SMART Digital - DDE

up to 15 l/h

Installation and operating instructions
Original installation and operating instructions.

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Warning
Prior to installation, read these installation and operating instructions. Installation and operation must comply with local regulations and accepted codes of good practice.

1. Safety instructions

These installation and operating instructions contain general instructions that must be observed during installation, operation and maintenance of the pump. It must therefore be read by the installation engineer and the relevant qualified operator prior to installation and start-up, and must be available at the installation location at all times.

1.1 Symbols used in this document

Warning
If these safety instructions are not observed, it may result in personal injury.

Caution
If these safety instructions are not observed, it may result in malfunction or damage to the equipment.

1.2 Qualification and training of personnel

The personnel responsible for the installation, operation and service must be appropriately qualified for these tasks. Areas of responsibility, levels of authority and the supervision of the personnel must be precisely defined by the operator. If necessary, the personnel must be trained appropriately.

Risks of not observing the safety instructions

Non-observance of the safety instructions may have dangerous consequences for the personnel, the environment and the pump and may result in the loss of any claims for damages.

It may lead to the following hazards:
• Personal injury from exposure to electrical, mechanical and chemical influences.
• Damage to the environment and personal injury from leakage of harmful substances.
1.3 Safety instructions for the operator/user

The safety instructions described in these instructions, existing national regulations on health protection, environmental protection and for accident prevention and any internal working, operating and safety regulations of the operator must be observed. Information attached to the pump must be observed. Leakages of dangerous substances must be disposed of in a way that is not harmful to the personnel or the environment.

Damage caused by electrical energy must be prevented, see the regulations of the local electricity supply company.

Before starting work on the pump, the pump must be disconnected from the power supply. The system must be pressureless!

The mains plug is the separator separating the pump from the mains.

Only original accessories and original spare parts should be used. Using other parts can result in exemption from liability for any resulting consequences.

1.4 Safety of the system in the event of a failure in the dosing pump

The dosing pump was designed according to the latest technologies and is carefully manufactured and tested.

If it fails regardless of this, the safety of the overall system must be ensured. Use the relevant monitoring and control functions for this.

Make sure that any chemicals that are released from the pump or any damaged lines do not cause damage to system parts and buildings.

The installation of leak monitoring solutions and drip trays is recommended.

1.5 Dosing chemicals

Warning

Before switching the supply voltage back on, the dosing lines must be connected in such a way that any chemicals in the dosing head cannot spray out and put people at risk.

The dosing medium is pressurised and can be harmful to health and the environment.

Warning

When working with chemicals, the accident prevention regulations applicable at the installation site should be applied (e.g. wearing protective clothing).

Observe the chemical manufacturer's safety data sheets and safety instructions when handling chemicals!

A deaeration hose, which is routed into a container, e.g. a drip tray, must be connected to the deaeration valve.

The dosing medium must be in liquid aggregate state!

Observe the freezing and boiling points of the dosing medium!

The resistance of the parts that come into contact with the dosing medium, such as the dosing head, valve ball, gaskets and lines, depends on the medium, media temperature and operating pressure.

Ensure that parts in contact with the dosing medium are resistant to the dosing medium under operating conditions, see data booklet!

Should you have any questions regarding the material resistance and suitability of the pump for specific dosing media, please contact Grundfos.
1.6 Diaphragm breakage

If the diaphragm leaks or is broken, dosing liquid escapes from the drain opening (fig. 10, pos. 11) on the dosing head. Observe section 7.4 Diaphragm breakage.

**Warning**

Danger of explosion, if dosing liquid has entered the pump housing!

Operation with damaged diaphragm can lead to dosing liquid entering the pump housing.

In case of diaphragm breakage, immediately separate the pump from the power supply!

Make sure the pump cannot be put back into operation by accident!

Dismantle the dosing head without connecting the pump to the power supply and make sure no dosing liquid has entered the pump housing. Proceed as described in section 7.4.1 Dismantling in case of diaphragm breakage.

To avoid any danger resulting from diaphragm breakage, observe the following:

- Perform regular maintenance. See section 7.1 Regular maintenance.
- Never operate the pump with blocked or soiled drain opening.
  - If the drain opening is blocked or soiled, proceed as described in section 7.4.1 Dismantling in case of diaphragm breakage.
- Never attach a hose to the drain opening. If a hose is attached to the drain opening, it is impossible to recognise escaping dosing liquid.
- Take suitable precautions to prevent harm to health and damage to property from escaping dosing liquid.
- Never operate the pump with damaged or loose dosing head screws.

2. General information

The DDE dosing pump is a self-priming diaphragm pump. It consists of a housing with stepper motor and electronics and a dosing head with diaphragm and valves. Excellent dosing features of the pump:

- Optimal intake even with degassing media, as the pump always works at full suction stroke volume.
- Continuous dosing, as the medium is sucked up with a short suction stroke, regardless of the current dosing flow, and dosed with the longest possible dosing stroke.

2.1 Warranty

A guarantee claim in accordance with our general terms of sale and delivery is only valid if the following requirements are fulfilled:

- The pump is used in accordance with the information within this manual.
- The pump is not dismantled or incorrectly handled.
- The maintenance is carried out by authorised and qualified personnel.

2.2 Applications

The pump is suitable for liquid, non-abrasive, non-flammable and non-combustible media strictly in accordance with the instructions in these installation and operating instructions.

**Areas of application**

- Drinking water treatment
- Wastewater treatment
- Swimming pool water treatment
- Boiler water treatment
- CIP (Clean-In-Place)
- Cooling water treatment
- Process water treatment
- Wash plants
- Chemical industry
- Ultrafiltration processes and reverse osmosis
- Irrigation
- Paper and pulp industry
- Food and beverage industries.

2.3 Improper operating methods

The operational safety of the pump is only guaranteed if it is used in accordance with section 2.2 Applications.

**Warning**

Other applications or the operation of pumps in ambient and operating conditions, which are not approved, are considered improper and are not permitted. Grundfos cannot be held liable for any damage resulting from incorrect use.

**Warning**

The pump is NOT approved for operation in potentially explosive areas!

**Warning**

A sunscreen is required for outdoor installation!
2.4 Symbols on the pump

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>!</td>
<td>Indication of universally dangerous spot.</td>
</tr>
<tr>
<td></td>
<td>In case of emergency and prior to all maintenance work and repairs, take the mains plug out of the mains supply!</td>
</tr>
<tr>
<td></td>
<td>The device complies with electrical safety class II.</td>
</tr>
<tr>
<td></td>
<td>Connection for deaeration hose at dosing head. If the deaeration hose is not correctly connected, danger will arise due to possible leakage of dosing liquid!</td>
</tr>
</tbody>
</table>

2.5 Nameplate

![Nameplate diagram]

**Fig. 1** Nameplate

<table>
<thead>
<tr>
<th>Pos.</th>
<th>Description</th>
<th>Pos.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Type designation</td>
<td>6</td>
<td>Enclosure class</td>
</tr>
<tr>
<td>2</td>
<td>Voltage</td>
<td>7</td>
<td>Mark of approval, CE mark, etc.</td>
</tr>
<tr>
<td>3</td>
<td>Frequency</td>
<td>8</td>
<td>Country of origin</td>
</tr>
<tr>
<td>4</td>
<td>Power consumption</td>
<td>9</td>
<td>Max. operating pressure</td>
</tr>
<tr>
<td>5</td>
<td>Max. dosing flow</td>
<td>10</td>
<td>Model</td>
</tr>
</tbody>
</table>
2.6 Type key

The type key is used to identify the precise pump and is not used for configuration purposes.

<table>
<thead>
<tr>
<th>Code</th>
<th>Example</th>
<th>DDE</th>
<th>6-</th>
<th>P-</th>
<th>PP/</th>
<th>V/</th>
<th>C-</th>
<th>X-</th>
<th>3</th>
<th>1</th>
<th>U2U2</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pump type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max. flow [l/h]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Max. pressure [bar]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Control variant**
- B: Basic
- P: B with pulse mode
- PR: P with relay output

**Dosing head material**
- PP: Polypropylene
- PVC: PVC (polyvinyl chloride, only up to 10 bar)
- PV: PVDF (polyvinylidene fluoride)
- SS: Stainless steel DIN 1.4401

**Gasket material**
- E: EPDM
- V: FKM
- T: PTFE

**Valve ball material**
- C: Ceramic
- SS: Stainless steel DIN 1.4401

**Control cube position**
- X: No control cube

**Voltage**
- 1: 1 x 100-240 V, 50/60 Hz

**Valve type**
- 1: Standard
- 2: Spring-loaded (HV version)

**Suction/discharge side connection**
- U2U2: Hose, 4/6 mm, 6/9 mm, 6/12 mm, 9/12 mm
- U7U7: Hose 0.17” x 1/4”, 1/4” x 3/8”, 3/8” x 1/2”
- AA: Threaded Rp 1/4”, female (stainless steel)
- VV: Threaded 1/4” NPT, female (stainless steel)
- XX: No connection

**Installation set**
- I001: Hose, 4/6 mm (up to 7.5 l/h, 13 bar)
- I002: Hose, 9/12 mm (up to 60 l/h, 9 bar)
- I003: Hose, 0.17” x 1/4” (up to 7.5 l/h, 13 bar)
- I004: Hose, 3/8” x 1/2” (up to 60 l/h, 10 bar)

**Mains plug**
- F: EU
- B: USA, Canada
- G: UK
- I: Australia, New Zealand, Taiwan
- E: Switzerland
- J: Japan
- L: Argentina

**Design**
- G: Grundfos

* Including: 2 pump connections, foot valve, injection unit, 6 m PE discharge hose, 2 m PVC suction hose, 2 m PVC deaeration hose (4/6 mm).
2.7 Product overview

3. Technical data / Dimensions

3.1 Technical data

<table>
<thead>
<tr>
<th>Data</th>
<th>6-10</th>
<th>15-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turndown ratio (setting range) [1:X]</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Max. dosing capacity [l/h]</td>
<td>6.0</td>
<td>15.0</td>
</tr>
<tr>
<td></td>
<td>[gph]</td>
<td></td>
</tr>
<tr>
<td>Min. dosing capacity [l/h]</td>
<td>0.006</td>
<td>0.015</td>
</tr>
<tr>
<td></td>
<td>[gph]</td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure [bar]</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>[psi]</td>
<td></td>
</tr>
<tr>
<td>Max. stroke frequency [strokes/min]</td>
<td>140</td>
<td>180</td>
</tr>
<tr>
<td>Stroke volume [ml]</td>
<td>0.81</td>
<td>1.58</td>
</tr>
<tr>
<td>Accuracy of repeatability [%]</td>
<td>± 5</td>
<td></td>
</tr>
<tr>
<td>Max. suction lift during operation [m]</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Max. suction lift when priming with wet valves [m]</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Min. pressure difference between suction and discharge side [bar]</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### Mechanical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>6-10</th>
<th>15-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. inlet pressure, suction side</td>
<td>[bar]</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Max. viscosity with spring-loaded valves</td>
<td>[mPas] (= cP)</td>
<td>600</td>
<td>500</td>
</tr>
<tr>
<td>Max. viscosity without spring-loaded valves</td>
<td>[mPas] (= cP)</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>Min. internal hose/pipe diameter suction/discharge side¹, ³</td>
<td>[mm]</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Min. internal hose/pipe diameter suction/discharge side (high viscosity)³</td>
<td>[mm]</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Min./Max. liquid temperature</td>
<td>[°C]</td>
<td>-10/45</td>
<td>0/45</td>
</tr>
<tr>
<td>Min./Max. ambient temperature</td>
<td>[°C]</td>
<td>-20/70</td>
<td></td>
</tr>
<tr>
<td>Min./Max. storage temperature</td>
<td>[°C]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. relative humidity (non-condensing)</td>
<td>[%]</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>Max. altitude above sea level</td>
<td>[m]</td>
<td>2000</td>
<td></td>
</tr>
</tbody>
</table>

### Electrical data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>[V]</td>
<td>100-240 V, -10 %/+10 %, 50/60 Hz</td>
</tr>
<tr>
<td>Length of mains cable</td>
<td>[m]</td>
<td>1.5</td>
</tr>
<tr>
<td>Max. inrush current for 2 ms (100 V)</td>
<td>[A]</td>
<td>8</td>
</tr>
<tr>
<td>Max. inrush current for 2 ms (230 V)</td>
<td>[A]</td>
<td>25</td>
</tr>
<tr>
<td>Max. power consumption P₁</td>
<td>[W]</td>
<td>19</td>
</tr>
<tr>
<td>Enclosure class</td>
<td></td>
<td>IP65, Nema 4X</td>
</tr>
<tr>
<td>Electrical safety class</td>
<td></td>
<td>II</td>
</tr>
<tr>
<td>Pollution degree</td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Signal input

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. load for level input</td>
<td></td>
<td>12 V, 5 mA</td>
</tr>
<tr>
<td>Max. load for pulse input</td>
<td></td>
<td>12 V, 5 mA</td>
</tr>
<tr>
<td>Max. load for external stop input</td>
<td></td>
<td>12 V, 5 mA</td>
</tr>
<tr>
<td>Min. pulse length</td>
<td>[ms]</td>
<td>5</td>
</tr>
<tr>
<td>Max. pulse frequency</td>
<td>[Hz]</td>
<td>100</td>
</tr>
<tr>
<td>Max. resistance in level/pulse circuit</td>
<td>[Ω]</td>
<td>1000</td>
</tr>
</tbody>
</table>

### Signal output

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. ohmic load on relay output</td>
<td>[A]</td>
<td>0.5</td>
</tr>
<tr>
<td>Max. voltage on relay output</td>
<td>[V]</td>
<td>30 VDC/30 VAC</td>
</tr>
</tbody>
</table>

### Weight/Size

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight (PVC, PP, PVDF)</td>
<td>[kg]</td>
<td>2.4</td>
</tr>
<tr>
<td>Weight (stainless steel)</td>
<td>[kg]</td>
<td>3.2</td>
</tr>
<tr>
<td>Diaphragm diameter</td>
<td>[mm]</td>
<td>44, 50</td>
</tr>
</tbody>
</table>

### Sound pressure

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. sound pressure level</td>
<td>[dB(A)]</td>
<td>60</td>
</tr>
</tbody>
</table>

### Approvals

CE, CB, CSA-US, NSF61, GOST/TR, C-Tick

---

¹ Data is based on measurements with water
² Maximum suction lift: 1 m, dosing capacity reduced (approx. 30 %)
³ Length of suction line: 1.5 m, length of discharge line: 10 m (at max. viscosity)
3.2 Dimensions
The indicated dimensions are the same for all control variants of the DDE range. The following drawing shows the DDE-PR control variant.

![Dimensional sketch](image)

Fig. 3  Dimensional sketch

<table>
<thead>
<tr>
<th>Pump type</th>
<th>A1 [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDE 6-10</td>
<td>251</td>
<td>196</td>
<td>46.5</td>
<td>24</td>
</tr>
<tr>
<td>DDE 15-4</td>
<td>251</td>
<td>200.5</td>
<td>39.5</td>
<td>24</td>
</tr>
</tbody>
</table>
4. Assembly and installation

For use in Australia:
Installation of this product must comply with AS/NZS3500!

Certificate of suitability number: CS9431
c-tick number: N20683

4.1 Pump assembly

Warning
Install the pump in such a way that the plug can easily be reached by the operator during operation! This will enable the operator to separate the pump from the mains quickly in case of emergency!

The pump is delivered with a mounting plate. The mounting plate can be mounted vertically, e.g. on a wall, or horizontally, e.g. on a tank. It takes just a few quick steps to firmly secure the pump to the mounting plate by means of a slot mechanism. The pump can easily be released from the mounting plate for maintenance.

4.1.1 Requirements
• The mounting surface must be stable and must not vibrate.
• Dosing must flow upwards vertically.

4.1.2 Align and install mounting plate
• Vertical installation: Mounting plate slot mechanism must be above.
• Horizontal installation: Mounting plate slot mechanism must be opposite the dosing head.
• The mounting plate can be used as a drill template, please see fig. 3 for drill hole distances.

4.1.3 Engage pump in mounting plate
1. Attach the pump to the mounting plate support clamps and slide under slight pressure until it engages.

Warning
Make sure that you do not damage any cables and lines during installation!

1. Indicate drill holes.
2. Drill holes.
3. Secure mounting plate using four screws, diameter 5 mm, to the wall, on the bracket or the tank.

4.2 Hydraulic connection

Warning
Risk of chemical burns!
Wear protective clothing (gloves and goggles) when working on the dosing head, connections or lines!

The dosing head may contain water from the factory check!

Caution
When dosing media which should not come into contact with water, another medium must be dosed beforehand!

Faultless function can only be guaranteed in conjunction with lines supplied by Grundfos!

The lines used must comply with the pressure limits as per section 3.1 Technical data!

Important information on installation
• Observe suction lift and hose diameter, see section 3.1 Technical data.
• Shorten hoses at right angles.
• Ensure that there are no loops or kinks in the hoses.
• Keep suction line as short as possible.
• Route suction line up towards the suction valve.
• Installing a filter in the suction line protects the entire installation against dirt and reduces the risk of leakage.
Hose connection procedure
1. Push union nut and tensioning ring across hose.
2. Push cone part fully into the hose, see fig. 6.
3. Attach cone part with hose to the corresponding pump valve.
4. Tighten union nut manually.
   - Do not use tools!
5. Tighten up union nuts after 2-5 operating hours, if using PTFE gaskets!
6. Attach deaeration hose to the corresponding connection (see fig. 2) and run into a container or a collecting tray.

4.3 Electrical connection

Mains connection

**Warning**
The enclosure class (IP65/Nema 4X) is only guaranteed if plugs or protective caps are correctly installed!

**Warning**
The pump can start automatically when the mains voltage is switched on!
Do not manipulate mains plug or cable!

**The mains plug is the separator separating the pump from the mains.**

**The rated voltage of the pump, see section 2.5 Nameplate, must conform to local conditions.**

The pump is supplied with assembled mains cable and plug.
1. Set capacity adjustment knob to 0 % (see 6.1 Operating elements).
2. Connect the mains plug with the mains socket.

---

**Note**
Pressure differential between suction and discharge side must be at least 1 bar/14.5 psi!

**Caution**
Tighten the dosing head screws with a torque wrench once before commissioning and again after 2-5 operating hours at 4 Nm.

Installation example

The pump offers various installation options. In the picture below, the pump is installed in conjunction with a suction line, level switch and multifunction valve on a Grundfos tank.
Signal connections
Applies to DDE-PR/P control variant.

Warning
Electric circuits of external devices connected to the pump inputs must be separated from dangerous voltage by means of double or reinforced insulation!

Fig. 8  Wiring diagram of the electrical connections (DDE-PR/P)

External stop and pulse input

<table>
<thead>
<tr>
<th>Function</th>
<th>Pins</th>
<th>Plug type</th>
</tr>
</thead>
<tbody>
<tr>
<td>External stop</td>
<td>GND</td>
<td>Pulse</td>
</tr>
<tr>
<td>Pulse</td>
<td>GND</td>
<td>Pulse</td>
</tr>
</tbody>
</table>

Level signals: empty and low-level signal

<table>
<thead>
<tr>
<th>Function</th>
<th>Pins</th>
<th>Plug type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-level signal</td>
<td>X, GND</td>
<td>Pulse</td>
</tr>
<tr>
<td>Empty signal</td>
<td>X, GND</td>
<td>Pulse</td>
</tr>
</tbody>
</table>

Relay outputs*

<table>
<thead>
<tr>
<th>Function</th>
<th>Pins</th>
<th>Plug type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay 1 (Alarm)</td>
<td>X, X, X</td>
<td>Pulse</td>
</tr>
<tr>
<td>Relay 2 (selectable)</td>
<td>X, X</td>
<td>Pulse</td>
</tr>
</tbody>
</table>

* applies to DDE-PR control variant
5. Startup

5.1 General notes

**Warning**

Suction and discharge hoses must be connected correctly!
The deaeration hose must be connected correctly and inserted into a suitable tank!

Tighten the dosing head screws with a torque wrench once before commissioning and again after 2-5 operating hours at 4 Nm.

**Caution**

Tighten the dosing head screws with the indicated torque (4 Nm). Tighten dosing head screws, if necessary.

5.2 Check before commissioning

- Check that the rated voltage indicated on the nameplate complies with the local conditions.
- Check that all connections are assembled correctly. Tighten connections, if necessary.
- Check that the dosing head screws are tightened with the indicated torque (4 Nm). Tighten dosing head screws, if necessary.
- Check that all electrical cables and plugs are connected correctly.

5.3 Start and deaerate the pump

1. Connect mains supply (see **4.3 Electrical connection**).
2. Open the deaeration valve by approximately half a turn.
3. DDE-PR/P control variant: Press the [100%] key and hold it down, until liquid flows out of the deaeration hose continuously and without any bubbles.
4. DDE-B control variant: Turn the capacity adjustment knob to 100 % and wait, until liquid flows out of the deaeration hose continuously and without any bubbles. Then set the capacity adjustment knob back to 0 %.
5. Close the deaeration valve.
The pump is deaerated.

6. Operation

6.1 Operating elements

![Fig. 9 Operating elements](image)

**Logarithmic scale**

**Capacity adjustment knob**

**Status LED**

"Pulse"

[Operation mode] key*

Status LED "Manual"

**Mechanical lock**

[100%] key*

**[Note]** The DDE-B control variant is only equipped with a status LED.

When pressing and holding down the [100%] key, the pump doses at 100 % for a certain time. The [100%] key can be used e.g. for deaeration. The [Operation mode] key is used to change between the "Manual" and "Pulse" mode (see section **6.2.3**). According to the selected operation mode, the respective status LED is active ("Pulse" = LED above key; "Manual" = LED below key).
The status LEDs indicate the following operating statuses and faults:

<table>
<thead>
<tr>
<th>LED colour</th>
<th>Pump status/fault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green (flashing)</td>
<td>stop</td>
</tr>
<tr>
<td>Green</td>
<td>running</td>
</tr>
<tr>
<td>Red-green (flashing)</td>
<td>standby (external stopped)*</td>
</tr>
<tr>
<td>Yellow</td>
<td>low-level signal*</td>
</tr>
<tr>
<td>Red</td>
<td>empty signal, pump stops*</td>
</tr>
<tr>
<td>Red (flashing)</td>
<td>motor blocked, pump stops</td>
</tr>
</tbody>
</table>

* only DDE-PR/P control variant

### 6.2 Operation modes
Following operation modes are available:
- **Manual**, see section 6.2.1
- **Pulse***, see section 6.2.2
  * Applies to DDE-PR/P control variant.

#### 6.2.1 Manual
In this operation mode, the pump doses constantly the dosing quantity set by the adjustment knob.
The setting range depends on the pump type:

<table>
<thead>
<tr>
<th>Type</th>
<th>Setting range [l/h]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDE 6-10</td>
<td>0.0060 - 6</td>
</tr>
<tr>
<td>DDE 15-4</td>
<td>0.0150 - 15</td>
</tr>
</tbody>
</table>

#### 6.2.2 Pulse
* Applies to DDE-PR/P control variant.
In this operation mode, the pump doses the set dosing volume for each incoming (potential-free) pulse, e.g. from a water meter. The pump automatically calculates the optimum stroke frequency for dosing the set volume per pulse.
The calculation is based on:
- the frequency of external pulses
- the set stroke volume in percent.
The dosing quantity per pulse is set to a value between 0.1 % and 100 % of the stroke volume using the adjustment knob.
The setting range depends on the pump type:

<table>
<thead>
<tr>
<th>Type</th>
<th>Setting range [ml/pulse]</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDE 6-10</td>
<td>0.0008 - 0.81</td>
</tr>
<tr>
<td>DDE 15-4</td>
<td>0.0016 - 1.58</td>
</tr>
</tbody>
</table>

The frequency of incoming pulses is multiplied by the set dosing volume. If the pump receives more pulses than it can process at the maximum dosing flow, it runs at the maximum stroke frequency in continuous operation. Excess pulses will be ignored.

### 6.3 Inputs/outputs
* Applies to DDE-PR/P control variant.

#### 6.3.1 External stop
The pump can be stopped via an external pulse, e.g. from a control room. When activating the external stop pulse, the pump switches from the operating state "Running" into the operating state "Standby". According to the selected operation mode, the respective LED flashes red-green.

#### 6.3.2 Empty and low-level signals
In order to monitor the filling level in the tank, a dual-level sensor can be connected to the pump. The pump responds to the signals as follows:

<table>
<thead>
<tr>
<th>Sensor signal</th>
<th>Pump status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low level</td>
<td>• LED lights up in yellow</td>
</tr>
<tr>
<td></td>
<td>• Pump continues running</td>
</tr>
<tr>
<td>Empty</td>
<td>• LED lights up in red</td>
</tr>
<tr>
<td></td>
<td>• Pump stops</td>
</tr>
</tbody>
</table>

**Caution**  
*When the tank is filled up again, the pump restarts automatically!*
6.3.3 Relay outputs

 Applies to DDE-PR control variant.

The pump can switch two external signals using installed relays. The relays are switched by potential-free pulses. The connection diagram of the relays is shown in section 4.3 Electrical connection.

Relay 1 is allocated with the alarm signals (tank empty, motor blocked) as standard. Relay 2 can be allocated with the following signals:

<table>
<thead>
<tr>
<th>Relay 2 signal</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low-level signal*</td>
<td>low level in tank</td>
</tr>
<tr>
<td>Stroke signal</td>
<td>each full stroke</td>
</tr>
<tr>
<td>Pulse input**</td>
<td>each incoming pulse from pulse input</td>
</tr>
</tbody>
</table>

* Default setting

** The correct transmission of incoming pulses can only be guaranteed up to a pulse frequency of 5 Hz.

6.3.4 Change settings

The signal inputs (level signals, external stop) and the relay outputs are configured at the factory as normally open (NO) contacts. They can be re-configured as normally closed (NC) contacts. Relay 2 can be allocated with different signals.

The activated settings are indicated by the status LEDs when the pump is in the setup mode. For entering the setup mode and changing settings, proceed as follows:

1. Set adjustment knob to 0 %.
2. Connect mains supply (see section 4.3 Electrical connection).
3. Press [100%] key and [Operation mode] key simultaneously and hold them down for at least 5 seconds.
   - The pump switches into setup mode 1. The active setup mode is indicated by the color of the upper status LED. The current setting is indicated by the color of the lower status LED.
4. Make the desired settings according to the following table:

<table>
<thead>
<tr>
<th>Change setting with [100%] key</th>
<th>Setup mode 1</th>
<th>Setup mode 2*</th>
<th>Setup mode 3*</th>
</tr>
</thead>
<tbody>
<tr>
<td>lower status LED</td>
<td>Green</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>upper status LED</td>
<td>Contact type of signal inputs (low-level, empty and external stop)</td>
<td>Contact type of relay outputs</td>
<td>Allocated signal of Relay 2</td>
</tr>
<tr>
<td>Green</td>
<td>NO**</td>
<td>NO**</td>
<td>Low-level signal**</td>
</tr>
<tr>
<td>Yellow</td>
<td>NC</td>
<td>NC</td>
<td>stroke signal</td>
</tr>
<tr>
<td>Red</td>
<td>-</td>
<td>-</td>
<td>pulse input</td>
</tr>
</tbody>
</table>

* Only DDE-PR control variant

** Default setting

5. To exit setup mode, keep [100%] key and [Operation mode] key simultaneously pressed for at least 1 second.
7. Service

In order to ensure a long service life and dosing accuracy, wearing parts such as diaphragms and valves must be regularly checked for signs of wear. Where necessary, replace worn parts with original spare parts made from suitable materials.

Should you have any questions, please contact your service partner.

**Warning**

*Maintenance work must only be carried out by qualified staff.*

7.1 Regular maintenance

<table>
<thead>
<tr>
<th>Interval</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>Check, if liquid leaks from the drain opening (fig. 10, pos. 11) and if the drain opening is blocked or soiled. If so, follow the instructions given in section 7.4 Diaphragm breakage.</td>
</tr>
<tr>
<td>Weekly</td>
<td>Clean all pump surfaces with a dry and clean cloth.</td>
</tr>
<tr>
<td>Every 3 months</td>
<td>Check dosing head screws. If necessary, tighten dosing head screws with a torque wrench at 4 Nm. Replace damaged screws immediately.</td>
</tr>
<tr>
<td>Every 2 years or 8000 operating hours*</td>
<td>Replace diaphragm and valves (see 7.3 Perform service)</td>
</tr>
</tbody>
</table>

*For media which result in increased wear, the service interval must be shortened.

7.2 Cleaning

If necessary, clean all pump surfaces with a dry and clean cloth.

7.3 Perform service

Only spare parts and accessories from Grundfos should be used for maintenance. The usage of non-original spare parts and accessories renders any liability for resulting damages null and void.

Further information about carrying out maintenance can be found in the service kit catalog on our homepage (www.grundfos.com).

**Warning**

*Risk of chemical burns!*

When dosing dangerous media, observe the corresponding precautions in the safety data sheets!

Wear protective clothing (gloves and goggles) when working on the dosing head, connections or lines!

Do not allow any chemicals to leak from the pump. Collect and dispose of all chemicals correctly!

Before any work to the pump, the pump must be disconnected from the power supply. The system must be pressureless!

7.3.1 Dosing head overview

![Fig. 10 Dosing head, exploded view](image)

1. Safety diaphragm
2. Flange
3. O-ring
4. Diaphragm
5. Valve on discharge side
6. Valve on suction side
7. Dosing head
8. Screws with discs
9. Cover
10. Deaeration valve
11. Drain opening
7.3.2 Dismantling the diaphragm and valves

**Warning**

*Danger of explosion, if dosing liquid has entered the pump housing!*

*If the diaphragm is possibly damaged, don’t connect the pump to the power supply! Proceed as described in section 7.4.2 Diaphragm breakage!*

This section refers to fig. 10.

1. Make system pressureless.
2. Empty the dosing head before maintenance and flush it, if necessary.
3. Set adjustment knob to 0 %.
4. Switch off mains supply.
5. Take suitable steps to ensure that the returning liquid is safely collected.
6. Dismantle suction, pressure and deaeration hoses.
7. Dismantle valves on suction and discharge side (5, 6).
8. Remove the cover (9).
9. Loosen screws (8) on the dosing head (7) and remove the screws and discs.
10. Remove the dosing head (7).
11. Unscrew diaphragm (4) counter-clockwise and remove with flange (2).
12. Make sure the drain opening (11) is not blocked or soiled. Clean if necessary.
13. Check the safety diaphragm (1) for wear and damage. Replace if necessary.

If nothing indicates that dosing liquid has entered the pump housing, go on as described in section 7.3.3 Reassembling the diaphragm and valves. Otherwise proceed as described in section 7.4.2 Dosing liquid in the pump housing.

---

7.3.3 Reassembling the diaphragm and valves

The pump must only be reassembled, if nothing indicates that dosing liquid has entered the pump housing. Otherwise proceed as described in section 7.4.2 Dosing liquid in the pump housing.

This section refers to fig. 10.

1. Attach flange (2) correctly and screw on new diaphragm (4) clockwise.
   - Make sure that the O-ring (3) is seated correctly!
2. Connect/switch on mains supply.
3. Turn the adjustment knob slowly to bring the diaphragm into its service position "inside" (end of suction phase, diaphragm retracted). Set adjustment knob back to 0 %.
4. Switch off mains supply again.
5. Attach the dosing head (7).
6. Install screws with discs (8) and cross-tighten with a torque wrench.
   - Torque: 4 Nm.
7. Attach the cover (9).
8. Install new valves (5, 6).
   - Do not interchange valves and pay attention to direction of arrow.
9. Connect suction, pressure and deaeration hoses (see section 4.2 Hydraulic connection).
   
   **Caution**

   *Tighten the dosing head screws with a torque wrench once before commissioning and again after 2-5 operating hours at 4 Nm.*

10. Deaerate dosing pump (see section 5.3 Start and deaerate the pump).
11. Please observe the notes on commissioning in section 5. Startup!
7.4 Diaphragm breakage

If the diaphragm leaks or is broken, dosing liquid escapes from the drain opening (fig. 10, pos. 11) on the dosing head.

In case of diaphragm breakage, the safety diaphragm (fig. 10, pos. 1) protects the pump housing against ingress of dosing liquid.

When dosing crystallising liquids the drain opening can be blocked by crystallisation. If the pump is not taken out of operation immediately, a pressure can build up between the diaphragm (fig. 10, pos. 4) and the safety diaphragm in the flange (fig. 10, pos. 2). The pressure can press dosing liquid through the safety diaphragm into the pump housing.

Most dosing liquids don’t cause any danger when entering the pump housing. However a view liquids can cause a chemical reaction with inner parts of the pump. In the worst case, this reaction can produce explosive gases in the pump housing.

**Warning**

Danger of explosion, if dosing liquid has entered the pump housing!

Operation with damaged diaphragm can lead to dosing liquid entering the pump housing.

In case of diaphragm breakage, immediately separate the pump from the power supply!

Make sure the pump cannot be put back into operation by accident!

Dismantle the dosing head without connecting the pump to the power supply and make sure no dosing liquid has entered the pump housing. Proceed as described in section 7.4.1 Dismantling in case of diaphragm breakage.

To avoid any danger resulting from diaphragm breakage, observe the following:

- Perform regular maintenance. See section 7.1 Regular maintenance.
- Never operate the pump with blocked or soiled drain opening.
  - If the drain opening is blocked or soiled, proceed as described in section 7.4.1 Dismantling in case of diaphragm breakage.
- Never attach a hose to the drain opening. If a hose is attached to the drain opening, it is impossible to recognise escaping dosing liquid.
- Take suitable precautions to prevent harm to health and damage to property from escaping dosing liquid.
- Never operate the pump with damaged or loose dosing head screws.

7.4.1 Dismantling in case of diaphragm breakage

**Warning**

Danger of explosion, if dosing liquid has entered the pump housing!

Do not connect the pump to the power supply!

This section refers to fig. 10.

1. Make system pressureless.
2. Empty dosing head before maintenance and flush it if necessary.
3. Take suitable steps to ensure that the returning liquid is safely collected.
4. Dismantle suction, pressure and deaeration hose.
5. Remove the cover (9).
6. Loosen screws (8) on the dosing head (7) and remove with discs.
7. Remove the dosing head (7).
8. Unscrew diaphragm (4) counter-clockwise and remove with flange (2).
9. Make sure the drain opening (11) is not blocked or soiled. Clean if necessary.
10. Check the safety diaphragm (1) for wear and damage. Replace if necessary.

If nothing indicates that dosing liquid has entered the pump housing, go on as described in section 7.3.3 Reassembling the diaphragm and valves. Otherwise proceed as described in section 7.4.2 Dosing liquid in the pump housing.

7.4.2 Dosing liquid in the pump housing

**Warning**

Danger of explosion!

Immediate separate the pump from the power supply!

Make sure the pump cannot be put back into operation by accident!

If dosing liquid has entered the pump housing:

- Send the pump to Grundfos for repair, following the instructions given in section 7.5 Repairs.
- If a repair isn’t economically reasonable, dispose of the pump observing the information in section 9. Disposal.
7.5 Repairs

**Warning**
*The pump housing must only be opened by personnel authorised by Grundfos!*

*Repairs must only be carried out by authorised and qualified personnel!*

*Switch off the pump and disconnect it from the voltage supply before carrying out maintenance work and repairs!*

After consulting Grundfos, please send the pump, together with the safety declaration completed by a specialist, to Grundfos. The safety declaration can be found at the end of these instructions. It must be copied, completed and attached to the pump.

*The pump must be cleaned prior to dispatch!*

*If dosing liquid has possibly entered the pump housing, state that explicitly in the safety declaration!*

*Observe section 7.4 Diaphragm breakage.*

If the above requirements are not met, Grundfos may refuse to accept delivery of the pump. The shipping costs will be charged to the sender.

8. Faults

8.1 Indication of faults

Depending on the selected operation mode, the pump indicates the following faults with its LEDs:

<table>
<thead>
<tr>
<th>LED colour</th>
<th>Fault Description</th>
<th>Remedy</th>
</tr>
</thead>
</table>
| Yellow     | low-level signal  | • fill tank  
|            |                   | • check contact type  
|            |                   | (see section 6.3.4). |
| Red        | empty signal      | • fill tank  
|            |                   | • check contact type  
|            |                   | (see section 6.3.4). |
| Red (flashing) | motor blocked | • reduce backpressure  
|            |                   | • have gear repaired, if necessary. |

For further faults, please see 8.2 List of faults.
## 8.2 List of faults

<table>
<thead>
<tr>
<th>Fault</th>
<th>Possible cause</th>
<th>Possible remedy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dosing flow too high</strong></td>
<td>Inlet pressure greater than backpressure</td>
<td>Install additional spring-loaded valve (approx. 3 bar) on the discharge side.</td>
</tr>
<tr>
<td></td>
<td>Air in dosing head</td>
<td>Deaerate the pump.</td>
</tr>
<tr>
<td></td>
<td>Faulty diaphragm</td>
<td>Change the diaphragm (see section 7.3 <em>Perform service</em>).</td>
</tr>
<tr>
<td></td>
<td>Leakage/fracture in lines</td>
<td>Check and repair lines.</td>
</tr>
<tr>
<td></td>
<td>Valves leaking or blocked</td>
<td>Check and clean valves.</td>
</tr>
<tr>
<td></td>
<td>Valves installed incorrectly</td>
<td>Check that the arrow on the valve housing is pointing in the direction of flow.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Check whether all O-rings are installed correctly.</td>
</tr>
<tr>
<td></td>
<td>Blocked suction line</td>
<td>Clean suction line/install filter.</td>
</tr>
<tr>
<td></td>
<td>Suction lift too high</td>
<td>Reduce suction lift.</td>
</tr>
<tr>
<td></td>
<td>Viscosity too high</td>
<td>Use hose with larger diameter.</td>
</tr>
<tr>
<td></td>
<td>Deaeration valve open</td>
<td>Install spring-loaded valve on the discharge side.</td>
</tr>
<tr>
<td><strong>No dosing flow or dosing flow too low</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Valves leaking or blocked</td>
<td>Tighten up valves, replace valves if necessary (see section 7.3 <em>Perform service</em>).</td>
</tr>
<tr>
<td></td>
<td>Backpressure fluctuations</td>
<td>Keep backpressure constant.</td>
</tr>
<tr>
<td><strong>Irregular dosing</strong></td>
<td>Valves leaking or blocked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Backpressure fluctuations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Liquid escaping from the drain opening on the flange</td>
<td>Immediately separate the pump from the power supply!</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Observe section 7. <em>Service</em> and especially section 7.4 <em>Diaphragm breakage</em>.</td>
</tr>
<tr>
<td></td>
<td>Dosing head screws not tightened</td>
<td>Tighten up screws (see section 4.2 <em>Hydraulic connection</em>).</td>
</tr>
<tr>
<td></td>
<td>Valves not tightened</td>
<td>Tighten up valves/union nuts (see section 4.2 <em>Hydraulic connection</em>).</td>
</tr>
<tr>
<td><strong>Liquid escaping</strong></td>
<td>Suction lift too high</td>
<td>Reduce suction lift; if necessary, provide positive inlet pressure.</td>
</tr>
<tr>
<td></td>
<td>Backpressure too high</td>
<td>Open the deaeration valve.</td>
</tr>
<tr>
<td></td>
<td>Soiled valves</td>
<td>Flush system, replace valves if necessary (see section 7.3 <em>Perform service</em>).</td>
</tr>
</tbody>
</table>

## 9. Disposal

This product or parts of it must be disposed of in an environmentally sound way. Use appropriate waste collection services. If this is not possible, contact the nearest Grundfos company or service workshop.

Subject to alterations.
Appendix

Safety declaration

Please copy, fill in and sign this sheet and attach it to the pump returned for service.

**Note** *Fill in this document using English or German language.*

Product type (nameplate) 

Model number (nameplate) 

Dosing medium 

**Fault description**

Please make a circle around the damaged parts.
In the case of an electrical or functional fault, please mark the cabinet.

We hereby declare that the pump has been cleaned and is completely free from chemical, biological and radioactive substances.

Date and signature 

Company stamp 

- Dosing liquid has possibly entered the pump housing.
  The pump must not be connected to the power supply! Danger of explosion!
Declaration of conformity

GB: EC declaration of conformity
We, Grundfos, declare under our sole responsibility that the products DDA, DDC and DDE, to which this declaration relates, are in conformity with these Council directives on the approximation of the laws of the EC member states:

CZ: ES prohlášení o shodě
My firma Grundfos prohlašujeme na svou plnou odpovědnost, že výrobky DDA, DDC a DDE, na něž se toto prohlášení vztahuje, jsou v souladu s ustanoveními směrnice Rady pro sbližení právních předpisů členských států Evropského společenství v oblastech:

DE: EG-Konformitätserklärung
Wir, Grundfos, erklären in alleiniger Verantwortung, dass die Produkte DDA, DDC und DDE, auf die sich diese Erklärung bezieht, mit den folgenden Richtlinien des Rates zur Angleichung der Rechtsvorschriften der EU-Mitgliedsstaaten übereinstimmen:

GR: Δήλωση συμμόρφωσης EC
Εμείς, η Grundfos, δήλωνουμε με αποκλειστική δική μας ευθύνη ότι τα προϊόντα DDA, DDC και DDE, στα οποία αναφέρονται η παρούσα δήλωση, συμμορφώνονται με τις εξής Οδηγίες του Συμβουλίου περί προσέγγισης των νομοθεσιών των κρατών μελών της ΕΕ:

FR: Déclaration de conformité CE
Nous, Grundfos, déclarons sous notre seule responsabilité, que les produits DDA, DDC et DDE, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des États membres CE relatives aux normes énoncées ci-dessous:

IT: Dichiarazione di conformità CE
Grundfos dichiara sotto la sua esclusiva responsabilità che i prodotti DDA, DDC e DDE, ai quali si riferisce questa dichiarazione, sono conformi alle seguenti direttive del Consiglio riguardanti il riavvicinamento delle leggi dei vari stati membri dell'Europa:

NL: EC overeenkomstigheidsverklaring
Wij, Grundfos, verklaren geheel onder eigen verantwoordelijkheid dat de producten DDA, DDC en DDE waarop deze verklaring betrekking heeft, in overeenstemming zijn met de Richtlijnen van de Raad in zake de onderlinge aanpassing van de wetgeving van de EG Lidstaten betreffende:

UA: Декларація відповідності ЄС
Компанія Grundfos заявляє про свою виключну відповідальність за те, що продукти DDA, DDC та DDE, на які поширюється дана декларація, відповідають таким рекомендаціям Ради щодо уніфікації правових норм країн - членів ЄС:

PT: Declaração de conformidade CE
A Grundfos declara sob sua única responsabilidade que os produtos DDA, DDC e DDE, aos quais diz respeito esta declaração, estão em conformidade com as seguintes Directivas do Conselho sobre a aproximação das legislações dos Estados Membros da CE:

RO: Declaratie de conformitate CE
Noi, Grundfos, declarăm pe propria răspundere că produsele DDA, DDC și DDE, la care se referă această declarare, sunt în conformitate cu aceste Directive de Consiliul asupra armonizării legilor Statelor Membre CE:

SI: ES izjava o skladnosti
V Grundfosu s polno odgovornostjo izjavljamo, da so naši izdelki DDA, DDC in DDE, na katere se ta izjava nanaša, v skladu z naslednjimi direktivami Sveta o približevanju zakonodaje za izenačevanje pravnih predpisov držav članic ES:

BG: EC декларация за съответствие
Ние, фирма Grundfos, заявяваме с пълна отговорност, че продуктите DDA, DDC и DDE, за които се отнася настоящата декларация, отговарят на следните указания на Съвета за уеднаквяване на правните разпоредби на държавите членки на EC:

DK: EF-overensstemmelseserklæring
Vi, Grundfos, erklærer under ansvar at produkterne DDA, DDC og DDE som denne erklæring omhandler, er i overensstemmelse med disse af Rådets direktver indbyrdes tilnærmelse til EF-medlemsstaternes lovgivning:

EE: EL vastavusdeklaratsioon
Meie, Grundfos, deklareerime enda ainuvastutusel, et toodet DDA, DDC ja DDE, milles kohta osalevad juhtmed käib, on vastavuses EÜ Nõukogu direktividega EMU liikmesriikide seaduste ühitamise kohta, mis säistlevad:

ES: Declaración CE de conformidad
Nosotras, Grundfos, declaramos bajo nuestra enterena responsabilidad que los productos DDA, DDC y DDE, a los cuales se refiere esta declaración, están conformes con las Directivas del Consejo en la aproximación de las leyes de las Estados Miembros del EM:

FR: Déclaration de conformité CE
Nous, Grundfos, déclarons sous notre seule responsabilité, que les produits DDA, DDC et DDE, auxquels se réfère cette déclaration, sont conformes aux Directives du Conseil concernant le rapprochement des législations des États membres CE relatives aux normes énoncées ci-dessous:

HR: EZ izjava o usklađenosti
Mi, Grundfos, izjavljivamo pod vlastitom odgovornošću da su proizvodi DDA, DDC i DDE, koji se odnose na ovu izjavu, u skladu s direktivama ovog Vijeća o usklađivanju zakona država članica EU:

LV: EK atbilstības deklarācija
Sabiedrība Grundfos ar pilnu atbildību dara zināmu, ka produkti DDA, DDC un DDE, uz kuriem attiecas šis pazīnojums, atbilst šādām Padomes direktīvām par tuvināšanos EK daftvalstu likumdošanas normām:

NO: EU samvorderklæring
Vi, Grundfos, erklærer på eget ansvaret for produktene DDA, DDC og DDE, som denne erklæringen gjelder, er i samsvar med disse rådsdirektivene slik de omtrentlig samsvarer med lovene for EU-medlemslandene:

PL: Deklaracja zgodności WE
My firma Grundfos oświadczamy z pełną odpowiedzialnością, że nasze wyroby DDA, DDC oraz DDE, których deklaracja niniejsza dotyczy, są zgodne z następującymi wytycznymi Rady ds. ujednolicenia przepisów prawnych krajów członkowskich WE:

RU: Deklarация о соответствии EC
Мы, компания Grundfos, со своей ответственностью заявляем, что изделия DDA, DDC и DDE, к которым относится настоящая декларация, соответствуют следующим Директивам Совета Европейского союза об унификации законодательных предписаний стран-членов EC:

SK: EC deklarácia o usaglašenosti
My firma Grundfos prehlasujeme na svoju plnú zodpovednosť, že výrobky DDA, DDC a DDE, na ktoré sa toto prehlasenie vztahuje, sú v súlade s ustanovením smernice Rady pre zbliženie právnych predpisov členských štátov Európskeho spoločenstva v oblastiach:
Declaration of conformity

We, Grundfos, vakuutamme omalla vastuullamme, että tuotteet DDA, DDC ja DDE, joita tämä vakuutus koskee, ovat EY:n jäsenvaltioiden lainsäädännön yhennymiseen tähtäävien Euroopan neuvoston direktiivien vaatimusten mukaisia seuraavasti:

Standards used:

This EC declaration of conformity is only valid when published as part of the Grundfos installation and operating instructions.

Pfinztal, 1 December 2014

Ulrich Stemick
Technical Director
Grundfos Water Treatment GmbH
Reetzstr. 85, D-76327 Pfinztal, Germany

Person authorised to compile technical file and empowered to sign the EC declaration of conformity.