

HD 22569.2



HD 22569.2 **BENCH-TOP METER FOR pH - CONDUCTIVITY - DISSOLVED** OXYGEN

The instrument HD22569.2 is a bench top instrument for electrochemical measures: pH, conductivity, dissolved oxygen, and temperature. It is are fitted with a large backlighted LCD display.

The HD22569.2 measures pH, mV, redox potential (ORP) with pH, redox electrodes or electrodes with separate reference; conductivity, resistivity in liquids, total dissolved solids (TDS) and salinity with combined 4-ring and 2-ring conductivity/temperature probes with direct input or SICRAM module; concentration of dissolved oxygen in liquids (in mg/l) and saturation index (in %), using SICRAM combined probes of polarographic type with two or three electrodes and integrated temperature sensor.

The instruments is fitted with an input for the measurement of temperature with Pt100 or Pt1000 immersion, penetration or contact probes. The temperature probes are equipped with an automatic recognition module and factory calibration data are stored inside.



- The pH electrode calibration can be carried out on one or five points and the calibration sequence can be chosen from a list of 13 buffers Temperature compensation can be automatic or manual.
- The conductivity probe calibration can be performed automatically with automatically detected conductivity calibration solutions: 147µS/cm, 1413µS/cm, 12880µS/cm or 111800µS/cm or manually with calibration solutions having different values.
- The dissolved Oxygen probe's quick calibration function guarantees timely correctness of the performed measurements.
- · Conductivity, dissolved oxygen and temperature probes fitted with SICRAM module can store factory and calibration data inside.

The instruments HD22569.2 is a **datalogger**, it can memorize up to 2,000 samples of data:

 pH or mV, conductivity or resistivity or TDS or salinity, concentration of dissolved oxygen and temperature:

The data can be transferred from the instrument connected to a PC via the multi-standard RS232C serial port and USB 2.0. The storing parameters can be configured using the menu. The RS232C serial port can be used to transfer the acquired measurements to a 24 column portable printer in real time (HD40.1 or HD40.2).

The instruments equipped with HD22BT (Bluetooth) option can transfer data without any connection to a PC or printer fitted with Bluetooth input or through Bluetooth/RS232C converter. The software DeltaLog11 allows instrument management and configuration, and data processing on PC.

The instruments have IP66 protection degree.

Technical characteristics of HD22569.2

pH - mV - X - Q - TDS - NaCl - mg/l 0, - %0, - mbar - °C - °F measurement . Instrument Dimensions (Length x Width x Height) 265x185x70mm 490g Weight ABS, rubber Materials Display Back lighted, matrix point display. 240x64 points, visible area: 128x35mm

Operating conditions Working temperature Storage temperature Working relative humidity Protection degree

Power

Auxiliary socket

Security of memorized data

Time Date and hour

Accuracy

Measured values storing Quantity Storage interval

1min/month max drift 2000 screens

1s ... 999s

3.6V - 1/2AA

-5 ... 50°C

-25 ... 65°C

12Vdc/1A

Unlimited

stirrer HD22.2

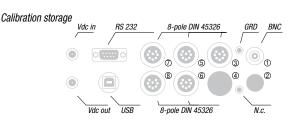
IP66

0 ... 90% R.H. without condensate

For supplying of electrode holder with built-in

Real time schedule with backup battery E

Mains adapter (cod. SWD10)





Quantity	Last 8 calibrations of e quantity	each physical	Measurement range (Ko	cell=1)	0.0199.9 mg/l 2001999 mg/l	Resolution 0.5 mg/l 1 mg/l
<i>RS232C serial interface</i> Type Baud rate Data bit Parity	RS232C electrically iso Can be set from 1200 8 None		Measurement range (Ko Accuracy (total dissolve		2.0019.99 g/l 20.099.9 g/l	0.01 g/l 0.1 g/l 1 g/l
Stop bit	1		Measurement of salinit	v		
Flow Control	Xon/Xoff		Measurement range	, ,		1mg/l
Length of serial cable	Max 15m				0	10mg/l
LICP Interface			Acouroov (colinity)			0.1g/l
<i>USB Interface</i> Type	1.1 - 2.0 electrically is	nlated	Accuracy (salinity)		$\pm 0.5\% \pm 1$ digit	
USB Interface	optional	bolatou	Automatic/manual temperature compensation			
	optional		0100°C with $\alpha_r = 0.004.00\%$ °C			004.00%/°C
Connections			Reference temperature		050°C	
Input for temperature probes	8-pole male DIN45326	6 connector	Conversion factor X/TD	S	0.40.8	10.100
with SICRAM modules pH/mV ① input	BNC female		<i>Cell constants K (cm⁻¹)</i> 0.01 - 0.1 - 0.5 - 0.7 - 1.0 - 10.0 <i>already set on instrument</i>		1.0 - 10.0	
Input for SICRAM module	8-pole male DIN45326	S connector	Cell constants K(cm ⁻¹) the		0 01 20 00	
pH/ temperature ③		Connector			0.0120.00	
2/4- electrode direct			Standard solutions auto	omatically detected (@	@25°C)	
conductivity input ®	8-pole male DIN45326				147µS/cm	
Conductivity SICRAM module input ⑦	8-pole male DIN45326				1413µS/cm	
Dissolved Oxygen input Serial interface	8-pole male DIN45326 DB9 connector (9- pol				12880µS/cm 111800µS/cm	
USB interface	USB connector type B	e male)			111000µ3/011	
Bluetooth	Optional		Measurement of conce	ntration of dissolved	oxygen by instrument	
Mains adapter		.5mm-2.1mm). Positive at	Measuring range		0.0090.00mg/l	
	centre		Resolution		0.01mg/l	[
Outlet for power supply of electrode holder			Accuracy			60110%, 1013mbar,
with built-in magnetic stirrer	Positive at centre (out	out 12Vdc/200mA max).			2025°C)	
pH measurement by instrument			Measurement of satura	tion index of dissolve	ed oxvaen	
Measuring range	-9.999+19.999pH		Measuring range		0.0600.0%	
Resolution	0.01 o 0.001pH select	able from menu	Resolution		0.1%	
Accuracy	± 0.001 pH ± 1 digit		Accuracy		$\pm 0.3\% \pm 1$ digit (in the I	
Input impedance	$>10^{12}\Omega$		$\pm 1\% \pm 1$ digit (in the range 200.0600.0%)		nge 200.0600.0%)	
Calibration error @25°C	Offset > 20mV Slope > 63mV/pH o Sl	ono < 50m\//nU	Measurement of barom	natric proceura		
					0.01100.0mbar	
Calibration points	Sensitivity > 106.5% of		Measuring range Resolution		0.01100.0mbar 0.1mbar	
Calibration points	Sensitivity > 106.5% of Up to 5 points with 1 buffer solutions	or Sensitivity < 85% I automatically detected	Measuring range		0.1mbar ±2mbar±1digit betwee	
Automatically detected pH standard	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0	or Sensitivity < 85% 13 automatically detected 2000pH - 4.008pH - 4.010pH	Measuring range Resolution		0.1mbar ±2mbar±1digit betwee	en 18 and 25°C in the remaining range
	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0 6.860pH - 6.865pH - 7.0	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH	Measuring range Resolution Accuracy		0.1mbar ±2mbar±1digit betwee	
Automatically detected pH standard	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH	Measuring range Resolution Accuracy Salinity setting		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C)	in the remaining range
Automatically detected pH standard	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0 6.860pH - 6.865pH - 7.0	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH	Measuring range Resolution Accuracy		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C)	
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9m\	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH 10.010pH	Measuring range Resolution Accuracy Salinity setting Setting Setting range		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l	in the remaining range
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH 10.010pH	Measuring range Resolution Accuracy Salinity setting Setting		0.1mbar ±2mbar±1digit betweet ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement	in the remaining range
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Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV	or Sensitivity < 85% 13 automatically detected 200pH - 4.008pH - 4.010pH 200pH - 7.413pH - 7.648pH 10.010pH	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i>	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year	or Sensitivity < 85% 13 automatically detected 2000pH - 4.008pH - 4.010pH 2000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i>	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy		0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.0001.999µS/cm 0.0019.99µS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm 0.01µS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year	nent with the sensor	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.00019.99μS/cm 0.019.99μS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm 0.01µS/cm 0.1µS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy	nent with the sensor	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.0001.999µS/cm 0.0019.99µS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm 0.01µS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year	nent with the sensor	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 1 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.0001999μS/cm 0.01999μS/cm 2001999μS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / / Resolution 0.001µS/cm 0.01µS/cm 0.1µS/cm 1µS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range	nent with the sensor compensation prature by instrument	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (K cell=1)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 1 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year f 0.0001999μS/cm 0.01999μS/cm 2.001999μS/cm 2.001999mS/cm 2001999mS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / / Resolution 0.001µS/cm 0.01µS/cm 0.1µS/cm 1µS/cm 0.01mS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range Pt1000 measuring range	nent with the sensor compensation prature by instrument	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C -50+150°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (K cell=1)	Sensitivity > 106.5% (Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 1 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year f 0.00019.99μS/cm 0.019.99μS/cm 20019.99μS/cm 2.0019.99mS/cm 2.0019.9mS/cm	or Sensitivity < 85% 3 automatically detected 000pH - 4.008pH - 4.010pH 000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001μS/cm 0.01μS/cm 0.1μS/cm 0.01mS/cm 0.1mS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measuren Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range Pt1000 measuring range	nent with the sensor compensation prature by instrument	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C -50+150°C 0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (K cell=1) Measuring range (Kcell=10) Accuracy (conductivity)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 1 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year f 0.0001999μS/cm 0.01999μS/cm 2.001999μS/cm 2.001999mS/cm 2001999mS/cm	or Sensitivity < 85% 3 automatically detected 000pH - 4.008pH - 4.010pH 000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001μS/cm 0.01μS/cm 0.1μS/cm 0.01mS/cm 0.1mS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measuren Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range Pt100 measuring range Resolution Accuracy	nent with the sensor compensation prature by instrument	0.1mbar ±2mbar±1digit betweet ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C 0.1°C ±0.1°C ±0.1°C ±0.1°C ±0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrumen</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (K cell=1)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 1 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year f 0.0001999μS/cm 0.01999μS/cm 2.001999μS/cm 2.001999mS/cm 2001999mS/cm	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / / <i>Resolution</i> 0.01μS/cm 0.1μS/cm 0.1μS/cm 0.1mS/cm 1mS/cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measuren Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range Pt1000 measuring range	nent with the sensor compensation prature by instrument	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C -50+150°C 0.1°C	in the remaining range automatically by conduc-
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=10) Accuracy (conductivity) <i>Measurement of resistivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.01)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0 6.860pH - 6.865pH - 7.0 9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.0001999µS/cm 0.001999µS/cm 2001999µS/cm 2001999µS/cm 2001999mS/cm 2001999mS/cm 2001999mS/cm ±0.5% ±1digit	or Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001μS/cm 0.1μS/cm 0.1μS/cm 0.1μS/cm 0.1mS/cm 1mS/cm (*) (*)	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of temper Pt100 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Measuracy Drift after 1 year (*) The resistivity measu	nent with the sensor compensation prature by instrument je	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C -50+150°C 0.1°C ±0.1°C ±1digit 0.1°C/year rom the reciprocal of co	in the remaining range automatically by conduc- igen probe
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Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=10) Accuracy (conductivity) <i>Measurement of resistivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.01)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.0 6.860pH - 6.865pH - 7.0 9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.00019.99µS/cm 0.0199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 200199.9µS/cm 10.5% ±1digit	r Sensitivity < 85% 3 automatically detected 000pH - 4.008pH - 4.010pH 000pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm 0.01µS/cm 0.1µS/cm 1µS/cm 0.1mS/cm 1mS/cm (*) (*) (*) 0.1Ω-cm 1Ω-cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measuren Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of tempe Pt100 measuring range Pt1000 measuring range Pt1000 measuring range (*) The resistivity measu Close to the bottom of the below: K cell = 1	nent with the sensor compensation rature by instrument ge urement is obtained f the scale, the indicati	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C 0.1°C ±0.1°C ±10git 0.1°C/year rom the reciprocal of co on of resistivity appears	in the remaining range automatically by conduc- <i>rgen probe</i> nductivity measurement. like reported in the table = 0.1 cm ⁻¹
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Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=10) Accuracy (conductivity) <i>Measurement of resistivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=0.1)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year t 0.0001999µS/cm 0.0199.9µS/cm 2001999µS/cm 2001999µS/cm 2001999mS/cm 2001999mS/cm 2001999mS/cm ±0.5% ±1digit Up to 100MΩ·cm 5.0199.9Ω·cm 1.00k199.9kΩ·cm 1.00k999kΩ·cm 1.00k999kΩ·cm 1.00k999kΩ·cm	 r) Sensitivity < 85% 13 automatically detected D00pH - 4.008pH - 4.010pH D00pH - 7.413pH - 7.648pH 10.010pH / <i>Resolution</i> 0.001µS/cm 0.01µS/cm 0.1µS/cm 0.1µS/cm 0.1mS/cm 0.1mS/cm 1mS/cm 1mS/cm 1Ω-cm 1Ω-cm 0.01kΩ-cm 1kΩ-cm 1kΩ-cm 1MΩ-cm 	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of temper Pt100 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Conductivity measu Close to the bottom of th below: K cell = C Conductivity (µS/cm) 0.001 µS/cm 0.003 µS/cm	nent with the sensor compensation erature by instrument pe urement is obtained f the scale, the indicati 0.01 cm ⁻¹ Resistivity (MΩ cm) 1000 MΩ cm 500 MΩ cm 333 MΩ cm	0.1mbar ±2mbar±1digit betweet ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C 0.1°C ±0.1°C ±1digit 0.1°C/year rom the reciprocal of co on of resistivity appears K cell 0.01 µS/cm 0.02 µS/cm 0.03 µS/cm	in the remaining range automatically by conduc- <i>rgen probe</i> automatically by conduc- <i>rgen probe</i> nductivity measurement. like reported in the table = 0.1 cm ⁻¹) Resistivity(MΩ-cm) 100 MΩ-cm 50 MΩ-cm 33 MΩ-cm
Automatically detected pH standard solutions (@25°C) <i>mV measurement by instrument</i> Measuring range Resolution Accuracy Drift after 1 year <i>Measurement of conductivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=10) Accuracy (conductivity) <i>Measurement of resistivity by instrument</i> Measuring range (Kcell=0.01) Measuring range (Kcell=0.01) Measuring range (Kcell=0.01) Measuring range (Kcell=0.01) Measuring range (Kcell=0.1) Measuring range (Kcell=10)	Sensitivity > 106.5% c Up to 5 points with 1 buffer solutions 1.679pH - 2.000pH - 4.(6.860pH - 6.865pH - 7.(9.180pH - 9.210pH - 7 -1999.9+1999.9mV 0.1mV ±0.1mV ±1digit 0.5mV/year f 0.0001999µS/cm 0.0199.9µS/cm 2.00199.9µS/cm 2.00199.9µS/cm 2.00199.9µS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 2.00199.9mS/cm 1.00K199.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00K99.9kΩ·cm 1.00MΩ·cm 0.55.0Ω·cm ±0.5% ±1digit	pr Sensitivity < 85% 13 automatically detected 1000pH - 4.008pH - 4.010pH 1000pH - 7.413pH - 7.648pH 10.010pH 7 7 Resolution 0.01µS/cm 0.01µS/cm 0.1µS/cm 0.1µS/cm 0.1mS/cm 1mS/cm (*) (*) (*) (*) 0.1Ω-cm 0.01kΩ-cm 0.1kΩ-cm 1MΩ-cm 0.1Ω-cm 0.1Ω-cm	Measuring range Resolution Accuracy Salinity setting Setting Setting range Resolution Temperature measurem Measurement range Resolution Accuracy Drift after 1 year Automatic temperature Measurement of temper Pt100 measuring range Pt1000 measuring range Pt1000 measuring range Pt1000 measuring range Conductivity (µS/cm) 0.001 µS/cm 0.003 µS/cm 0.004 µS/cm	nent with the sensor compensation prature by instrument ge urement is obtained f the scale, the indicati 0.01 cm ⁻¹ Resistivity (MΩ·cm) 1000 MΩ·cm 500 MΩ·cm 333 MΩ·cm 250 MΩ·cm	0.1mbar ±2mbar±1digit betwee ±(2mbar+0.1mbar/°C) directly from menu or tivity measurement 0.070.0g/l 0.1g/l inside the dissolved Oxy 0.0+50.00°C 0.1°C ±0.1°C 0.1°C/year 050°C -50+150°C 0.1°C ±0.1°C ±1digit 0.1°C/year rom the reciprocal of co on of resistivity appears K cell 0.01 µS/cm 0.02 µS/cm 0.04 µS/cm	in the remaining range automatically by conduc- <i>igen probe</i> automatically by conduc- <i>igen probe</i> <i>igen probe</i> <i>automatically by conduc-</i> <i>igen probe</i> <i>automatically by conduc-</i> <i>igen probe</i> <i>igen pro</i>
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ORDERING CODES

HD22569.2: The kit is composed of: instrument HD22569.2 for the measurement of pH redox - conductivity - resistivity - TDS - salinity - concentration of dissolved oxygen, saturation index - temperature, **datalogger**, stabilized power supply at mains voltage 100-240Vac/12Vdc-1A., calibrator HD9709/20, instructions manual and software DeltaLog11.

pH/mV electrodes, conductivity probes, dissolved oxygen probes, temperature probes, standard reference solutions for different measurement types, connection cables for pH electrodes with S7 connector, cables for data download to PC or printer have to be ordered separately.

Accessories

9CPRS232: Connection cable SubD female 9- pole for serial output RS232C.

- CP22: USB 2.0 connection cable connector typo A connector type B.
- DeltaLog11: Software for download and management of the data on PC using Windows 98 to Vista operating systems.

SWD10: Stabilized power supply at 100-240Vac/12Vdc-1A mains voltage.

HD40.1: Portable, serial input, 24 column thermal printer, 57mm paper width.

- HD40.2: 24-column portable thermal printer, Bluetooth and serial interface, 57mm paper width, four NiMH 1.2V rechargeable batteries, SWD10 power supply, instruction manual, 5 thermal paper rolls. Requires the module HD22BT (optional) or the cable HD 2110 CSNM (optional).
- HD22.2: Laboratory electrode holder composed of basis plate with incorporated magnetic stirrer, staff and replaceable electrode holder. Height max. 380mm. Powerd by bench-top meters of the series HD22... with cable HD22.2.1 (optional) or supplier SWD10 (optional).
- HD22.3: Laboratory electrode holder with metal basis plate. Flexible electrode holder for free positioning. For Ø 12mm probes.
- HD22BT: Bluetooth module for wireless data transmission from instrument to PC. The fitting of the module into the instrument is made exclusively by Delta Ohm, at the time of placing the order.

TP47: Module for the connection of Pt100 4-wire and Pt1000 2-wire probes.

pH electrodes without SICRAM module (Inputs ① and ②)

KP20: Combined pH electrode for general use, gel filled with screw connector S7 body in Epoxy.

KP30: Combined pH electrode for general use, cable 1 m, gel filled, body in Epoxy.

- KP50: Combined pH electrode with Teflon collar diaphragm, for emulsions, deionised water, S7 screw connector, gel filled, body in glass.
- KP 61: Combined pH electrode, 3 diaphragms for milk, cream, etc. Liquid reference filling, with screw connector S7, body in glass.
- KP 62: Combined pH electrode, 1 diaphragm for pure water, paints, etc. gel-filled, with screw connector S7. body in class.
- KP 63: Combined pH electrode for general use, varnish, cable 1 m, electrolyte KCI 3M body in glass.
- KP 64: Combined pH electrode for water, varnish, emulsions, etc., electrolyte KCI 3M with screw connector S7, body in glass.
- KP 70: Combined pH micro electrode diam. 4.5 x L=25 mm. Gel filled, with screw connector, body in glass.
- **KP 80:** Combined pointed pH electrode, gel filled, with screw connector S7, body in glass.
- CP: Extension cable 1.5m with BNC connectors on one side and S7 on the other side for electrode with S7 connector.
- CP5: Extension cable 5m with BNC connectors on one side and S7 on the other side for electrode with S7 connector.

CE: S7 screw connector for pH electrode.

BNC: Female BNC for electrode extension.

pH electrodes with SICRAM module (Input³)

KP63TS: Combined pH/temperature electrode with SICRAM module, body in Epoxy, Ag/AgCl sat KCI.

SICRAM Module with BNC input for pH electrodes (Input ③)

KP47: SICRAM module for pH electrode with BNC standard connector.

ORP Electrodes (Inputs ① and ②)

KP90: Redox Platinum electrode, with screw connector S7, electrolyte KCI 3M, body in glass. **KP91:** Redox Platinum electrode with 1m cable, GEL filled, body in glass.

pH buffer solutions

HD8642: Buffer solution 4.01pH - 200cc. HD8672: Buffer solution 6.86pH - 200cc. HD8692: Buffer solution 9.18pH - 200cc.

Redox buffer solutions

HDR220: Redox buffer solution 220mV 0,5 l. HDR468: Redox buffer solution 468mV 0,5 l.

Electrolyte solutions

KCL 3M: 50cc ready for use solution for electrode refilling.

Cleaning and maintenance

HD62PT: Diaphragm cleaning (tiourea in HCl) - 500ml. HD62PP: Protein cleaning (pepsin in HCl) - 500ml. HD62RF: Regeneration (fluorhydric acid) - 100ml. HD62SC: Solution for electrode preservation - 500ml.

- Conductivity probes and combined conductivity and temperature probes without SICRAM module (Input \Im)
- **SP06T:** Combined conductivity and temperature 4-electrode cell in Platinum, body in Pocan. Cell constant K = 0.7. Measurement range 5μ S/cm ...200mS/cm, 0...90°C.
- SPT401.001: Combined conductivity and temperature 2- electrode cell in stainless steel AISI 316. Cell constant K = 0.01. Measurement range 0.04µS/cm ...20µS/cm, 0...120°C. Measurement in closed-cell.

SPT01G: Combined conductivity and temperature 2-electrode Platinum-wire cell, body in glass. Cell constant K = 0.1. Measurement range 0.1μ S/cm ... 500μ S/cm, $0...80^{\circ}$ C.

- SPTIG: Combined conductivity and temperature 2-electrode Platinum-wire cell, body in glass. Cell constant K = 1. Measurement range 10µS/cm ...10mS/cm, 0...80°C.
- SPT10G: Combined conductivity and temperature 2-electrode Platinum-wire cell, body in glass. Cell constant K = 10. Measurement range 500µS/cm ...200mS/cm, 0...80°C.

Combined conductivity / temperature probes with SICRAM module (Input ®)

SPT1GS: Combined conductivity /temperature 2-electrode Platinum- wire cell, body in glass with SICRAM module. Cell constant K = 1. Measuring range 10μ S/cm ...10mS/cm, 0...80°C.

Standard conductivity calibration solutions

HD8747: Standard calibration solution 0.001 mol/l equal to 147μ S/cm @25°C - 200cc. HD8714: Standard calibration solution 0.01mol/l equal to 1413μ S/cm @25°C - 200cc. HD8712: Standard calibration solution 0.1mol/l equal to 12880μ S/cm @25°C - 200cc. HD87111: Standard calibration solution 1mol/l equal to 111800μ S/cm @25°C - 200cc.

Combined dissolved oxygen/temperature probes (Input [®])
D09709 SS: The kit includes: combined probe for measurement of 0₂ and temperature with replaceable membrane, three membranes, 50ml of zero solution, 50ml of electrolyte solution. Cable length 2m. Ø12mm x 120mm.

D09709 SS.5: The kit includes: combined probe for measurement of O_2 and temperature with replaceable membrane, three membranes, 50ml of zero solution, 50ml of electrolyte solution. Cable length 5m. \varnothing 12mm x 120mm.

Electrode dimensions and characteristics at page 403

Accessories

D09709 SSK: Accessory kit for the D09709 SS probe consisting of three membranes, 50ml of zero solution, 50ml of electrolyte solution

D09709.20: Calibrator for polarographic probes D09709SS and D09709SS.5.

Temperature probes complete with SICRAM module (Input S)

TP87: PT100 sensor immersion probe. Stem Ø 3 mm, length 70 mm. Cable length 1 metre.
TP472I.0: Pt100 sensor immersion probe. Stem Ø 3 mm, length 230 mm. Cable length 2 m.
TP473P.0: Pt100 sensor penetration probe. Stem Ø 4mm, length 150 mm. Cable length 2 m.
TP474C.0: Pt100 sensor contact probe. Stem Ø 4mm, length 230mm, contact surface Ø 5mm. Cable length 2 m.

TP475A.0: Air probe, sensor Pt100. Stem Ø 4mm, length 230mm. Cable length 2 m. TP472I.5: Immersion probe, sensor Pt100. Stem Ø 6mm, length 500 mm. Cable length 2 m. TP472I.10: Immersion probe, sensor Pt100. Stem Ø 6mm, length 1,000mm. Cable length 2 m.

Temperature probes complete with TP47 module (input[®])

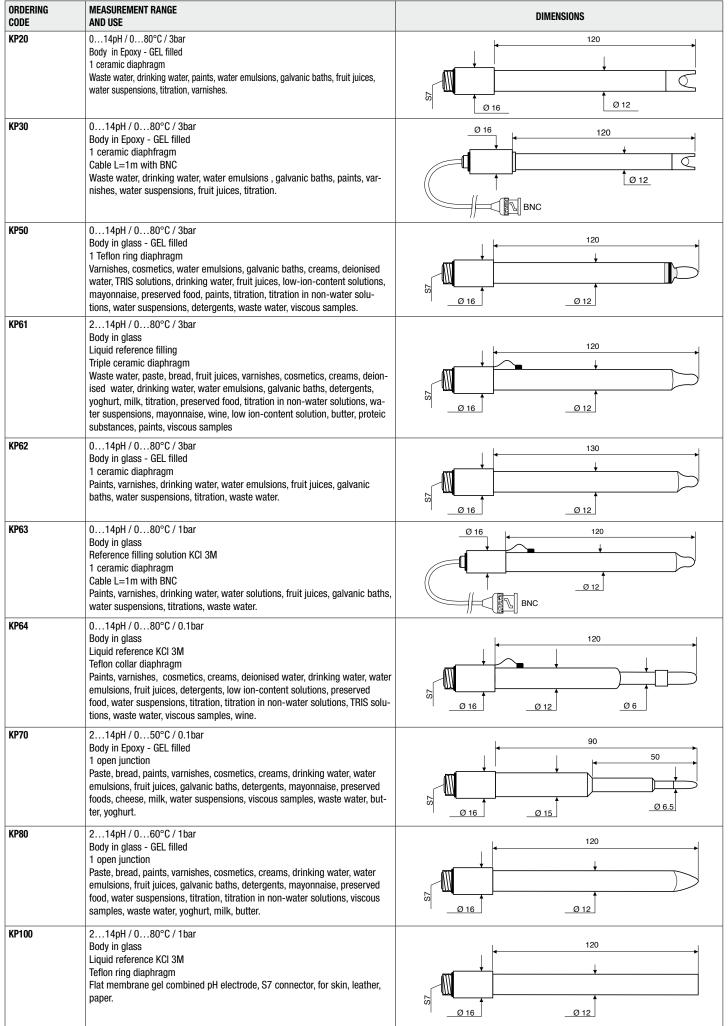
TP47.100: Direct 4 wires Pt100 sensor immersion probe. Probe's stem Ø 3mm, length 230mm. Connection cable 4 wires with connector, length 2 m.

- TP47.1000: Pt1000 sensor immersion probe. Probe's stem Ø 3mm, length 230mm. Connection cable 2 wires with connector, length 2 m.
- TP87.100: Pt100 sensor immersion probe. Probe's stem Ø 3mm, length 70mm. 4 wire connection cable with connector, length 1 m.
- TP87.1000: Pt1000 sensor immersion probe. Probe's stem Ø 3mm, length 70mm. 2-wire connection cable with connector, length 1 m.

Accessories

TP47: Module for the connection of Pt100 4-wire and Pt1000 2-wire probes.

Technical data of pH electrodes without SICRAM module



Water Analysis

pH electrodes

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ORDERING CODE	MEASUREMENT RANGE AND USE	DIMENSIONS
KP63TS	014pH / 080°C / 1bar Pt100 sensor Body in glass Reference filling solution KCI 3M 1 ceramic diaphragm Cable L=1 m with SICRAM module Paints, varnishes, drinking water, water solutions, fruit juices, galvanic baths, water suspensions, titra- tions, waste water.	
KP47	Please refer to employed electrode.	

Redox Elettrodes without SICRAM module

ORDERING CODE	MEASUREMENT RANGE AND USE	DIMENSIONS
KP90	±2000mV 080°C 5bar Body in glass Reference filling solution KCI 3M General use	
KP91	±1000mV 060°C 1bar Body in Epoxy - GEL Cable L=1m with BNC General use No heavy tasks	

Combined 2-ring or 4-ring conductivity probes without SICRAM module

ORDERING Code	MEASUREMENT RANGE AND USE	DIMENSIONS
SP06T	K=0.7 5µS/cm200mS/cm 090°C 4-electrode cell in Pocan/Platinum Probe material Pocan General use No heavy tasks	L=1.5m
SPT401.001	K=0.01 0.04µS/cm20µS/cm 0120°C 2-electrode cell in AISI 316 Ultrapure water Measurement in closed-cell	~ 72
SPT01G	K=0.1 0.1µS/cm500µS/cm 080°C 2-electrode cell in Platinum-wire Probe material glass Pure water	L=1.5m → → → → → → → → → → → → → → → → → → →

2-ring or 4-ring conductivity probes without SICRAM module

ORDERING Code	MEASUREMENT RANGE AND USE	DIMENSIONS
SPT1G	K=1 10μS/cm10mS/cm 080°C 2-electrode cell in Platinum wire Probe material glass General heavy tasks, average conductivity	L=1.5m → → → → → → → → → → → → → → → → → → →
SPT10G	K=10 500µS/cm200mS/cm 080°C 2-electrode cell in Platinum wire Probe material glass General heavy tasks, high conductivity	L=1.5m

Conductivity probes with SICRAM module

ORDERING CODE	MEASUREMENT RANGE AND USE	DIMENSIONS	
SPT1GS	K=1 10μS/cm10mS/cm 080°C 2-electrode cell Glass/Platinum		

Dissolved oxygen probe

Model	D09709 SS	D09709 SS.5	
Туре	Polarographic pro	Polarographic probe, Silver anode, Platinum cathode	
Application range			
Application range		0.0060.00mg/l	
Working temperature		045°C	
Accuracy		±1%f.s.	
Membrane	Replaceable		
Cable length	2m	5m (*)	

(*)Cable with connector

