

ORP ANALYZER TRANSMITTER

Model: HDM-138A

FEATURES

- 4-wire ORP transmitter with built-in microcomputer:**
 Field installation type pH analyzer / transmitter featuring isolated output, digital indication and rainproof construction.
- Automatic determination of electrode quality:**
 The transmitter judges the electrode quality from during calibration with standard solution. It can display "good", "high", "low", and the potential difference from the standard value.
- Output range setting:**
 The measurement range for the output signal can be easily adjusted.
- Temperature indication:**
 Temperature of sample or calibration standard can be indicated on the display (requires electrode with built-in temperature sensor, such as Models 2600, 2610 etc.).
- Output can be held when in maintenance mode:**
 By switching to "standby mode", the output is kept at the value present just before the mode is switched, preventing disruption to the process control system.
- Compatible with 1K Ω temperature sensors:**
 The unit is compatible with 1K Ω temperature sensors as well as the standard 10K Ω temperature sensor (Automatic setting).
- Input for remote "hold" command (Terminals 10-11):**
 The transmitter can receive a "hold" command signal from the water jet cleaner or chemical cleaner to hold the output (4~20mA DC) during the cleaning process.
- Measured value shifting:**
 The measured value can be shifted up or down to meet specific requirements of the process control system. (Shift width: ± 100 mV).

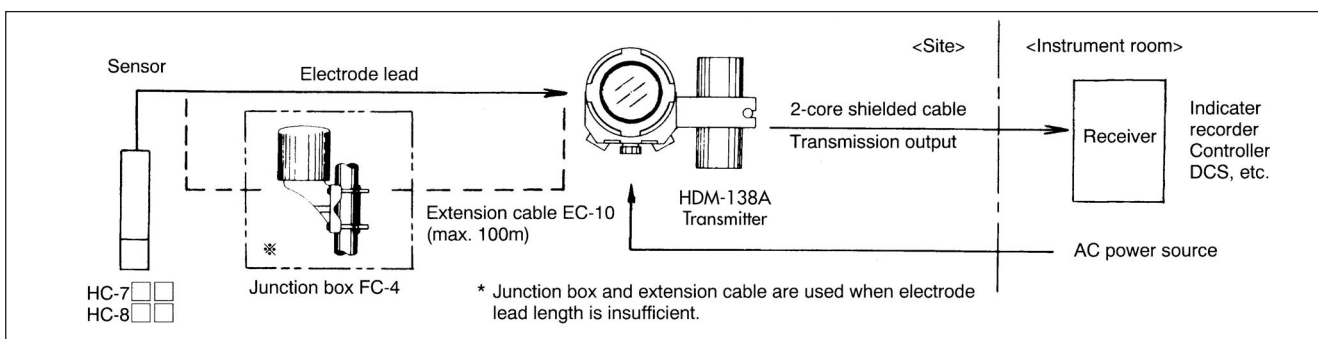
STANDARD SPECIFICATIONS

Product Name	: ORP analyzer/transmitter.
Model	: HDM-138A
Measurement Range	: -2000~+2000 mV Temperature; 0~100°C (indication only, no output signal).
Indication System	: Digital (LCD)
Resolution	: 1 mV; Temperature; 0.1.



Linearity	: Within ± 4 mV (equivalent input).
Repeatability	: Within ± 3 mV (equivalent input).
Output signal	: Isolated 4~20mA DC, max load: 650 Ω .
Output Ranges	: Freely selectable, minimum width is 400mV.
Example ranges	: -2000 ~ +2000mV : -700 ~ +700mV : 0 ~ +1400mV : -300 ~ +700mV : -200 ~ +200mV etc.
Power Requirements	: AC90~132V 50/60Hz : AC180~264V 50/60Hz (option)
Power Consumption	: Approx. 3VA.
Ambient Conditions	: -20~55°C, 99% RH or less.
Construction	: Outdoor installation, rainproof.
Weight	: Approx. 3kg.
Mounting	: Mounted on 50A pipe.
Cable Entry	: G $\frac{3}{4}$ (PF $\frac{3}{4}$ F), 3 ports.
Materials	
Main Body	: Cast aluminium alloy.
Window	: Resin.
Colour	: Metallic silver and blue.

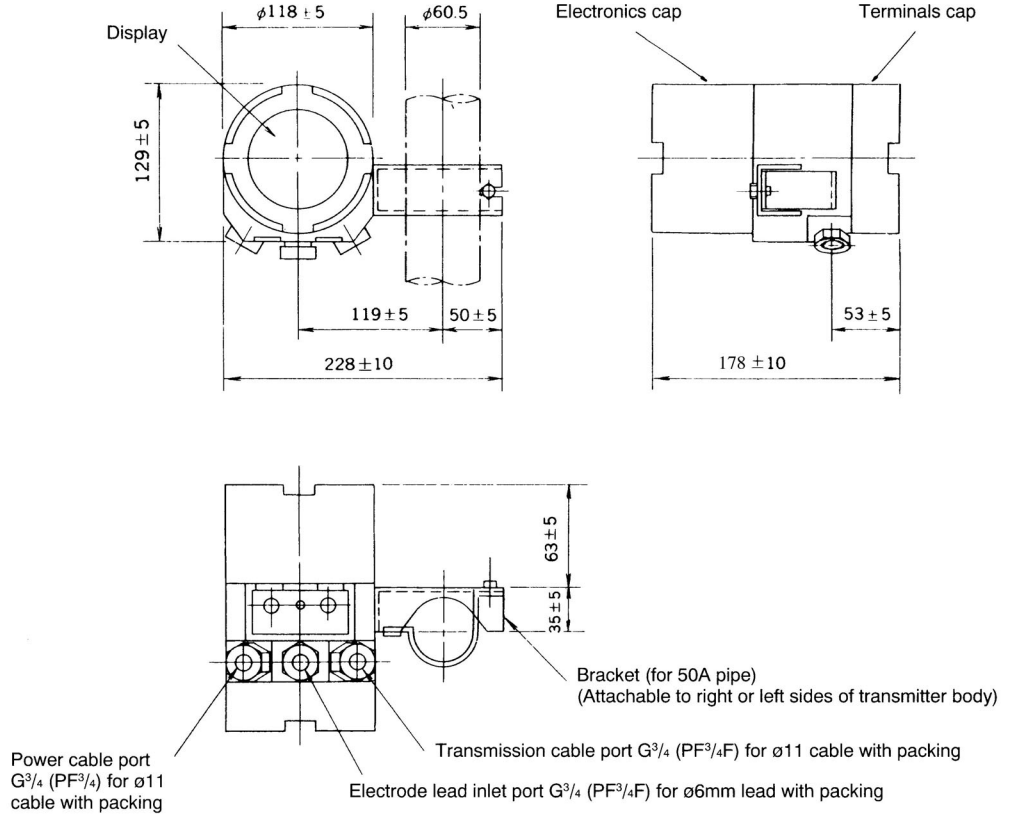
SYSTEM CONFIGURATION



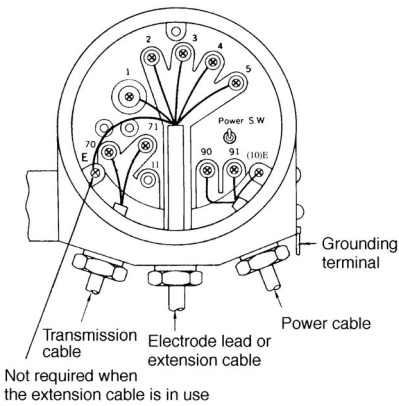
DIMENSIONS

(Unit : mm)

■ HDM-138A Transmitter

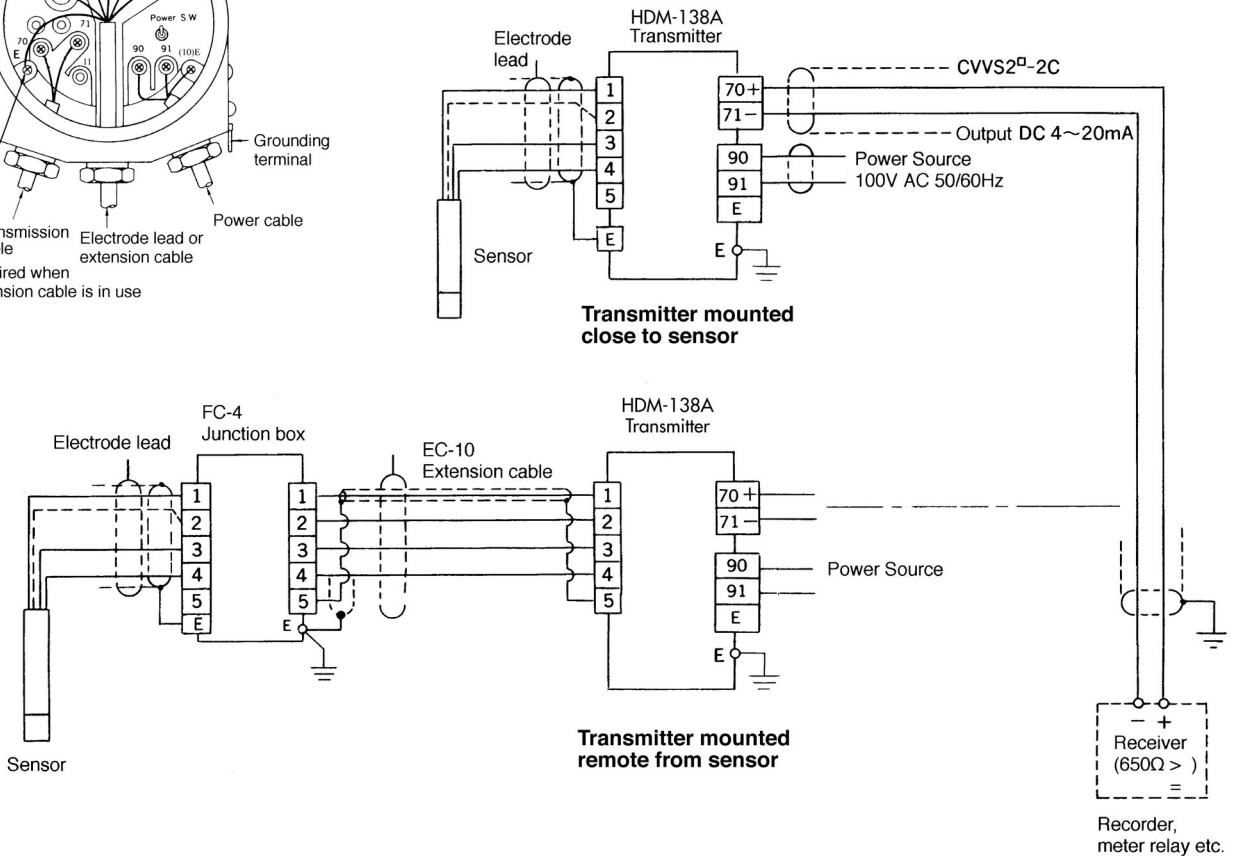


TERMINALS



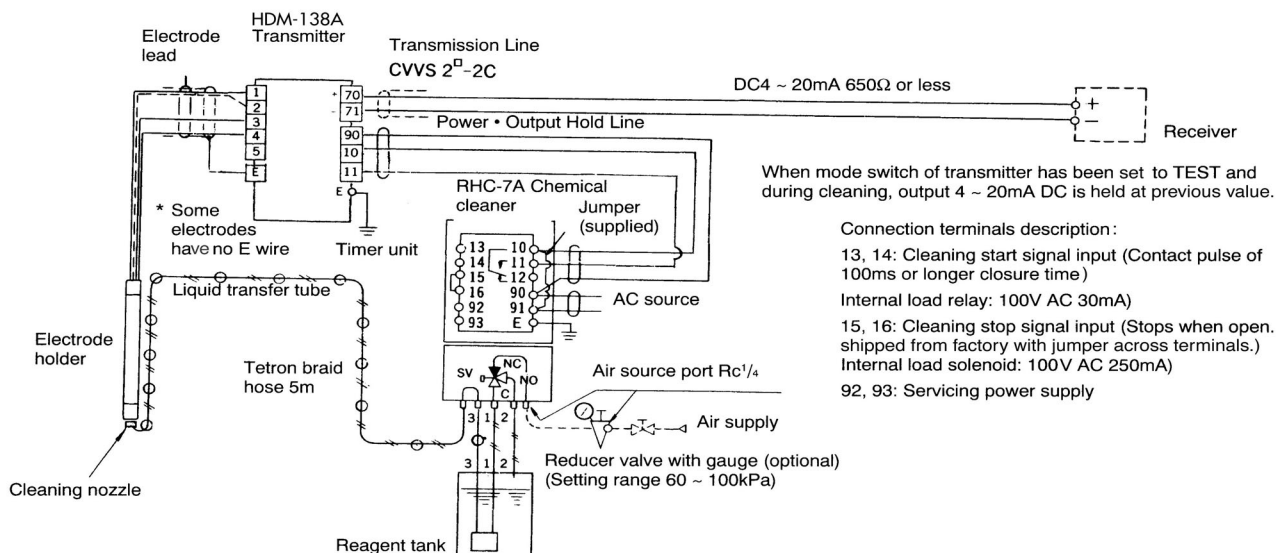
WIRING DIAGRAMS

• Basic configuration



WIRING DIAGRAMS

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



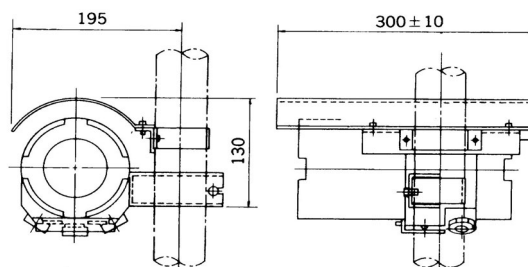
Note: Transmitter includes remote "hold" option (terminals 10 & 11)

OPTIONAL ACCESSORIES

- Sun Shade (hood)

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

Material : SUS304.
Mounting : 2 inch pipe.

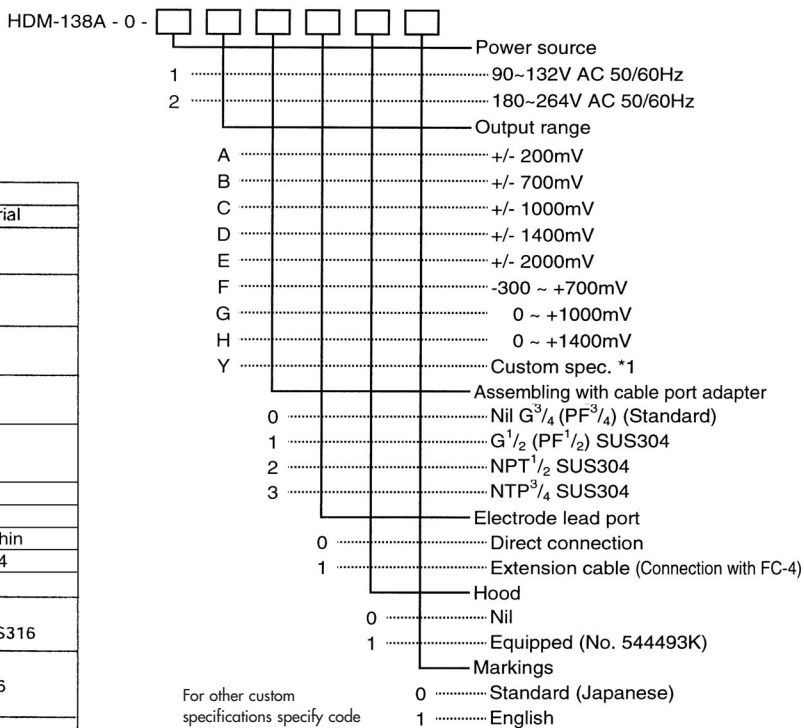


APPLICATION SENSORS

A wide variation of sensors can be combined with the HDM-138A transmitter as shown in the following table. Select the sensor based on your application requirements such as immersion or flow through type, wetted materials and measurement conditions.

	Electrode selection		Applicable holder	
	Application	Model No.	Model No.	Material
Immersion Type	General use (-5 ~ 70 °C)	2600(Pt)	HC-703C	PVC
		2605(Alloy)	HC-763	PP
	High temperature (-5 ~ 95 °C)	2601(Pt)	HC-703F	PVDF
	Chemical resistant (-5 ~ 70 °C)	2602(Pt)	HC-703T	PFA
	Pressurized type (-5 ~ 70 °C)	2610(Pt)	HC-753	PP
		2615(Alloy)		
	KCL no supply type (-5~50°C)	2910 (pt)	HC-753	PP
		2915 (Alloy)		
	KCℓ no supply type (chip replaceable) (-5~80°C)	ELCP-61(P+) ELCP-7 (Alloy)	HC-D70C	PVC 3
			HC-D76	PP
HC-D90			PP pushin	
HC-D95			SUS304	
HC-70F			PVDF	
Flow-through Type	General use (-5 ~ 70 °C)	2610(Pt)	HC-882	PP
		2615(Alloy)	HC-883	PP/SUS316
	High temperature (-5 ~ 95 °C)	2500(Pt)	HC-811	SUS316
			HC-812	
			HC-813	
	Chemical resistant (-5 ~ 70 °C)	2502(Pt)	HC-811	SUS316
			HC-812	
			HC-813	
	KCℓ no supply type (-5~50°C)	2910 (P+) 2915 (Alloy)	HC- N86	PP
			N82	SUS316
KCℓ no supply type (chip replaceable) (-5~80°C)	ELCP-61 (P+) ELCP-71 (Alloy)	HC-D82	SUS316	
		HC-D86	PP	
		HC-D88	PP no chamber	

PRODUCT CODE



RELATED EQUIPMENT FOR pH, ORP ANALYZERS

JUNCTION BOX

When the transmitter is installed remotely to the sensor (mainly for panel mounted transmitters) and the standard electrode lead length is too short, a junction box is required.

Model	: FC-4
Construction	: Field installation, spray proof (JIS CO920)
Mounting	: 25~50A Pipe, wall or panelmount
Material	: ABS resin
Finish	: Matted chromium plating, metallic silver
Weight	: Approx. 0.9kg
Applicable extension cable	: EC-10

EXTENSION CABLE

The extension cable is a special cable specifically manufactured for use with pH analysers. It is used for connection between transmitter and junction box. Maximum cable length is 100m. The cable must not be spliced.

Model	EC-10
Overall diameter	8mm
Insulation	Polyethylene and PVC
Sheath	PVC
Insulation resistance between core conductors	At least $10^5 \text{M}\Omega/100\text{m}$
Standard length	5m, 10 ~ 100m
Weight	Approx. 0.5kg/5m

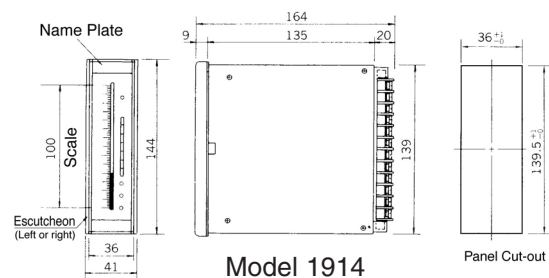
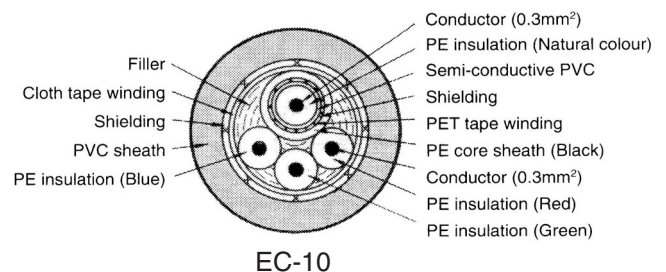
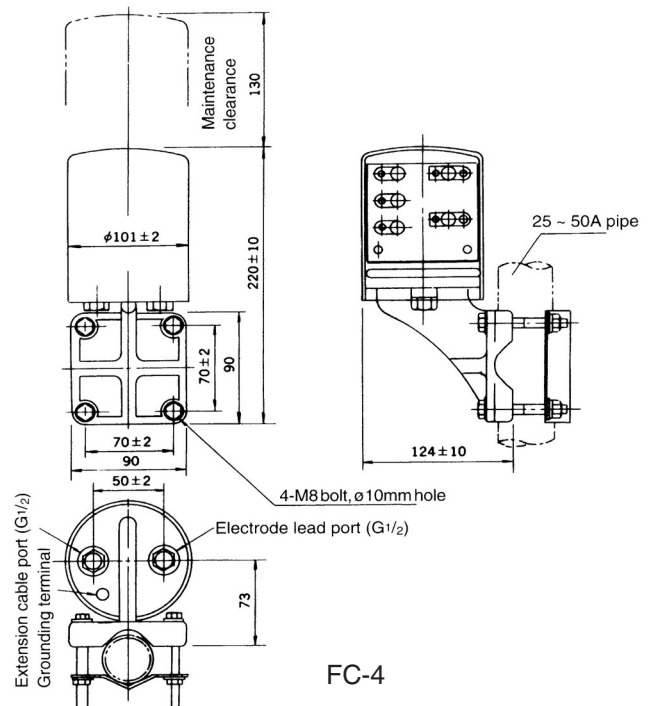
BARGRAPH METER RELAY

Model	: 1914
Output Signal	: 4~20mA DC
Alarm Outputs	: High-high, high, low, low-low. (Contact rating: 125V, 0.5A)
Scale	: Specify with purchase order.
Scale Length	: 100mm
Display	: Red LED, 101 dots.
Power Requirements	: 85~264V AC, 50/60Hz
Power Consumption	: Approx. 7VA
Ambient Conditions	: 0~45°C, 40~80% RH
Weight	: Approx 420g

SUN-SHADE

(For protection from direct sun-light)

Material	: 304 Stainless Steel
Mounting	: 50A Pipe bracket



DKK-TOA CORPORATION

International Operations:

DKK-TOA Corporation
29-10, 1-Chome, Takadanobaba, Shinjuku-ku, Tokyo 169-8648 Japan
Tel: +81-3-3202-0225 Fax: +81-3-3202-5685

Representative Office (Europe):

DKK-TOA European Representative
St. Johns Innovation Centre, Cowley Rd., Cambridge CB4 0WS UK.
Tel: +44 (0)1223-526471 Fax: +44 (0)1223-709239

**CAUTION**

Do not operate products before consulting instruction manual.