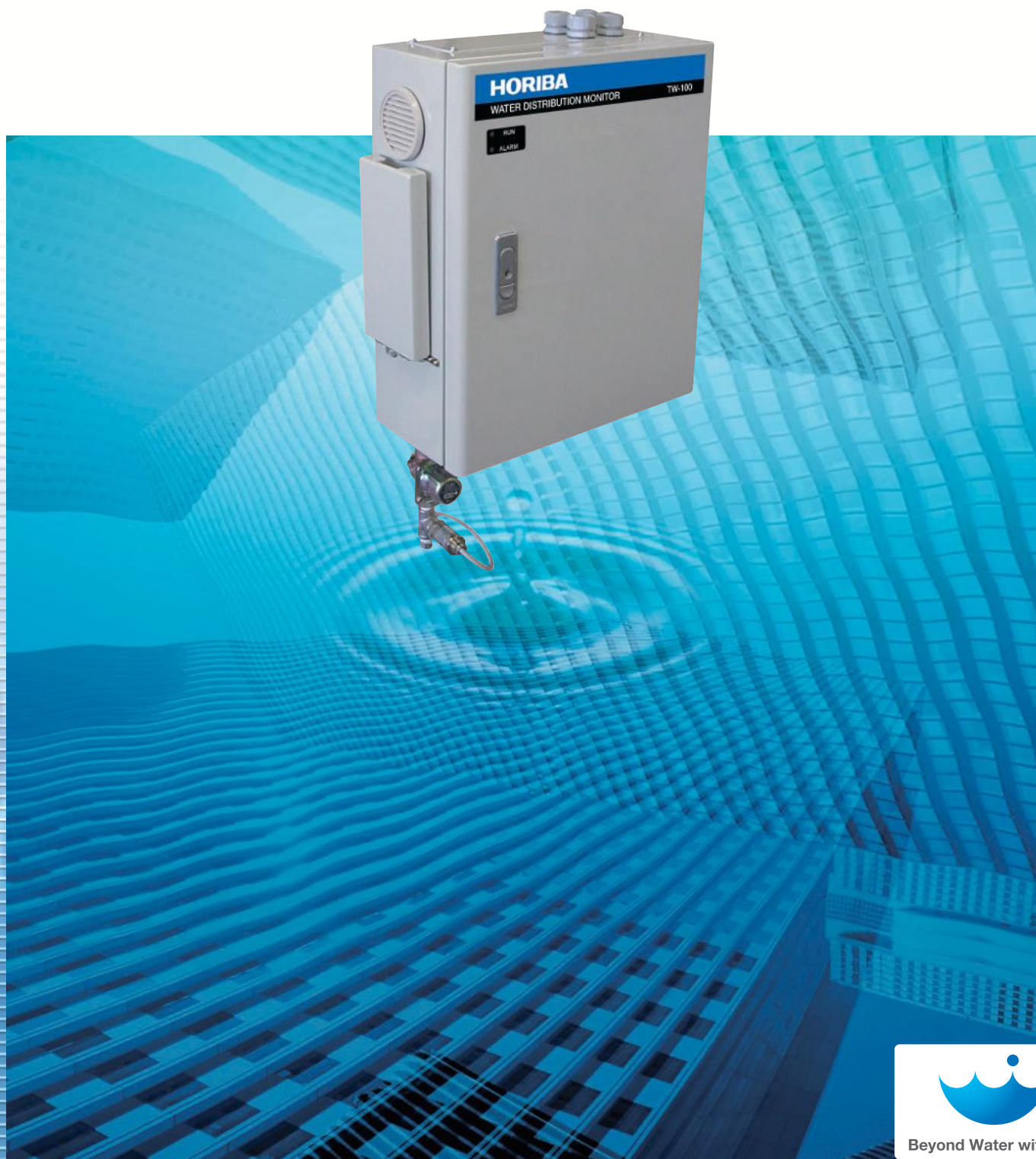


HORIBA

Water Distribution
Monitor

TW-100



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HORIBA



Water Distribution Monitor

TW-100

HORIBA's TW-100 is a process water quality measurement system designed for drinking water and water distribution plants. The TW-100 monitors turbidity, color, free chlorine and pressure. This chemical free method reduces operating costs as it requires minimal maintenance and improves process control.

This compact system is equipped with sensors to monitor four water quality parameters. Optional sensors can be added to monitor as many as seven water quality parameters. No reagents are required for the measurement.

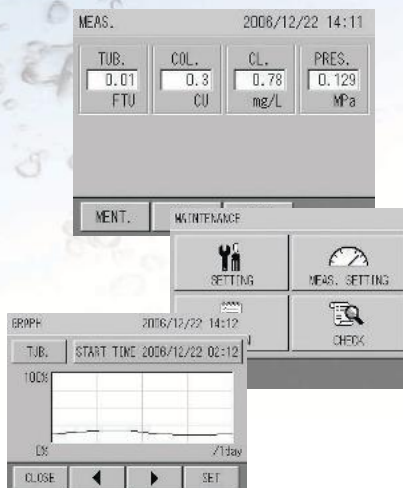
Standard Four parameters:
Turbidity, color, free chlorine, water pressure

Optional Seven parameters:
Turbidity, color, free chlorine, water pressure, pH, electric conductivity, water temperature



The instrument is operated with a touch screen panel for easy operation and display of measured values.

- Operation panel specifications
320x240 dots
Black and white graphic LCD with backlight



The compact size allows for more installation location options and space for operation.

Features:

- Automatic cleaning
- Adjustable measurement frequency
- Variable sample volume
- Automatic zero calibration
- Internal water leak detection and alarm
- Data storage to compact flash card



Reagent bottle tray for calibration (standard)

[Chart 1]

Standard type

Parameters	Method	Range	Repeatability	Calibration method
Turbidity	Transmitted light absorption	0 to 2 FTU, 0 to 4 FTU	Full scale $\pm 2.5\%$	Formazin standard solution or polystyrene latex standard solution
Color	Transmitted light absorption	0 to 10 CU, 0 to 20 CU	Full scale $\pm 5.0\%$	Standard color solution
Free chlorine	Polarography	0 to 2 mg/L	Full scale $\pm 2.5\%$	DPD colorimetry
Water pressure	Diaphragm pressure sensor	0 to 1 MPa	Full scale $\pm 1.0\%$	Standard pressure gauge

Option (each parameter can be added to the standard type)

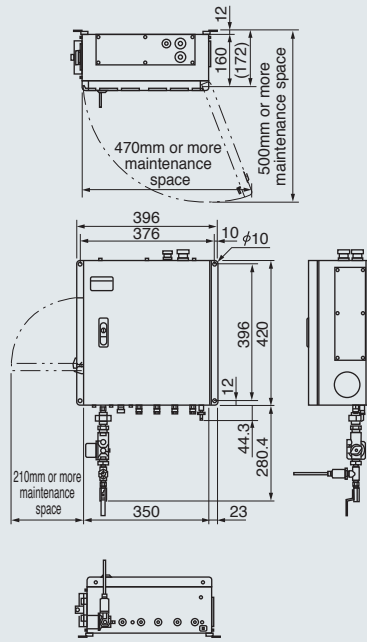
Parameters	Method	Range	Repeatability	Calibration method
pH	Glass electrode	pH 2 to 12	± 0.1 pH	pH 7 and pH 9 standard solutions
Conductivity	AC bipole	0 to 50 mS/m	Full scale $\pm 2.0\%$	KCL standard solution
Water temperature	Thermistor	0 to 50°C	$\pm 0.5^\circ\text{C}$	Standard thermometer

System specifications

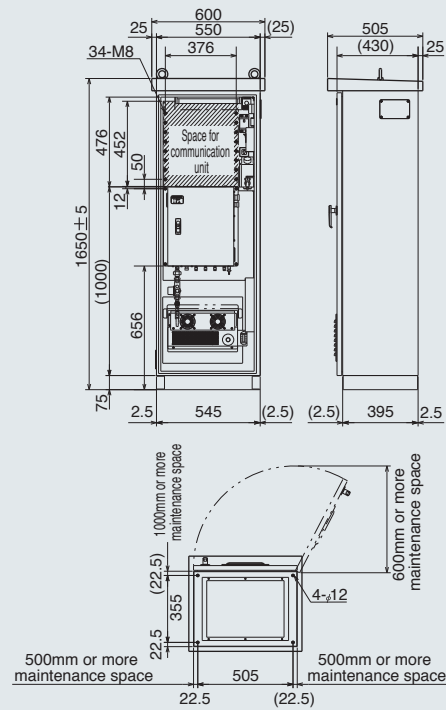
Product name	Water Distribution Monitor
Model name	TW-100
Parameters	Turbidity, color, free chlorine, water pressure (standard); pH, conductivity, water temperature (option)
Methods	See chart 1.
Range	See chart 1.
Repeatability	See chart 1.
Display	LCD display: 320 x 240 dot B&W graphic LCD with backlight (touch panel type) Standard version simultaneously displays four measurement categories (turbidity, color, free chlorine, and water pressure); Optional version simultaneously displays up to seven parameters (the four parameters plus pH, conductivity, and water temperature)
Calibration method	See chart 1.
Automatic zero calibration	(Turbidity, color, free chlorine) Calibration method: Measurement of filtered sample water Trigger: Internal control (timer) or external control. Interval: 1 to 9999 hours (can be set as desired within that range) Time: 20 to 99 minutes (can be set as desired within that range)
Automatic cleaning	(Turbidity, color) Cleaning method: Wiper cleaning Trigger: Internal control (timer) or external control. Interval: 5 to 9999 hours (can be set as desired within that range) (Free chlorine) Continuous cleaning with beads grinder
Sample water conditions	Temperature: 0 to 40C (must not freeze) Pressure: 0.1 to 0.75 MPa Flow rate: over 100 mL/min Flow rate for measurement: 50 to 100 mL/min * Be sure to flush the sample water before starting the system. * Be sure to install a bypass for the pipe to which the system is attached. * If there is any possibility that the sample water could freeze, please protect the system from cold temperature.
Ambient temperature/humidity	Temperature; 0 to 40C; Humidity: 85% or less
Analog output	Type: Measurement value: Same number as parameters (4 standard, 7 as maximum) Specifications: DC 4 to 20 mA, insulated output (no insulation between parameters), maximum load resistance 600 Ω
Output signal	Type: Power off, batch alerts, maintenance Details: Power off: Output when power is off. Batch alerts: Cell temperature error, compensation temperature error, cell wiper error, internal communication error, water leak, battery error, upper and lower limit of measurement, light source error, zero calibration, span calibration, analyzer error Maintenance: Output when the system is in maintenance or calibration mode. Specifications: Non-voltage contact output, a contacts Contact ratings: AC 125 V, 0.3 A, DC 30 V, 1 A (depends on resistance load), each output COM is independent.
Input signal	Type: Cleaning start, zero calibration start, error check sequence start, error water sampling start Details: Cleaning start: Cleaning procedure initiated with closed contact input Zero calibration start: Zero calibration initiated with closed contact input Error discrimination start: Error discrimination initiated with closed contact input Error water sample sampling start: Error water sample sampling initiated with closed contact input Specifications: Non-voltage contact input (open collector contact can be used), insulated input Resistance when ON: Maximum 100 W; Open voltage: DC 26 V; Short-circuit current: Max. 13 mA
Communications	Interface: RS-232C compliant (*Remote monitoring system is option)
Functions	Estimation of sample water volume (counting type), internal water leak detection, error water sampling
Data memory	Measurement values for each parameters are stored in the unit's data memory. Data can be transferred to a CF card. Memory interval: 1 minute or 1 hour Memory schedule: At the top of the hour Data memory longevity: 1 minute intervals: About 10 days; 1 hour intervals: About 1 year. * The latest data is written to up date a series of data.
Wiring contact	Wiring ground: For power source: φ8.5~φ10.5; For input/output: φ12.5~φ14.5
Piping contact	Sample water input: Rc 1/4; Drainage: Rc 1/4; Calibration solution input: Rc 1/8; Error sample sampling aperture: Rc 1/8
Construction	Designed for indoor installation. * Housed in a special case (frame) for exterior installation (option).
Power	AC 100 V to AC 230 V, 10%, 50/60 Hz
Power consumption	AC 100 V to AC 120 V: 120 VA; AC 100 V to AC 230 V: 150 VA
Weight	Approx. 15 kg (Measurement unit only)
External dimensions	350 mm (W) x 160 mm (D) x 420 mm (H) (not including installation fixtures and projecting portions)
Paint color/Material	Munsell 5PB8/1; Unit case is made of SUS.
Installation environment	• Install on a flat surface without vibration shocks. • No dust, mist, or corrosive gases in the atmosphere. •Lower air pressure. •No direct sunlight. •Ventilated air. •2,000 m or less above sea level.

■ Exterior dimensions (unit: mm)

Main unit



Outdoor specification



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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