ISO 14001 Certified

SPECIFICATION SHEET

TOA DKK

Panel Type pH Analyzer/Controller — HBM-100A
Panel Type ORP Analyzer/Controller — HBM-102A

Compact DIN size (96 x 96 mm) panel mount pH/ORP controllers.

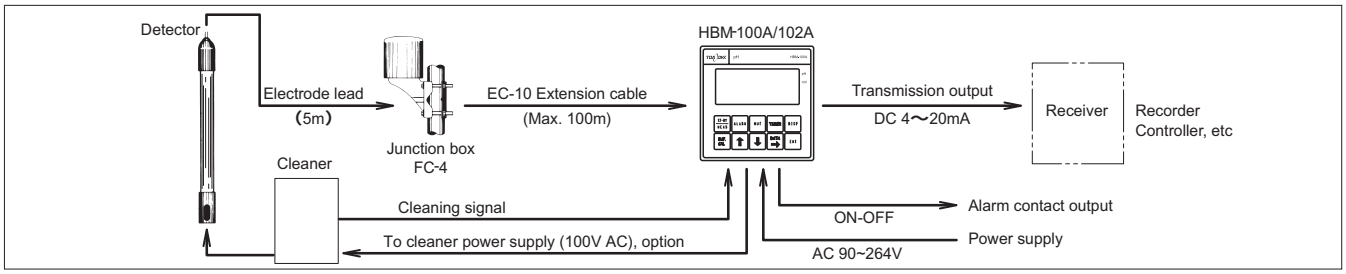
2-point alarm contact output and 4~20mA DC transmission output are equipped as standard.

- ○ The controller is equipped with an automatic, single-action stability judgment function, which allows for accurate calibration using standard solutions and helps to eliminate operator errors. During calibration, the controller determines the status of the electrode by monitoring its characteristics and displays diagnostic information in the form of messages.
- ○ Output (measurement) range that can be freely set.
- ○ Measurement and display of sample temperature (0~100ºC).
- ○ When the controller enters maintenance (ST-BY) mode, the previous output value is held and the alarm output is disabled. This helps to prevent disruptions to the control system, such as chemical feeds.
- ○ The controller automatically switches back to measurement mode if it is left in maintenance (ST-BY) mode for more than two hours.
- ○ Crack detection function for pH electrode.
- ○ Temperature compensation for sample pH value and pH/ORP value shift functions.

Standard Specifications

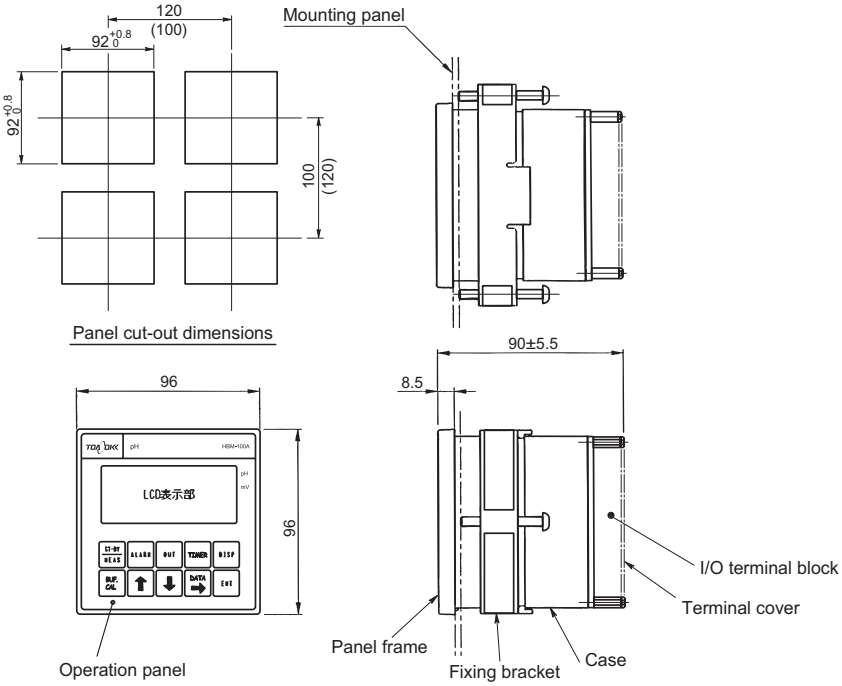
Product name	Panel type pH analyzer/controller	Panel type ORP analyzer/controller
Model	HBM-100A	HBM-102A
Measurement range	pH: -1.00 ~ 15.00 mV: -600 ~ +600 mV Temp: 0 ~ 100ºC Display only. No output-signal.	mV: -2000 ~ +2000 mV Temp: 0 ~ 100ºC Display only. No output-signal.
Transmission output signal	4~20 mA DC, isolated. Max. resistance: 650Ω or less.	
Transmission output range	Adjustable (0.1 pH steps). Minimum width of 2 pH.	Adjustable (10 mV steps).Minimum width of 400 mV.
Control (alarm) contact output	2 contacts (upper and lower limits can be set freely) a-contacts Contact capacity: 250V AC, 3A or less (resistive load)	
	Control sensitivity: Set to a value between 0.01~2.00pH	Control sensitivity: Set to a value between 1~200mV
Performance	Linearity: ±0.03pH or less (using equivalent input)	Linearity: ±3mV or less (using equivalent input)
	Repeatability: ±0.02pH or less (using equivalent input)	Repeatability: ±3mV or less (using equivalent input)
	Response: 5 sec. or less for 90% response in FA (fast) mode, 50 sec. or less for 90% response in SL (slow) mode.	
Power requirements/Power consumption	90~264V AC, 50/60Hz approx. 5VA	
Ambient conditions	-10~50ºC, 0~90% RH (when in transport and storage: -30~70ºC, 0~99% RH)	
Dimensions/Weight	96 (W) x 96 (H) x 90 (D) mm (panel cut-out 92 x 92 mm), approx. 0.5kg	
Other functions	Cleaning signal input: The controller can receive a "cleaning" signal from the chemical and brush cleaners to hold output during the cleaning process. Temperature compensation for sample pH value: Coefficient setting range…±0.100/ºC Standard conversion temperature…25ºC Manual temperature compensation for glass electrode: Manual temperature compensation is carried out by specifying the sample water temperature. pH/ORP value shift: Measured value can be shifted within the range of ±1.00 pH/±100 mV. (Temperature shift range: ±5ºC) Burnout: Output signal can be shifted to the upper or lower limit when there is an abnormality, such as a cracked glass membrane or temperature sensor failure.	
Optional features	Alarm contact output: 2 extra contacts (a-contacts, upper/lower limits can be set freely, no bandwidth limit) (4 contacts in total) Cleaner control output: The internal timer delivers 100V AC power to the chemical cleaner, brush cleaner, and other cleaners. RS-232 output: A digital communication cable can be used to send the measured pH/ORP and temperature values to a computer.	

Configuration

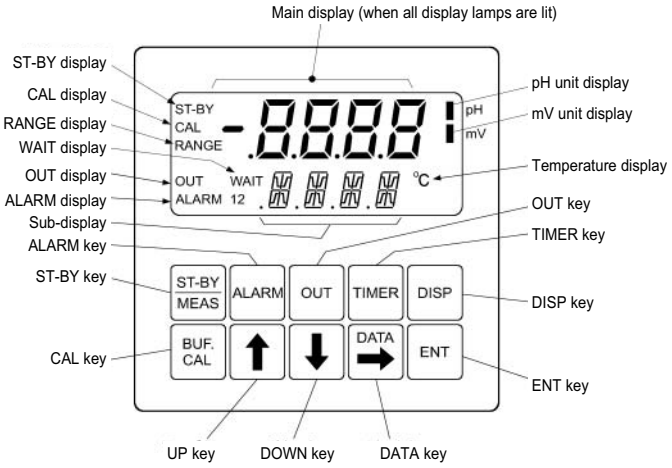


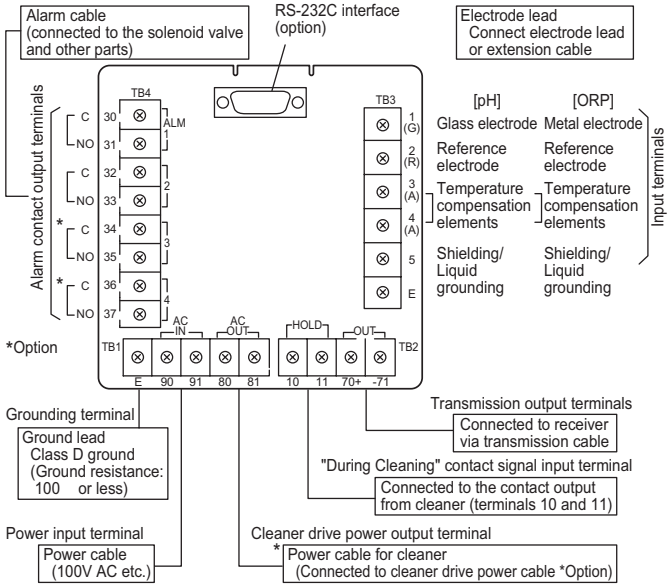
Dimensions

Unit : mm

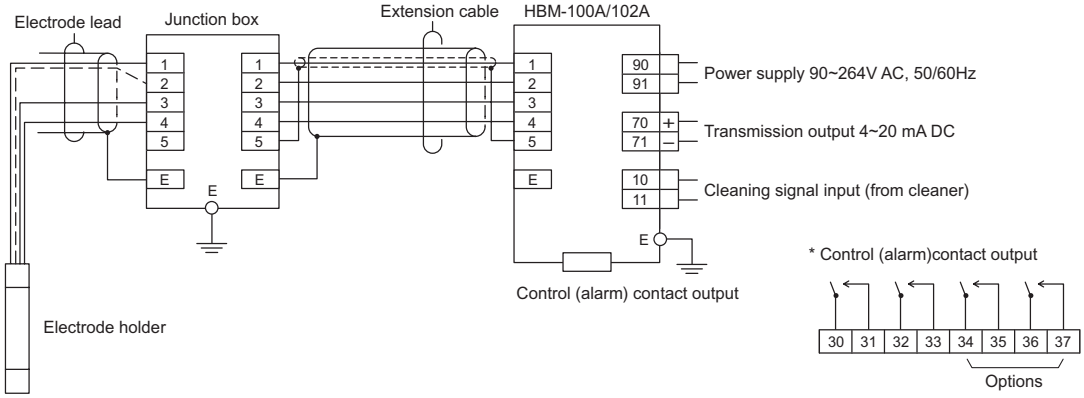


Front panel/Terminal connections





Wiring diagrams



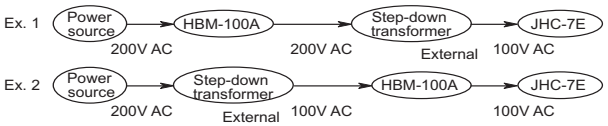
Product code

Model HBM-100A (pH controller)

HBM100A-1- □□□□□□□

- Power supply *1
  - A: 90~264V AC, 50/60Hz
- Transmission output
  - 1: 4~20 mA DC
  - 2: 4~20 mA DC and RS-232C interface
- Alarm output
  - 0: 2 point alarm
  - 1: 4 point alarm
- Cleaning timer *2
  - 1: None
  - 2: Provide
- Markings
  - 0: Japanese (Standard)
  - A: English
- Individual certification
  - 0: None
  - 1: Applied (with inspection certificate)

*1 (*2)The controller operates on adjustable-voltage 90-264V AC power supply and comes with a power output for a cleaner. Note that the same voltage supplied to the main unit of the controller is also passed through to the cleaner. Make sure the voltages are compatible.



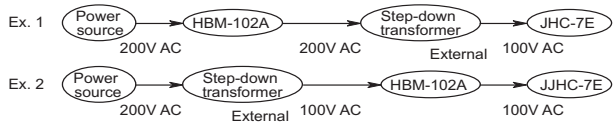
*2. The controller can be used together with “E” series cleaners, such as JHC-7E, BHC-7E, and RHC-7EC. Make sure to select 2 (“Provide”) when using the controller with the “E” series.

Model HBM-102A (ORP controller)

HBM102A-1- □□□□□

- Power supply *1
  - A: 90~264V AC, 50/60Hz
- Transmission output
  - 1: 4~20 mA DC
  - 2: 4~20 mA DC and RS-232C interface
- Alarm output
  - 0: 2-point alarm
  - 1: 4-point alarm
- Cleaning timer *2
  - 1: None
  - 2: Provide
- Markings
  - 0: Japanese (Standard)
  - A: English

*1 (*2)The controller operates on adjustable-voltage 90-264V AC power supply and comes with a power output for a cleaner. Note that the same voltage supplied to the main unit of the controller is also passed through to the cleaner. Make sure the voltages are compatible.



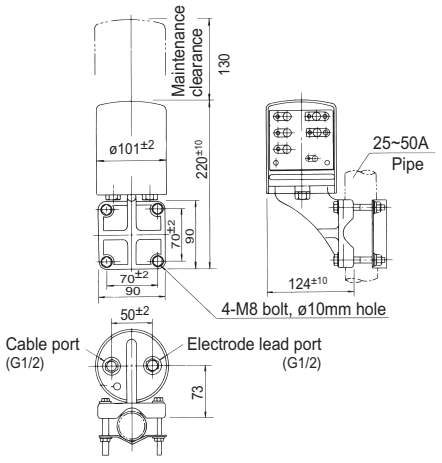
*2. The controller can be used together with “E” series cleaners, such as JHC-7E, BHC-7E, and RHC-7EC. Make sure to select 2 (“Provide”) when using the controller with the “E” series.

Related equipment

● Junction box

A junction box is required when the transmitter and electrode are installed away from each other and the standard electrode lead length is too short.

Model	: FC-4
Construction	: Outdoor installation
Weight	: Approx. 0.9kg
Case material	: ABS resin
Base material	: ABS resin
Finish	: Pearskin finish chromium plating
Mounting	: 25 ~ 50A pipe, wall or panel mount

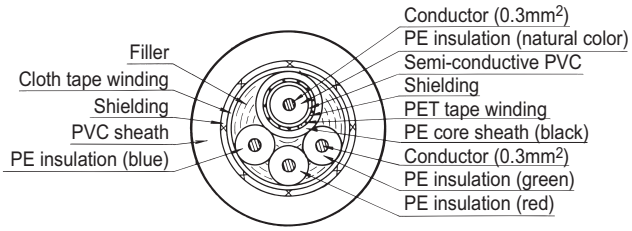


FC-4 dimensions

● Extension cable

The extension cable is a special cable specifically manufactured for a pH/ORP analyzer. It connects the transmitter and junction box.

Model	: EC-10
Outside diameter	: ø8
Insulation	: Polyethylene and PVC
Sheath	: PVC
Insulation resistance between core conductors	: 10^5MΩ or greater/100m.
Maximum cable length	: 100m, no cable splicing.
Standard length	: 5m ~ 100m (5m unit step)
Weight	: Approx. 0.5kg/5m



Cross section of EC-10

Applicable detectors

A wide variety of detectors can be used together with the HBM-100A/102A controller, as shown in the following table. Select the detector that best fits the immersion type, flow-through type, and measurement conditions. For detailed specifications, see the attached detector specification sheet.

Classification	Application		Model	Wetted part material	pH electrode	ORP electrode
Immersion type						
KCl supply type Integrated model	Process control / effluent treatment	General use (below 60˚C)	HC-703C	PVC FKM	5600 5605: HF resistant	2600: Pt 2605: M
		High temperature (below 80˚C)	HC-763	PP FKM	5601	2601: Pt
		High temperature, chemical resistant	HC-703F	PVDF FKM	5601	—
		Pressurized type (below 60˚C)	HC-753C	PVC FKM	5610	2610: Pt
KCl supply type Replaceable-tip electrode	Process control	General use (below 60˚C)	HC-G70	PVC FKM	GSS-314B	PSS-314B: Pt ASS-314B: M
		High temperature (below 80˚C)		PP FKM		
KCl Non-supply type Replaceable -tip electrode	Effluent treatment	General use (below 60˚C)	HC-G70	PVC FKM	GSS-304B	PSS-304B: Pt ASS-304B: M
		High temperature (below 80˚C)		PP FKM		
		High temperature (below 80˚C)	HC-G72	SUS316		
		Drop-in type (below 60˚C)	HC-G95	PVC SUS316		
Flow-through type						
KCl supply type Integrated model	Process control	Insertion/ Pressurized type (below 80˚C)	HC-880	PP FKM	5610 5611 (High temperature use)	2610: Pt
		Supplied with PP case (below 80˚C)	NHC-882			
		Supplied with SUS case (below 80˚C)	NHC-883	PP SUS316 FKM		
		Head pressure type Supplied with SUS case (below 80˚C)	NHC-893	PP SUS316 FKM	5600 5601 (High temperature use)	2600: Pt 2605: M
KCl Non-supply type Replaceable-tip electrode	Effluent treatment	General use (below 60˚C)	HC-G80	PVC	GSS-304B	PSS-304B: Pt ASS-304B: M
		High temperature (below 80˚C)	HC-G82	SUS316		
Micro flow rate type	For boiler and pure water (below 50˚C)		HC-64	Acrylic FKM	MG511 4164 6149	—
KCl supply type						

ORP electrode materials (metals)
Pt: Platinum
M: Alloys including gold

Note: The service temperature range of the HF resistant electrode is -5~50ºC.

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⚠ CAUTION Do not operate producuts before consulting instruction manual.

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