HORIBA

Water Quality Meter Series — Selection Guidebook

for Ammonia Nitrogen Meter

NH_4-N

Contents

For all water treatment processes, from pure

The "water expert," a long-selling product, now protects the quality of the world's water.

Horiba Advanced Techno's water quality meter series has all the measurement items necessary for sensors as well as holders and cleaners can be combined to meet each customer's needs, from or the "48/96 Series Indoor-Use Panel Installation Type Water Quality Meter" according to your site's

Outdoor-use type Water Quality Analyzer **H-1 Series**

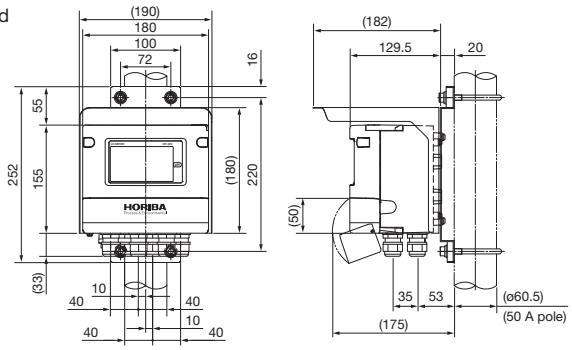
Developed to embody the key concepts of Tough (Robustness), Intelligence (Functionality), and Easy Maintenance (Maintainability) to cope with the harsh environmental conditions of on-site processes. The robust die-cast aluminum case, noise resistance, auto-calibration, various self-diagnostic functions, and a wide range of interfaces facilitate on-site water quality management both indoors and outdoors.

H-1 Series Lineup

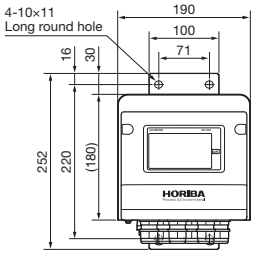
pH meters	HP-200	4-wire
	HP-300	2-wire
	HP-300-IS	2-wire, explosion-proof
ORP meters	HO-200	4-wire
	HO-300	2-wire
	HO-300-IS	2-wire, explosion-proof
Electroconductivity meters (Conductivity meters)	HE-200C	4-wire, low concentration
	HE-300C	2-wire, low concentration
	HE-300C-IS	2-wire, explosion-proof
	HE-200H	4-wire, high concentration
Electrical resistivity meters (Resistivity meters)	HE-200R	4-wire
	HE-300R	2-wire
Dissolved oxygen meters (DO meters)	HD-200	4-wire, diaphragm type
	HD-300	2-wire, diaphragm type
	HD-200FL	4-wire, optical type
Turbidimeters	HU-200TB-W	4-wire, wide range, flow-through type
	HU-200TB-H	4-wire, high concentration, flow-through type
	HU-200TB-EH	4-wire, high sensitivity, flow-through type
Turbidity and SS meters	HU-200TB-IM	4-wire, immersion type
MLSS meters (Sludge densitometers)	HU-200SS	4-wire
Colorimeters	HU-200CL	4-wire
Residual chlorine meters	HR-200	4-wire, water flow bead type
	HR-200RT	4-wire, rotating electrode bead type
Turbidity, chromaticity, and residual chlorine meters	HU-200M-CR	4-wire
Simplified fluoride ion meters	HC-200F	4-wire
	HC-300F	2-wire
Ammonium nitrogen meters	HC-200NH	4-wire

External dimensions (Unit: mm)

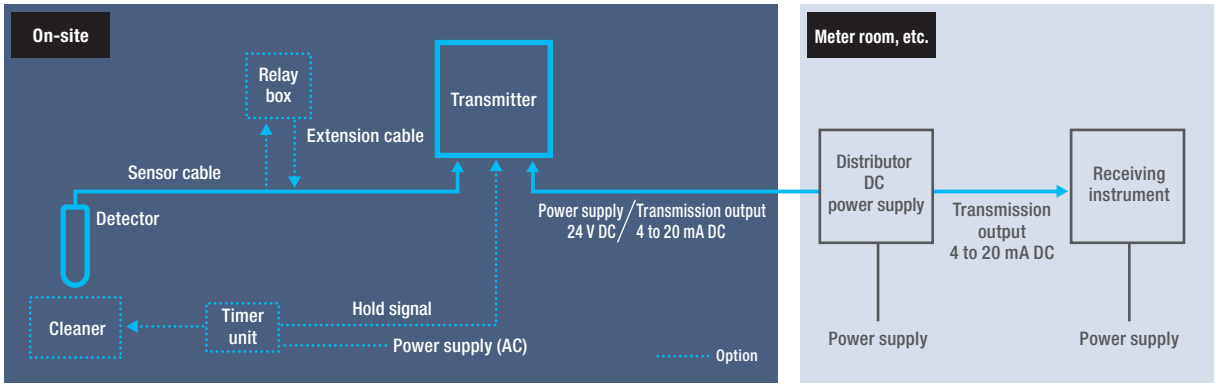
Pole-mounted



Wall-mounted



2-wire system configuration diagram (example) (H-1 series)



water and tap water to sewage and wastewater.

comprehensive measurement and management of water quality. A wide variety of transmitters and measurement to maintenance. Choose either the "H-1 Series Outdoor-Use Type Water Quality Meter" conditions.

Indoor-use panel installation type Water Quality Analyzer 48/96 Series

DIN standard size for installation in control panels. Each control panel has a durable embossed finish and can be operated using the front keys. The compact body offers a full range of functionality, including a status display that uses icons and a security function that employs a PIN code.

Transmitter: 48 series

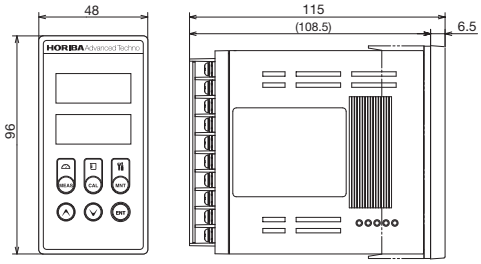
96 series

48/96 Series Lineup

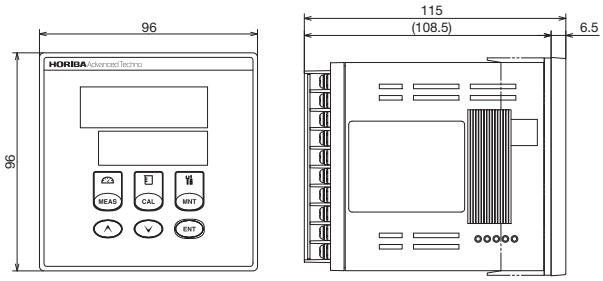
pH meters	HP-480	4-wire
	HP-480PL	4-wire, pulse proportional control
	HP-480TP	4-wire, time-division proportional control
	HP-960FTP	4-wire, 4-point alarm, time-division proportional control
ORP meters	HO-480	4-wire
Electroconductivity meters (Conductivity meters)	HE-480C	4-wire, for low concentration
	HE-480C-DC24V	4-wire, 24 V DC power supply
	HE-960CW	4-wire, 2-channel
	HE-960CW-P	4-wire, 2-channel, USP/EP compatible
	HE-480H	4-wire, for high concentration
	HE-960HI	4-wire, wide range
Electrical resistivity meters (Resistivity meters)	HE-480R	4-wire
	HE-480R-DC24V	4-wire, 24 V DC power supply
	HE-960RW	4-wire, 2-channel
Dissolved oxygen meters (DO meters)	HD-480	4-wire, diaphragm type
Residual chlorine meters	HR-480	4-wire, galvanic type
	HR-480P	4-wire, polarograph type, water flow bead type

External dimensions (Unit: mm)

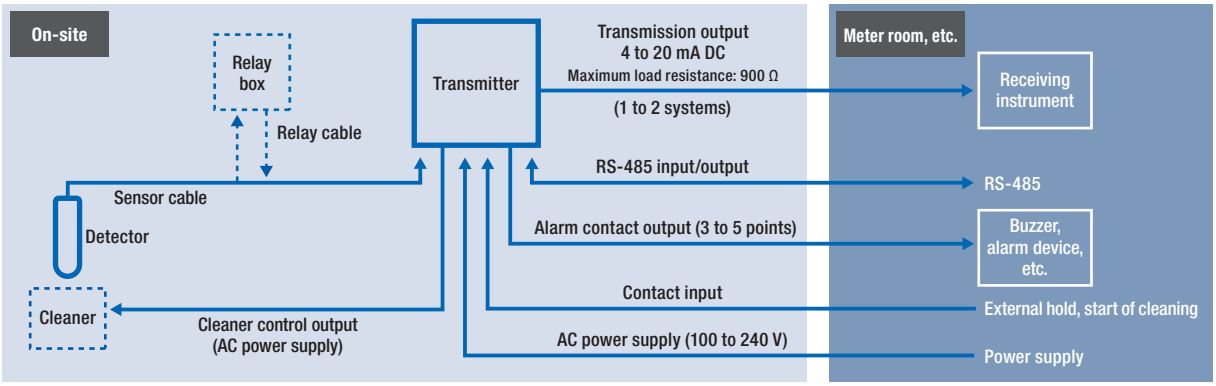
Transmitter: 48 series



Transmitter: 96 series



4-wire system configuration diagram (example) (H-1 series, 48/96 series)



MEMO

Water Quality Meter Series

Ammonia Nitrogen Meter (NH_4-N Meter)

【Measurement object】 **Ammonia nitrogen in solution**
【Measurement method】 **Ion electrode**
【Purpose】 **Aeration air volume control in biological reactors, wastewater management, etc.**

H-1 Series

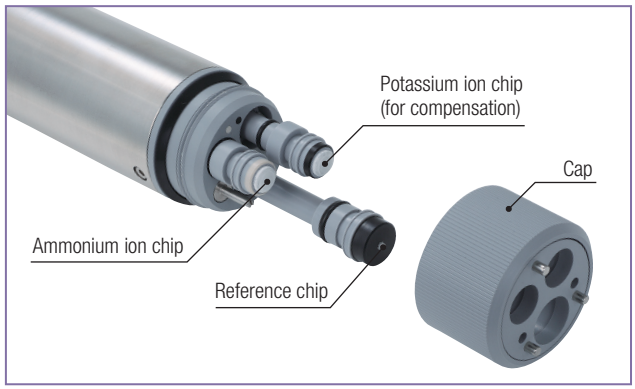
Outdoor-use type
Ammonia Nitrogen Meter

Ammonia nitrogen transmitter code table

Model	Specifications
HC-200NH	4-Wire, Power : 100 to 240 V AC 50/60 Hz

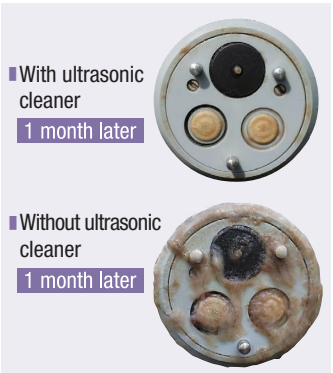
Features

Sensor
- Easy replacement by replaceable tip sensor
- Notification function for when sensor replacement is recommended



Ultrasonic cleaner (optional)
- Mild cleaning without damaging sensor
- Long term adhesion prevention of stain

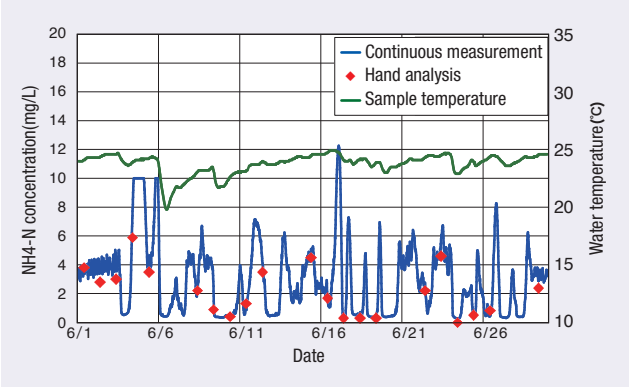
Close-up of detector



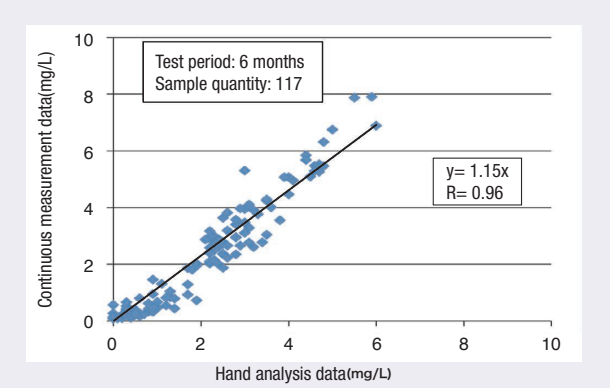
Field test example

*Data from joint research with Bureau of Sewerage Tokyo Metropolitan Government

Stable measurement result



Hand analysis correlation



Transmitter

Sensor

Holder / Cleaner 〈Select when necessary〉

In case of no holder and no cleaner.

NH_4-N — HC-200NH — AM-2000 — Drop-in holder — NH-16P / NH-16S

Ultrasonic cleaner — UH-16A

*Please also select the ultrasonic oscillator US-2S.

Jet cleaner — JH-16A

*Please also select air pump unit APU-20 or solenoid valve unit SVU-A.

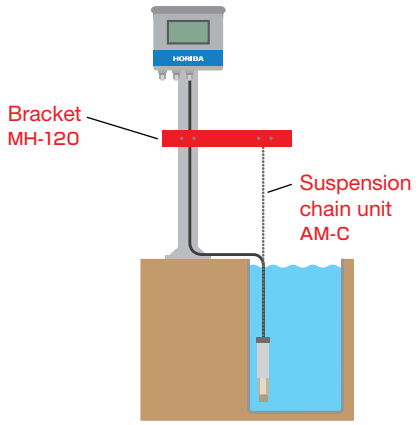
Selection of cleaners

●Optimal ▲Suitable ×Not appropriate

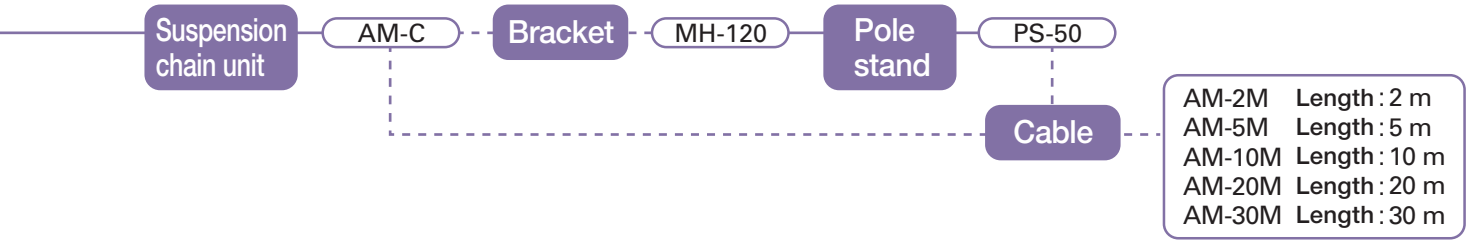
Types of dirts \ Types of cleaners		Ultrasonic cleaner UH-16A	Jet cleaner JH-16A
		A unique burst oscillation method allows continuous measurement without any values effect during cleaning.	Cleaning with water or air jets attacks attached dirt physically.
Food wastewater, pulp mill wastewater		▲	●
Microorganisms	Algae, bacteria (activated sludge)	●	●
Organic, oil	Tar, heavy oil	×	×
	Light oil	×	×
	Fatty acids, amines	×	▲
Suspension	Soil	●	▲
	Metal powder	▲	▲
	Clay, limestone	×	▲
Hardly soluble inorganic components	Coagulated sediments, neutralization treatment components ($CaCO_3$, etc.), scale	×	▲

Installation example

☑ Without cleaner
☑ Without holder



Accessory

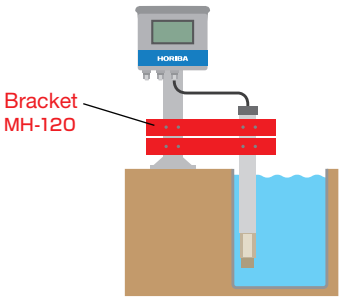


*HC-200NH can be connected to an optional optical dissolved oxygen sensor.

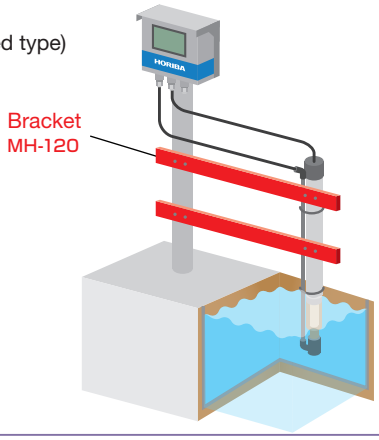
Installation example

*Please contact us for installation of chemical cleaners.

☑ With holder



☑ With cleaner
(Holder integrated type)



HC-200NH Specifications

Product name	Ammonia nitrogen meter
Converter model	HC-200NH

Ammonia nitrogen

Sensor model			AM-2000: Ammonia nitrogen sensor
Sensor chip model			7691: Ammonium ion chip, 7692: Potassium ion chip for correction, 7211: Reference chip
Application			Biological treatment reaction tank
Measurement range	Concentration		0 to 1000 mg/L (display range: 0 to 2000 mg/L)
			Possible setting range 1000 (2000), 100.0 (200.0), 10.00 (20.00) mg/L The initial setting is 10.00 (20.00) mg/L.
	Temperature		0 to 40ºC (display range: –10 to 110ºC)
Sample Condition	pH		4.0 to 8.5
	[Na^+]		0 to 100 times of [NH_4-N]
Display resolution	Concentration		0.01 mg/L: 0.00 to 10.00 mg/L 0.1 mg/L: 0.0 to 100.0 mg/L 1 mg/L: 0 to 1000 mg/L
	Temperature		0.1ºC
Performance	Concentration	Repeatability	±3% or ±0.2 mg/L, whichever is greater for the readings (standard solution)
	Temperature	Repeatability	±0.3ºC (equivalent input)
		Linearity	±0.3ºC (equivalent input)
Temperature compensation	Compatible temperature element		Platinum resistor: 1 kΩ (0ºC)
	Temperature measurement range		0 to 40ºC
	Temperature calibration function		1-point calibration for comparison with the reference thermometer
Potassium ion concentration compensation	Compensation range		The potassium ion concentration is not more than 10 times the ammonium ion concentration or 1000 ppm or less.
	Compensation error		±20ºC (reading)
Calibration	Calibration method, number of calibrations		Reference solution calibration of the ammonia nitrogen (2 points)
	Type of the reference solution		Select 1 to 10 mg/L or 10 to 100 mg/L.
	Additional functions		Automatic defect calibration judgment (asymmetry potential, sensitivity, stability) Calibration history (asymmetry potential, sensitivity)
Adjustment	Adjustment method, number of items for adjustment		Sample adjustment using manual analysis (1 point), standard curve input function (primary system)
	Additional functions		Adjustment history (number of days elapsed from the previous adjustment, sample adjustment coefficient)
Self-check	Calibration error		Asymmetry potential error, sensitivity error, response speed error, out of the temperature calibration range
	Sensor diagnosis error		Ion chip deterioration, reference chip impedance error, temperature sensor short-circuit, temperature sensor disconnection, out of the temperature measurement range, sensor communication error
	Converter error		CPU error, ADC error, memory error

Dissolved oxygen

Model		DO-2000: Optical dissolved oxygen sensor
Sensor model		5700A: Optical dissolved oxygen sensor cap
Measurement range	Dissolved oxygen concentration	0 to 20 mg/L (display range: 0 to 22 mg/L)
	Saturation ratio	0 to 200ºC (display range: 0 to 200%)
	Temperature	0 to 50ºC (display range: –10 to 110ºC)
Display resolution	Dissolved oxygen concentration	0.01 mg/L
	Saturation ratio	0.1%
	Temperature	0.1ºC
Temperature compensation	Temperature measurement range	0 to 50ºC
	Temperature calibration function	1-point calibration for comparison with the reference thermometer
Calibration	Calibration method	Atmospheric calibration Span calibration Zero solution (sulfite of soda) calibration Span solution (air saturated water) calibration
	Additional functions	Calibration history (zero, span, sensor cap recommended replacement time)
Self-check	Calibration error	Zero calibration error, span calibration error
	Sensor diagnosis error	Sensor communication error, film detection error, out of the sensor temperature measurement, optical error
	Converter error	CPU error, ADC error, memory error

*1: Although an arrestor (400 V discharge starting voltage) is mounted for the transmission output, contact input, and communication, install an optimum surge absorber element on the connection line, depending on the surrounding environment, device installation conditions, and external connection devices.

*2: When the sensor cable, the transmission cable, or the contact input cable is extended to 30 m or longer, the surge test specified in the EMC directive for CE marking is not applied.

Common specifications (converter)

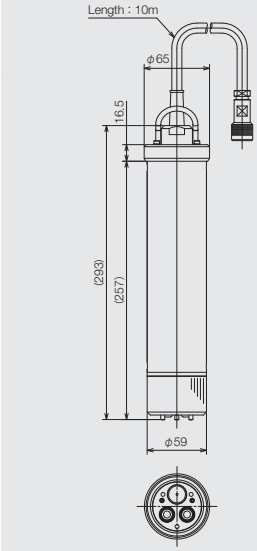
Transmission output*1	Number of current outputs		3 (negative terminals of each transmission output channel are connected inside and thus have the same electrical potential.)
	Output type		4 to 20 mA DC, input/output isolation type
	Load resistance		900 Ω (max.)
	Linearity		Within ±0.08 mA (limited to the current linearity)
	Repeatability		Within ±0.02 mA (limited to the current linearity)
	Output range	Output	Select 4 items from below. **Ammonia nitrogen concentration**: Arbitrary setting within the measurement range is possible. **Dissolved oxygen concentration**: Arbitrary setting within the measurement range is possible. **Temperature reading of the ammonia nitrogen meter**: Arbitrary setting within the range from -10 to 110ºC is possible. **Temperature reading of the dissolved oxygen meter**: Arbitrary setting within the range from -10 to 110ºC is possible.
	Error output		Provided with burnout function (selectable from 3.8 mA and 21 mA for setting)
	Hold function		Selectable between the latest value hold and the preset value hold
Contact output*1	Number of output points		5
	Output type		No-voltage contact output
	R1, R2	Contact type	Relay contact, SPST (1a)
		Contact capacity	250 V AC 3 A, 30 V DC 3 A (resistance load)
		Contact function	Selectable from among the upper limit alarm, lower limit alarm, during transmission output hold, and cleaning output (closed at alarm operation, open under normal conditions and in a power-off state)
		Description of alarm	Measurement range: concentration within the display range Delay time: 0 to 600 seconds
	FAIL	Contact type	Relay contact, SPDT (1c)
		Output capacity	250 V AC 3 A, 30 V DC 3 A (resistance load)
		Contact function	Error alarms for values outside the measurement range and self-check output can be set Delay time: 0 to 600 seconds
	R3	Contact type	Relay contact, SPST (1a) (common for R4 and COM)
		Contact capacity	30 V DC 1 A (resistance load)
		Contact function	Notification of the ion chip deterioration
	R4	Contact type	Relay contact, SPST (1a) (common for R3 and COM)
		Contact capacity	30 V DC 1 A (resistance load)
		Contact function	Ion chip lifetime alarm
Cleaning output*1	Number of output points		2
	Output type		Voltage contact output (connection power supply voltage output)
	Contact type		Relay contact, SPDT (1a)
	Output capacity		250 V AC 0.5 A
	Application		Solenoid valve drive for cleaning
	Settings	Cycle	0.1 to 168.0 hours
		Cleaning time	2 to 600 seconds
		Hold time	2 to 600 seconds
	Timer accuracy		Difference is within 2 minutes per month
	Description of cleaning operation		Internal timer operation Operations of the internal timer and external contact input The internal timer is enabled only for the external contact input. Select 1 function from the cleaning trigger operation (the internal cleaning sequence starts when the external contact input turns ON for 2 seconds or more). The 2 output settings are common (individual setting is disabled).
Contact input*1	Number of output points		1
	Contact type		Open collector no-voltage “a” contact
	Condition		ON resistance: 100 Ω (max.) Open-circuit voltage: 24 V DC Short-circuit current: 12 mA DC (max.)
	Contact function		Select from the external input of the cleaning operation and HOLD input transmission output.
Operating temperature range			-20 to 55ºC (no freezing)
Operating humidity range			Relative humidity: 5 to 90% (no condensation)
Storage temperature			-25 to 65ºC
Power supply	Rated power supply voltage		100 to 240 V AC ±10% 50/60 Hz
	Power consumption		28 VA (during operation with 240 V AC max.)
Compatible standards	CE marking(*1)		EMC : EN61326-1 Class A, Industrial electromagnetic environment Safety : EN61010-1 RoHS : EN IEC63000 9. Monitoring and control instruments including industrial monitoring and control instruments
	FCC rules		Part15 Class A
Structure	Installation		Outdoor installation type
	Installation method		50 A pole-mounted or wall-mounted
	Protection class		IP65
	Material of case		Aluminum alloy (coated with epoxy-modified melamine resin)
	Material of the mounting brackets		SUS304
	Material of hood		SUS304 (coated with epoxy-modified melamine resin)
	Material of display window		Polycarbonate
	Display element		Reflective monochrome LCD
External dimensions			(W)180 x (D)115 x (H)155 mm (excluding mounting brackets)
Mass			Mainframe: approx. 3.5 kg, hood, mounting bracket: approx. 1 kg

Sensor and holder

Ammonia nitrogen sensor

AM-2000

External dimensions (Unit: mm)



Specifications

Model		AM-2000
Measurement range	Ammonia nitrogen	0 to 1000 mg/L
	Temperature	0 to 40ºC (no freezing)
Measurement depth		0 to 10 m
Material		SUS316, FKM, PVC
External dimensions		ø58 mm x L280 mm
Mass		Approx. 2.7 kg (including 10 m cable)
Combination holder		Drop-in shape
Combination cleaning unit		Ultrasonic wave, air jet

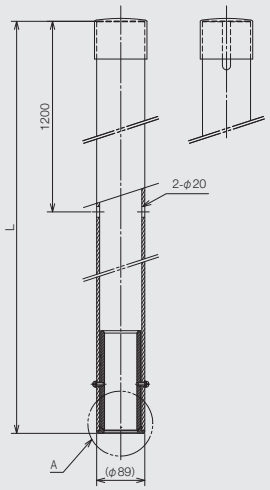
Consumables

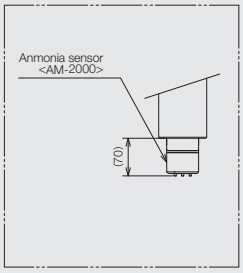
Product name	Model
Ammonium ion chip	7691
Potassium ion chip	7692
Reference chip	7211
Liquid Junction Cap	C-7211

Ammonia sensor drop type holder

NH-16P
NH-16S

External dimensions (Unit: mm)





Detail view of A

Specifications

Model		NH-16P	NH-16S
Ambient temperature		-5 to 50ºC (no freezing)	
Conditions for sample	Temperature*1	-5 to 50ºC	
	Pressure	Atmospheric pressure	
	Flow velocity	2 m/sec or less	
Weted parts		PVC	PVC, SUS316
Mass	(Holder length 2.0 m)	Approx. 4.1 kg	Approx. 8.7 kg
	(Holder length 2.5 m)	Approx. 5.1 kg	Approx. 10.9 kg
	(Holder length 3.0 m)	Approx. 6.1 kg	Approx. 13.1 kg
	(Holder length 3.5 m)	Approx. 7.1 kg	Approx. 15.3 kg
	(Holder length 4.0 m)	Approx. 8.1 kg	Approx. 17.5 kg
Probe		Ammonium nitrogen meters AM-2000	

Code table

Model	Holder material	Holder length (m)	Specification
NH-16			Drop-in holder
	-P		PVC*2
	-S		SUS316, PVC*2
		-2.0	L : 1.8 m
		-2.5	L : 2.3 m
		-3.0	L : 2.8 m
		-3.5	L : 3.3 m
		-4.0	L : 3.8 m

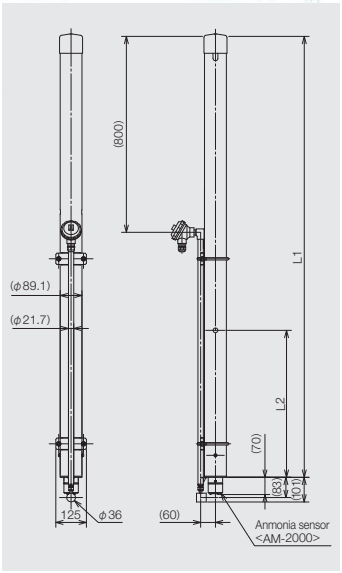
*1 The operating temperature range is different from that of the sensor.
Check the specified temperature of the sensor.
*2 If there are problems with weather resistance under direct sunlight, please use a SUS holder.

Ultrasonic cleaner

Immersion type ultrasonic cleaner

UH-16A

External dimensions (Unit: mm)



Specifications

Model	UH-16A
Cleaning method	Ultrasonic wave continuous irradiation
Control system	Burst oscillation by time control
Oscillation frequency	Approx. 68 to 72 kHz Frequency sweeping
Combination oscillator	US-2S
Ambient temperature	0 to 50ºC (no freezing)
Sample pressure	Atmospheric pressure
Sample flow velocity	2 m/s or less
Weted parts	SUS316 , PVC (materials of the sensor and the holder are not included.)
Mass	Normal length 2.0 m : Approx.12 kg 3.0 m : Approx.16 kg 4.0 m : Approx.20 kg
Specified sensor to be cleaned	Ammonia sensor : AM-2000
Accessories	Exclusive-use cable 10 m
Special note	Sensor unit is not included in this product

Code table

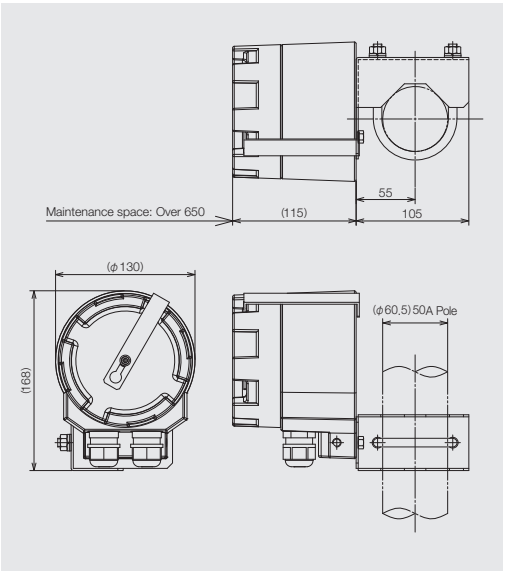
Model	Holder length (m)	Specification
UH-16A		Immersion type for ammonia nitrogen sensor
	-2.0	L1:1.8 m, L2:0.6 m, Weight:Approx.12.0 kg
	-2.5	L1:2.3 m, L2:1.1 m, Weight:Approx.14.0 kg
	-3.0	L1:2.8 m, L2:1.6 m, Weight:Approx.16.0 kg
	-3.5	L1:3.3 m, L2:2.1 m, Weight:Approx.18.0 kg
	-4.0	L1:3.8 m, L2:2.6 m, Weight:Approx.20.0 kg

Ultrasonic oscillator

US-2S

*Please select together with ultrasonic oscillator cable.

External dimensions (Unit: mm)



Specifications

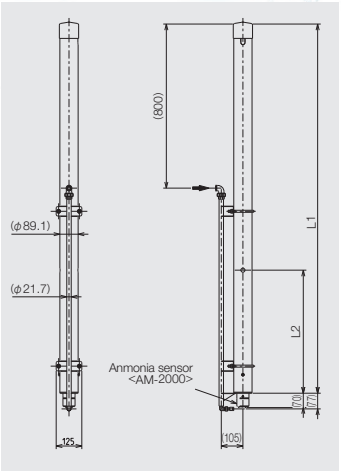
Model	US-2S
Power supply voltage	100 to 240 V AC 50/60Hz
Power supply tolerance	90 to 110% of the power supply voltage
Power comsumption	10 VA
Cleaning method	Ultrasonic wave continuous irradiation
Control system	Burst oscillation by time control
Oscillation frequency	Approx. 68 to 72 kHz Frequency sweeping
Ambient temperature	-5 to 50ºC
Ambient humidity	5 to 90% RH (without dew condensation)
Mass	Approx.2.0 kg
Protection class	IP54 (IEC60529,JIS C0920) (Category 2)
Materials	AC4C
Coating	The epoxy denaturing melamine resin painting (Mansel 10PB5/1)
Specified sensor to be cleaned	DO : DO-2000 MLSS : SS-90 Ammonia : AM-2000
Accessories	Noise filter

Jet cleaner

Immersion jet cleaner for ammonia nitrogen sensor

JH-16A

External dimensions (Unit: mm)



Specifications

Model	JH-16A
Cleaning method	Intermittent water jet cleaning
Sample temperature*	-5 to 50ºC (no freezing)
Sample pressure	Atmospheric pressure
Sample flow velocity	2 m/sec or less
Washing pressure	0.05 to 0.2 MPa
Cleaning connection diameter	Rc1/2
Weted parts	SUS316, FKM (materials of the sensor and the holder are not included.)

Code table

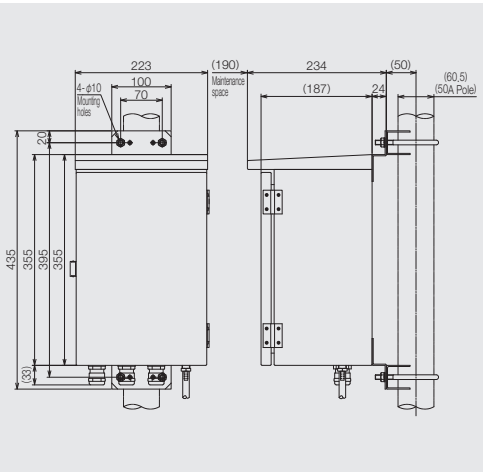
Model	Holder length (m)	Specification
JH-16A		Immersion type for ammonia nitrogen sensor
	-2.0	L1:1.8 m, L2:0.6 m, Weight:Approx.11.9 kg
	-2.5	L1:2.3 m, L2:1.1 m, Weight:Approx.14.9 kg
	-3.0	L1:2.8 m, L2:1.6 m, Weight:Approx.17.8 kg
	-3.5	L1:3.3 m, L2:2.1 m, Weight:Approx.21.2 kg
	-4.0	L1:3.8 m, L2:2.6 m, Weight:Approx.24.1 kg

* The operating temperature range varies depending on the combined sensor, so please check the specified temperature for each product.

Air pump unit

APU-20-N-N-A1
APU-20-S-O-A1

External dimensions (Unit: mm)



Specifications

Model	APU-20
Discharge pressure	0.2 MPa
Discharge flow rate	15 L/min (50 Hz), 18 L/min (60 Hz)
Connection port size	Rc1/4 (Hose nipple for ø8 mm × ø6 mm hose included)
Power supply	100 V AC (Standard) 50/60 Hz, 200 V AC, 220 V AC or 240 V AC
Power capacity	Approx. 80 VA
Ambient temperature/ Ambient humidity	0 to 40°C/90% or less
Dimensional outline	(W) 223 × (D) 210 × (H) 395 mm (Mounting bracket not included)
Mass	Approx. 12 kg
Construction	Outdoor installation type (Rainproof type JIS C0920 Equivalent to protection class 3 Material & Surface treatment: [SPCC & Polyurethane paint/Color (DIC G-262)] or [SUS304" & "No processing]

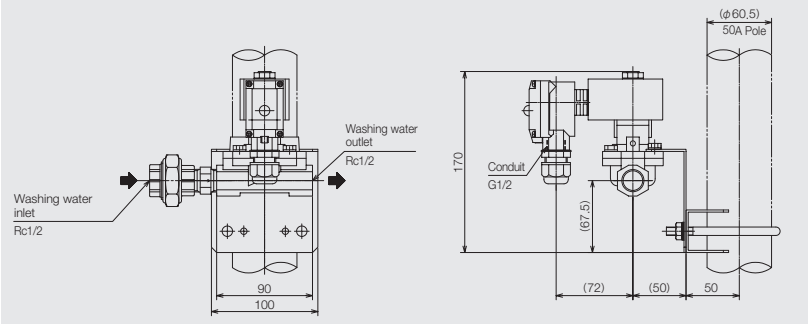
Code table

Model	Specification
APU-20-N-N-A1	Material : SPCC, Polyurethane coating
APU-20-S-O-A1	Material : SUS304, No coating

Solenoid valve unit

SVU-A-A1-S
SVU-A-A2-S

External dimensions (Unit: mm)



Specifications

Model	SVU-A
Structure	Solenoid volve unit, Bracket for A pole
Material	Bracket: SUS304 Unit body: SCS13 Unit seal: NBR, etc.
Power supply	100 V AC or 200 V AC 50 Hz/6.7 W, 60Hz/5.7 W
Sample temperature	-10 to 60ºC (no freezing)
Ambient temperature	-20 to 60ºC

Code table

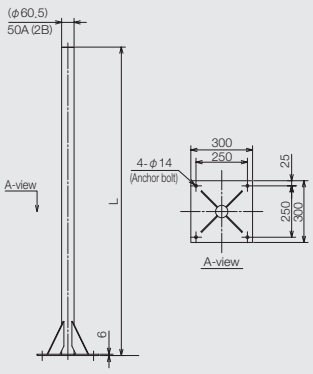
Model	Specification
SVU-A-A1-S	Power : 100 V AC
SVU-A-A2-S	Power : 200 V AC

Accessory

Pole stand

PS-50-1.5-SUS-300
PS-50-1.7-SUS-300

External dimensions (Unit: mm)



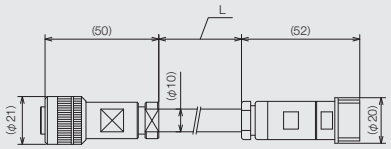
Code table

Model	Specification
PS-50-1.5-SUS-300	L : 1.5 m ±0.01, Material : SUS304
PS-50-1.7-SUS-300	L : 1.7 m ±0.01, Material : SUS304

Cable

AM-2M
AM-5M
AM-10M
AM-20M
AM-30M

External dimensions (Unit: mm)

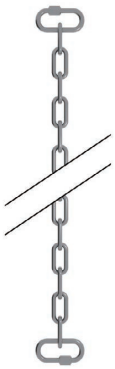


Code table

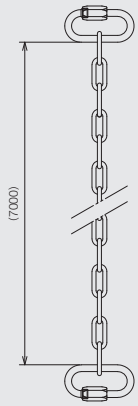
Model	Specification
AM-2M	L : 2 m
AM-5M	L : 5 m
AM-10M	L : 10 m
AM-20M	L : 20 m
AM-30M	L : 30 m

Bracket

AM-C



External dimensions (Unit: mm)



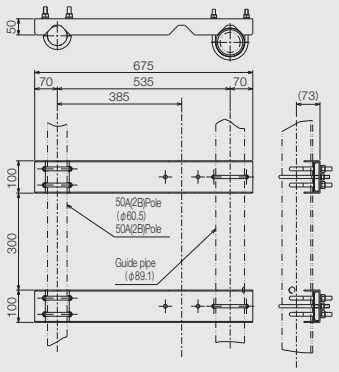
Code table

Model	Specification
AM-C	Chain unit for hanging detector SUS304 (7 m), Chain fastening

Bracket

MH-120

External dimensions (Unit: mm)



Code table

Model	Specification
MH-120	Material : SUS304, Pack of 2

Standard solution

Code table

Product Name	Model	Specification
Calibration solution 1 mg/L	L-NH-1	Ammonia nitrogen standard solusion 1 mg/L (approx. 500 mL) x 1
Calibration solution 10 mg/L	L-NH-10	Ammonia nitrogen standard solusion 10 mg/L (approx. 500 mL) x 1
Calibration solution 100 mg/L	L-NH-100	Ammonia nitrogen standard solusion 100 mg/L (approx. 500 mL) x 1
Beaker set	AM-B	Calibration bottles x 2

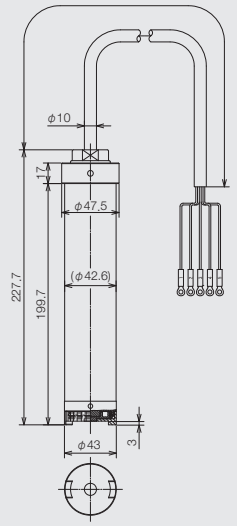
Accessory for optical dissolved oxygen sensor (optional)

*Brackets are also required.

Optical dissolved oxygen sensor (optional)

DO-2000

External dimensions (Unit: mm)

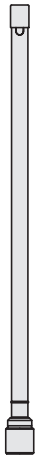


Specifications

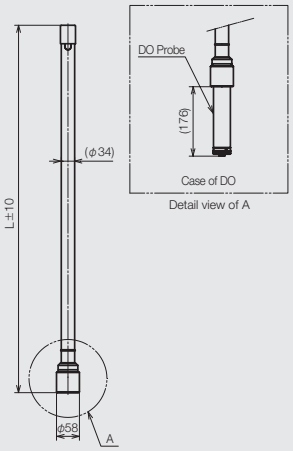
Model		DO-2000
Measurement principle		Optical (fluorescent)
Measurement range	Dissolved oxygen concentration	0 to 20 mg/L
	Saturation ratio	0 to 200%
	Temperature	0 to 50°C (no freezing)
Pressure of the measurement solution		0 to 1.0 MPa
Material		SUS316, NBR, PVC
Response speed		90% response: Within 30 seconds, 95% response: Within 60 seconds
Repeatability		Within ±0.5% of the full scale
Linearity		Within ±2% of the full scale
External dimensions		ø43 mm x L230 mm
Mass		Approx. 3.0 kg (including 10 m cable)

Immersion holder for DO-2000

DH-151



External dimensions (Unit: mm)



Specifications

Model	DH-151
Ambient temperature	-5 to 50°C
Sample temperature *1	-5 to 50°C
Sample pressure	Atmospheric pressure
Flow velocity of measured liquid	2 m/sec or less
Weted parts	PVC
Mass (nominal length: 1m)	Approx. 0.5 kg
Probe	DO-2000

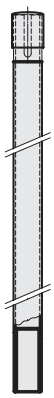
Code table

Model	Holder length (L)	Specification
DH-151		
	-0.5	L : 0.5 m
	-1.0	L : 1.0 m
	-1.5	L : 1.5 m
	-2.0	L : 2.0 m
	-2.5	L : 2.5 m
	-3.0	L : 3.0 m

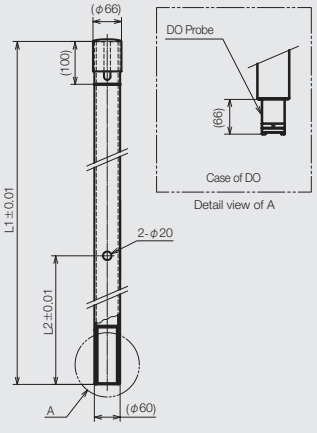
*1 Working temperature ranges vary with combinational detectors.
Check a working temperature of a detector.

Drop type holder for DO sensor

NH-15P/NH-15S



External dimensions (Unit: mm)



Specifications

Model		NH-15P	NH-15S
Conditions for measuring liquid		Atmospheric pressure	
Weted parts	Pressure	-5 to 50°C (no freezing)	
	Material	PVC (Probe and sensor materials not included)	SUS316 (Probe and sensor materials not included)
Mass (Holder length 2.0 m)		Approx. 2.5 kg	Approx. 6.3 kg
Probe		DO-2000	

Code table

Model	Holder material	Holder length (L)	Specification
NH-15			
	-P		PVC
	-S		SUS316
		-2.0	L1 : 1.8 m, L2 : 0.6 m
		-2.5	L1 : 2.3 m, L2 : 1.1 m
		-3.0	L1 : 2.8 m, L2 : 1.6 m
		-3.5	L1 : 3.3 m, L2 : 2.1 m
		-4.0	L1 : 3.8 m, L2 : 2.6 m

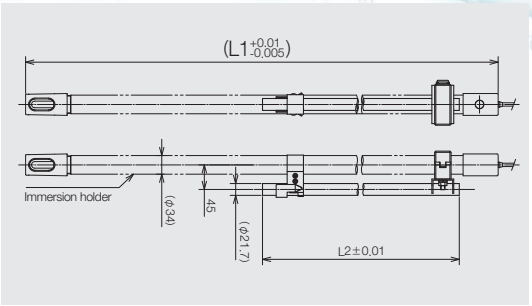
Accessory for optical dissolved oxygen sensor (optional)

*Brackets are also required.

Support pipe for immersion holder

SP-60

External dimensions (Unit: mm)



Code table

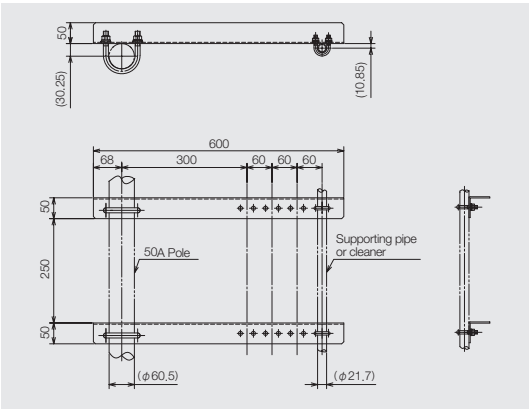
Model	Holder length (m)	Specification
SP-60		Material : SUS316
	-1.0	L1 : 1.0 m, L2 : 0.5 m
	-1.5	L1 : 1.5 m, L2 : 1.0 m
	-2.0	L1 : 2.0 m, L2 : 1.5 m
	-2.5	L1 : 2.5 m, L2 : 2.0 m
	-3.0	L1 : 3.0 m, L2 : 2.5 m

* If length of holder is 2.0 m more, holder needs this hook.
* When installing, please use the MH-60 for cleaner /support pipe shown below. Please prepare a pole stand for installation separately.

Fitting arm for supporting pipe / for cleaner

MH-60

External dimensions (Unit: mm)



Code table

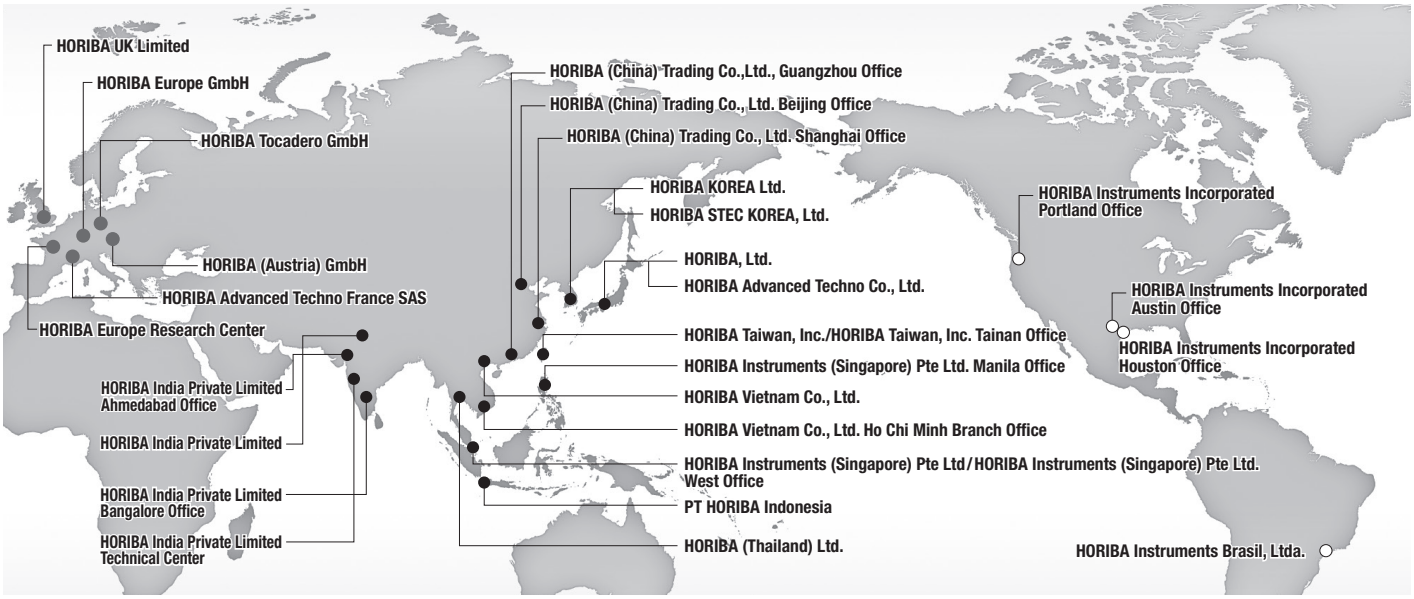
Model	Specification
MH-60	For supporting pipe, For cleaner, SUS304

MEMO

IMS HORIBA Group is certified Quality Management System ISO9001, Environmental Management System ISO14001, and Occupational Health and Safety Management System ISO45001 and operate as Integrated Management System (IMS).

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

HORIBA Advanced Techno Global Network



HORIBA
HORIBA, Ltd.
Group Head Office
2 Miyanohigashi-cho, Kisshoin, Minami-ku, Kyoto, 601-8510, Japan
Phone: 81 (75) 313-8121 Fax: 81 (75) 321-5725
https://www.horiba.com/int/

HORIBA Advanced Techno, Co., Ltd. **Japan**

Head Office
2 Miyanohigashi-cho, Kisshoin, Minami-ku, Kyoto, 601-8551, Japan
Phone: 81 (75) 321-7184 Fax: 81 (75) 321-7291
www.horiba.com/water-liquid/

Asia
HORIBA (China) Trading Co., Ltd.
HORIBA (Thailand) Limited
HORIBA Instruments (Singapore) Pte Ltd.
HORIBA Instruments (Singapore) Pte Ltd. Manila Office
HORIBA Vietnam Company Limited.
PT HORIBA Indonesia
HORIBA KOREA Ltd.
HORIBA Taiwan, Inc.
HORIBA India Private Limited

Americas
HORIBA Instruments Incorporated
HORIBA Instruments Brasil, Ltda.

Europe
HORIBA Europe Research Center
HORIBA UK Limited
HORIBA Europe GmbH
HORIBA Tocadero GmbH
HORIBA (Austria) GmbH
HORIBA Advanced Techno France SAS

Bulletin:HAE-2007A

Printed in Japan 2504SK00