OPERATING MANUAL

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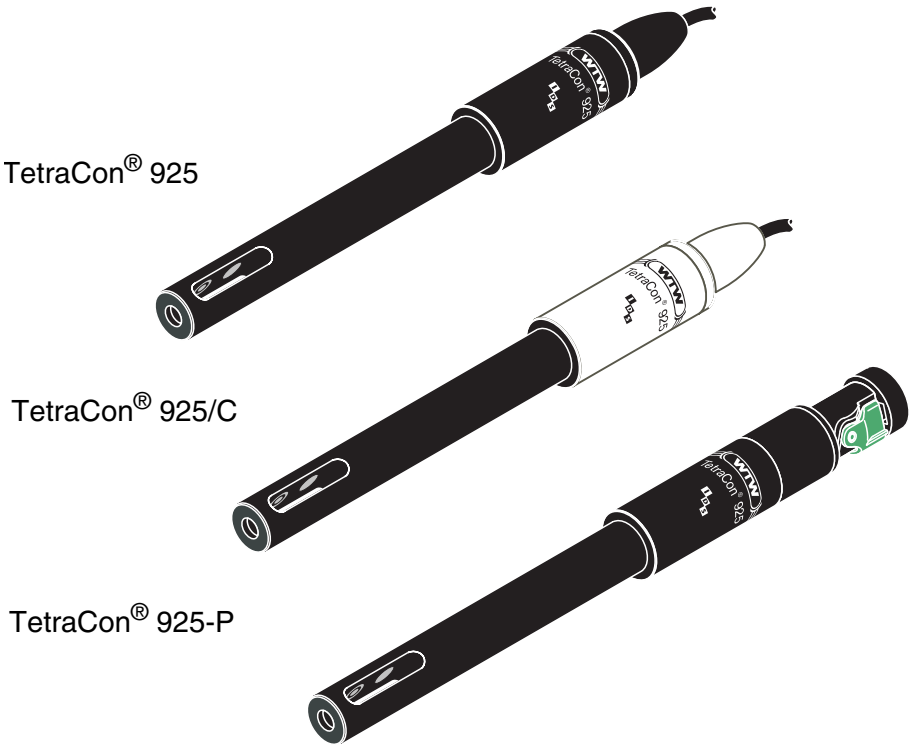


TetraCon® 925 (/C)(-P)

CONDUCTIVITY CELL

WTW

a xylem brand

Contents

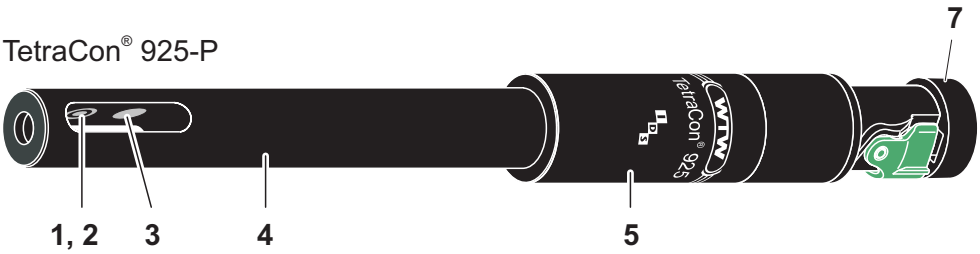
1 Overview

1.1 Structure and function

Structure

TetraCon® 925(/C)

TetraCon® 925-P



1	Voltage electrode (inside, 2x)
2	Current electrode (ring, 2x)
3	Temperature sensor in graphite enclosure
4	Shaft
5	Connecting head with active electronics
6	Connection cable (TetraCon® 925(/C))
7	IDS plug (TetraCon® 925-P)

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 via the meter.

1.2 Recommended fields of application

- On site measurements in rivers, lakes and wastewater
- Fish farming
- Ground water measurements
- Applications in water laboratories

Due to the use of high performance PEEK material for the connection technology TetraCon® 925/C has an improved chemical resistance, especially in acid media (eg. As electroplating baths).

NOTE
Concentrated or strong oxidizing acids and organic solvents can damage or destroy the sensor.

2 Measuring / Operation

2.1 Commissioning

Scope of delivery

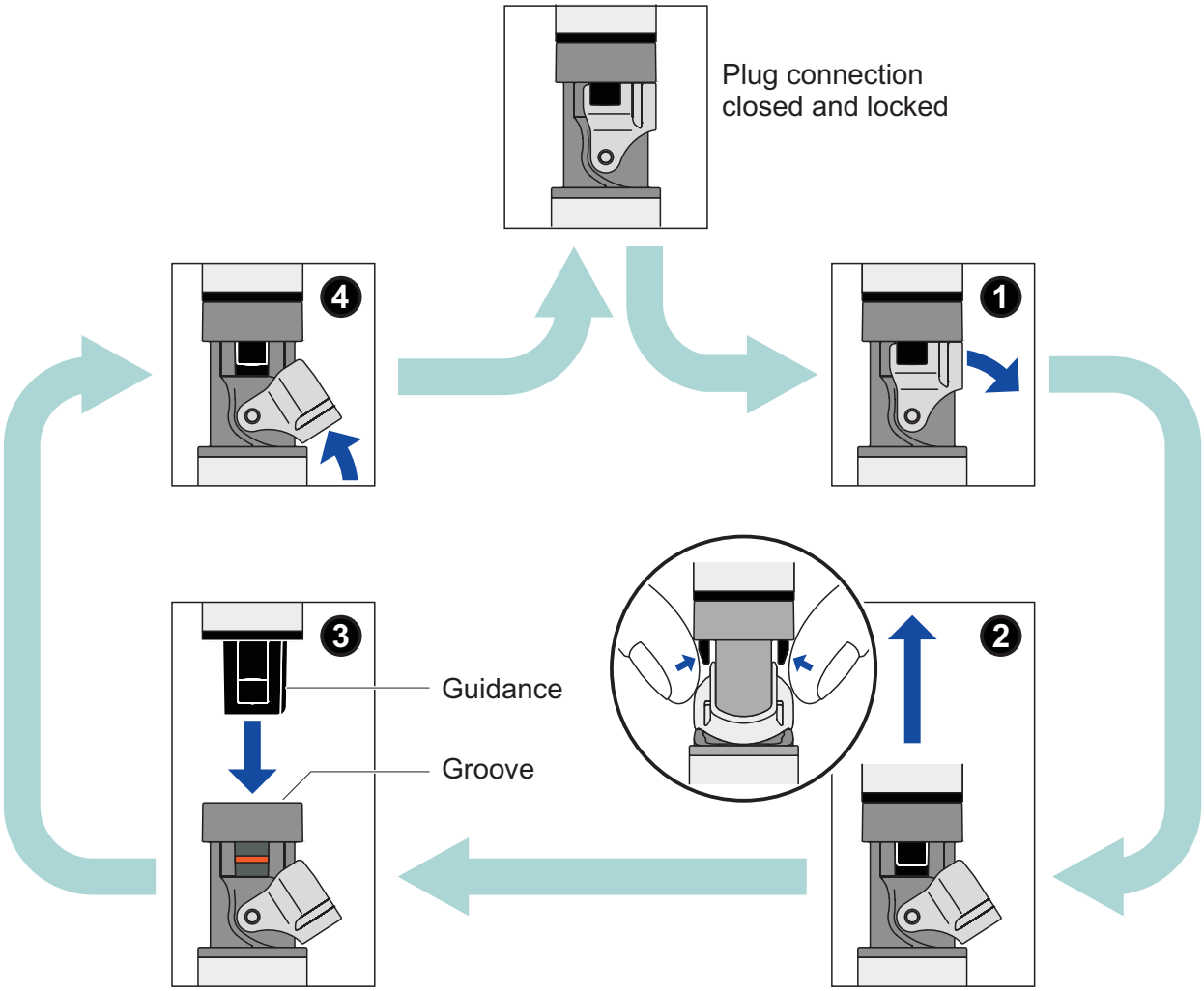
- Conductivity measuring cellTetraCon® 925 (/C)(-P)
- Operating manual

Preparing the sensor for measurement

TetraCon® 925(/C)	Connect the sensor to the meter. The sensor is immediately ready to measure.
TetraCon® 925-P	Connect the sensor to a free IDS sensor plug-in position of the multi parameter probe or to an IDS connection of the meter. To open and close the IDS plug-in position please note the section 2.2 OPENING AND CLOSING THE IDS PLUG CONNECTION (TETRACON® 925-P). The sensor is immediately ready to measure. Connection cables in different lengths to connect the TetraCon® 925-P sensor to the meter are listed in chapter 6 WEAR PARTS AND ACCESSORIES.

2.2 Opening and closing the IDS plug connection (TetraCon® 925-P)

This section only applies to the IDS plug variant, TetraCon® 925-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
Prior to cleaning, disconnect the sensor from the meter.

Outside 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...

Error symptom	Cause	Remedy
No temperature or conductivity display	– No connection between meter and conductivity measuring cell – Cable defective	– Establish connection between meter and conductivity measuring cell
Measurement delivers implausible conductivity values	– Measuring range exceeded – Contamination in the area of the electrodes – Electrodes damaged	– Make sure the correct sensor is being used for the application – Clean the conductivity measuring cell (see section 3). – Return the sensor
Incorrect temperature display	– The temperature sensor is not immersed deep enough in the measuring solution – Temperature sensor defective	– Observe the minimum immersion depth – Return the conductivity measuring cell

5 Technical data

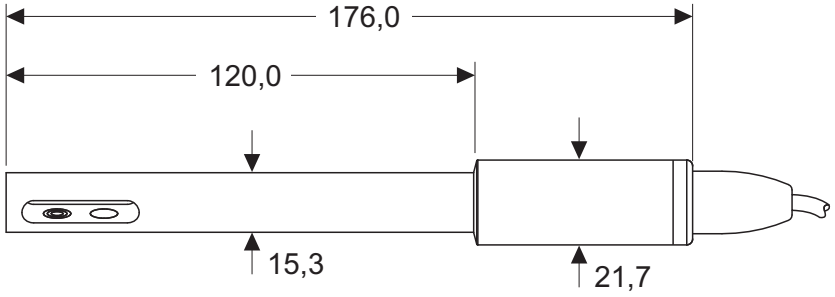
5.1 General data

General features

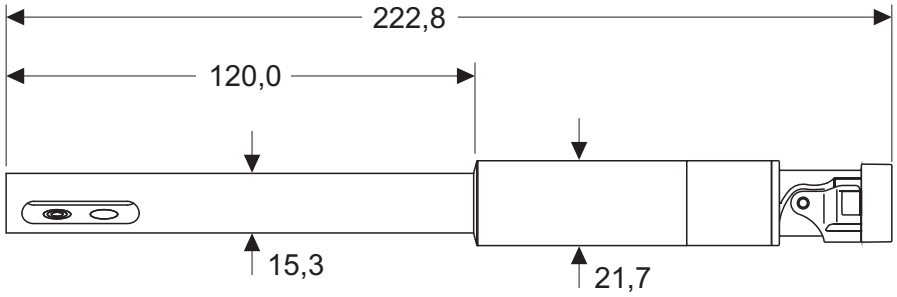
Measuring principle	Four-electrodes measurement
Cell constant	0.475 cm^{-1} ±1.5 %
Temperature sensor	Integrated NTC 30 (30 kΩ at 25 °C / 77 °F)

Dimensions (in mm)

TetraCon® 925(/C):



TetraCon® 925-P:



Weights

TetraCon® 925(/C)	60 g (without cable)
TetraCon® 925-P	65 g

Materials

Shaft	Epoxy
Connection head	TetraCon® 925(-P):POM TetraCon® 925/C:PEEK
Conductivity electrodes	Graphite
Thermistor enclosure	Graphite

Connection cable

Lengths	TetraCon® 925:1,5 / 3 m TetraCon® 925-P: 1,5 / 3 / 6 / 10 / 15 / 25 / 40 / 60 / 100 m TetraCon® 925/C:1,5 m
Diameter	4.3 mm

	Smallest allowed bend radius	Fixed installation:20 mm Flexible use:60 mm
	Plug type	Socket, 4 pins
IDS plug (TetraCon® 925-P)	Connection type	4-pole, watertight plug connection with lock, reverse polarity protected
	Materials	● Synthetic materials: Glass fiber reinforced Noryl, TPU, TPC-ET, POM, PEEK, PBT ● O-ring: FPM ● Contacts gold-plated
Pressure resistance	Sensor with connection cable	IP 68 (2.5 x 10^5 Pa or 2.5 bar)
	Cable plug (TetraCon® 925)	IP 67 (when plugged in)

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

Measurement conditions	Conductivity measuring range	1 µS/cm ... 2 S/cm
	Temperature range	-5 ... 70 °C (100 °C) (23 ... 158 °F (212 °F))
	Max. admissible overpressure	TetraCon® 925(/C):2,5 x 10^5 Pa (2,5 bar) TetraCon® 925-P:1 x 10^6 Pa (10 bar)
	Minimum depth of immersion	36 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
Storage conditions	Recommended storing method	In air
	Storage temperature	0 ... 50 °C
Characteristic data on delivery	Temperature responding behavior	t_{99} (99 % of the final value display after) < 20 s
	Accuracy of the temperature sensor	± 0,2 K

5.2 Measuring ranges, resolution, accuracy

Measuring ranges, resolution

Measured parameter	Measuring range	Resolution
æ [µS/cm]	0.0 ... 199.9 200 ... 1999	0.1 1
æ [mS/cm]	2.00 ... 19.99 20.0 ... 199.9 200 ... 2000	0.01 0.1 1
ρ (Resistivity) [Ohm*cm]	0.50 ... 19.99 20.0 ... 199.9 200 ... 1999	0.01 0.1 1
ρ (Resistivity) [kOhm*cm]	2.00 ... 19.99 20.0 ... 199.9 200 ... 1999	0.01 0.1 1
ρ (Resistivity) [MOhm*cm]	2.00 ... 19.99	0.01
SAL	0.0 ... 70.0 according to IOT table	0.1
TDS	0 ... 1999 mg/l 2.00 ... 19.99 g/l 20.0 ... 199.9 g/l	1 0.01 0,1
T [°C]	– 5.0 ... + 100.0	0,1

5.3 Accuracy of the IDS measuring technique

Measured parameter	Accuracy (± 1 digit)
æ, ρ, SAL, TDS	± 0.5 % of measured value
T [°C]	± 0.1

6 Wear parts and accessories

Accessories for TetraCon® 925-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
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 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.

For more information on how Xylem can help you, go to xyleminc.com.

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