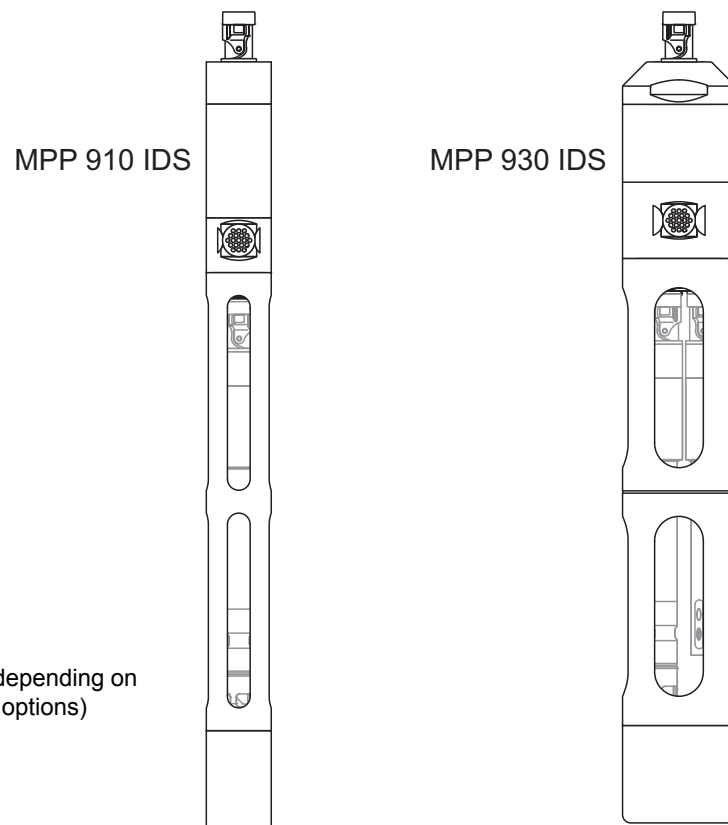


MPP 910 IDS

MPP 930 IDS



(Sample figures. Actual equipment depending on scope of delivery and selected options)



Modular multi-parameter probe with depth measurement

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Printed in Germany.

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1 Overview

The MPP 9x0 IDS multi-parameter probe is a modular system, consisting of a basic module and various expansion options.

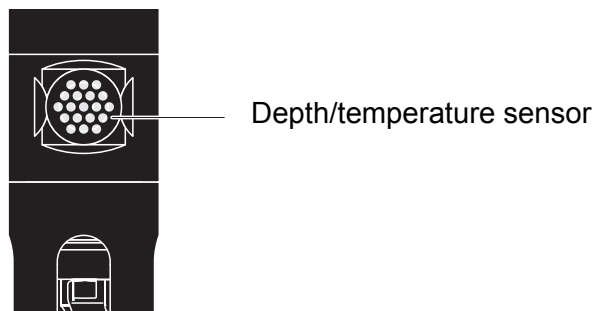
System components
(figure see page on the right)

1	Basic module MPP 910 IDS with one sensor plug-in position
2	Basic module MPP 930 IDS with three sensor plug-in positions
3	AS/IDS-xx connection cable between basic module and meter or sensor and meter (xx = different lengths available)
4	Blind plug BPO/IDS 900 for cable plug-in position

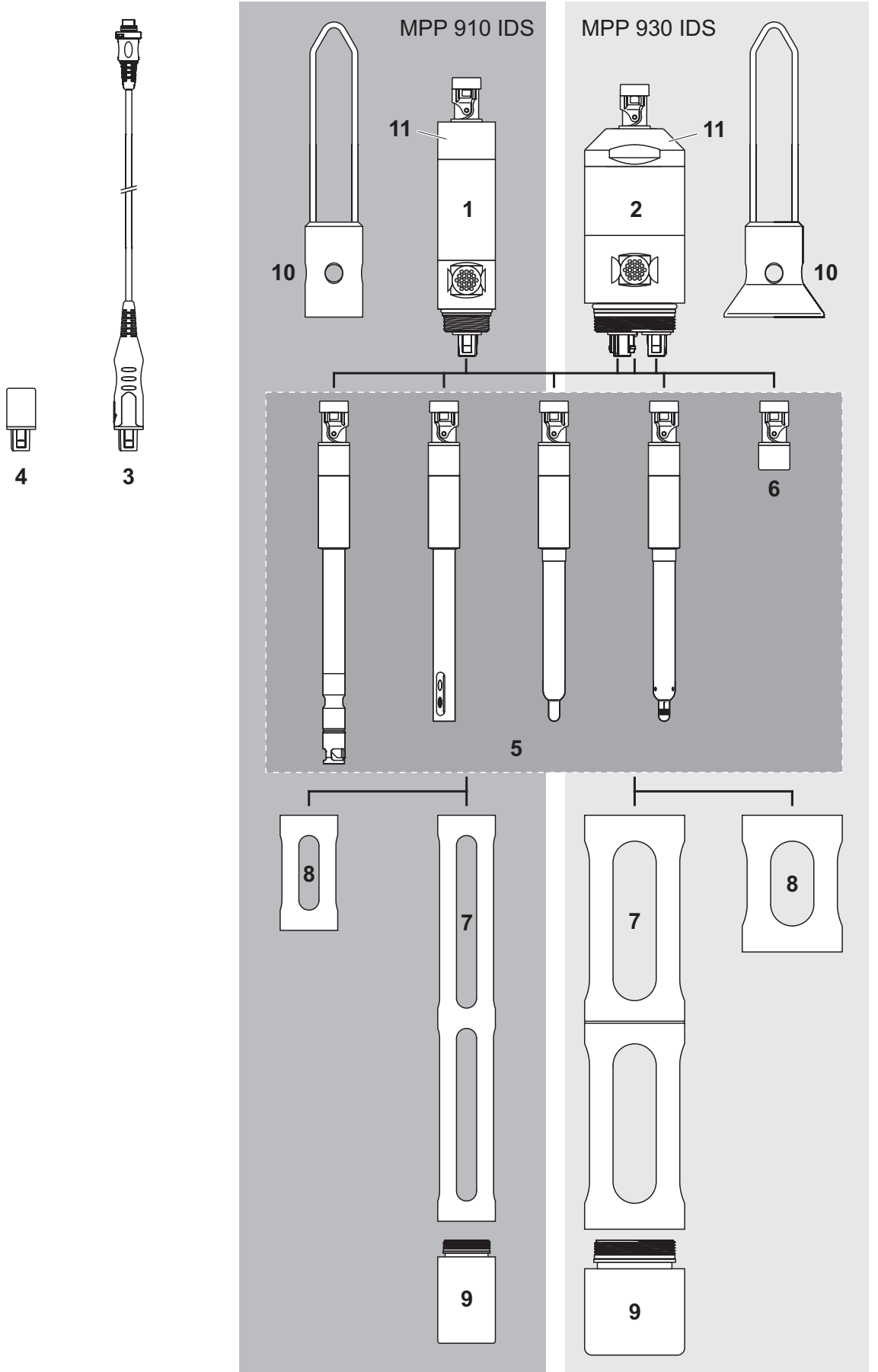
Expansion options:

5	Digital sensors of the XXX-P series, e.g. FDO 925-P
6	BPI/IDS 900 blind plug for BPI/IDS 900 sensor plug-in position
7	Long protective tube, to protect the sensors connected
8	Short protective tube, for usage of the basic module without any sensors. Reduces the distance between the depth/temperature sensor and the bed of the water body
9	Sinker
10	Holding shackle (accessory) to be screwed on instead of the protective ring (pos. 11)
11	Protective ring

Depth measurement



On the shaft of the basic module there is a pressure sensor with integrated temperature measurement. Based on the pressure and temperature value the meter calculates the depth of immersion in the measuring medium. The temperature measurement is used for the temperature compensation of the pressure sensor and for density compensation.



IDS plug connection

All plug connections of the basic module, sensors, connection cable and blind plug are of the same type. A lock protects the connections against being inadvertently disconnected.

With the connection cable, the individual sensors can also be directly connected to the meter if necessary (for calibration or firmware update).

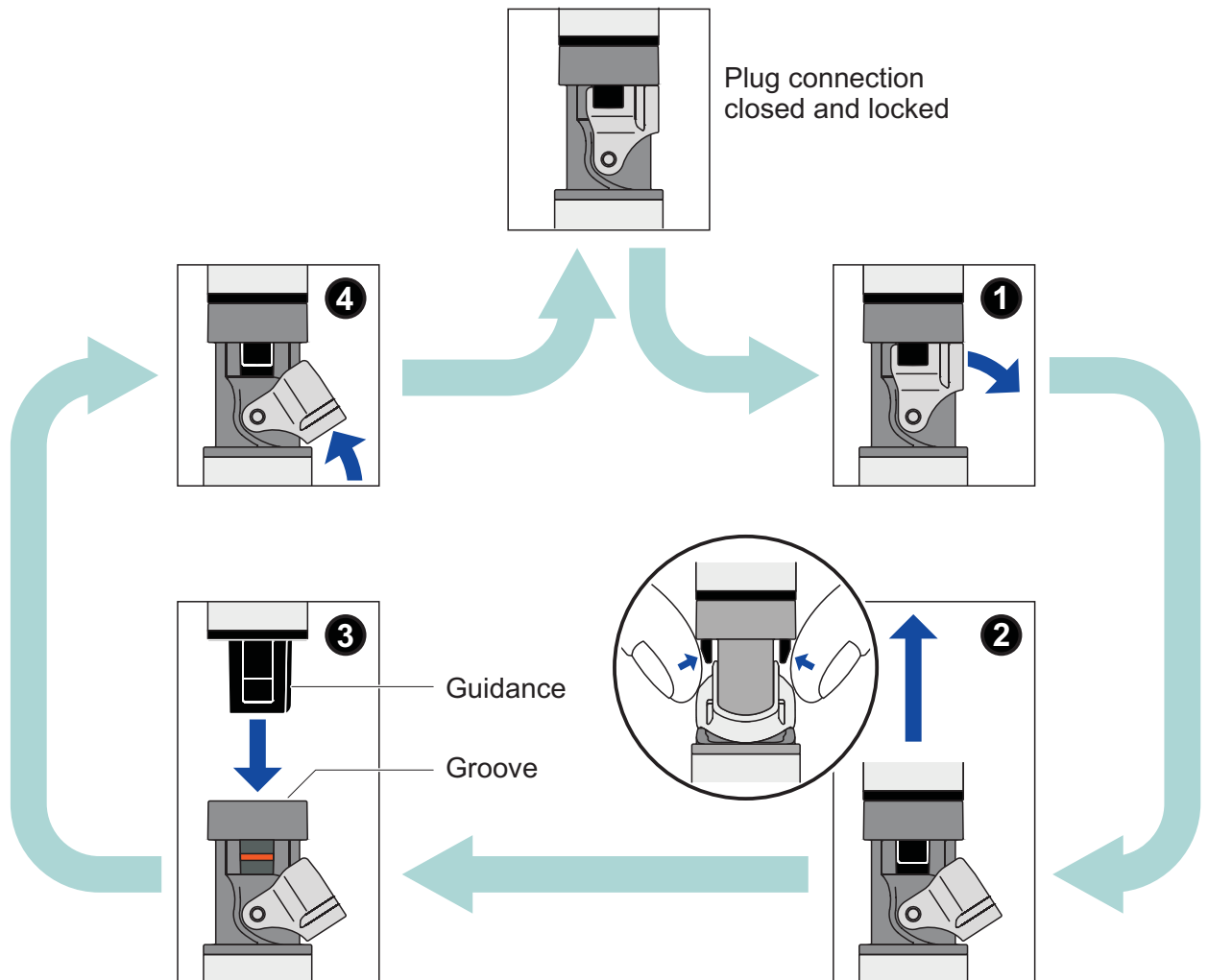
Recommended fields of application

- On-site measurements in rivers, lakes, sea water and brackish water, wells, leachate that is not or only slightly polluted
- Measurements in boreholes
- Depth profile measurements
- Measurements in ground and spring water

2 Operation

2.1 Opening and closing the plug connections

The following instructions apply to all actions where any components are connected or disconnected (e.g. exchange of blind plug \Rightarrow sensor):



Opening the plug connection

- If necessary, clean the plug connection
- Open the locking device (step 1)
- Use your thumb and index finger to press the clips of the connector together, and pull the connector out of the plug (step 2).

Closing the plug connection

- Make sure that the plug connection is completely dry and clean.
- Align the guidance of the connector with the groove in the plug and insert the connector in the unlocked plug until it catches (step 3).
- Close the locking device (step 4).

NOTE

All plug-in positions have to be equipped with sensors or closed with blind plugs before the multi-parameter probe is immersed in the measuring medium.

2.2 Commissioning

- Prepare the sensors for the measuring operation (see sensor operating manual). For calibration, connect the sensors to the meter with the 1.5 m connection cable.



Calibrating the sensors while they are installed is not possible. The depth and temperature measurement of the basic module is calibration free (factory calibration).

- Equip the basic module with the required sensors:
 - Unscrew the short protective pipe
 - Per plug-in position:
Replace the blind plug with a sensor (depending on the required design, how to do this is described on page 7).
 - Screw on the long protective pipe
- Screw the sinker on the open end of the protective pipe so the probe will go down faster.
- Connect the basic module to the meter.

NOTE

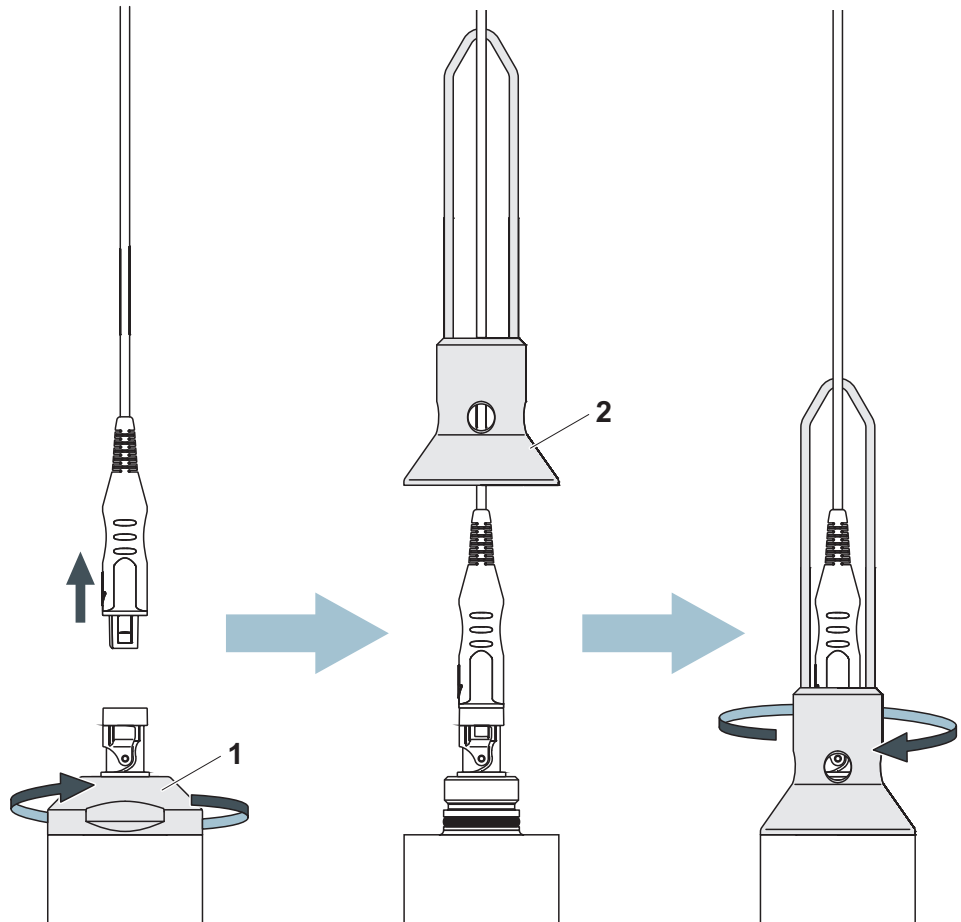
The connection cable without any problems withstands the tractive forces that occur when it is pulled by hand in a water body where there are no strong current and no obstacles. If the current is strong or if there are obstacles the tractive forces can temporarily be much higher and cause the cable to snap. If you are in doubt we recommend to attach the multi-parameter probe with the holding shackle (accessories) to a sufficiently strong rope or a chain so the probe will not be lost.

NOTE

All plug-in positions have to be equipped with sensors or closed with blind plugs before the multi-parameter probe is immersed in the measuring medium.

2.3 Mounting the holding shackle

The holding shackle is screwed onto the sensor instead of the protective ring. To do so, proceed as follows (sample figure of MPP 930 IDS):



- Disconnect the connection cable from the basic module (see page 7)
- Unscrew the protective ring (pos. 1).
- Thread the connection cable through the connecting piece of the holding shackle (pos. 2) and reconnect it to the basic module
- Screw the holding shackle to the basic module

3 Cleaning



Please observe the instructions on cleaning the sensors given in the respective sensor operating manuals. If necessary, remove the sensor for cleaning and close its plug-in position with a blind plug.

Exterior cleaning

Remove water-soluble contamination by rinsing with deionized water. Other types of contamination have to be removed as follows while the contact time with the detergents should be kept as short as possible:

Contamination	Cleaning procedure
Fat and oil	Rinse with water containing household washing-up liquid
Lime and hydroxide deposits	Rinse with citric acid (10 % by weight)

Thoroughly rinse the multi-parameter probe with water after this.

Cleaning the pressure sensor

To clean the pressure sensor, remove the screen lid with your fingernails. Then rinse the recess with a mild water jet (e.g. wash bottle or slightly-running faucet).

NOTE

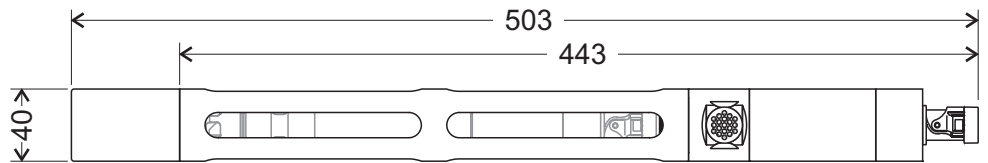
The membrane of the depth sensor is very sensitive to mechanical impacts. Therefore, avoid any touching of the membrane. Do not point a sharp water jet at the membrane while cleaning it.

4 Technical data

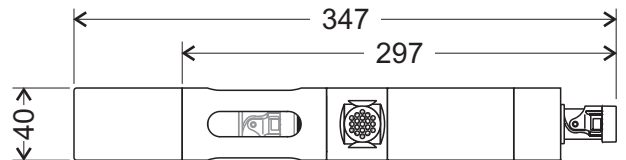
4.1 Dimensions, weights

4.1.1 MPP 910

Dimensions
(in mm)



Protective pipe long



Protective pipe short

Weights

Basic module without cable, sinker and sensors (all plug connections closed with blind plugs)

- With short protective pipe approx. 274 g
- With long protective pipe approx. 355 g

Sinker

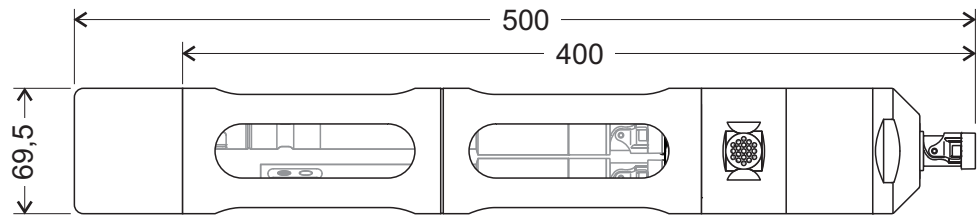
Approx. 497 g

Holder EH/40-SW

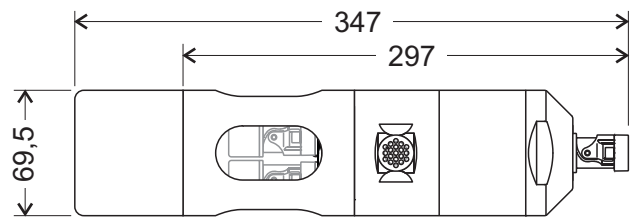
64 g

4.1.2 MPP 930

Dimensions
(in mm)



Protective pipe long



Protective pipe short

Weights

Basic module without cable, sinker and sensors (all plug connections closed with blind plugs)

- With short protective pipe approx. 929 g
- With long protective pipe approx. 1131 g

Sinker

Approx. 1870 g

Holder EH/70-SW

105 g

4.1.3 Accessories

Weights

BPI/IDS 900

17 g

BPO/IDS 900

12 g

4.2 Application characteristics



The application range of a multi-parameter probe can be limited due to the sensors installed (see sensor operating manuals). The following specifications refer to the probe without any sensors installed.

Measuring medium	Allowed temperature range	-5 ... 50 °C (23 ... 122 °F)
	Allowed pH range	4 ... 12
Pressure resistance	IP 68 (1 x 10 ⁶ Pa or 10 bar)	
	The MPP 9x0 IDS multi-parameter probe meets the requirements according to article 3(3) of the directive, 97/23/EC ("pressure equipment directive").	
Storage conditions	Storage temperature	-25 ... 50 °C (-13 ... 122 °F)

4.3 General data

Materials	Enclosure of the basic module, protective pipe, blind plug	POM
	Sinker	Stainless steel 1.4571
	Depth temperature sensor including pressure membrane	Hastelloy [®] C-276
	Holding shackle (option)	Titan Grade 3
IDS plug connection	Connection type	4-pole, watertight plug connection with lock, reverse polarity protected
	Materials of plug and connector	<ul style="list-style-type: none"> ● Synthetic materials: Glass fiber reinforced Noryl, TPU, TPC-ET, POM, PEEK, PBT ● O-ring: FPM ● Contacts gold-plated

Connection cable	Diameter	4.3 mm
	Smallest allowed bend radius	Permanent bend: 63 mm Single time or short time bend: 21 mm
	Material of cable sheath	TPE-U, aramid fiber reinforced

4.4 Measurement characteristics

Depth measurement	Measuring principle	Piezo-resistive pressure sensor, calibration-free
	Measuring ranges at 20 °C (68 °F)	0.50 ... 100.00 m (328 ft)
	Resolution	0.05 m (0.16 ft)
	Accuracy at 20 °C (68 °F)	0.25 m (0.82 ft) ± 1 digit
	Automatic density compensation	Indirectly through the integrated temperature measurement. Calculated by the measuring instrument on the basis of the temperature/density function of water. Additional compensation of the salinity after the salinity value was entered on the meter.
Temperature measurement	Temperature sensor	Semiconductor sensor integrated in the pressure sensor
	Measuring range	-5 ... 50 °C (23 ... 122 °F)
	Resolution	0.1 K

5 Wear parts and accessories

Connection cableMPP 9x0 IDS - meter

Description	Model	Order no.
IDS connection cable, 1.5 m	AS/IDS-1.5	903 850
IDS connection cable, 3 m	AS/IDS-3	903 851
IDS connection cable, 6 m	AS/IDS-6	903 852
IDS connection cable, 10 m	AS/IDS-10	903 853
IDS connection cable, 15 m	AS/IDS-15	903 854
IDS connection cable, 20 m	AS/IDS-20	903 855
IDS connection cable, 25 m	AS/IDS-25	903 856
IDS connection cable, 40 m	AS/IDS-40	903 857
IDS connection cable, 60 m	AS/IDS-60	903 858
IDS connection cable, 100 m	AS/IDS-100	903 859

Blind plug

Description	Model	Order no.
Blind plug for IDS sensor plug-in position	BPI/IDS 900	908 370
Blind plug for IDS cable plug-in position	BPO/IDS 900	908 371

General accessories

Description	Model	Order no.
Holding shackle for MPP 910 IDS	EH/40 SW	109 315
Holding shackle for MPP 930 IDS	EH/70 SW	109 316



Note

For further accessories, refer to the WTW catalog or the Internet.



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