

Personal pH, pH/ORP, Conductivity Meters
PH71/PH72/SC72



PH71/PH72/SC72

Personal pH, pH/ORP, Conductivity Meters

Bulletin 12B03D01-01E

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Compact and
lightweight
220g

IP67
Waterproof

CE, RCM, KC
Compliance

pH, pH/ORP, and Conductivity Meters

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- Data memory
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- Self-diagnostics
- Auto power off



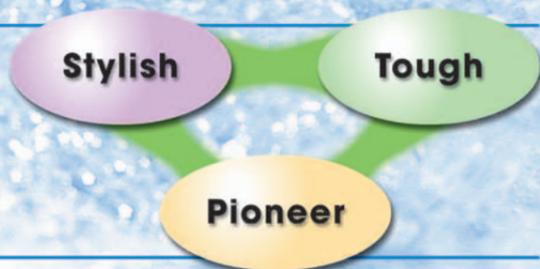
Personal Series



YOKOGAWA is a pioneer in the design and development of portable water quality meters.

Bodies of the Personal Series are tough, waterproof (IP67) and stylish design with bright new colors.

Advanced yet easy-to-use membrane keypad for various and convenient function such as data memory.



Model, Codes and Specifications

Personal pH Meter

Model	Suffix Code	Option Code	Description
PH71	-----	-----	Personal pH meter
pH 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 *1	-----	With needle type pH sensor (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) *2

*1: Needle type pH sensor and Test tube size pH sensor; Non-RoHS compliant products

*2: 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
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 *1	-----	With needle type pH sensor (cable length: 0.75 m)
	-33 *1	-----	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)
Label language	-J	-----	Japanese
	-E	-----	English
Country	-AA	-----	Global except South Korea and Malaysia (with batteries)
	-NB	-----	South Korea and Malaysia (without batteries) *2

*1: Needle type pH sensor and Test tube size pH sensor; Non-RoHS compliant products

*2: 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
	-11	-----	For PH71/72: KCl replenish-free type combination pH sensor (cable length: 0.75 m)
	-13	-----	For PH71/72: KCl replenish-free type combination pH sensor (cable length: 3 m)
	-18 *1	-----	For PH81/82: KCl replenish-free type combination pH sensor (cable length: 0.75 m)
	-19 *1	-----	For PH81/82: KCl replenish-free type combination pH sensor (cable length: 3 m)
	-21	-----	For PH71/72: KCl refillable type combination pH sensor (cable length: 0.75 m)
	-23	-----	For PH71/72: KCl refillable type combination pH sensor (cable length: 3 m)
	-28 *1	-----	For PH81/82: KCl refillable type combination pH sensor (cable length: 0.75 m)
	-32 *2	-----	For PH71/72: Needle type pH sensor (cable length: 0.75 m)
	-33 *2	-----	For PH71/72: Test tube size pH sensor (cable length: 0.75 m)
	-38 *1 *2	-----	For PH82: Needle type pH sensor (cable length: 0.75 m)
	-39 *1 *2	-----	For PH82: Test tube size pH sensor (cable length: 0.75 m)
	-AA	-----	Always -AA

*1: Combination of pH sensors for PH81/82 meter with PH71/72 meter will not be IP67 waterproof.

*2: Needle type pH sensor and Test tube size pH sensor; Non-RoHS compliant products

ORP Sensors for pH/ORP Meter

Model	Suffix Code	Option Code	Description
OR72SN *1	-----	-----	
	-41	-----	
	-43	-----	
	-48 *2	-----	
	-49 *2	-----	
-AA	-----		Always -AA

*1: Cannot be connected to PH81 and PH71 meters

*2: Combination of ORP sensors for PH81/82 meter with PH72 meter will not be IP67 waterproof.

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	0 to 14 pH, 0 to 80°C (or 0 to 100°C*1)	0 to 14 pH, ±2000 mV, 0 to 80°C (or 0 to 100°C*1)
Resolution	0.01 pH, 0.1°C	0.01 pH, 1 mV (0.1 mV for -199.9 mV to 199.9 mV), 0.1°C
Repeatability (w/o sensor)	±0.01 pH ±1 digit	±0.01 pH ±1 digit, ±1 mV ±1 digit
Display	Digital LCD	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	Automatic/manual	Automatic/manual
Calibration	Automatic (1 or 2 point), manual	Automatic (1 or 2 point), manual
Ambient temperature	0 to 50°C	0 to 50°C
Construction	IP67 (JIS C0920)	IP67 (JIS C0920)
Weight	Approx. 220 g (without sensor)	Approx. 220 g (without sensor)
Power source	2 AA size dry cell batteries	2 AA size dry cell batteries
Battery life	Approx. 600 hours*2, Auto Power Off function	Approx. 600 hours*2, Auto Power Off function
Functions	Data memory (300 points), alarm clock, etc.	Data memory (300 points), alarm clock, etc.
Regulatory compliance	EMI (Emission) - EN 61326-1 Class B EMS (Immunity) - EN 61326-1 Table 2 (For use in industrial locations)	EMI (Emission) - EN 61326-1 Class B EMS (Immunity) - EN 61326-1 Table 2 (For use in industrial locations)

*1: When needle type or test tube size pH sensor is connected.

*2: When alkaline dry cell batteries are used.

*3: When needle type or test tube size pH sensor is connected, liquid temperature can not be measured.

Note: Conductivity of sample solution must be at least 50 µS/cm.

Standard Accessories for Personal pH/ORP Meter (for a set of converter and sensor)

AA size dry batteries (2pcs) (for South Korea and Malaysia "NB", batteries are not attached), User's Manual, Quick Manual, non-slip pads (2 pcs), hand strap
* 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.

Specifications of Sensors for Personal pH/ORP Meter

Sensor	Model	Measurement Range	Wetted Material
KCl replenish-free type combination pH sensor	PH72SN-11 (0.75 m)	0 to 14 pH	Polypropylene resin (sensor body, protective cover)
	PH72SN-13 (3 m)	0 to 14 pH	Glass (glass electrode, temperature sensor protection tube)
KCl refillable type combination pH sensor	PH72SN-21 (0.75 m)	0 to 14 pH	Ceramics (liquid junction)
	PH72SN-23 (3 m)	0 to 14 pH	Silicon rubber (sensor seal)
KCl refillable type ORP sensor	OR72SN-41 (0.75 m)	±2000 mV	ORP sensor: Platinum (electrode)
	OR72SN-43 (3 m)	±2000 mV	KCl replenish-free type: PVC (cable), rigid polyethylene (grip), ethylene propylene rubber (grip and cable connection)
Needle type pH sensor	PH72SN-32 (0.75 m)	0 to 14 pH	Glass (sensor body)
Test tube size pH sensor	PH72SN-33 (0.75 m)	0 to 14 pH	Glass (sensor body)

Personal Conductivity Meter

Model	Suffix Code	Option Code	Description
SC72	-----	-----	Personal conductivity meter
Conductivity 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
Sensor	-11	-----	For SC72: Sensor for high purity water measurement (cable length: 0.75 m)
	-19 *	-----	For SC82: Sensor for high purity water measurement (cable length: 0.75 m)
	-21	-----	For SC72: General-purpose type sensor (cable length: 0.75 m)
	-23	-----	For SC72: General-purpose type sensor (cable length: 3 m)
	-29 *	-----	For SC82: General-purpose type sensor (cable length: 0.75 m)
	-31	-----	For SC72: Chemical-resistant type sensor (cable length: 0.75 m)
	-39 *	-----	For SC82: Chemical-resistant type sensor (cable length: 0.75 m)
	-41	-----	For SC72: Sensor for high conductivity measurement (cable length: 0.75 m)
	-49 *	-----	For SC82: Sensor for high conductivity measurement (cable length: 0.75 m)
	-AA	-----	Always -AA

*Combination of conductivity sensor for SC82 with SC72 meter will not be IP67 waterproof.

Specifications of Personal Conductivity Meter

	SC72	
Measurement	Conductivity of solution	
Unit	S/cm or S/m	
Measurement range	Conductivity	0 to 2 µS/cm through 0 to 2 S/cm (depends on sensor to be used)
	Resistivity	0 to 40.0 MΩ·cm (for sensor for high purity water measurement) *1
Resolution	Temperature	0 to 80°C
	Conductivity	0.05% of full scale *2
	Resistivity	0.1 MΩ·cm
Repeatability	Temperature	0.1°C
	Conductivity	±2% (±5% when general-purpose type sensor is used in the range of 0 to 200 mS/cm)
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%/°C) or NaCl coefficient, reference temperature at 25°C	
Ambient temperature	0 to 50°C	
Construction	IP67 (JIS C0920)	
Weight	Approx. 220 g (without sensor)	
Power source	2 size AA dry cell batteries	
Battery life	Approx. 200 hours*3, Auto Power Off function	
Functions	Data memory (300 points), alarm clock	
Regulatory compliance	EMI (Emission) - EN 61326-1 Class B	
	EMS (Immunity) - EN 61326-1 Table 2 (For use in industrial locations)	

*1: Resistivity can be measured for reference. In that case repeatability is determined by conductivity.

*2: When measuring range is set to full scale.

*3: When alkaline dry cell batteries are used.

Standard Accessories for Personal Conductivity Meter

AA size dry batteries (2pcs) (for South Korea and Malaysia "NB", batteries are not attached), User's Manual, Quick Manual, non-slip pads (2 pcs), hand strap, cotton swabs

Specifications of Sensor for Personal Conductivity Meter

Sensor	Model	Measurement Range*1	Cell Constant	Wetted Material
For high purity water measurement*2	SC72SN-11(0.75m)	0 to 2μS/cm, 0 to 20μS/cm, 0 to 200μS/cm, 0 to 40MΩ·cm	0.05cm ⁻¹	SUS316 (electrode element), fluoro rubber (O-ring), polypropylene resin (insulated area), PVC (cable)
General-purpose type	SC72SN-21(0.75m)	0 to 20μS/cm, 0 to 200μS/cm, 0 to 2mS/cm, 0 to 20mS/cm, 0 to 200mS/cm	5cm ⁻¹	Titanium (sensor), fluoro rubber (O-ring), PVC (cable), polyphenylene sulfite resin, polypropylene resin (insulated area, clear cover)
	SC72SN-23 (3m)			
Chemical-resistant type	SC72SN-31(0.75m)	0 to 2mS/cm, 0 to 20mS/cm, 0 to 200mS/cm, 0 to 2S/cm	50cm ⁻¹	Glass, platinum black (electrode element), PVC (cable)
For high conductivity measurement	SC72SN-41(0.75m)			

*1: Fixed range. For automatic range, range is automatically variable.

*2: Resistivity can be measured for reference. In that case repeatability is determined by conductivity.

Options (Available Separately)

For pH and conductivity meters in common	Soft carrying case	—
	Sensor stand	K9220XN
For pH and pH/ORP meters	pH 9 standard solution (50 ml)	K9220XF
For conductivity meter	Standard solution (0.1 mol/l NaCl, 250 ml)	K9221ZA

Spare Parts

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

Compliance

Compliance	IP67	CE *1	RCM	KC
Personal meter				
pH meter without sensor, pH/ORP meter without sensor	○	○	○	○
pH sensor	—	○*2	○	○
ORP sensor	—	○	○	○
Conductivity meter without sensor	○	○	○	○
Conductivity sensor	—	○	○	○

*1: pH, pH/ORP and Conductivity meters and sensors; RoHS compliant products from Style code 2

*2: Needle type pH sensor and Test tube size pH sensor; Non-RoHS compliant products

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VigilantPlant is Yokogawa's automation concept for safe, reliable, and profitable plant operations. VigilantPlant aims to enable an ongoing state of Operational Excellence where plant personnel are watchful and attentive, well-informed, and ready to take actions that optimize plant and business performance.

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