

Real time data transmitter for
Horiba Water Quality Meter U-53
(using GSM/GPRS, 3G [W-CDMA])

SESAME II-06d

Distributor :

Midori Engineering
Lab. Co., Ltd.

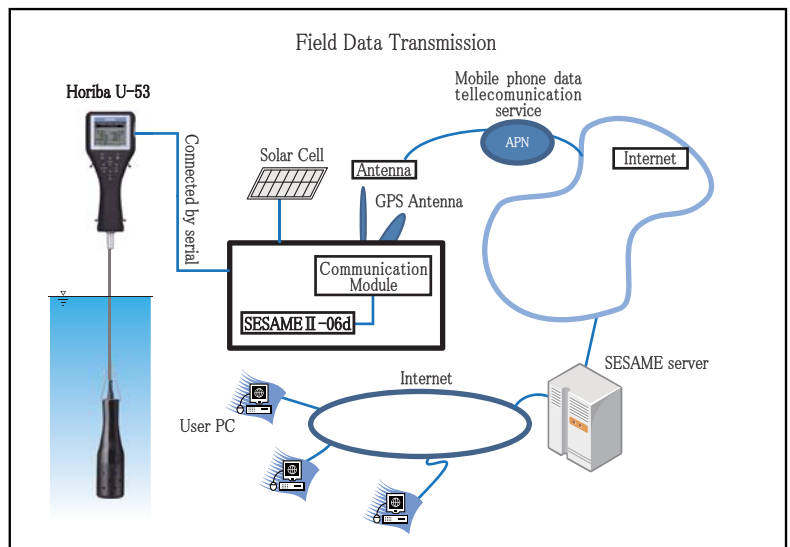
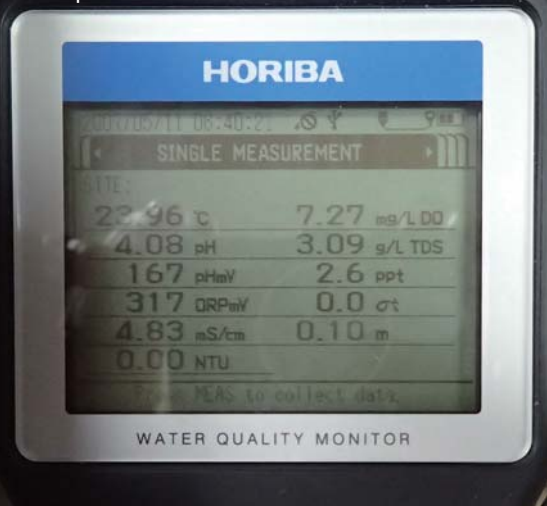
SESAME II-06d is a data logging and transmitting system designed for Horiba Multi-parameter Water Quality Meter U-53. Based on the telecommunication network served by SESAME System, you can get real-time field data on a variety of water quality!

SESAME II-06d logs all the data of U-53 (pH, oxidation-reduction potential (ORP), dissolved oxygen (DO), electric conductivity (EC), salinity*, total dissolved solid (TDS)*, seawater specific gravity*, water temperature, turbidity, and water depth) in both its internal memory and an SD card. The data are then sent to a cloud server via the mobile phone network. So the users can access the data in the cloud server via the Internet.

SESAME II-06d can remember upper and lower threshold values for all items of U-53. When a measured value gets out of the range, an alert message is sent to the server, which will then send an email to the users. So the SESAME System is very useful for monitoring water pollution in canals, rivers and coastal area.

*Converted from EC value.

All 11 parameters measured with U-53



Serial interface
between
data logger &
control unit

Control unit

Solar charge
controller

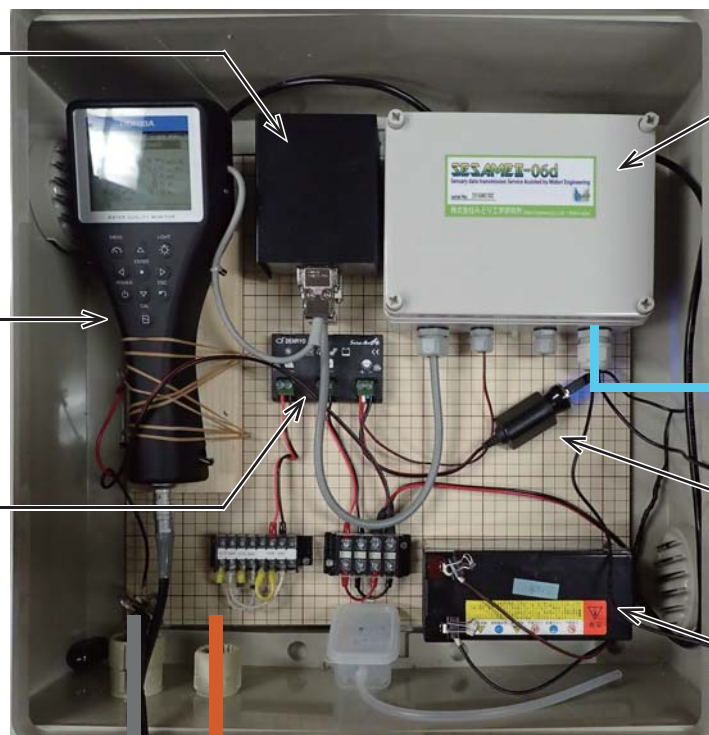
Data logger &
transmitter

GPS & mobile
phone antenna

Voltage converter
(12 to 5 VDC)

Deep cycle battery
(12 VDC)

To sensing probe
To solar cell



Real time data transmitter, SESAME II -06d, for Horiba Water Quality Meter U-53

Model No.	SESAME II-06d
Input	All data of U-53 (pH, ORP, DO, EC, salinity*, TDS*, seawater specific gravity*, water temp., turbidity, and water depth)
Interval	Measurement: 1~60 min, 1 min step Transmission: 10/15/20/30 min, 1/2/4/6/12/24 hours
Alarming	All data of U-53 and Battery voltage (upper and lower thresholds)
Recording Media	Internal: 1 M-bit non-volatile EEPROM (up to 3000 times observation) External: SD card (up to 4GB)

Antenna	Mobile Terminal: 1, GPS: 1
Band Frequency**	GSM/GPRS, 3G (W-CDMA)
Operating Temp.	-5 to 45°C
Power Source	12 VDC Deep cycle battery (20 Ah x 2) with solar cell (40 W)
Power Requirement	U-53: 60 mA (waiting w/o backlight) 500 mA (during measurement) Data logger: 4 mA Transmission: 600 mA

* Converted from EC value.

** For example, Telkomsel is applicable in Indonesia.

Technical data of Horiba Multi-parameter Water Quality Meter U-50 series

U-50 Series Specifications

	U-51	U-52	U-52G	U-53	U-53G	U-54	U-54G
Sensor Probe	Measurement temperature	-10 to 55°C					
	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)	●	●	●	●	●	●
Control Unit	Measurement depth	Max. 30 m					
	Light source per sensor (light emitting diode)	PPS, glass, SUS316L, SUS304, PFA, PEEK, O, titanium, FEP membrane, POM					
	Water resistance	JIS protection level 8					
	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)					
pH	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			Approx. 70 hours (without backlight)	
	Storage temperature	-10 to 60°C					
Oxidation Reduction Potential (ORP)	Ambient temperature	-5 to 45°C					
	Measurement principle	Glass electrode method					
	Range	pH0 to 14					
	Resolution	0.01pH					
	Repeatability	±0.05pH					
	Accuracy	±0.1pH					
Dissolved Oxygen (DO)	Measurement principle	Platinum electrode method					
	Range	-2000 mV to +2000 mV					
	Resolution	1 mV					
	Repeatability	±5 mV					
	Accuracy	±15 mV					
	Measurement principle	Polarographic method					
Conductivity (COND)	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			
	Repeatability	±0.1 mg/L					
	Accuracy	±0.2 mg/L, 20 to 50 mg/L: ±0.5 mg/L					
	Measurement principle	4 AC electrode method					
	Range	0 to 10 S/m (0 to 100 mS/cm)					
Salinity	Resolution	±0.05% F.S.					
	Accuracy	*±1% F.S. (Median of two-point calibration)					
	Measurement principle	Conductivity conversion					
	Range	0 to 70 PPT (permillage)					
	Resolution	0.1 PPT					
	Repeatability	±1 PPT					
Total Dissolved Solid (TDS)	Accuracy	±3 PPT					
	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	Measurement principle	Conductivity conversion					
	Range	0 to 50 σ _t					
	Resolution	0.1 σ _t					
	Repeatability	±2 σ _t					
	Accuracy	±5 σ _t					
	Measurement principle	Thermistor method					
Temperature	Range	-10 to 55°C					
	Resolution	0.01°C					
	Repeatability	*±0.10°C (at calibration point)					
	Accuracy	JIS class B platinum thermometer sensor (±0.3+0.005 t)					
	Measurement principle	LED light source and 90° scattering method	Tungsten lamp source and 90° scattering method			LED light source and 90° scattering method	
	Range	0 to 800 NTU	0 to 1000 NTU			0 to 1000 NTU	
Turbidity (TURB)	Resolution	0 to 99.9 NTU: 0.1 NTU	100 to 800 NTU: 1 NTU	0 to 99.9 NTU: 0.01 NTU	10 to 99.9 NTU: 0.1 NTU	0 to 0.99: 0.01 NTU	1 to 99.9: 0.1 NTU
	Repeatability	±5% (Reading) or ±0.5 NTU whichever is greater					
	Accuracy	±5% (Reading) or ±1 NTU whichever is greater					
	Measurement principle	Pressure method					
	Range	0 to 30 m					
	Resolution	0.05 m					
Water depth	Repeatability	±1% F.S.					
	Accuracy	±0.3 m					
	Measurement principle	Pressure method					
	Range	0 to 30 m					
	Resolution	0.05 m					
	Repeatability	±1% F.S.					
GPS	Accuracy	±0.3 m					
	Measurement principle	Pressure method					
	Range	0 to 30 m					
	Resolution	0.05 m					
	Repeatability	±1% F.S.					
	Accuracy	±0.3 m					

Note:
 * Battery life based on continuous operation using alkaline C dry batteries when the monitor temperature is over 20°C 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°C normal pressure condition).

Distributor

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TEL +81 11-555-5000

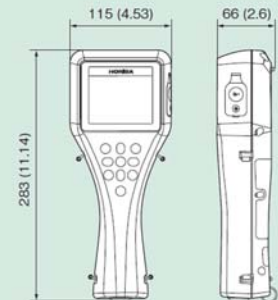
URL <http://www.midori-eng.co.jp/>

Emai info@midori-eng.co.jp

802 Dotsu Bild. 1-23 Kita 5 jo
 Nishi 6 chome Chuo-ku,
 Sapporo. Japan
 #060-0005

Dimensions unit: mm (in)

Control unit



Sensor probe

