HORIBA
Process & Environmental

Measure and Display up to **11 Items** Simultaneously

Rugged Outdoor Design

Multi-parameter Water Quality Meters

U-50 Series

5 languages display | English | Japanese | Russian | Spanish | Portuguese

Multi-parameter Water Quality Meters

CE marking compliant

Beyond Water with You

Measure and Display 11 Parameters Simultaneously with Newly Designed Control Unit and Sensor Technology.

Intuitive software assures ease of use and operation efficiency.
Experience the durability and performance of an instrument that exceeds your expectations in the field testing of ground water and surface water applications.

Measure and Display up to **11 Items** Simultaneously

Control Unit Features:

- Easy to read LCD Display
- One-hand operation
- On-screen icon displays battery power and GPS, USB and probe unit connectivity
- Quick-connect connector (cable to control unit)
- Shock resistant cover
- Backlight display

Operating instructions

Rugged Outdoor Design

Sensor Probe Unit Features:

- Turbidity Sensor conforms to US EPA method 180.1 (U-53/U-53G)
- Turbidity Sensor conforms to EN ISO 7027 (U-54/U-54G)
- Minimum dissolved oxygen sensor maintenance with screw-on type membrane cap
- Chemical resistant materials of construction
- Optional ToupH pH electrode* that is difficult to break
- Field replaceable sensors

*Prevents damage during maintenance.

Innovative Features,

Design and Performance that Makes Measurement Easy in a Variety of Applications

●Measurement at a Drainage Ditch or Wharf

Instantaneously monitor, collect and store data while moving the submersed sensor probe unit.

●Measurement in Marshes

The control unit's waterproof design allows the user to work without concern of splashing or accidentally dropping the control unit in the water. The backlight display allows the user to take measurements in the dark.

●Measurements in Surface Water

The long 30 meter cable option allows the user to deploy the sensor probe unit and collect measurement data at varying depths. The GPS models facilitate en-vir-onmental surveys of oceans, lakes and rivers.

●Measuring Ground Water from an Intake

With the sensor probe lowered and submersed at an intake, 10,000 data sets can be stored in the control unit and transferred to a PC later.

Exceptional Performance and Optimal Design for field ap

Control Unit

Easy to read LCD Display and Easy Operation

- All 11 parameters measurement data is listed on screen.
- Text size can be changed to large font.
- Small control unit design for operation with one hand.
- Icon display information.

- Operation instructions on-screen.
- Variable display contrast compensates for extreme ambient lighting conditions.

Control Unit Design for Field Operations

- Auto-calibration feature provides hassle free calibration of pH, dissolved oxygen, conductivity, turbidity and depth.
- Shock resistant cover designed for rough treatment in the field and is easily cleaned.
- Cable can be easily connected and disconnected with quick-connect fitting.

Data Management

- Auto hold function freezes average data values on the screen to offer more time to verify or transcribe data.
- Diagnostic functions notify the user of errors.
- Integral USB connection for data transfer to a PC. USB cable is sold separately and includes software.
- Selectable measurement units allow the operator to report data without the need to convert data to desired units of measure.

GPS Compatible (U-52G/53G/54G)

The system can be used in conjunction with the Global Positioning System (GPS) to record latitude, longitude, and other location data for individual measurements. This is particularly useful for environmental surveys.

plication

Sensor Probe Unit

Multiple Sensors Housed in Each Probe

- Multiple sensors allow for the measurement of 11 parameters simultaneously.
  (pH, pH (mv), ORP, DO, COND, Salinity, TDS, Seawater Specific Gravity, Temperature, Turbidity, Water depth)
- Turbidity Sensor U-53 conforms to US EPA method 180.1. Precision has been improved over conventional instruments. The Model U-53 high precision field replaceable turbidity sensor with wiper has a resolution of 0.01 NTU.
- Turbidity sensor of U-54 conforms to EN ISO 7027. The model U-54 has a resolution of 0.01 NTU.
- Improved stability of the dissolved oxygen sensor has been achieved with a new 3 electrode design for fast response and polarographic sensor for ease of maintenance.
- pH and ORP electrodes can be replaced individually to reduce replacement costs.

■U-5X series specification comparison list

	U-51	U-52	U-52G	U-53	U-53G	U-54	U-54G
pH	●	●	●	●	●	●	●
ORP (Oxidation Reduction Potential)	●	●	●	●	●	●	●
Dissolved Oxygen	●	●	●	●	●	●	●
Conductivity	●	●	●	●	●	●	●
Salinity	●	●	●	●	●	●	●
TDS (Total Dissolved Solids)	●	●	●	●	●	●	●
Seawater Specific Gravity	●	●	●	●	●	●	●
Temperature	●	●	●	●	●	●	●
Turbidity (LED)	—	●	●	—	—	●	●
Turbidity (Tungsten lamp)	—	—	—	●	●	—	—
Water depth	—	—	●	●	●	●*	●*
GPS	—	—	●	—	●	—	●

Note: *U-54/G(2m) don't have the feature of water depth.

U-50 Series Specifications

		U-51	U-52	U-52G	U-53	U-53G
Sensor Probe	Measurement temperature	-10 to 55℃				
	Maximum sensor diameter	Approx. 96 mm				
	Probe length	Approx. 340 mm				
	Cable length	Standard: 2 m, option: 10, 30 m				
	Mass	Approx. 1,800 g (Approx. 3.97 lbs)				
	Automatic calibration (uses pH4)	●	●		●	
	Turbidity wiper	—	—	—	●	●
	Measurement depth	Max. 30 m				
	Liquid contact part material (liquid end material)	PPS, glass, SUS316L, SUS304, FKM, PEEK,Q, titanium, FEP membrane, POM				
	Water resistance	JIS protection level 8				
Control Unit	Outer dimensions	115 (W) x 66 (D) x 283 (H) mm				
	Mass	Approx. 800 g (Approx. 1.76 lbs)				
	LCD	320 x 240 liquid crystal display with backlight (black and white)				
	Data memory	10,000				
	Communication	USB				
	Battery	C batteries x 4				
	Water resistance	JIS protection level 7 (when sensor cable is fitted)				
	Battery Life	Approx. 70 hours (without backlight)			Approx. 500 measurements	
	Storage temperature	-10 to 60℃				
	Ambient temperature	-5 to 45℃				
pH ●Two-point calibration ●Automatic temperature	Measurement principle	Glass electrode method				
	Range	pH0 to 14				
	Resolution	0.01pH				
	Repeatability	±0.05pH				
	Accuracy	±0.1pH				
Oxidation Reduction Potential (ORP)	Measurement principle	Platinum electrode method				
	Range	-2000 mV to +2000 mV				
	Resolution	1 mV				
	Repeatability	±5 mV				
	Accuracy	±15 mV				
Dissolved Oxygen (DO) ●Salinity conversion (0 to 70 PPT/automatic) ●Automatic temperature compensation	Measurement principle	Polarographic method				
	Range	0 to 50.0 mg/L				
	Resolution	0.01 mg/L				
	Repeatability	±0.1 mg/L				
	Accuracy	0 to 20 mg/L: ±0.2 mg/L 20 to 50 mg/L: ±0.5 mg/L				
Conductivity (COND) ●Auto range ●Automatic temperature conversion (25℃)	Measurement principle	4 AC electrode method				
	Range	0 to 10 S/m (0 to 100 mS/cm)				
	Resolution	0.000 to 0.999 mS/cm: 0.001 mS/cm 1.00 to 9.99 mS/cm: 0.01 mS/cm 10.0 to 99.9 mS/cm: 0.1 mS/cm 0.0 to 99.9 mS/m: 0.1 mS/m 0.100 to 0.999 S/m: 0.001 S/m 1.00 to 9.99 S/m : 0.01 S/m				
	Repeatability	±0.5% F.S.				
	Accuracy	*±1% F.S. (Median of two-point calibration)				
Salinity	Measurement principle	Conductivity conversion				
	Range	0 to 70 PPT (permillage)				
	Resolution	0.1 PPT				
	Repeatability	±1 PPT				
	Accuracy	±3 PPT				
Total Dissolved Solid (TDS) ●Conversion factor setting	Measurement principle	Conductivity conversion				
	Range	0 to 100 g/L				
	Resolution	0.1% F.S.				
	Repeatability	±2 g/L				
	Accuracy	±5 g/L				
Seawater specific gravity ●Display σt, σ0, σ15	Measurement principle	Conductivity conversion				
	Range	0 to 50 σt				
	Resolution	0.1 σt				
	Repeatability	±2 σt				
	Accuracy	±5 σt				
Temperature	Measurement principle	Thermistor method				
	Range	-10 to 55℃				
	Resolution	0.01℃				
	Repeatability	*±0.10℃ (at calibration point)				
	Accuracy	JIS class B platinum thermometer sensor (±0.3+0.005 l t l)				
Turbidity (TURB)	Measurement principle	—	LED light source and 30° scattering method		Tungsten lamp source and 90° scattering method	
	Range		0 to 800 NTU		0 to 1000 NTU	
	Resolution		0 to 99.9 NTU: 0.1 NTU 100 to 800 NTU: 1 NTU		0 to 9.99 NTU: 0.01 NTU 10 to 99.9 NTU: 0.1 NTU 100 to 1000 NTU: 1 NTU	
	Repeatability		*±5% (Reading) or ± 0.5 NTU whichever is greater		±3% (Reading) or ±0.1 NTU whichever is greater	
	Accuracy		±5% (Reading) or ±1 NTU whichever is greater		0 to 10 NTU: ±0.5 NTU 10 to 1000 NTU: 3% (Reading) or ±1 NTU whichever is greater	
Water depth	Measurement principle	—	—	Pressure method		
	Range			0 to 30 m		
	Resolution			0.05 m		
	Repeatability			±1% F.S.		
	Accuracy			±0.3 m		
GPS	12 channel parallel	—	—	●	—	●

Note:

* Battery life based on continuous operation using alkaline C dry batteries when the monitor temperature is over 20℃ and the backlight OFF.
* Accuracy is measured by calibrating 4 points for turbidity and electrical conductivity and 2 points for all other measurements against standard solution.
* Repeatability is measured by the ability to reproduce the results against the standard solution (at 25℃ normal pressure condition).

	U-54	U-54G
	●	
	—	—
	Approx. 70 hours (without backlight)	
	LED light source and 90° scattering method	
	0 to 1000 NTU	
	0 to 0.99 NTU: 0.01 NTU 1 to 99.9 NTU: 0.1 NTU 100 to 1000 NTU: 1 NTU	
	±5% (Reading) or ± 0.5 NTU whichever is greater	
	±5% (Reading) or ±1 NTU whichever is greater	
	Pressure method, only 10m and 30m product	
	—	●

U-50 Series

Cable length		Model	Code
U-51	2 m	U-51 (2 m)	3200164509
	10 m	U-51 (10 m)	3200164510
U-52	2 m	U-52 (2 m)	3200164501
	10 m	U-52 (10 m)	3200164502
	30 m	U-52 (30 m)	3200164503
U-52G	2 m	U-52G (2 m)	3200156563
	10 m	U-52G (10 m)	3200164499
	30 m	U-52G (30 m)	3200164500
U-53	2 m	U-53 (2 m)	3200164506
	10 m	U-53 (10 m)	3200164507
	30 m	U-53 (30 m)	3200164508
U-53G	2 m	U-53G (2 m)	3200158178
	10 m	U-53G (10 m)	3200164504
	30 m	U-53G (30 m)	3200164505
U-54	2m	U-54 (2 m)	3200323680
	10 m	U-54 (10 m)	3200323681
	30 m	U-53 (30 m)	3200323683
U-54G	2m	U-54G (2 m)	3200323686
	10 m	U-54G (10 m)	3200323687
	30 m	U-54G (30 m)	3200323688

Standard Accessories

Item	Quantity
pH4 standard solution (500mL)	1
pH reference internal solution (250 mL)	1
DO sensor internal solution set ●Internal solution (50mL) ●Sandpaper (#8000, #600) ●Syringe	1
DO Membrane space parts set	1
Spanner for DO sensor	1
Cleaning brush	1
Calibration cup	1
Back pack	1
Strap	1
Alkaline batteries LR14	4
Silicon grease	1
Instruction manual	1

Consumables

Item	Model	Code
pH sensor	7112	3014057312
pH sensor ToupH	7113	3200170923
ORP sensor	7313	3200170920
DO sensor	7543	3200170924
Reference sensor	7210	3200043582
Reference tip	—	3200043587
Turbidity sensor U-52/52G	7800	3200172803
Turbidity sensor U-53/53G	7801	3200172800
Turbidity sensor U-54/54G	7802	3200318188
DO membrane cap	—	3200170194
DO Inner fluid 50mL	306	3200170938

Standard solution

Item			Model	Code
Standard solution	pH4 (for automatic calibration),	500 mL	100-4	3200043638 (9003001600)
	pH4 (for automatic calibration),	4 L	140-4	3200174430
	pH7	500 mL	100-7	3200043637 (9003001700)
	pH9	500 mL	100-9	3200043636 (9003001800)
	ORP standard solution powder	For 250 mL×10	160-51	3200043618 (9003003100)
	ORP standard solution powder	For 250 mL×10	160-22	3200043617 (9003003000)
Internal solution	Internal solution for pH reference	250 mL	330	3200043641 (9037005200)

Dimensions unit: mm (in)

Option

Item	Model	Code
Carrying case	U-5030	3200174772
Flow chamber	—	3200156570
Probe guard	—	3200167002
Cable (with data-collection software)	—	3200174823

IMS

The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System ISO45001.
We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies.

Please read the operation manual before using this product to assure safe and proper handling of the product.

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