, Δp-c, constant speed

- Setting PWM signal type

➥LED indicates the set PWM signal type

Pressing of button	LED	PWM signal
1st	iPWM1 ●	PWM 1
2nd	iPWM2 ●	PWM 2

NOTICE
All settings/displays are retained if the power supply is interrupted.

7.3 Sync function

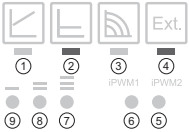
The pump curve of a pump to be replaced can be adapted via an LED code and is specific to each product profile.

Information on suitable replacement pumps and LED coding is available in the Wilo replacement guide or in the Wilo Assistant app (sync function tool).

General operation

- Starting sync function:
  Simultaneously press the two operating buttons.
- Select LED:
  Press the top operating button enough times until the required LED (up to 9 LEDs) in a clockwise direction is selected.
- Activating or deactivating LED:
  Press bottom operating button to change the status (active or inactive) of the selected LED.
- Confirming new LED coding:
  Simultaneously press the two operating buttons 1x briefly.
- Cancelling sync function – changes are not saved:
  Simultaneously press the two operating buttons for 5 seconds.

NOTICE
The LED indicators are independent during the sync function and have no effect on the indicators of the selected control modes and pump curve settings.



Example:
In order to reprogram the pump for a Wilo-Star RS 15/4, the LED coding must have the following result:

2nd LED and 4th LED are activated.

Starting sync function

- Simultaneously press and hold the top and bottom operating buttons for 5 seconds, then release.

➥ All LEDs give short flicker

➥ The first LED flashes

- Press the top operating button to select the 2nd LED.

➥ The first LED goes out
➥ The second LED flashes

- Press the bottom operating button to activate the 2nd LED.

➥ The second LED lights up

- Press the top operating button to select the 3rd LED.

➥ The third LED flashes

- Press the top operating button to select the 4th LED.

➥ The third LED goes out
➥ The fourth LED flashes

- Press the bottom operating button to activate the 4th LED.

➥The fourth LED lights up

The sync function is completed for the pump to be replaced (example of Wilo-Star RS 15/4).

- Compare the setting to the LED code.

NOTICE
If all 9 LEDs are run through, the LED selection automatically begins again with the 1st LED. Simultaneously press the two buttons to cancel the mode.

- To finish, simultaneously press and hold the top and bottom operating buttons 1x briefly.

➥The LED coding applied is displayed for 5 seconds

➥All LEDs flash 3x

➥The new setting is applied and the sync function finished. The pump returns to normal control mode.

NOTICE
Upon completing the sync function, check and, if necessary, set the set control modes and pump curves again.

NOTICE
In the event of an incorrect input during the sync function, the LED settings have to be repeated/ corrected clockwise.
If an incorrect LED coding is entered and confirmed, the central LED remains red during the flashing phase. This incorrect coding is not taken into account, the pump exits the sync function and retains the previous configuration.
If the Varios PICO is to be reset to its original profile, the sync function has to be restarted with the LED code of the Varios PICO.

8 Decommissioning

Shutting down the pump

Shut down the pump immediately if the connecting cable or other electrical components are damaged.

- Disconnect the pump from the power supply.
- Contact Wilo customer service or a specialist technician.

9 Maintenance

Cleaning

- Carefully remove dirt from the pump on a regular basis using a dry duster.
- Never use liquids or aggressive cleaning agents.

10 Faults, causes and remedies

The troubleshooting must only be carried out by a qualified specialist, and work on the electrical connection must only be carried out by a qualified electrician.

Faults	Causes	Remedy
Pump is not running although the power supply is switched on	Electrical fuse defective	Check fuses
	No voltage supply at pump	Rectify the power interruption
Noisy pump	Cavitation due to insufficient suction pressure	Increase the system pressure within the permissible range
		Check the delivery head and set it to a lower head if necessary
Building does not warm up	Thermal output of the heating surfaces is too low	Increase setpoint
		Set control mode to Δp-c

10.1 Fault signals

- The fault signal LED indicates a fault.
- The pump switches off (depending on the fault) and attempts a cyclical restart.

LED	Faults	Causes	Remedy
Lights up red	Blocking	Rotor blocked	Activate manual restart or contact customer service
	Contacting/ winding	Winding defective	
Flashes red	Under/ overvoltage	Power supply too low/ high on mains side	Check mains voltage and operating conditions, and request customer service
	Excessive temperature of module	Module interior too warm	
	Short-circuit	Motor current too high	
Flashes red/ green	Generator operation	Water is flowing through the pump hydraulics, but there is no mains voltage at the pump	Check mains voltage, flow rate/ pressure and ambient conditions
	Dry run	Air in the pump	
	Overload	Sluggish motor, pump is operated outside of its specifications (e.g. high module temperature). The speed is lower than during normal operation.	

Manual restart

- The pump attempts an automatic restart upon detecting a blockage.

If the pump does not restart automatically:

- Activate manual restart via the bottom operating button, press and hold for 5 seconds, then release.

➥ The restart function is initiated and lasts 10 minutes.
➥ The LEDs flash in succession clockwise.

- Press the bottom operating button quickly 2x to cancel.

NOTICE
After the restart, the LED display shows the previously set values of the pump.

If the fault cannot be remedied, contact a specialist technician or Wilo customer service.

11 Disposal

Information on the collection of used electrical and electronic products

Proper disposal and appropriate recycling of this product prevents damage to the environment and danger to your personal health.

NOTICE
Disposal in domestic waste is forbidden!
In the European Union, this symbol can appear 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.

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

- Only hand over these products at designated, certified collecting points.
- 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 www.wilo-recycling.com

EU/EG KONFORMITÄTSERKLÄRUNG
EU/EC DECLARATION OF CONFORMITY
DECLARATION DE CONFORMITE UE/CE

Als Hersteller erklären wir unter unserer alleinigen Verantwortung, dass die Nassläufer-Umwälzpumpen der Baureihe,
We, manufacturer, declare under our sole responsability that these glandless circulating pump types of the series,
Nous, fabricant, déclarons sous notre seule responsabilité que les types de circulateurs de la série,

Varios PICO ...

(Die Seriennummer ist auf dem Typenschild des Produktes angegeben / The serial number is marked on the product site plate / Le numéro de série est inscrit sur la plaque signalétique du produit)

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entsprechen :
In their delivered state comply with the following relevant directives :
dans leur état de livraison sont conformes aux dispositions des directives suivantes :

_ Niederspannungsrichtlinie 2014/35/EU
_ Low voltage 2014/35/EU
_ Basse tension 2014/35/UE

_ Elektromagnetische Verträglichkeit-Richtlinie 2014/30/EU
_ Electromagnetic compatibility 2014/30/EU
_ Compabilité électromagnétique 2014/30/UE

_ Richtlinie energieverbrauchsrelevanter Produkte 2009/125/EG
_ Energy-related products 2009/125/EC
_ Produits liés à l'énergie 2009/125/CE
Nach den Ökodesign-Anforderungen der Verordnung 641/2009 für Nassläufer-Umwälzpumpen , die durch die Verordnung 622/2012 geändert wird
This applies according to eco-design requirements of the regulation 641/2009 for glandless circulators amended by the regulation 622/2012
suivant les exigences d'éco-conception du règlement 641/2009 pour les circulateurs, amendé par le règlement 622/2012

und entsprechender nationaler Gesetzgebung,
and with the relevant national legislation,
et aux législations nationales les transposant,

sowie auch den Bestimmungen zu folgenden harmonisierten europäischen Normen :
comply also with the following relevant harmonized European standards :
sont également conformes aux dispositions des normes européennes harmonisées suivantes :

EN 60335-2-51
EN 16297-1
EN 16297-2
EN 61000-6-1:2007
EN 61000-6-2:2005
EN 61000-6-3+A1:2011
EN 61000-6-4+A1:2011

Dortmund, ppa. [signature]

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Original-erklärung / Original declaration / Déclaration originale

F_GQ_013-21

DECLARAÇÃO CE DE CONFORMIDADE

WILO SE declara que os materiais designados na presente declaração obedecem às disposições das directivas europeias e às legislações nacionais que as transcrevem :

Baixa Voltagem 2014/35/CE ; Compatibilidade Electromagnética 2014/30/CE ; Produtos relacionados com o consumo de energia 2009/125/CE

E obedecem também às normas europeias harmonizadas citadas na página precedente.

wilo

Pioneering for You