



# LR 925/01(-P)

ULTRAPURE WATER CONDUCTIVITY MEASURING CELL



## LR 925/01(-P) - Contents

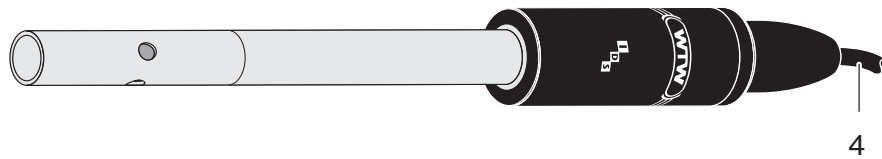
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# 1 Overview

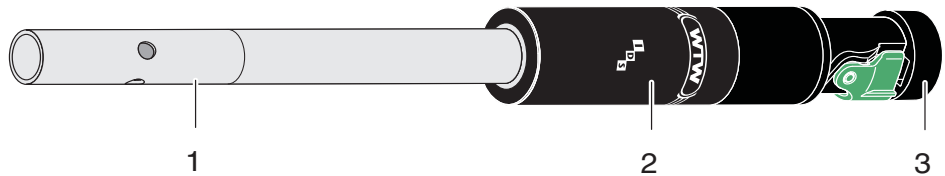
## 1.1 Structure and function

### Structure

LR 925/01



LR 925/01-P



1	Shaft
2	Connecting head with active sensor electronics
3	IDS plug (LR 925/01-P)
4	Connection cable (LR 925/01)

### Automatic sensor recognition

The sensor electronics with the stored sensor data is in the connecting head. The data include, among other things, the sensor type and series number. With each calibration, the calibration data is written in the sensor and the calibration history is recorded. The data is recalled by the meter when the sensor is connected and is used for measurement and for measured value documentation. Storing the calibration data in the sensor ensures that the correct cell constant is automatically used if the sensor is operated with several meters.

The digital transmission technique guarantees the failure-free communication with the meter even with long connection cables. If the sensor firmware is enhanced by WTW, it can be updated with the meter.

## 1.2 Recommended fields of application

Measurements in ultrapure water.

## 2 Measurement / Operation

### 2.1 Commissioning

#### Scope of delivery

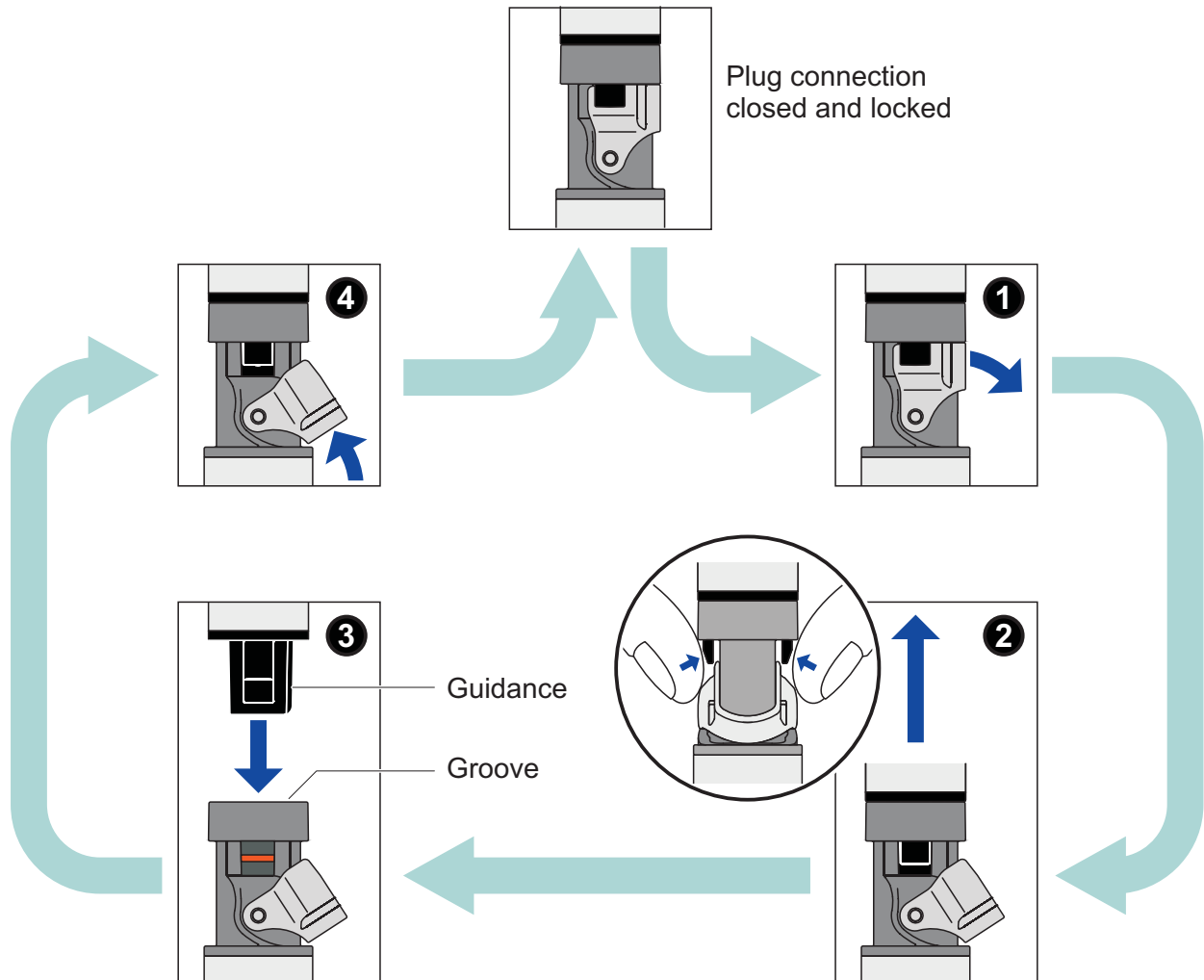
- Conductivity measuring cell LR 925/01(-P)
- Operating manual

#### Preparing the sensor for measurement

LR 925/01	Connect the sensor to the meter. The sensor is immediately ready to measure.
LR 925/01-P	<p>Connect the sensor to an IDS connector of the meter. To open and close the IDS plug connection please follow the section 2.2 OPENING AND CLOSING THE IDS PLUG CONNECTION (LR 925/01-P). The sensor is immediately ready to measure.</p> <p>Connection cables in different lengths to connect the LR 925/01-P sensor to the meter are listed in chapter 6 WEAR PARTS AND ACCESSORIES.</p>

## 2.2 Opening and closing the IDS plug connection (LR 925/01-P)

This section only applies to the IDS plug variant, LR 925/01-P.



### 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).

### 3 Cleaning

**Note**

To clean the sensor, disconnect it from the instrument.

**Exterior cleaning**

We recommend to clean the sensor thoroughly, especially before measuring low conductivity values.

Contamination	Cleaning procedure
Lime sediments	Immerse in acetic acid for 5 minutes (volume share = 10 %)
Fat/oil	Clean with warm water that contains washing-up liquid

After cleaning, thoroughly rinse with deionized water and recalibrate if necessary.

**Aging of the conductivity measuring cell**

Normally, the conductivity measuring cell does not age. Special measuring media (e.g. strong acids and bases, organic solvents) or temperatures that are too high may considerably reduce its lifetime or lead to damage. The warranty does not cover failure caused by measuring conditions and mechanical damage.

**Disposal**

We recommend to dispose of the measuring cell as electronic waste.

## 4 What to do if ...

<b>Error symptom</b>	<b>Cause</b>	<b>Remedy</b>
No temperature or conductivity display	<ul style="list-style-type: none"><li>– No connection between meter and conductivity measuring cell</li><li>– Cable defective</li></ul>	<ul style="list-style-type: none"><li>– Establish connection between meter and conductivity measuring cell</li></ul>
Measurement delivers implausible conductivity values	<ul style="list-style-type: none"><li>– Measuring range exceeded</li><li>– Contamination in the area of the electrodes</li><li>– Electrodes damaged</li></ul>	<ul style="list-style-type: none"><li>– Make sure the correct sensor is being used for the application</li><li>– Clean the conductivity measuring cell (see section 3).</li><li>– Return the sensor</li></ul>
Incorrect temperature display	<ul style="list-style-type: none"><li>– The temperature sensor is not immersed deep enough in the measuring solution</li><li>– Temperature sensor defective</li></ul>	<ul style="list-style-type: none"><li>– Observe the minimum immersion depth</li><li>– Return the conductivity measuring cell</li></ul>



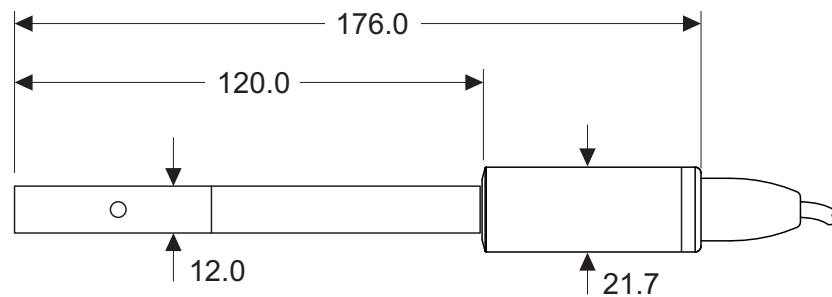
## 5 Technical data

### 5.1 General data

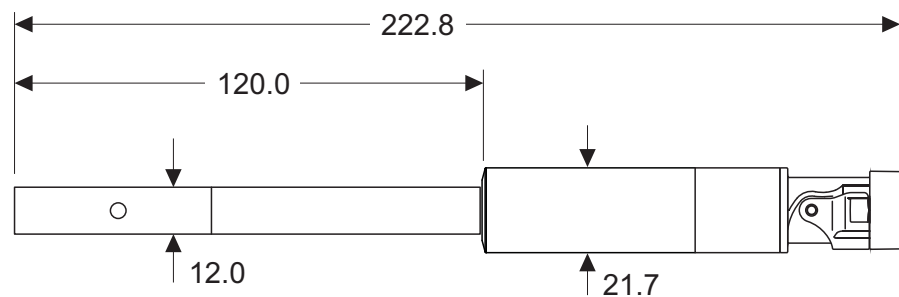
<b>General features</b>	Measuring principle	2-electrodes measurement
	Cell constant	$0.100 \text{ cm}^{-1} \pm 2 \%$
	Temperature sensor	Integrated NTC 30 (30 k $\Omega$ at 25 °C / 77 °F)

### Dimensions (in mm)

LR 925/01:



LR 925/01-P:



<b>Weight</b>	LR 925/01	Approx. 90 g (without cable)
	LR 925/01-P	Approx. 95 g
<b>Materials</b>	Shaft	Stainless steel 1.4571
	Connection head	LR 925/01: POM LR 925/01-P: POM
	Conductivity electrodes	Stainless steel 1.4571
	Thermistor enclosure	Stainless steel 1.4571

<b>Connection cable</b>	Lengths	LR 925/01: 1,5 m LR 925/01-P: 1,5 / 3 / 6 / 10 / 15 / 20 m
	Diameter	4.3 mm
	Smallest allowed bend radius	Fixed installation: 20 mm Flexible use: 60 mm
	Plug type	Socket, 4 pins

<b>IDS plug (LR 925/01-P)</b>	Type of connection	4-pole, watertight plug connection with lock, reverse polarity protected
	Materials	<ul style="list-style-type: none"> <li>● Synthetic materials: Glass fiber reinforced Noryl, TPU, TPC-ET, POM, PEEK, PBT</li> <li>● O-ring: FPM</li> <li>● Contacts gold-plated</li> </ul>

<b>Pressure resistance</b>	Sensor with connection cable	IP 68 (2 x 10 <sup>5</sup> Pa or 2 bar)
	Cable plug	IP 67 (when plugged in)

The LR 925/01(-P) meets the requirements according to article 3(3) of the directive, 97/23/EC ("pressure equipment directive").

<b>Measurement conditions</b>	Conductivity measuring range	0.01 μS/cm ... 200 μS/cm
	Temperature range	-5 ... 70 °C (100 °C) 23 ... 158 °F (212 °F)
	Max. admissible overpressure	2 x 10 <sup>5</sup> Pa (2 bar)
	Minimum depth of immersion	30 mm
	Maximum depth of immersion (at temperature)	Whole sensor + cable up to 70 °C (158 °F) Sensor shaft only (=120 mm) up to 100 °C (212 °F)
	Operating position	Any

<b>Storage conditions</b>	Recommended storing method	In air
	Storage temperature	0 ... 50 °C (32 ... 122 °F)

**Characteristics when delivered**

Temperature responding behavior	$t_{99}$ (99 % of the final value display after) < 20 s
Accuracy of the temperature sensor	$\pm 0.2$ K

**5.2 Measuring ranges and resolution****Measuring ranges, resolution**

Measured parameter	Measuring range	Resolution
$\kappa$ [ $\mu\text{S}/\text{cm}$ ]	0.01 ... 19.99	0.01
	0.0 ... 199.9	0.1
$\rho$ (resistivity) [ $\text{k}\Omega\cdot\text{cm}$ ]	5.00 ... 19.99	0.01
	20.0 ... 199.9	0.1
	200 ... 1999	1
$\rho$ (resistivity) [ $\text{M}\Omega\cdot\text{cm}$ ]	2.00 ... 19.99	0.01
	20.0 ... 199.9	0.1
T [ $^{\circ}\text{C}$ ]	- 5,0 ... + 100,0	0.1

**5.3 Accuracy of the IDS measuring technique**

Measured parameter	Accuracy ( $\pm 1$ digit)
$\kappa, \rho$	$\pm 0.5$ % of measured value
T [ $^{\circ}\text{C}$ ]	$\pm 0.1$

## 6 Wear parts and accessories

### Accessories for LR 925/01-P (IDS plug variant)

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
Blind plug for IDS plug (sensor)	BPO/IDS 900	908 371
Blind plug for IDS socket (cable)	BPI/IDS 900	908 370



Further accessories are listed in the price list of the WTW catalog "Laboratory and field instrumentation".



# What can Xylem do for you?

We're a global team unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

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