

# WQC-40

Portable multi-item water quality meter



Sea Water  
Specific  
Gravity

TDS

Salt

Conductivity

pH

Water  
depth

ORP

Ion

Dissolved  
Oxygen

Temperature

Turbidity

A single unit can measure up to 9 items simultaneously  
Water depths up to 100m



# From environmental monitoring of rivers and lakes to water quality management in factories and fish farms

## Integrated sensor supports multi-item water quality measurement



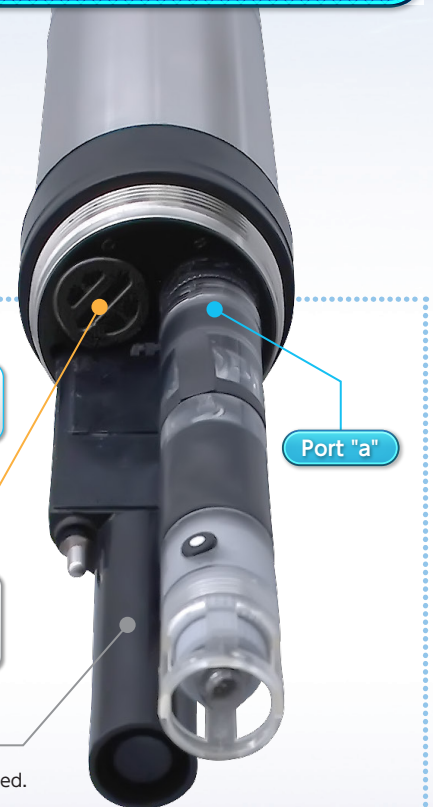
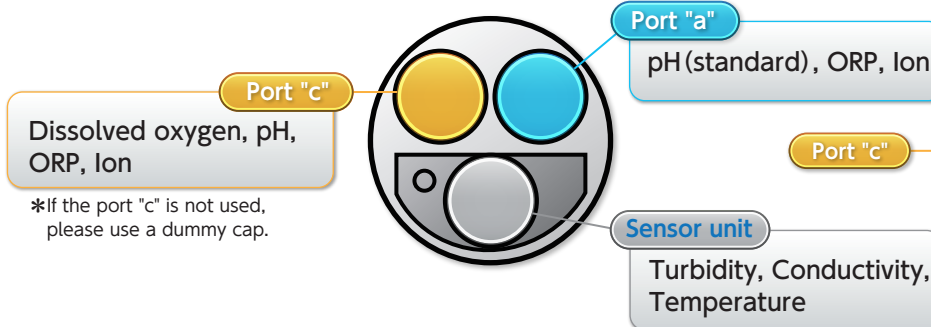
- Salinity, TDS (total dissolved solids), seawater specific gravity are converted from electric conductivity.
- Water depth is a factory option.



## Multi-port electrode attachment port

- ◆ A pH (standard), ORP, and ion electrode can be connected to the port "a".
- ◆ A dissolved oxygen, pH, ORP, and ion electrode can be connected to the port "c".
- 2 types of ion can be selected from 6 types of ion electrodes.  
( $F^-$ ,  $Cl^-$ ,  $NO_3^-$ ,  $Ca^{2+}$ ,  $K^+$ ,  $NH_4^+$ )

### Electrode attachment port



## Thin as $\Phi 45mm$

- ◆ Easily inserted into pipes for a boring survey.

## Modbus compatible

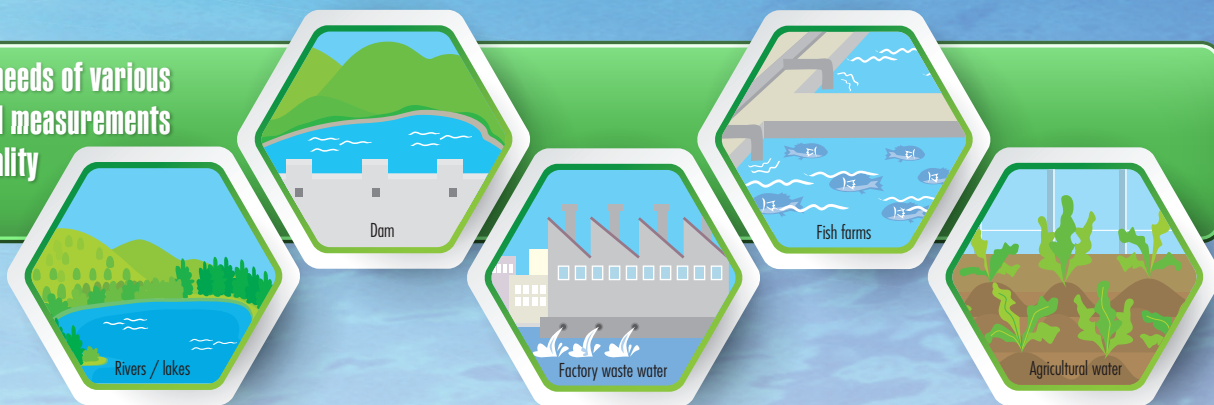
- ◆ A Modbus power supply box is available as an option.
- By connecting a general purpose gateway, etc., a water quality monitoring system can be constructed.

## Data memory function

- ◆ 9999 data memory available  
(Memory available by sensor module only)

\*pH and ORP can only be connected to either of port "a" or port "c" (pH or ORP cannot be selected for both port "a" and port "c").

We meet the needs of various environmental measurements and water quality surveys



## Specification

### ◆ Instrument body

Water proof structure	IP67 (Immersion for 30 mins available for 1 m ) * Disabled when the sensor module is not connected and when using external input/output and USB
USB (Peripheral, Micro)	Standard equipment (isolated)
RS-232C	Standard equipment (external printer, RS-232C, GPS unit, shared with analog output, non-isolated)
Analog output	DC100 to 2400 mV, up to 6 items can be set (isolated)
Open collector output	Alarm output 2 points DC25V, 50mA or less (isolated)
Performance guarantee temperature	0 to 45°C
Power	2 AA alkaline batteries / rechargeable Ni-MH batteries or USB power supply (no charging function)
External dimension (excluding protrusions)	Approx. 70 (W) × 39 (H) × 188 (D) mm
Weight (including batteries)	Approx. 300 g

### ◆ Sensor module

Water proof structure	Within 100m (1.0MPa) * The water depth when the ion electrode is attached is up to 5 to 15m depending on the type of electrode.
RS-485 (Modbus RTU)	Connectable with the optional Modbus power BOX
Performance guarantee temperature	0 to 45°C
Power	3 AA alkaline batteries / rechargeable Ni-MH batteries
External dimension (excluding protrusions)	Standard : Approx. $\phi 45 \times 425$ (length) mm With water depth sensor : Approx. $\phi 47 \times 500$ (length) mm
Weight (including batteries)	Standard : Approx. 1330 g With water depth sensor : Approx. 1470 g

## Measurement items

Item	Measurement range	Repeatability (Constant conditions)	Measurement method
pH	pH0.00 to pH14.00	Within $\pm 0.05$ pH	Glass electrode method
Electric conductivity (EC)	0.00 to 10.00S/m Display range: 0.0 to 202.0mS/m, 0.000 to 2.020S/m, 0.00 to 20.20S/m (manual/automatic switch range)	Within $\pm 1\%$ FS	AC 4-electrode method
Salt	0.00 to 4.00% (NaCl) 0.00 to 40.00psu (PSS)	NaCl: within 0.04% PSS: within 0.40psu	Conversion from electric conductivity
Total dissolved solids (TDS)	0.0 to 999.9g/L	Within $\pm 1\%$ FS	Conversion from electric conductivity
Sea water specific gravity ( $\sigma_t$ )	0.0 to 50.0 $\sigma_t$	Within $\pm 0.5 \sigma_t$	Conversion from electric conductivity
Temperature (TEMP)	-5.00 to 55.00°C	Within $\pm 0.3^\circ\text{C}$	Platinum resistor
Turbidity (TURB) *1	0.0 to 80.0NTU (mg/L) 0 to 800NTU (mg/L)	Within $\pm 1.6$ NTU (0.0 to 80.0NTU) Within $\pm 8$ NTU (0 to 800NTU)	90 degree scattered light method
Dissolved oxygen (DO) (Optional)	0.00 to 20.00mg/L 0 to 200%	Within $\pm 0.3$ mg/L Within $\pm 4\%$	Membrane galvanic cell method
ORP (Optional)	-2000 to 2000mV	—	Platinum electrode method
Ion (Optional) *2 (6 types: F <sup>-</sup> , Cl <sup>-</sup> , NO <sub>3</sub> <sup>-</sup> , Ca <sup>2+</sup> , K <sup>+</sup> , NH <sub>4</sub> <sup>+</sup> )	0.00 to 2.00mg/L 0 to 62g/L (6 range) (Depending on electrode used)	Within $\pm 5$ mV	Ion electrode method
Water depth (DEPT) (Factory option)	0.0 to 100.0m	Within $\pm 0.1$ m	Diaphragm pressure sensor method

\*1 Turbidity when calibrated with formazin standard solution is displayed as NTU, and turbidity when calibrated with kaolin standard solution is displayed as mg/L.  
(Suspended solids (SS) cannot be measured.)

\*2 Regarding ion measurement, it is a batch measurement.

## Standard accessories

pH6.86 Standard solution 500mL	143F192	Special tool (spanner)	76357900
pH4.01 Standard solution 500mL	143F191	Calibration beaker (2 pcs.)	67659900
Reference electrode gel internal solution 50mL	143F235	Silicone grease	141D002
Reference electrode replacement liquid junction	6784580K	Protective cover (with shoulder belt)	7659870K
Connector cap (attached to the sensor module)	7659850K	Connection cable 2m	7748340K
Dummy cap (built into the electrode mounting part)	7659830K	AA alkaline batteries (sample provided) (5 pcs.) Instruction manual	

## Order code

### ◆ Set sale and main unit only (with 2m connection cable)

Order code	
WQC40-0-0	Main unit only
WQC40-0-1	Main unit + Standard sensor module
WQC40-0-2	Main unit + Standard sensor module + Water depth sensor

### ◆ Sensor module

Order code	
WMS40-0-0	Standard sensor module
WMS40-0-1	Standard sensor module + Water depth sensor

## Options

### ◆ pH/ORP

Product	Code No.
Reference electrode	ELR-001
Glass electrode tip	ELP-023
ORP electrode tip	ELM-004
Liquid junction	6784580K
Reference electrode gel internal solution 50mL	143F235
pH 6.86 standard solution 500mL	143F192
pH 4.01 standard solution 500mL	143F191
pH 9.18 standard solution 500mL	143F193
ORP check solution (pH4.01 standard solution 500mL+quinhydrone solution)	143F196
Abrasive solution for ORP electrode 10mL	AO-001

### ◆ Electric conductivity

Product	Code No.
Check solution for EC cell 0.01mol/kg 100mL (4 bottles) 140.8mS/m at 25°C	143A144

### ◆ Turbidity

Product	Code No.
Formazin standard solution 4000NTU 100mL	HACH1140
Formazin standard solution 4000NTU 500mL	HACH1141

### ◆ Dissolved oxygen

Product	Code No.
DO Electrode unit	ELD-001
DO Electrode diaphragm set (2 pcs.)	6789790K
DO Electrode internal liquid (electrolyte) 50 mL (3 bottles)	0BG00007
Sodium sulfite 50g	143A030



### ◆ Other options

Product	Code No.
Connection cable 2m (standard accessories)	7748340K
Connection cable 10m	6821850K
Connection cable 30m	6821860K
Connection cable 100m	6821870K
Data acquisition software	GP-LOG
USB communication cable 2m	7473100K
RS-232C connection cable 2m	118N062
Analog output cable ASSY 1.8m	7585320K
External printer (with connection cable)	EPS-P30
External printer paper (20 rolls)	P000119
Ink ribbon for external printer (1 pc.)	ORD00001
Connection cable for external printer	118N061
AC-USB adapter ASSY 2m	7472510K
Connector cap (standard accessories)	7659850K
Dummy cap (standard accessories)	7659830K
Silicone grease (standard accessories)	141D002
Protective cover (with shoulder belt) (standard accessories)	7659870K
GPS Unit	7679760K
Modbus power BOX	7670840K
Stirrer	ST-8



**DKK-TOA CORPORATION**



**CAUTION**

Please read the operation manual carefully before using products.

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