

## pH ANALYZER / TRANSMITTER

Model: HDM-136A

## FEATURES

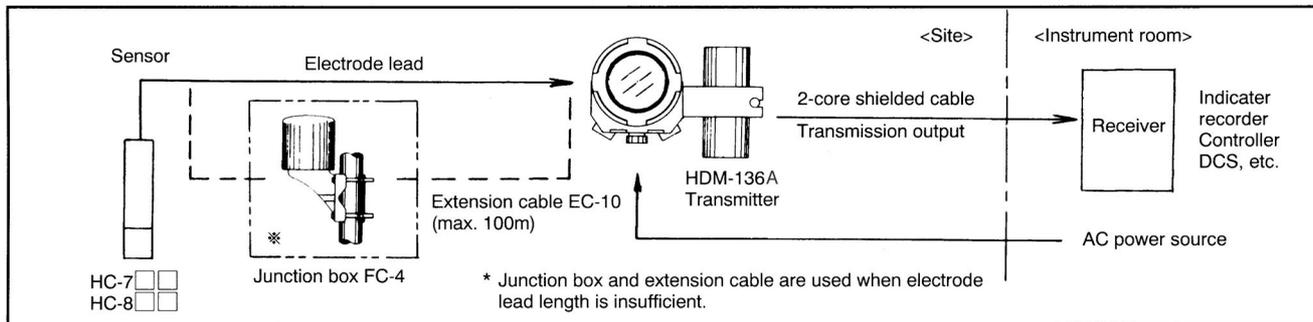
- 4-wire pH transmitter with built-in microcomputer:**  
 Field installation type pH analyzer / transmitter featuring isolated output, digital indication and rainproof construction.
- Simplified calibration with standard solution:**  
 Data of five different pH standard solutions can be stored in the internal memory for single-action calibration. Stability judgment function provides accurate calibration with standard solution, free from operator error.
- Automatic determination of electrode quality:**  
 The transmitter judges the electrode quality from its characteristics during calibration with standard solutions. Degradation of electromotive force at pH7, degradation of electromotive force per pH and other information is displayed in the form of error messages. Characteristic data of each electrode can be called out to determine the extent of degradation as required.
- Output range alteration:**  
 The pH range of the output signal can be easily adjusted.
- Output holding during maintenance work:**  
 By switching the mode to ST-BY (standby) the output is kept at the value just before the mode was switched therefore preventing disruption to the control system.
- External input for "hold" feature (Terminals 10-11):**  
 The transmitter can receive a "hold" command signal from the water jet cleaner and chemical cleaner to hold the output (4~20mA DC) during cleaning.
- Measured value shift:**  
 The measured value can be shifted by a pH value demanded for the convenience of process operation. (Shift width:  $\pm 0.7$ pH).
- Manual temperature compensation:**  
 Manual temperature compensation function (0~100°C) can be provided for use with electrodes which do not have temperature compensation functions.
- Compliant with 1k  $\Omega$  temperature compensation resistance:**  
 Compliant with temperature compensation resistance of 10k  $\Omega$  (standard spec.) as well as 1k  $\Omega$ . (Auto determinant function).
- pH temperature compensation:**  
 Compensates pH temperature characteristics of samples (pure water & boiler water). Temperature setting range; -0.100~+0.100pH/°C. Temperature for standard conversion; 25°C.
- Self diagnostics:**  
 Detects damage on glass membrane, problems with temperature compensation resistance, abnormal data and indicates fault by altering transmission output to higher or lower limit (adjustable).



## STANDARD SPECIFICATION

<b>Product Name</b>	: pH analyzer/transmitter.
<b>Model</b>	: HDM-136A.
<b>Measurement Ranges</b>	: pH; -1.00~14.00pH. MV; -600~+600mV Temperature; 0~100°C Indication only. No output-signal.
<b>Indication System</b>	: Digital indication (LCD)
<b>Resolution</b>	: pH; 0.01, mV; 0.1 Temperature; 0.1°C
<b>Performance</b>	
Linearity	: within $\pm 0.03$ pH (at equivalent input), within $\pm 0.6\%$ FS for transmission output (at max. 5pH width with equivalent input), within $\pm 0.6\%$ FS (at min. 5pH width with equivalent input).
<b>Power Requirements</b>	: 90~/132V AC 50/60Hz or 180~264V AC 50/60Hz.
<b>Power Consumption</b>	: Approx. 3VA.
<b>Ambient Conditions</b>	: -20~55°C, 99%RH or less.
<b>Construction</b>	: Outdoor installation, rainproof Type (JIS C0920).
<b>Weight</b>	: Approx. 3.0kg.
<b>Mounting</b>	: Mounted on 50A pipe.
<b>Cable Entry</b>	: G $\frac{3}{4}$ (PF $\frac{3}{4}$ F), 3 ports.
<b>Materials</b>	
Main Body	: Cast aluminium alloy.
Window	: Glass.
<b>Colour</b>	: Metallic silver and blue.
<b>Output Signal</b>	: 4~20mA DC isolated from input. Load resistance: Max 650 $\Omega$ .
<b>Output Range</b>	: Adjustable in 0.1pH steps, with minimum width of 2pH.

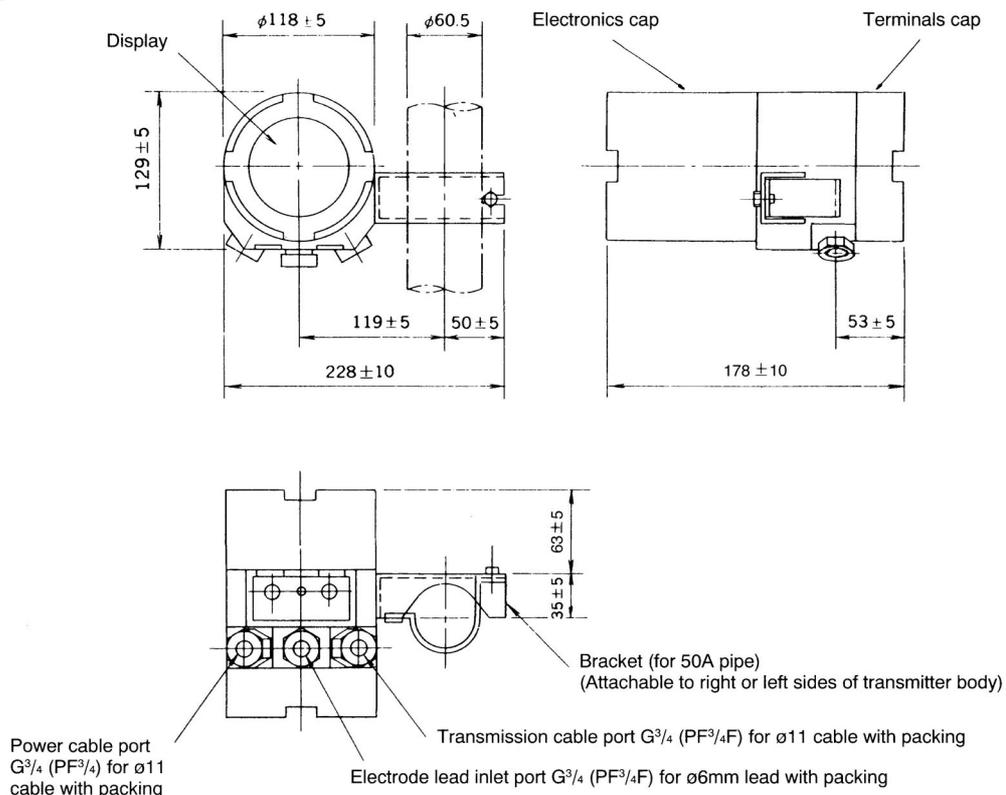
## SYSTEM CONFIGURATION



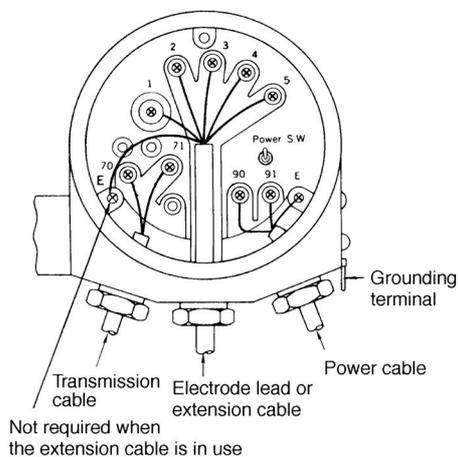
## DIMENSIONS

(Unit : mm)

### ■ HDM-136A transmitter

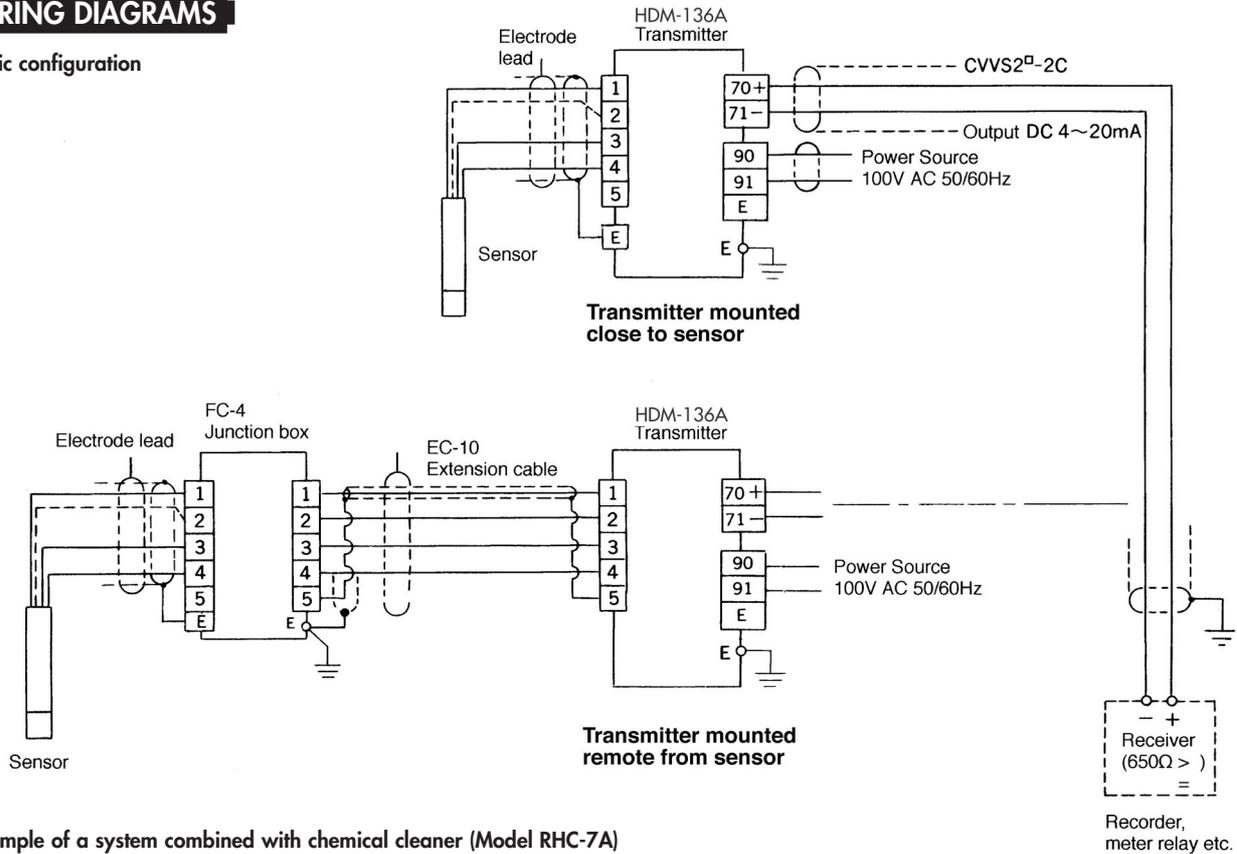


## TERMINALS

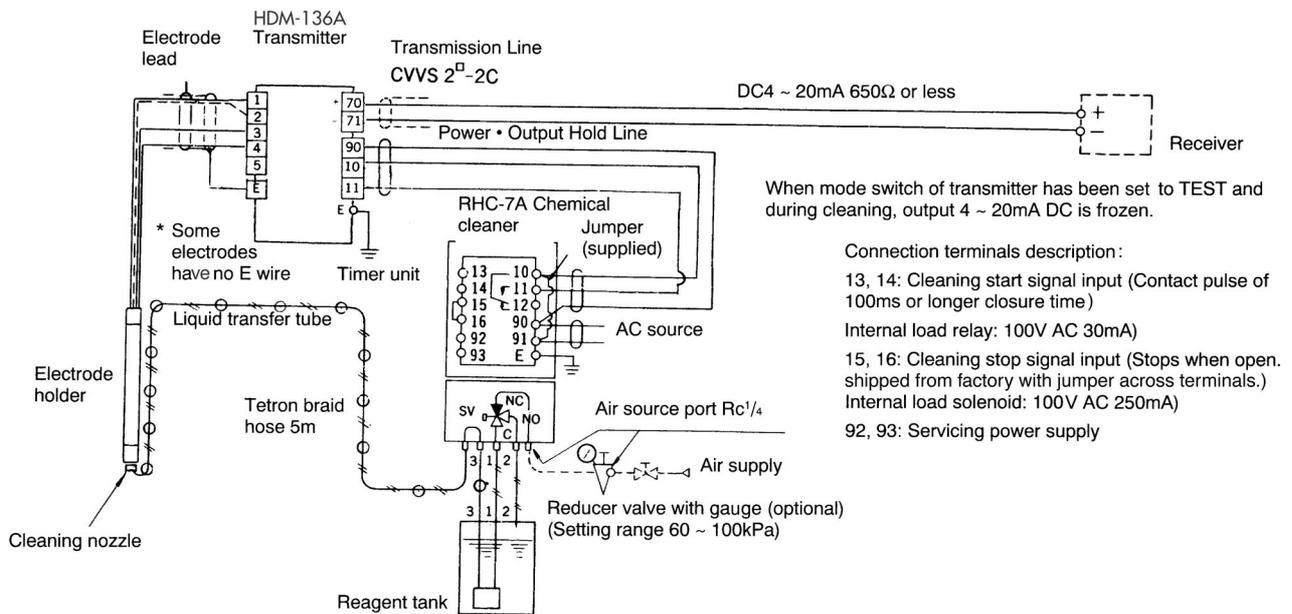


**WIRING DIAGRAMS**

• **Basic configuration**



• **Example of a system combined with chemical cleaner (Model RHC-7A)**



**Note:** Transmitter includes remote "hold" option (terminals 10 & 11)

**OPTIONAL ACCESSORIES**

• **Sun Shade (hood)**

Recommended when the instrument is installed at a location exposed to direct sunlight.

- Material** : SUS304.
- Mounting** : 2 inch pipe.

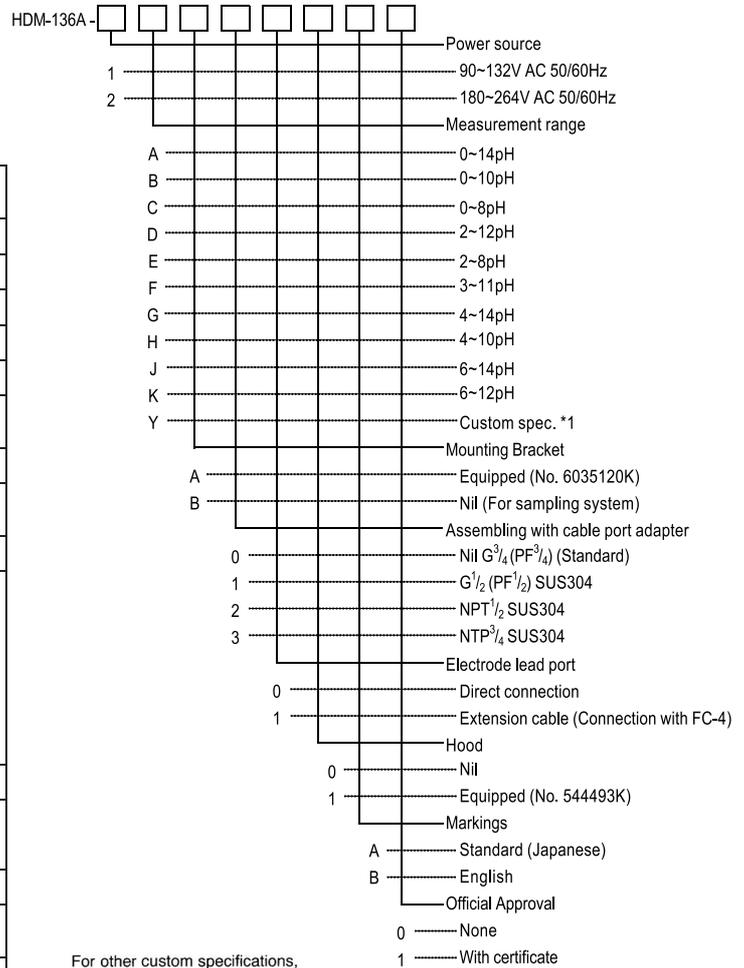
**APPLICATION SENSORS**

A wide variation of sensors can be combined with HDM-136A transmitter as shown in the following table. Properly select the sensor in accordance with limiting conditions such as immersion type, flow-through type, wetted parts material, and measurement conditions.

	Electrode selection			Applicable holder		Remarks
	Classification	Application	Model ( ) is HF proof type	Model	Material	
Immersion type	KCℓ supply type	General use ø15 (-5~70°C)	5600 (5605)	HC-703C HC-763	PVC3 PP	
		High temperature ø15 (-5~95°C)	5601	HC-703F	PVDF	
		Chemical resistant ø15 (-5~70°C)	5602	HC-703T	PFA	
		Chemical resistant ø15 (-5~95°C)	5603	HC-703F	PVDF	
		Pressurized type ø15 (-5~70°C)	5610 (5615)	HC-753	PP	
	KCℓ no-supplying type (no amp.)	General use (-5~50°C)	5910 (5915)	HC-N70	PVC3	Drop-in
				HC-N72 HC-N76 HC-N90 HC-N95	SUS316 PP PP SUS304	
	KCℓ no-supplying type (chip exchange type)	General use (-5~80°C)	ELCP-11 ( " -21) ( " -31) ( " -41)	HC-D70C	PVC3	Drop-in
				HC-D76 HC-D90 HC-D95 HC-70F	PP PP SUS304 PVDF	
	Flow-through type	KCℓ supply type	General use ø15 No pressure	5600 (5605)	NHC-892 NHC-893	PP PVC PP SUS316
General use ø12 (-5~95°C)			5610 (5615)	HC-880 NHC-882 NHC-883	PP PP SUS316	
Chemical resistant ø12 (-5~95°C)			5502 (5506)	HC-852 HC-853	PTFE SUS316	
Fermentation use ø12 (-5~95°C)			5500 (5506)	HC-81 HC-811 HC-812	SUS316 SUS316 SUS316	
Process on-line use				NHC-813	SUS316	
General use ø12 (-5~95°C)			6475L 6476	HC-83 HC-82	SUS316 SUS316	Leadless
KCℓ no-supplying type (no amp.)		General use ø12 (-5~50°C)	5910 (5915)	HC-N80	PVC3	Leadless
				HC-N82 HC-N86	SUS316 PP	
KCℓ no-supplying type (chip exchange type)		General use (-5~80°C)	ELCP-11 ( " -21) ( " -31) ( " -41)	HC-D82	SUS316	No chamber
				HC-D86 HC-D88	PP PP	
Single function type	For boiler and pure water (-5~50°C)	G : MG511 R : 4164 T : 6149	HC-64 (TC10KO)	Acrylic		

Note: Service temperature range of HF resistant electrode is all -5 ~ 50°C.

**PRODUCT CODE**



For other custom specifications, specify code 9 for numeric digit and code Z for alphabetical digit. (Required with inspection tag)

Required (with authorized certification)

\*1 Output range is limited to [set at 1pH step, min. range span is 5pH]

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**CAUTION**

Do not operate products before consulting instruction manual.