OpreX™ Analyzers

Personal pH, pH/ORP, Conductivity Meters

PH71/PH72/SC72

Personal Series are ideal for testing waters outside, laboratory studies, and various other applications.

Features

- **Tough and waterproof construction**
  Conforms to IP67
- **Large and easy-to-read LCD display**
  Large characters
- **Compact and lightweight**
  Fits comfortably your hand and stands firm on the table
- **Lineup of various sensors**
- **Regulatory compliance**
  - EMI(Emission) - EN 61326-1 Class B
  - EMS(Immunity) - EN 61326-1 Table 2
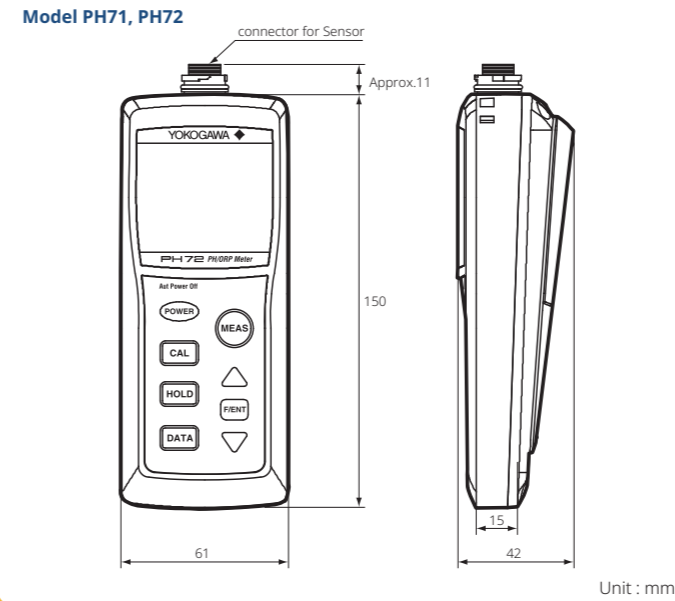   (For use in industrial locations)

PH72SN

PH71 Personal pH Meter
PH72 Personal pH/ORP Meter

SC72 Personal Conductivity Meter
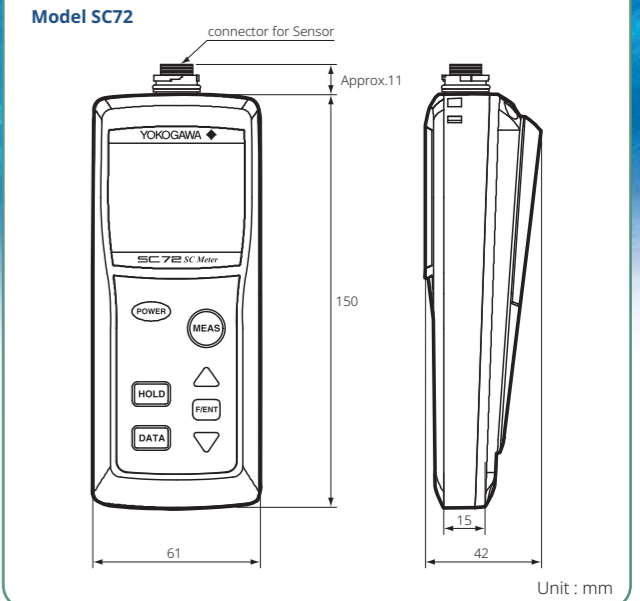
SC72SN

Simple to Use

① **Remaining battery life at a glance**
  Long battery life:
  Approx. 200 hours of continuous use (SC72)
  Approx. 600 hours of continuous use (PH71/72)

② **Large and easy-to-read LCD display**
  Large characters

③ **Power on/off key**
  Auto power off function

④ **Easy calibration**
  Automatic/manual calibration

⑤ **HOLD key**
  Holds the displayed measured value temporarily

⑥ **Entry keys**
  For data setting, range setting, temperature compensation setting, standard solution calibration, cell constant setting (SC72), etc.

⑦ **DATA key**
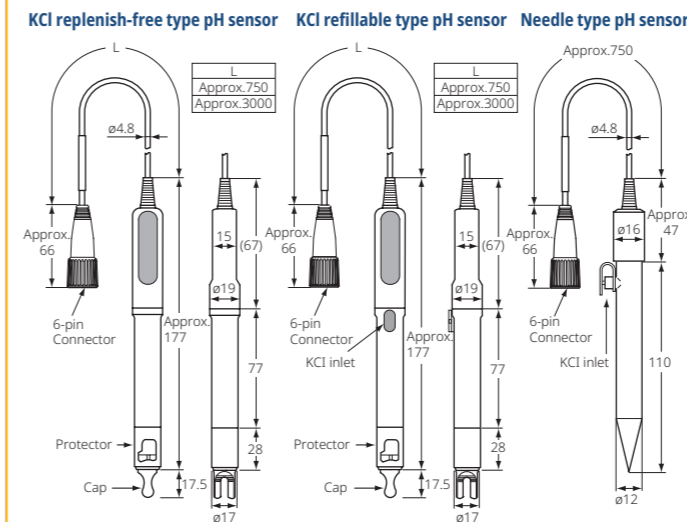 Gives access to 300 data points (measured values, temperature, date and time)
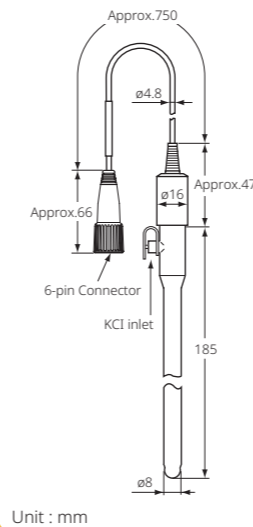
Dimension

Personal pH, pH/ORP Meter

Model PH71, PH72

connector for Sensor
Approx.11
150
61
42
15
Unit : mm

Personal Conductivity Meter

Model SC72

connector for Sensor
Approx.11
150
61
42
15
Unit : mm

pH Sensor for Personal pH, pH/ORP Meter

KCl replenish-free type pH sensor   KCl refillable type pH sensor   Needle type pH sensor
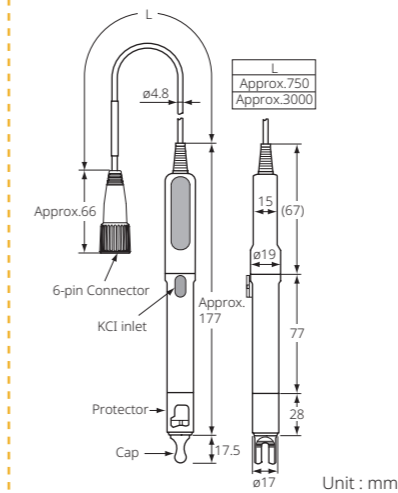

Test tube size pH sensor

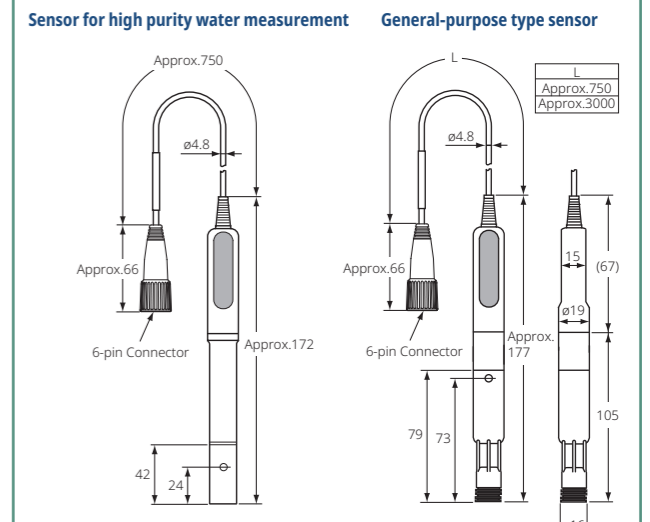### ORP Sensor for Personal pH/ORP Meter

KCl refillable type ORP sensor

Unit : mm

Conductivity Sensor for Personal Conductivity Meter

Sensor for high purity water measurement   General-purpose type sensor

Chemical-resistant type sensor   Sensor for high conductivity measurement

Unit : mm
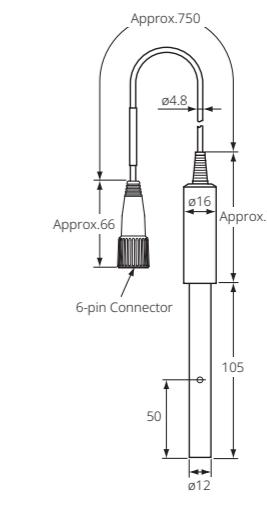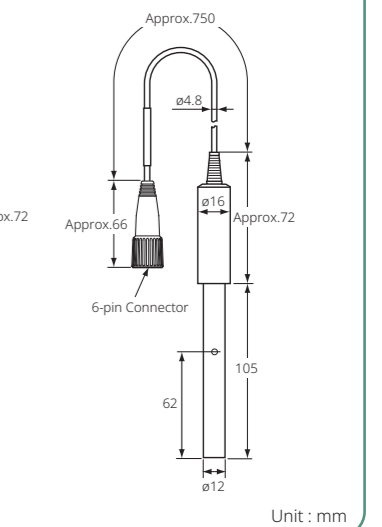
Model, Codes and Specifications

■ Personal pH Meter

Model	Suffix Code	Option Code	Description
PH71	- - - - - - - - - - - -	- - - - - - - - - -	Personal pH meter
Connecting sensors	-00	- - - - - - - - - -	Without sensor
	-11	- - - - - - - - - -	With KCl replenish-free type combination pH sensor (cable length: 0.75 m)
	-13	- - - - - - - - - -	With KCl replenish-free type combination pH sensor (cable length: 3 m)
	-21	- - - - - - - - - -	With KCl refillable type combination pH sensor (cable length: 0.75 m)
	-23	- - - - - - - - - -	With KCl refillable type combination pH sensor (cable length: 3 m)
	-32	- - - - - - - - - -	With needle type pH sensor (cable length: 0.75 m)
	-33	- - - - - - - - - -	With test tube size pH sensor (cable length: 0.75 m)
Language	-J	- - - - - - - - - -	Japanese
	-E	- - - - - - - - - -	English
Country		-AA	- - - - - - - - - -	Global except South Korea and Malaysia (with batteries)
		-NB	- - - - - - - - - -	South Korea and Malaysia (without batteries) *1

*1: In South Korea and Malaysia, primary battery is limited by regulations. Prepare batteries with the authorized certification mark for each country.

■ Personal pH/ORP Meter

Model	Suffix Code	Option Code	Description
PH72	- - - - - - - - - - - -	- - - - - - - - - -	Personal pH/ORP meter
Connecting sensors	-00	- - - - - - - - - -	Without sensor
	-11	- - - - - - - - - -	With KCl replenish-free type combination pH sensor (cable length: 0.75 m)
	-13	- - - - - - - - - -	With KCl replenish-free type combination pH sensor (cable length: 3 m)
	-21	- - - - - - - - - -	With KCl refillable type combination pH sensor (cable length: 0.75 m)
	-23	- - - - - - - - - -	With KCl refillable type combination pH sensor (cable length: 3 m)
	-32	- - - - - - - - - -	With needle type pH sensor (cable length: 0.75 m)
	-33	- - - - - - - - - -	With test tube size pH sensor (cable length: 0.75 m)
	-41	- - - - - - - - - -	With KCl refillable type ORP sensor (cable length: 0.75 m)
	-43	- - - - - - - - - -	With KCl refillable type ORP sensor (cable length: 3 m)
	-51	- - - - - - - - - -	With KCl refillable type combination pH sensor (cable length: 0.75 m) + KCl refillable type ORP sensor (cable length: 0.75 m)
Language	-J	- - - - - - - - - -	Japanese
	-E	- - - - - - - - - -	English
Country		-AA	- - - - - - - - - -	Global except South Korea and Malaysia (with batteries)
		-NB	- - - - - - - - - -	South Korea and Malaysia (without batteries) *1

*1: In South Korea and Malaysia, primary battery is limited by regulations. Prepare batteries with the authorized certification mark for each country.

■ pH Sensors for Personal pH/ORP Meter

Model	Suffix Code	Option Code	Description
PH72SN	- - - - - - - - - - - -	- - - - - - - - - -	pH sensor for personal pH/ORP meter
Type	-11	- - - - - - - - - -	KCl replenish-free type combination pH sensor (cable length: 0.75 m)
	-13	- - - - - - - - - -	KCl replenish-free type combination pH sensor (cable length: 3 m)
	-18	- - - - - - - - - -	KCl replenish-free type combination pH sensor (cable length: 0.75 m) *1
	-19	- - - - - - - - - -	KCl replenish-free type combination pH sensor (cable length: 3 m) *1
	-21	- - - - - - - - - -	KCl refillable type combination pH sensor (cable length: 0.75 m)
	-23	- - - - - - - - - -	KCl refillable type combination pH sensor (cable length: 3 m)
	-28	- - - - - - - - - -	KCl refillable type combination pH sensor (cable length: 0.75 m) *1
	-32	- - - - - - - - - -	Needle type pH sensor (cable length: 0.75 m)
	-33	- - - - - - - - - -	Test tube size pH sensor (cable length: 0.75 m)
	-38	- - - - - - - - - -	Needle type pH sensor (cable length: 0.75 m) *1
	-39	- - - - - - - - - -	Test tube size pH sensor (cable length: 0.75 m) *1
—		-AA	- - - - - - - - - -	Always -AA

*1: pH sensor for PH81, PH82 (previous models). Waterproofing is not guaranteed if you use PH81, PH82-type sensor in conjunction with PH71, PH72 meter.

■ ORP Sensors for pH/ORP Meter

Model	Suffix Code	Option Code	Description
OR72SN *1	- - - - - - - - - - - -	- - - - - - - - - -	ORP Sensor for Personal pH/ORP Meter
Type	-41	- - - - - - - - - -	KCl refillable ORP sensor (cable length: 0.75 m)
	-43	- - - - - - - - - -	KCl refillable ORP sensor (cable length: 3 m)
	-48	- - - - - - - - - -	KCl refillable ORP sensor (cable length: 0.75 m) *2
	-49	- - - - - - - - - -	KCl refillable ORP sensor (cable length: 3 m) *2
—		-AA	- - - - - - - - - -	Always -AA

*1: Cannot be connected to PH71 and PH81 (previous model) meters.
*2: pH sensor for PH82 (previous model). Waterproofing is not guaranteed if you use PH82-type sensor in conjunction with PH72 meter.

■ Specifications of Personal pH/ORP Meters

		PH71	PH72
Measurement		Hydrogen ion concentration (pH) of solution	Hydrogen ion concentration (pH) or oxidation-reduction potential (ORP) of solution
Measurement range	pH	0 to 14 pH *1	
	ORP	—	-2000 to 2000 mV
	Temperature	0 to 80°C *2 (or 0 to 100°C *4)	
Resolution	pH	0.01 pH	
	ORP	—	1 mV (0.1 mV: -199.9 to 199.9 mV)
	Temperature	0.1°C	
Repeatability (without sensor)	pH	±0.01 pH	
	ORP	—	±1 mV
Accuracy	Temperature	±0.7°C (0 to 70°C), ±1°C (above 70°C)	
Display		Digital LCD	
Indication		pH and solution temperature (simultaneously), sensor check, various messages *3	pH or ORP (mV) and solution temperature (simultaneously), sensor check, various messages *3
Temperature compensation (glass electrode emf — temperature characteristics)		Automatic compensation (or manual compensation *4)	
Solution conductivity		50 μS/cm or more *5	
Calibration		Automatic (1 or 2 point), manual	
Ambient temperature		0 to 50°C	
Wetted Material		●KCl replenish-free type combination pH sensor Polypropylene resin (sensor body, protective cover), Glass (glass electrode, temperature sensor protection tube), Ceramics (liquid junction), Silicon rubber (sensor seal) ●KCl refillable type combination pH sensor PVC (cable), rigid polyethylene (grip), ethylene propylene rubber (grip and cable connection), Polypropylene resin (sensor body, protective cover), Glass (glass electrode, temperature sensor protection tube), Ceramics (liquid junction), Silicon rubber (sensor seal) ●Needle type pH sensor Glass (sensor body) ●Test tube size pH sensor Glass (sensor body)	●KCl refillable type ORP sensor Platinum (electrode), Polypropylene resin (sensor body, protective cover), Glass (glass electrode, temperature sensor protection tube), Ceramics (liquid junction), Silicon rubber (sensor seal) —
Construction		Protection class IP67 (IEC 60529)	
Dimensions		Approximately 150(H) x 61(W) x 42(D) mm (not including connector part)	
Weight		Approximately 220 g (without sensor)	
Power source		2x AA batteries (LR6), Auto power off function (time configurable: 1 to 120 minutes)	
Battery life		Approximately 600 hours *6 of continuous use (battery type and operating condition dependent)	
Functions		Data memory (300 points), alarm clock, etc.	
EMC Compliance		EMI (Emission): EN 61326-1 Class B EMS (Immunity): EN 61326-1 Table 2 (For ise in industrial locations *7) EMC Regulatory Arrangement in Australia and New Zealand (RCM) EN 61326-1 Class B, Table2 Korea Electromagnetic Conformity Standard Class B 한국 전자파적합성 기준	
Environmental resistance		Compliant with RoHS *8, WEEE, and EU battery directive	

*1: Display range is from -2 to 10 pH.
*2: Display range is from -10 to 120°C. When a needle type or test tube size pH sensor is used. 0 to 50°C when a KCl replenish-free type sensor and its sensor cable are immersed in water.
*3: When needle type or test tube size pH sensor is connected, liquid temperature can not be measured.
*4: When a needle type or test tube size pH sensor is connected.
*5: Confirm that the solution conductivity is 50 μS/cm or more.
*6: When alkaline batteries are used.
*7: Display value may be affected by strong electromagnetic field.
*8: RoHS: EN IEC 63000 (Style 2.03 and later)

■ Standard Accessories for Personal pH/ORP Meter (for a set of converter and sensor)
User's Manual, Quick Manual, non-slip pads (2 pcs), hand strap, AA batteries (2pcs) (for South Korea and Malaysia "-NB", batteries are not attached)
* Standard solutions (pH 4, pH 7), calibration sub bottles (2 pcs), 3.3 mol/l KCl solution, 5-ml syringe, and cotton swabs are supplied depending on specifications.

■ Spare Parts
pH 4 standard solution (250 ml x 1 bottle)   Part number: K9084KF
pH 7 standard solution (250 ml x 1 bottle)   Part number: K9084KG
pH 9 standard solution (250 ml x 1 bottle)   Part number: K9084KH
KCl solution (3.3 mol/l KCl solution, 50 ml x 2 bottles)   Part number: K9220XH
Quinhydrone reagent (3 packs, 1 pack for 250 ml solution)   Part number: K9024EC
Calibration sub bottle (2 bottles)   Part number: K9220WW
Cap set (Sensor protective cover and cap)   Part number: K9220ZY
O-ring and gasket set (Gaskets for battery box (2 pcs) and O-rings for connector (2 pcs))   Part number: K9654AY

Model, Codes and Specifications

▪ Personal Conductivity Meter

Model	Suffix Code	Option Code	Description
SC72	- - - - - - - - - - - -	- - - - - - - - - -	Personal conductivity meter
Connecting sensors	-00	- - - - - - - - - -	Without sensor
	-11	- - - - - - - - - -	With sensor for high purity water measurement (cable length: 0.75 m)
	-21	- - - - - - - - - -	With general-purpose type sensor (cable length: 0.75 m)
	-23	- - - - - - - - - -	With general-purpose type sensor (cable length: 3 m)
	-31	- - - - - - - - - -	With chemical-resistant type sensor (cable length: 0.75 m)
	-41	- - - - - - - - - -	With sensor for high conductivity measurement (cable length: 0.75 m)
Label language	-J	- - - - - - - - - -	Japanese
	-E	- - - - - - - - - -	English
Country		-AA	- - - - - - - - - -	Global except South Korea and Malaysia (with batteries)
		-NB	- - - - - - - - - -	South Korea and Malaysia (without batteries) *1

*1: In South Korea and Malaysia, primary battery is limited by regulations. Prepare batteries with the authorized certification mark for each country.

▪ Conductivity Sensor for Personal Conductivity Meter

Model	Suffix Code	Option Code	Description
SC72SN	- - - - - - - - - - - -	- - - - - - - - - -	Conductivity sensor for personal conductivity meter
Type	-11	- - - - - - - - - -	Sensor for high purity water measurement (cable length: 0.75 m)
	-19	- - - - - - - - - -	Sensor for high purity water measurement (cable length: 0.75 m) *1
	-21	- - - - - - - - - -	General-purpose type sensor (cable length: 0.75 m)
	-23	- - - - - - - - - -	General-purpose type sensor (cable length: 3 m)
	-29	- - - - - - - - - -	General-purpose type sensor (cable length: 0.75 m) *1
	-31	- - - - - - - - - -	Chemical-resistant type sensor (cable length: 0.75 m)
	-39	- - - - - - - - - -	Chemical-resistant type sensor (cable length: 0.75 m) *1
	-41	- - - - - - - - - -	Sensor for high conductivity measurement (cable length: 0.75 m)
	-49	- - - - - - - - - -	Sensor for high conductivity measurement (cable length: 0.75 m) *1
—		-AA	- - - - - - - - - -	Always -AA

*1: Conductivity sensor for SC82 (previous model). Waterproofing is not guaranteed if you use SC82-type sensor in conjunction with SC72 meter.

▪ Specifications of Personal Conductivity Meter

		SC72
Measurement		Conductivity of solution
Measurement range	Conductivity	●General-purpose type (Cell Constant: 5 cm^{-1}) 　0 to 20 µS/cm, 0 to 200 µS/cm, 0 to 2 mS/cm, 0 to 20 mS/cm, 0 to 200 mS/cm ●For high purity water measurement (Cell Constant: 0.05 cm^{-1}) 　0 to 2 µS/cm, 0 to 20 µS/cm, 0 to 200 µS/cm ●Chemical-resistant type (Cell Constant: 5 cm^{-1}) 　0 to 20 µS/cm, 0 to 200 µS/cm, 0 to 2 mS/cm, 0 to 20 mS/cm, 0 to 200 mS/cm ●For high conductivity measurement (Cell Constant: 50 cm^{-1}) 　0 to 2 mS/cm, 0 to 20 mS/cm, 0 to 200 mS/cm, 0 to 2 S/cm
	Resistivity	0 to 40.0 MΩ·cm (for sensor for high purity water measurement) *1
	Temperature	0 to 80℃ *2
Resolution	Conductivity	0.05% of full scale *3
	Resistivity	0.1 MΩ·cm
	Temperature	0.1℃
Repeatability	Conductivity	±2% (±5% when general-purpose type sensor is used in the range of 0 to 200 mS/cm)
Accuracy	Temperature	±0.7℃ (0 to 70℃), ±1℃ (above 70℃)
Display		Digital LCD
Indication		Conductivity or resistivity, solution temperature and temperature coefficient (simultaneously), various messages
Range switching		Automatic/manual
Temperature compensation		Temperature coefficient (0 to 9.99%/℃) or NaCl coefficient, reference temperature at 25℃
Ambient temperature		0 to 50℃
Wetted Material		●General-purpose type (Cell Constant: 5 cm^{-1}) 　Titanium (sensor), fluoro rubber (O-ring), PVC (cable), polyphenylene sulfite resin, polypropylene resin 　(insulated area, clear cover) ●For high purity water measurement (Cell Constant: 0.05 cm^{-1}) 　SUS316 (electrode element), fluoro rubber (O-ring), polypropylene resin (insulated area), PVC (cable) ●Chemical-resistant type (Cell Constant: 5 cm^{-1}) 　Glass, platinum black (electrode element), PVC (cable) ●For high conductivity measurement (Cell Constant: 50 cm^{-1}) 　Glass, platinum black (electrode element), PVC (cable)
Construction		Protection class IP67 (IEC 60529)
Dimensions		Approximately 150(H) x 61(W) x 42(D) mm (not including connector part)
Weight		Approximately 220 g (without sensor)
Power source		2x AA batteries (LR6), Auto power off function (time configurable: 1 to 120 minutes)
Battery life		Approximately 200 hours *4 of continuous use (battery type and operating condition dependent)
Functions		Data memory (300 points), alarm clock
EMC Compliance		EMI (Emission): EN 61326-1 Class B EMS (Immunity): EN 61326-1 Table 2 (For ise in industrial locations *5) EMC Regulatory Arrangement in Australia and New Zealand (RCM) EN 61326-1 Class B, Table2 Korea Electromagnetic Conformity Standard Class B 한국 전자파적합성 기준
Environmental resistance		Compliant with RoHS *6, WEEE, and EU battery directive

*1: Resistivity can be measured for reference. In that case repeatability is determined by conductivity.
*2: Display range is from -10 to 120℃. 0 to 50℃ when the sensor cable is immersed in water.
*3: When measuring range is set to full scale.
*4: When alkaline batteries are used.
*5: Display value may be affected by strong electromagnetic field.
*6: RoHS: EN IEC 63000 (Style 2.03 and later)

▪ Standard Accessories for Personal Conductivity Meter
User's Manual, Quick Manual, non-slip pads (2 pcs), hand strap, cotton swabs, AA batteries (2pcs) (for South Korea and Malaysia "-NB", batteries are not attached)

▪ Options (Available Separately)
Standard solution (0.1 mol /l NaCl, 250 ml) Part number: K9221ZA

▪ Spare Parts
O-ring and gasket set (Gaskets for battery box (2 pcs) and O-rings for connector (2 pcs)) Part number: K9654AY

■ Compliance

Compliance Personal meter	IP67	CE *1	RCM	KC
pH meter without sensor, pH/ORP meter without sensor	○	○	○	○
pH sensor	—	—	○	○
ORP sensor	—	○	○	○
Conductivity meter without sensor	○	○	○	○
Conductivity sensor	—	○	○	○

*1: RoHS (EN IEC 63000) conforms to style 2.03 or later for meters and style 2.02 or later for sensors.

OpreX™ Through the comprehensive OpreX portfolio of products, services, and solutions, Yokogawa enables operational excellence across the enterprise.

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