Wilo-MVISE-2G

D Einbau- und Betriebsanleitung

GB Installation and operating instructions

F Notice de montage et de mise en service

4.102.054-Ed.1-06/08

Fig. 1

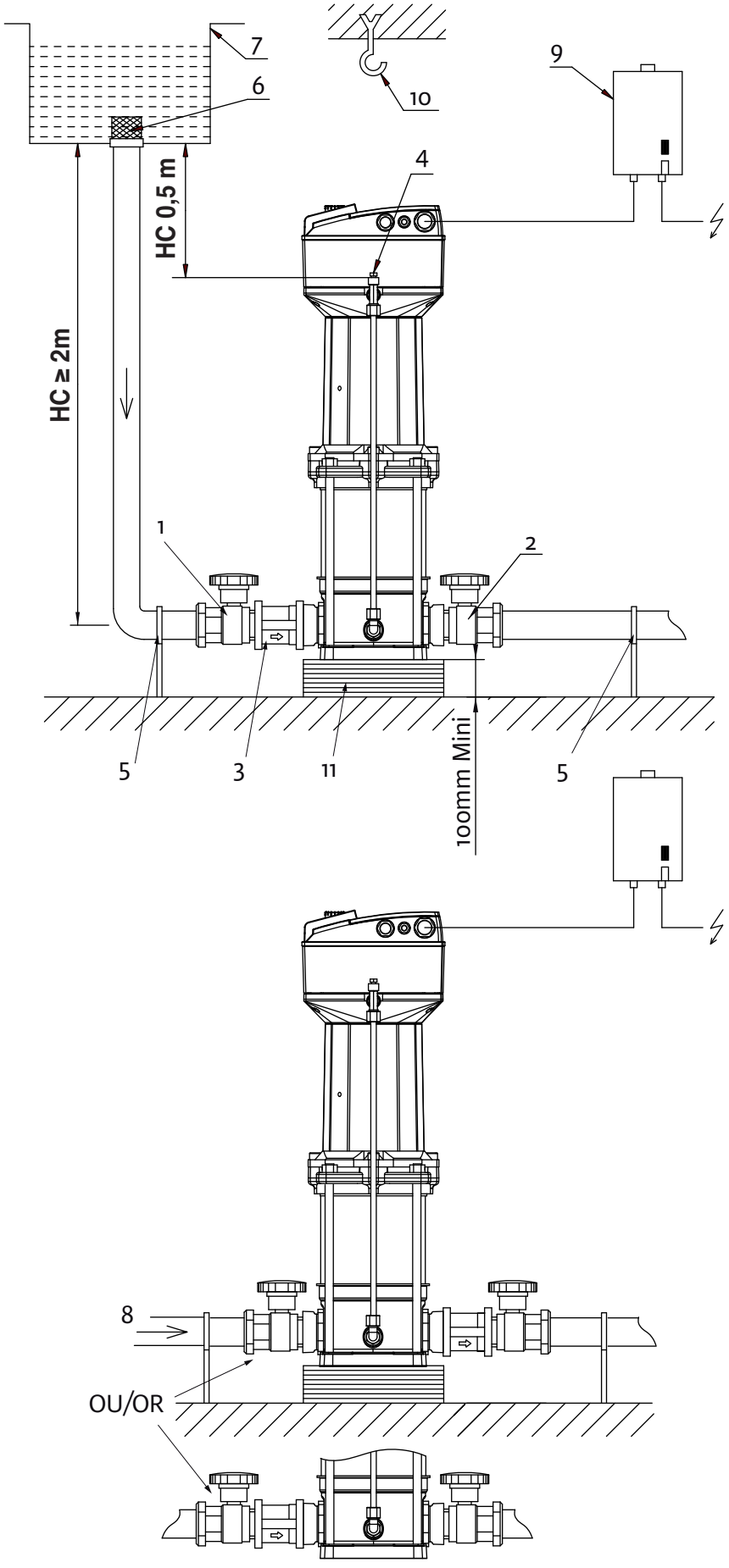
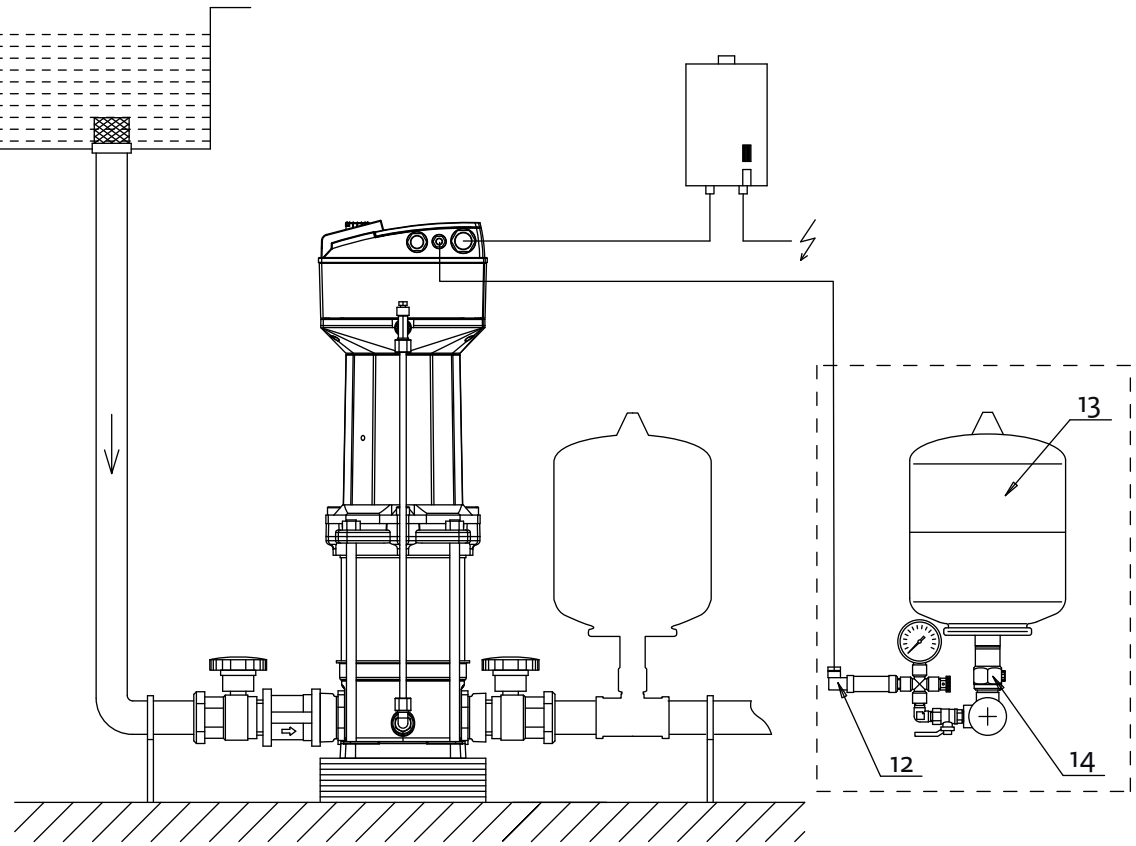


Fig. 2



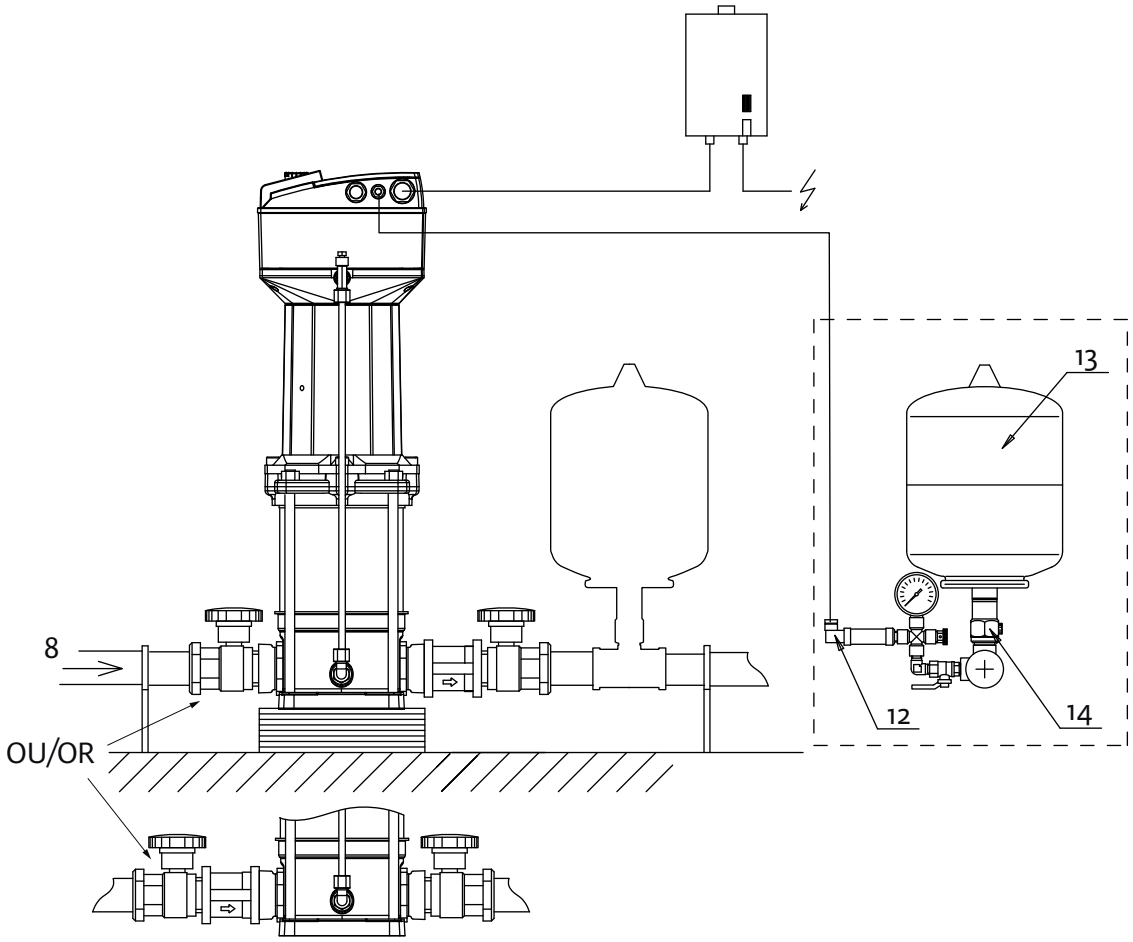
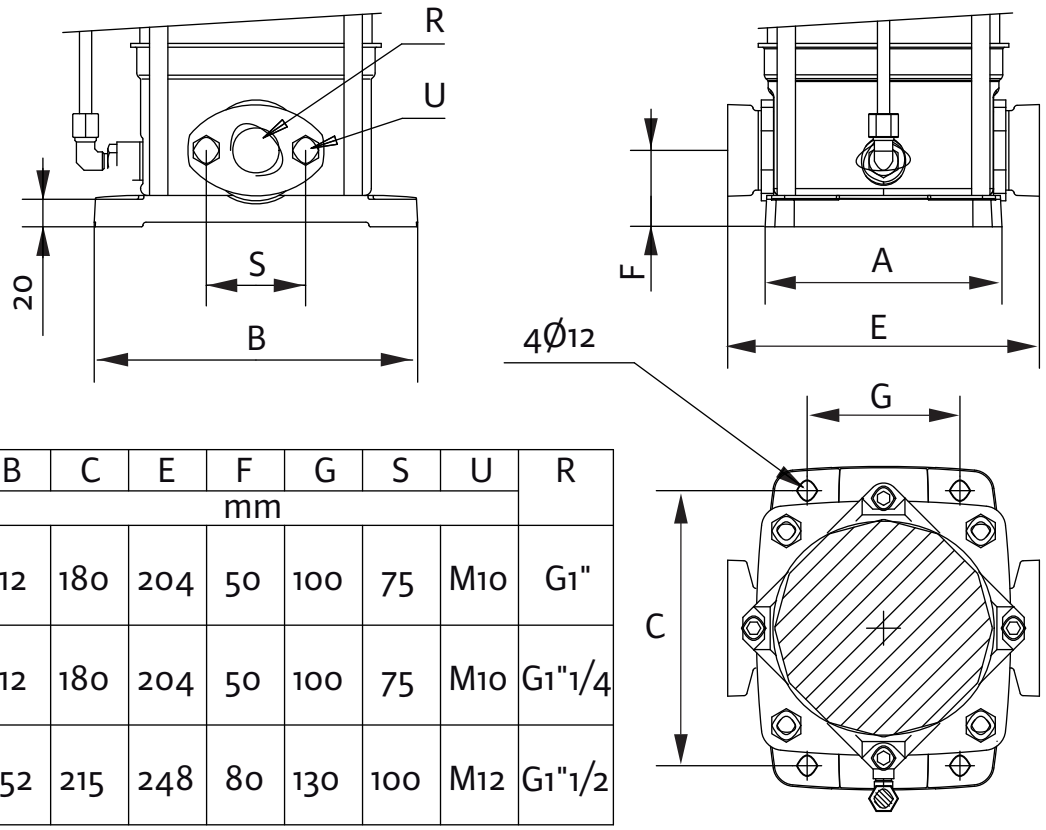


Fig. 3



TYPE	A	B	C	E	F	G	S	U	R
	mm								
200	160	212	180	204	50	100	75	M10	G1"
400	160	212	180	204	50	100	75	M10	G1"1/4
800	200	252	215	248	80	130	100	M12	G1"1/2

Fig. 4

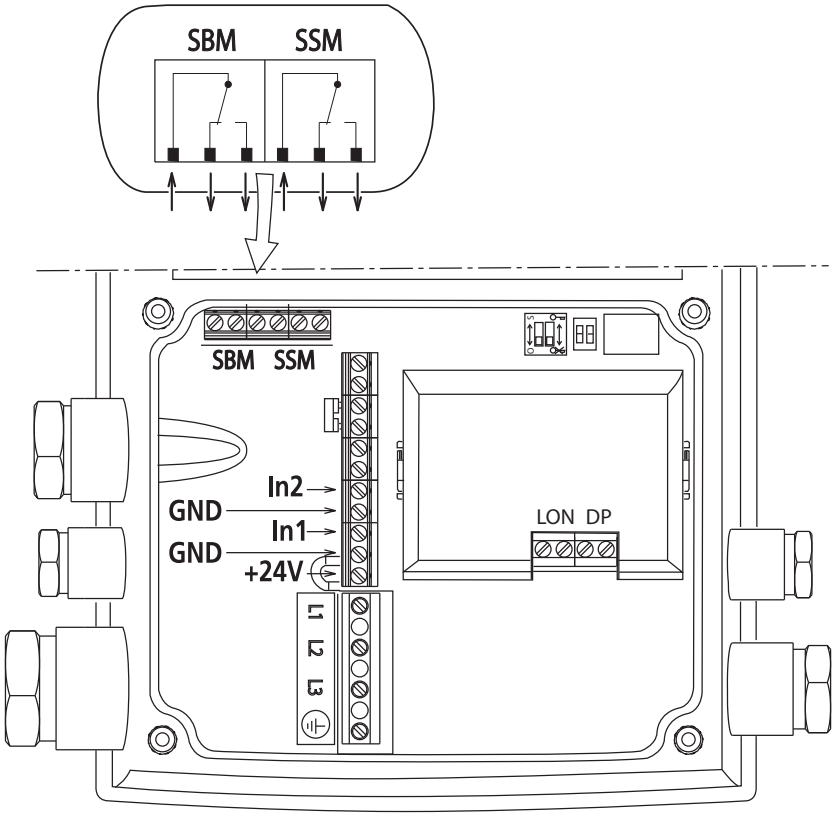


Fig. 5

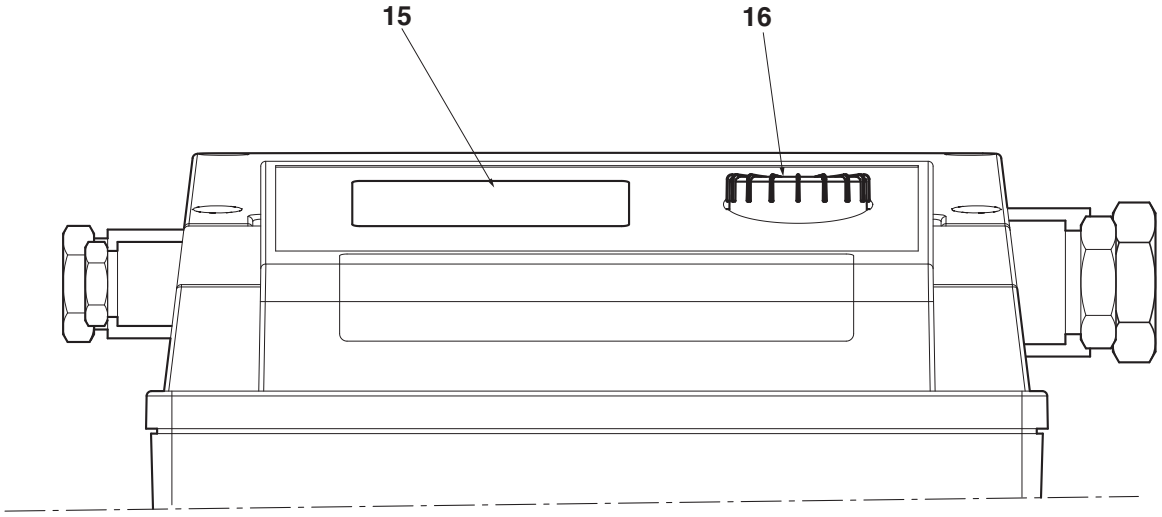


Fig. 6

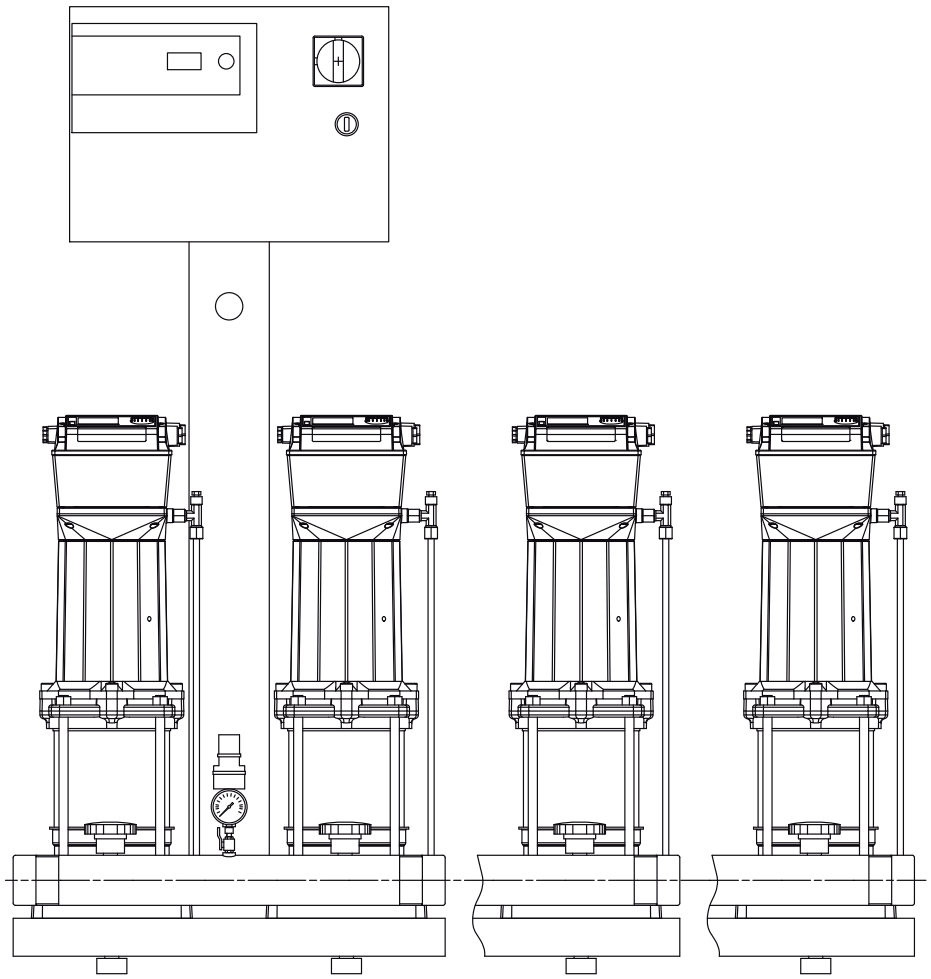
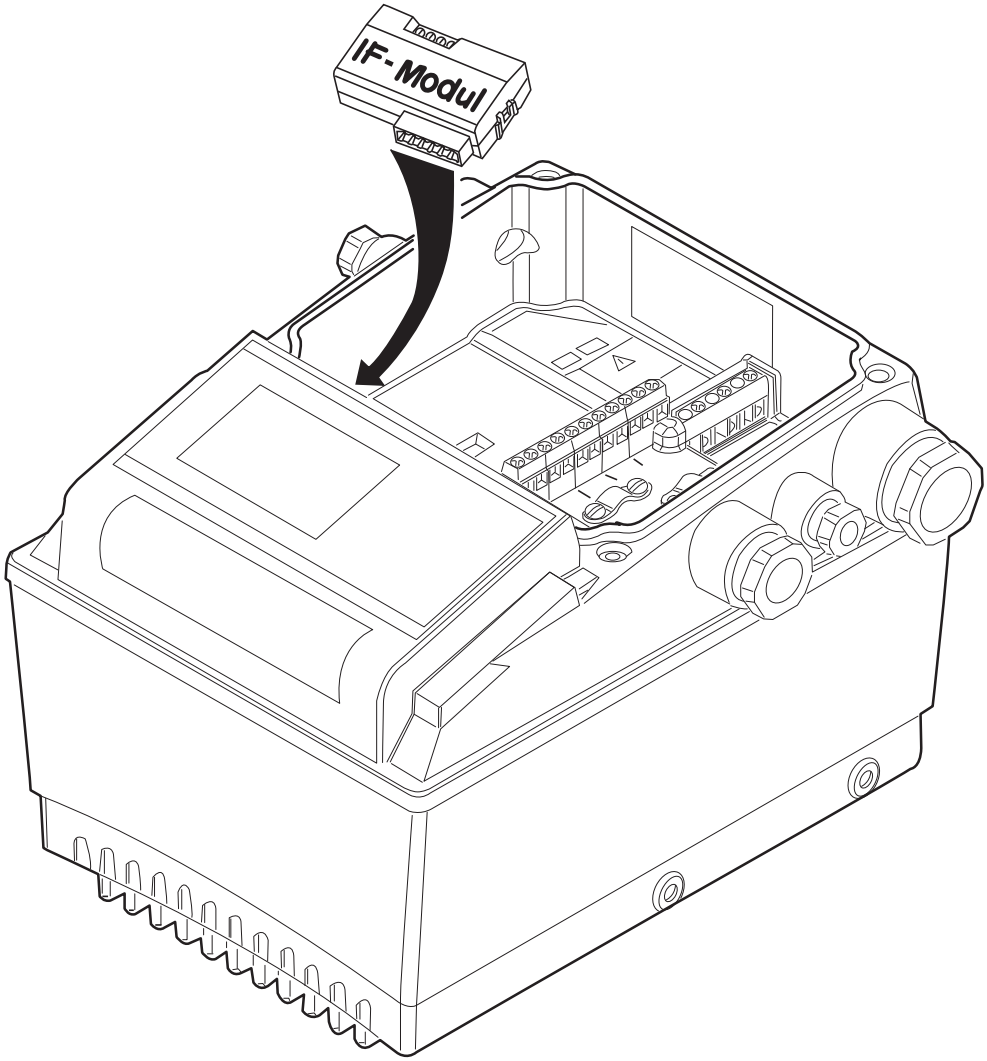


Fig. 7



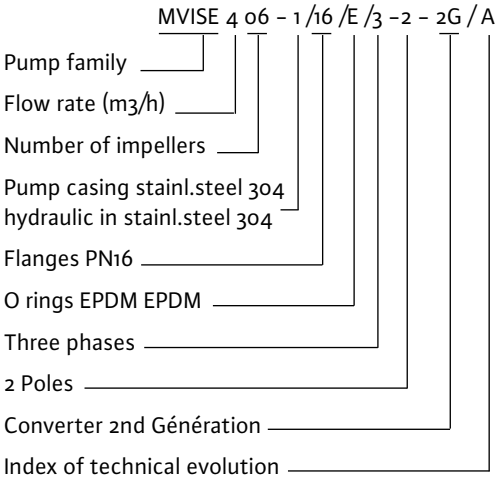
1. General

These installation and operating instructions are an integral part of the product. They must be kept readily available at the place where the product is installed. Strict adherence to these instructions is a precondition for the proper use and correct operation of the product.
These installation and operating instructions conform to the relevant version of the product and the underlying safety standards valid at the time of going to press.

1.1 Applications

Pumps aimed at clear liquids in building, agriculture and industry areas...
Water supply – water tower – sprinkling, high pressure washing – boiler supply – lifting of condensates – air conditioning – industrial networks and integration in all modular systems.
These pumps are suitable for water and other long viscosity fluids free from mineral oil and without abrasives or long fibre substances. The motor-converter being cooled by the liquid flowed by the pump, it is important to validate beforehand the compatibility of the pump with the concerned liquid.

1.2 Designation



1.2 Technical characteristics

- Maximum operating pressure :
  Body PN 16 : 16 bar
  Maximum suction pressure : 10 bar
- Temperature range :
  (EPDM O'ring and mechanical seal) – 15° to + 50°C
  (KTW approved version – according to German standard)
- Ambient temperature : + 40°C maxi
- Ambient humidity : < 90%

Pump acoustic levels per power :
< 55 dB (A) : (tolerance +3 dB).

Only pump running under pressure.

2. Safety

These instructions contain important information which must be followed when installing and operating the pump. It is therefore imperative that they be read by both the installer and the operator before the pump is installed or operated.
Both the general safety instructions in this section and the more specific safety points in the following sections should be observer.

2.1 Instruction symbols used in this operating manual

Symbols


General danger symbol.


Hazards from electrical causes.


NOTE : ....

Signal words:

DANGER ! Imminently hazardous situation. Will result in death or serious injury if not avoided.

WARNING ! Risk of (serious) injury. 'Warning' implies that failure to comply with the safety instructions is likely to result in (severe) personal injury.

CAUTION ! Risk of damage to the pump/installation. 'Caution' alerts to user to potential product damage due to non-compliance with the safety instructions.

NOTE ! Useful information on the handling of the product.
It alerts the user to potential difficulties.

2.2 Personnel qualification

The personnel installing the pump must have the appropriate qualification for this work.

2.3 Risks incurred by failure to comply with the safety instructions

Failure to comply with the safety precautions could result in personal injury or damage to the pump or installation. Failure to comply with the safety precautions could also invalidate any claim for damages.
In particular, failure to comply with these safety instructions could give rise, for example, to the following risks:

- Failure of important pump or system functions,
- Failure of specified maintenance and repair methods
- Personal injury due to electrical, mechanical and bacteriological causes.
- Damage to property.

2.4 Safety instructions for the operator

The relevant accident precaution regulations must be observed.
Potential dangers caused by electrical energy must be excluded. Local or general regulations [e.g. IEC, VDE, etc.] and directives from local

energy supply companies are to be followed.

2.5 Safety instructions for inspection and assembly

The operator must ensure that all inspection and assembly work is carried out by authorised and qualified specialists who have carefully studied these instructions.
Work on a pump or installation should only be carried out once the latter has been brought to a standstill.

2.6 Unauthorised modification and manufacture of spare parts

Changes to the pump/machinery may only be made in agreement with the manufacturer. The use of original spare parts and accessories authorised by the manufacturer will ensure safety. The use of any other parts may invalidate claims invoking the liability of the manufacturer for any consequences.

2.7 Improper use

The operating safety of the pump or installation can only be guaranteed if it is used in accordance with paragraph 4 of the operating instructions. All values must neither exceed nor fall below the limit values given in the catalogue or data sheet.

3. Transport and interim storage

When receiving the material, check that there has been no damage during the transport. If any defect has been stated, take the required steps with the carrier within the allowed time. If the delivered material is to be installed later on, store it in a dry place and protect it from impacts and any outside influences (humidity, frost etc...).

DANGER ! Due to high position of centre of gravity and small ground surface of this type of pumps, beware of unstability during handling to avoid any falling down and take necessary means to avoid injuries or damaging.

CAUTION ! Handle the pump carefully so as not to alter the geometry and the alignment of the hydraulic unit.

4. Products and accessories

4.1 Description (Fig. 1, 2, 5) :

1 - Pump suction valve
2 - Pump discharge valve
3 - Non-return valve
4 - Venting plug
5 - Pipe supports or brackets
6 - Strainer
7 - Storage tank
8 - Town water supply
9 - Switch and section switch with fuses
10 - Lifting hook
11 - Foundation block
12 - Pressure sensor
13 - Tank
14 - Insulation valve of the tank
15 - Display
16 - Adjustment button
HC - Minimum inlet pressure
HP - Position of venting plug

4.2 Pump and motor

- Multistage vertical pump with wet rotor motor not self-priming, with ports in line on the same axis in bottom part.
- Wet rotor motor fitted with its converter in its upper part.
- Protection index motor-converter : IP44
- Insulation class : F
- Operating frequencies : 50/60Hz
- Operating voltages : 400v +/- 10%
- Hydraulic connection
  Oval flanges on the PN 16 pump casing: pump supplied with oval cast iron counter flanges for screw-on tube, rings and bolts.

CAUTION ! Only pump running under pressure.

4.4 Accessories (option)

Accessories must be ordered separately.

• Insulating valves • bladder or galvanised tank • tank for antihammer blow effect • weld-on (Steel) or screw-on (Stainless Steel) counter flange • non-return valves (with nose or spring ring when operating in mode 2) • vibrationless sleeves • protection kit against dry-running • sensor kit for pressure regulation (accuracy : ≤ 1% ; use between 30 % and 100 % of the reading range) • Interface for connection to PLR network • Interface for connection to LONWORKS network.

5. Installation

Installation and service by qualified personnel only

5.1 Mounting

- Fig. 1 : pump under pressure on storage tank (7) or town water supply (8).

The liquid flowed by the pump allows the lubrication of the wet rotor motor bearing and the cooling of the motor-converter. It is imperative that the suction pressure is upper or equal to 1,2bar.
So, a running with a storage tank : HC ≥ 2m (fig. 1) and the venting plug position : HP ≥ 0,5m

CAUTION ! Assemble only after finishing all welding and bra-zing operations and after thorough cleaning of the pipes.In fact any dirt can damage the correct operation of the pump.

- Install the pump in a place easy to reach, protected against extrema conditions (rain and sun in excess, frost) and as close as possible from the drawing point.
- For heavy pumps provide a point of attachment (lifting hook-item10) in the pump axis (item12) to facilitate removal.
- Install the pump on a concrete block (at least 10 cm high) (item11) and fix with anchor bolts (ins-

tallation plan see fig.3).

- Foresee an insulating material under the concrete block (cork or reinforced rubber) to avoid any noise and vibration transmission into the installations.
- Before final tightening of anchor bolts, ensure that the pump axis is vertical : use shims if necessary.

5.2 Hydraulic connections

CAUTION !
Possible damage of the installation !
The installation has to bear the pressure reached when the pump runs at maximum frequency and zero flow rate.

- Pump connection with threaded screw-on tubes directly on the tapped oval counter flanges delivered with the pump.
- The diameter of the pipe must never be smaller than the one of the counter flange.
- The direction of the fluid flow is indicated on the identification label of the pump.
- Use supports or collars (fig. 1, 2 – item. 7) so that the pump does not bear the weight of the pipes.

CAUTION !
Water potable using!
In order to avoid
the proliferation of bacteria, the tank must be flow-through and equipped with the insulation valve type “flow jet” (fig.2-item12).

CAUTION !
Possible damage of the installation !
It is recommended to connect the non-return valve to the pump discharge to protect it against hammer blow effects.

5.3 Electrical connections

The electric connections and inspections have to be carried out by a qualified electrician and have to comply with the relevant local standards.

- The electric characteristics (frequency, voltage, nominal current) of the motor-converter are mentioned on the nameplate. Check that the motor-converter complies with the mains supply used.
- The electric protection of the motors is integrated into the converter. The parameters take into account the characteristics of the pump and must ensure its protection and the one of the motor.
- In case of impedance between earth and neutral point, install a protection before motor-converter.
- Provide a fuse disconnecting switch (type GF) or a circuit-breaker to protect the mains installation (fig. 1 – item. 9).

WARNING ! If you have to install a differential circuit-breaker for users protection, it must have a delay effect.

CAUTION ! Adjust it according to the current mentioned on the converter label.

Main network

- Use power cables conforming with standards.

DO NOT FORGET TO CONNECT TO EARTH.

The electric connection of the converter (fig.4) according to its operating modes (see chapter 8 for starting) has to comply with the schemes of the following table .

CAUTION ! A connection error can damage the converter.

The power cable must never touch the pipe or the pump ; make sure that it is sheltered from any humidity.

5.3 Details of electrical connections

- Loosen the screws and remove the converter cover.

CONNECTION TO MAINS SUPPLY		POWER TERMINALS
– Connect the 4 core cables on the 4 terminals (3 phases + earth)	(fig. 4)	L1 L2 L3 PE — wires Ø 2,5 mm²
CONNECTION OF INPUTS / OUTPUTS		**TERMINALS FOR INPUTS / OUTPUTS**
– 3 operating mode : (See Chapter 6 : Starting up) – Manual mode : Mode 1 – Single pump in regulation mode : Mode 2 – External frequency control mode : Mode 3	(fig. 4)	aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 not used — not used — In2... — GND... — In1... — GND... — +24V... Remote control ON/OFF — External set valuel — Sensor 2omA/1oV sceened cable imperative

MANUAL MODE	MODE 1	
1) In manual mode : Mode 1 – The remote control allows the switching On or Off of the pump (free contact), this function has priority on the others. – This remote control can be removed by shunting the terminals (3 and 4).	Example :	aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 Remote control Float switch, pressure gauge for dry-running...

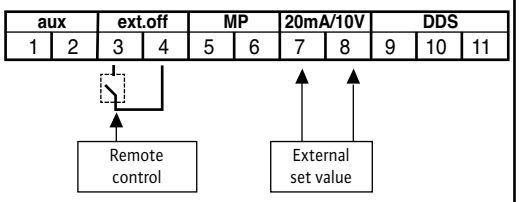
PRESSURE REGULATION	MODE 2	
2) In mode with pressure regulation : Mode 2 – with pressure sensor 2 wires – and adjustment of set value by encoder.		aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 Remote control — Pressure sensor
– with pressure sensor 3 wires – and adjustment of set value by encoder		aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 Remote control — Pressure sensor
– with pressure sensor 2 wires – and adjustment by external set value.		aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 Remote control — External set value — pressure sensor
– with pressure sensor 3 wires – and adjustment by external set value.		aux 1 2 — ext.off 3 4 — MP 5 6 — 20mA/10V 7 8 — DDS 9 10 11 Remote control — External set value — pressure sensor
– The remote control allows the switching On or Off of the pump (free contact), this function has priority on the others. – This remote control can be removed by shunting the terminals (3 and 4).	Example :	Float switch, pressure gauge for dry-running...

OTHER REGULATION **MODE 2**

In mode “other regulation – Mode 2”, connections are identical to those described previously
(the pressure sensor being indeed on replaced by a sensor adapted to the wished type of regulation).

MODE EXTERNAL CONTROL **MODE 3**

3) In mode with external control : Mode 3
– By current signal



– The remote control allows the switching On or Off of the pump (free contact), this function has priority on the others.
– This remote control can be removed by shunting the terminals (3 and 4).

Example : Float switch, pressure gauge for dry-running...

CONNECTION FOR THE SERIE CONTACTS

The converter is fitted with 2 output relays with free contact" aimed for an interface to centralized control.
Example : control box, pumps control...

1) Available transfer “relay” : SBM

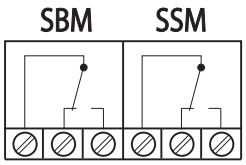
– feature of the contact.....Free contact **250V/1A**
The relay is activated when the pump runs or is in a position to run.
When a first defect appears or by main supply cutoff (the pump stops), the contact is closing.
Information is given to the control box, regarding the un-availability of the pump, even temporarily.

2) Failures transfer "relay” : SSM

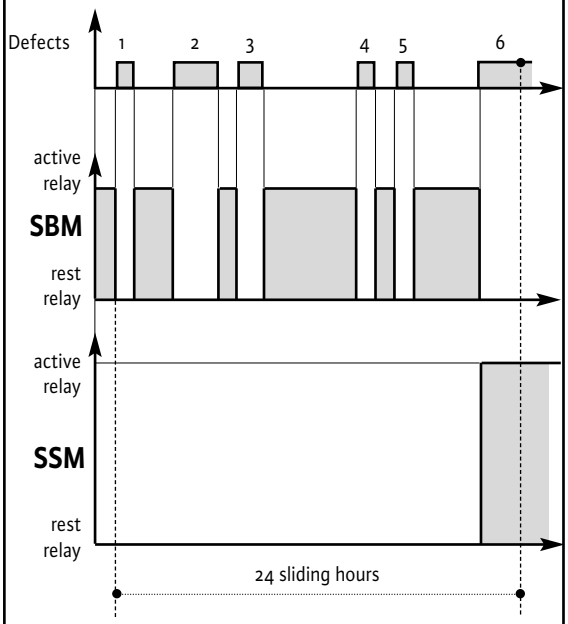
– feature of the contact.....Free contact **250V/1A**

– After a series of detection (from 1 to 6 according to significance) of the same type of defect, the pump stops and this relay is activated (up to manual action).

TERMINAL FOR THE SERIE CONTACTS

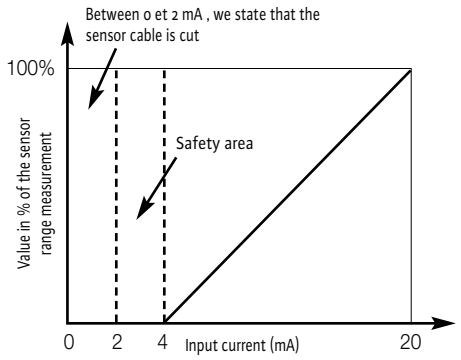


Exemple : 6 defects with a variable time-limit on 24 sliding hours according to the following scale :

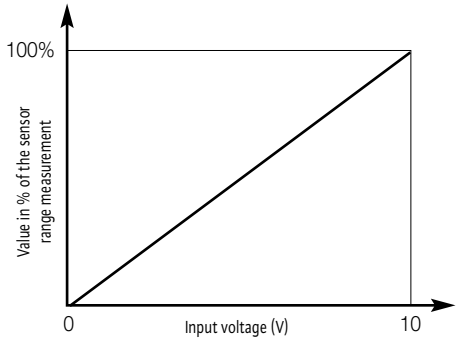


Control laws in MODE 2

Sensor signal 4-20mA

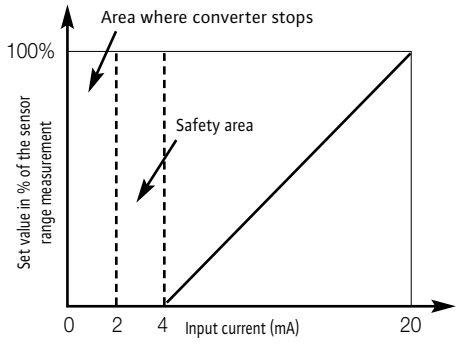


Sensor signal 0-10V

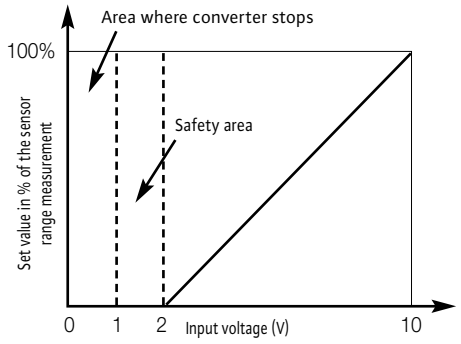


External set value control in MODE 2

Consigne 0-20mA

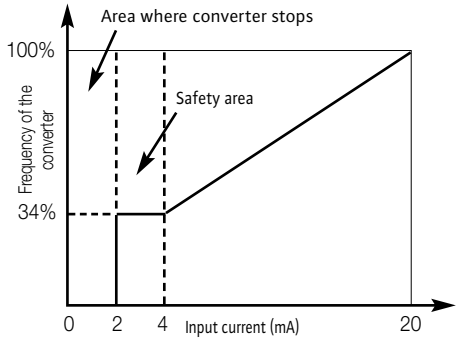


Consigne 0-10V

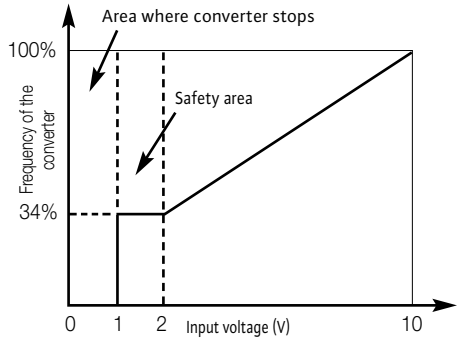


External frequency control in MODE 3

Signal externe 0-20mA



Signal externe 0-10V



6. STARTING UP

6.1 Preliminary rinsing

Each of our pumps is tested regarding hydraulic features in factory, some water may remain in them.

It is recommended for hygiene purposes, to carry out a rinsing of the pump before any using with potable water supply.

6.2 Filling – venting

CAUTION ! Never operate the pump dry, even briefly.

- Close the discharge valve (2),
- Open the venting plug (4), the suction valve (1) and completely fill the pump.
  Close the venting plug only after water flows out and complete aeration.

WARNIG ! Beware of scalding !
In hot water, a stream of water may escape from the venting plug port. Take all required precautions as regards persons and motor-converter.

WARNIG ! Avoid touching the pump owing to the risk of burning! Depending on the operating condition of the pump and/or installation (fluid temperature, volume flow) the entire pump including the motor can become very hot.

CAUTION ! Operating in pressure regulation mode :
MODE 2 to ensure the detection of zero flow, set the non-return valve before the pressure sensor (fig. 2).

6.3 Starting up

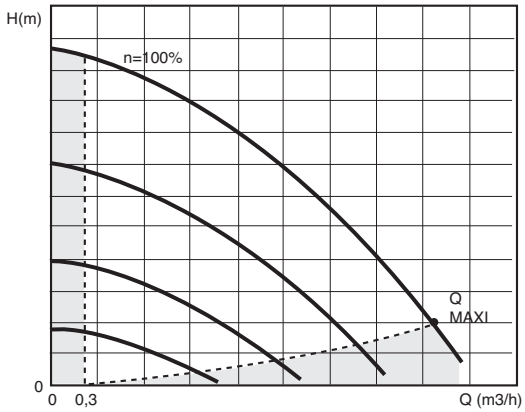
WARNING ! Depending on conveyed fluid and operating cycles of the pump, surface temperature (pump, motor) can exceed 68°C. Take necessary means to avoid injuries.

CAUTION ! The pump must not run at zero flow (closed discharge valve).

To ensure an adequate cooling of the motor-converter, the pump must not run with a flow lower than 0,3 m3/h and a flow bigger to maximum speed than :

- 5,5m3/h for MVISE/Multi-VSE2xx
- 8m3/h for MVISE/Multi-VSE4xx
- 14m3/h for MVISE/Multi-VSE8xx

See curves for intermediate speeds.



- If the pump is operating at high back-pressure, unscrew the venting device a few turns to complete venting until water flows out.
- Open the discharge valve to start the pump.
- Check pressure stability at discharge with a manometer, if instability, perfect air draining.
- Adjust the discharge valve in order to have the wished working point.
- Check that the current input does not exceed the value indicated on the pump data plate.
- Perfect air draining : open the venting plug and close it only after water flows out and complete aeration.

7. Operating and setting

7.1 Configuration

This converter is composed of a two switches block with two positions each (fig. 4 – item S):

Switch 1

- The **SERVICE** position is used to enter the parameters of the different modes.
- The **OPERATION** position allows the selected mode to run and hinders the access to parameters input (normal operating).

Switch 2

- The position “key” is used to lock encoder.
- The position “no key” allows to use encode.

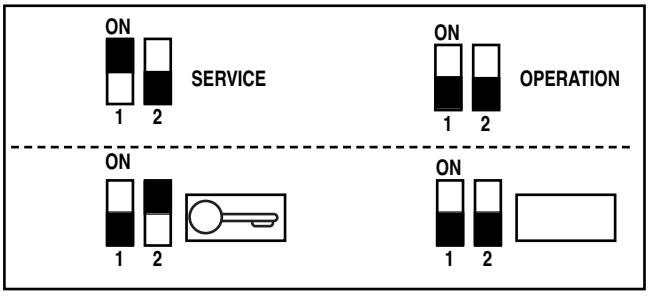
Example : Locking of set value in mode 1 or 2.

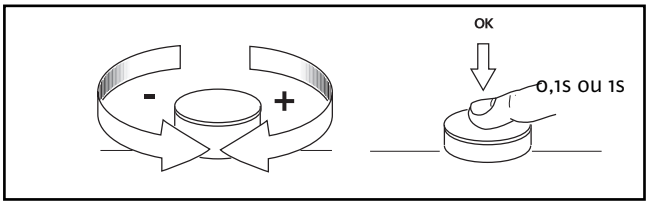
Fonctionnement de l’ encodeur :

The selection of a new parameter is done only with simple rotation.

” + ” on right and ” – ” on left.

A short impulse on the encoder validates this new setting.





7.1.1 Manual mode : MODE 1

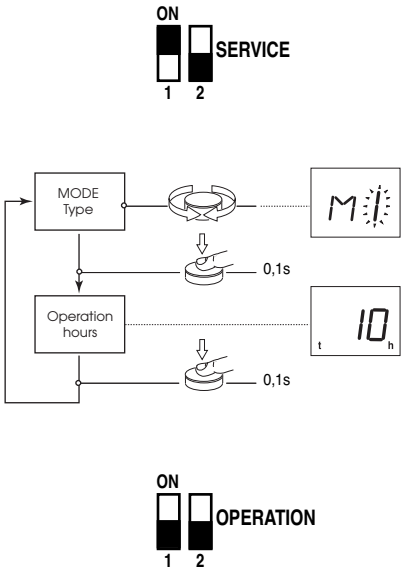
When changing the motor speed with the encoder you reached the operating point.

Parameters input in Mode 1

If the pump is new and not integrated inside a system, parameters are already in with operation in Mode 1 ; (see § "Operation in Mode 1").

- Set the switch (fig. 4 – item. S) on position SERVICE.
- Sélect M1.
- Validate.
- Visualisation of the Operating time meter. (number of pump operating hours).
- Validate.
- Set the switch again on position OPERATION.

MODE 1 – Manual mode



Operating in MODE 1

For the starting up, we recommend to set the motor speed at 2000 (RPM).

When turning the encoder the requirement value can be changed.

- Validate the new value.

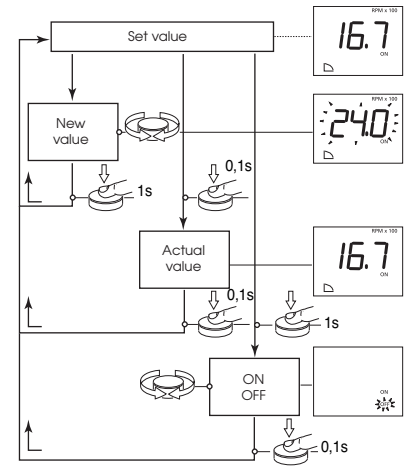
With a short impulse on the encoder the actual speed can be displayed ; after 30 seconds or a new impulse the requirement value reappears.

An impulse around 1s allows the ON/OFF function).

- Sélect OFF.
- Validate.

Nota : the remote control (ex : switch) allows a stop of the pump (converter ON).

When stopping the pump, the sign "OFF" appears.



7.1.2 MODE with regulation: MODE 2

The pump can run in different regulation types (pressure, temperature, flow,...).
The P, I, D factors are fixing on the software for the pressure regulation. And on the other hand, for another regulation, the P, I, D factors will be configurated when you put in parameters.

MODE 2 : Pressure regulation (fig. 2)

The addition of a pressure sensor and a tank allows a pressure regulation of the pump.
The accuracy of the sensor is ≤ 1% and it is used between 30 % and 100 % of the measuring scale range. The tank must have a useful volume of 8L minimum. With no water in the tank, pressurize the tank to a pressure 0.3 bar less than the pressure regulation of the pump. (tank and sensor kit delivered as accessories)
(tank and sensor kit delivered as accessories).

Parameters input in MODE 2

- Set the switch (fig.4, item S) on position SERVICE.
- Select M2.
- Validate.
- Select the source of set value Internal / External. Default "I" (set value adjustment by encoder).
- Validate.
- If the external set value "E" is validated, (set value adjustment by external signal).
- select the signal type (0–10V) or (0–20mA).
- Validate.
- Select the regulation type "P" for the pressure regulation.
- Validate.
- Select the range of the pressure sensor (6, 10, 16 bar).
- Validate.
- Select the type of sensor (0–10V) or (0–20mA). (the information which is blinking is the one validate).
- Validate.
- Select the stop delay (time between detection of zero output and complete stop of the pump): range from 0 to 180 seconds (with notice 180 s).
- Validate.
- Visualisation of the Operating time meter. (number of pump operating hours).
- Validate.
- Set the switch back on position OPERATION.

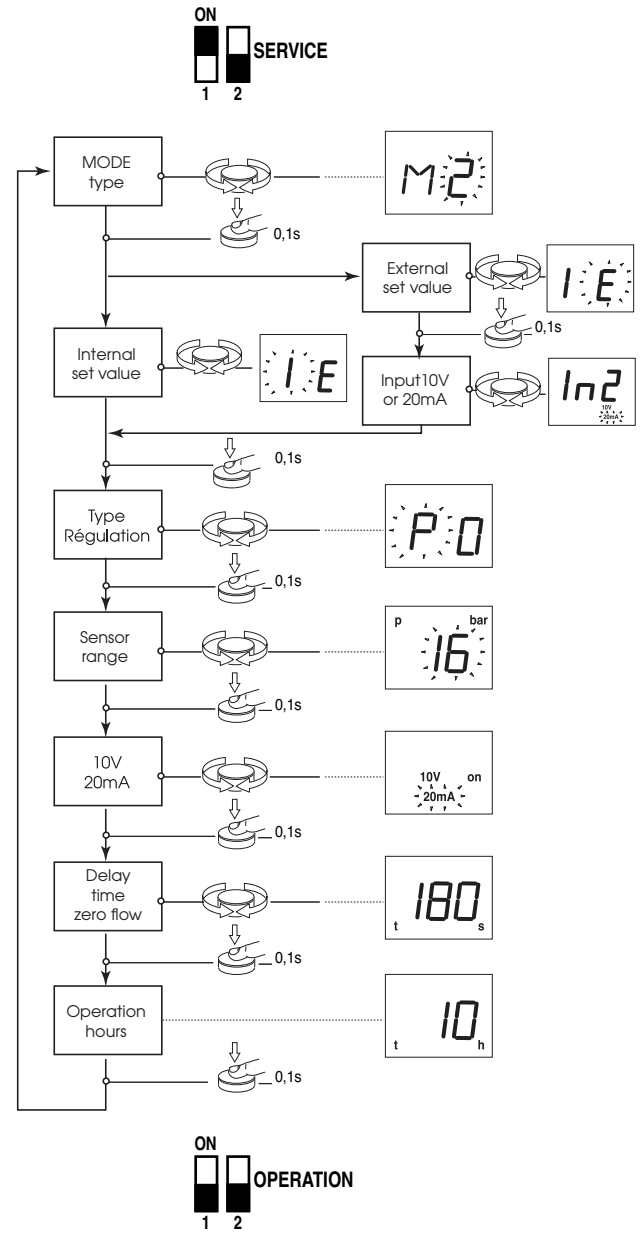
Operating in MODE 2 and set value control with encoder

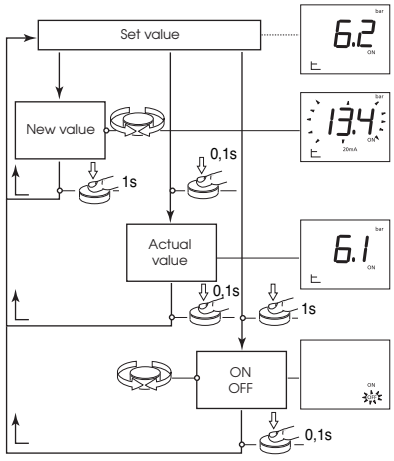
For the starting up, we recommend to set the motor speed at 60% of its maximum pressure.

By turning the encoder the requirement value can be changed.

- Validate the new value.
  With a short impulse on the encoder the actual pressure can be displayed; the requirement pressure reappears after 30 seconds or after on other impulse.
  An impulse around 1s allows the ON/OFF function.
- Select OFF.
- Validate.

MODE 2 – Pressure regulation





Operating in MODE 2 pressure regulation and external set value control

The set value is controlled by the input signal 0-10V or 0-20mA.

For the starting up, we recommend to set the motor speed at 60% of its maximum pressure.

With a short impulse on the encoder the actual pressure can be displayed; the requirement pressure reappears after 30 seconds or after on other impulse.

An impulse around 1s allows the ON/OFF function.

- Select OFF.
- Validate.

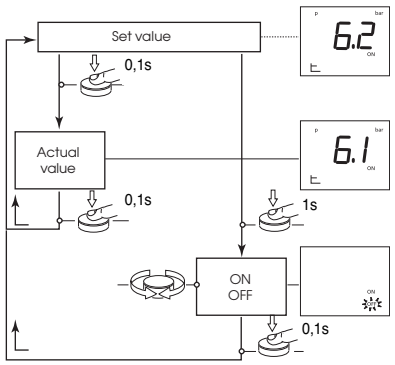
Nota : the remote control (ex : switch) allows a stop of the pump (converter ON).

When stopping the pump, the sign "OFF" appears.

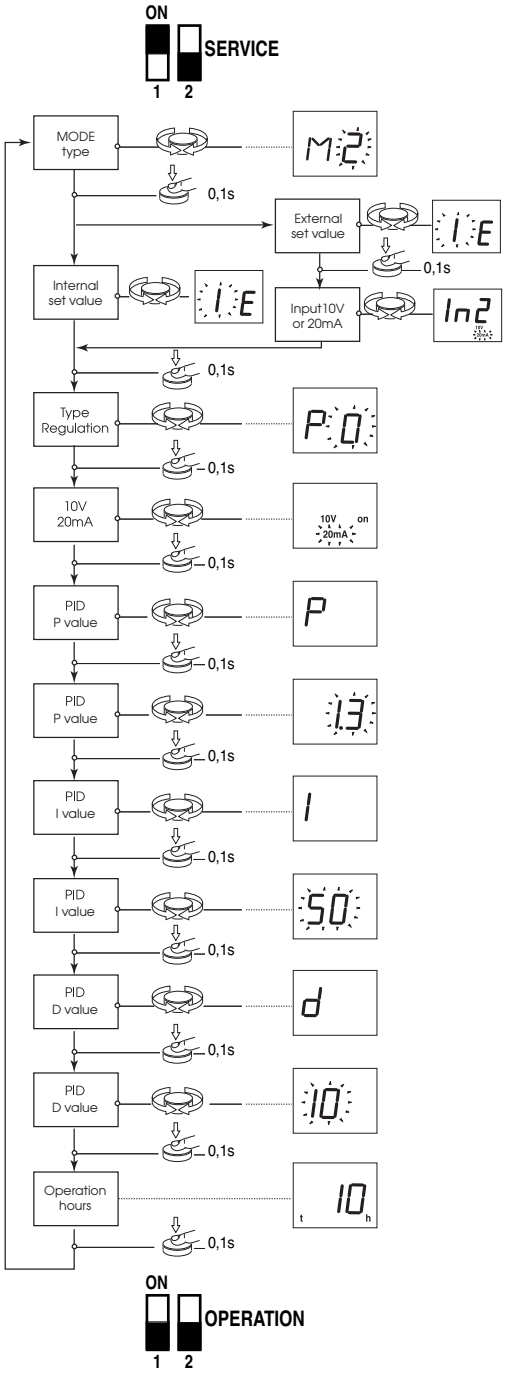
MODE 2 : Other regulation

Parameters input in MODE 2

- Set the switch (fig. 4 - item S) on position SERVICE.
- Select "M2".
- Validate.
- Select the source of set value Internal/External, Default "I"
  (set value adjustment by encoder)
- Validate.
- If the external set value "E" is validated,
  (set value adjustment by external signal)
  select the signal type (0-10V) or (0-20mA).
- Validate.
- Select the regulation type "O" for other regulation.
- Validate.
- Select the type of sensor (0-10V) or (4-20mA).
  (the information which is blinking is the one validated).
- Validate.
- Display "P" parameter of PID.
- Validate.
- Select the "P" value (default P=1).
- Validate.
- Display "I" parameter of PID.
- Validate.
- Select the "I" value (default I=1s).
- Validate.
- Display "D" parameter of PID.
- Validate.
- Select the "D" value
  (default D=oms)
- Validate.
- Visualisation of the Operating time meter.
  (number of pump operating hours).
- Validate.
- Set the switch back on position OPERATION.



MODE 2 – Other regulation

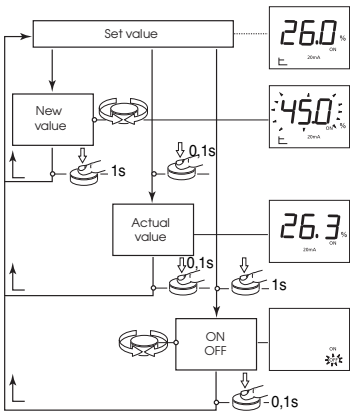


MODE 2 : Other regulation

Operating in MODE 2 and set value control with encoder

In this case, the displayed value is a percentage of the sensor range measurement.
By turning the encoder the requirement value can be changed.

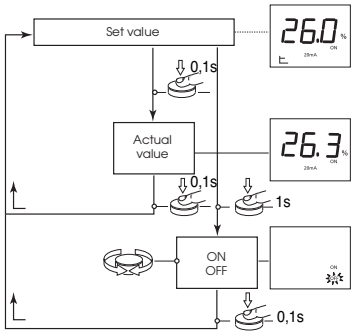
- Validate the new value.
  With a short impulse on the encoder the actual value can be displayed; the requirement value reappears after 30 seconds or after on other impulse.
  An impulse around 1s allows the ON/OFF function.
- Select OFF.
- Validate.



Operating in MODE 2 and external set value control

The set value is controlled by the input signal 0–10V or 0–20mA.
In MODE 2 – other regulation, the displayed value is a percentage of the sensor range measurement.
With a short impulse on the encoder the actual value can be displayed; the requirement value reappears after 30 seconds or after on other impulse.
An impulse around 1s allows the ON/OFF function).

- Selec OFF.
- Validate.

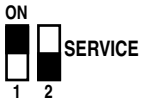


Nota : the remote control (ex : switch) allows a stop of the pump (converter ON).
When stopping the pump, the sign "OFF" appears.

MODE 3

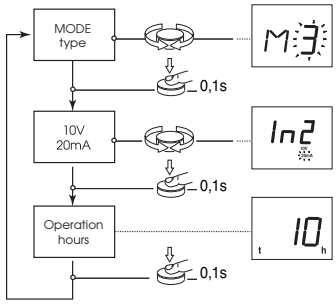
7.1.3 With external control in frequency : MODE 3 (fig. 10)

The pump is controlled with an external system.



Parameters input in MODE 3

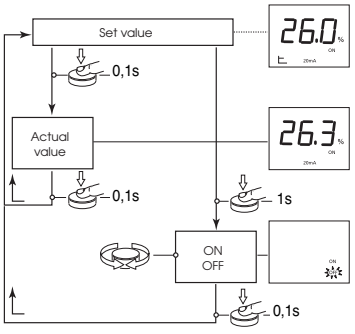
- Set the switch on position SERVICE.
- Select M3.
- Validate.
- Select the external signal type (0–10V) or (0–20mA) (default 0–10V).
- Visualisation of Operating time meter (number of pump operzting hourse).
- Validate.
- Set the switch back on position OPERATION.



Operating in MODE 3

In Mode 3 the displayed value is a percentage of the maximum pump speed.
With a short impulse on the encoder the actual pressure can be displayed ; The requirement value reappears after 30 seconds or after an other impulse.
An impulse around 1s allows the ON/OFF function.

- Select OFF.
- Validate.



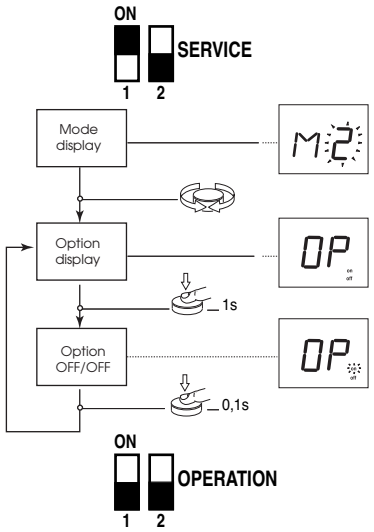
Nota : The remote control (ex : switch) allows a stop of the pump (converter ON). When stopping the pump, the sign "OFF" appears.
If a voltage signal (0–10V) is used and is lower than 1V, the sign "OFF" automatically appears.
If a current signal (0–20mA) is used and is lower than 2mA, the sign "OFF" automatically appears.

7.1.4 Programming option

Reduction of the maximum frequency
It is possible to reduce the maximum allowable frequency of the pump thanks to the encoder. This option must be used for special liquid being able to generate an overload of the pump.

Option OP

- Set the switch (fig. 4 – item S)on position SERVICE.
- According to the chosen mode, "MI or "M2" or "M3" appears.
- Select "OP" thank to encoder.
- "OP" appears.
- Validate.
- Select "ON or "OFF".
  (the information which is blinking is the one validated)
- Validate.
- Set the switch back on positon "OPERATION".



IF Module (InterFace)
The communication between the pumps and the Building Management System (BMS) is possible with :

- An IF–modul–PLR for a PLR network
- An IF–modul–LON for a LONWORKS network
  The IF modul is connected directly inside the connection area of the converter (Fig. 7).

For further information, contact the WILO customer department.

8. Maintenance

CAUTION ! Before carrying out any maintenance work, switch off the pump and ensure that it cannot be switched on again by unauthorised people.
Never carry out work on a running pump.

- No special maintenance in operation.
- Keep the pump and the motor–converter perfectly clean.
- In frosty weather and for prolonged stoppages of the pump, it is recommended to drain, in order to avoid its deterioration.

9. Defects – causes – remedies

All incidents hereafter mentioned give rise to :

- The resting of the SBM relay (unavailable transfer)
- The activation of the SSM relay (failure transfer) when the maximum quantity of one type of defect is reached over a 24 hours range.
- Lightening of a red LED and the defect code display.

If the defect is major, the action of an after-sales technician is required.

SIGNALLING	BEHAVIOUR OF THE CONVERTER					INCIDENTS / POSSIBLE CAUSES	REPAIRING
CODE DEFECT	Reaction time before converter stop	Waiting time before restart	Max qty of defects over 24 hours	STATE OF RELAYS SBM	STATE OF RELAYS SSM		
E00	1mn	1mn	6	rest	active ①	Pump is no more primed or runs dry	Prime the pump once again by filling it (see chapter 8-3)
E01	1mn	1mn	6	rest	active ①	Load of the pump is excessive, pump is defective, or the pump is obstructed by particles	Density and/or viscosity of the conveyed fluid are too big. Dismantle the pump and replace the defective components or clean them
E04 (E32)	≤5s	5s ②	6	rest	active ①	The converter supply is in under-voltage	Check voltage at the converter terminals. Minimum 400V -10%
E05 (E33)	≤5s	5s ②	6	rest	active ①	The converter supply is in over-voltage	Check voltage at the converter terminals Maximum 400V +10%
E06	≤5s	5s ②	6	rest	active ①	A supply phase is missing	Check the supply
E07	3s	immediate	no limite	resr	active ①	The converter runs like a generator.	The pump veers, check the tightness of the non-return valve
E10	3s	no restart	1	rest	active ①	The pump is locked	Dismantle the pump, clean it and replace the defective parts
E20	3s	5mn ②	6	rest	active ①	The motor heats Water temperature > +50°C Ambient temperature > +40 °C	The motor is foreseen to run at : maximum water temperature of + 50°C maximum ambient temperature of + 40°C
E23	immediate	5mn ②	6	rest	active ①	The converter or the motor is in short-circuit.	Dismantle the motor-converter of the pump, check it or replace it
E25	≤5s	no restart	1	rest	active ①	Missing phase(s) between motor and converter	Check the connection between motor and converter. Dismantle the motor-converter, check it or replace it
E26	immediate	5mn ②	6	rest	active ①	The thermal sensor of the motor is defective or has a wrong connection	Dismantle the motor-converter of the pump, check it or replace it
E30 E31	3s	5mn ②	6	rest	active ①	The converter heats Water temperature > +50°C Ambient temperature > +40 °C	Check the bypass, check the operating conditions Check the bypass The converter is foreseen to run at : maximum water temperature of + 50°C maximum ambient temperature of + 40°C
E36	1,5s	no restart	1	rest	active ①	Internal problem of converter	Call on after-sales technician
E42	5s	no restart	1	rest	active ①	The cable of the sensor (4-20mA) is cut	Check the correct supply and the cable connection of the sensor
E50	immediate	5mn	no limite	rest	active ①	PLR communication defect	Failure of the interface or the cable. Check or replace

① State of the relay if the number of failure > than the allowed number of failure. ② Si le défaut est supprimé.

Restart of the pump after a detection of defects :

1st case - The pump has reached the maxi quantity of defects (from 1 to 6, according to the significance) of the same defect type over a 24 sliding hours period. In this case, the SSM relay is activated and the SBM relay is at rest. The pump can be restarted by pressing on the encoder (long push-on > 2s) or by switching off the supply and by restoring it.

2nd case - • The pump hasn't reached the maxi quantity of defects.
In this case, the SSM and SBM relays are at rest. Only a switch off and a restoration of the supply allow the restart.

For both cases, it is necessary to proceed at first to the deletion of the defect. In case of intervention on the pump, switch off the supply beforehand.

Other defects, not detected by the converter, due to the pump

Defects	Causes	Remedies
The pump is running but no delivery	The pump does not run quickly enough	Check the adequate adjustment of the requirement (conformity to the required points)
	The internal parts are obstructed by particles	Let dismantle the pump and clean it
	Suction pipes are obstructed	Clean all the pipes
	Air in suction pipes	Check tightness of the whole pipe up to the pump and make it tight
	Suction pressure is too low, it causes generally cavitation noise	Too high losses of load on suction or the pressure in the suction is too low
The pump is vibrating	Loose on its foundation	Check and tighten completely the nuts of the stud bolts
	Particles obstructing the pump	Have the pump dis-mantled and cleans it
No sufficient pressure for the pump	The motor speed is not high enough	Check if the set value is correctly adjusted
	The motor is defective	Replace it
	Bad filling of the pump	Open the venting device and vent until there are no more air bubbles
The flow is irregular	The suction pipe has a lower diameter than the one of the pump	The suction pipe must have at least the same diameter as the suction pump port
	The strainer and the suction pipe are partially obstructed	Remove and clean
	In mode 2, the pressure sensor is not adequate	Put a sensor with conforming pressure scale and accuracy (see chapter 5.3)
In mode 2, the pump don't stop if the flow is zero	The non-return valve is not tight	Clean it or change it
	The non-return valve is not adequate	Replace it by an adequate non-return valve
	The tank has low capacity due to installation	Change it or add an other one on the installation

WARNING ! If the liquid is toxic, corrosive or dangerous for human being, WILO or the qualified person in charge of the repairing must be informed. In this case, clean the pump to ensure a complete safety to the repairing man.

10. Spare parts

Spare parts are ordered via a local specialist dealer and/or Wilo customer service.
In order to avoid queries and incorrect orders, make sure to mention all data indicated on the rating plate when placing your order.

Subject to technical alterations !

D EG - Konformitätserklärung
GB EC – Declaration of conformity
F Déclaration de conformité CEE

Hiermit erklären wir, dass die Bauarten der Baureihe : **MVISE ...-2G (1,1KW & 2KW)**
Herewith, we declare that this product:
Par le présent, nous déclarons que cet agrégat :

in der gelieferten Ausführung folgenden einschlägigen Bestimmungen entspricht:
in its delivered state comply with the following relevant provisions:
est conforme aux dispositions suivants dont il relève:

EG-Maschinenrichtlinie **EC-Machinery directive** **Directives CEE relatives aux machines**	**98/37/EG**
Elektromagnetische Verträglichkeit - Richtlinie **Electromagnetic compatibility - directive** **Compatibilité électromagnétique- directive**	**89/336/EWG** i.d.F/ as amended/ avec les amendements suivants: 91/263/EWG 92/31/EWG 93/68/EWG
Niederspannungsrichtlinie **Low voltage directive** **Direction basse-tension**	**73/23/EWG** i.d.F/ as amended/ avec les amendements suivants : 93/68/EWG
Angewendete harmonisierte Normen, insbesondere: *Applied harmonized standards, in particular:* *Normes harmonisées, notamment:*	**EN 809** **EN 61800-5-1** **EN 61800-3**

Dortmund, 31.07.2006

i.V.
Erwin Prieß
Quality Manager

WILO

WILO AG
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44263 Dortmund

Document: 2081626.1

NL **EG-verklaring van overeenstemming**

Hiermede verklaren wij dat dit aggregaat in de geleverde uitvoering voldoet aan de volgende bepalingen:

EG-richtlijnen betreffende machines 98/37/EG

Elektromagnetische compatibiliteit 89/336/EEG als vervolg op 91/263/EEG, 92/31/EEG, 93/68/EEG

EG-laagspanningsrichtlijn 73/23/EEG als vervolg op 93/68/EEG

Gebruikte geharmoniseerde normen, in het bijzonder: **1)**

I **Dichiarazione di conformità CE**

Con la presente si dichiara che i presenti prodotti sono conformi alle seguenti disposizioni e direttive rilevanti:

Direttiva macchine 98/37/CE

Compatibilità elettromagnetica 89/336/CEE e seguenti modifiche 91/263/CEE, 92/31/CEE, 93/68/CEE

Direttiva bassa tensione 73/23/CEE e seguenti modifiche 93/68/CEE

Norme armonizzate applicate, in particolare: **1)**

E **Declaración de conformidad CE**

Por la presente declaramos la conformidad del producto en su estado de suministro con las disposiciones pertinentes siguientes:

Directiva sobre máquinas 98/37/CE

Directiva sobre compatibilidad electromagnética 89/336/CEE modificada por 91/263/CEE, 92/31/CEE, 93/68/CEE

Directiva sobre equipos de baja tensión 73/23/CEE modificada por 93/68/CEE

Normas armonizadas adoptadas, especialmente: **1)**

P **Declaração de Conformidade CE**

Pela presente, declaramos que esta unidade no seu estado original, está conforme os seguintes requisitos:

Directivas CEE relativas a máquinas 98/37/CE

Compatibilidade electromagnética 89/336/CEE com os aditamentos seguintes 91/263/CEE, 92/31/CEE, 93/68/CEE

Directiva de baixa voltagem 73/23/CEE com os aditamentos seguintes 93/68/CEE

Normas harmonizadas aplicadas, especialmente: **1)**

S **CE- försäkran**

Härmed förklarar vi att denna maskin i levererat utförande motsvarar följande tillämpliga bestämmelser:

EG–Maskindirektiv 98/37/EG

EG–Elektromagnetisk kompatibilitet – riktlinje 89/336/EWG med följande ändringar 91/263/EWG, 92/31/EWG, 93/68/EWG

EG–Lågspänningsdirektiv 73/23/EWG med följande ändringar 93/68/EWG

Tillämpade harmoniserade normer, i synnerhet: **1)**

N **EU-Overensstemmelseserklæring**

Vi erklærer hermed at denne enheten i utførelse som levert er i overensstemmelse med følgende relevante bestemmelser:

EG–Maskindirektiv 98/37/EG

EG–EMV–Elektromagnetisk kompatibilitet 89/336/EWG med senere tilføyelser: 91/263/EWG, 92/31/EWG, 93/68/EWG

EG–Lavspenningsdirektiv 73/23/EWG med senere tilføyelser: 93/68/EWG

Anvendte harmoniserte standarder, særlig: **1)**

FIN **CE-standardinmukaisuusseloste**

Ilmoitamme täten, että tämä laite vastaa seuraavia asiaankuuluvia määräyksiä:

EU–konedirektiivit: 98/37/EG

Sähkömagneettinen soveltuvuus 89/336/EWG seuraavin täsmennyksin 91/263/EWG 92/31/EWG, 93/68/EWG

Matalajännite direktiivit: 73/23/EWG seuraavin täsmennyksin 93/68/EWG

Käytetyt yhteensovitetut standardit, erityisesti: **1)**

DK **EF-overensstemmelseserklæring**

Vi erklærer hermed, at denne enhed ved levering overholder følgende relevante bestemmelser:

EU–maskindirektiver 98/37/EG

Elektromagnetisk kompatibilitet: 89/336/EWG, følgende 91/263/EWG, 92/31/EWG, 93/68/EWG

Lavvolts-direktiv 73/23/EWG følgende 93/68/EWG

Anvendte harmoniserede standarder, særligt: **1)**

H **EK. Azonossági nyilatkozat**

Ezennel kijelentjük,hogy az berendezés az alábbiaknak megfelel:

EK Irányelvek gépekhez: 98/37/EG

Elektromágneses zavarás/türés: 89/336/EWG és az azt kiváltó 91/263/EWG, 92/31/EWG, 93/68/EWG

Kisfeszültségü berendezések irány-Elve: 73/23/EWG és az azt kiváltó 93/68/EWG

Felhasznált harmonizált szabványok, különösen: **1)**

CZ **Prohlášení o shodě EU**

Prohlašujeme tímto, že tento agregát v dodaném provedení odpovídá následujícím příslušným ustanovením:

Směrnicím EU–strojní zařízení 98/37/EG

Směrnicím EU–EMV 89/336/EWG ve sledu 91/263/EWG, 92/31/EWG, 93/68/EWG

Směrnicím EU–nízké napětí 73/23/EWG ve sledu 93/68/EWG

Použité harmonizační normy, zejména: **1)**

PL **Deklaracja Zgodności CE**

Niniejszym deklarujemy z pełną odpowiedzialnoscią że dostarczony wyrób jest zgdony z następującymi dokumentami:

EC–dyrektywa dla przemysłu maszynowego 98/37/EG

Odpowiedniość elektromagnetyczna 89/336/EWG ze zmianą 91/263/EWG, 92/31/EWG, 93/68/EWG

Normie niskich napięć 73/23/EWG ze zmianą 93/68/EWG

Wyroby są zgodne ze szczegółowymi normami zharmonizowanymi: **1)**

RUS **Деклация о соответствии Европейским нормам**

Настоящим документом заявляем, что данный агрегат в его объеме поставки соответствует следующим нормативным документам:

Директивы ЕС в отношении машин 98/37/EG

Электромагнитная устойчивость 89/336/EWG с поправками 91/263/EWG, 92/31/EWG, 93/68/EWG

Директивы по низковольтному напряжению 73/23/EWG с поправками 93/68/EWG

Используемые согласованные стандарты и нормы, в частности : **1)**

GR **Δήλωση προσαρ ογής της Ε.Ε.**

Δηλώνου ε ότι το προϊόν αυτό σ' αυτή την κατάσταση παράδοσης ικανοποιεί τις ακόλουθες διατάξεις :

Οδηγίες ΕG για ηχανή ατα 98/37/EG

Ηλεκτρο αγνητική συ βατότητα EG-89/336/EWG όπως τροποποιήθηκε 91/263/EWG 92/31/EWG, 93/68/EWG

Οδηγία χα ηλής τάσης EG–73/23/EWG όπως τροποποιήθηκε 93/68/EWG

Εναρ ονισ ένα χρησι οποιού ενα πρότυπα, ιδιαίτερα: **1)**

TR **CE Uygunluk Teyid Belgesi**

Bu cihazın teslim edildiği ºekliyle aºağıdaki standartlara uygun olduğunu teyid ederiz:

AB-Makina Standartları 98/37/EG

Elektromanyetik Uyumluluk 89/336/EWG ve takip eden, 91/263/EWG, 92/31/EWG, 93/68/EWG

Alçak gerilim direktifi 73/23/EWG ve takip eden, 93/68/EWG

Kısmen kullanılan standartlar: **1)**

1) **EN 809,**

EN 60034-1

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