

Immersion fittings

Ⓒ Installation and operating instructions

CONTENTS

	Page
1. General	2
1.1 Warranty	2
2. Safety information	2
2.1 Obligations on the part of the operator	2
2.2 Recognising warning signs	2
3. Technical data	3
3.1 Versions	3
3.2 Dimensions	3
4. Installation	3
4.1 Transport and Storage	3
4.2 Assembly	3
5. Maintenance	5
6. Accessories	6
6.1 Wet-keeping shell	6
6.2 Impedance converter	6
6.3 Electrodes	6
6.4 Buffer solutions	6
6.5 Cables	6
7. Disposal	6

1. General

This instruction manual contains all important information for the operation of the immersion fittings:

- Technical data
- Instructions for commissioning, operating and maintenance
- Safety information

Should you require further information, or should problems occur which are not handled in sufficient depth in this instruction manual, please contact Grundfos Alldos directly. We will be pleased to support you with our comprehensive measurement and control technology know-how as well as our water treatment expertise.

Please do not hesitate to contact us if you have any suggestions on how we can make our instruction manual even more user-friendly.

1.1 Warranty

A warranty claim in the sense of our general conditions of sale and delivery can only be recognised if:

- The device is used according to the information in this instruction manual,
- The device is not opened or handled incorrectly in any manner,
- Repairs are only carried out by authorised and qualified personnel,
- Only original spare parts are used for repairs,
- Only components approved by Grundfos Alldos are used throughout the entire system.

Typical parts subject to wear are excluded from the guarantee, e.g.

- Gaskets, O-rings

2. Safety information

The Grundfos Alldos immersion fittings are used for the installation of pH and redox single-rod electrodes within the scope of the possible uses described in this instruction manual.



Warning

Other applications are classed as non-approved, and are not permissible. Grundfos Alldos accepts no liability for any damage resulting from incorrect use.

2.1 Obligations on the part of the operator

The operator of the system is responsible for

- Compliance with country-specific safety regulations
- Training of operating personnel
- Provision of prescribed protective gear
- Arranging regular maintenance
- Avoidance of danger



Warning

The device and associated additional components should only be installed and connected by qualified personnel
Observe the local safety regulations

2.2 Recognising warning signs

The safety instructions Warning, Caution and Note have the following meanings:



Warning

Risk of accidents and injury

Caution

Risk of malfunction or damage to the device

Note

There is an exceptional feature.

3. Technical data

Ambient temperature	+10 °C to +80 °C
Operating temperature	max. 80 °C
Operating pressure	Unpressurised
Number of electrodes	max. 3
Length of electrodes	120 mm
Required cross-section	DN 100
Weight	approximately 4 kg
Materials	PP, EPDM, stainless steel (1.4571)
Cable glands	1 x Pg 13.5; 2x Pg 16

3.1 Versions

Immersion fitting	Immersion depth
96627432 (322-210)	1,000 mm
96627433 (322-220)	2,000 mm

3.2 Dimensions

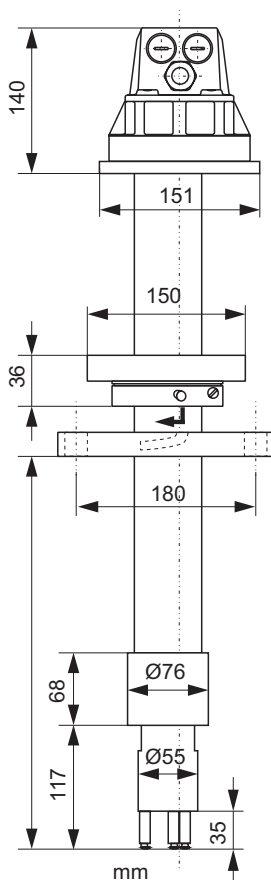


Fig. 1 Dimensional drawing of the immersion fitting

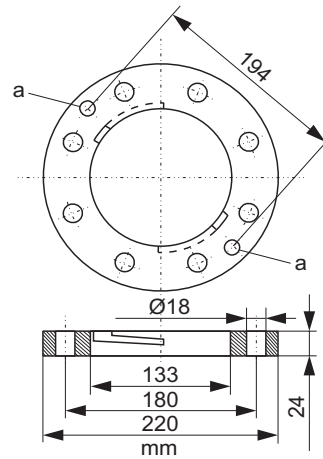


Fig. 2 Dimensional drawing of the flange

a = Through-holes for star handle screws

4. Installation

4.1 Transport and Storage

- Transport the unit carefully. Never throw it.
- Store in a cool, dry location.

4.2 Assembly

4.2.1 Example of a measuring system

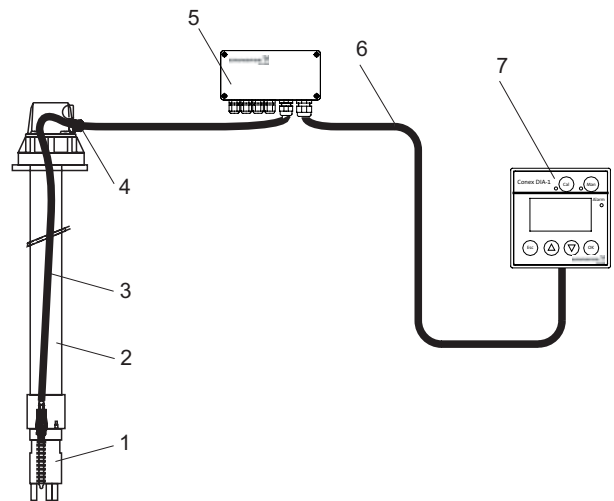


Fig. 3 Example of a complete measuring system

No.	Description
1	Electrode holder (3 mounting positions)
2	Immersion fitting
3	Measuring cable (cable length max. 3 m)
4	Screwed cable joint
5	Sensor interface for Conex® DIA
6	Connecting cable (cable length max. 100 m)
7	Conex® DIA (control panel mounting version)

Note

This example refers to the installation with a Conex® DIA device version for control panel mounting.

For non-standard installations, observe the measuring amplifier instruction manual.

TM04 1199 0908

TM04 1200 0908

TM04 1198 0908

4.2.2 Installing the fitting

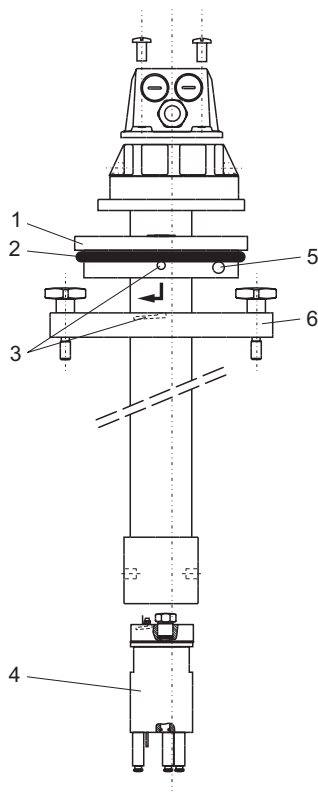


Fig. 4 Assembly drawing of the immersion fitting

No.	Description
1	Adjustable flange adapter (2 half-shells)
2	O-ring for tolerance compensation
3	Bayonet lock
4	Electrode holder (3 mounting positions)
5	Tensioning screws (2 pieces)
6	Flange DN 100

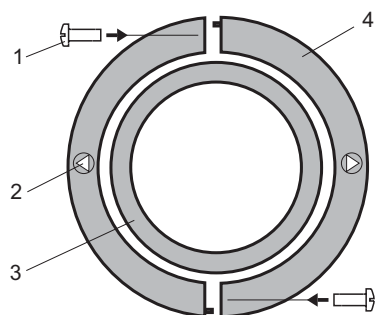


Fig. 5 Adjustable flange

No.	Description
1	Phillips screws
2	Marker "final position"
3	Assembly pipe
4	Half-shells

The fitting with the DN 100 adjustable flange is installed as follows:

1. Attach the DN 100 flange to the mounting frame.
2. Place the half-shells (4) of the adapter in the desired position on the pipe.
3. Use the two Phillips screws (1) to screw the half-shells together.
4. Insert the O-ring in the O-ring groove (adjustable flange adapter on the outside).
5. Insert the fitting in the pre-assembled DN 100 flange.
6. Hold the fitting by the fitting head and screw it clockwise into the bayonet lock until it reaches the "final position" marker (2).

4.2.3 Installing the electrodes

Preparing the electrodes

Only those electrodes that fulfil the following prerequisites may be installed:

- Pg 13.5 threaded plug head
- 120 mm shaft length
- 12 mm shaft diameter

Note Electrodes with a fixture for connection to a KCl tank may not be used.

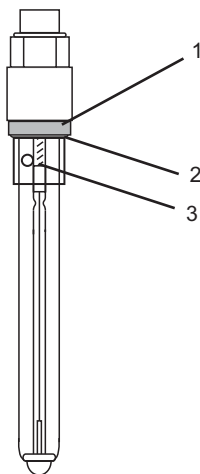


Fig. 6 Preparing the electrodes

No.	Description
1	Thrust collar
2	O-ring
3	Lock

Preparation

1. Remove the protective cap on the electrode.
2. Ensure that the O-ring (2), thrust collar (1) and lock (3) are present on the electrode shaft.
3. Wet the electrode shaft with water. The sensor is now easier to screw in.

Installing the electrodes

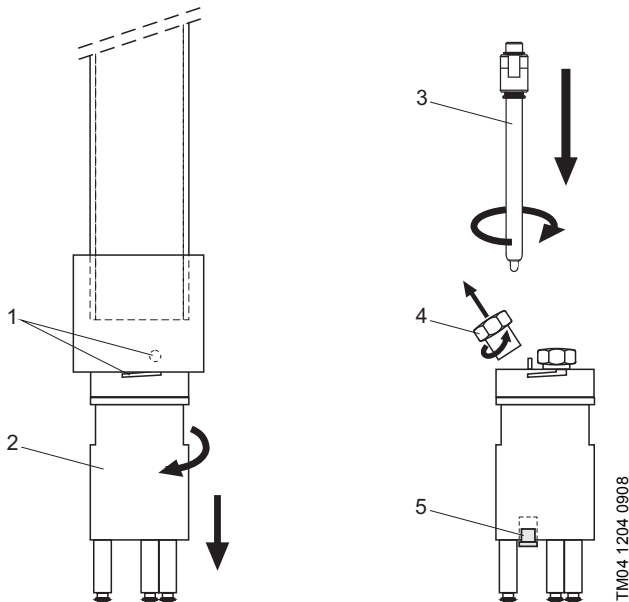


Fig. 7 Installing the electrodes

No.	Description
1	Bayonet lock
2	Electrode holder
3	pH/redox electrode
4	Upper dummy plug
5	Lower dummy plug

Install the sensor as follows:

1. Unscrew the electrode holder (2) out of the bayonet lock (1).
2. Unscrew the upper dummy plug (4) from the electrode holder.
3. Remove the lower dummy plug (5) from the electrode holder.
4. Screw the electrode into the electrode holder by hand (3 Nm).

Connecting the measuring cable

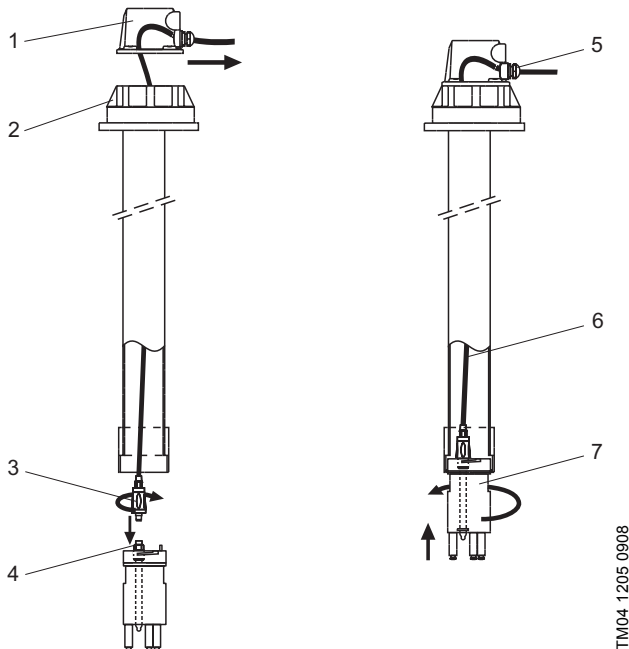


Fig. 8 Connecting the measuring cable

No.	Description
1	Cover
2	Fitting head
3	Measuring cable connection plug
4	Electrode
5	Pg 13.5 screwed cable joint
6	Measuring cable
7	Electrode holder

Connect the measuring cable as follows:

1. Unscrew the cover (1) from the fitting head (2).
2. Push the connector end of the measuring cable through the assembly pipe.
3. Screw the connection plug (3) of the measuring cable onto the sensor head (4).
4. Screw the electrode holder (8) into the bayonet lock.
5. Push the other end of the measuring cable through the Pg 13.5 screwed cable joint (6). Be sure to leave an extra measuring cable length of around 10 cm, as this is required for removing the sensor.
6. Screw the cover (1) onto the fitting head (2).
7. Tighten the Pg screwed joint (6).

4.2.4 Removing the fitting

1. Leave the assembled DN 100 flange on the mounting frame.
2. Hold the fitting by the fitting head and turn it anti-clockwise to unscrew it from the bayonet lock and remove it from the medium.

5. Maintenance

Warning

Risk of injury!

Before any maintenance work is carried out on the fitting, ensure that the process line and the container are depressurised, empty and have been flushed.

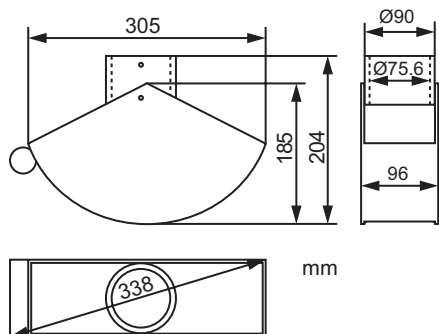
To ensure reliable, accurate measurements, the following maintenance work must be carried out on the fitting:

- Replace damaged fitting parts,
- Keep O-rings and sealing surfaces clean,
- Replace damaged O-rings,
- Apply a thin film of grease (e. g. Syntheso Glep) to dry O-rings,
- Remove deposits from time to time.

6. Accessories

6.1 Wet-keeping shell

- Prevents the electrodes from drying out when the water level is too low
- Can be used in open containers, tanks and channels
- Order no: 95706027 (322-002)



TM04 1206 0908

Fig. 9 Dimensions of the wet-keeping shell

6.2 Impedance converter

- Mains independent,
- Subsequent assembly possible,
- Allows the option of longer line lengths,
- Signal stabilising.
- Order no: 95704730 (336-312)

6.3 Electrodes

Order no.	Description
96609158 (312-100)	pH electrode with ceramic diaphragm
96609159 (312-103)	pH electrode with PTFE diaphragm
96609161 (312-106)	pH electrode with hole diaphragm
96609162 (313-100)	Redox electrode with ceramic diaphragm
96609163 (313-103)	Redox electrode with PTFE diaphragm

6.4 Buffer solutions

Order no.	Description
96609165 (549-050)	Set of 3 pH buffer solutions (pH 4.01; pH 7.00; pH 9.18)
96609166 (549-051)	Redox buffer solution (220 mV)
96688696 (549-052)	3-molar KCl solution for storing electrodes

6.5 Cables

Order no.	Description
96609182 (321-252)	1m coaxial cable for connecting pH and redox electrodes to an N plug
96609183 (321-250)	3m coaxial cable for connecting pH and redox electrodes to an N plug
96701441 (321-250/10)	10m coaxial cable for connecting pH and redox electrodes to an N plug
95703576 (321-250/25)	25m coaxial cable for connecting pH and redox electrodes to an N plug

7. Disposal

This product or parts of it must be disposed of in an environmentally sound way:

1. Use appropriate waste collection services.
2. If this is not possible, contact the nearest Grundfos or Grundfos Alldos company or service workshop.

This extract from Endress+Hauser's device documentation is used only for non-binding illustration purposes. Only the current version of Endress+Hauser's complete original documentation is binding.

You can find the current original documentation on the Internet at www.de.endress.com.

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