



Xseries

Benchttop Water Quality Meter

series

pH Meter · Conductivity Meter
Multi-Function Water Quality Meter
pH / ORP / Ion / Conductivity / Dissolved Oxygen



- pH
- ORP
- ION
- Conductivity
- DO

Large Touch Screen

X series

pH Meter Conductivity Meter
Multi-Function Water Quality Meter
pH / ORP / Ion / Conductivity / Dissolved Oxygen

Large,
Easy-to-read display



Flat panel,
easy maintenance



Vertical display



Horizontal display



Wall-mounted

Excellent system extensibility

Turntable

PC

External printer



Electronic recording can be established by connecting to a PC or network
(Please inquire about the PC software for Part 11)

Various Display Functions

Vertical/Horizontal screen switch



2ch Display

Graphic Display

Touch panel input

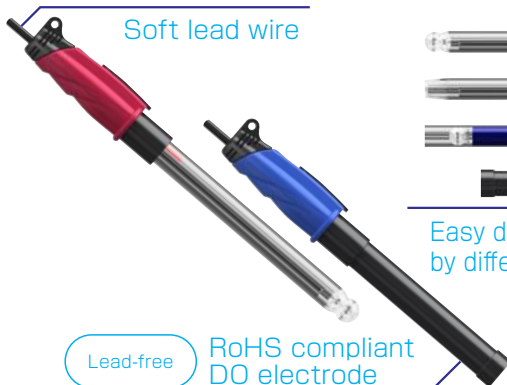


Easy-to-read menu



Maintenance information

New sensors and electrodes



Soft lead wire

Lead-free

RoHS compliant DO electrode



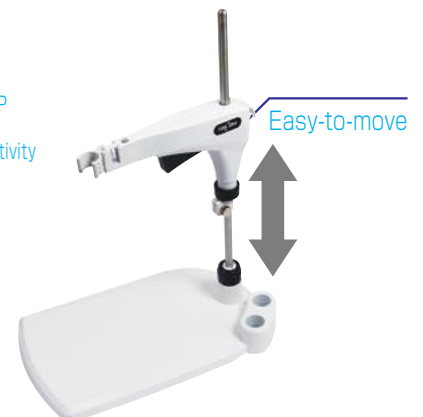
RED:pH

YELLOW:ORP

WHITE:Conductivity

BLUE:DO

Easy distinction of electrodes by different coloring



Easy-to-move

Xseries Line-up

Touch Screen

Multi-function Water Quality Meter MM-43X

sensors are sold separately

2ch



- pH
- ORP
- ION
- Conductivity
- Resistivity
- Salinity
- Concentration
- TDS
- DO

- USB
USB memory/
PC connectable
- External printer
- Turntable
- USP645

pH/Ion Meter HM-42X

Including pH combined electrode
GST-5841C



- pH
- ORP
- ION

- USB
USB memory/
PC connectable
- External printer
- Turntable

Conductivity Meter CM-42X

Including conductivity cell
CT-58101B



- Conductivity
- Resistivity
- Salinity
- Concentration
- TDS

- USB
USB memory/
PC connectable
- External printer
- Turntable
- USP645

Customized LCD Basic Type

pH Meter HM-41X

Including pH combined electrode
GST-5821C



- pH
- ORP

- USB
PC connectable
- External printer
- Dry battery

pH Meter HM-40X

Including pH combined electrode
GST-5821C



For international sales only

- pH

- Dry battery

Conductivity Meter CM-41X

Including conductivity cell
CT-58101B



- Conductivity
- Resistivity
- Salinity
- TDS

- USB
PC connectable
- External printer
- Dry battery

Accessories

MM-43X		HM-42X		CM-42X	
Electrode attachment(J)	OIB00005	Strong pH composite electrode	GST-5841C	Electrical conductivity cell	CT-58101B
Electrode attachment (DP)	OIB00007	Standard solution pH 6.86 500mL	143F192	Poly beaker (150mL)	ODE00001
Electrode attachment (ION)	OIB00006	Standard solution pH 4.01 500mL	143F191	AC adapter	7430880K
Poly beaker (150mL)×3	ODE00001	Inner Solution for Reference Electrode 50mL	50mL	Power cord	118C229
AC adapter	7430880K	Poly beaker (150mL)×3	ODE00001	Ground wire	7439370K
Power cord	118C229	AC adapter	7430880K		
Ground wire	7439370K	Power cord	118C229		
		Ground wire	X0979500		

(Common accessories for all the above model)

Electrode holder 7430850K Electrode stand (w/column and stopper) 7430860K Electrode attachment G (2 sets for MM-43X) OIB00004
Tilt stand 7430870K Manual

※ Accessories are included only when purchased in 1 set.

HM-41X		HM-40X		CM-41X	
Strong pH composite electrode *	GST-5821C	Strong pH composite electrode *	GST-5821C	Electrical conductivity cell	CT-58101B
Standard solution pH 6.86 500mL	143F192	Standard solution pH 6.86 500mL	143F192	Poly beaker (150mL)	ODE00001
Standard solution pH 4.01 500mL	143F191	Standard solution pH 4.01 500mL	143F191	AA batteries (For testing)	
Inner Solution for Reference Electrode 50mL		Inner Solution for Reference Electrode 50mL		Ground wire	X0979500
Poly beaker (150mL)×3	ODE00001	Poly beaker (150mL)×3	ODE00001		
AA batteries (For testing)		AA batteries (For testing)			
Ground wire	X0979500	Ground wire	X0979500		

(Common accessories for all the above model)

Electrode holder 7430850K Electrode holder (for HM-40X) OIB00001 Electrode stand (Stand, strut, stopper) (without HM-40X) 7430860K Electrode stand (Stand, strut, stopper) (for HM-40X) 6948810K
Electrode attachment (G) OIB00004 Tilt stand 7430870K (without HM-40X) Instruction manual

※ Accessories are included only when purchased in 1 set.

Accessories and Options

Product	P/N	Remarks
Electrode Holder	7430850K	
Electrode Stand	7430860K	With support, stopper.
Electrode Attachment (G)	OIB00004	For Xseries electrodes.
Electrode Attachment (J)	OIB00005	For Jseries electrodes.
Electrode Attachment (ION)	OIB00006	For single function ion electrodes.
Electrode Attachment (DP)	OIB00007	For P30series electrodes.
Electrode Attachment (N)	OIB00008	For Temp. sensor etc.
Stirrer	ST-7	For sample stirring. Max. 200mL beaker.
Turntable	TTT-710	12 or 18 samples.
		36 samples.
		60 samples.
		100 samples, Maker Option
		Shower cleaning by purified water is standard equipped. Chemical cleaning, bubble cleaning, air blow are possible (optional). Turntable with thermostatic tank is also available (optional). For HM-42X, CM-42X, MM-43X.
Connection Cable for Turntable	7433040K	Cable length: 2m. For HM-42X, CM-42X, MM-43X.
Data Collection Software	X-LOG	Measurement data can be export to PC. Cnection to PC by USB cable or RS-232C cable is possible. Data transfer by USB memory is also possible. RS-232C cable should be our specified one. USB cable should be A type(male)-Micro B type(male). *commercial cable is available. OS:Windows 10/8/7 For HM-42X, CM-42X, MM-43X.
Data Collection Software	GP-LOG	Measurement data can be export to PC. Cnected to PC by USB cable. USB cable should be A type(male)-Micro B type(male). *commercial cable is available. OS:Windows 10/8/7 For HM-41X, CM-41X.
RS-232C Connecting Cable	118N062	For PC connection, 2m For conncting to USB port, USB serial converter cable is necessary. HM-42X, CM-42X, MM-43X
External Printer	EPS-P30	Print to plain paper, Chart Width Approx.60mm Include connecting cable, Exterminal printer paper, Ribon for external printer
External printer paper	PO00119	20rolls, non-thermal paper
Ribon for external printer	ORD00001	
Externl Printer Cable	118N061	If you already have external printer (EPS-G/EPS-R), it is possible to use the printer by purchasing this cable.
Cell Selector	ES-1GC	Max. 5 conductivity electrodes connectable. CM-42X, MM-43X (For ch-1 only)
Electrode Selector	ES-1GDP	Max. 5 electrodes of DO connectable. MM-43X (For ch-1 only)
Analog Output Cable	7433020K	Cable length: 1.5m, External connection:3mm Y terminal (3mmY Terminal) HM-42X, CM-42X, MM-43X
pH Checker	PC-1G	HM-42X/41X/40X, MM-43X
Conductivity Check Plug	EC-1G	CM-42X/41X, MM-43X
Temp. Check Plug	TC-1G	HM-42X/41X/40X, CM-42X/41X, MM-43X
Electrode Adapter (pH/ORP/ion)	OJD00001	Single function electrode connectable.



Electrode Holder/Stand



Stirrer



Turntable



External printer

Electrodes

pH/ORP

Cal-Memo sensor

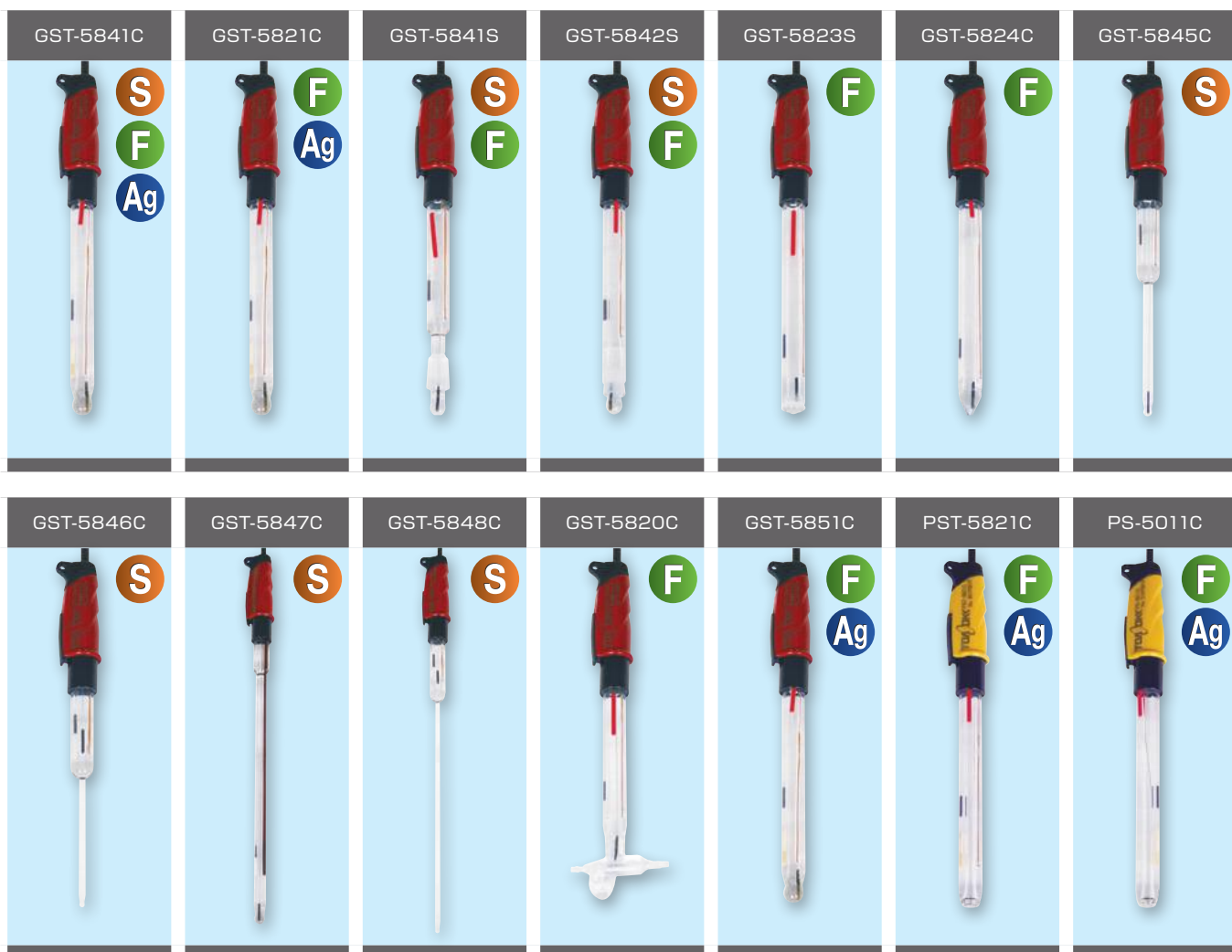
The sensor memorizes Model, serial number, calibration data

Electrode	Application	Range		Strong* ¹	Float* ²	Silver ion trap* ³	
		pH, ORP	Temp.				
pH combined electrode	GST-5841C	For general use	pHO~14	0~100°C	○	○	○
	GST-5821C	For general use	pHO~14	0~100°C	—	○	○
	GST-5841S	For organic solvent	pHO~14	0~100°C	○	○	—
	GST-5842S	For precise measurement	pHO~14	0~60°C	○	○	—
	GST-5823S	For precise trace amount	pHO~11	0~60°C	—	○	—
	GST-5824C	For insertion	pHO~12	0~60°C	—	○	—
	GST-5845C	For trace amount	pHO~13	0~100°C	○	—	—
	GST-5846C	For extreme trace amount	pHO~13	0~60°C	○	—	—
	GST-5847C	For test tube	pHO~13	0~100°C	○	—	—
	GST-5848C	For narrow test tube	pHO~13	0~60°C	○	—	—
	GST-5820C	For flow-through type	pHO~12	0~60°C	—	○	—
	GST-5851C	For high alkaline sample	pHO~14	0~100°C	—	○	○
ELP-040	For hydrofluoric acid bath	pH2~12	0~50°C	—	○	—	
5082L	Glass electrode chip (For ELP-040)						
ORP combined electrode	PST-5821C	For general use	Range of indication	0~100°C	—	○	○
ORP combined electrode Cal-Memo incompatible	PS-5011C	For general use	Range of indication	—	—	○	○

Oxalate pH Standard Solution pH 1.68	500mL	143F194
Phthalate Standard Solution pH 4.01	500mL	143F191
Phosphate pH6.86 Standard Solution	500mL	143F192
Borate Standard Solution pH 9.18	500mL	143F193
Carbonate pH Standard Solution pH 10.02	500mL	143F195
Inner Solution for Reference Electrode RE-4 50mL×3		OBG00011

ORP Standard Solution (Phthalate Standard Solution pH 4.01 500mL+Quinhydrone powder)	143F196
Abrasive Solution for ORP Electrode 10mL	AO-001

- S** *1 Strong Glass electrode. The strength of its tip is improved. Hard to break.
- F** *2 Float Float is built-in whose exchange span of internal solution can be checked in a glimpse
- Ag** *3 Silver Ion Trap Measurement performance of solution with shock absorbing characteristics such as tap water and alkaline solution is improved.



Conductivity

Cell	Application	Range		Cell Constant	
		Conductivity	Temp.		
Immersion type Conductivity cell	CT-58101B	For general use	100 μ S/m~10S/m {1 μ S/cm~100mS/cm}	0~100 $^{\circ}$ C	100m ⁻¹
	CT-58101C	For low electrical conductivity use	5 μ S/m~1S/m {0.05 μ S/cm~10mS/cm}	0~100 $^{\circ}$ C	10m ⁻¹
	CT-58101A	For high electrical conductivity use	1mS/m~100S/m {10 μ S/cm~1S/cm}	0~100 $^{\circ}$ C	1000m ⁻¹
Flow-through type Conductivity Cell	CT-88101B	For general use	100 μ S/m~10S/m {1 μ S/cm~100mS/cm}	0~100 $^{\circ}$ C	100m ⁻¹
	CT-88101C	For low electrical conductivity use	5 μ S/m~1S/m {0.05 μ S/cm~10mS/cm}	0~100 $^{\circ}$ C	10m ⁻¹
	CT-88102A	For high electrical conductivity use	10mS/m~100S/m {100 μ S/cm~1S/cm}	0~100 $^{\circ}$ C	2000m ⁻¹
	CT-27111D	For Pure Water	5 μ S/m~20mS/m {0.05 μ S/cm~200 μ S/cm}	0~80 $^{\circ}$ C	1m ⁻¹

Conductivity Cell Check C Solution 100mL (4 bottles)	140.9mS/m at 25 $^{\circ}$ C	OBI00001
Conductivity Cell Check B Solution 250mL (2 bottles)	1286mS/m at 25 $^{\circ}$ C	OBI00002
Flow cell, made of PP (For CT-27111D)	Connection Diameter: Outer Diameter 8mm×Inner Diameter 4mm	CEF-22A
Flow cell, made of SUS (For CT-27111D)	Connection Diameter: Outer Diameter 8mm×Inner Diameter 6mm	CEF-23A



Dissolved Oxygen

Electrode	Application	Range	Note	Measurement method
Dissolved oxygen electrode	OE-273AA	Standard Membrane: 0~20mg/L High Range Membrane: 0~50mg/L (High Range Membrane Set sold separately)	For no-flow measurement	Membrane Polarographic Method
	OE-573BA			
	OE-473AA	For incubator bottle	With stirring function	
	OE-473BA	Lab-use	For no-flow measurement	

Membrane set OE-273AA (3 sets)	OCC00001
Membrane Set OE-273AA High Range DO (3 sets)	OCC00002
Membrane Set OE-573BA (3 sets)	OCC00023
Membrane Set OE-573BA High Range DO (3 sets)	OCC00024
Membrane Set OE-473AA (3 sets)	OCC00003
Membrane Cartridge OE-473AA (5 sets)	OCT-2502
Membrane Set OE-473BA (3 sets)	OCC00022
Electrolyte R-12 50mL (3 sets)	143H008
Sodium Sulfite 50g	143A030

Note(1) DO electrode cannot be used for the below membrane type galvanic cell method.

OE-270AA/570BA, 470AA/470BA

Note(2) For BOD measurement, auxiliary equipment such as incubator bottle and incubator is necessary.

Recommended incubator bottle
JIS standard Medium Size TS19/22 (Large-diameter 18.8mm, Reduced-diameter 16.6mm, Length 22mm)



Ion

Electrode	Ion replacement chip	Measurement range(Optimal pH range)	Interference of coexisting ion ^{*1} / Note
Fluoride ion combined electrode F-2021	F-200 (Solid Membrane)	0.019~19,000mg/L F ⁻ (pH5~6)	OH ⁻ =10 ¹ HPO ₄ ²⁻ , HCO ₃ ⁻ =10 ³ (pH 7~8) Cl ⁻ , Br ⁻ , I ⁻ , NO ₃ ⁻ , SO ₄ ²⁻ , S ₂ O ₃ ²⁻ =10 ⁵
Chloride ion combined electrode CL-2021	CL-200B (Solid Membrane)	1~35,000mg/L Cl ⁻ (pH5~6)	S ²⁻ =Can not coexist CN ⁻ , I ⁻ =10 ⁻⁵ Br ⁻ , S ₂ O ₃ ²⁻ =10 ⁻² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , F ⁻ =10 ³
Cyanide ion combined electrode CN-2021	CN-200B (Solid Membrane)	0.003~26mg/L CN ⁻ (pH12~13)	S ²⁻ =Can not coexist I ⁻ =10 ⁻¹ S ₂ O ₃ ²⁻ =10 ¹ Br ⁻ =10 ³ NO ₃ ⁻ , SO ₄ ²⁻ , PO ₄ ³⁻ =10 ⁴ CO ₃ ²⁻ , Cl ⁻ , F ⁻ =10 ⁵
Sodium ion combined electrode NA-2011	NA-100B (Glass Membrane)	2.3~23,000mg/L Na ⁺ (pH10~11)	Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , NH ₄ ⁺ , K ⁺ , Li ⁺ =10 ³
Potassium ion combined electrode K-2031	K-300B (Liquid Membrane)	0.39~3,900mg/L K ⁺ (pH5~6)	H ⁺ =10 ² NH ₄ ⁺ =3×10 ² Na ⁺ =2×10 ³ Li ⁺ =10 ⁴
Calcium ion combined electrode CA-2031	CA-300 (Liquid Membrane)	0.4~40,000mg/L Ca ²⁺ (pH5~6)	Pb ²⁺ , Zn ²⁺ =10 ¹ Mn ²⁺ =10 ² Cu ²⁺ , Mg ²⁺ , Cd ²⁺ , Ba ²⁺ , Fe ²⁺ =10 ³ Ni ²⁺ =10 ⁴
Nitrate ion combined electrode N-2031	N-300 (Liquid Membrane)	0.62~62,000mg/L NO ₃ ⁻ (pH5~6)	I ⁻ =10 ⁻³ Br ⁻ , NO ₂ ⁻ =10 ⁰ Cl ⁻ =10 ¹ CH ₃ COO ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ²
Ammonia electrode(Membrane electrode) AE-2041	—	0.09~1,800mg/L NH ₄ ⁺ (pH12 or more)	Volatile amines
Carbon Dioxide electrode(Membrane electrode) CE-2041	—	Dissolved Gas 1.49~1,490mg/L	Dissolved gas:Volatile weak acid Atmosphere:Acidic gas Calibration cell(CGC-202L) and Calibration adapter (6791140K) is necessary.
Bromide ion combined electrode BR-200	BR-200 (Solid Membrane)	0.8~80,000mg/L Br ⁻ (pH5~6)	S ²⁻ =Can not coexist CN ⁻ , I ⁻ =10 ⁻⁴ S ₂ O ₃ ²⁻ , SCN ⁻ =10 ⁰ Cl ⁻ =10 ² NO ₃ ⁻ , SO ₄ ²⁻ , CO ₃ ²⁻ , F ⁻ =10 ⁴
Iodide ion combined electrode I-2021	I-200 (Solid Membrane)	0.01~127,000mg/L I ⁻ (pH5~6)	S ²⁻ , Reducing substance = Can not coexist CN ⁻ =10 ⁰ S ₂ O ₃ ²⁻ =10 ¹ SCN ⁻ =10 ³ Br ⁻ =10 ⁴ NO ₃ ⁻ , CO ₃ ²⁻ , PO ₄ ³⁻ , Cl ⁻ , F ⁻ =10 ⁵
Cadmium ion combined electrode CD-2021	CD-200 (Solid Membrane)	0.01~1,120mg/L Cd ²⁺ (pH5~6)	Hg ²⁺ , Ag ⁺ , Cu ²⁺ =Can not coexist Pb ²⁺ , Fe ³⁺ =10 ⁰ Cr ³⁺ =10 ² Na ⁺ , K ⁺ , Mg ²⁺ , Ca ²⁺ , Zn ²⁺ , Al ³⁺ =10 ⁵
Copper ion combined electrode CU-2021	CU-200 (Solid Membrane)	0.06~630mg/L Cu ²⁺ (pH5~6)	Ag ⁺ , Hg ²⁺ =Can not coexist Fe ³⁺ =10 ⁻¹ Al ³⁺ =10 ¹ Cr ³⁺ =10 ² Ni ²⁺ =10 ³ Na ⁺ , Mg ²⁺ , Ca ²⁺ =10 ⁴
Silver ion combined electrode AG-2021	AG-200 (Solid Membrane)	0.1~108,000mg/L Ag ⁺ (pH5~6)	Hg ²⁺ =Can not coexist Mg ²⁺ =10 ³ Ca ²⁺ , Cu ²⁺ , Pb ²⁺ , Cd ²⁺ , Zn ²⁺ =10 ⁴ Na ⁺ , K ⁺ =10 ⁵
Sulfide ion combined electrode S-2021	S-200 (Solid Membrane)	0.3~32,000mg/L S ²⁻ (pH13 or more)	—

Ion sensor replacement liquid junction (10)	OLFO0001
F Standard Solution F-1000 500mL	143F391
F Standard Buffer Solution F-10+TISAB-11 500mL	143F393
F Standard Buffer Solution F-100+TISAB-11 500mL	143F392
Cl Standard Solution CL-1000 500mL	143A281
Na Standard Solution NA-1000 500mL	143E031
K Standard Solution K-1000 500mL	143B482
Ca Standard Solution CA-1000 500mL	143B481
NO3 Standard Solution NO3-1000 500mL	143C486
NO3-N Standard Solution NO3-N 500mL	143C487
NH4 Standard Solution NH4-1000 500mL	143A041
NH4-N Standard Solution NH4-N 500mL	143A042
Carbon Dioxide Electrode Calibration Powder for CGS-111 1L (10 pillows)	143D044
Br Standard Solution BR-1000 500mL	143C483
I Standard Solution I-1000 500mL	143H091
Cd Standard Solution CD-100 500mL	143B500
Cu Standard Solution CU-100 500mL	143D043
Ionic Strength Adjuster TISAB-01 500mL For F ^{*2}	143A279
Ionic Strength Adjuster TISAB-11 500mL For F ^{*2}	143A280
Ionic Strength Adjuster ISA-CL 500mL For Cl, Br, I, Ag	143A334
Ionic Strength Adjuster ISA-CN 500mL For CN	143A335
Ionic Strength Adjuster ISA-NA 500mL For Na	143A338
Ionic Strength Adjuster ISA-K 500mL For K	143A337
Ionic Strength Adjuster ISA-CA 500mL For Ca	143A333
Ionic Strength Adjuster ISA-NO 500mL For NO ₃	143A340
Ionic Strength Adjuster ISA-NH 500mL For NH ₄	143A339
Ionic Strength Adjuster ISA-CO 500mL For CO ₂	143D045
Ionic Strength Adjuster ISA-CU 500mL For Cu, Cd	143A336
Ionic Strength Adjuster Powder for ISA-S 100mL (10 pillows) S	143A332
Reference Electrode Internal Solution RE-1 100mL	143F230
Reference Electrode Outer Chamber Solution RE-2 100mL	143F238
Reference Electrode Outer Chamber Solution RE-3 100mL	143F239
Ammonia Electrode Internal Solution RE-NH4 50mL (3 bottles)	0BG00005
Carbon Dioxide Electrode Internal Solution RE-11	143D042
Ammonia Electrode Replacement Membrane (10 membranes)	AE-FILM
Carbon Dioxide Electrode Membrane Cartridge (4 cartridges)	CTC-211
Carbon Dioxide Electrode Calibration Cell	CGC-202L
Calibration Adapter	6791140K

*1 Interference of coexisting ion

If an ion coexists in the solution, it can cause data errors when measuring the targeted ion. A selectivity coefficient of 10^x means that if the solution contains a coexistent ion that is 10^x times greater than the value of the targeted ion that is measured, an error occurs in which the value of the targeted ion equals the coexistent ion value.

If the concentration level of the coexistent ion is high enough to affect the measured values, we recommend conducting pretreatment in order to prevent interference.

*2 143A279(TISAB-01): For general sample
143A280(TISAB-11):For sample containing metal ion(iron, aluminum etc.)

Note(1) The ion electrode does not have temperature measurement function. Measurable solution temperature range is 0-50°C .

Note(2) In addition to the electrode, standard solution, ion strength adjuster, and reference electrode external solution are necessary for ion measurement.

Note(3) Make sure to contact us before you conduct ion measurements, because when there are coexisting samples, it can be difficult to conduct ion measurements.

Note(4) We do not sell cyanide, silver, and sulfide ion standard solutions. Customers are suggested to prepare following the steps listed in the instruction manual.

Specifications/Function

pH meter

Model Name		HM-42X	HM-41X	HM-40X	
Measurement Method		pH :Glass electrode method ORP :Platinum electrode method Ion :Ion electrode method Temperature :Thermistor resistor	pH :Glass electrode method ORP :Platinum electrode method Temperature :Thermistor resistor	pH :Glass electrode metho Temperature :Thermistor resistor	
Display unit		Touch panel color graphic LCD	Customized LCD	Customized LCD	
Measurement Item/Range	pH	pH0.000~14.000	pH0.000~14.000	pH0.000~14.000	
	mV (ORP)	-2000.0~2000.0 mV	-2000~2000 mV	-500~500 mV * ¹ *ORP electrode not connectable	
	Ion	Depends on the sensor used	—	—	
	Temperature	0.0~100.0°C Ion : Depends on the electrode	0.0~100.0°C	0.0~100.0°C	
Display Range	pH	pH-2.000~16.000	pH-2.000~16.000	pH-2.000~16.000	
	mV (ORP)	-2200.0~2200.0 mV	-2200~2200 mV	-550~550 mV * ¹	
	Ion (Manual/Auto Range Switching) (mol/L selectable)	Zoom OFF	0.0~19.9μg/L 20~199μg/L 0.20~1.99mg/L 2.0~19.9mg/L 20~199mg/L 0.20~1.99g/L 2.0~19.9g/L 20~199g/L 200~1990g/L	Zoom ON 0.00~19.99μg/L 20.0~199.9μg/L 0.200~1.999mg/L 2.00~19.99mg/L 20.0~199.9mg/L 0.200~1.999g/L 2.00~19.99g/L 20.0~199.9g/L 200~1999g/L	—
		Temperature	-5.0~110.0°C	-5.0~110.0°C	-5.0~110.0°C * ¹
		pH	0.01pH/0.001pH	0.01pH/0.001pH	0.01pH/0.001pH
mV (ORP)		1/0.1mV	1mV	1mV	
Display resolution switch	Ion	0.0μg/L~1990g/L (Maximum to 3-digits) 0.00μg/L~1999g/L (Maximum to 4-digits)	—	—	
	pH	±0.002pH	±0.006pH	±0.006pH	
	mV (ORP)	±0.2mV	±2mV	±2mV * ¹	
Repeatability (Main body)	Ion	±0.5% FS	—	—	
	Temperature	within ±0.2°C	within ±0.2°C	within ±0.2°C	
	pH Temperature Compensation Range		ATC(Auto Temperature Compensating) : 0~100.0°C MTC(Manual Temperature Compensating) : 0~100.0°C	ATC(Auto Temperature Compensating) : 0~100.0°C MTC(Manual Temperature Compensating) : 0~100.0°C	ATC(Auto Temperature Compensating) : 0~100.0°C MTC(Manual Temperature Compensating) : 0~100.0°C
	pH Calibration		JIS pH standard solution, US standard solution, customized standard solution Max. 5 point calibration	JIS pH standard solution, US standard solution, customized standard solution Max. 5 point calibration	JIS pH standard solution, US standard solution, customized standard solution Max. 5 point calibration
Ion Calibration		Max. 5 point calibration	—	—	
Temperature Calibration		1 point calibration	1 point calibration	1 point calibration	
Performance Guaranteed Temperature, Humidity		0~45°C 20~85% or below (condensation-free)	0~45°C 20~85% or below (condensation-free)	0~45°C 20~85% or below (condensation-free)	
Data Memory		2000 data	1000 data	—	
Print Function		Optional External Printer EPS-P30 connectable	Optional External Printer EPS-P30 connectable	—	
Auto Hold Function		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Auto Hold Conditions Settings		<input type="radio"/>	—	—	
Statistical Calculation Function		Average Value	—	—	
Calibration History Creation Function		Max.20 run lots	Latest one run	Latest one run	
Interval Measurement		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
Security Function		<input type="radio"/>	—	—	
Upper/Lower Limit Output Setting		<input type="radio"/>	—	—	
Customized Standard Solution Table Creation Function		<input type="radio"/>	—	—	
mV Shift Function		<input type="radio"/>	<input type="radio"/>	—	
External Input/Output	RS-232C Interface	<input type="radio"/> (2ch)	<input type="radio"/> (For external printer)	—	
	USB (Host)	<input type="radio"/>	—	—	
	USB (peripheral, Micro)	<input type="radio"/>	<input type="radio"/>	—	
	Analog Output	pH	±700mV (pH0~14)	—	—
		mV (ORP)	±1V (0~±2000mV)	—	—
		Ion	0~1VFS	—	—
Temperature		0~1V (0~100°C)	—	—	
Alarm	Upper Limit: Open collector Lower Limit: Open collector	—	—		
Option Connection	External printer	<input type="radio"/>	<input type="radio"/>	—	
	Turntable (TT510/710)	<input type="radio"/>	—	—	
	Electrode Selector (ES-1G)	<input type="radio"/>	—	—	
	Control Box (AC-1V)	<input type="radio"/>	—	—	
Power Source		AC100~240V (Special AC Adapter)	AA Alkaline battery×4 or USB power feeding (No charging function)	AA Alkaline battery×4	
Power Consumption		Approx.11VA	Approx.2500 hours (estimated)	Approx. 2500 hours (estimated)	
Main Unit Dimensions (Excluding Protruding Parts)		Approx.130W×60H×230Dmm	Approx.130W×60H×230Dmm	Approx.130W×60H×230Dmm	
Main Unit Weight		Approx. 0.8kg	Approx. 0.7kg	Approx. 0.7kg	

* 1 ORP electrode cannot be connected

Conductivity meter

Model Name		CM-42X	CM-41X	
Measurement Method		Conductivity: AC 2-Electrode Method Temperature: Thermistor Resistor	Conductivity: AC 2-Electrode Method Temperature: Thermistor Resistor	
Conductivity Measuring frequency		80Hz/3kHz Auto-selection	80Hz/3kHz Auto-selection	
Display unit		Touch panel color graphic LCD	Customized LCD	
Measurement Item/Range	Conductivity	Depends on the cell	Depends on the cell	
	Resistivity	Depends on the cell	Depends on the cell	
	Salinity	Conversion from conductivity	Conversion from conductivity	
	Concentration	Conversion from conductivity	—	
	TDS	Conversion from conductivity	Conversion from conductivity	
	Temperature	0.0 ~ 100.0°C	0.0 ~ 100.0°C	
Display Range	Conductivity (Manual/Auto Range Switching) (Depending on the cell)	0.0 ~ 200.0 μ S/m (0.000 ~ 2.000 μ S/cm) 0.000 ~ 2.000mS/m (0.00 ~ 20.00 μ S/cm) 0.00 ~ 20.00mS/m (0.00 ~ 200.0 μ S/cm) 0.0 ~ 200.0mS/m (0.000 ~ 2.000mS/cm) 0.000 ~ 2.000S/m (0.00 ~ 20.00mS/cm) 0.00 ~ 20.00S/m (0.0 ~ 200.0mS/cm) 0.0 ~ 200.0S/m (0.000 ~ 2.000S/cm) SI unit (S/m) or (S/cm) selectable	0.0 ~ 200.0 μ S/m (0.000 ~ 2.000 μ S/cm) 0.000 ~ 2.000mS/m (0.00 ~ 20.00 μ S/cm) 0.00 ~ 20.00mS/m (0.0 ~ 200.0 μ S/cm) 0.0 ~ 200.0mS/m (0.000 ~ 2.000mS/cm) 0.000 ~ 2.000S/m (0.00 ~ 20.00mS/cm) 0.00 ~ 20.00S/m (0.0 ~ 200.0mS/cm) 0.0 ~ 200.0S/m (0.000 ~ 2.000S/cm) SI unit (S/m) or (S/cm) selectable	
	Resistivity (Manual/Auto Range Switching) (Depending on the cell)	0.005 ~ 2.000 Ω ·m (0.5 ~ 200.0 Ω ·cm) 0.00 ~ 20.00 Ω ·m (0.000 ~ 2.000k Ω ·cm) 00.0 ~ 200.0 Ω ·m (0.00 ~ 20.00k Ω ·cm) 0.000 ~ 2.000k Ω ·m (0.0 ~ 200.0k Ω ·cm) 0.00 ~ 20.00k Ω ·m (0.000 ~ 2.000M Ω ·cm) 00.0 ~ 200.0k Ω ·m (0.00 ~ 20.00M Ω ·cm) 0.000 ~ 2.000M Ω ·m (0.0 ~ 200.0M Ω ·cm) 0.00 ~ 20.00M Ω ·m (0 ~ 2000M Ω ·cm) SI unit (S/m) and conventional unit (S/cm) selectable	0.005 ~ 2.000 Ω ·m (0.5 ~ 200.0 Ω ·cm) 0.00 ~ 20.00 Ω ·m (0.000 ~ 2.000k Ω ·cm) 00.0 ~ 200.0 Ω ·m (0.00 ~ 20.00k Ω ·cm) 0.000 ~ 2.000k Ω ·m (0.0 ~ 200.0k Ω ·cm) 0.00 ~ 20.00k Ω ·m (0.000 ~ 2.000M Ω ·cm) 00.0 ~ 200.0k Ω ·m (0.00 ~ 20.00M Ω ·cm) 0.000 ~ 2.000M Ω ·m (0.0 ~ 200.0M Ω ·cm) 0.00 ~ 20.00M Ω ·m (0 ~ 2000M Ω ·cm) SI unit (Ω ·m) and conventional unit (Ω ·cm) selectable	
	Salinity	0.00 ~ 4.04% (NaCl) 0.00 ~ 42.40psu (PSS:Sea water salinity)	0.00 ~ 4.04% (NaCl) 0.00 ~ 42.40 (PSS:Sea water salinity)	
	Concentration (Automatic Range Switching)	0 ~ 2.000% 0 ~ 20.00% 0 ~ 200.0%	—	
	TDS (Manual/Auto Range Switching)	0 ~ 99.99mg/L 0 ~ 999.9mg/L 0 ~ 9.999g/L 0 ~ 99.99g/L 0 ~ 999.9g/L	0 ~ 99.99mg/L 0 ~ 999.9mg/L 0 ~ 9.999g/L 0 ~ 99.99g/L 0 ~ 999.9g/L	
	Temperature	-5.0 ~ 110.0°C	-5.0 ~ 110.0°C	
	Repeatability (Meter main unit)	Conductivity	±0.5% FS	±0.5% FS
		Resistivity	±0.5% FS	±0.5% FS
		Salinity	±0.5% FS	±0.5% FS
		Concentration	±0.5% FS	—
TDS		±0.5% FS	±0.5% FS	
Temperature		within ±0.2°C	within ±0.2°C	
Temperature Compensation	Temperature Compensation Range	ATC (Auto Temperature Compensation) : 0 ~ 100.0°C MTC (Manual Temperature Compensation) : 0 ~ 100.0°C	ATC (Auto Temperature Compensation) : 0 ~ 100.0°C MTC (Manual Temperature Compensation) : 0 ~ 100.0°C	
	N/A	ATC OFF	ATC OFF	
	Standard Temperature Setting	0 ~ 100.0°C	25°C fixed	
	Temperature Coefficient (Linear)	0 ~ 10.00%/°C	0 ~ 10.00%/°C	
	Temperature Coefficient (Curve)	2-10 points	—	
	Pure Water Dual Temperature Compe.	○	—	
Concentration Conversion Setting	2-10 points	—		
Temperature Calibration	1-point Calibration	1-point Calibration		
Performance Guaranteed Temperature, Humidity	0 ~ 45°C 85% or below (condensation-free)	0 ~ 45°C 85% or less (condensation-free)		
Data Memory	2000 data	1000 data		
Print Function	Connectable to optional external printer EPS-P30	Connectable to optional external printer EPS-P30		
Auto Hold Function	○	○		
Auto Hold Conditions Setting	○	—		
Statistical Calculation Function	Average value	—		
Calibration History Creation Function	Max.20 run lots each Channel, 10 electrode Types	Latest one run		
Interval Measurement	○	○		
Security Function	○	—		
Upper/Lower Limit Output Setting	○	—		
External Input/Output	RS-232C Interface	○ (2ch)	○ (External Printer)	
	USB (Host)	○	—	
	USB (peripheral, Micro)	○	○	
	External Instrument Connection	○	—	
	Analog Output	Meas. Value Range Alarm	0 ~ 1VFS 100mV/range Upper Limit: Open Collector Lower Limit: Open Collector	
Option Connection	External Printer	○	○	
	Turntable (TTT510/710)	○	—	
	Cell Switch (ES-1GC)	○	—	
	Control Box (AC-1V)	○	—	
Power Source	AC100 ~ 240V (Special AC Adapter)	AA Alkaline battery×4 or USB power feeding (No charging function).		
Power Consumption	Approx.12VA	Approx.1000 hours (estimated)		
Main Unit Dimensions (Excluding Protruding Parts)	Approx.130 W×60 H×230 Dmm	Approx.130 W×60 H×230 Dmm		
Main Unit Weight	Approx. 0.8kg	Approx. 0.7kg		

Multi-Function Water Quality Meter

Model		MM-43X		
Measurement Method	pH	: Glass Electrode Method		
	ORP	: Platinum Electrode		
Conductivity Measuring Frequency	Ion	: Ion Electrode Method		
	Conductivity	: AC 2-Electrode Method		
Electrode Inputs	DO	: Membrane Polarographic Method		
	Temperature	: Thermistor Resistor		
Display Unit	Touch Panel Color Graphic LCD			
Display	Selectable 2-ch Simultaneous Display or Single Only Display			
Measurement Item/Range	pH	pH 0.000 ~ 14.000		
	mV (ORP)	-2000.0 ~ 2000.0 mV		
	Ion	Depends on the sensor		
	Conductivity	Depends on the cell		
	Resistivity	Conversion from conductivity Depend on the cell		
	Salinity	Conversion from conductivity		
	Concentration	Conversion from conductivity		
	TDS	Conversion from conductivity		
	DO	Depends on the electrode		
	Saturation %	Depends on the electrode		
	Temperature	0.0 ~ 100.0°C		
		DO:0.0 ~ 50.0°C	Ion:Depends on the sensor (No temperature measurement function)	
	pH	pH 2.000 ~ 16.000		
mV (ORP)		-2200.0 ~ 2200.0 mV		
Ion (Manual/Auto range switching) (mol/L selectable)	ZOOM OFF	ZOOM ON		
	0.0 ~ 19.9µg/L 20 ~ 199µg/L 0.20 ~ 1.99mg/L 2.0 ~ 19.9mg/L 20 ~ 199mg/L 0.20 ~ 1.99g/L 2.0 ~ 19.9g/L 20 ~ 199g/L 200 ~ 1990g/L	0.00 ~ 19.99µg/L 20.0 ~ 199.9µg/L 0.200 ~ 1.999mg/L 2.00 ~ 19.99mg/L 20.0 ~ 199.9mg/L 0.200 ~ 1.999g/L 2.00 ~ 19.99g/L 20.0 ~ 199.9g/L 200 ~ 1999g/L		
Conductivity (Manual/Auto range switching) (Depends on the cell)	0.0 ~ 200.0µS/m (0.000 ~ 2.000µS/cm)	0.000 ~ 2.000mS/m (0.00 ~ 20.00µS/cm)		
	0.00 ~ 20.00mS/m (0.0 ~ 200.0µS/cm)	0.0 ~ 200.0mS/m (0.000 ~ 2.000mS/cm)		
Resistivity (Manual/Auto range switch) (Depends on the cell)	0.000 ~ 2.000kΩ·m (0.0 ~ 200.0kΩ·cm)	0.00 ~ 20.00kΩ·m (0.0 ~ 200.0kΩ·cm)		
	0.00 ~ 20.00MΩ·m (0.0 ~ 200.0MΩ·cm)	0.00 ~ 20.00MΩ·m (0.0 ~ 200.0MΩ·cm)		
Salinity	0.00 ~ 4.04% (NaCl)	0.00 ~ 42.40psu (PSS:Sea water salinity)		
Concentration (Auto range switch)	0 ~ 2.000%	0 ~ 20.00%	0 ~ 200.0%	
TDS (Manual/Auto range switch)	0 ~ 99.99mg/L 0 ~ 999.9mg/L 0 ~ 9.999g/L 0 ~ 99.99g/L 0 ~ 999.9g/L			
Dissolved Oxygen	0.00 ~ 22.00mg/L (High range membrane set (Option) 0.00~55.0mg/L)			
Saturation %	0 ~ 220.0%	(High range membrane set (Option) 0 ~ 550%)		
Temperature	-5.0 ~ 110.0°C			
pH	0.01pH/0.001pH			
	mV (ORP)	1mV/0.1mV		
Ion	0.0µg/L ~ 1990g/L (Maximum to 3 digits)			
	0.00µg/L ~ 1999g/L (Maximum 4 digits)			
Repeatability (Main body unit)	pH	±0.002pH		
	mV (ORP)	±0.2mV		
	Ion	±0.5% FS		
	Conductivity	±0.5% FS		
	Resistivity	±0.5% FS		
	Salinity	±0.5% FS		
	Concentration	±0.5% FS		
	TDS	±0.5% FS		
	Dissolved Oxygen	±0.03mg/L (Standard membrane) ±0.1mg/L (High range membrane)		
	Saturation %	±1% (Standard membrane/High range membrane)		
	Temperature	within ±0.2°C		

Model		MM-43X	
Temperature compensation	pH	Temp. compensation range	ATC (Auto Temperature Compensation) : 0 ~ 100.0°C MTC (Manual Temperature Compensation) : 0 ~ 100.0°C
		Temp. compensation range	ATC (Auto Temperature Compensation) : 0 ~ 100.0°C MTC (Manual Temperature Compensation) : 0 ~ 100.0°C
	Conductivity	N/A	ATC OFF
		Standard Temp. setting	0 ~ 100.0°C
		Temperature Coefficient (Linear)	0 ~ 10.00%/°C
		Temperature Coefficient (Multipoint)	2 ~ 10 points
	Dissolved Oxygen	Pure Water Dual Temperature Compensation	○
		Temperature Compensation Range	ATC (Auto Temperature Compensation) : 0 ~ 50.0°C
	pH calibration		JIS pH Standard Solution, US Standard Solution, Custom Standard Solution, Max. 5-point Calibration
	Ion calibration		Max.5-point Calibration
DO calibration		Auto Calibration (Zero Span Calibration)	
Temp. calibration		1-point Calibration	
Conductivity Concentration Conversion Setting		2-10 points	
DO Salinity Compensation Setting		○	
DO ATM Pressure Compensation Setting		○	
Performance Guaranteed Temperature, Humidity		0 ~ 45°C 85% or below (Condensation-free)	
Data Memory		2000 data each channel	
Print Function		Optional External Printer EPS-P30	
Auto Hold Function		○	
Auto Hold Conditions Setting		○	
Statistical Calculation Function		Average Value	
Calibration History Creation Function		Max. 20 run lots	
Interval Measurement		○	
Security Function		○	
Upper/Lower Limit Output Setting		○ (1ch only)	
External Input/Output	RS-232C Interface	USB (Host)	○ (2ch)
		USB (Peripheral, Micro)	○
		pH	±700mV (pH0 ~ 14)
	Analog Output	mV (ORP)	±1V (0 ~ ±2000mV)
		Ion	0 ~ 1VFS
		Conductivity/Resistivity/Salinity/Concentration/TDS	0 ~ 1VFS
		DO/Saturation	0 ~ 1VFS
		Range (Ion/Conductivity/Resistivity/Salinity/Concentration/TDS)	100mV/Range
		Temperature	0 ~ 1V (0 ~ 100°C)
		Alarm (1ch only)	Upper Limit : Open Collector Lower Limit : Open Collector
Option Connection	External Printer	○	
	Turntable (TTT510/710)	○	
	Electrode Selector (ES-1G)	○	
	Cell Selector (ES-1GC)	(Single option can be connected to ch-1)	
	Control Box (AC-1V)	○ (For ch-1 only)	
Power Source		AC100 ~ 240V (AC Adapter)	
Power Consumption		Approx. 18VA	
Main Unit Dimensions (Excluding Protruding Parts)		Approx. 130 W×60 H×230 D mm	
Main Unit Weight		Approx. 0.9kg	

pH Meter

Practical manually operated analog and digital models

HM-20J • pH Meter

- Easy-to-read of measurements digital display
- Capable of measuring oxidation-reduction potential (ORP) (electrode sold separately)
- With mV-shift function
- Low price, compact size



Specifications

Model Name		HM-20J	
Measurement Method		Glass Electrode Method	
Display		Digital meter, pH / mV switching	
Measurement Range	pH	Range	pH0~14
		Resolution	0.01pH
	PH expansion	Range	—
		Resolution	—
mV	Range	0~±1999mV	
	Resolution	1mV	
Repeatability (Meter Main Unit)	pH	±0.01pH±1digit	
	PH expansion	—	
	mV	±1mV±1digit	
Analog Output	pH	±700mV(pH0~14)	
	mV	±1V(0~±1999mV)	
Temperature Compensation Range		ATC (Auto Temperature Compensating) : 0~100.0°C	
Calibration		Manual (Zero span)	
Operation Temp. Range		0~40°C	
Power Source		AC Line or Size AA battery ×2	
Power Consumption		Approx. 3 VA	
Main Unit Dimensions		Approx. W148 × H75 × D221 mm	
Main Unit Weight		Approx. 0.7 kg	

Standard Accessories

pH Electrode	GST-5711C 1 Pc.
Standard Solutions	Each 1 bottle
KCL Solution	1 bottle
Electrode Holder	1 piece
Electrode Attachment	1 piece (J-type)
Electrode Stand	1 piece
Support	1 piece
Stopper	1 piece
Polyethylene Beaker	150 mL 3 pieces
Thermometer	1 piece
Power Cable	1 piece
Ground Wire	1 piece
Operation Manual	1 copy

Conductivity Meter

Practical manually operated digital model

CM-20J • Conductivity Meter

- Easy-to-read LCD digital display
- SI Unit (S/m) and Conventional Unit (S/cm) selectable
- Operation of AC/ DC 2 power source
- Low price, compact size



Specifications

Model Name		CM-20J
Display Unit		LCD
Measurement Range		Depending on Cell used
Display Range	0~2.000mS/m, 0~20.00mS/m, 0~200.0mS/m	
	0~2.000S/cm, 0~20.00S/cm	
Display unit switching :		SI Unit (S/m, Ω·m) and Conventional Unit (S/cm, Ω·cm) selectable
Repeatability (Meter Main Unit)		±0.5% FS
Range setting		Manual
Temperature Compensation	Temperature Compensation Range	Manual 0~60°C
	Standard Temperature	25°C fixed
Output	Temperature Coefficient (Linear)	2% / °C fixed
	Conductivity	0~1V FS
Frequency of measurement		Auto select with 80Hz and 3kHz
Operation Temp. Range		0~40°C
Power Source		AC Line or Size AA battery ×2
Power Consumption		Approx. 3 VA
Main Unit Dimensions		Approx. W148×H75×D221 mm
Main Unit Weight		Approx. 0.7 kg

Standard Accessories

Cell	1 piece(C-5010)B
Electrode Holder	1 piece
Electrode Stand	1 piece
Support	1 piece
Stopper	1 piece
Electrode Attachment	1 piece(J-type)
Polyethylene Beaker (150 mL)	1 piece
Mercury thermometer	1 piece
AC Cable	1 piece
Ground Wire	1 piece
Former unit label	1 set
Operation Manual	1 copy



DKK-TOA CORPORATION



Please read the operation manual carefully before using products.

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