ISO-14001
ISO-9001

SPECIFCATION SHEET

CONDUCTIVITY TRANSMITTER WITH HART COMMUNICATION INTERFACE

Model: WBM-165H

HART REGISTERED

Transmitter for conductivity measurement suitable for field installation. The transmitter features a HART communication interface using a 2 wire, 24V DC circuit. The transmitter also has a die cast aluminium case and a wide range of useful features.

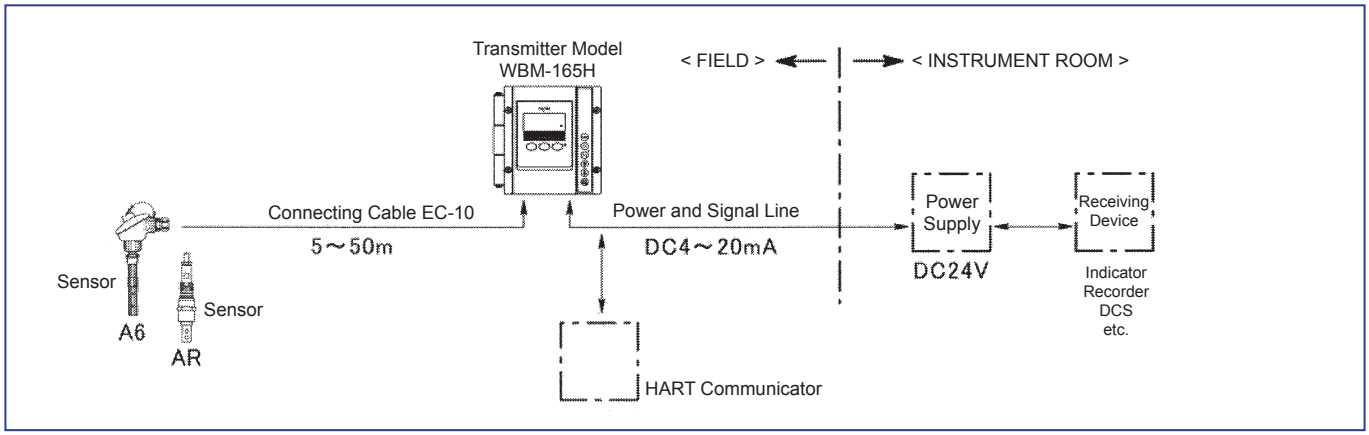
HART COMMUNICATION PROTOCOL

CE

Features

- Hart communication interface (version 7).
- Full compliance with relevant EU directives relating to CE Mark.
- Suitable for a wide range of measurments from ultrapure water (0~0.2mS/cm to industrial effluent (0~20 mS/cm). A wide temerature compensation range is also available from -5 up to 120°C.
- Output signal range can be freely set (25% width of measurment range or wider).
- Sample temperature is shown on LCD display (-5~120°C).
- 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.
- Measurement value can be set to operational control conductivity value (setting width: 20% of measurement value).
- Burn out function is provided. The output signal jumps to upper or lower limit to generate and alarm to announce measurement error, temperature compensation error transmitter fault conditions etc..

Typical System Configuration



Specifications

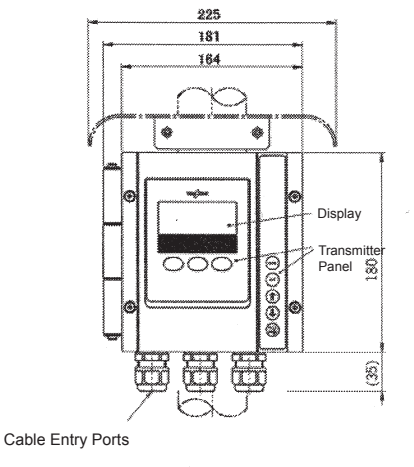
Product Name			Conducitity Transmitter with Hart Communication Interface
Model No.			WBM-165H
Measurement Range			0~0.2000/2.000/20.00 µS/cm (Cell Const.=0.01), 0~2.000/20.00/200.0 µS/cm (Cell Const.=0.1)
			0~20.00/200.0/2000 µS/cm (Cell Const.=1), 0~0.2000/2.000/20.00 mS/cm (Cell Const.=10)
			Temperature: -5~120 °C (0.1°C Resolution)
Performance Excluding Sensor	Linearity	up to 20m Cable	Conductivity: +/- 0.5% FS, Temperature: +/- 0.3°C (equivalent input, std. conditions)
		21~50m Cable	Conductivity: +/- 1.0% FS, Temperature: +/- 0.5°C (equivalent input, std. conditions)
	Repeatability		Conductivity: +/- 0.2%, FS Temperature: +/- 0.1°C (equivalent input, std. conditions)
Display			LCD
Operating Power & Consumption			2-Wire System, 24VDC (18~30 VDC, [SEE NOTE BELOW] depending on load resistance), 0.6 VA or less
Output Ranges			Conductivity: Can be freely set at 25% of measuring range or greater
Output Signal			Isolated 4~20mA, max load resistance: 520Ω
Processor			Microprocessor
Ambient Temperature & Humidity			-20~55°C, 0~95% RH (Shipping: -30~65°C, 98% RH or less)
Construction			IP-65 rating, equivalent to NEMA 4X
Outline Dimensions			181 (w) x 180 (h) x 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 / mettalic 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 G1/2 glands
Combination Sensor			Model A6 Cell. AR series (cable EC-10, max 50m between transmitter and sensor)

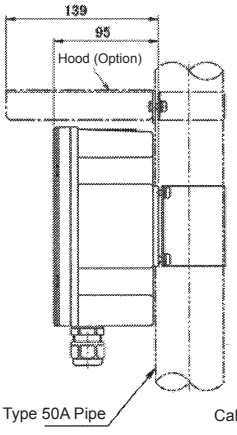
[NOTE]
When HART commuication is used, load resistance is 250Ω.

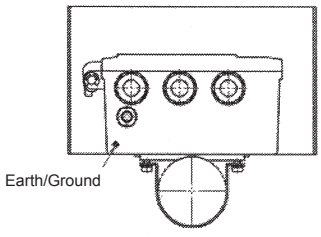
Dimensions

Units: mm

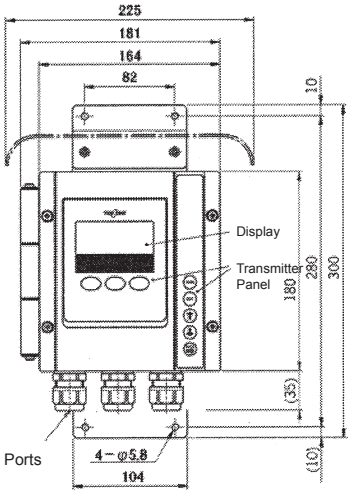
● **50A Pole Mounting**

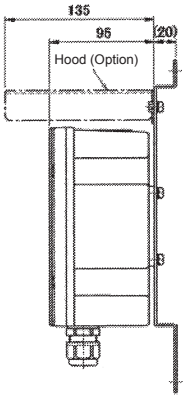


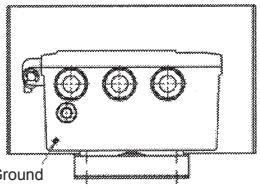




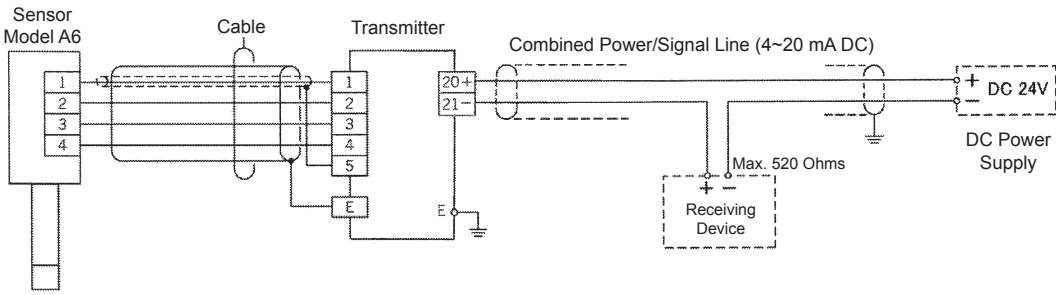
● **Wall or Rack Mounting**



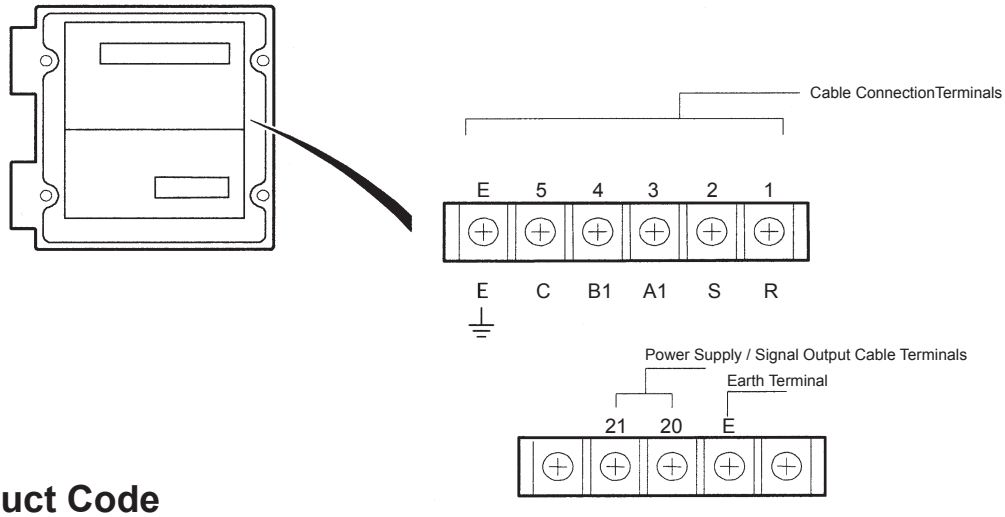




Wiring Connections



External Terminals



Product Code

WBM165H −0−

		Nominal Cell Const. & Meas. (Display) Range *1
A … … … … … … … … … …		0.01/cm 0~0.2000/2.000/20.00 µS/cm
B		0.1/cm 0~2.000/20.00/200.0 µS/cm
C		1.0/cm 0~20.00/200.0/2000 µS/cm
D	S/cm Units Above	10.0/cm 0~0.2000/2.000/20.00 mS/cm
E	S/m Units Below	1/m 0~20.00/200.0/2000 µS/cm
F		10/m 0~0.2000/2.000/20.00 mS/cm
G		100/m 0~2.000/20.00/200.0 mS/cm
H		1000/m 0~20.00/200.0/2000 mS/cm
		Output Range (4~20mA DC) *2
A … … … … … … … … … …		As per above mentioned measurement (display) ranges
Y		Other range specified by client (add separate note)
		Sensor Manufactured Together With Transmitter
0 … … … … … … … … …		No (sensor manufactured separately)
1		Yes
		Built in Arrestor *3
0 … … … … … … … … …		None
1		Equipped
		Power Cable Entry
0 … … … … … … … …		Cable gland, G1/2 thread
1		NPT 1/2 adapter
		Mounting Bracket
0 … … … … … … …		Suitable for mounting on 50A pipe
1		Suitable for wall or rack mounting
		Hood
0 … … … … … …		None
1		Equipped
		Markings
A … … …		Japanese
B		English

Codes for Custom Specs:
Numeric Character: 9
Alphabetical Character: Z

*1 The standard measurement (display) range is determined by the nominal cell constant of sensor to be combined. If alternative measurement ranges are required, the transmitter needs to be set up and the order becomes a “special”.

*2 If within standard measurement (display) range as mentioned in A~H above, it is set to the mid range. If specified by client is selected (Y) it can be freely set down to minimum of 25% width of each range (e.g. if measurement (display) range is 0~20.00 µS/cm, it can be freely set down to minimum of 0~5.00 µS/cm or 5.00~10.00 µS/cm etc.).

*3 Ceramic surge arrestor fitted on the incoming power line.

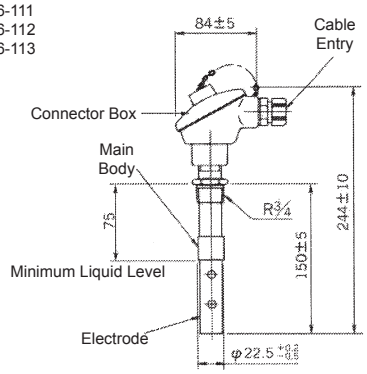
Combination Sensors

There are various process connections available such as pipe fitting, immersion, flow-thruogh cell etc.. Please refer to separate individual specifications for more detailed information.

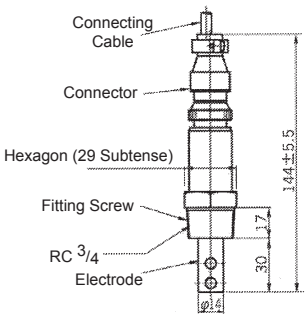
Product Name:	Conductivity Sensor
Model Code:	A type cell, AR type cell etc.
Cell Constant:	0.01/0.1/1.0/(10.0)/cm
Temperature Sensor	Thermistor type (enclosed in inner pole)
Sample Conditions:	Temperature: 0~100 °C Pressure: max. 1 MPa (max. 0.5 MPa for AR type)
Materials:	Main body: 316 stainless steel Connector: plastic Connector box: cast aluminium Electrode: 316 stainless steel Electrode Insulation: glass (hermetic seal), PTFE (Teflon) Case: 316 stainless steel or polypropylene (PP)
Piping Connections:	R3/4 thread
Temperature Resistance:	0~100°C

● **Screw Thread Type**

Models: A6-111
A6-112
A6-113

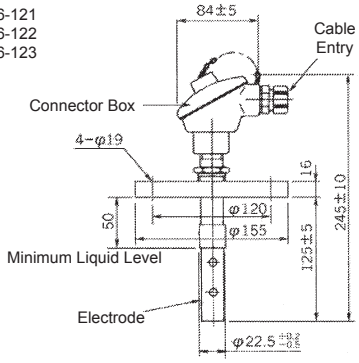


AR4-212



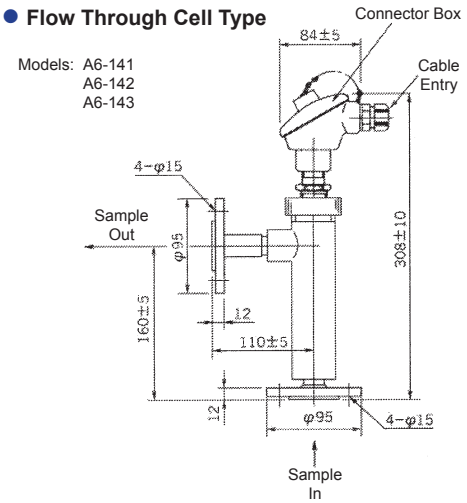
● **Flange Type**

Models: A6-121
A6-122
A6-123



● **Flow Through Cell Type**

Models: A6-141
A6-142
A6-143



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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