THE NEW GENERATION

Electrochemical Catalogue 2007-2008

CONTENT

CONTENT

MODEL PROLINE B210
pH/mV/°C Meter

pH measurement for everyday work in the laboratory

- Clear high-contrast custom LCD display
- User friendly instrument for demanding users
- High reproducibility through improved sensor technology
- Improved Quality of measurements through automatic functions
- "Electrode condition" shows you right away whether the electrode is in good condition
- Integrated interface for data exchange
- Automatic buffer recognition
- 1-, 2- or 3-point calibration

POWERFULL TOOLS
EASY AND READY TO USE

SPECIFICATIONS

B210	Measuring range	Resolution	Accuracy
pH	0.00 ~ 14.00	0.01	± 0.01
mV	-1999 ~ 1999	1	± 1
Temperature	-5.0 ~ 105°C	0.1 °C	± 0.5 °C
Sensor inputs	BNC, Cinch/RCA (NTC 30kΩ)		
Interfaces	RS232 (connection to printer or PC)		
Power requirements	Power adapter (9V, DC) or four AA batteries (not included)		
Size / Weight	180 x 180 x 65mm / 610g		

ORDERING INFORMATION

B210 Meter only option includes B210 pH meter, operation manual, power adapter

B210T Meter kit option includes B210 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC

Add a (#) for 115V ~ versions, e.g.: B210#

MODEL PROLINE B250
Conductivity/TDS/°C Meter

Easy to use and ideal for numerous applications

- Clear high-contrast custom LCD display
- User friendly instrument for demanding users
- High reproducibility through improved sensor technology
- Self-diagnostic test program
- Three types of Temperature Compensation selectable: linear, non-linear and no compensation for purified water (USP)
- Integrated interface for data exchange
- 4 measurement modes: Conductivity, TDS, Salinity and Resistivity
- Calibration with 84 µS/cm, 1413 µS/cm or 12.88 mS/cm
- Selectable Cell constant

MORE THAN CONDUCTIVITY
AT AN AFFORDABLE PRICE

SPECIFICATIONS

B250	Measuring range	Resolution	Accuracy
Conductivity	0.01 µS/cm ~ 500 mS/cm	0.01 ~ 1	± 0.5%
Temperature	-5.0 ~ 105°C	0.1 °C	± 0.2 °C
TDS	0.01 mg/L ~ 500 g/L	0.01 ~ 1	± 0.5%
Resistivity	0.00 ~ 20.00 MΩ cm		
Salinity	0.00 ~ 80.00 ppt		
Sensor inputs	Mini-DIN		
Interfaces	RS232 (connection to printer or PC)		
Power requirements	Power adapter (9V, DC) or four AA batteries (not included)		
Size / Weight	180 x 180 x 65mm / 610g		

ORDERING INFORMATION

B250 Meter only option includes B250 Conductivity meter, operation manual and power adapter

B250T Meter kit option includes B250 + Conductivity standard + epoxy Conductivity cell with built-in ATC

Add a (#) for 115V ~ versions, e.g.: B250#

POWERFULL TOOLS
EASY AND READY TO USE

PROLINE PLUS
THE MASTER OF VERSATILITY

THE MODULAR DESIGN OF PROLINE PLUS ALLOWS YOU TO UPGRADE YOUR INSTRUMENT FOR FUTURE NEED AT ANY TIME. PROLINE PLUS'S MODULAR DESIGN ALLOWS YOU TO ALTER THE MEASUREMENT PARAMETERS TO SUIT YOUR CHANGING NEEDS. THE RANGE INCLUDES TWO SINGLE AND TWO DUAL CHANNEL METERS AS WELL AS INTERCHANGEABLE PLUG-IN EXPANSION UNITS.

GLP ASSURED

DATE AND TIME, SERIAL NUMBER, SAMPLE IDENTIFICATION AND MANY MORE FEATURES TO SUPPORT GLP.

CONDUCTIVITY ACCORDING TO USP

PROLINE PLUS SUPPORTS YOU WHEN YOU PERFORM MEASUREMENTS ACCORDING TO USP (UNITED STATES PHARMACOPEIA). GO TO THE USP MODE!

DATA MANAGEMENT

SAVING, CAPTURING AND RECALLING OF RESULTS, CALIBRATION AND RAW DATA, AND DISPLAYING OF GRAPHS.

AUTOMATIC RECOGNITION

PROLINE PLUS AUTOMATICALLY RECOGNIZES A NEW MODULE THAT HAS BEEN INSTALLED. THIS MAKES CHANGING FROM ONE PARAMETER TO ANOTHER FAST AND EASY.

MODEL PROLINE PLUS M310
pH/mV/ORP/°C Meter

Professional pH meter supports GLP and current standards

Modular system for pH, Conductivity and Ion concentration. For upgrading at any time with plug-in expansion modules.

- Expandable to a two-channel system (pH/mV/ORP, Conductivity and Ion)
- Optional USB communication module
- Data management with 1000 GLP data points
- Pin code password protection
- Full GLP menu
- Different types of measurement value determination
- Graphical display of the calibration curve
- Up to 9 calibration points
- Automatic buffer recognition
- Resolution selectable between 0.001/0.01/0.1

SPECIFICATIONS

M310	Measuring range	Resolution	Accuracy
pH	-2.000 ~ 19.999	0.001, 0.01, 0.1	± 0.002
mV (rel. mV)	-1999 ~ 1999	0.1	± 0.1
Temperature	-30.0 ~ 130°C	0.1°C	± 0.1°C

Sensor inputs	BNC, 2mm Ref., Cinch/RCA (NTC), 4mm banana (Pt1000)
Interfaces	RS232 (connection to printer or PC)
Power requirements	Power adapter (9V, DC)
Size / Weight	190 x 240 x 65mm/985g

ORDERING INFORMATION

M310 Meter only option includes M310 pH meter, operation manual, power adapter

M310T Meter kit option includes M310 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC

Add a (#) for 115V ~ versions, e.g.: M310#

CONDUCTIVITY METER OF THE SUPER CLASS

MODEL PROLINE PLUS M330

Conductivity/TDS/°C Meter

- Linear or non-linear temperature compensation
- USP-mode: satisfies the current requirements for purified water
- Manual input and presentation of the cell constant
- Automatic Conductivity standard recognition
- Expandable to a two-channel system (pH/mV/ORP and Ion)
- Data management with 1000 GLP data points
- Pin code password protection
- Full GLP menu
- Temperature reference is selectable (20°C or 25°C)
- Self-diagnostics
- 4-Pole Electrode technology

PROLINE PLUS

CONDUCTIVITY MEASUREMENTS ACCORDING USP

GO TO USP MODE!

SPECIFICATIONS

M330	Measuring range	Resolution	Accuracy
Conductivity	0.01 µS/cm ~ 1000 mS/cm	0.01 ~ 1	± 0.5%
Temperature	-5.0 ~ 130°C	0.1 °C	± 0.1°C
TDS	0.01 mg/L ~ 1000 g/L	0.01 ~ 1	± 0.5%
Resistivity	0.00 ~ 20.00 MΩ cm		
Salinity	0.00 ~ 80.00 ppt		
Sensor inputs	Mini-DIN		
Interfaces	RS232 (connection to printer or PC), titrator output		
Power requirements	Power adapter (9V, DC)		
Size / Weight	190 x 240 x 65mm / 985g		

ORDERING INFORMATION

M330 Meter only option includes M330 Conductivity meter, operation manual and power adapter

M330T Meter kit option includes M330 + Conductivity standard + epoxy 4-pole Conductivity cell with built-in ATC

Add a (#) for 115V ~ versions, e.g.: M330#

MODEL PROLINE PLUS M350

Dual channel pH/mV/Conductivity/TDS/°C Meter

pH/Conductivity meter professional performance with modular expansion possibilities at any time!

- Combines all functions of the M310 and M330
- Clear large display two-channel measurement
- Expandable to a two-channel system (pH/mV/ORP, Conductivity and Ion)
- Context-sensitive Help menu
- USP-mode: satisfies current requirements for purified water
- Supports user-defined calibration standards
- Automatic Module recognition
- Remembers 25 last readings of calibration curves with high/low limits
- Power loss memory protection
- 4-Pole Electrode technology

MEASUREMENTS OF CONDUCTIVITY AND pH AT THE SAME TIME!

SPECIFICATIONS

M350	Measuring range	Resolution	Accuracy
pH	-2.000 ~ 19.999	0.001, 0.01, 0.1	± 0.002
mV (rel. mV)	-1999 ~ 1999	0.1	± 0.1
Temperature	-30.0 ~ 130°C	0.1°C	± 0.1°C
Conductivity	0.01 µS ~ 1000 mS/cm	0.01 ~ 1	± 0.5%
Temperature	-5.0 ~ 130°C	0.1°C	± 0.1°C
TDS	0.01 mg/L ~ 1000 g/L	0.01 ~ 1	± 0.5%
Resistivity	0.00 ~ 20.00 MΩ cm		
Salinity	0.00 ~ 80.00 ppt		
Sensor inputs	BNC, 2mm Ref., Cinch/RCA (NTC), 4mm banana, Mini-DIN		
Power requirements	Power adapter (9V, DC)		
Size / Weight	190 x 240 x 65mm / 1120g		

ORDERING INFORMATION

M350 Meter only option includes M350 pH/Conductivity meter, operation manual, power adapter

M350T Meter kit option includes M350 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC + Conductivity standard + epoxy 4-pole Conductivity cell with built-in ATC

Add a (#) for 115V ~ versions, e.g.: M350#

DETERMINE ION CONCENTRATION
AT THE HIGHEST LEVEL OF COMFORT

MODEL PROLINE PLUS M370
Dual channel Ion/pH/mV/ORP/°C Meter

- Advanced Ion Meter
- Choice of 29 pre-programmed electrodes types
- Expandable to a two-channel system (pH/mV/ORP, Conductivity and Ion)
- 5 measurement units: mol/L, mmol/L, ppm, mg/L and %
- Menu-guided addition or subtraction procedures
- Up to 9 calibration points
- Storage of the calibration data of 10 ISE with corresponding ID
- Complete range of electrodes for 22 Ions

SPECIFICATIONS

M370	Measuring range	Resolution	Accuracy
Concentration	1.00 E^{-9} ~ 9.99 E^{+9}	± last significant place	± 0.5%
pH	-2.000 ~ 19.999	0.001, 0.01, 0.1	± 0.002
mV (rel. mV)	-1999 ~ 1999	0.1	± 0.1
Temperature	-30.0 ~ 130°C	0.1°C	± 0.1°C
Sensor inputs	2 each: BNC, 2mm Ref., Cinch/RCA (NTC), 4mm banana (Pt1000)		
Interfaces	RS232 (connection to printer or PC)		
Power requirements	Power adapter (9V, DC)		
Size / Weight	190 x 240 x 65mm / 1120g		

ORDERING INFORMATION

M370 Meter only option includes M370 pH/Ion meter, operation manual, power adapter

M370T Meter kit option includes M370 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC

Add a (#) for 115V ~ versions, e.g.: M370#

For Ion selective electrodes see page 44

BENCH PERFORMANCE IN THE FIELD

PORTABLE EQUIPMENT FOR ALL PURPOSES

Waterproof to IP67, these easy to operate meters are suitable for use in process plants, production facilities, the food industry, research and environmental monitoring.

TOTALLY WATERPROOF BY DESIGN

When combined with the electrode supplied, the meter system is fully waterproof.

The meter, electrode, batteries, instructions and carrying case are included in the field kit, so you are ready to go anywhere, anytime.

SENSELINE

WORKING IN THE FIELD BECOMES A PLEASURE

MODEL SENSELINE F410

pH/mV/°C Meter

- Clear display of measured values and settings
- Watertight and dustproof to IP67 specifications
- Continue indication of electrode and battery status
- Automatic endpoint and buffer recognition
- Automatic Temperature Compensation
- Data memory for 30 GLP data points
- 3-point calibration with predefined or user-defined buffers

TOTALLY WATERPROOF BY DESIGN

SPECIFICATIONS

F410	Measuring range	Resolution	Accuracy
pH	0.00 ~ 14.00	0.01	± 0.01
mV	-1999 ~ 1999	1	± 1
Temperature	-5.0 ~ 105°C	0.1°C	± 0.5°C
Sensor inputs	BNC (>10^{12}Ω); NTC 30 KΩ (both IP67)		
Power requirements	4AA batteries 1.5V or NiMH accumulators 1.3V		
Operation environment	0 ~ 40°C, 5 ~ 85% rel. humidity (non-cond.)		
Size / Weight	220 x 90 x 45mm / 325g (without batteries)		

ORDERING INFORMATION

F410 Meter only option includes F410 pH portable meter, operation manual and four AA batteries

F410T Meter kit option includes F410 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC (IP67) and carrying case

MODEL SENSELINE F430
Conductivity/TDS/°C Meter

- Automatic endpoint recognition
- Automatic Temperature Compensation
- Automatic standard recognition 84 µS/cm, 1413 µS/cm or 12.88 mS/cm
- Data memory for 30 GLP data points
- Clear display of measured value and settings
- Watertight and dustproof to IP67 specifications
- Complete range of electrodes
- 4-Pole Electrode technology

CONDUCTIVITY FOR EVERYDAY WORK

SPECIFICATIONS

F430	Measuring range	Resolution	Accuracy
Conductivity	0.01 µS/cm ~ 500 mS/cm	0.01 ~ 1	± 0.5%
Temperature	-5.0 ~ 105°C	0.1°C	± 0.2°C
TDS	0.01 mg/L ~ 300 g/L	0.01 ~ 1	± 0.5%
Resistivity	0.00 ~ 100.00 MΩ cm		
Salinity	0.00 ~ 80.00 ppt		
Sensor inputs	LTW 7 pin (IP67)		
Power requirements	4 AA batteries 1.5V or NiMH accumulators 1.3V		
Operation environment	0 ~ 40°C, 5 ~ 85% rel. humidity (non-cond.)		
Size / Weight	220 x 90 x 45mm / 325g (without batteries)		

ORDERING INFORMATION

F430 Meter only option includes F430 Conductivity portable meter, operation manual and four AA batteries

F430T Meter kit option includes F430 + Conductivity standard + epoxy 4-pole Conductivity electrode with built-in ATC (IP67) and carrying case

SEPARATE OPERATING MODES
FOR EXPERTS AND ROUTINE USE

MODEL SENSELINE PLUS F450
Dissolved Oxygen/°C Meter

- Manual or automatic air pressure compensation with built-in barometer
- High-performance O_2 sensor
- Comprehensive range of accessories
- Data memory for 200 GLP data points
- On/off Backlit display
- Linear and non linear temperature compensation
- Separate operation modes for expert and routine use
- Contact-free infrared communication with notebook, printer or PC

SPECIFICATIONS

F450	Measuring range	Resolution	Accuracy
Saturation	0.0 ~ 600%	0.1 ~ 1	± 0.5%
Temperature	0.0 ~ 60°C	0.1°C	± 0.1°C
mg/L, ppm	0.00 ~ 99.00	0.01	± 0.5% max. 0.03
Pressure	500 ~ 1100 mbar	1	± 1
Sensor inputs	BNC (>10^{12} Ω); NTC 22 KΩ (both IP67)		
Outputs	IR to printer or PC via RS232 or USB		
Power requirements	4 AA batteries 1.5V or NiMH accumulators 1.3V		
Operation environment	0 ~ 40°C, 5 ~ 85% rel. humidity (non-cond.)		
Size / Weight	220 x 90 x 45mm / 325g (without batteries)		

ORDERING INFORMATION

F450 Meter only option includes F450 DO portable meter, operation manual and four AA batteries

F450T Meter kit option includes F450 + Zero solution + electrolyte + epoxy DO electrode with built-in ATC (IP67) and carrying case

pH/ION METER

FOR HIGHEST DEMANDS

MODEL SENSELINE PLUS F470

pH/mV/Ion/°C Meter

The bright backlit display can be switched on when working under poor-light-conditions.

- IP-67 pH/Ion meter with expanded range for the highest demands
- Simple ion concentration determination
- Segmented or linear calibration as desired
- 5-point calibration with choice of 6 predefined and one user-defined buffer set
- Record date, time, time interval
- Data memory for 200 GLP data points
- Contact-free infrared communication with notebook, printer or PC
- On/off backlit display

SPECIFICATIONS

F470	Measuring range	Resolution	Accuracy
pH	-2.000 ~ 19.999	0.001	± 0.002
mV (rel. mV)	-1999 ~ 1999	0.1	± 0.1
Temperature	-5.0 ~ 130.0°C	0.1°C	± 0.2°C
Concentration	0.000 ~ 999.9%		
	0.000 ~ 9999 ppm	3 or 4 digits	± 0.5%
Sensor inputs	BNC (>10^{12} Ω); NTC 30 KΩ (both IP67)		
Outputs	IR to printer or PC via RS232 or USB		
Power requirements	4 AA batteries 1.5V or NiMH accumulators 1.3V		
Operation environment	0 ~ 40°C, 5 ~ 85% rel. humidity (non-cond.)		
Size / Weight	220 x 90 x 45mm / 325g (without batteries)		

ORDERING INFORMATION

F470	Meter only option includes F470 pH/Ion portable meter, operation manual and four AA batteries
F470T	Meter kit option includes F470 + 2 pH buffers + KCl solution + epoxy pH electrode with built-in ATC (IP67) and carrying case

FLAT SURFACE ELECTRODES
INTERCHANGEABLE

QiSTIK SERIES

QiSTIK PH METER QP100

Flat surfaces technology provides fast and easy on-the-spot pH measurements

- RENEW feature tells you when it's time to replace your pH electrode
- CAL feature tells you when it's time to recalibrate your meter
- Waterproof to IP57 protects meter from wet environment
- Flat surface pH electrode rugged design to withstand harsh environments and also measure pH on solid and semisolid surfaces
- Analogue bargraph originates at neutral point (pH 7.00) to conveniently view trends in acidity or alkalinity
- Auto power off, Low battery indicator
- ATC plus measures temperature
- 1, 2, or 3 point calibration


Flat surface

SPECIFICATIONS

pH	0.00 ~ 14.00
Temperature	-5 ~ 90°C (23° ~ 194°F)
Max. resolution	0.01 pH, 0.1°C/°F
Basic accuracy	± 0.01 pH, ± 1°C/ 1.8°F
Dimensions	35.6 x 172.7 x 40.6mm
Weight	110 g

ORDERING INFORMATION

QP100	Complete with gel filled flat surface electrode, protective sensor cap, sample cup with cap, four 3V CR2032 button batteries and neckstrap.
QP105	Spare pH QiSTIK electrode Module
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QS910X	pH 4 buffer (red), 500ml
QS912X	pH 7 buffer (yellow), 500ml
QS916X	pH 10 buffer (blue), 500ml

QiSTIK PH METER QP110

Rugged refillable flat surface pH electrode

- Same features as QP100
- Refillable flat surface pH electrode that can be reused by refilling the reference solution once it depletes
- Obtains continuous high accuracy using fresh reference solution
- Fast and easy to refill electrode
- Maximizes electrode shelf life
- Waterproof to IP57 protects meter from wet environment


Refillable


QP113


Flat surface

SPECIFICATIONS

pH	0.00 ~ 14.00
Temperature	-5 ~ 90°C (23° ~ 194°F)
Max. resolution	0.01 pH, 0.1°C/°F
Basic accuracy	± 0.01 pH, ± 1°C/ 1.8°F
Dimensions	35.6 x 172.7 x 40.6mm
Weight	110 g

ORDERING INFORMATION

QP110	Complete with refillable flat surface pH electrode, 15ml of refill solution, reference junction removal too, protective sensor cap, sample cup with cap, four 3V CR2032 button batteries and neckstrap.
QP115	Spare Refillable pH QiSTIK electrode Module
QP113	Reference Refill Solution kit for QP110 and QP115
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QS910X	pH 4 buffer (red), 500ml
QS912X	pH 7 buffer (yellow), 500ml
QS916X	pH 10 buffer (blue), 500ml

QiSTIK CHLORINE METER QC200

Revolutionary technique measures Direct Total Residual Chlorine

- Obtain readings from 0.01 ppm to 10 ppm with fast and easy steps
- Makes non-subjective measurements – Unaffected by interferences associated with traditional colorimeters and spectrophotometers
- Unique flat surface Chlorine electrode eliminates any concerns for clogged junctions or glass breakage
- Uses patented ExTab reagent tablets for consistent results
- Automatic electronic self calibration
- EPA approved methodology
- Waterproof to IP57 protects meter from wet environment

Replacement Flat surface Chlorine electrode Module

- Easy to clean flat surface electrode
- Measures Chlorine and Temperature
- Interchangeable with QiSTIK pH or ORP meter
- Complete with protective connector cap


QC203


QC207


QC205

SPECIFICATIONS

Chlorine (ppm)	0.01 ~ 10.00
Temperature	-5 ~ 90°C (23° ~ 194°F)
Max. resolution	0.01 ppm, 0.1°C/°F
Basic accuracy	± 10% rdg 0.01 ppm, ± 1°C/ 1.8°F
Dimensions	35.6 x 172.7 x 40.6mm
Weight	110 g

ORDERING INFORMATION

QC200	Complete with flat surface Chlorine electrode, 5pks of 10 reagent tablets (50 tests), sensor cap, sample cup with cap, four 3V CR2032 button batteries and neckstrap
QC205	Spare Chlorine electrode Module
QC203	ExTab Reagent tablets (10pk – 100 tests)
QC204	ExTab Reagent tablets (100pk – 1000 tests)
QC207	Chlorine Standard (1 ppm) – 3 ampoules (20ml each)
QC006	Weighted base with 5 solution cups
QC007	Spare sample solution cups (24pk)
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QC800	QiSTIK 3-in-1 kit Chlorine, pH, Temp includes: QC200 QiSTIK meter, Flat surface pH electrode module, ExTab Reagent tablets, 3 pH buffers, weighted base with sample cups and carrying case
QC900	QiSTIK 4-in-1 kit Chlorine, pH, ORP, Temp includes: QC200 QiSTIK meter, Flat surface pH electrode module, Flat surface ORP electrode module, ExTab Reagent tablets, 3 pH buffers, weighted base with sample cups and carrying case

QiSTIK ORP METER QR300

High resolution of 1mV

- Measures ORP/Redox from -999 to 999 mV
- Automatic electronic self calibration
- Auto power off, Low battery indicator
- Simulated analogue bargraph displays change in ORP reading
- Waterproof to IP57 protects meter from wet environment


QR305


Flat surface

SPECIFICATIONS

ORP(mV)	-999 ~ 999 mV
Max. resolution	1 mV
Basic accuracy	± 4 mV
Dimensions	35.6 x 172.7 x 40.6mm
Weight	110 g

ORDERING INFORMATION

QR300	Complete with flat surface ORP electrode, protective sensor cap, sample cup with cap, four 3V CR2032 button batteries and neckstrap
QR305	Spare ORP QiSTIK electrode Module
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight

QiSTIK II QC400

Conductivity/TDS/Salinity/Temp

High accuracy multi-range sensor measures four parameters including Conductivity, TDS, Salinity and Temperature

- Autoranging with 8 selectable units: µS, mS, ppm, ppt, mg/L, g/L, °C, and °F
- Analogue bargraph indicates trends
- Data Hold, Auto power off, Low battery indicator
- Simultaneous display of Conductivity or TDS plus Temperature
- Internal memory stores up to 25 labelled readings for easy recall
- Adjustable Conductivity to TDS ratio factor from 0.4 to 1.0
- Self calibration on power up
- Waterproof to IP57 protects meter from wet environment

EC Sensor

SPECIFICATIONS

Conductivity	0 ~ 199.9 µS 200 ~ 1999 µS 2.00 ~ 19.99 mS
TDS/Salinity	0 ~ 99.9 ppm (mg/L) 100 ~ 999 ppm (mg/L) 1.00 ~ 9.99 ppt (g/L)
Temperature	0 ~ 65°C (32° ~ 149°F)
Automatic Temp	Yes
Max. resolution	0.1 µS, 0.1 ppm (mg/L)
Basic accuracy	± 2% FS, ± 1°C/1.8°F
Dimensions	36 x 173 x 41mm
Weight	110 g

ORDERING INFORMATION

QC400	Complete with Conductivity cell, sensor cap, sample cup with cap, four 3V CR2032 button batteries, and neckstrap.
QC405	Spare QiSTIK II Conductivity Cell Module
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QS953X	84 µS/cm Conductivity standard, 500ml
QS950X	1413 µS/cm Conductivity standard, 500ml
QS951X	12.88 mS/cm Conductivity standard, 500ml
QC410	QiSTIK II Conductivity kit, includes: QC400 QiSTIK II Conductivity meter, 3 Conductivity standards, weighted base, sample cups and carrying case

QiSTIK II QC500

pH/Conductivity meter

Combination rugged flat surface pH electrode with autoranging high accuracy Conductivity cell measures Conductivity, TDS, Salinity, pH and Temperature

- 9 units of measure: pH, µS, mS, ppm, ppt, mg/L, g/L, °C, and °F
- Analogue bargraph indicates trends
- Internal memory stores up to 25 labelled readings for easy recall
- Adjustable Conductivity to TDS ratio from 0.4 to 1.0
- 0.5 fixed Salinity ratio
- RENEW feature warns to check calibration, but allows continue use
- Data Hold, Auto power off, Low battery indicator
- Waterproof IP57 protects meter from wet environment

QC505

SPECIFICATIONS

Conductivity	0 ~ 199.9 µS 200 ~ 1999 µS 2.00 ~ 19.99 mS
TDS/Salinity	0 ~ 99.9 ppm (mg/L) 100 ~ 999 ppm (mg/L) 1.00 ~ 9.99 ppt (g/L)
pH	0.00 ~ 14.00
Temperature	0 ~ 65°C (32° ~ 149°F)
Automatic Temp	Yes
Max. resolution	0.1 µS, 0.1 ppm, 0.01 pH, 0.1°C/°F
Basic accuracy	± 2% FS, 0.01 pH, ± 1°C/1.8°F
Dimensions	36 x 186 x 41mm
Weight	110 g

ORDERING INFORMATION

QC500	Complete with electrode, protective sensor cap, sample cup with cap, four 3V CR2032 button batteries and neckstrap.
QC505	Spare QiSTIK II pH/Conductivity cell module
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QS953X	84 µS/cm Conductivity standard, 500ml
QS950X	1413 µS/cm Conductivity standard, 500ml
QS951X	12.88 mS/cm Conductivity standard, 500ml
QS910X	pH 4 buffer (red), 500ml
QS912X	pH 7 buffer (yellow), 500ml
QS916X	pH 10 buffer (blue), 500ml
QC510	QiSTIK II pH/Conductivity kit, includes: QC500 QiSTIK II pH/Conductivity meter, 3 Conductivity standards, weighted base, sample cups, 3 pH buffers and carrying case

QiSTIK II QD600

Dissolved Oxygen meter

Easy to replace screw on membrane cap with optional extension cables

- Oxygen level displayed as % Saturation or Concentration (mg/L [ppm])
- Adjustable Altitude Compensation (0 to 20,000 ft in 1,000 ft increments)
- Adjustable Salinity Compensation from 0 to 50 ppt
- Automatic Temperature Compensation
- Analogue bargraph indicates trends
- Memory stores up to 25 data sets with DO and Temperature readings
- Self calibration on power up
- Data Hold, Auto power off, Low battery indicator
- Waterproof IP57 protects meter from wet environment
- Optional 1m or 5m extension cable

Easy replacement

QD603

Extension cable

SPECIFICATIONS

DO saturation	0 ~ 200.0%
DO concentration	0 ~ 20.00 ppm (mg/L)
Temperature	0 ~ 50°C (32° ~ 122°F)
Automatic Temp	Yes
Max. resolution	0.1%, 0.01 ppm, 0.1°C/°F
Basic accuracy	± 2% FS, 0.4 ppm, ± 1°C/1.8°F
Dimensions	36 x 176 x 41mm
Weight	110 g

ORDERING INFORMATION

QD600	Complete with DO electrode, protective sensor cap, spare membrane cap, electrolyte, four 3V CR2032 button batteries and neck-strap
QD605	Spare QiSTIK II Dissolved Oxygen Module
QD603	Membrane kit (6 screw on membrane caps, 15ml filling solution and polishing paper)
QA010	1m Extension cable with probe Guard/Weight
QA050	5m Extension cable with probe Guard/Weight
QD610	QiSTIK II DO/pH/Conductivity kit includes: QC500 QiSTIK II pH/Conductivity electrode, 3 Conductivity standards, weighted base, sample cups, 3 pH buffers, QD600 QiSTIK II DO electrode, replacement membrane cap, electrolyte and carrying case

QiSTIK ACCESSORIES

QiSTIK Replacement pH, ORP and Chlorine Electrode Modules

Features:

- Interchangeable pH, ORP and Chlorine sensor modules for Qistik series meters
- ATC via built-in Pt100 sensor (QP105, QP115 and QC205)
- Refillable pH electrode (QP115) provides an economical way to refill your electrode, eliminates the problem of limited electrode shelf life, contamination, and usage life in aggressive applications
- Note: The QP105, QC205 and QR305 replacement modules are not interchangeable with QiSTIK II meters

ORDERING INFORMATION

QP105 pH QiSTIK Electrode Module
QP115 Refillable pH QiSTIK Electrode Module
QP113 Reference Refilling Solution Kit for QP115
QC205 Chlorine QiSTIK Electrode Module
QR305 ORP QiSTIK Electrode Module

Several kits available

T11 SINGLE INPUT THERMOMETER

- Selectable units of °F and °C
- Wide temperature range with 0.1°/ 1° resolution
- Data Hold function freezes reading on display
- Auto Power off to save battery life
- Low battery and overrange indication
- Records Max/Min readings for later recall
- Complete with built-in stand, protective holster, type K bead wire probe (-4 ~ 482°K/ -20 ~ 250°C) and 6 AAA batteries.

T10 DUAL INPUT THERMOMETER WITH DUAL READINGS

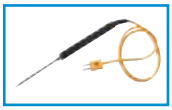
- Compact and rugged design features large backlit display
- Displays [T1 and T2] or [T1-T2 and T1] or [T1-T2 and T2]
- Measures differential Temperature between the two probes
- Selectable units of °C/°F or Kelvin
- Timer function displays elapsed time plus the time when Min/Max readings are taken
- OFFSET key used for zero function to make relative measurements
- Data Hold and Auto power off
- Min/Max readings
- Complete with built-in stand, protective holster, two type K bead wire temperature probes (-4 ~ 482°K/ -20 ~ 250°C) and 6 AAA batteries.

T15 7 THERMOCOUPLE DATALOGGER

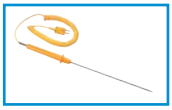
- Seven Thermocouple type selections: K, J, T, E, R, S, N
- Large backlit display
- Stores Time, T1 and T2
- Internal memory stores up to 8800 data sets
- Manual push-button data-logging or automatic with programmable sample rate of 3 to 355 seconds per reading
- Manual record/recall of data
- Data Hold and Auto power off
- Min/Max/ Avg or Min/Max with elapsed time
- Complete with two type K temperature probes (-4 ~ 482 °K/ -20 ~ 250 °C), Windows® 95/98/ME/NT/2000/XP compatible software, RS232 cable for data transfer, protective holster, case and 6 AAA batteries.

Order number	T11	T10	T15
Single or Dual input	Single	Dual	Dual
Type K °C (°F)	-50 ~ 1300°C (-58 ~ 1999°F)	-200 ~ 1360°C (-200 ~ 1999°F)	-150 ~ 1090°C (-200 ~ 1994°F)
Type J °C (°F)	—	—	-150 ~ 1370°C (-200 ~ 1999.9°F)
Basic accuracy	± 0.3% rdg	± 0.3% rdg	± 0.05% rdg
Resolution	0.1°/ 1°	0.1°/ 1°	0.1°
Data-logging	—	—	8800 readings
Dimensions	135 x 72 x 31mm	152 x 72 x 37mm	150 x 72 x 35mm
Weight	235g	235g	235g

QM1010K



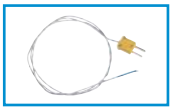
QM1020K



QM1040K

QM1030K

QM1050K



For more thermocouple models: www.q-i-s.net

ACCESSORIES

QM1010K Type K Penetration Probe (87mm x Ø 3.3mm), -40 ~ 260°C
QM1020K Type K High temperature Penetration Probe (203mm x Ø 3.3mm), -46 ~ 538°C
QM1030K Type K Surface Probe (150mm x Ø 8.13mm), -50 ~ 800°C
QM1040K Type K Immersion Probe (150mm x Ø 3.3mm), -50 ~ 700°C
QM1050K Type K Bead Wire temperature Probe (1m), -20 ~ 250°C

MODEL T120

Compact IR Thermometer with wide temperature range

- Measures -50 ~ 538°C with 0.1° resolution up to 199.9°
- Built-in laser pointer identifies target area
- Backlighting display
- Overrange indicator
- Automatic Data Hold when trigger released
- Fixed 0.95 emissivity covers 90% of surface applications
- Auto power off
- Complete with 9V battery and pouch case

MODEL T140

IR Thermometer with K thermocouple input

- Wide temperature range for IR temperature and type K thermocouple measurements
- Automatic emissivity adjustment (for temperatures 115°C or higher)
- Memory stores up 20 readings
- Adjustable high/low alarm alerts user visually and audibly when temperature exceeds programmed limits
- MAX/MIN/AVG/DIF features display highest, lowest, average, and MAX minus MIN values
- Large LCD display with bright backlight for easy-to-read measurements and programming parameters
- Built-in laser pointer improves aim
- Data Hold, Auto power off and low battery indication
- Complete with 9V battery, type K thermocouple sensor (-20 ~ 250°C/-4 ~ 482 °F) and carrying case

MODEL T160

IR Thermometer with high distance to target ratio

- Wide temperature range for IR temperature and type K thermocouple measurements
- Automatic emissivity adjustment (for temperatures 115°C or higher)
- Memory stores up 20 readings
- Adjustable high/low alarm alerts user visually and audibly when temperature exceeds programmed limits
- MAX/MIN/AVG/DIF features display highest, lowest, average, and MAX minus MIN values
- Large LCD display with bright backlight for easy-to-read measurements and programming parameters
- Built-in laser pointer improves aim
- Data Hold, Auto power off and low battery indication
- Complete with 9V battery, type K thermocouple sensor (-20 ~ 250°C/-4 ~ 482°F) and carrying case

Order number	**T120**	**T140**	**T160**
Range	-50 ~ 538°C -58 ~ 1000°F	-50 ~ 800°C (IR); -50 ~ 1370°C (type K) -58 ~ 1472°F (IR); -58 ~ 2498° F (type K)	-50 ~ 1000°C -58 ~ 1832°C
Basic Accuracy	± 1% of reading or ± 1°C/1.8°F (whichever is greater)	(IR) ± 2% rdg or 2°C/4°F whichever is greater < 500°C (932°F) (type K) ± 1.5% ± 3°C/5°F	2% rdg + 2°C/4°F < 500°C (932°F) ± (2.5% rgd + 5°) > 500°C/932°F; 3% + 4°C/9°F > 500°C (932°F)
Max. Resolution	0.1°C/°F; 1°C/°F	0.1°C/°F	0.1°C/°F
Emissivity	0.95 fixed	0.1 ~ 1.00 adjustable	0.1 ~ 1.00 adjustable
Field of view (distance to target)	8:1	13:1	50:1
Dimensions	82 x 42 x 160mm	82 x 42 x 160mm	100 x 56 x 230mm
Weight	180g	180g	290g
CE	Yes	Yes	Yes

MODEL P822
pH/mV/DO/°C controller

INPUTS
Two inputs for pH, mV or Dissolved Oxygen and two inputs for temperature

OUTPUTS
- Two programmable 4-20 mA analogue outputs, 10 bit resolution, for connection to a proportional pump, a PLC or an industrial recorder
- Bi-directional RS485 output

GLP
All procedures for a Good Laboratory Practice are available

CABINET
IP65 dust and splash-proof cabinet for wall mounting

DISPLAY
- Graphical display with back light for better readability
- Shows continuously the measurements of all channels
- Real-time clock displays time and date
- HELP key at any moment to guide you with built-in manual

DATA-LOGGING
- Stores up to 1200 values including temperature, time and date at a programmable interval
- Built-in analogue recorder shows the stored measurements on graphical display
- Stores minimum/maximum readings

SPECIAL FEATURES
- No electrical interference between electrodes in the same solution
- Galvanic input/output insulation eliminates ground loop interferences
- A special timer can give alarm to interrupt the process control in case of an electrode failure
- Two-way communication with any computer using RS485
- Programmable identification number
- Password protection prevents any unauthorised access to the instrument

SPECIFICATIONS P822

Modes	pH mV Oxygen Temperature	0 ~ 14 ± 2000 mV 0 ~ 60 mg/L (0 ~ 600%) -30 ~ 130°C
Resolution	pH mV Oxygen Temperature	0.01 1 mV 0.05 mg/L (0.5%) 0.1°C (1°C: >99.9°C)
Channels	pH/mV/Oxygen Temperature	2 2 for Pt1000 (or Pt100)
Inputs		screw terminals
Temperature compensation		-30°C ~ 130°C (O_2: 0 ~ 50°C), automatic or manual
Salinity compensation	Oxygen	0 ~ 40 ppt
Accuracy	pH/mV Oxygen Temperature	0.1% ± 1 digit 1% ± 1 digit 0.3°C
Calibration	Reminder pH Buffers ISO-pH Slope mV/Oxygen Temperature	0 ~ 999 hours 1 – 2 points 9 pre-programmed 2 user specified 6 ~ 8 pH 80 ~ 120% 1 point ± 10°C
Control	On/off Proportional	Yes Yes
Display	LCD	128 x 64 pixels
GLP protocol		Yes
Real time clock		Yes
Recorder	Built-in Interval Two outputs	1200 points 1 ~ 9999 sec. 4 ~ 20 mA, programmable max. 300Ω load
RS485	Baud rate Computer	300 ~ 9600 b/s Up to 31 units via RS485/RS232 interface
Data-logging	Values Interval	1200 + °C/date/time 1 ~ 9999 sec.
Relay outputs		4 solid state 12 ~ 250 VAC/max. 0.5A
Help funtion	Languages	EN, NL, FR, DE
Identification number		Yes
Password protection		Yes
Power supply	Mains	210 ~ 250 VAC
Dimensions	W x D x H	20 x 9 x 12 cm
Weight		1.2 kg

ORDERING INFORMATION

P822 pH/mV/DO/°C Controller

Add a (#) for 115V ~ versions, e.g.: P822#

MODEL P862

Conductivity/Resistivity/ TDS/°C controller

INPUTS
Two inputs for Conductivity and two inputs for temperature

OUTPUTS
- Two programmable 4-20 mA analogue outputs, 10 bit resolution, for connection to a proportional pump, a PLC or an industrial recorder
- Bi-directional RS485 output

GLP
All procedures for a Good Laboratory Practice are available

CABINET
IP65 dust and splash-proof cabinet for wall mounting

DISPLAY
- Graphical display with back light for better readability
- Shows continuously the measurements of all channels
- Real-time clock displays time and date
- HELP key at any moment to guide you with built-in manual

DATA-LOGGING
- Stores up to 1200 values including temperature, time and date at a programmable interval
- Built-in analogue recorder shows the stored measurements on graphical display
- Stores minimum/maximum readings

SPECIAL FEATURES
- No electrical interference between electrodes in the same solution
- A special timer can give alarm to interrupt the process control in case of an electrode failure
- Two-way communication with any computer using RS485
- Programmable identification number
- Password protection prevents any unauthorised access to the instrument

SPECIFICATIONS P862

Modes	Conductivity	0 ~ 2000 mS/cm
	Resistivity	0 ~ 20 MΩ.cm
	TDS	0 ~ 100 g/L
	Temperature	-30 ~ 130°C
Resolution	Conductivity	0.01 µS/cm
	Resistivity	1 Ω.cm
	TDS	0.01 mg/L
	Temperature	0.1°C
Channels	Conductivity	2
	Temperature	2 for Pt1000 (or Pt100)
Inputs		screw terminals
Temperature compensation		-30°C ~ 130°C, automatic or manual
Accuracy	Conductivity	0.5% f.s. of range
	Temperature	0.3 °C
Calibration	Reminder	0 ~ 999 hours
	Conductivity	1 point
	Cell Constant	0.1/1/10 cm-1 ± 50%
	Temp. coef.	Natural waters (EN27888)
	Ref. Temp.	20°C or 25°C
	Cal. Solutions	0.01/0.1/1 M KCl
	Cap. Comp.	Yes
	Temperature	± 10°C
Control	On/off	Yes
	Proportional	Yes
Display	LCD	128 x 64 pixels
GLP protocol		Yes
Real time clock		Yes
Recorder	Built-in	1200 points
	Interval	1 ~ 9999 sec.
	Two outputs	4 ~ 20 mA, programmable max. 300Ω load
RS485	Baud rate	300 ~ 9600 b/s
	Computer	Up to 31 units via RS485/RS232 interface
Data-logging	Values	1200 + °C/date/time
	Interval	1 ~ 9999 sec.
Relay outputs		3 solid state 12 ~ 250 VAC/max. 0.5A
Help funtion	Languages	EN, NL, FR, DE
Identification number		Yes
Password protection		Yes
Power supply	Mains	210 ~ 250 VAC
Dimensions	W x D x H	20 x 9 x 12 cm
Weight		1.2 kg

ORDERING INFORMATION

P862 Conductivity Controller

Add a (#) for 115V ~ versions, e.g.: P862#

PH ELECTRODE

* recommended
\+ suitable

	QP101X	QP106X	QP108X	QP113X	QP115X	QP119X	QP121X	QP123X	QP125X	QP127X	QP128X	QP130X	QP132X	QP135X
Agar							*						+	
Alkaline solutions												*		
Aqueous solutions	*	*	*				*	+	+			*		
Beer, Hops	*	*	*			*	*			*	+		+	
Bio samples														
Blood	*	*	+			*	*			*				
Bread, Dough							+	*	*				*	
Cold liquids				*										
Cement	*	+	+			+	+	+	+	+		*	+	
Cosmetics	*	*	*				*	+	+	*			+	
Dairy, milk, yogurt	*	*	+				*	*	*		*		*	
Education purposes	*	*	*			+	+	+	+	+	+			
Fats, creams	+						*	*	*			+	+	
Field use	+		*	*			+	+	+		*		*	
Fish	+	+	+			+	*	*	*	+			*	
General Purpose	*	*	*	*	+	+	+	+	+		*	*		
Hydrofluoric acid														
Lab Flasks, NMR tubes						+					+			
Liquer	+									*				
Low Ionic strength	+				*					*				
Meat, cheese							*	*	*				*	
Micro samples		*				*	+	+	+					
Oil					+						+	+		+
Paint		*			+	*	*				+	+		
Sea water, swimming pools	*		*	*			+				+	+		
Soil	+	+	+					*	*					
Solvents										+				*
Surface							*							
Surfactants / detergents														
Temperature, high or varying				+								+		
TRIS						*								
Viscosity, high							*	+	+		+	*		

QP136X	QP137X	QP138X	QP150X	QP156X	QP160X	QP170X	QP174X	QP101P	QP106P	QP121P	QP127P	QP137P	QP2104T	QP2111T	QP4111T	QP4125X
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CLASSIC pH-ELECTRODES

pH-electrodes for laboratory and field

ALL SIZES AVAILABLE

Order number	QP101X	QP108X	QP113X	QP115X	QP121X	QP128X
Common specifications	pH-combination pH-range: 0..14 Shaft diameter: 12mm					
Type of Junction	Annular Ceramic	Ceramic Frit	Porous Teflon	Annular Ceramic	Porous Teflon	Cotton Replaceable
Temperature range	0..80°C	0..80°C	0..60°C	0..50°C	0..80°C	0..80°C
Shaft material	Glass	Epoxy	Epoxy	Glass	Epoxy	Epoxy
Shaft length	120mm	120mm	120mm	120mm	120mm	120mm
Reference system	Ag/AgCl	Ag/AgCl	Ag/AgCl	Calomel	Ag/AgCl	Ag/AgCl
Reference electrolyte	KCl/AgCl	Gel	Solid Gel	KCl/AgCl	Gel	KCl/AgCl
Cable and Connector	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, BNC
Application group	Routine, general purpose, agriculture, aquarium	Routine, general purpose, agriculture, aquarium	Cold water, drinking water, swimming pool	Low conductivity water	General purpose, agar, paper, cosmetics, viscous liquids	Polluting samples, colloids, sludge's, fat, cream, diary products

CLASSIC pH-ELECTRODES

- pH-electrodes for laboratory and field
- Puncture pH-electrodes
- For solids and semi solids
- Bio samples

Order number	QP106X	QP119X	QP123X	QP125X	QP132X	QP137X
Common specifications	pH-combination pH-range: 0..14					
Type of Junction	Ceramic Frit	Ceramic Frit	Ceramic Frit	Porous Teflon	Annular Ceramic	3x Ceramic Frit
Temperature range	0..80°C	0..80°C	0..80°C	0..80°C	0..80°C	0..80°C
Shaft material	Glass	Glass	Glass	Epoxy	Epoxy	Glass
Shaft length	A=90mm	A=90mm	A=40mm	120mm	A=60mm	120mm
Shaft diameter	4.5mm	4.5mm	6mm	10mm	35mm (blade)	12mm
Reference system	Ag/AgCl	Calomel	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Reference electrolyte	KCl	KCl	KCl/AgCl	KCl/AgCl	Gel	KCl/AgCl
Cable and Connector	S7	S7	1m, BNC	1m, BNC	1m, BNC	1m, BNC
Application group	Micro samples, titre plates, tubes, vials	TRIS buffers, biological samples, enzymes	Meat, cheese, dough, bread, diary products	Meat, cheese, dough, diary products, soil	Food, meat, fruit, frozen materials	Surfactants detergents, soil, sludge's

CLASSIC pH-ELECTRODES

- **Electrodes for ProLine, ProLine Plus**
- **Electrodes for SenseLine, SenseLine Plus**
- **Temperature probe**

Order number						
ProLine (Plus)	**QP2104T**	**QP2111T**	**QM2700T**			
SenseLine (Plus)				**QP4111T**	**QP4111T10**	**QP4125X**
Common specifications	pH-combination pH-range: 0..14					
Type of Junction	Annular Ceramic	Ceramic Frit		Ceramic Frit	Ceramic Frit	Porous Teflon
Temperature range	0..80°C	0..80°C	-30..130°C	0..80°C	0..80°C	0..80°C
Temperature probe	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	
Shaft material	Glass	Epoxy	PTFE	Epoxy	Epoxy	Epoxy
Shaft length	120mm	120mm	120mm	120mm	120mm	120mm
Shaft diameter	12mm	12mm	3mm	12mm	12mm	10mm
Reference system	Ag/AgCl	Ag/AgCl		Ag/AgCl	Ag/AgCl	Ag/AgCl
Reference electrolyte	KCl	Gel		Gel	Gel	KCl/AgCl
Cable and Connector	1m, BNC-Cinch/RCA	1m, BNC-Cinch/RCA	1m, BNC-Cinch/RCA	1.8m, BNC-Cinch/RCA (IP67)	10m, BNC-Cinch/RCA (IP67)	1m, BNC-Cinch/RCA
Application group	Routine, general purpose, agriculture, aquarium	Routine, general purpose, agriculture, aquarium	General purpose	Routine, general purpose, agriculture, aquarium	Routine, general purpose, agriculture, aquarium	Meat, cheese, diary products, soil

WHEN `SIZE` IS NOT AN ISSUE – REACHING THE UNREACHABLE

Long... or short

Thick... or thin

Order number	QP138X	QP156X	QP160X	QP170X	QP174X
Common specifications	pH-combination pH-range: 0..14				
Type of Junction	Ceramic Frit	Ceramic Frit	Ceramic Frit	Annular Ceramic	Cotton Replaceable
Temperature range	0..80°C	0..130°C	0..130°C	0..80°C	0..80°C
Shaft material	Glass	Glass	Glass	Glass	Epoxy
Shaft length	A=180mm	260mm	425mm	250mm	300mm
Shaft diameter	3.7mm	12mm	12mm	8mm	12mm
Reference system	Ag/AgCl	Ag^+ trap	Ag^+ trap	Ag/AgCl	Ag/AgCl
Reference electrolyte	KCl/AgCl	KCl-gel	KCl-gel	KCl	KCl/AgCl
Cable and Connector	1m, BNC	S7	S7	1m, BNC	1m, BNC
Application group	NMR tubes, reactors, flasks, vials	Biological reactors, chemical reactors, acid & alkalines, Sulphides	Biological reactors, chemical reactors, acid & alkalines Sulphides	Routine, reactors, flasks	General purpose, viscous samples, gelatin

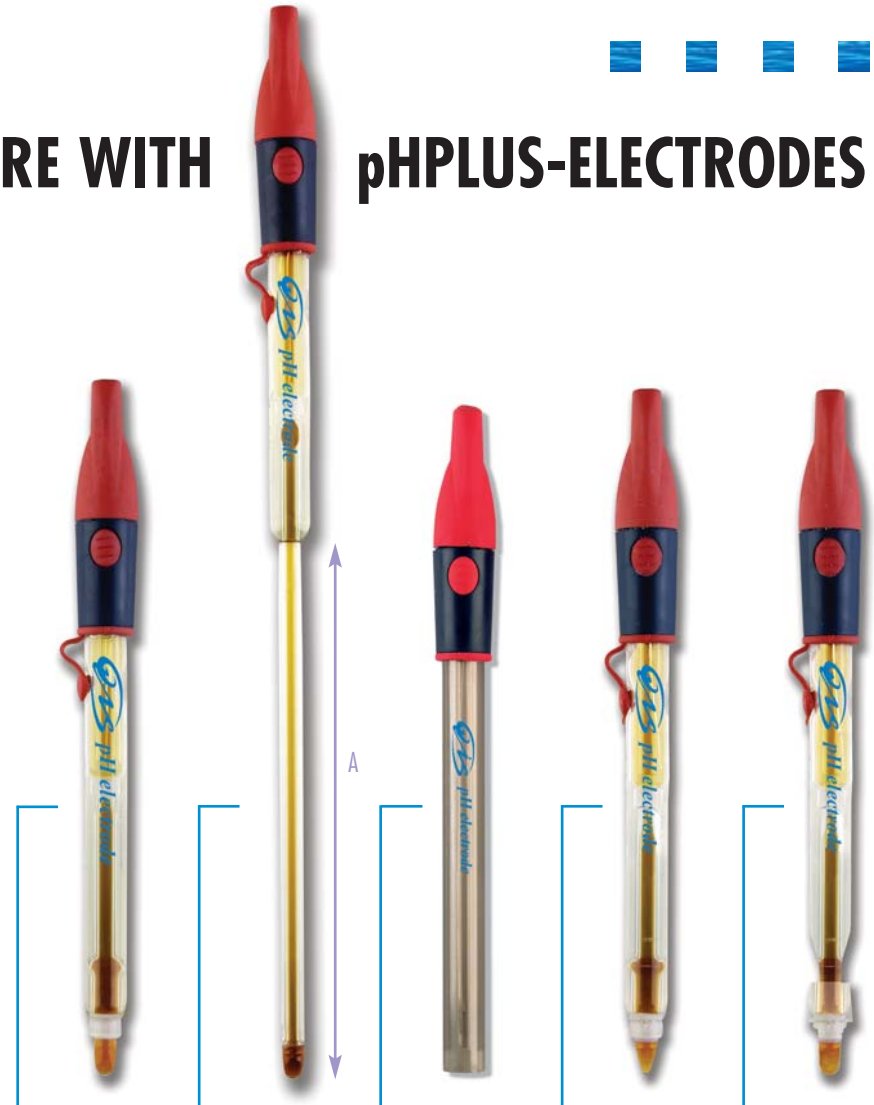
EXTREMES

- For harsh pH measurements
- Small sodium error above pH 12
- Maximum accuracy in difficult samples
- Solvents

Order number	QP127X	QP130X	QP135X	QP136X	QP150X	QP155X
Common Specifications	pH-combination pH-range: 0..14					
Type of Junction	Ground Sleeve	Porous Teflon	Annular Ceramic	Annular Ceramic	Ceramic Frit	Ceramic Frit
Temperature range	0..80°C	0..130°C	0..80°C	0..80°C	0..130°C	0..80°C
Shaft material	Glass	Glass	Glass	Glass	Glass	Glass
Shaft length	120mm	120mm	120mm	120mm	120mm	120mm
Shaft diameter	12mm	12mm	12mm	12mm	12mm	12mm
Reference system	Ag/AgCl	Double Junction Ag/AgCl	Double Junction Ag/AgCl	Ag/AgCl	Ag^+ trap	Double Junction Ag/AgCl
Reference electrolyte	KCl	KCl-Gel	LiCl-Gel	KCl	KCl-gel	Sat. LiCl/MeOH
Cable and Connector	1m, BNC	1m, BNC	S7	1m, BNC	S8	S7
Application group	Blood, emulsions, liqueur, low ionic strength, paint, soil, emulsions, suspensions, TRIS buffers, yogurt	High or low pH samples, small Na-error, gelatin, glucose	Non-aqueous media, solvents	Hydrofluoric acid	Biological reactors, chemical reactors, fermentation, acid & alkalines	Solvents, lab reactors

SENSING THE FUTURE WITH pHPLUS-ELECTRODES

- **For all brands of pH-instruments**
- **Fast response**
- **Maximum stability at quick changing temperatures**



Quick Response due to pHPlus

Temperature changes cause unstable potentials at the lead-off elements. A result of this is a prolonged response time. The pHPlus is a special designed reference system, so pH and reference potentials stabilize rapidly and simultaneously. pHPlus guarantees shortest response times despite large changes in temperature.

pH electrodes of all types show good linearity over the pH range. pHPlus assists the user to make reliable measurements as there is no hysterises (memory) effect caused by variations in temperature.

Order number	QP101P	QP106P	QP121P	QP137P	QP127P
Common specifications	pH-combination pH-range: 0..14				
Type of Junction	Annular Ceramic	Ceramic Frit	Porous Teflon	Annular Ceramic	Ground Sleeve
Temperature range	0..100°C	0..100°C	0..90°C	0..100°C	0..100°C
Shaft material	Glass	Glass	Epoxy	Glass	Glass
Shaft length	120mm	A=90mm	120mm	120mm	120mm
Shaft diameter	12mm	4.5mm	12mm	12mm	12mm
Reference system	pHPlus	pHPlus	pHPlus	pHPlus	pHPlus
Reference electrolyte	KCl	KCl	KCl	KCl	KCl
Cable and Connector	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, BNC
Application group	General purpose, alkaline solutions, hops/beer, seawater	General purpose, micro samples, alkaline solutions, hops/beer, seawater	General purpose, alkaline solutions, hops/beer, seawater	Field, penetration, photo baths, milk, soil	Blood, emulsions liqueur, low ionic strength, paint, soil, emulsions, suspensions, TRIS buffers, yogurt

REFERENCE CELLS

- Various forms and possibilities
- Fundamental research
- Specialties

Order number	QM710X	QM711X	QM712X	QM713X	QM714X	QM716X
Common specifications	Half-cells					
Type of Junction	Ceramic Frit	Ceramic Frit	Ceramic Frit	Ceramic Frit	Porous Teflon	Ceramic Frit
Temperature range	0..80°C	0..80°C	0..80°C	0..80°C	0..100°C	0..80°C
Shaft material	Glass	Epoxy	Glass	Glass	Epoxy	Glass
Shaft length	120mm	120mm	120mm	120mm	120mm	50mm
Shaft diameter	12mm	12mm	12mm	12mm	12mm	6mm
Reference system	Ag/AgCl	Ag/AgCl	Calomel Hg/HgCl2	Double junction Ag/AgCl	Double junction Ag/AgCl	Ag/AgCl
Reference electrolyte	3M KCl with sat. AgCl	3M KCl with sat. AgCl	Sat. KCl	3M KCl with sat. AgCl	3M KCl with sat. AgCl	3M KCl Gel with sat. AgCl
Cable and Connector	1m, banana plug	1m, banana plug	1m, banana plug	1m, banana plug	1m, banana plug	1m, banana plug
Application group	General purpose Ion Selective	General purpose	General purpose, voltammetry, Ion Selective	General purpose, voltammetry	General purpose, hot liquids	General purpose, Bio-cells

REFERENCE CELLS

- Various forms and possibilities
- Fundamental research
- Specialties

Order number	QM720X	QM730X	QM731X	QM740X	QM742X	QM750X
Common specifications	Half-cells					
Type of Junction	Ceramic Frit	Ground Sleeve	Ceramic Frit	Ceramic Frit	Ceramic Frit	Ceramic Frit
Temperature range	0..80°C	0..80°C	0..100°C	0..60°C	0..60°C	0..80°C
Shaft material	Glass	Glass	Glass	Glass, NS14,5	Glass, NS14,5	Glass
Shaft length	200mm	A=145mm	120mm	A=80mm	A=80mm	260mm
Shaft diameter	12mm	12mm	12mm	8mm	8mm	12mm
Reference system	Ag/AgCl	Double junction	pHPlus	Hg/HgO	Hg/Hg_2SO_4	Ag/AgCl
Reference electrolyte	KCl with sat. AgCl	Ag/AgCl 3M KCL	Sat. KCl	Sat. K_2SO_4	0.1M KOH	3M KCl with sat. AgCl
Cable and Connector	1m, banana plug	S7	S7	S7	S7	S8
Application group	General purpose, reactors	General purpose Low ionic strength, emulsions, dirty sample	General purpose, fast changing temperature	Voltammetry, Chloride free	Voltammetry, Chloride free	General purpose, reactors

REDOX-ELECTRODES

- Measures Redox potential
- Platinum, gold and silver electrodes
- Combination or Half-cell
- Karl-Fisher
- For all types of instruments

Order number	QR400X	QR402X	QR406X	QR408X	QR410X	QR411X
Common specifications	Range: ± 2000mV Combination				Half cell	Half cell
Type of Junction	Ceramic Frit	Annular Ceramic	Annular Ceramic	Annular Ceramic	Annular Ceramic	
Temperature range	0..80°C	0..80°C	0..80°C	0..80°C	0..80°C	0..80°C
Shaft material	Epoxy	Glass	Glass	Glass	Glass	Glass
Shaft length	120mm	120mm	120mm	120mm	120mm	120mm
Shaft diameter	12mm	12mm	12mm	12mm	12mm	12mm
Metal	Platinum pin	Platinum pin	Platinum ring	Silver billet	Platinum pin	Double platinum
Reference system	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl		
Reference electrolyte	Gel	KCl/AgCl	KCl/AgCl	Gel		
Cable and Connector	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, 4mm banana	1m, 4mm banana
Application group	General purpose	General purpose	General purpose	Silver Halide titration	General purpose	Karl Fischer titrations

CLASSIC CONDUCTIVITY ELECTRODES

- **General purpose**
- **For instruments from other manufacturers**

Order number	QC200X	QC214X	QC205X	QC212X	QC226X	QC230X
Common specifications	Shaft length: 120mm					
Measuring range	0-12mS/cm	0-12mS/cm	0-200mS/cm	0-100mS/cm	0-2mS/cm	0-300mS/cm
Temperature range	0..60°C	0..60°C	0..100°C	0..100°C	0..100°C	0..100°C
Cell constant	1.0	0.1	1.0	1.0	0.1	10
Shaft material	Epoxy	Epoxy	Glass	Glass	Glass	Glass
Shaft diameter	12mm	12mm	12mm	6mm	12mm	12mm
Cell type	2 graphite poles	2 graphite poles	2 platinum poles	2 platinum poles	2 platinum poles	2 platinum poles
Cable and Connector	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, BNC	1m, BNC
Application group	General purpose, water, education, drinking water, sewer	Low Ionic samples	General purpose	Glass tubes, micro samples	Ultra pure water resistant media	Very strong acids/ base, High conductivity (salinity)

PRESENT, FUTURE AND..... STATE OF THE ART

for QiS benchtop and portable instruments

- 4-pole cell technology
- Integrated temperature sensors
- USP probe

Order number ProLine (Plus) SenseLine (Plus)	QC2210T	QC2240T	QC2260T	QC4460T	QC4460T10	QA853X
Common specifications	Shaft length: 120mm / Shaft diameter: 12mm					For more accurate measurements in ultra pure water the glass flow-through cell would be recommended. (electrode not included)
Measuring range	0.01-500mS/cm	0.001-500µS/cm	0.01-1000mS/cm	0.05-1000mS/cm	0.05-1000mS/cm	
Temperature range	0..100°C	0..70°C	0..100°C	0..105°C	0..105°C	
Temperature probe	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	NTC 30kΩ	
Cell constant	0.56	0.08	0.56	0.56	0.56	
Shaft material	Glass	PVC/Steel V4A	Epoxy	Epoxy	Epoxy	
Cell type	4 platinum poles	2 steel poles	4 graphite poles	4 graphite poles	4 graphite poles	
Cable and Connector	1m, mini-DIN	1m, mini-DIN	1m, mini-DIN	1.8m, LTW (IP67)	10m, LTW (IP67)	
Application group	Wide conductivity range	Ultra pure water	Wide conductivity range	Field use, Wide conductivity range	Field use, Wide conductivity range	

OXYGEN ...

WHAT WOULD WE DO WITHOUT IT!

- **Specifically for QiS instruments**
- **Polarographic type**
- **Galvanic type**

Order number SenseLine (Plus) Controller P822	QD2400T	QD2400T10	QD303T	QD304T
Measuring range	0..200% 0..20mg/l	0..200% 0..20mg/l	0..600% 0..60mg/l	0..600% 0..60mg/l
Temperature range	0..60°C	0..60°C	0..50°C	0..50°C
Temperature probe	NTC 30kΩ	NTC 30kΩ	Pt1000	Pt1000
Shaft Length	12mm	12mm	12mm	12mm
Shaft Diameter	120mm	120mm	120mm	120mm
Shaft material	PPS	PPS	Epoxy	Epoxy
Cable and Connector	1.8m, LTW (IP67)	10m, LTW (IP67)	1m, BNC	1m, BNC/PG13.5
Membrane kit Electrolyte, 100ml Zero solution, 100ml	**QA1800X QA1804X QA802X**	**QA1800X QA1804X QA802X**	**QA800X QA1804X QA802X**	**QA800X QA1804X QA802X**

Dissolved Oxygen Accessories

QA1800X
Spare membranes for QD2400T (set of 3)

QA803X
BOD adapter

QA1804X
Oxygen electrolyte,100 ml

QA802X
Oxygen zero solution, 100 ml

QA803X
BOD adapter

QA800X
Spare membrane set of 3

FERMENTATION...

BIOREACTOR ELECTRODES

- Autoclavable and steam sterilisable
- pH
- Conductivity
- Redox
- Temperature

SterProbe
The SterProbe series of electrodes are designed for use in benchtop fermentors, installed either vertically or through a side port in fermentors and reactors. The SterProbe will withstand repeated sterilization in a separate autoclave or in-situ steam sterilization cycles.

Silver Ion Trap
The electrolyte in conventional Ag/AgCl reference systems must be saturated with silverchloride. With critical media this will result in the diaphragm being contaminated with silversulfide.
This can not happen with the SterProbe Silver Ion Trap, ensuring that the electrolyte remains absolutely free from silver.

Order number (with probe length)	pH	EC	Redox	ATC
120mm	**QP150X**	**QC250X**	**QR450X**	**QM762T**
210mm	**QP152X**	**QC252X**	**QR452X**	**QM764T**
225mm	**QP154X**	**QC254X**	**QR454X**	**QM766T**
260mm	**QP156X**	**QC256X**	**QR456X**	**QM768T**
325mm	**QP158X**	**QC258X**	**QR458X**	**QM770T**
425mm	**QP160X**	**QC260X**	**QR460X**	**QM772T**
Common specifications	0..135°C			
Type of Junction	Frit		Annular Ceramic	
Shaft material	Glass	Glass	Glass	Glass
Shaft diameter	12mm	12mm	12mm	12mm
Reference system	Ag Trap		Ag Trap	
Reference electrolyte	Gel		Gel	
Cable and Connector	S8	S8	S8	S8
Electrode specifics	pH-range: 0..14	K=1.00 0..200mS/cm 2 platinum plates	Platinum stift 0..1000mV	Pt1000

Convertor QA817X

The QA817X is an inexpensive means to upgrade an existing pressurised electrode housing to use the SterProbe line of electrodes. The QA817X is mounted on the lower portion of the 764 serie-pressurised housings and only takes a few minutes. The QA817X is entirely of 316 SS and will withstand rugged service and corrosive environments.

FERMENTATION...

BIOREACTOR ELECTRODES

- **Dissolved Oxygen**
- **Polarographic type**

DO-SterProbe 316SS
QiS Steam Sterilisable dissolved oxygen electrodes are designed for fermentation where it is necessary to subject electrodes to repeated in-situ sterilization or sterilization in a separate autoclave.
They are of the polarographic Clark type and are compatible with most O2 amplifiers found in fermentation or with amplifiers that are designed to be used with Ingold dissolved oxygen electrodes.

Membrane
The easily replaced electrode membrane cartridge is an unique feature of the DO-SterProbe. The membrane is of special construction – a silicone/PTFE composite, reinforced with Stainless steel mesh.

Order number (with probe length)				
120mm	DO **QD750X**	DO **QD1212X**	DO **QD1912X**	DO **QD2512X**
220mm	**QD752X**	**QD1222X**	**QD1922X**	**QD2522X**
320mm	**QD754X**	**QD1232X**	**QD1932X**	**QD2532X**
420mm	**QD756X**	**QD1242X**	**QD1942X**	**QD2542X**
Common specifications	Cathode: Platinum Anode: Silver	Stability: better than 2% Response: 98% 60 seconds		
Shaft material	Glass	316 SS	316SS	316SS
Shaft diameter	12mm	12mm	19mm	25mm
ATC	No	No	No	No
Temperature range	0..60°C	0..80°C	0..80°C	0..80°C
Sterilisation temp.	130°C	130°C	130°C	130°C
Polarising voltage	680mV	680mV	680mV	680mV
Output	25..50nA	25..50nA	25..50nA	25..50nA
Residual signal	< 1nA	< 1nA	< 1nA	< 1nA
Accessories				
Membrane kit (3pcs.)	**QA812X**	**QA812F**	**QA812F**	**QA812F**
Electrolyte 125ml	**QA813X**	**QA813F**	**QA813F**	**QA813F**
1m cable, no connector	**QA810X**	**QA810F**	**QA810F**	**QA810F**
3m cable, no connector	**QA811X**	**QA811F**	**QA811F**	**QA811F**

EasyFit QA816X

The QA816X is designed to fit the standard 25mm entry ports found on nearly all fermentation vessels, large or small. This 316L SS housing except an electrode with PG 13.5 threaded cap such as the SterProbe range. The QA816X accepts electrodes with an insertion length of 120mm (e.g. QP150X). Housings for longer electrodes are available upon request.

AQUASENSE – pH & ORP ELECTRODES

- Wastewater
- Drinking water
- Effluent
- Swimming pools
- Agriculture

RefSat electrolyte: RefSat electrolyte is a polymer electrolyte gel saturated with KCl and solid KCl rings for stable long term readings.
Electrodes with RefSat electrolyte are maintenance free and cost effective.

Solid Gel: The Solid Gel retains the salts and maintains the zero potential for a much longer period of time. The mechanical strength of the gel enables the use of a junction with a large bore, thus providing minimum liquid junction potentials. Solid Gel electrodes are specially designed for cold water applications.

Order number	QP180X	QP180XG	QP182X	QP180XS	QR480X	QR481X
pH-Sensor	•	•	•	•		
Redox-Sensor					Pt	Pt
Temperature range	0..80°C	0..100°C	0..80°C	0..60°C	0..100°C	0..80°C
Range	0..14pH	0..14pH	0..14pH	0..14pH	0..2000mV	0..2000mV
Pressure range [bar]	4	6	4	5	7	4
Type of Junction	Frit	Annular Ceramic	Frit	Porous Teflon	Annular Ceramic	Frit
Shaft material	Epoxy	Glass	Epoxy	Epoxy	Glass	Epoxy
Shaft diameter	12mm	12mm	12mm	12mm	12mm	12mm
Shaft length	120mm	120mm	80mm	120mm	120mm	120mm
Reference system	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Electrolyte	RefSat	RefSat	Gel	Solid Gel	RefSat	RefSat
Cable and Connector	S8	S8	3m, BNC	S8	S8	S8

- Process applications
- Paper
- Wastewater
- Drinking water
- Effluent
- Swimming pools
- Agriculture
- Effluent
- Extreme conditions

CONSENSE – CONDUCTIVITY ELECTRODES

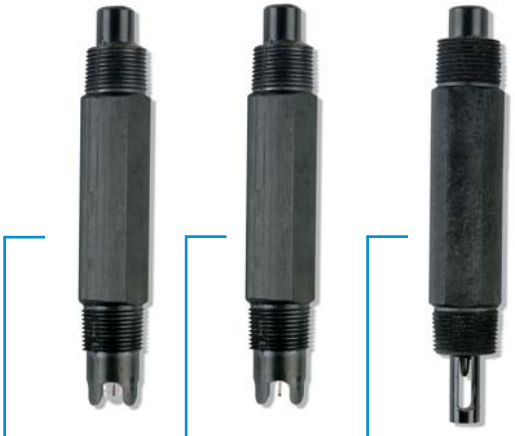
Order number	QC280X	QC281X	QC282X	QC302X	QC304X	QC306X
Cell constant	1,0	1,0	0,1	0,01	0,1	1,0
Range	0..200mS/cm	0..200mS/cm	0..2mS/cm	0..50µS/cm	0..500 µS/cm	0..5000 µS/cm
Temperature range	0..100°C	0..60°C	0..100°C	0..50°C	0..50°C	0..50°C
Pressure range [bar]	5	5	5	5	5	5
Shaft material	Glass	Glass	Glass	PVC	PVC	PVC
Shaft diameter	12mm	12mm	12mm			
Shaft length	120mm	120mm	120mm	A=40mm	A=18mm	
Cell type	2 platinum poles	2 platinum poles	2 platinum poles	2 x 316SS rods	2 x graphite rods	2 x graphite rods
Cable and Connector	S8	S8	S8	3m cable, no connector	3m cable, no connector	3m cable, no connector
Electrode specifics				1/2 "thread	1/2 "thread	1/2 "thread

SUBMERSIBLE ELECTRODE ASSEMBLIES

- Settling basis
- Effluent treatment plants
- Tanks
- Canals
- Open Vessels

SUBMERSIBLE ELECTRODE ASSEMBLY

The submersible electrode assembly QA880X is intended for industrial pH en ORP measurements and is available with ATC. The combination electrode is replaceable and can be changed in a few minutes. The electrode is constructed with a sealed, gel-filled reference which requires no filling. It features an porous Teflon junction which will allow operation in a solution that would normally foul a standard electrode. The probe assembly is available either in a complete submersion assembly or as the electrode holder and the electrode separately. The electrode can be easily mounted onto the 1/2 " NPT threaded pipe with a total length of 120cm.



Order number	QP184X	QR483X	QC288X
Temperature range	0..100°C	0..60°C	0..60°C
Range	0..14pH	0..2000mV	0..12mS
Specifics		Pt-stift	K=1.0 2 graphite plates
Pressure range [bar]	6	6	10
Type of Junction	Porous Teflon	Porous Teflon	
Shaft material	Ryton	Ryton	Ryton
Shaft diameter	25.9mm	25.9mm	25.9mm
Shaft length	150mm	150mm	150mm
Reference system	Ag/AgCl	Ag/AgCl	2 graphite poles
Cable and connection	5m, no leads	5m, no leads	5m, no leads

ORDERING INFORMATION

QA880X	PVC submersion holder with electrode holder, length 120cm
QP184X	pH-electrode, 5m cable without ATC
QP184T	pH-electrode, 5m cable with ATC (PT1000)
QR483X	Redox-electrode, 5m cable without ATC
QR483T	Redox-electrode, 5m cable with ATC (PT1000)
QC288X	EC-electrode, 5m cable without ATC
QC288T	EC-electrode, 5m cable with ATC (PT1000)

IN-LINE REPLACEABLE ELECTRODE ASSEMBLY

USED WHEN ELECTRODE REPLACEMENT IS FREQUENT

PIPES, TANKS, CANALS, VESSELS

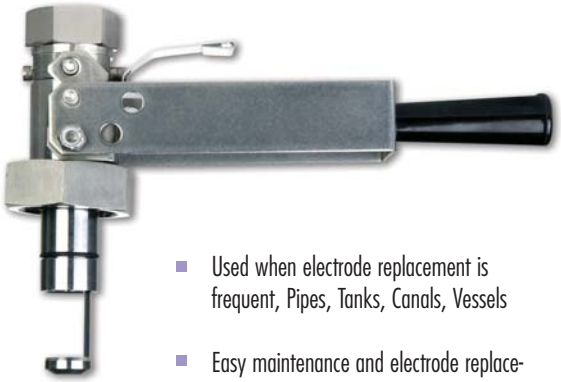
IN-LINE REPLACEABLE ELECTRODE ASSEMBLY

- Used when electrode replacement is frequent, Pipes, Tanks, Canals, Vessels
- Easy maintenance and electrode replacement
- Requires no tools
- 1/2" MNPT thread and is made in PEEK
- Guard protection of the pH membrane
- Probe insertion is 1" from the thread by 1/2" diameter
- Accepts all 12 x 120mm electrodes with S8 connection

ORDERING INFORMATION

QA895X	Replaceable electrode assembly, PEEK
Fits the following pH-electrodes:	
QP150X	pH-electrode, Ag/AgCl, glass, 0-135°C, 12 x 120mm, 10bar
QP180X	pH-electrode, Ag/AgCl, epoxy, 0-80°C, 12 x 120mm, 4bar
QP180XG	pH-electrode, Ag/AgCl, glass, 0-100°C, 12 x 120mm, 6bar

IN-LINE RETRACTABLE ELECTRODE ASSEMBLY



- Used when electrode replacement is frequent, Pipes, Tanks, Canals, Vessels
- Easy maintenance and electrode replacement without interrupting the process flow
- Accepts all 120mm x Ø12mm electrodes with S8 connector electrodes
- Utilises standard Ingold™ 25mm port system, a unique gimbal mounting and o-rings with a low compression set
- The majority of the components are constructed of 316L stainless steel

ORDERING INFORMATION

QA890X	Retractable electrode assembly
Fits the following pH-electrodes:	
QP150X	pH-electrode, Ag/AgCl, glass, 0-135°C, 12 x 120mm, 10bar
QP180X	pH-electrode, Ag/AgCl, epoxy, 0-80°C, 12 x 120mm, 4bar
QP180XG	pH-electrode, Ag/AgCl, glass, 0-100°C, 12 x 120mm, 6bar
QD1212X	DO-electrode, 316SS, 0-80°C, 12 x 120mm

ION SELECTIVE TYPES

MONO - ION SELECTIVE ELECTRODES

Mono Ion Selective electrodes need a separate reference. Like the directIon electrodes they are very simple to use and are ideal for applications where high accuracy is required, particularly where ion levels are low.
Mono Ion Selective electrodes are used for general applications (ASTM, EPA, NEN etc..) and education.

DIRECTION - SELECTIVE ELECTRODES

DirectIon electrodes are rugged solid state sensors with built in driTek Teflon double junction references that do not require regularly refilling, no membrane replacement and little operator maintenance.
Advantages:

- Can be stored dry
- Fully submersible
- Integrated reference electrode
- Robust and rugged
- Can be left dry for long term storage

DirectIon electrodes are extremely useful for general straight forward applications, biotech applications and field use (river-, well-, drinking-, soil-, pond-, sewer- waters).

FLOW PLUS - ION SELECTIVE ELECTRODES

The solid state sensor provides rapid analysis as it does not require preconditioning or an internal solution. Its shelf life is also longer than for standard ISE's.

The Flow Plus reference system has a liquid junction provided by a conical plug, which is opened or closed by rotation of the electrode cap. The wider the gap between the plug and the epoxy body the faster the flow of electrolyte from the electrodes liquid junction.

The electrolyte passes over a rounded, polished, solid state ISE incorporated into the electrodes inner shaft. The internal ISE varies in type according to the Ion being used as the sensor. The electrolyte and the internal ISE therefore always have the same potential and contact is made between the two ISE's by the flowing electrolyte.

For low ionic strength or viscous samples best results are achieved with increased flow. For normal applications the flow is limited so as to maintain the electrolyte level for longer periods.

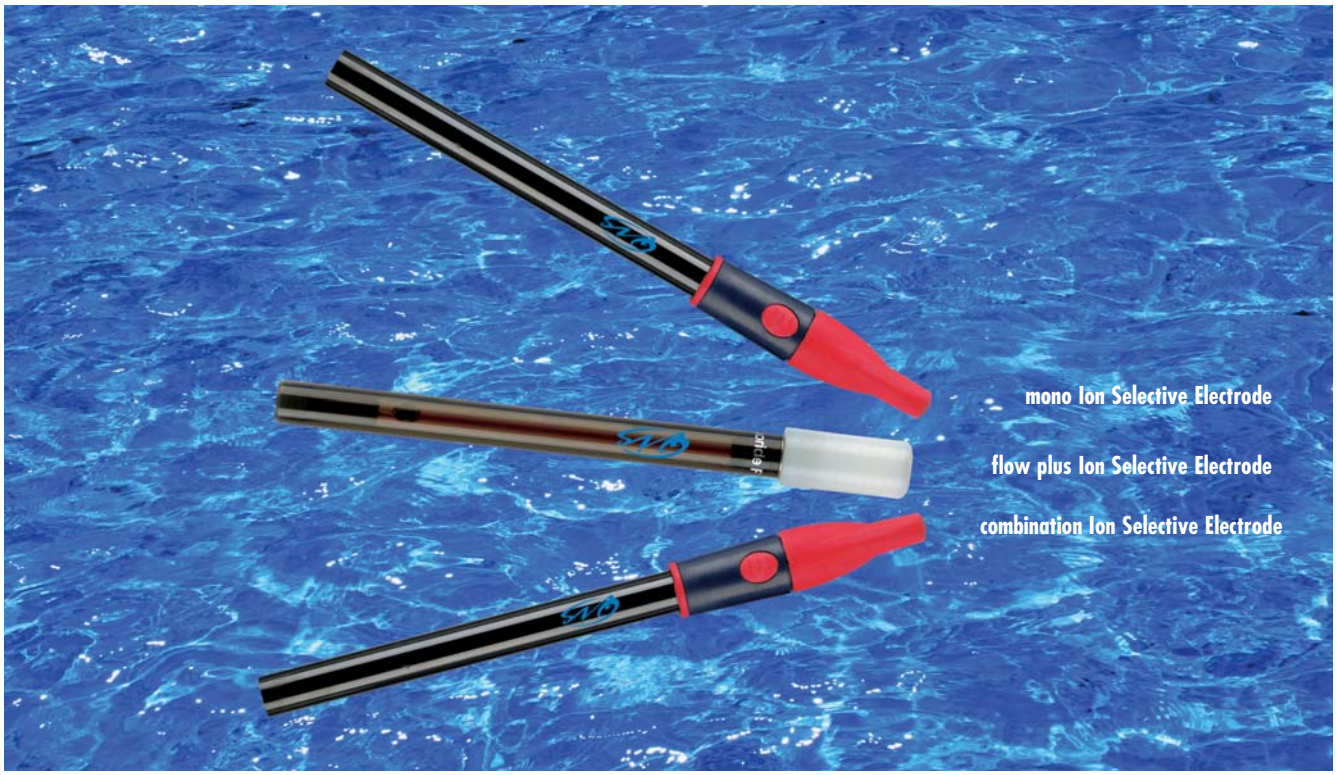
Flowplus combination ISE's have several technical advantages over conventional combination electrodes. These are clearly demonstrated upon use of the electrodes in real situations with awkward samples or in cases where stability, response times or drift cause a problem.

GAS SENSING ION SELECTIVE ELECTRODES

This electrode responds to dissolved gases in solution. The dissolved gas diffuses across the membrane into a small volume of buffer, specific for each electrode. Reaction of the gas with the buffer causes a pH change sensed by an external glass combination pH-electrode. Ammonia is among the species measured by this type of electrode.

CONNECTOR & CABLE

The Ion Selective Electrodes are suited for every brand mV and / or ION meter. They are standard supplied with 1m cable and a BNC connector. Other cable lengths or connectors are available upon request (see page 51 for connector types).



HOW TO USE ISE'S

INTRODUCTION TO ION SELECTIVE MEASUREMENT

Analysis with Ion Selective Electrodes (ISE) is a simple and straightforward process, provided a few basic facts are understood and a few rules are followed. Anyone who has made a pH measurement with a conventional glass membrane electrodes has already used the oldest and still the best ISE available and most analysis with other ISE's are almost as simple. However the Hydrogen ion, H^+, is rather an unique species in electrochemistry and the pH-electrode consequently, has only a few shortcomings. It is usually only necessary to check the electrodes in a standard buffer solution, dip it into a sample solution and read the pH. While this latter value is not, strictly speaking, the concentration of hydrogen ions its meaning and usefulness have developed through use and familiarity to the point where is has become the important parameter.
Thus a knowledge that the hydrogen ion concentration of a sample is 1.04×10^{-4}M is not now as useful as knowing that is has a pH of 4.

Ion Selective Electrodes are not that ideal as a pH-electrode in their response, do not have the same practical measuring range and are subjected to varying degrees of interferences by other ions. Likewise the discrepancy between the measured "activity" and the widely understood "concentration" is not only greater, but the latter parameter is the one of significance in most real analyses. Thus a pCa of 3 does not have the same significance to a chemist as the concentration value of 1.06×10^{-3} moles per litre or 42.5ppm.

SELECTIVITY AND INTERFERENCES

ISE are, as their name implies, selective rather then specific for the particular ion. Thus a Potassium selective electrode responds not only to the activity of Potassium ions in solution but also to some fraction of the Sodium ions also present. The selectivity of an ion is expressed as the Selectivity Coefficient "K". The smaller the value of "K" the more selective that electrode is to Potassium, i.e. the better it is.

Practical Guide Line

Well, fear not, here is a purely practical guide to performing ion analysis in the real world in "boffin free" language.

The Equipment you need:

1. An ION meter (model M370 & F470) or mV meter (B210).
2. An ION Selective Electrode (see page 46-47).
3. Calibration Standards (see page 46-47).
4. ISA solution if necessary (see section "Ionic Strength Adjustment").
5. Bottle of water.

WHAT CAN I MEASURE AND WHERE?

1. The sample must be water based.
2. If not, it must be soluble in water.
3. Sample must not be too hot or too cold (between 0-40°C).
4. Sample must not dissolve PVC.
5. Sample must have a ION concentration within the range as shown on page 46-47.
6. The pH of the sample must be within the specified limits as shown on page 46-47.
7. The sample should not contain significant amount of the interfering ions given on page 46-47.

CALIBRATION STANDARD

The way you calibrate the meter depends on how accurate you require the results to be. If you only require a rough guide and not an exact concentration of the ion in solution, you only need to use one standard. For best performance you require at least 3 standards.

SOME USEFUL TIPS:

1. If you are only using one standard try and ensure that it is as close as possible to the concentration of the samples.
2. For a multi-point calibration curve, take the recommended standard solution (see page 46-47) and dilute the standard in 10 fold (e.g. 1000 - 100 - 10 mg/l).
3. Your standards should always be under similar conditions as your samples (e.g. if your samples are at 40°C, your standards should also be at 40°C).
4. Start with your highest standard, measure, rinse the electrode, middle standard, measure, rinse the electrode etc.

IONIC STRENGTH ADJUSTMENT

Ionic strength is the total concentration of all ions in your sample. The greater the number of ions in solution the less active the individual ions are. The outcome of this is that e.g. you will get a higher result for say 100ppm nitrate sample in spring water then a 100ppm nitrate sample in sea water using the same standards and no Ion Strength Adjustment.
We can eliminate the problem completely by making the total Ionic Strength of all samples and standards the same.
We can do this by adding a small volume of a concentrated inert solution to each standard and sample. This is usually 2ml of ISAB (Ion Strength Adjustment Buffer) to 50ml of standard and sample. See page 46-47 for the correct ISAB to use.

Sometimes you cannot or do not have to use an ISAB. These situations are given below:

1. When accuracy is not required.
2. When sample ionic strength are low e.g. 100mg/l and less.
3. When concentrations of the samples are all low and you cannot afford to loose sensitivity by adding ISAB.
4. When you cannot add an ISAB e.g. in the sea. It is often possible to make sure that the standard mimics the sample thereby eliminating the problem e.g. add salt to the sample.

TEMPERATURE

Always operate ISE's between the specified temperature (see page 46-47) and make sure standards and samples are at the same temperature.
Automatic Temperature Compensation, like for pH, is not possible with ISE. Each electrode has a specific Isopotential point and all instruments are programmed with the Isopotential point for pH. The Isopotential points for the ISE can not (yet) be set into the instruments.

INTERFERENCES

ISE's are not perfect. They do suffer interferences from other ions to a greater or lesser degree. If there is an ion present in the samples that is listed as an interferent then you need to think about a few points:

1. If the ions you are measuring are greater in concentration than the interferent you can usually ignore it.
2. In many instances interfering ions can be eliminated using chemicals e.g. removing sulphate ions by adding Barium Chloride.
3. You can use incremental techniques e.g. Known Addition.

ION SELECTIVE ELECTRODES

The Measurement

1. Select the necessary equipment
2. Make sure your samples meet the criteria given
3. Calibrate your instrument by making the calibration curve
4. Measure the standards by reading the mV-value and plot it against the concentration. With an ION meter the calibration curve will be saved into the memory of the Ion meter.
5. Add ISA, if necessary, to your standards and samples
6. Mix the solution well. Before measurement stop stirring, wait for stable signal and measure.
7. Make sure your samples are in the middle of the calibration curve. If necessary dilute your sample.
8. Measure your samples and take the mV readings. Compare this in the calibration plot and you will find the concentration of your samples or in case of an ION meter you will get a direct concentration reading of your sample in mg/l.

Electrode preparation

When you first receive the electrode, a rubber cover protects the tip. Remove this cover and soak the electrode in an approx. 10 ppm solution of the ion involved for a few hours. Make sure not to touch the membrane of the Ion Selective Electrode. Any damage to the membrane could cause a defective Ion Selective Electrode. All electrodes are checked before they leave our facility and are in good working condition.
Make sure the electrode is conditioned to the environment temperature. In case of refillable electrodes, fill the electrode with the correct filling solution (e.g. the Flow Plus ISE). After conditioning the electrode, connect it to the ION meter and start your measurements.

For Ion meters look at page 10 & 15

Order no.	TYPE	CONCENTRATION RANGE (Mol/L)	LIMITS (ppm)	pH RANGE
	Ammonium (NH_4^+)	5×10^{-1} - 5×10^{-5}	9000 - 0.09	1 - 8.6
QI500M	Mono			
QI500C	Direction Combination			
QI500F	Flow Plus Combination			
	Barium (Ba^{2+})	10^{-1} - 10^{-5}	1.4 - 13,700	3 - 10
QI502M	Mono			
QI502C	Direction Combination			
	Bromide (Br^-)	10^{0} - 5×10^{-5}	0.4 - 80,000	1 - 12
QI504M	Mono			
QI504C	Direction Combination			
	Cadmium (Cd^{2+})	10^{-1} - 1×10^{-5}	0.1 - 11,200	3 - 7
QI506M	Mono			
QI506C	Direction Combination			
	Calcium (Ca^{2+})	10^{-1} - 5×10^{-7}	4,010 - 0.02	3.5 - 11
QI508M	Mono			
QI508C	Direction Combination			
QI508F	Flow Plus Combination			
	Carbonate (CO_3^{2-})	10^{-1} - 10^{-7}	0.008 - 80	6.6 - 9.6
QI510M	Mono			
QI510C	Direction Combination			
	Chloride (Cl^-)	10^{0} - 3×10^{-6}	35,500 - 1	1 - 12
QI512M	Mono			
QI512C	Direction Combination			
QI512F	Flow Plus Combination			
	Cupric (Cu^{2+})	10^{0} - 1×10^{-7}	0.008 - 84,000	2 - 7
QI514M	Mono			
QI514C	Direction Combination			
	Cyanide (CN^-)	10^{-2} - 1×10^{-5}	0.03 - 260	11 - 13
QI516M	Mono			
QI516C	Direction Combination			
	Fluoride (F)	10^{-1} - 1×10^{-6}	1,900 - 0.02	4 - 8
QI518M	Mono			
QI518C	Direction Combination			
QI518F	Flow Plus Combination			
	Iodide (I^-)	10^{0} - 5×10^{-7}	0.06 - 127,000	2 - 12
QI520M	Mono			
QI520C	Direction Combination			
	Lead (Pb^{2+})	10^{-1} - 1×10^{-5}	0.2 - 20,800	3 - 7
QI522M	Mono			
QI522C	Direction Combination			
	Nitrate (NO_3^-)	10^{0} - 7×10^{-6}	62,000 - 0.4	2 - 11
QI524M	Mono			
QI524C	Direction Combination			
QI524F	Flow Plus			
	Perchlorate (ClO_4^-)	10^{0} - 2×10^{-1}	0.2 - 99,500	0 - 11
QI526M	Mono			
QI526C	Direction Combination			
	Potassium (K^+)	10^{0} - 10^{-5}	0.04 - 39,000	1 - 9
QI528M	Mono			
QI528C	Direction Combination			
QI528F	Flow Plus Combination			
	Silver (Ag^+)	10^{0} - 1×10^{-7}	0.01 - 107,900	1 - 9
QI530M	Mono			
QI530C	Direction Combination			
	Sodium (Na^+) Glass	Sat - 10^{-6}	1 ppb	9 - 12
QI532M	Mono			
QI532C	Direction Combination			
	Sulphide (S^{2-})	10^{0} - 1×10^{-7}	0.003 - 32,000	13 - 14
QI534M	Mono			
QI534C	Direction Combination			
	Thiocyanate (SCN^-)	10^{-1} - 2×10^{-6}	1 - 5,800	2 - 12
QI536M	Mono			
QI536C	Direction Combination			
	Water Hardness	2×10^{-1} - 5×10^{-5}	-	4.5 - 10
QI538M	Mono			
QI538C	Direction Combination			
GAS ION SELECTIVE ELECTRODES				
QI550G	**Ammonia (NH_3)**	10^{-5} - 10^{0}	-	11-13
	Accessories			
QS972S	Ammonia electrolyte, 3x30ml			
QS972I	Spare membranes for Ammonia ISE, pk/3			

TEMP RANGE (°C)	MAIN INTERFERENCES	Calibration Standard	Recommended ISAB	Electrolyte for FlowPlus	Recommended Reference electrode for mono ISE
0 - 50	K^+, Na^+	QS970S	QS970I		
					QM712X
				QS962X	
0 - 50	Sr^{2+}, K^+, Na^+	QS974S	QS974I		
					QM712X
0 - 50	I^-, CN^-, S^{2-}	QS975S	QS975I		
					QM712X
0 - 50	Hg^{2+}, Ag^+, Cu^{2+} Pb^{2+}, Fe^{3+}	QS976S	QS976I		
					QM710X
0 - 50	Ba^{2+}, Al^{3+}, Sr^{2+}	QS977S	QS977I		
					QM712X
				QS963X	
0 - 50	SCN^-, I^-, NO_3^- NO_2^-, CH_3COO^-	QS978S	QS978I		
					QM712X
0 - 50	I^-, Br^-, CN^-, S^{2-}	QS979S	QS979I		
					QM712X
				QS964X	
0 - 50	Hg^{2+}, Ag^+, S^{2-} Cl^-, Br^-	QS980S	QS980I		
					QM712X
0 - 50	I^-, S^{2-}	QS981S	QS981I		
					QM712X
0 - 50	OH^-	QS982S	QS982I		
					QM710X
				QS965X	
0 - 50	CN^-, S^{2-}	QS984S	QS984I		
					QM712X
0 - 50	S^{2-}, Hg^{2+}, Ag^+ Cu^{2+}, Fe^{3+}, Cd^{2+}	QS985S	QS985I		
					QM712X
0 - 50	Cl^-, NO^{2-}	QS986S	QS986I		
					QM712X
				QS967X	
0 - 50	I^-, SCN^-, NO_3^-	QS987S	QS987I		
					QM712X
0 - 50	Cs^+, NH_4^+	QS988S	QS988I	QS966X	
					QM712X
0 - 50	S^{2-}, Hg^{2+}	QS989S	QS989I		
					QM712X
0 - 50	Ag^+, NH_4^+, Li^+, K^+	QS990S	QS990I		
					QM712X
0 - 50	Ag^+, Hg^{2+}	QS991S	QS991S		
					QM710X
0 - 50	I^-, Cl^-, S^{2-}	QS992S	QS992I		
					QM710X
0 - 50	Ba^{2+}, Sr^{2+}, Cd^{2+} Cu^{2+}, Na^+, K^+, NH_4^+	QS993S	QS993I		
					QM712X
0 - 50	Hydrazine, aliphatic amines	QS994S	QS994I		

Conductivity Standards... meeting your requirements

All Standards directly traceable to NIST

- All test conductivity standards are traceable to primary standards from the United States National Institute for Standards and Technology (NIST).

Upon request a Certificate of Analysis can be supplied. (Additional costs will apply.)

Conductivity standard

Expiry from date of manufacture

5µs/cm to 10µS/cm	6 months
20µS/cm to 147µS/cm	12 months
200µS/cm to 500,000µS/cm	18 months

Order number	Conductivity @ 25°C
QS1004	5 µS/cm
QS1008	10 µS/cm
QS1012	20 µS/cm
QS1016	50 µS/cm
QS1020	100 µS/cm
QS1024	500 µS/cm
QS1026	5,000 µS/cm
QS1030	20,000 µS/cm
QS1034	100,000 µS/cm
QS1038	200,000 µS/cm
QS1042	500,000 µS/cm
QS950X	1413 µS/cm
QS951X	12.88 mS/cm
QS1012	111.8 mS/cm

NIST traceable conductivity standards

pH Buffer Solutions

Order no.		Packaging
QS910X	pH 4 buffer (red)	500ml
QS912X	pH 7 buffer (yellow)	500ml
QS914X	pH 9 buffer (green)	500ml
QS916X	pH 10 buffer (blue)	500ml
QS924X	pH 4.01	ampoules, 6 x 25ml
QS926X	pH 6.87	ampoules, 6 x 25ml

Redox Standards

Order no.		Packaging
QS960X	258mV	500ml
QS961X	468mV	500ml
QS928X	470mV	ampoules, 6 x 25ml

Reference Filling Solutions

Order no.		Packaging
QS930X	Lithium Acetate (LiAC)	100ml
QS931X	Lithium Chloride (LiCl)	100ml
QS932X	Sodium Nitrate ($NaNO_3$)	100ml
QS933X	Ammonium Sulphate $(NH_4)_2SO_4$	100ml
QS934X	TEAC	100ml
QS935X	Ammonium Chloride (NH_4Cl)	100ml
QS936X	Potassium Nitrate (KNO_3)	100ml

General Filling Solutions

Order no.		Packaging
QS937X	Potassium Chloride (KCl)	500ml
QS938X	3 M Potassium Chloride/AgCl	100ml
QS939X	3 M Potassium Chloride gellified	100ml
QA839X	Storage bottle	pk/4

Cleaning Solutions

Order no.		Packaging
QS941X	Pepsine/HCl cleaning solution	500ml
QS942X	pH storage solution 3M KCl	500ml
QS938X	3 M Potassium Chloride/AgCl	100ml

TRACEABILITY

All pH, Conductivity & Redox calibration standards are NIST traceable. Upon request a detailed Certificate of Analysis can be supplied with the standards (note: an extra charge will be added for this certificate). Temperature dependence data (@25°C) is printed on the label as well as lot numbers and expiry dates. Unopened bottles can have a shelf-life up to 2.5 years.

ACCESSORIES

ACCESSORIES FOR PROLINE & PROLINE PLUS

Order no.	
QA8010X	pH/mV expansion module (ProLine Plus)
QA8020X	Conductivity expansion module (ProLine Plus)
QA8030X	Ion/pH expansion module (ProLine Plus)
QA8550X	Power Adapter EU, 240V
QA8560X	Power Adapter UK, 230V
QA8570X	Power Adapter US, 115V
QA8040X	ProLine Plus transparent protective cover
QA8050X	USB communication module (ProLine Plus)
QA8060X	Printer
QA8070X	Printer paper, pk/5
QA8080X	Printer cable
QA8090X	Computer cable

ACCESSORIES FOR SENSELINE & SENSELINE PLUS

Order no.	
QA8580X	RS232 infrared adapter
QA8110X	Sealing kit
QA8120X	AA Batteries, pk/4
QA8130X	Carrying case
QA8140X	Printer
QA8150X	Printer paper, pk/5

SWING ARM ELECTRODE HOLDER

Order no.	
QA854X	Swing arm electrode holder

For easy and convenient measurement with multiple probes, this flexible electrode holder can hold up to 4 electrodes and one ATC probe. With its heavy base and flexible arm, the electrodes can be moved sideways or up and down keeping them at a constant vertical position.

FLOW THROUGH CELL

Order no.	
QA853X	Flow through cell

General purpose flow through cell fits all ø12mm electrodes. It is specially designed to measure continuously at high flow rates using a standard electrode.

QA839X

QA8550X

QA8560X

QA8570X

QA853X

QA8030X

QA8020X

QA8010X

QA8060X

QA854X

QA851X

CABLES

Order no.	
QA820X	1m cable S7/S8 with BNC connector
QA822X	2m cable S7/S8 with BNC connector
QA824X	5m cable S7/S8 with BNC connector
QA826X	10m cable S7/S8 with BNC connector
QA828X	20m cable S7/S8 with BNC connector
QA830X	30m cable S7/S8 with BNC connector
QA832X	BNC to DIN socket
QA833X	BNC socket to DIN
QA834X	BNC socket to No.7 connector
QA836X	US std. Socket to BNC

HOW TO ORDER YOUR "CUSTOM MADE" ELECTRODE

In some situations the standard electrodes in the electrode section are not suited for the customer's application. In this situation QiS offers the possibility to adjust the electrode to the customer's wishes.

Art. No.: QC208T

HOW TO CONSTRUCT THE ARTICLE NUMBER?

Choose the required pH, conductivity or reference electrode from page 24 to 47.
Fill in the article number added with the desired length of the electrode and the cable length and connector.

Art. No.: QR208T – AAA – BBB

AAA length in millimeters e.g.: 200 = 200 millimeters

BBB cable length:
001 = 1 meter
002 = 2 meter
004 = 4 meter
010 = 10 meter

LOOKING FOR AN ELECTRODE THAT FITS YOUR INSTRUMENT!

There are many instruments in the field from other brands. Meaning a lot of different connectors, which makes it difficult to buy an electrode from another manufacturer. Normally yes, but QiS electrodes fits every instrument!
This means that if you send us the brand and model (or specify the connectors) of your instrument, we can fit the right connector to the electrode. Look at this page for some connector examples.

QIS EQUIVALENTS

QiS offers equivalents of products made by other manufacturers which are similar in quality (or better), but more economically priced. When ordering a QiS equivalent, please also mention the original article number of the supplier. If an equivalent is not available in this section you can send your request to our QiS Product Department.

Looking for an electrode equivalent?
Visit our website for the most common brands.


DIN


radiometer no7


8pin DIN


US Standard


ATC jack


2 mm pin


3 mm lemo


5 mm lemo


S7/S8


banana


BNC socket


BNC


BNC socket to DIN adaptor

QT900
Handheld Turbidimeters

Designed to provide the ease of portability needed in the field with rugged durability, the QT900 is a necessity for anyone monitoring turbidity on the go. The shock resistant carrying case holds everything necessary for field operation while the instrument itself removes easily to go wherever it is needed. With a resolution of 0.01 NTU and an extended range to 1100 NTU, the QT900 is a perfect partner for field use. Advanced micro circuitry design substantially increases lamp and battery life.

- **Rugged Self-Contained Carrying Case**
  Contains everything needed, including battery pack, manual and calibration standards
- **Waterproof**
  Waterproof housing allows sample measuring and cleaning in any wet environment
- **Auto Ranging 0 ~ 1100 NTU**
  Instrument senses turbidity level of sample and automatically adjusts to the appropriate measurement range
- **Standards Kit**
  Each QT900 Turbidimeter is supplied with a Calibration Kit manufactured using USEPA and ISO 7027 accepted primary standards materials
- **Built-in Self Diagnostics**
- **Economical cost**

SPECIFICATIONS

Conformance	USEPA method 180.1 (QT900) ISO 7027 (QT900IR)
Measuring range	Auto-ranging from 0 ~ 1100 NTU
Principle of operation	Nephelometric
Certification	CE, designed to meet IP67 and NEMA 4X
Accuracy	± 2% of reading or ± 0.01 NTU whichever is greater (0 ~ 500 NTU) ± 3% of reading (500 ~ 1100 NTU)
Resolution	0.01 NTU < 100 NTU 0.1 NTU < 100.0 ~ 999.9 NTU 1 NTU < 1000 ~ 1100 NTU
Response time	14 seconds
Display	4 digit (7 segment) LCD
Light source	(QT900) White light (Tungsten) (QT900IR) Infrared – LED (860 nm)
Power supply	4x AAA Alkaline batteries (over 5000 tests)
Sample cells	10ml
Dimensions	28 x 30.5 x 7.6cm
Weight	1.22 kg

ORDERING INFORMATION

QT900	Handheld Turbidimeter (white light), includes: meter, set of calibration standards, indexing rings, 4 AAA batteries, measuring cuvettes with light shield caps, operation manual and carrying case
QT900IR	Handheld Turbidimeter (Infrared), includes: meter, set of calibration standards, indexing rings, 4 AAA batteries, measuring cuvettes with light shield caps, operation manual and carrying case
QT910X	Calibration kit (0.02, 10 and 1000 NTU)
QT911X	Cuvettes with light shield caps, 3/pk

QT800 Laboratory Turbidimeters

Designed to provide the accuracy demanded by today's scientist, the QT800 Laboratory Turbidimeter is ready to meet the challenge. Features such as the Auto Alert Calibration Prompt and the Quick Connection Lamp Module, allow for simple calibration and low maintenance. With a resolution of 0.01 NTU at low turbidity readings and an extended range to 1000 NTU, the QT800 is an ideal and affordable tool for research as well as routine analytical measurements.

- **Auto Ranging 0 ~ 1000 NTU**
  Instrument senses turbidity level of sample and automatically adjusts to the appropriate measurement
- **Auto Alert Calibration Prompt**
  Automatically prompts the operator when calibration of the instrument is needed
- **Simple Calibration Procedures**
  Calibration initiated with the push of a button ensures accurate readings
- **RS-232 Output**
  Date, time and NTU reading can be captured with a serial printer or data recorder
- **Infrared Light Source (QT800IR)**
  Meets international standard ISO 7027 for turbidity measurements
- **Pour Through Assembly**
  Save time by pouring your grab sample through the measurement chamber

SPECIFICATIONS

Range	Auto ranging from 0 ~ 1000 NTU
Measurement principle	Nephelometric non-ration
Accuracy	± 2% of reading plus 0.01 NTU whichever is greater
Resolution	0.01 NTU (0 ~ 9.99 NTU) 0.1 NTU (10 ~ 99.9 NTU) 1 NTU (100 ~ 1000 NTU)
Response time	6 seconds
Sample size	30ml (27ml minimum)
Light source	Quick Connect Tungsten Filament or Infrared
Operation Temperature	0 ~ 50°C
Outputs	RS-232
Dimensions	27.3 x 25.4 x 9.5cm
Weight	1.32 kg

ORDERING INFORMATION

QT800	Laboratory Turbidimeter (100 ~ 240 VAC), includes meter, calibration standards (0.02, 10 and 1000 NTU), 2 measuring cuvettes with light shield caps, power adapter and operation manual
QT800IR	Laboratory Turbidimeter Infrared (100 ~ 240 VAC), includes meter, calibration standards (0.02, 10 and 1000 NTU), 2 measuring cuvettes with light shield caps, power adapter and operation manual
QT810X	Pour Through Assembly
QT811X	Calibration set (0.02, 10 and 1000 NTU)
QT812X	Cuvettes, 28 x 700mm, 3/pk
QT813X	Formazin Stock Solution Kit

CHLORINE POCKET PHOTOMETER

FOR MEASURING FREE OR TOTAL CHLORINE

- **Laboratory accuracy in the field**
  Microprocessor technology together with rugged construction ensures accuracy and durability in the roughest environments
- **Simple operation**
  No need to change cuvette or pathlength for low level measurements
- **Integrated packaging**
  Provides easy access to everything needed to conduct a test
- **Waterproof**
  IP-67 at 1m for 30 minutes
- **EPA approved method**
  Meets standard Method 4500-Cl G.DPD Colorimetric method for measuring residual chlorine

SPECIFICATIONS

Range	0 ~ 10.0ppm
Method	EPA Approved – DPD
Resolution	0.0 ppm for 0 ~ 6 ppm 0.1 ppm for 6 ~ 10 ppm
Accuracy	2% (0 ~ 6 ppm) 10% (6 ~ 10 ppm)
Measurement	1cm Pathlength
Response time	3 seconds
Light source	Longlife LED – 515 nm
Sample size	3 ml
Display	7 Segment Brightvision LCD
Power	4 AAA batteries (up to 1000 tests)
Dimensions	28 x 30.5 x 7.6 cm
Weight	1.22 kg

ORDERING INFORMATION

QC700	Chlorine Pocket Photometer, includes Chlorine meter, 4 cuvettes, 4 AAA batteries, operation manual and carrying case
QC701X	DPD powder dispenser for Free Chlorine (for 5ml test volume) – 100 tests
QC702X	DPD powder dispenser for Free Chlorine (for 5ml test volume) – 1000 tests
QC703X	DPD powder dispenser for Total Chlorine (for 5ml test volume) – 100 tests
QC704X	DPD powder dispenser for Total Chlorine (for 5ml test volume) – 1000 tests
QC705X	Disposable cuvettes, 100/pk
QC706X	2.0 ppm Reference standard solution, 100ml
QC707X	Set of 4 AAA batteries

DPD POWDER DISPENSER FOR CHLORINE TESTING

- Smaller … More Convenient … Disposable
- Simple Push Button Operation allows for precise dosing
- Patented design
- No spill dispensing into most round or square cuvettes
- Dispenser design prevents clogging

Portable dispenser accurately delivers the correct volume of DPD reagent for Free or Total Chlorine. Supplied with enough DPD powder for 100 tests or in multi-packs for high volume testing.

To use, simply invert the dispenser over sample and press the button to dispense reagent. Powder dissolves quickly in sample, leaving no messy residue behind. Available for 5ml, 10ml and 25ml sample sizes with formulations for use with QiS and a variety of other manufacturer's test kits.

Order no.	Desciption and Formulation	Sample Size
QC701X	DPD powder dispenser – 100 tests for Free Chlorine	5ml
QC702X	DPD powder dispenser – 1000 tests for Free Chlorine	5ml
QC703X	DPD powder dispenser – 100 tests for Total Chlorine	5ml
QC704X	DPD powder dispenser – 1000 tests for Total Chlorine	5ml
QC710X	DPD powder dispenser – 100 tests for Free Chlorine	10ml
QC711X	DPD powder dispenser – 100 tests for Free Chlorine	10ml
QC712X	DPD powder dispenser – 100 tests for Total Chlorine	10ml
QC713X	DPD powder dispenser – 1000 tests for Total Chlorine	10ml
QC714X	DPD powder dispenser – 100 tests for Free Chlorine	25ml
QC715X	DPD powder dispenser – 100 tests for Free Chlorine	25ml
QC716X	DPD powder dispenser – 100 tests for Total Chlorine	25ml
QC717X	DPD powder dispenser – 1000 tests for Total Chlorine	25ml
QC718X	DPD Tablets* – 100 tests for Free Chlorine	10ml
QC719X	DPD Tablets* – 100 tests for Total Chlorine	10ml

* For test kits using tablet technology

CHLORINE MICRO CHECK TEST STRIPS

Free or Total Chlorine with sensitivity as low as 0.05 ppm

The Micro Check Test Strips are an accurate, inexpensive and safe alternative to reagent Chlorine testing. Quick, Accurate and Easy to use results are achieved in under 1 minute. Available in Free or Total Chlorine with sensitivity as low as 0.05 ppm (mg/L)

ORDERING INFORMATION

Order no.	Description tests	Detection levels ppm (mg/L)
QC720X	Micro Check Free Chlorine, bottle of 50 strips	0, 0.1, 0.2, 0.4, 0.6, 0.8, 1.2, 1.5, 2.0, 2.6, 4.0, 6.0, 10
QC721X	Micro Check Total Chlorine, bottle of 50 strips	High range 0.0, 0.1, 0.2, 0.5, 0.8, 4.0, 10.0 Low range 0.0, 0.05, 0.1, 0.15, 0.2, 0.5, 1.0

PROGRAMMABLE SYRINGE PUMPS

Programmable syringe pumps providing an economical cost high quality solution to your sophisticated dispensing applications. Instead of buying pumps for a dedicated application, purchase a pump which you can easily reconfigure as your dispensing needs change. For less than the cost of many limited function pumps!

GENERAL FEATURES:

- Infuses and withdraws
- Accepts small syringes or large syringes, up to 60 cc
- Dispense continuously at a fixed pumping rate
- Change pumping rate and direction while pumping
- Selectable rate units: µl/hr, µl/min, ml/hr, ml/min
- Dispense a specified volume
- Dispense according to a pumping program to:
  Pre-program dispense volumes. Each volume can be different.
- Automatically change pumping rates or pumping direction
- Ramp up or down the pumping rate
- Timed delays between dispenses
- Automatically pause the program and wait for the user to continue the dispense
- Synchronize dispenses with other equipment or pumps to change pumping rates in reaction to a sensor or signals from other pumps
- Send logic signals to other equipment. Change pumping rates in reaction to a sensor
- Program the audible alarm to beep at any time to alert the operator
- Enter the pumping program from the keypad or download it from a computer
- Operates stand-alone, from an RS-232 computer port or from the TTL logic interface
- Total volume pumped separately accumulated for infusion and withdrawal
- Not for clinical use on humans

PROGRAMMING FEATURES:

- 41 programmable phases
- Set event interrupts from external signals to cause automatic jumps to another part of the program
- Conditional jumps based on external inputs
- Nested loops: Repeat a section of the program continuously or a set number of times
- Program editing functions: Insert and delete program phases
- Simplifies program development and updating
- Allows quick removal or addition of program phases
- Enter programs from the keypad or from a computer
- Download or upload pumping programs from or to a computer. Store dispensing programs in a file on your computer, then download them to one or more pumps. Specify in the file to send a different pumping program to each pump in the pump network.
- Automatically change pumping rates
- Insert timed delays between dispenses

All types of syringes are available upon request

AVAILABLE MODELS:

NE1000

- Holds 1 syringe, from the smallest available, up to 60 cc
- Infusion rates from 0.73 µL/hr with a 1cc up to 2100 ml/hr with a 60 cc syringe

NE1600

- Holds up to 6 syringes of up to 60 cc each
- Infusion rates from 0.568 µL/hr with a 1 cc up to 1337 ml/hr with a 60 cc syringe

NE1800

- Holds up to 8 syringes of up to 10 cc each
- Infusion rates from 0.568 µL/hr with a 1 cc up to 380 ml/hr with a 10 cc syringe
- Continuous Operation Dispensing System (Reciprocating / Push-Pull)
- Dual Syringe Pump System

PUMP-DUAL-U

- Using 2 NE-1000 pumps attached with a cable, one pump will infuse while the other pump refills
- When one pump changes direction, the other pump changes direction.
- Attach each of your syringes to a dual check valve, and the outputs with a 'Y' connector and you have a continuous infusion system

ORDERING INFORMATION

NE1000	Single syringe pump
NE1600	Syringe pump holds up to 6 syringes
NE1800	Syringe pump holds up to 8 syringes
PUMP-DUAL-U	Two NE1000 Syring pumps with communication cable

Q-DOS DOSING PUMPS

COST EFFECTIVE - EFFICIENT

- Electromagnetic dosing pumps
- Diaphraghm: PTFE
- Pump head: Polypropylene
- High accuracy
- Water treatment
- Chemical dosing
- Agriculture
- IP 65 protection
- Plastic housing: glass fibre reinforced polypropylene
- Control panel protection assured by a transparent policarbonate cover with gasket
- Level control setting included (supplied without probe)

Q-DOS100M,
MANUAL regulation by means of a potentiometer adjustable pulses from 0 to 100% or from 0 to 20%. Input for a level switch to stop the pump.

Q-DOS100P,
PROPORTIONAL regulation by means or a digital signal operating modes. Proportional to an external pulse (Multipliers or Divider).

Q-DOS100A,
ANALOG regulation by means of a 4/20mA signal

Q-DOS100PH,
pH regulation by means of an on/off relay measuring range 0-14, 4/20mA output

Q-DOS100ORP,
REDOX regulation by means of a on/off relay. Measuring range -1400mV +1400mV, 4/20mA output.

Order number	**Q-DOS102M**	**Q-DOS102P**	**Q-DOS102A**	**Q-DOS102PH**	**Q-DOS102RP**
Flow	0..2 l/hour	0..2 l/hour	0..2 l/hour	0..2 l/hour	0..2 l/hour
Order number	**Q-DOS110M**	**Q-DOS110P**	**Q-DOS110A**	**Q-DOS110PH**	**Q-DOS110RP**
	0..10 l/hour	0..10 l/hour	0..10 l/hour	0..10 l/hour	0..10 l/hour
Pressure	0..10 bar	0..10 bar	0..10 bar	0..10 bar	0..10 bar
Power supply	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz	230V 50/60Hz
Every pump is supplied with: 1x semi rigid polyethylene hose, length 1.5m – 2x Suction hose transparent, length 1.5m - Injection valve 3/8" BSP-M, filter and manual of instructions					
Optional: 120V version, please add # to ordernumber; e.g. Q-DOS102M#					

Q-TITRATORS

- Acid-base
- Redox
- Argentometric
- Complexometric

Q-titrators meet the most demanding analytical requirements for research applications as well as for users routinely analyze a large number of samples every day.

Burette for titrant reagents
Up to 4 can be connected at the same time, in succession or cascade.

Specifications:
- Stepper motor
- Resolution 48,000 steps
- Syringes: standard 10 ml
- In clear glass graduated
- Steel plunger with replaceable PTFE tip
- Valves: 4 way, with two suction intakes (1 for titrant and 1 for washing)
- 1 outlet (titrant discharge)
- 1 for connection to syringe

APPLICATIONS

FOODS
- tomato sauces/preserves/tomato purèe: acidity and chlorides determination
- olive oil/seed oils: acidity, peroxides and iodine no.
- cheeses/yogurt: acidity, chlorides
- milk: pH, acidity, chlorides
- fruit juices/beverages: acidity, formalin no., vitamin C, chlorides

ENOLOGY/WINEGARS
- wines: reducing sugars, pH, acidity, free and total SO_2, chlorides, formalin no., CO_2
- musts: pH, total acidity
- vinegars/balsamic vinegars: acidity, chlorides, reducing sugars

WATER
- drinking water: acidity, alkalinity, hardness, calcium, chlorides, hypochlorite, chlorite
- waste water: COD, BOD and chlorides

ANIMAL FEEDS AND SOILS
- protein determination (N_2) according to Kjeldhal, acidity, chlorides

PETROLCHEMICAL
- mineral oils: TAN, TBN
- petroleum and derivatives: nitrogenous bases, bromine no., mercaptan sulfide

GENERAL CHEMISTRY
- acids-bases: concentration titers
- galvanic baths: boric acid, iron, chromium, nickel, zinc, chlorides, cyanides, etc.
- cements: calcium and magnesium, chlorides
- resins: hydroxyl no., NCO% (isocyanate)
- titrant reagents: titer standardization

PHARMACEUTICS AND COSMETICS
- determination of purity of injectable drugs: calcium and magnesium
- saline solution: NaCl content
- cosmetic creams and greasy substances: acidity, peroxides no., iodine no.

Download applications at www.q-i-s.net

Peristaltic pump for auxiliary reagents Up to 4 can be connected a the same time. Delivery: 2ml/sec

Q- titrators were designed to suit laboratory needs and to carry out simple, potentiometric titration for a wide range of applications.

Standard titration programs

- Auto studio: program for automatic optimization of specific titration parameters
- End point: predefined pH/mV titration, with dosage control by means of control band
- Equivalences: titrations with automatic localization of equivalent point(s), with predefined or incremental additions during titration
- Dosage: dispensing of predefined fixed volumes
- Rinsing with solution and washing: for loading reagents and washing at the end of titration

Specific programs

- Enology: total pH/acidity, reducing sugars, free and total SO_2
- Titrant reagents standardization: calculation of the exact titer

Measurement scales

- pH scale: 0 to 14 pH, 0.01 pH resolution
- mV scale: -1999.9 mV to +1999.9 mV, 0.1 mV resolution
- Temperature scale: 0 to 130°C, 0.1°C resolution

Memories available for programs

For 30 programms, user-changeable & can be protected by password. Preferred: for memorizing up to 8 "preferred" programs, i.e. those used most frequently.

Expression of analysis results

Calculation and free choice of desired unit of expression (e.g. %, g/L, ppm, mol/L, etc.), starting with a sample by weight or volume.

pH calibration

Automatic calibration of the pH electrode on 1 or 2 points with predefined buffers (pH 2.00/4.00/7.02/10.00) or with buffers freely defined by the user. Defective electrode and/or buffer warning. Freely programmable calibration interval (days/hours).

Measurement inputs

- 2 inputs for pH/mV electrodes, independent, BNC connector
- 1 input for reference electrode, banana plug
- 1 input for Pt100 temperature compensator
- 1 input for working with polarized current (KF, SO_2 analyses)
- 2x RS232C ports

ORDER INFORMATION

QT1000ST21, basic titration unit with control unit, software, mechanical stirrer, burette, electrodes and holder, 220V.

QT1000BU21, burette with bottle stand

QT1000PO22, peristaltic pump, double channel

Add a (#) for 115V ~ versions, e.g.: QT1000ST21#

AUTOMATIC SAMPLER

Using the autosampler reproducibilty of every individual titration is guaranteed

The Autosampler is available in two versions:

Q1000AS22
Standard; 16 positions for 120 ml samples

Q1000AST22
With thermostatic jacket; heat or cool your samples before titration

BWB-1
FLAME PHOTOMETER

The BWB-1 Flame Photometer is a high quality, high performance instrument, employing modern technology to ensure that a customer can measure Na, K, Li, Ca and Ba, very simply but with a high performance.
The Flame Photometer comes as a complete package, and only requires the provision of either propane or butane gas to enable it to be used straight out of its package.

THE MANY BUILT-IN FEATURES COMPRISE:

- Filters for Na, K, Li, Ca and Ba
- Simultaneous detection and display of all 5 elements
- Internal standard for both Na and Li
- 2 point and multi point calibration
- Unit retains calibration values
- Flameout detection and automatic shutdown
- Automatic start-up routine
- Self-diagnostics on set up
- Diagnostic indicators
- Detection to ensure drain trap filled
- Modular sub component replacement
- Built-in air compressor
- Replaceable aspirator needle
- Adjustable mixing chamber orientation
- Impact bead
- Computer interface
- External Computer in-out control
- Cycle based maintenance alerts
- Moisture separator included
- Auto moisture drain
- Chart recorder output
- Gas regulator fitted
- Switchable voltage
- RoHS compliant
- Auto Sampler compatible

SPECIFICATIONS:

Linearisation:	Included in the software, and available on any of the 5 elements. Achievable on both single and Multi Point calibrations.	
Aspiration:	3-4 ml/min	
Optimum Range of Filters	Single Point Calibration:	Multi Point Calibration:
Na:	0 ~ 60 ppm	0 ~ 1000 ppm
K:	0 ~ 100 ppm	0 ~ 1000 ppm
Li:	0 ~ 15 ppm	0 ~ 1000 ppm
Ca:	0 ~ 125 ppm	0 ~ 1000 ppm
Ba:	-	0 ~ 1000 ppm
Reproducibility:	<1% coefficient of variability for 20 consecutive samples over 30 minutes (after instrument stabilisation) at concentrations of 100 ppm or less	
Limits of Detection		
Na:	0.01 ppm	
K:	0.01 ppm	
Li:	0.025 ppm	
Ca:	0.1 ppm	
Ba:	10 ppm	
Time of stability:	Less than 15 seconds after sample is introduced into the flame	
Drift:	Less than 1% per 30 minutes after instrument stabilisation	
Linearity:	Better than 2% mid-point of optimum range (single point calibrations)	
Specificity:	Na/K/Li = < 0.5% to each other when equal in concentration at < 100 ppm	
Number of Parameter Measured:	When displayed in READ mode = concentration of all 5 elements (with scrolling to the 5th) highest to lowest continuously	

ORDERING INFORMATION

BWB-1	flame photometer, complete package

Add a (#) for 115V ~ versions, e.g.: BWB-1#

FLOC TESTERS

SPECIALLY DESIGNED TO RUN THE COAGULATION-FLOCCULATION JAR TEST OF WATER.

Range of multiple stirrers running at the same speed. Suitable for 1L beakers, tall or squat form. Timer 0-60 min. and contineously variable height of stirring blades, even during operation. The blades are designed to pick up the sediments form the beaker bottom. Available in 2 models.

Order no. QA1014X
4-positions tester, provided with; digital servo-controlled microprocessor regulation, day-light illumination with the possibility to place the shade to light at the bottom or at the back as wanted.

Order no. QA1016X
6-positions tester, provided with; digital servo-controlled microprocessor regulation, day-light illumination with the possibility to place the shade to light at the bottom or at the back as wanted.

OPTIONAL:

Order no. QA1020A, plastic water bath, ambient +5°C to +65°C (±1°C) for QA1014X and QA1016X

QA1014X

IMHOFF CONES

The decantability of the activate sludges of the purification stations, is evaluated with one liter of sample of the oxidation tanks by an Imhoff graduated cone.

Order no. QA1050X
Complete apparatus has a plastic support and two transparent plastic sedimentation cones, marked indelible 0-1000, the cones have a water-tight screwed stopper on the bottom to evacuate the sediments. According to DIN 12672.

OPTIONAL:

Order no. QA1050X100, spare plastic Imhoff cone, 1pcs


QA1050X

Q-MAG

Magnetic stirrer

- Base made of: Hytrel®
- Stirring plate: Chemically resistant Nylon®
- Stirring speed: 350-2000rpm
- Vessel size: Ø 85mm
- Maximum stirring volume: 1L
- Overall dimensions (LxWxH): 143 x 143 x 66mm
- Power Supply: 12V/220V power adapter

ORDERING INFORMATION

QA850X (standard)
QA851X (digital display)

Q-MAG

Hot plate stirrer with stainless steel housing and anti-spilling protection

- Temperature range: up to 425°C
- Heating power: 400W
- Stirring speed: 250-1600rpm
- Max. vessel diameter: 135mm
- Size (DxHxW): 220 x 105 x 165mm
- Weight: 2 kg
- Power Supply: 220 V, 50/60 Hz

ORDERING INFORMATION

QA9030X stirring hot plate

Q-MAG

Large hot plate stirrer with stainless steel housing and anti-spilling protection

- Temperature range: up to 425°C
- Heating power: 1400W
- Stirring speed: 250-1600rpm
- Max. vessel diameter: 350mm
- Size (DxHxW): 420 x 175 x 410
- Weight: 25 kg
- Power Supply: 220 V, 50/60 Hz

ORDERING INFORMATION

QA9035X stirring hot plate

Q-MAG

Stirring hot plate with stainless steel housing and high density ceramic stirring surface

- Made of Aluminium
- Stirring speed: 60 to 1500rpm
- Heating Range: ambient to 380°C
- Electronic regulation for stirring and heating
- Heating plate dimensions: 180 x 180mm
- Overall dimensions (LxWxH): 205 x 260 x 110mm
- Power Supply: 220 V, 50/60 Hz

ORDERING INFORMATION

QA9010X stirring hot plate

Q-MAG

Hot plate with ceramic plate

- Temperature range 240°C
- High speed heating
- Automatic overhead protection
- Auto detection of wrong container
- Digital timer
- 1800W heating power
- Size: 260 x 295mm
- Power Supply: 220 V, 50/60 Hz

ORDERING INFORMATION

QA9020X stirring hot plate

Q-LIGHT

Magnetic Stirrers with Lightning

- Magnetic stirrers with light on the bottom to allow lightning of the recipients during the stirring. Stainless steel housing with anti-slide top
- Accepts vessel with a diameter of max. 220mm
- Speed 250-1600 rpm
- Dimension (DxHxW): 250 x 85 x 220mm
- Weight: 2 kg
- Power Supply: 230 V, 50/60 Hz

ORDERING INFORMATION

QA9050X white light
QA9052X UV366 nm
QA9054X blue, green, red, white and yellow

MODEL QH3500
HYGRO-THERMOMETER PSYCHROMETER

- Simultaneous display of %RH, temperature and Dew Point or Wet bulb or Probe temperature
- Calculates T1-T2 differential (Air temperature minus External Probe temperature) using optional probe (QM3510) and T2-Dew Point
- Data Hold and auto power off
- Max/Min readings
- Optional temperature probe (QM3510) for Differential temperature

SPECIFICATIONS

Sensor type	Capacitance
Dew Point	-68.0 ~ 49.9°C
Wet Bulb	-21.6 ~ 49.9°C
Humidity (basic accuracy)	0 ~ 100%RH (± 3%RH)
Temperature (internal)	-20 ~ 50°C
Basic accuracy	± 0.6°C
Temperature (external)	-20 ~ 70°C
Basic accuracy	± 0.6°C
Dimensions	178.5 x 48.4 x 24.7mm
Weight	95g

ORDERING INFORMATION

QH3500	Hygro-Thermometer Psychrometer (includes 2 AAA batteries)
QM3500K	Hygro-Thermometer Psychrometer kit including: QH3500, external temperature probe, 33% and 75% calibration bottles and carrying case
QM3510	Thermistor Temperature Probe for QH3500
QM3500C	33% and 75%RH Calibration kit for QH3500

MODEL QH3600
CFM/CMM THERMO-ANEMOMETER

- Simultaneous display of Ambient Temperature and Air Flow or Air Velocity
- Up to 8 easy to set Area dimensions are stored in the meter's internal memory of each unit (ft^2 or m^2)
- 20 point average function for Air Flow
- Super large LCD Backlit Display
- 3% velocity accuracy via low friction 72mm ball bearing van wheel
- Data Hold and Min/Max
- Auto power off

SPECIFICATIONS

Ranges (max resolution)	ft/min	80 ~ 5900 (1)
	m/sec	0.4 ~ 30.00 (0.01)
	km/h	1.4 ~ 108.0 (0.1)
	MPH	0.9 ~ 67.0 (0.1)
	knots	0.8 ~ 58.0 (0.1)
	Temperature	-10 ~ 60°C (0.1°)
	Air Flow (CFM=ft^3/min)	0 ~ 9999 CFM (1)
	Air Flow (CMM=m^3/min)	0 ~ 9999 CMM (1)
Basic accuracy	± 3% rdg; ± 1°C	
Dimensions	178 x 74 x 33mm	
Weight	700g	

ORDERING INFORMATION

QH3600	CFM/CMM Thermo-Anemometer includes: meter with vane sensor with 1.2m cable, 9V battery, protective rubber holster and carrying case

MODEL QH3700
POCKET SIZE MOISTURE DETECTOR

- Dual measurement scale LCD display with Bargraph
- Measures Wood Moisture and Building Material Moisture
- Use on wall board, sheet rock, cardboard, plaster, concrete and mortar
- Self-contained, pocket sized meter with belt clip
- Replaceable threaded measurement electrode pins
- Impact proof housing
- Battery operated for on-the-go measurements
- Auto power off conserves battery energy
- Built-in battery check and measurement verification test

SPECIFICATIONS

Sensor type	Contact pins
Moisture Content	6 ~ 44% (Wood); 0.2 ~ 2.0% (Materials)
Max Resolution	1% (Wood); 0.1% (Materials)
Dimensions	130 x 40 x 25mm
Weight	100g

ORDERING INFORMATION

QH3700	Moisture Detector includes: meter with protective cap, replacement pins and three CR-2032 batteries
QH3710	Replacement pins for QH3700 (50 pins)

MODEL QH3900
TYPE 2 SOUND METER

- Two range meter with backlit LCD display
- High accuracy meets type 2 standards (ANSI S1.4-1983, IEC 60651, EN 60651)
- High & Low measuring ranges
- Data Hold and Max hold functions
- Backlit display to view in dimly lit area

SPECIFICATIONS

Range	Low: 35 ~ 100 dB High 65 ~ 130 dB
Basic accuracy	± 1.5 dB (Type 2)
Weighting (A&C)	Yes
Response time (fast/slow)	Yes
Condenser Microphone	12.7mm
Dimensions	210 x 55 x 32mm
Weight	230g

ORDERING INFORMATION

QH3900	Sound meter (type 2) includes: meter with microphone wind screen and 9V battery

MODEL QH2500
HUMIDITY AND TEMPERATURE CHART RECORDER

Best value paperless chart recorder in the market that's easy to set up and operate.

- Simultaneous numerical and graphical display of Humidity and Temperature readings, plus time and date
- Measures humidity (10 ~ 95% RH) and temperature -28.0° - 60.0°C plus calculates Dew Point
- Large dual graphical LCD displays with adjustable vertical and horizontal resolution
- Internal memory records up to 49,000 data points that can be transferred to a PC via RS-232 serial port for further data analysis
- LCD indicates percentage of memory remaining
- Replaceable probe does not require recalibration
- Detachable probe extends up to 1 metre for measurements in closed environments
- Audible and visual alarm with Hi/Low setpoints
- Output socket used with optional external alarm module

SPECIFICATIONS

Relative Humidity range	10.0 ~ 95.0%
Temperature range	-28.0 ~ 60.0°C
Accuracy	± 3% Relative Humidity; ± 1°C
Dimensions	129 x 195 x 22mm
Weight	357g

ORDERING INFORMATION

QH2500	Humidity + Temperature Chart recorder includes: meter with built-in stand, detachable probe with 1m cable, software, RS-232 cable, adaptor (230V) and 3 AA batteries
QH2510	Humidity + Temperature Chart recorder includes: meter with built-in stand, detachable probe with 1m cable, software, RS-232 cable, adaptor (115V) and 3 AA batteries

MODEL QH3800
WIDE RANGE LIGHT METER

- Measures high intensity light up to 40,000 Fc and 400,000 Lux, is ideal for outdoor applications
- Compact and rugged design
- Large display with bargraph
- Relative function for zero or difference from reference value
- Peak captures short light pulses to 100µSeconds
- Data Hold and Min/Max readings
- Auto power off, zero function

SPECIFICATIONS

Display counts	4000 count LCD
Fc Range	40, 400, 4000, 40000 Fc
Lux Range	40, 400, 4000, 40000, 400000 Lux
Max. Resolution	0.01 Fc/Lux
Basic accuracy	± 3% rdg + 0.5% FS
Cosine & Color Corrected	Yes
Dimensions	150 x72 x 33mm
Weight	235g

ORDERING INFORMATION

QH3800	Light meter includes: meter with built-in stand, light sensor and protective cover with 1m coiled cable, protective holster, 6 AAA batteries and carrying case

HOW TO ORDER

TO PLACE AN ORDER

1 Clearly indicate your company name, contact person, department, full address, VAT number, telephone & fax number, order number and date.
2 Make sure the delivery and invoice address is on the order. If this is the same, please indicate this on the order to prevent any delays.
3 Only use the partnumber mentioned in our catalogue added with a short model description. For example:
- Order no. M310T, meter kit option includes M310 + 2 pH buffers + electrolye + KCl solution.

4 Always indicate the quantity you order. For example:
- Art. no.: QA800X,
- Quantity: 1
- Description: DO-membrane-kit, 3/pk

5 In case of an order confirmation, clearly mark this on the copies of the original. If in any event this was not clearly done and has been accepted as a new order by us, we may charge you with a 25% restocking fee.

PRICES

1 Prices are subject to change without prior notice.
2 On all our prices and quotations, point 3 of the "General Terms and Conditions of delivery and Sale" are valid. Note: We can supply you with English, German and Dutch translations, but only the Dutch terms are valid.
3 On every order we reserve the right to add a handling fee and banking costs to the invoice.
4 A minimum of EURO 300,- will be added to the total net amount for orders on the basis of a letter of credit or orders requiring legalisation or inspection.

TERMS

All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the invoice.

SHIPMENTS

Without specific instructions from the Buyer, we will determine the most efficient means of transportation and make partial shipment when necessary. Transport is at the consignee's risk, even with carriage prepaid.

GUARANTEE

1 For guarantee issues, the "General Terms and Conditions of delivery and Sale" are valid (page 66, point 13).
2 Accessories and breakable items such as electrodes do not fall under guarantee unless proven to be defective before shipment.
3 ProSense B.V. will repair all defective equipment during the guarantee period without charge, provided the instrument has been used under normal conditions and in accordance with the operating limitations and maintenance procedures described in the instruction manual.
4 ProSense B.V. reserves the right to reject the guarantee claim in case of alteration of the product, misuse or abuse. In these cases we will invoice the costs of repair.
5 A written authorisation must be obtained from ProSense B.V. before returning any product for warranty!
6 In case of damage during transport, always keep the original packing material (for inspection) and report eventual claims to the carriers and us.

LIABILITY

All products in this catalogue are intended for laboratory use only or intended to be used as stated with the product. ProSense B.V. is not liable for consequential damages arising out of the use or handling of its products.

DESIGN CHANGES

Because of the continuous product developments, design and specifications of all our products described in this catalogue are subjected to change without prior notice.

SALES & SERVICE

Call +31 (0)162-471485 for support between 08.30 a.m. and 17.00 p.m. (European time) or fax +31 (0)162-471486 for technical assistance & sales questions.

Bredaseweg 108 a
4902 NS Oosterhout - The Netherlands
PO Box 173
4900 AD Oosterhout - The Netherlands
tel: +31 (0)162-471485
fax: +31 (0)162-471486
info@q-i-s.net

QiS is a ProSense B.V. Brand

An up-to-date price-list is available upon request.

GENERAL TERMS AND CONDITIONS OF DELIVERY AND SALE of ProSense B.V. established in Oosterhout, The Netherlands

Article 1 - Applicability

1.1 The present general terms and conditions apply to all quotations issued by ProSense and to all contracts and follow-up contracts concluded between ProSense and its customers, even if this is not indicated by ProSense in correspondence, etc.
1.2 Any other or differing terms and conditions which the customer may apply are expressly declared to be inapplicable.
1.3 Any departure from the above paragraphs must be expressly agreed in writing by the parties.
1.4 ProSense reserves the right to change these terms at any time. Changes shall be deemed to have been accepted if the customer has not made known any objection to them in writing within fourteen days of being sent the revised terms.

Article 2 - Drawings

All illustrations, drawings, designs, details of dimensions, weights, etc. remain the property of ProSense at all times and are not binding unless there is express agreement in writing to the contrary.

Article 3 - Prices and quotations

3.1 All quotations and prices are without obligation and remain valid for thirty days.
3.2 In the case of a composite quotation, ProSense is not obliged to deliver a part of the goods offered in the quotation for a proportionate part of the offer price.
3.3 All offers from stock are made subject to the goods not being sold in the interim.
3.4 All prices are stated on the basis of the prices applying at the date of quotation/contract.
ProSense has the right to increase prices if this becomes necessary due to a rise in material prices, wages or other relevant costs during the period between the date of quotation and/or contract and the delivery date.
3.5 Prices of subsequent orders are independent of prices in a previous quotation.
3.6 Prices for all deliveries apply ex warehouse, exclusive of packing, insurance, transport and VAT.

Article 4 - Orders

4.1 Orders and commissions/contracts are not binding on ProSense until they have been confirmed in writing by ProSense.
4.2 ProSense has the right to fulfil orders or commissions/contracts in parts and to invoice them in parts. In this case the customer is obliged to accept the part deliveries and to pay for them.

Article 5 - Delivery dates

5.1 The delivery periods stated in quotations, order confirmations and contracts apply approximately and as such are without obligation. Delivery periods only commence from the date at which ProSense has received all the necessary information from the customer.
5.2 Failure to meet the delivery periods for whatever reason shall not in any circumstances entitle the customer to claim compensation, to withhold payment on any goods already delivered or to set off payment against any other invoices still outstanding.
5.3 If stated delivery period(s) are exceeded by five months or more, the customer shall have the right to cancel the contract or to refuse to accept the goods.

Article 6 - Installation

6.1 If so agreed in writing ProSense will install the goods or have them installed.
6.2 The customer shall give ProSense access to the installation location during ProSense's normal working hours to allow the necessary work to be carried out.
6.3 Installation is at the customer's expense and risk at all times.

Article 7 - Obligation to take delivery of goods

7.1 If the customer refuses to take delivery or neglects to provide information or instructions required for the delivery, the goods will be stored at the customer's expense and risk. All associated costs are due and payable every 14 days in all cases.
7.2 Without prejudice to its rights to demand that the customer should take delivery of the goods, ProSense is then entitled to invoice for the waiting goods and to claim payment for them.

Article 8 - Force majeure

8.1 If as a result of force majeure ProSense is unable to meet its obligations under an order or contract or is unable to meet them in full or on time, ProSense has the right to declare that order or contract dissolved without the intervention of the courts.
8.2 Force majeure is defined as any circumstances outside the control or ProSense which temporarily or permanently prevents ProSense from fulfilling the order or contract, and any circumstances such that in ProSense's sole assessment ProSense can not reasonably be expected to fulfil the order or contract.
8.3 Force majeure specifically includes but is not restricted to lack of plant, basic materials or labour, storm, fire, smoke or water damage, extreme weather conditions, strike, interruption of work or other strandstill either in ProSense's operations or in the operations of its suppliers or auxiliaries.
8.4 In the event that ProSense declares the contract to be dissolved on the grounds of force majeure, the customer has no right to compensation or penalty payments of any kind.

Article 9 - Payment

9.1 Unless expressly agreed otherwise, payment for goods bought and delivered must be made within 30 days of date of invoice.
9.2 All payments must be made in the invoiced currency, with no deduction or set-off of any debts, either at ProSense's office or to a bank or post bank account to be designated by ProSense.

Article 10 - Non-payment

10.1 In the event of non-payment or late payment the customer shall be liable to pay interest from the date of invoice of 7% per month plus the current ECB interest of 2%, on the outstanding invoice amount without any notice of default being required. A part of a month shall be calculated as a full month for this purpose.
10.2 If after receiving a notice of default the customer still fails to pay the amount due, ProSense shall have the right to pass on the debt for collection without prior warning. All costs of collection, both legal and extrajudicial, shall be payable by the customers/debtor.
10.3 The extrajudicial collection costs are set at 15% of the principal sum, exclusive of VAT and with a minimum of Euro 250.00. The extrajudicial costs also include the costs of any petition for involuntary liquidation. As regards the legal costs, the actual costs of ProSense's Lawyer, to be stated by the relevant lawyer at that time, will be charged.

Article 11 - Reservation of rights

11.1 If in the judgement of ProSense any credit granted or to be granted to the customer becomes too large, ProSense shall be entitled to demand payment in full or in part before delivery or to ask for adequate security for such payment.
11.2 If circumstances so indicate, ProSense shall also be entitled to suspend or cancel the orders placed.
11.3 If the customer fails to pay any due and payable debt to ProSense, ProSense shall be entitled to take back the delivered goods immediately, without prejudice to its rights to payment in full.

Article 12 - Retention of title

12.1 All goods sold and delivered to the customer remain the property of ProSense until full payment of the goods delivered or to be delivered, including interest and charges as referred to in article 9, has been received by ProSense.
12.2 As long as the title remains with ProSense, the customer does not have the right to process the goods, pledge them, transfer their ownership as a security or grant any other right to them to third parties, except within the normal exercise of his business.

Article 13 - Guarantee

13.1 ProSense provides a guarantee of 12 months form the date of delivery on instruments and parts supplied. The guarantee applies only for the normal use of the instruments or parts.
13.2 Contrary to the previous paragraph, articles and parts made of glass, plexiglass, rubber, elastic, plastic or synthetic materials, and also light bulbs, valve semiconductors, thermocouples, liquids and electrodes only carry the guarantee provided by the manufacturer in questions.

Article 14 - Liability

14.1 ProSense is not liable for direct or indirect loss or damage to persons and/or goods, including loss or damage due to a stoppage of business resulting for instance from the operation of or any defect or shortcoming in any goods supplied or from any work performed by or omission or shortcoming by personnel of ProSense.
14.2 If the goods to be supplied by ProSense are used outside the Netherlands, ProSense is similarly not liable for any consequences for the use or application of the supplied goods arising from technical requirements, standards and/or regulations laid down by laws or stipulation of the country in which the goods are used.

Article 15 - Complaints

15.1 ProSense will only process complaints if these are submitted to ProSense in writing by registered mail within 8 days of delivery.
15.2 If ProSense finds a complaint to be justified ProSense will arrange for either repair or replacement at its discretion and at its expense. ProSense is not obliged to pay any compensation.
15.3 Any complaints do not result in payment obligations being suspended and do not entitle the customer to cancel any orders made or to refuse delivery of such orders.

Article 16 - Returned goods

16.1 ProSense will only accept returned goods provided that prior agreement has been given in writing and on condition that the goods are sent back carriage paid.
16.2 The goods will only be replaced if they are received by ProSense in an undamaged condition.

Article 17- Applicable law

17.1 All quotations made by ProSense and all contracts concluded with the customer together with the performance of such contracts shall be governed solely by the law of the Netherlands.
17.2 All disputes arising from offers made, contracts concluded or deliveries made by ProSense shall be settled solely by the competent court in the district of Breda.

These general terms and conditions of sale and delivery were filed with the Chamber of Commerce and Industry for Breda and the surrounding district on 18.06.2004 as number 4024. These terms are translated. Only the Dutch version is legally binding.

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