

ELECTROCHEMISTRY

BOECO PORTABLE PH/ORP/TEMP METER MODEL PT-380

- ▶ Simultaneous displays pH or mV and temperature.
- ▶ Convenient calibration with automatic buffer recognition of European and US buffer sets. Calibration data is stored in memory and is ready for use on power up.
- ▶ Automatic or manual temperature compensation
- ▶ Automatic lock mode and end point sensing are available to lock in stable readings
- ▶ 50 data set reviewable memory
- ▶ Automatic shut off function (30 minutes of non-use)
- ▶ Battery life 1000 hours
- ▶ Low battery indicator
- ▶ IP65 waterproof case

The PT-380 will be delivered incl. the following standard accessories:
1 x ATC probe 6000AST, each 1 x 100 ml BOECO Buffer solution pH 4,01, pH 7,00, 1 x 9 V battery, 1 x operating manual, 1 x carrying case

Specification:

pH		
Range	Resolution	Accuracy
-2 to 16,00 pH	0.01 pH	± 0,01 ± 1 digit
mV		
Range	Resolution	Accuracy
-1999 to 1999 mV	1 mV	± 0,1 %
Temperature		
Range	Resolution	Accuracy
-10,0 to 120,0 °C	0.1 °C	±0,5 %

pH buffer recognition:	US (4,01, 7,00, 10,01) NIST (4,00, 6,86, 9.18) user selectable
pH electrode offset Recognition:	±90mV at pH 7,00 or 6.86
pH electrode slope Recognition:	±30% at pH 4,00,4,01,9,18 or 10,01
pH temp. compensation:	Auto / manual -10,0 to 120 °C
Input Impedance:	10 ¹² ohms
Temperature sensor:	Thermistor, 10K ohms at 25°C
RS 232 interface:	no
Power requirement:	9 Volt battery
Dimensions (LxWxH):	198x70x37 mm
Weight:	0,26 kg (Battery included)

Code	Description
BOE 5190380	Portable pH/ORP/Temperature meter, model PT-380 in carrying case with standard accessories without electrode

BOECO ELECTRODES

The electrodes are not included with the pH meters and have to be ordered separately:

Code	Description
BOE 5190600	Basic pH combination electrode, BA ECO plastic PC shaft, gel electrolyte, 0...14 pH, 0...80°C, with BNC plug, 1m cable, glass sensor
BOE 5095695	Basic pH combination electrode BA 25, Noryl plastic shaft, gel electrolyte, 0...14 pH, -5...80°C, with BNC plug, 1m cable, fibre diaphragm
BOE 5095626	Basic pH combination electrode BA 17, glass shaft, liquid electrolyte, 0...14 pH, 0...100°C, with BNC plug, 1m cable. With leak proof refill opening, platinum diaphragm

BOECO PH/MV/ION/TEMP BENCH TOP METER MODEL BT-675

- ▶ Large display with backlight
- ▶ Simultaneous display of pH / ORP and temperature readings
- ▶ Dual buffer set selection: (4,01, 7,00 10,01) or 4,00, 6,86, 9,18)
- ▶ Calibration data is stored in memory and is ready for use on power up.
- ▶ Resolution to 0,1 mV for Ion measurement
- ▶ Automatic or manual temperature compensation
- ▶ Automatic lock mode and end point sensing are available to lock in stable readings
- ▶ AC adaptor or battery power (low battery indicator)
- ▶ IP54 waterproof case

The BT-675 will be delivered incl. the following standard accessories:
1 x ATC probe, each 1 x 500 ml Buffer solution pH 4,01, pH 7,00
1 x AC adaptor, 1 x operating Manual, 1 x flexible electrode holder

Specification:

pH		
Range	Resolution	Accuracy
0 to 14,00 pH	0.01 pH	± 0,01
mV		
Range	Resolution	Accuracy
-1999,9 to 1999,9 mV	0,1 mV	± 0,4 mV (-1500,0 -1500,0); ± 1 mV (-1999,9 - -1500,0 and 1500,0 - 1999,9)
Temperature		
Range	Resolution	Accuracy
0.0 to 100,0°C	0.1°C	±0,2°C

pH buffer recognition:	US (4,01, 7,00, 10,01) or NIST (4,00, 6,86, 9,18) user selectable
Buffer temp. range	0 - 60,0 °C
pH calibration	1,2 or 3 point calibration
pH electrode offset Recognition:	±1,50 pH
pH electrode slope Recognition:	±30% at pH 4,00, 4,01, 9,18 or 10,01
pH temp. compensation:	Auto / manual 0,0 to 100°C
Input impedance:	10 ¹³ ohms
Temperature sensor:	Thermistor, 10K ohms at 25°C
RS 232 interface:	no
Power requirement:	6 x 1,5 Volt AAA batteries or AC adaptor
Dimensions (LxWxH):	150 x 203 x 72 mm
Weight:	0,54 kg (battery included)

Code	Description
BOE 5196750	Bench Top pH/mV/Ion/Temp Meter, Model BT-675, AC adaptor with EURO plug with standard accessories, without electrode
BOE 5196751	Bench Top pH/mV/Ion/Temp Meter, Model BT-675, AC adaptor with US plug with standard accessories, without electrode



BOECO PORTABLE PH/ORP/TEMP METER MODEL PT-380



BT-675



BOECO ELECTRODES



PH/TEMP. TESTER PT-70 WITH REPLACEABLE ELECTRODE



ELECTRODE MODULE

PH/TEMP. POCKET TESTER PT-70

with replaceable electrode

- ▶ Large display screen - displays pH and temperature at the same time
- ▶ 1, 2 or 3 point calibration, with automatic buffer recognition of US and NIST buffer sets.
- ▶ Readings are automatically compensated for temperature (ATC)
- ▶ Electrode efficiency display
- ▶ Replaceable electrode module ensures extended usefulness
- ▶ IP67 water-tight housing
- ▶ Auto power off after 10 minutes of inactivity
- ▶ Battery life over 200 hours

Specification:

Modes:		pH, °C
Ranges:	pH	0 to 14 pH
	Temp.	-9,9...99,9 °C
Resolution:	pH	0,01 pH
	Temp.	0,1 °C
Accuracy:	pH	± 0,02 pH ± 1 digit
	Temp.	± 0,3 °C ± 1 digit
Temperature compensation:		Auto from -9,9 to 99,9°C
pH buffer recognition:		US (pH 4,01, 7,00 10,01) NIST (pH 4,00, 6,86, 9,18)
Buffer temp range:		0,0 - 60 °C
Input impedance:		> 10 ¹² ohms
pH calibration:		1, 2 or 3 point calibration
pH electrode offset recognition:		±90mV at pH 7,00 ±98,3mV to -81,7mV at pH 6,86
pH electrode slope recognition:		±30% at pH 4,00; 4,01; 9,18 and 10,01
Power:		4 x LR44 batteries
Dimensions :		193 x 44 x 25 mm
Weight :		105 grams (incl. batteries)

Code	Description
BOE 5190070	PH/Temp. Tester PT-70
BOE 5190071	Spare pH electrode module PT-70-1 for PT-70

TECHNICAL BUFFER SOLUTIONS

In square plastic bottles, PE, 500 ml, labeled with an individual batch no. on the bottles, traceable to SRM of NIST

Code	Description
BOE 104000	pH 4,00 (20°C), 500 ml
BOE 107000	pH 7,00 (20°C), 500 ml
BOE 110000	pH 10,00 (20°C), 500 ml
BOE 104004	pH 4,00 (20°C), 500 ml, red color coded
BOE 107006	pH 7,00 (20°C), 500 ml, green color coded
BOE 110008	pH 10,00 (20°C), 500 ml, blue color coded

CONDUCTIVITY CALIBRATION SOLUTIONS

In square plastic bottles, PE, 250 ml, labeled with an individual batch no. on the bottles, traceable to PTB and NIST

Code	Description
BOE 300141	1,413 mS/cm KCL 0,01 mol/l (25°C), 250 ml
BOE 301288	12,88 mS/cm KCL 0,1 mol/l (25°C), 250 ml
BOE 311180	111,8 mS/cm KCL 1 mol/l (25°C), 250 ml

ELECTROLYTE SOLUTION

In square plastic bottles, PE, 500 ml, labeled with an individual batch no. on the bottles.

Code	Description
BOE 400300	Potassium chloride 3 mol/l, 500 ml

PH INDICATORS

pH-Fix is the most popular indicator stick for all purposes. The indicator dyes are chemically bound to the cellulose fibres, avoiding bleeding even in strong alkaline samples. Presentation: Box of 100 sticks 6 x 85 mm

Code	Description
M-N 92110	pH-Fix 0-14, pH Graduation 1,0

The budget priced universal indicator papers can be used for most standard applications. For each pH-value these papers show a single colour which can be matched with the colour scale at an interval of 1 pH-unit. Presentation: Reel of 5 m length and 7 mm width

Code	Description
M-N 90201	pH-Universal Indicator Paper, pH 1-11, pH Graduation 1,0
M-N 90204	pH-Universal Indicator Paper, pH 1-14, pH Graduation 1,0/2,0



PH INDICATORS

BOECO PORTABLE DO/TEMP. METER MODEL DO-580

- ▶ Simultaneous display of dissolved oxygen and temperature measurements
- ▶ Automatic temperature compensated (ATC) dissolved oxygen readings
- ▶ User selectable salinity and pressure compensated dissolved oxygen readings
- ▶ Works with accurate and reliable galvanic dissolved oxygen probes
- ▶ 50 data set reviewable memory
- ▶ Automatic shut off function (30 minutes of non-use)
- ▶ Battery life approx. 200-500 hours
- ▶ Low battery indicator
- ▶ IP65 waterproof case

Specification:

Dissolved Oxygen (ppm)	
Ranges	0.00 to 20.00 ppm (mg/L)
Resolution	0.01 ppm (mg/L)
Accuracy	±2 % of the reading or ±0,2 ppm
Dissolved Oxygen (%)	
Ranges	0,0 to 200,0 %
Resolution	0.1 %
Accuracy	±2 % of the reading or ±0,2 air saturation
Temperature	
Ranges	-6 to 46,0 °C
Resolution	0.1°C
Accuracy	±0,3 °C ±1 digit

Pressure compensation:	600 to 1100 mBar (450 to 825 mmHg)
Salinity compensation:	From 0,0 to 40,0 ppt
Electrode type:	Galvanic
Temperature sensor:	Thermistor, 10K ohms, at 25 °C
Calibration backup:	Yes
Automatic temp. comp:	Yes
Power	9 Volt battery
Size (LxWxD)	198x70x37 mm
Weight:	0,26 kg (Battery included)

The DO-580 will be delivered incl. the following standard accessories:
1 x Watertight dissolved oxygen probe LD-900G-1, 1 x 30 ml Galvanic O2 Fill Solution, 1 x 9 V battery, 1 x Operating Manual, 1 x carrying case

Code	Description
BOE 5190580	Portable DO/Temperature Meter, Model DO-580 in carrying case with dissolved oxygen probe LD-900G-1



BOECO PORTABLE DO/TEMP METER MODEL DO-580





BOECO PORTABLE CONDUCTIVITY/
TDS/SALINITY/TEMP METER
MODEL CT-480



BOECO PORTABLE CONDUCTIVITY/TDS/SALINITY/TEMP. METER MODEL CT-480

- ▶ Simultaneous displays of conductivity, salinity or TDS with temperature measurements.
- ▶ Convenient one point calibration. Calibration data is stored in memory and is ready for use on power up.
- ▶ Adjustable TDS coefficient, reference temperature and temperature coefficient
- ▶ Uses one conductivity cell for conductivity, salinity and TDS measurement
- ▶ Accepts 4-wire conductivity cells with $k=0,475$ cell constant and 2-wire $K=0,1$ cell constant for improved flexibility and accuracy
- ▶ 50 data set reviewable memory
- ▶ Automatic shut off function (30 minutes of non-use)
- ▶ Battery life approx 200 -500 hours
- ▶ Low battery indicator
- ▶ IP65 waterproof case

Specification:

Conductivity K = 0,475

Range	Resolution	Accuracy
0,0 to 475 μ S/cm	0,1 μ S/cm	$\pm 1\%$ of reading +2 μ S/cm
475 to 4750 μ S/cm	1 μ S/cm	$\pm 1\%$ of reading +5 μ S/cm
4,75 to 47,50mS/cm	0,01mS/cm	$\pm 1\%$ of reading +0,05mS/cm
47,5 to 200,0mS/cm	0,1mS/cm	$\pm 2,5\%$ of reading +0,5mS/cm

Conductivity K = 0,1

Range	Resolution	Accuracy
0.00 to 99,99 μ S/cm	0,01 μ S/cm	$\pm 1\%$ of reading
100 to 200 μ S/cm	0,1 μ S/cm	$\pm 1\%$ of reading

Salinity

Range	Resolution	Accuracy
0.0 to 70,0 ppt	0,1 ppt	$\pm 0,2\%$ Full Scale

Temperature

Range	Resolution	Accuracy
-10.0 to 90,0 °C	0,1 °C	$\pm 0,2\%$ or $\pm 4\%$ Full Scale whichever is greater

Reference Temp.:	From 15,0 to 25,0°C, default is 25,0°C
Temperature Coefficient:	From 0.00 to 4,00 °C, default is 1,91°C
TDS Constant:	From 0,30 to 1,00, default is 0,65
Cell Constant	4 wire conductivity cell: $K = 0,475$
ATC	Thermistor, 10K ohms, at 25°C
Power	9 Volt battery
Size (LxWxD)	196x70x37 mm
Weight	0,26 kg (Battery included)

The CT-480 will be delivered incl. the following standard accessories:
1 x 4-wire conductivity cell 3020P with $k=0,475$
1 x 9 V battery, 1 x Operating Manual, 1 x carrying case

Code	Description
BOE 5190480	Portable Conductivity/Salinity/TDS/Temperature Meter, Model CT-480 in carrying case with 4-wire Conductivity Cell 3020P with 6 PIN connector, $K=0,475$ (50 μ S - 200mS/cm)

Optional Conductivity Cell:

BOE 5190109	2-wire Conductivity Cell 109P with 6 PIN connector, $K=0,1$ (0,0 - 200,0 μ S/cm)
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BOECO BENCH TOP CONDUCTIVITY/ TDS/ SALINITY/TEMP. METER MODEL CT-676

- ▶ Simultaneous displays of conductivity, salinity or TDS with temperature measurements.
- ▶ Convenient one point calibration. Calibration data is stored in memory and is ready for use on power up.
- ▶ Adjustable TDS coefficient, reference temperature and temperature coefficient
- ▶ Uses one conductivity cell for conductivity, salinity and TDS measurement
- ▶ Accepts 4-wire conductivity cells with $k=0,475$ cell constant and 2-wire $K=0,1$ cell constant for improved flexibility and accuracy
- ▶ Low battery indicator
- ▶ IP54 waterproof case

Specification:

Conductivity K = 0,475

Range	Resolution	Accuracy
0,0 to 475 μ S/cm	0,1 μ S/cm	$\pm 1\%$ of reading +2 μ S/cm
475 to 4750 μ S/cm	1 μ S/cm	$\pm 1\%$ of reading +5 μ S/cm
4,75 to 47,50mS/cm	0,01mS/cm	$\pm 1\%$ of reading +0,05mS/cm
47,5 to 200,0mS/cm	0,1mS/cm	$\pm 2,5\%$ of reading +0,5mS/cm

Conductivity K = 0,1

Range	Resolution	Accuracy
0.00 to 99,99 μ S/cm	0,01 μ S/cm	$\pm 1\%$ of reading
100 to 200 μ S/cm	0,1 μ S/cm	$\pm 1\%$ of reading

Salinity

Range	Resolution	Accuracy
0,0 to 70,0 ppt	0,1 ppt	$\pm 0,2\%$ Full Scale

Temperature

Range	Resolution	Accuracy
-10,0 to 90,0 °C	0,1 °C	$\pm 0,2\%$ or $\pm 4\%$ Full Scale whichever is greater

Reference Temp.:	From 15,0 to 25,0°C, default is 25,0°C
Temperature Coefficient:	From 0,00 to 4,00 °C, default is 1,91°C
TDS Constant:	From 0,30 to 1,00, default is 0,65
Cell Constant	4 wire conductivity cell: $K = 0,475$
ATC	Thermistor, 10K ohms, at 25°C
Power Requirement:	6 x 1,5 Volt AAA batteries or AC adaptor
Dimensions (LxWxH):	150 x 203 x 72 mm
Weight:	0,54 kg (Battery included)

The CT-676 will be delivered incl. the following standard accessories:
1 x 4-wire conductivity cell 3020P with $k=0,475$, 6 x 1,5V AAA batteries,
1 x Operating Manual, 1 x Flexible electrode holder

Code	Description
BOE 5196760	Bench Top Conductivity/Salinity/TDS/Temperature Meter, Model CT-676 with 4-wire Conductivity Cell 3020P with 6 PIN connector, $K=0,475$ (50 μ S - 200mS/cm), with EURO plug
BOE 5196761	Idem, with US plug AC adaptor

Optional Conductivity Cell:

BOE 5190109	2-wire Conductivity Cell 109P with 6 PIN connector, $K=0,1$ (0,0 - 200,0 μ S/cm)
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CT-676