Operating manual

TetraCon 325
TetraCon 325/C

Standard conductivity cell

ba55301e03 02/2005

Accuracy when going to press

The use of advanced technology and the high quality standard of our instruments are the result of continuous development. This may result in differences between this operating manual and your instrument. Also, we cannot guarantee that there are absolutely no errors in this manual. Therefore, we are sure you will understand that we cannot accept any legal claims resulting from the data, figures or descriptions.

List of contents

1 Overview

1.1 Structure and function

Structure

1	Voltage electrode (inside, 2x)
2	Current electrode (ring, 2x)
3	Temperature sensor in a graphite enclosure
4	Shaft
5	Connection head

1.2 Recommended fields of application

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

The TetraCon 325/C ist particularly suitable for heavy chemical stress, particularly for acid media.

2 Cleaning

Caution
Before cleaning, disconnect the sensor from the instrument.

Cleaning

A thorough cleaning is particularly recommended for measurements of low conductivities.

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 lyes, organic solvents) or too high temperatures shorten the operational lifetime considerably or damage the measuring cell. The warranty does not cover cases where such conditions cause failure or mechanical damage.

Disposal

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

3 What to do if...

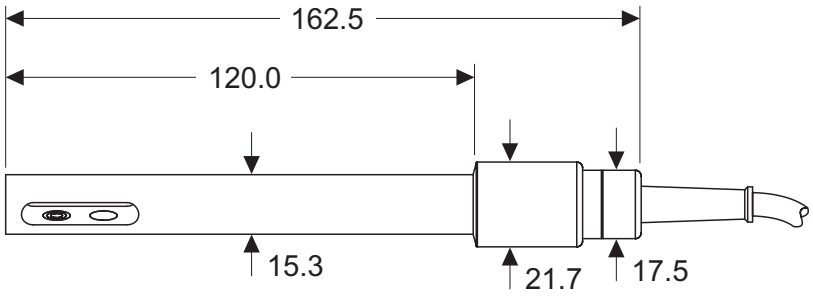
Error symptom	Cause	Remedy
No temperature or conductivity display	– No connection between measuring instrument and sensor – Cable defective	– Check connection between measuring instrument and sensor
Measurement delivers implausible conductivity values	– Incorrect cell constant adjusted at the measuring instrument – Measuring range exceeded – Contamination in the area of the electrodes – Electrodes damaged	– Check / correct the cell constant – Observe the application range – Clean the sensor (see section 2). – Return the sensor
Incorrect temperature display	– The temperature sensor was not immersed deep enough in the measuring solution – Temperature sensor defective	– Observe the minimum immersion depth – Return the sensor

4 Technical data

General features

Measuring principle	Four-electrode measurement
Cell constant	0.475 cm^{-1} ±1.5 %
Temperature sensor	integrated NTC 30 (30 kΩ / 25 °C)

Dimensions (in mm)



Weight approx. 135 g

Materials

Shaft	Epoxy
Connection head	TetraCon 325: POM TetraCon 325/C: PEEK
Plug connection for DO module	PEEK
Conductivity electrodes	Graphite
Thermistor enclosure	Graphite

Connection cable

Lengths	TetraCon 325: 1,5 / 3 / 6 / 10 / 15 / 20 m TetraCon 325/C: 1,5 m
Diameter	6 mm
Smallest allowed bend radius	Permanent bend: 80 mm Single time or short time bend: 50 mm
Plug type	Socket, 8 pins

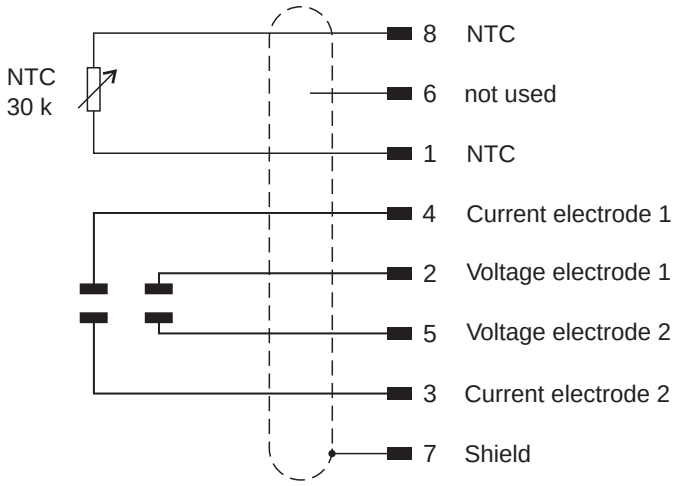
Pressure resistance

Sensor with closed plug connection	IP 68 (2 x 10^5 Pa or 2 bar)
Cable plug	IP 67 (when plugged in)

The TetraCon 325 / TetraCon 325/C meets the requirements according to article 3(3) of the 97/23/EC directive ("Pressure equipment directive").

Measurement conditions	Conductivity measuring range	1 µS/cm ... 2 S/cm
	Temperature range	-5 ... 80 °C (100 °C)
	Max. allowed overpressure	2 x 10^5 Pa (2 bar)
	Minumum depth of immersion	36 mm
	Maximum depth of immersion	Entire sensor+cable (up to 80 °C) Sensor shaft only (=120 mm / up to 100 °C)
	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 after) < 20 s
	Precision of the temperature sensor	± 0.2 K

Pin assignment



Plug from the front: