

pH/ORP TRANSMITTER WITH HART COMMUNICATION INTERFACE

Model: HBM-165H



Transmitter for pH/ORP measurement suitable for field installation. The transmitter features a Hart communication interface using a 2 wire, 24 VDC circuit. The transmitter also has a die cast aluminium case, digital display and a wide range of other useful features.

Features

- Measurement of both pH or ORP available.
- Data on up to 5 calibration solutions is stored in memory. This combined with the built-in temperature sensor in the electrode allows automatic recognition of calibration solutions without needing user input. In addition, an automatic stability judgment function ensures accurate calibration, free from user errors.
- The transmitter judges the electrode quality when measuring calibration or checking solution.
- Electrode glass breakage detection.
- In addition to automatic temperature compensation, the transmitter also allows the user to set the temperature compensation coefficient. This allows measurement in applications such as boiler feed water control etc.. The transmitter is also compatible with electrodes that have non-standard temperature sensors (ie. 10 KΩ @ 25°C) or no temperature sensor.



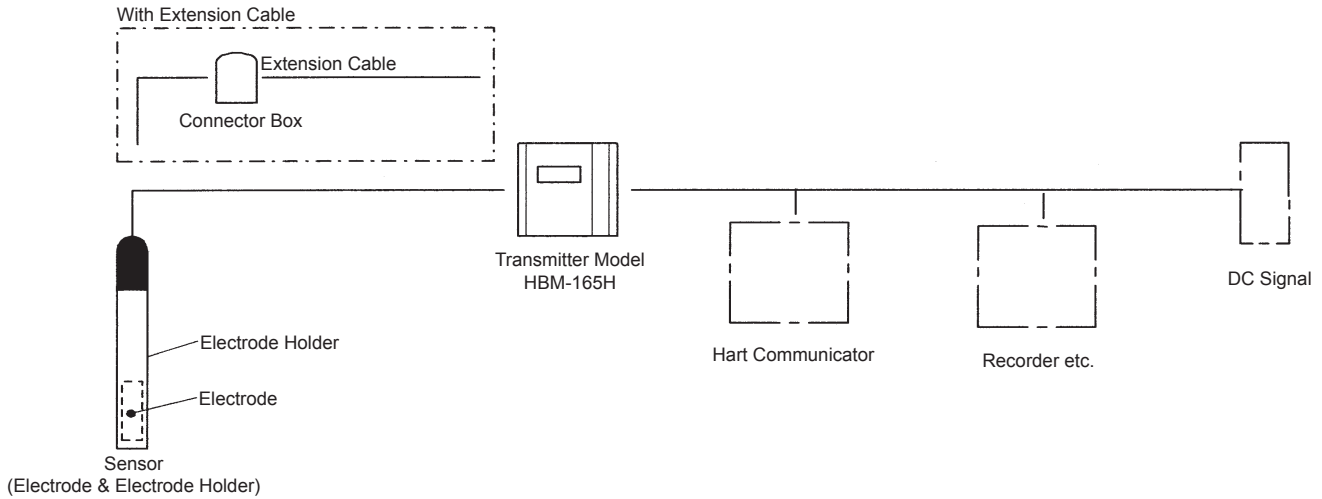
- Maintenance mode feature allows the measured value immediately before switching into maintenance mode to be held. In addition, automatic return to measurement mode can be set in case operator forgets to manually switch back to measurement mode after performing maintenance.
- Hart communication interface (version 7).



Specifications

Product Name		pH/ORP Transmitter with Hart Communication Interface	
Model No.		HBM-165H	
Measurement		pH	ORP
Measurement Range		-1.00~15.00 pH (0.01pH Resolution)	-2000~2000 mV (1mV Resolution)
Temperature Measurement		-5~100°C (0.1°C Resolution)	
Performance Excluding Sensor	Linearity	Within +/- 0.01 pH (equivalent input, std. conditions)	Within +/- 3 mV (equivalent input, std. conditions)
	Repeatability	Within +/- 0.01 pH (equivalent input, std. conditions)	Within +/- 1 mV (equivalent input, std. conditions)
Display		LCD	
Operating Power & Consumption		2-Wire System, 24VDC (11~30 VDC, depending on load resistance), 0.6 VA or less	
Output Ranges		Can be freely set in 2 pH widths in 0.01pH increments	Can be freely set in 400 mV widths in 1 mV increments
Output Signal		Isolated 4~20mA, max load resistance: 550Ω	
Processor		Microprocessor	
Ambient Temperature & Humidity		-20~55°C, 0~95% RH (Shipping: -30~65°C, 0~98% RH), o	
Construction		IP-65 rating, dust and water jet resistant, outdoor installation. Equivalent to NEMA 4X	
Outline Dimensions		181 (w) x 180 (h) 95 (d) mm	
Mounting		Suitable for mounting on 50A pipe (wall/rack mounting available as an option)	
Weight		2 kg (Approx.)	
Case Material and Paint Finish		Aluminium die cast / metallic silver (display & keypad panel: polyester resin, Munsell N1.5)	
Cable Entry		3 cable glands for external 6~12 mm dia. cables (can be removed for directly connecting conduit)	
Combination Equipment	Electrode	Model 5600, 5610 etc.	Model 2600, 2610 etc.
	Electrode Holder	Model HC-7, Model HC-8 etc.	
	Connector Box	FC-4	
	Extension Cable	EC-10	
Other Functions		- Sample pH value compensation: temperature coefficient setting range +/- 0.100 pH/°C (std. conversion temp. 25 °C) by input of sample temperature. - Glass electrode manual temp. compensation. - pH/ORP shift: within +/- 1.00pH to +/- 100mV (within +/- 5.0°C of temperature). - Electrode burnout: glass breakage, temp. sensor error etc..	

System Configuration



Product Code

HBM-165H-0-□□□□

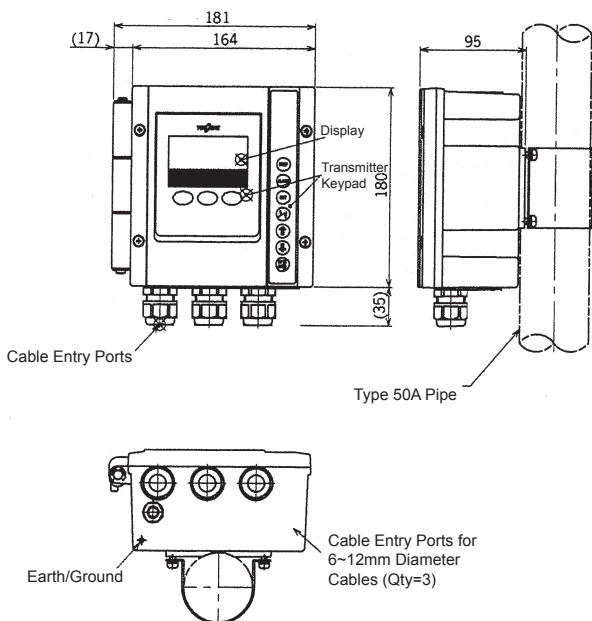
A	pH/mV Output (4~20mA) Range
B	0~14 pH
Y	+/- 700 mV
	Custom Specification *1
A	Mounting Brackets
B	For 50A Pipe Mounting
	For Wall or Rack Mounting
A	Cable Entry
B	With Cable Glands (G ¹ / ₂ Screw Fitting)
	With 1/2 Inch NPT Adapters
A	Hood (Sun Shade)
B	Not Included
	Equipped
A	Markings
B	Standard (Japanese Language)
	English Language

*1

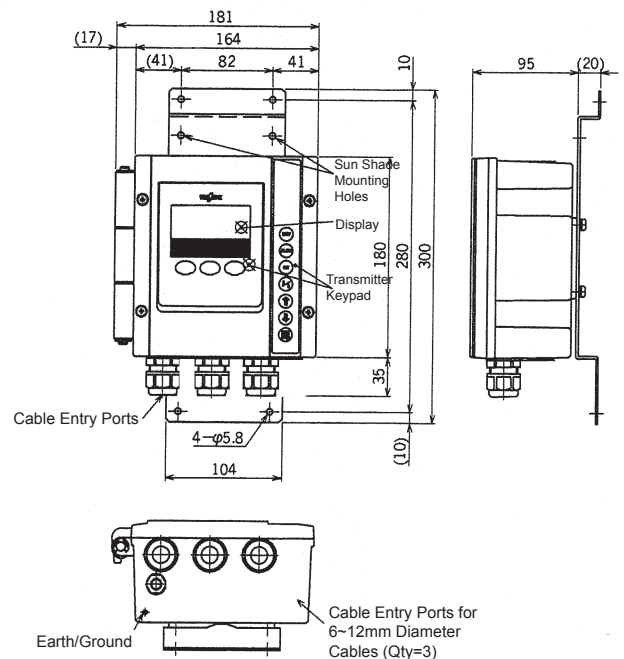
pH measurement display range is pH -1.00~15.00. Please specify widths of pH 2 or more in pH 0.1 increments.
mV measurement display range is -2000~2000mV. Please specify widths of 400mV or more in 1mV increments.

Dimensions

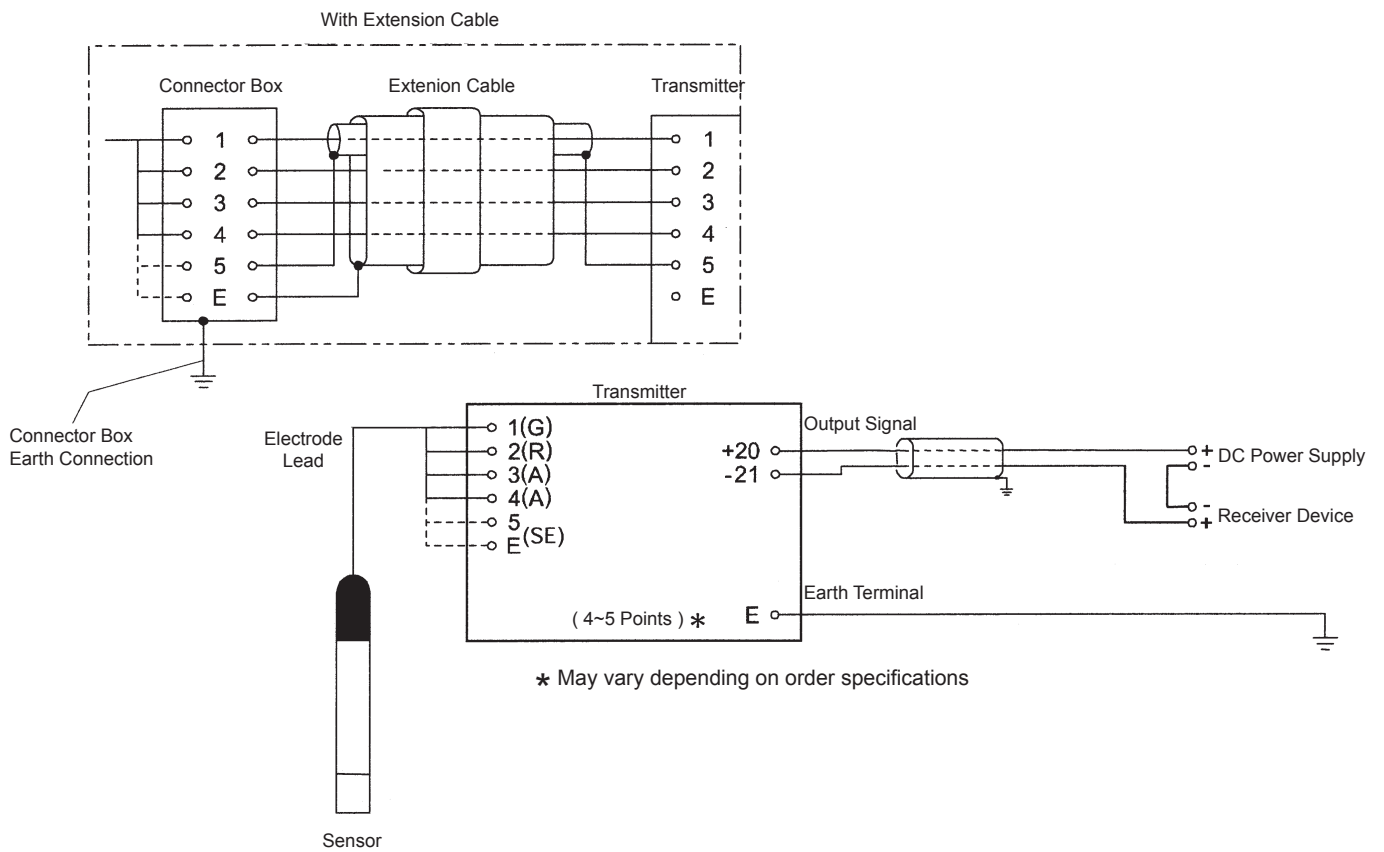
● Pole Mounting



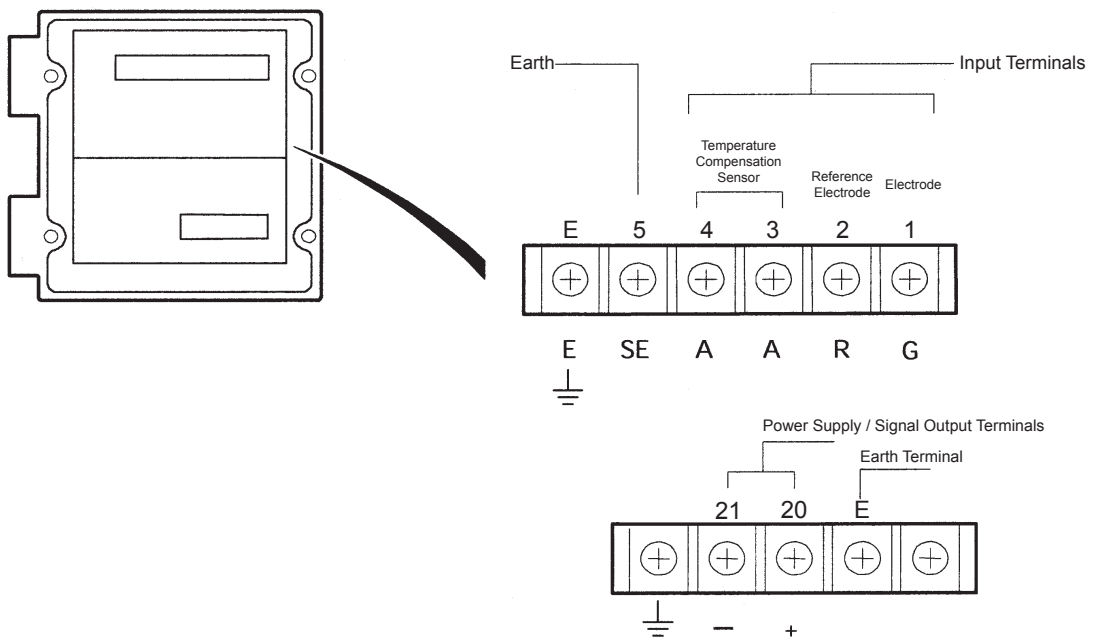
● Wall or Rack Mounting



Wiring Connections



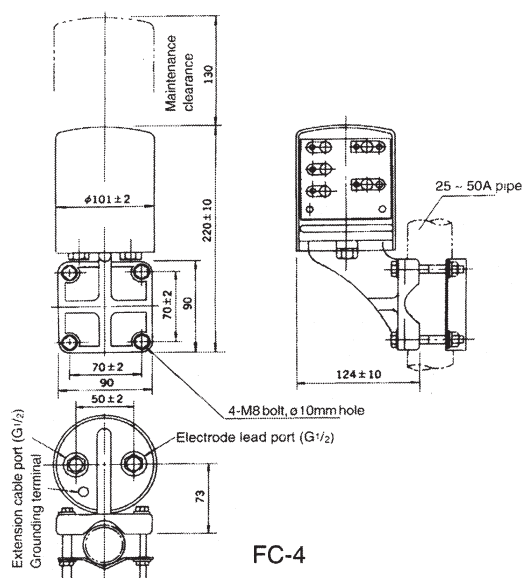
External Terminals



Related Equipment

● Connector Box

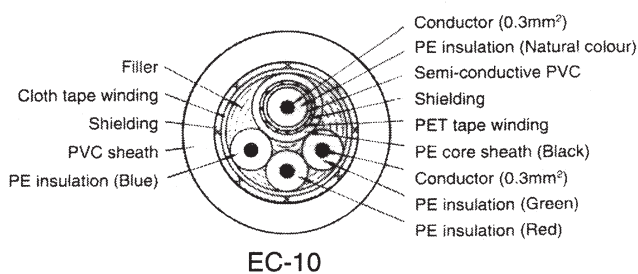
Model:	FC-4
Construction:	Field installation
Weight:	Approx. 0.9kg
Case Material:	ABS resin
Base Material:	ABS resin
Finish:	Matted chromium plating, metallic silver
Installation:	25~50A Pipe, wall or panel mount



● Extension Cable

The extension cable is specifically manufactured for use with pH/ORP analysers. It is used for connection between transmitter and connector box.

Model:	EC-10
External Diameter:	8mm
Insulation:	Polyethylene & PVC
External Coating:	Vinyl
Insulating Resistance Between Cores:	Minimum 10^5 M Ω per 100m
Maximum Distance:	100m (no splicing)
Standard Lengths:	5m~100m in units of 5m
Weight:	Approx. 0.5kg per 5m length

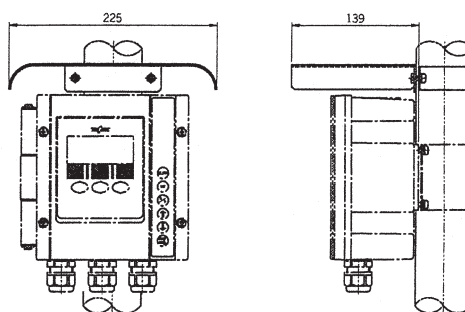


Optional Equipment

● HBM-160H Hood (Sun Shade)

Recommended if the transmitter is installed outdoors in direct sunlight.

Material:	304 series stainless steel
Installation:	50A pipe mounting



Always read the instruction manual before operation.

Due to continuous product improvement, specifications contained herein are subject to change without notice.

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