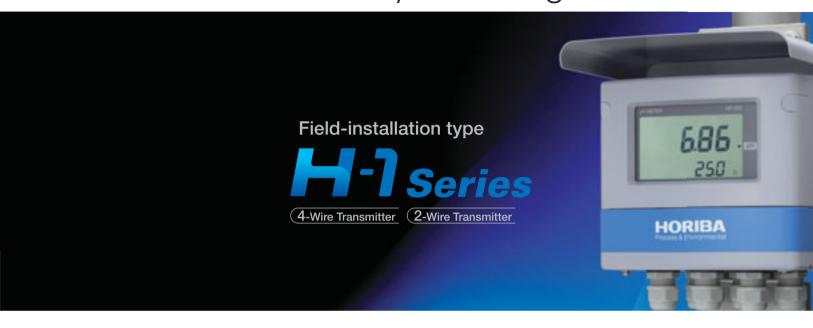




# Optimum measurement system for all types of application Industrial Water Quality Measuring Instruments





## Measurement item

pH ORP RESIST COND RC DO NH4-N F MLSS TURB COLOR

## Total support for all types of application from purified water



HORIBA H-1 and SLIM48/96 series of industrial water quality measuring instruments include a total array of measurement points for the broad applications required controling of water quality. With sensors, cleaners, and various accessories, these water quality measuring instruments are applicable to all kinds of water treatment and reduce the maintenance load.

## Series Lineup of Industrial Water Quality Instruments

Series	Installation Location	Туре	Power Supply	рН	ORP	Resistivity	Condu Low Conductivity Solutions	Ictivity   High Conductivity     Solutions	Residual Chlorine	DO	NH4-N	F	MLSS	Turbidity	Color
	Field -installation type	2-Wire Transmitter	24 V DC	HP-300	HO-300	HE-300R	HE-300C	_	_	HD-300		HC-300F			
H-1		2-Wire Multi -Parameter	24 V DC	HQ-300	HQ-300	HQ-300	HQ-300			HQ-300		HQ-300		_	_
		4-Wire Transmitter	90 to 264 V AC	HP-200	HO-200	HE-200R	HE-200C	HE-200H	HR-200	HD-200 HD-200FL	HC-200NH	HC-200F	HU-200SS	HU-200TB-W HU-200TB-H HU-200TB-EH HU-200TB-IM	HU-200CL
SLIM 48/96	Panel mount type	4-Wire Transmitter	90 to 264 V AC	HP-480 HP-960FTP	HO-480	HE-480R HE-960RW	HE-480C HE-960CW	HE-480H HE-960HI	HR-480P	HD-480		_		_	_

## monitoring to waste water monitoring



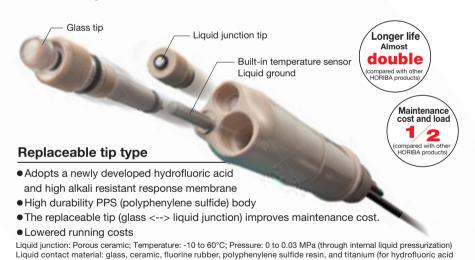
The Field installation type H-1 series Transmitters offer a rainproof structure. This has been newly developed under the concepts of "durability", "functionality", and "maintainability"

in order to stand the severe environmental conditions of on-site processes. This series of units comprehensively can use all kinds of water treatment from purified water monitoring to waste water monitoring.



The panel mount type SLIM48/96 series instruments are the optimum Analyzers for incorporation in an instrumentation system. Their compact design means minimal space requirements for systems that combine multi-item measurement instruments. We recommend this series for automatic all-purpose monitoring of sewerage, factory effluent, factory processes, etc.

## Industrial pH electrode



## pH electrode HF Combination with replaceable tip

resistance: Nickel chrome alloy)



Resistant to the waste fluids of semiconductor processes and strong acids, including hydrofluoric acid.

## pH electrode Alkali

Combination with replaceable tip



Resistant to the water used in brine electrolysis processes and high alkali waste fluids.

## pH electrode Oil

Combination with replaceable tip Model: 6173-50B



Resistant to oil contamination in petroleum refinery processes and boiler circulation water that includes petroleum.

## Standard electrode

Dome-shaped tough electrode Integrated combination









Integrated combination



























Combination with replaceable tip Model: 6174-50B



## **HU-200TB-IM**

(4-Wire Transmitter)







## **HU-200TB-W**

(4-Wire Transmitter)







Measuring method	90-degree transmission-scattering method					
Measuring range	Turbidity Formazin: 0 to 4000 NTU					
	Kaolin: 0 to 2000 degrees (Display range: 2001 to 4000 degrees)					
	SS Kaolin: 0 to 2000 mg/L (Display range: 2001 to 4000 mg/L)					
Transmission output	Two points 4 to 20 mA DC input/output isolated type Maximum load resistance 900 $\Omega$					
Contact output	Six points Output type: No-voltage contact output Relay contact, SPST Contact capability R1, R2, R3: Selectable from upper limit alarm, lower limit alarm, transmission output Hold, and cleaning output Setting range: Within the measurement range of turbidity or absorbance Delay time: 0 to 600 s FAIL: You can use the NO and NC relay contact. Error alarms for values outsides the measurement range, self-checks, and calibration errors can be set Delay time: 0 to 600 s RNG1, RNG2: Status output of the transmission output range					
Contact input	Four points Contact type: No-voltage a contact for open collector Contact function EXT1: Transmission output hold EXT2: Cleaning operation external input EXT3 EXT4: Selection from four ranges by 2 bits input					
Communication function	RS-485 Two wire type, the power source of the communication is isolated from the power of measurement circuit. (The power source of transmission and communication are not isolated)					
Ambient temperature	-20 to 55°C					
Self-diagnosis	Sensor check error, Transmitter error					
Power supply	100 to 240 V AC 50/60 Hz 36 VA (max.)					
Structure	Outdoor installation type: IP65 Protection class Installation method: 50 A pole-mounted or wall-mounted Material of case: Aluminium alloy (coated with epoxy modified melamine resin) Material of mounting brackets: SUS304					
Weight	Approx. 4.5 kg					
Regulatory certification	CE marking, FCC rules					

HU-200TB-W Speci	fications					
Measuring method	90-degree transmission-scattering method					
Measuring range	Kaolin 0 to 1000 degrees (Display range: 0 to 1100 degrees) or 0 to 1000 mg/L					
	Formazin 0 to 2000 degrees (Display range: 0 to 2200 degrees)					
	PSL 0 to 100 degrees (Display range: 0 to 110 degrees)					
Transmission output	Two points 4 to 20 mA DC input/output isolated type Maximum load resistance 900 $\Omega$					
Transmission output range	Free range					
Contact output	Four points Output type: No-voltage contact output Relay contact, SPST Contact capability R1, R2, R3: Selectable from upper limit alarm, lower limit alarm, transmission output Hold, and cleaning output. FAIL: Error alarm RNG1, RNG2: Range signal by 2 bits binary output					
Contact input	Four points Contact type: No-voltage a contact for open collector Contact function EXT1 EXT2: Can be selected from auto zero cal directives or transmission hold EXT3 EXT4: Selection from four ranges by 2 bits input					
Communication function	RS-485 Two wire input/output isolated type (not isolated from transmission output)					
Ambient temperature	-20 to 55°C					
Self-diagnosis	Sensor check error, Converter error					
Power supply	100 to 240 V AC 50/60 Hz 35 VA (max.)					
Structure	Outdoor installation type: IP65 Protection class Installation method: 50 A pole-mounted or wall-mounted Material of case: Aluminium alloy (coated with epoxy modified melamine resin) Material of mounting brackets: SUS304					
Weight	Approx. 4.5 kg					
Regulatory certification	CE marking, FCC rules					

## Sensor

#### Specifications Model SS-150 Measuring method Light scattering/transmission method or transmission method Light source Infrared LED 860 nm Silicon photo diode Automatic cleaner Rotary wiper Measured liquid temperature 0 to 45°C (Without freezing) Measured liquid pressure 0 to 0.1 MPa Material of wetted Part PFA, POM, FKM, M, SUS316, EPDM, PVC, Provided standard cable: 10 m, maximum extension distance: 50 m Cable length 24 V DC 6 W supplied from HU-200TB-IM Transmitter Power supply Approx. 1.0 kg (excluding cables) Weight



## Specifications

Model	SS-120-W
Measuring method	90-degree transmission-scattering method
Light source	LED 860 nm
Detector	Silicon photo diode
Automatic cleaner	Wiper (Option)
Measured liquid temperature	5 to 45°C (without freezing)
Measured liquid pressure	0 to 0.3 MPa
Material of wetted Part	PVC SUS316 FKM silicone rubber hard glass EPDM
Cable length	Standard attachment cable: 5 m
Installation	Screwing in bore size: Rc3/4
Power supply	12 V DC supplied from HU-200TB Transmitter
Weight	Mainframe: approx. 3.5 kg Cleaner: 2.5 kg



## **HU-200TB-H**

(4-Wire Transmitter)







## **HU-200TB-EH**

(4-Wire Transmitter)







HU-200TB-H Specif	ications					
Measuring method	90-degree transmission-scattering method					
Measuring range	Kaolin 0 to 10.00 degrees (Display range: 0 to 11.00 degrees)					
	Formazin 0 to 10.00 NTU (Display range: 0 to 11.00 NTU )					
	PSL 0 to 10.00 degrees (Display range: 0 to 11.00 degrees)					
Transmission output	Two points 4 to 20 mA DC input/output isolated type Maximum load resistance 900 $\Omega$					
Transmission output range	Free range					
Contact output	Two points Output type: No-voltage contact output Relay contact, SPST Contact capability R1, R2, R3: Selectable from upper limit alarm, lower limit alarm, transmissio output Hold, and cleaning output. FAIL: Error alarm RNG1, RNG2: Status output of the transmission output rang e					
Contact input	Four points Contact type: No-voltage a contact for open collector Contact function EXT1 EXT2: Can be selected from auto zero cal directives or transmission hold EXT3 EXT4: Selection from four ranges by 2 bits input					
Communication function	RS-485 Two wire input/output isolated type (not isolated from transmission output)					
Ambient temperature	-20 to 55°C					
Self-diagnosis	Sensor check error, Converter error					
Power supply	100 to 240 V AC 50/60 Hz 35 VA (max.)					
Structure	Outdoor installation type: IP65 Protection class Installation method: 50 A pole-mounted or wall-mounted Material of case: Aluminium alloy (coated with epoxy modified melamine resin) Material of mounting brackets: SUS304					
Weight	Approx. 4.5 kg					
Regulatory certification	CE marking, FCC rules					

HU-200TB-EH Spec	ifications
Measuring method	90-degree transmission-scattering method
Measuring range	Kaolin Formazin PSL: 0 to 2.0000 degrees (Display range: 0 to 2.2000 degrees)
Transmission output	Two points 4 to 20 mA DC input/output isolated type Maximum load resistance 900 $\Omega$
Transmission output range	Free range
Contact output	Six points Output type: No-voltage contact output Relay contact, SPST
	Contact capability R1, R2, R3: Selectable from upper limit alarm, lower limit alarm, transmission
	output Hold, and cleaning output.
	Setting range: Within the measurement range of turbidity or absorbance
	Delay time: 0 to 600s
	FAIL: You can use the NO and NC relay contact.
	Error alarms for values outsides the measurement range,
	self-checks, and calibration errors can be set
	Delay time: 0 to 600s
	RNG1, RNG2: Status output of the transmission output range
Contact input	Four points Contact type: No-voltage a contact for open collector
	Contact capability EXT1 EXT2: Can be selected from auto zero cal directives or transmission hold
	EXT3 EXT4: Selection from four ranges by 2 bits input
Communication function	RS-485 Two wire input/output isolated type (not isolated from transmission output)
Ambient temperature	-20 to 55°C
Self-diagnosis	Transmitter error
Power supply	100 to 240 V AC 50/60 Hz 35 VA (max.)
Structure	Outdoor installation type: IP65 Protection class
	Installation method: 50 A pole-mounted or wall-mounted
	Material of case: Aluminium alloy (coated with epoxy modified melamine resin)
	Material of mounting brackets: SUS304
Weight	Approx. 4.5 kg
Regulatory certification	CE marking, FCC rules

#### Sensor Specifications Specifications Model SS-120-H Model SS-120-LD Measuring method 90-degree transmission-scattering method Measuring method 90-degree transmission-scattering method Light source LED 660 nm Light source Laser diode 670 nm Detector Silicon photo diode Detector Silicon photo diode Automatic cleaner Wiper (Option) Measured liquid temperature 0 to 40°C (no freezing) Measured liquid temperature 5 to 45°C (without freezing) Measured liquid pressure 0 to 0.3 MPa Measured liquid pressure 0 to 0.3 MPa Material of wetted Part PVC SUS316, FKM Silicon rubber Hard glass EPDM Material of wetted Part PVC SUS316 FKM silicone rubber hard glass EPDM Standard attachment cable: 5 m Cable length 12 V DC 6 W supplied from HU-200TB-EH transmitter Cable length Standard attachment cable: 5 m Power supply Approx. 3.5 kg Screwing in bore size: Rc3/4 Installation Weight 12 V DC supplied from HU-200TB Transmitter Power supply Weight Mainframe: approx. 3.5 kg Cleaner: 2.5 kg Turbidity Concentration (NTU, mg/L) Model 0.0001 0.1 0.001 1000 10000 100000 SS-120-W HU-200TB-W 2000 mg/L SS-120-H HU-200TB-H High Sensitivity 10 mg/L SS-120-LD HU-200TB-EH **Ultra High Sensitivity** HU-200TB-IM SS-150 4000 mg/L

## Lineup of Cleaners

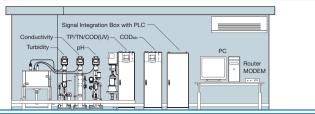
Ultrasonic Cleaner UCH-1X1 UCF-3X1	Jet Cleaner JCH-1X1 JCF-3X1	Jet Driven Brush Cleaner BH-1X1	Brush Cleaner BCH-1X1	Brush/Jet Cleaner BCH-1X1J	Chemical Cleaner CCH-1X1	Chemical Brush Cleaner CBCH-1X1	pH Meter with Auto Calibration Function AH-151
The use of original burst oscillation method enables continuous cleaning, as measurement values are not affected during cleaning.	Cleans with water or air jet. Effective physical cleaning to remove adhered substances.	Cleaner with a brush rotated by water or air jet. Can be used in an explosion-proof area, as power supply is not required as long as jet source is available.	Motor-driven brush cleaner. Effective physical cleaning to remove adhered substances.	Composite type cleaner, combining a motor-driven brush cleaner and a jet cleaner.	Chemical cleaner using dilute hydro- chloric acid. Optimum for removing coating materials such as calcium.	Composite type cleaner, combining a chemical cleaner using dilute hydro- chloric acid and a motor-driven brush cleaner.	pH meter with automatic functions to clean electrodes with chemicals and calibrate standard solutions and to measure pH, which significantly reduces man-hours required for maintenance. Regular cleaning and calibration en
[Immersed type] UCH series	[Immersed type] JCH series	[Immersed type] BH series	[Immersed type] BCH series	[Immersed type] BCH series	[Immersed type] CCH series	[Immersed type] CBCH series	[Immersed type] AH-151-CH
[Circulation type] UCF series	[Circulation type] JCF series						

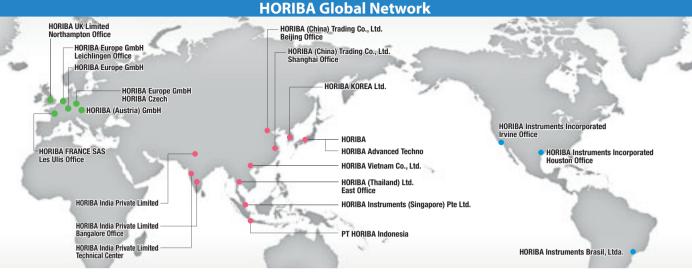
## Comparison Table of Automatic Cleaners

	Ultrasonic Cleaner	Jet Cleaner	Jet Driven Brush Cleaner	Brush Cleaner	Brush/Jet Cleaner	Chemical Cleaner	Chemical Brush Cleaner	pH Meter Auto Calibration Function
рН	0	0	0	0	0	0	0	0
ORP	0	0	0	0	0	0	0	×
DO(Polarography)	×	0	×	×	×	×	×	×
DO (Optical)	0	0	×	×	×	×	×	×
NH4-N	0	0	×	×	×	×	×	×
F	×	0	×	×	×	0	×	×
MLSS	×	0	×	×	×	×	×	×

## Water Quality Monitoring System

As the item to watch water quality, we offer the following automatic analytical instruments.







The HORIBA Group adopts IMS (Integrated Management System) which integrates Quality Management System IS09001, Environmental Management System IS014001. and Occupational Health and Safety Management System OHSAS18001

We have now integrated Business Continuity Management System ISO22301 in order to provide our products and services in a stable manner, even in emergencies



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