



Type 202820

Immersion Fittings

Type 202820/40-...

Type 202820/63-...

B 20.2820.0 **Operating Instructions**

01.04/00428760

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1.1 Preface

Please read these Operating Instructions before commissioning the instrument. Keep the manual in a place which is accessible to all users at all times.

Please assist us to improve these operating instructions, where necessary.

Your suggestions will be appreciated.



All necessary settings are described in this manual. If any difficulties should still arise during start-up, you are asked not to carry out any unauthorized manipulations on the unit. You could endanger your rights under the instrument warranty!

Please contact the nearest subsidiary or the head office in such a case.

2 Typographical conventions

2.1 Warning signs



Danger

This sign is used when there may be **danger to personnel** if the instructions are disregarded or not followed correctly!



Caution

This sign is used when there may be **damage to equipment or data** if the instructions are disregarded or not followed correctly!

2.2 Note signs



Note

This sign is used when your **special attention** is drawn to a remark.

see abcd

Reference

The cursive (italic) text refers to **further information** in other chapters or sections.

abc¹

Footnote

Footnotes are remarks that **refer to specific points** in the text. Footnotes consist of two parts:

A marker in the text, and the footnote text.

The markers in the text are arranged as continuous superscript numbers.

*

Action

This sign indicates that an **action to be performed** is described.

The individual steps are marked by this asterisk.

Example:

* Remove crosspoint screws.

* Open housing.

3.1 Immersion fittings

General

Immersion fittings are used for holding and protecting transducers through a Pg13.5 fastening thread (e.g. combination electrodes and metal electrodes, conductivity cells, compensation thermometers etc.).

Immersion fittings enable measurements not only on the surface of the product, but also deep inside the liquid. The connection head stays dry.

Depending on the application, immersion fittings can be mounted in or on tanks using fixing elements such as pipe clips, brackets, flanges or other devices. Various accessories are available to broaden the application spectrum.



The fitting must not be pressurized via the measured medium.

4 Instrument identification

4.1 Type designation

4.1.1 Type 202820/40



202820/40

4 Instrument identification

Type code

(1) Basic type

202820 Immersion fitting

(2) Basic type extension

40 40 mm diameter of fitting

(3) Immersion length

0500 500 mm (standard length, ex-stock)
 0800 800 mm
 1000 1000 mm (standard length, ex-stock)
 1300 1300 mm
 1500 1500 mm
 2000 2000 mm

(4) Material of fitting

87 PP (polypropylene)

(5) Extra codes

078 cleaning nozzle
 088 KCl reservoir with diaphragm tube

	(1)	(2)	(3)	(4)	(5)
Order code	202820	40	-	87	-
Order example	202820	40	1000	87	-

Accessories and spare parts

Designation	Sales No.
Flange DN32	20/00083375
Flange DN50	20/00083376
Wetting cup	20/00083372
Cleaning spray head* 500 mm	20/00083373
Cleaning spray head* 1000 mm	20/00083374
Bracket	20/00085988

*the spray head can also be supplied for different lengths

4 Instrument identification

4.1.2 Type 202820/63



202820/63

4 Instrument identification

Type code

(1) Basic type

202820 Immersion fitting

(2) Basic type extension

63 63 mm diameter of fitting

(3) Immersion length

0500 500 mm (standard length)

0800 800 mm

1000 1000 mm

1300 1300 mm

1500 1500 mm

2000 2000 mm

(4) Material of fitting

87 PP (polypropylene)

(5) Extra codes

055 earth pin

	(1)	(2)	(3)	(4)	(5)
Order code	202820	/ 63	-	87	-
Order example	202820	/ 63	- 1000	- 87	-

and spare parts

Designation	Sales No.
Flange DN50	20/00056544
Flange DN65	20/00056545
Wetting cup	20/00057581
Wetting cup with mounting plate	20/00063825
Mounting angle with flange DN 50	20/00064384
KCl reservoir, pressure-tight	20/00060254

5 Technical data

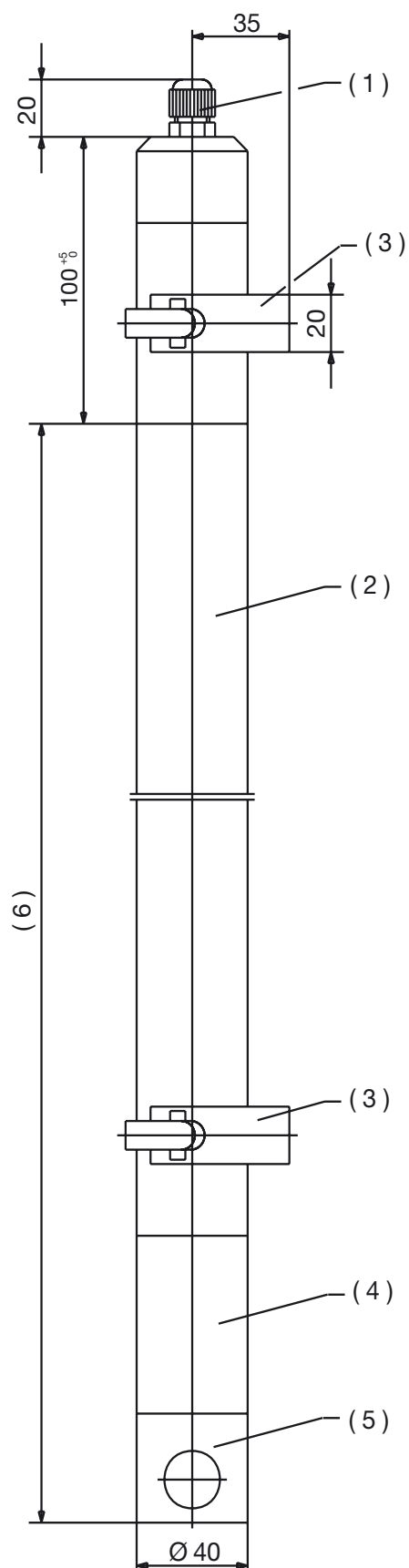
5.1 Type 202820/40 and Type 202820/63

Type	Material	Maximum temperature	Sensor holder(s)	Protection
202820/40	PP	95°C	1 x Pg13.5	IP65
202820/63			3 x Pg13.5	

5.2 Dimensions

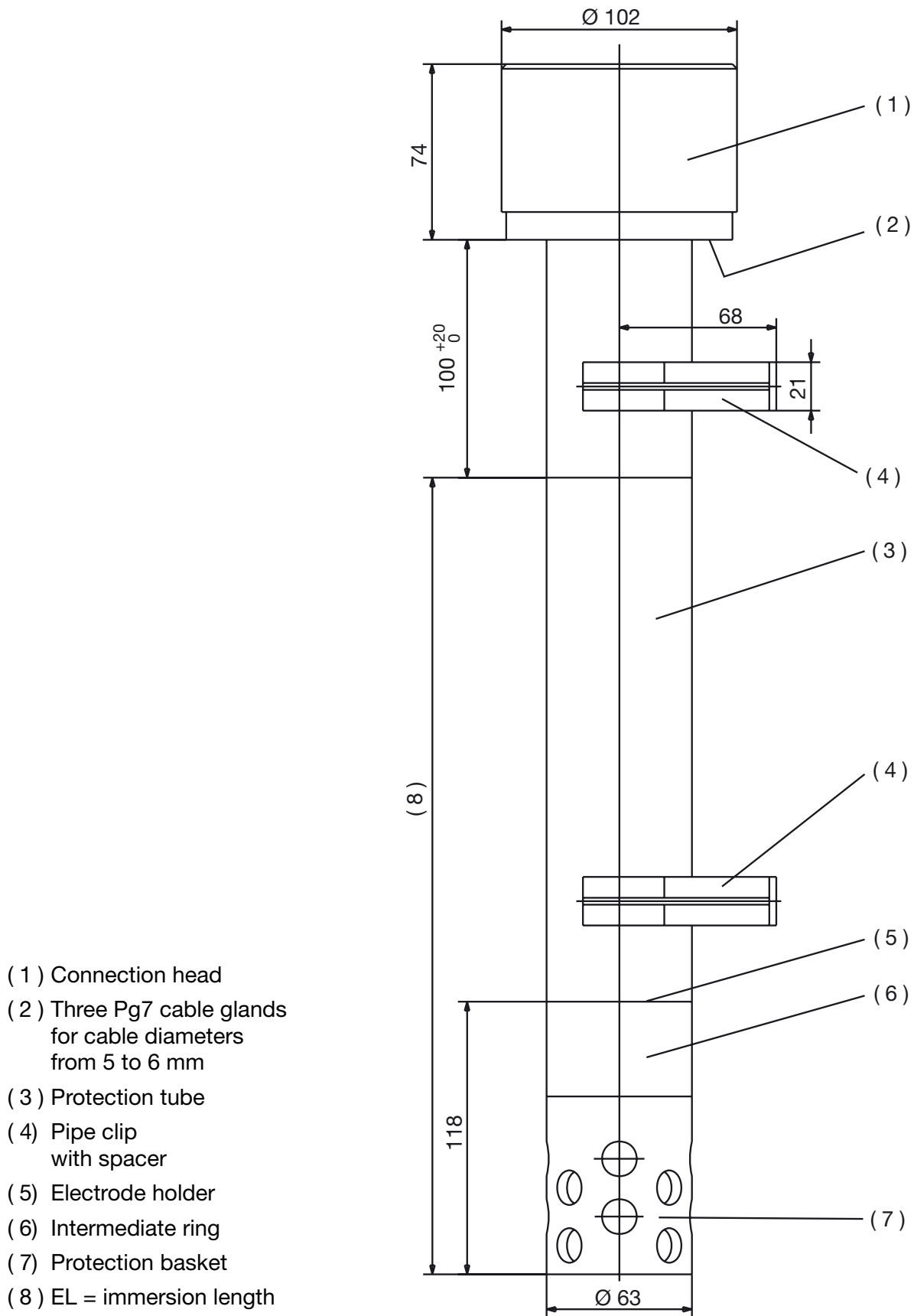
5.2.1 Type 202820/40

- (1) Pg9 cable gland
for cable diameters
from 4 to 8 mm
- (2) Protection tube
- (3) Pipe clip
- (4) Electrode holder
- (5) Protection basket
- (6) EL = immersion length



5 Technical data

5.2.2 Type 202820/63



6.1 General



Please make sure that the threads and O-rings are clean, otherwise liquid may leak into the fitting.

When installing a glass electrode, please be aware that the glass membrane is very fragile.

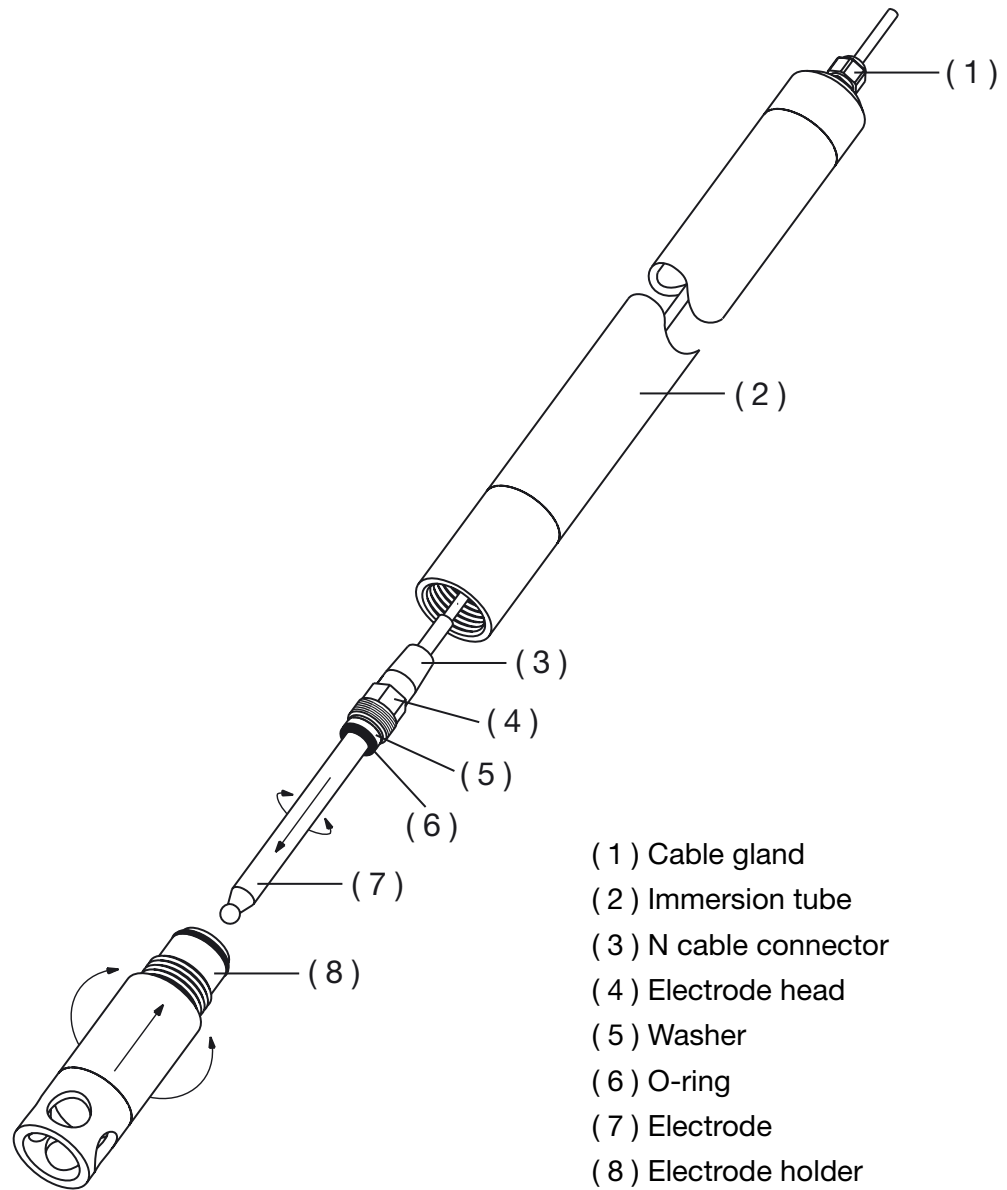


An impedance converter (see Data Sheet 20.2995) can be mounted between the pH electrode and the N cable connector.

6 Mounting

6.2 Type 202820

Installing the sensor



- * Screw the electrode holder (8) out of the immersion tube (2).
- * Screw sensor into the electrode holder (8).



The washer (5) and the O-ring (6) must be on the electrode (7).
Screw the N cable connector (3) onto the electrode head (4).

- * Release the cable gland (1).
- * Pass the cable through the immersion tube (2) and the cable gland (1).
- * Screw the electrode holder (8) into the immersion tube (2); tighten the cable gland (1).

6.3 Accessories and spare parts

6.3.1 Pipe clips (standard)

Mounting

- * Mount the pipe clips on the tank, spacing them out as appropriate.
- * Snap the fitting into the pipe clips.

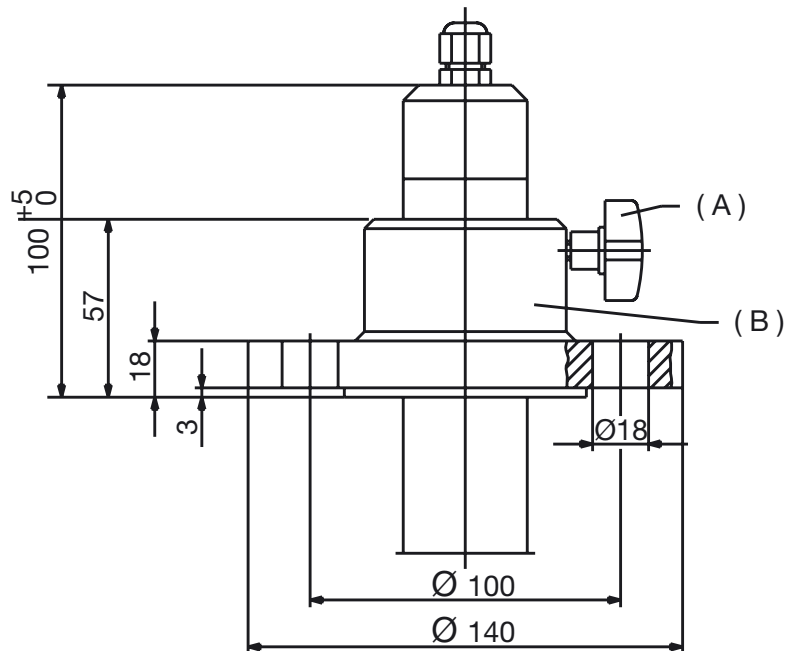
Immersion depth of fitting



In order to prevent the ingress of liquid into the fitting, the first 120 mm of the immersion tube (measured from the cable gland) must not be immersed in the liquid to be measured.

6.3.2 Flange DN 32

(Part No.
TN 00083375)



- (A) Fixing screw
(B) Flange (slidable)

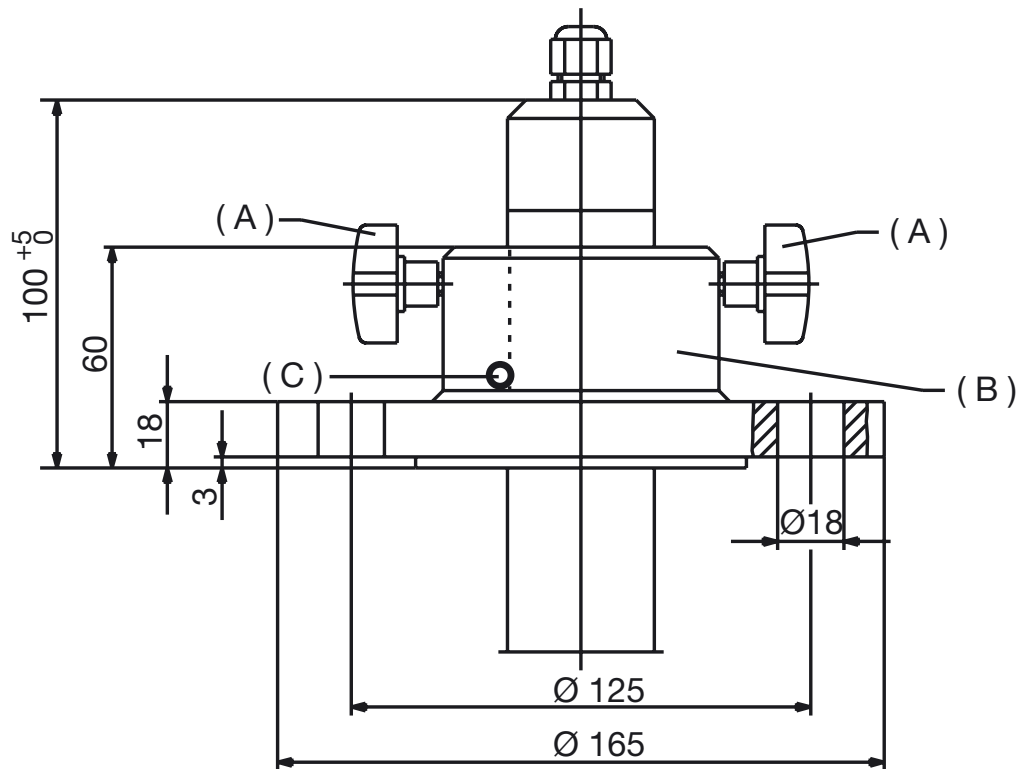
Mounting

- * Screw the flange onto the tank. If the tank cannot be accessed from the inside, then it is advisable to use fixed studs.

6 Mounting

6.3.3 Flange DN 50

(Part No.
TN 00083376)



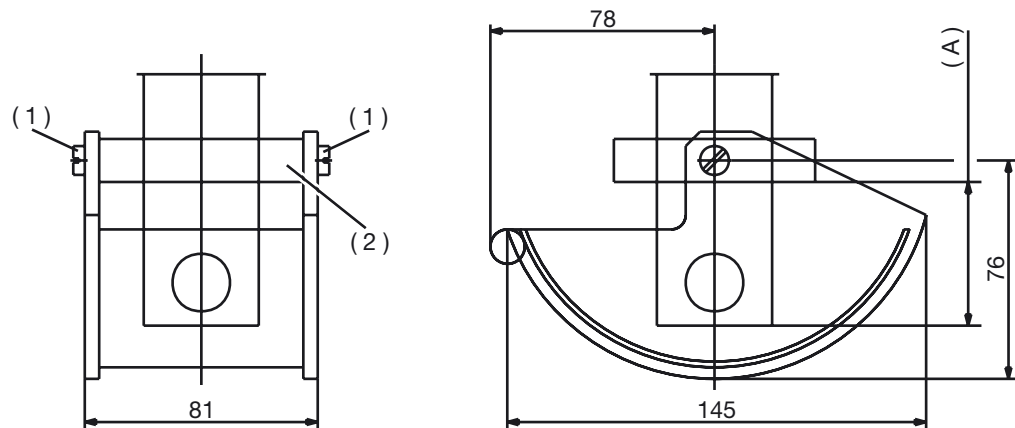
- (A) Fixing screw
- (B) Flange (slidable)
- (C) O-ring

Mounting

- * Screw the flange onto the tank. If the tank cannot be accessed from the inside, then it is advisable to use fixed studs.

6.3.4 Wetting cup

(Part No.
TN 00083372)



(A) Mounting dimension 50 mm

Mounting

- * Release the screws (1).
- * Secure the wetting cup bracket (2) with the screws (1).

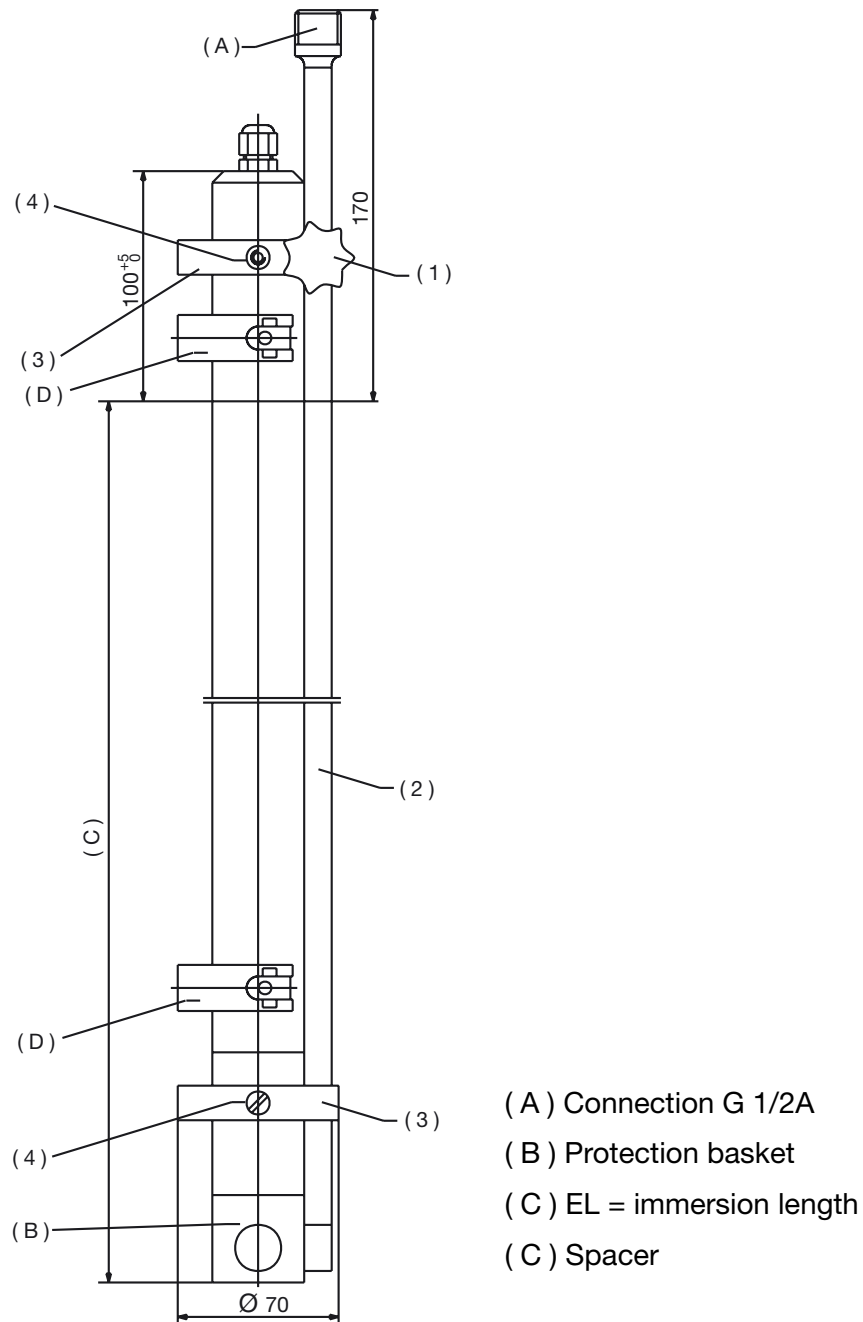


To ensure the proper functioning of the wetting cup, spacers have to be fitted between the pipe clips and the tank,
⇒ "Cleaning nozzle for 500 mm fitting", page 20.

6 Mounting

6.3.5 Cleaning nozzle for 500 mm fitting

(Part No.
TN 00083373)

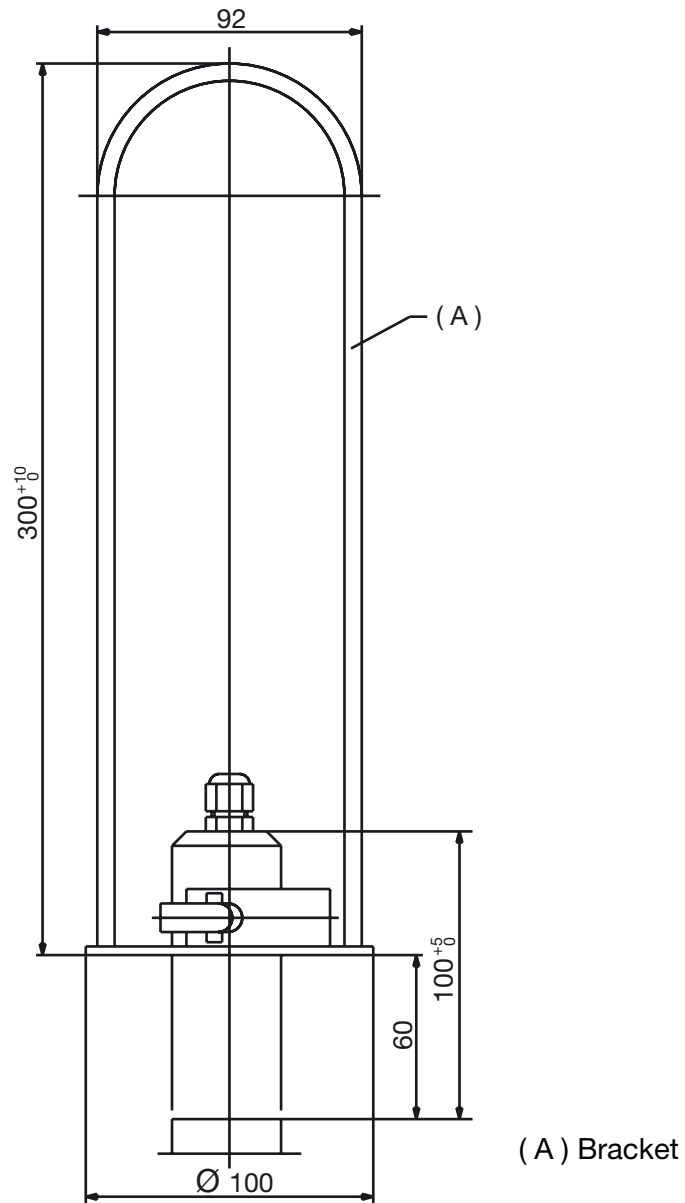


Mounting

- * Release the screws (4).
- * Slide the clamping rings (3) onto the fitting.
- * Insert the spray tube into the clamping rings (2).
- * When retrofitting, also change the protection basket (C).
- * Line up the spray tube (2) in such a way as to ensure that the cleaning jet is directed straight onto the electrode membrane (not visible).
- * Tighten the screws (4) and the star nuts (1).
- * Provide the pipe clips with additional spacers.
- * Secure fitting in the pipe clips.

6.3.6 Bracket

(Part No.
TN 00085988)

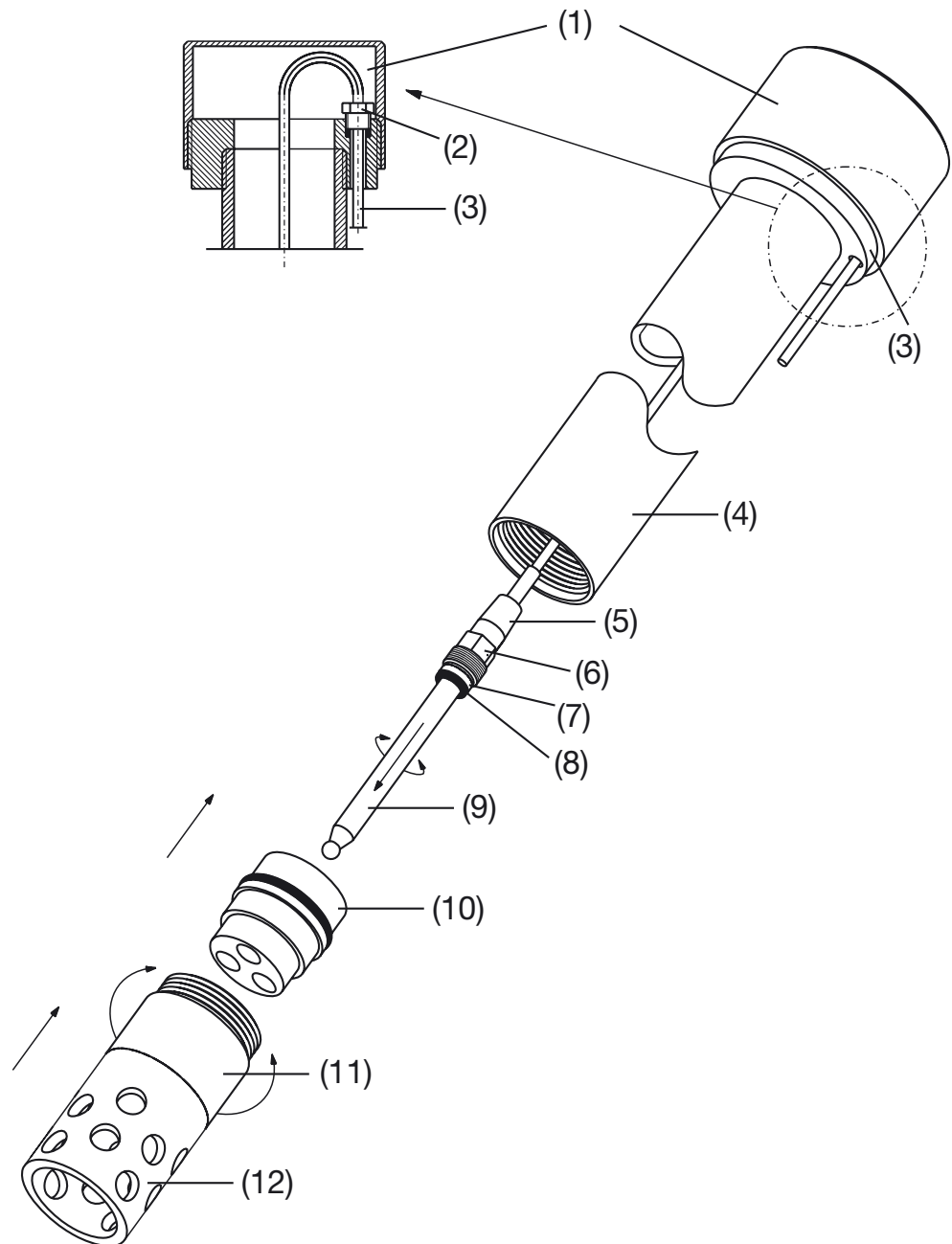


- * Fix the bracket (A) onto the pipe clip using 1 screw.
- * Slide the fitting into the pipe clip.

6 Mounting

6.4 Type 202820/63

Installing
the sensor



(1)	Cover	(7)	Washer
(2)	Cable gland	(8)	O-ring
(3)	Internal cable	(9)	Electrode
(4)	Immersion tube	(10)	Electrode holder
(5)	N cable connector	(11)	Intermediate ring
(6)	Electrode head	(12)	Protection tube

6 Mounting

- * Screw off cover (1).
- * Screw off Intermediate ring (11).
- * Pull electrode holder (10) out of immersion tube (4).
- * Screw sensor (9) and, if necessary, blind grommets into the electrode holder (10).
The tightening torque should be 50 — 100 Ncm.



The washer (7) and the O-ring (8) must be fitted on the electrode (9).

- * Screw the N cable connector (5) onto the electrode head (6).
- * Pass the cable (3) through the immersion tube (4) and cable gland (2).
- * Insert the electrode holder (10) into the immersion tube (4); tighten cable gland (2).
- * Screw the intermediate ring (11) into the immersion tube (4).
The tightening torque should be 100 — 150 Ncm.
- * Screw the protection tube (12) into the intermediate ring (11).
The tightening torque should be 50 — 100 Ncm.

6 Mounting

6.5 Accessories and spare parts

6.5.1 Pipe clips with spacer (standard)

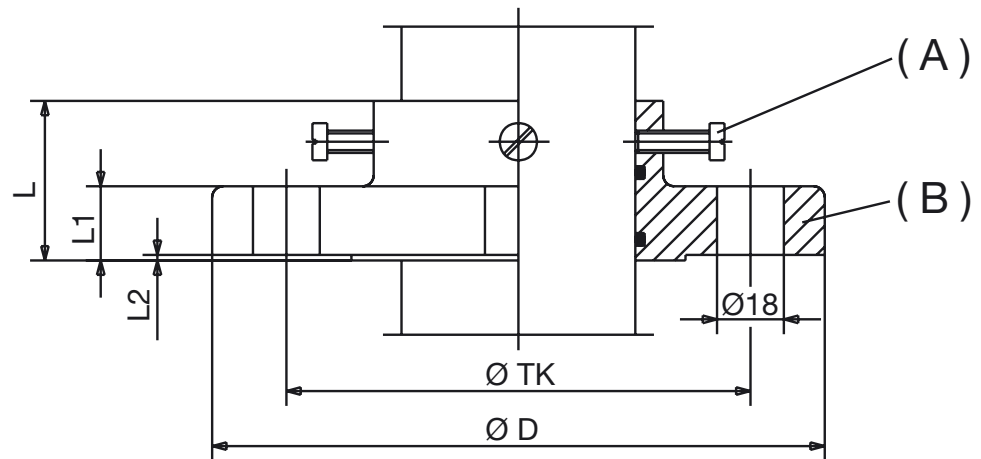
- * Mount the pipe clips (4) on the tank, spacing them out as appropriate.
- * Snap the fitting into the pipe clips.

Immersion
depth of the
fitting



In order to prevent the ingress of liquid into the fitting, the first 120 mm of the immersion tube (measured from the cable gland) must not be immersed in the liquid to be measured.

6.5.2 Flange DN 50/DN 65



- (A) Fixing screw
(B) Flange (slidable)

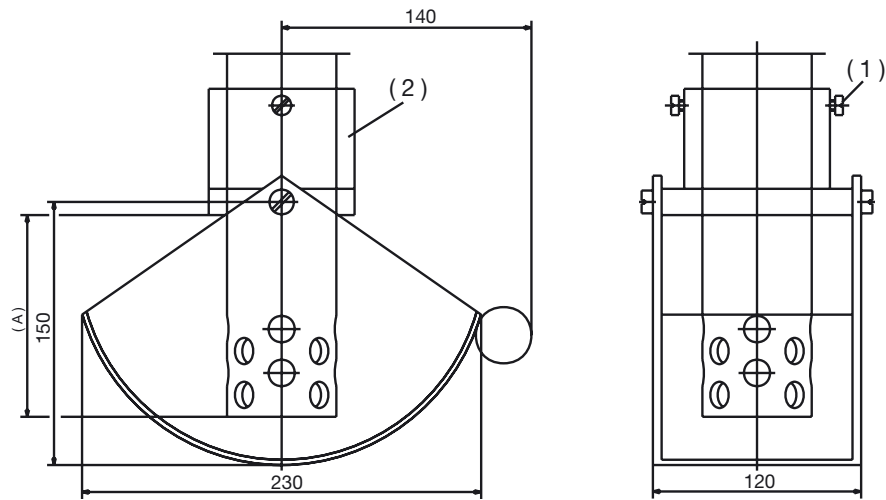
- * Screw the flange onto the tank. If the tank is not accessible from the inside, then it is advisable to use fixed studs.

DN 50 / DN 65

Designation	DN	D	TK	L	L ₁	L ₁
Flange DN 50, TN 00056544	50	165	125	43	20	1.5
Flange DN 65, TN 00056545	65	185	145	49	22	2

6.5.3 Wetting cup

(Part No.
TN 00057581)



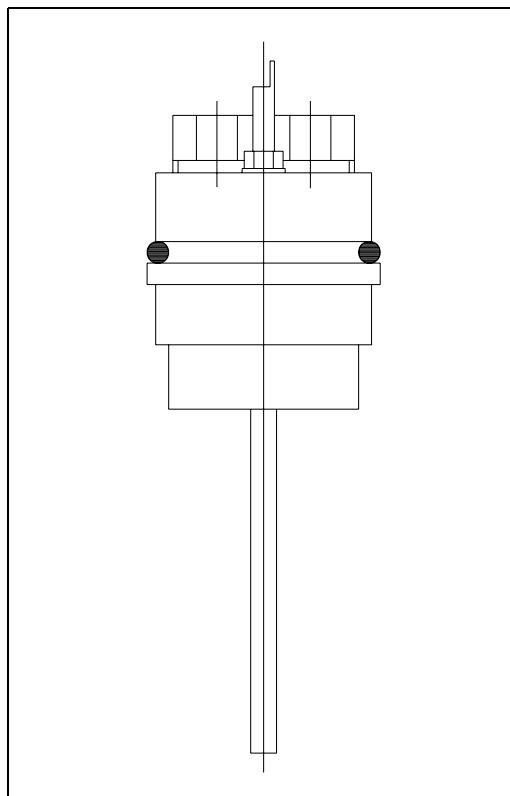
(A) Mounting dimension 115 mm

* Release the screws (1).

* Secure the wetting cup bracket (2) with the screws (1).

6.5.4 Earth pin

(Part No.
TN 00057355)

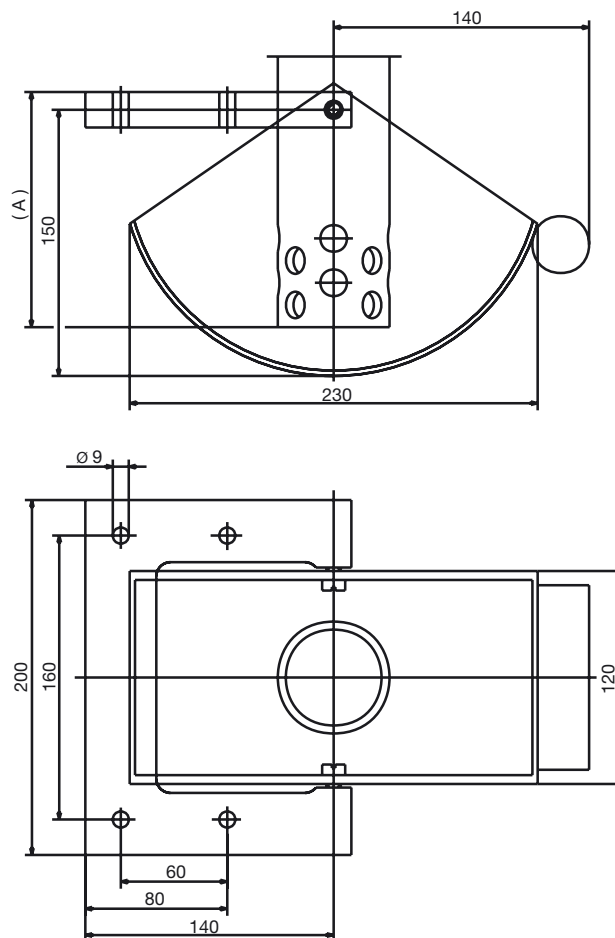


Fitted at the factory

6 Mounting

6.5.5 Wetting cup with mounting plate

(Part No.
TN 00063825)

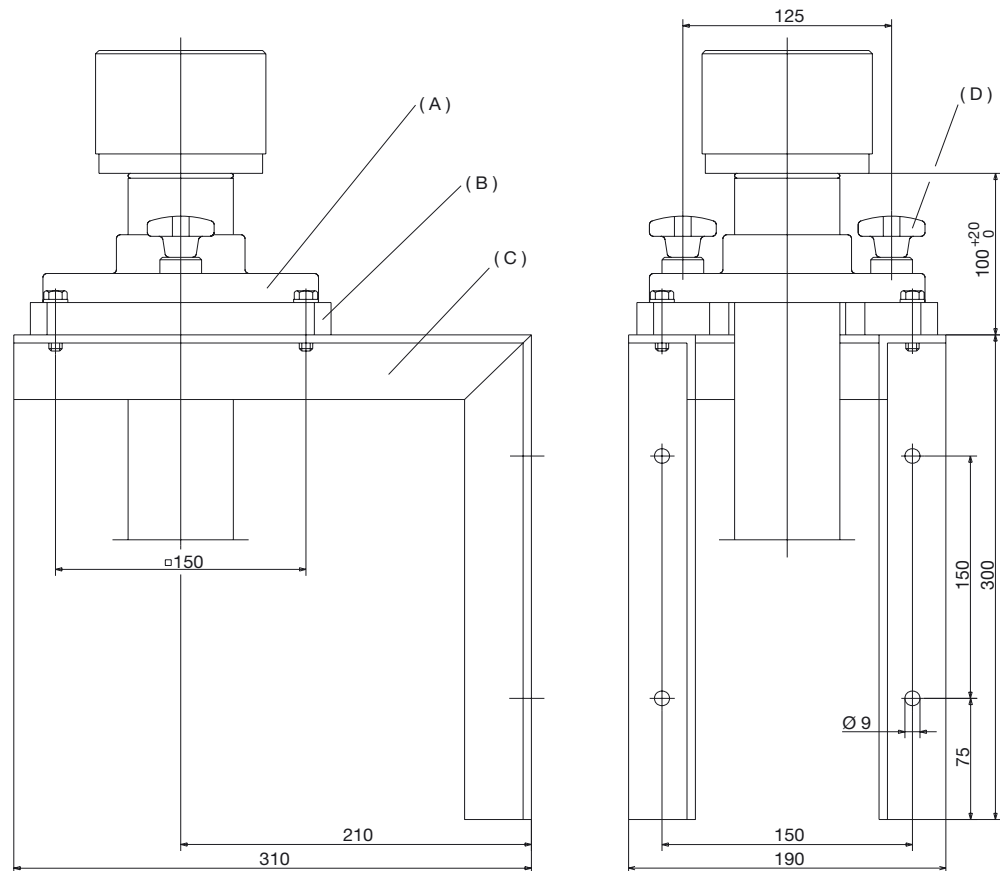


(A) Mounting dimension 135 mm

* Secure the mounting plate with four M8 screws.

6.5.6 Mounting angle with flange DN 50

(Part No.
TN 00064384)

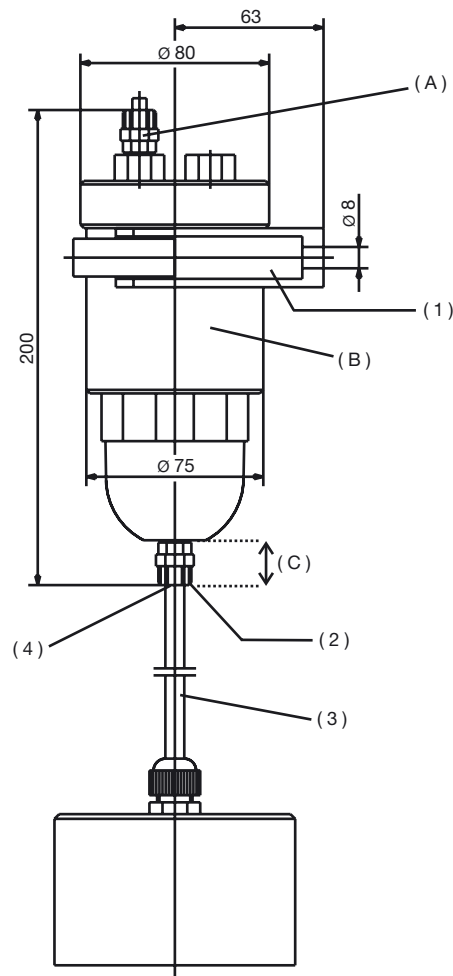


- (A) Flange DN 50
- (B) Mounting angle
- (C) Mounting angle, zinc-plated steel
- (D) Star knob

6 Mounting

6.5.7 KCl reservoir, pressure-tight, with compressed-air connection

(Part No.
TN 00060254)



- (A) Compressed-air connection
- (B) KCl reservoir, pressure-resistant up to 6 bar, suitable for wall-mounting
- (C) Connection for KCl tubing
- (D) Only in conjunction with Type 202820/63

- * Screw fixing bracket (1) onto the wall.
- * Unscrew the nut (2) and slide onto the tubing (3).
- * Push the tubing (3) onto the nipple (4) and secure with the nut (2).



The KCl reservoir (B) can be pressurized up to 6 bar, by means of the compressed-air connection (A).

The KCl solution in the tubing (3) must be free from bubbles.

A reference electrode can be screwed into the electrode holder.

7.1 Maintenance



The fitting (including the electrode) must be cleaned at regular intervals. In order to do this, you have to unscrew the protection tube. The sensing part of the electrode is now freely accessible.

Cleaning interval and cleaning agent depend on the type and degree of the contamination.

After each disengagement of the threaded joints, the O-rings have to be lubricated with vaseline or similar (depending on the solution) and the sealing faces have to be checked for damage.

7.2 Fault



Ingress of liquid into the fitting may be caused by damaged sealing faces or O-rings. Because of its design, the fitting is not pressure-tight.
