EG series Magnetostrictive Level Transmitter is built based on the principle of magnetic field strength of two different directions sending out a signal to determine the exact level of the medium. Therefore, even if there is a power failure and reconnection is needed, it will not affect the previous setting parameters. So there is no reconfiguration involved. Moreover, medium is not in contact to the sensing element. There will be no wear and tear to the sensing element during repeat operation.

As Magnetostrictive Level Transmitter gives direct signal output, additional output interface is not needed. As the resolution is very accurate and reliable, it will reduce the malfunction of the product. Moreover, due to the durability of the sensing element, lifespan is exceptionally long. Minimal maintenance is needed, thus stocking up on replacement parts for maintenance is not needed.

For PC connection, it enables long distance monitoring of one EG transmitter (use RS232 / RS485 communication port) or multiple EG transmitters (use RS485).
(RS 232 / RS485 are optional accessories).

FEATURES

★ High performance.
★ Absolute position output
★ Short response time.
★ High stable & high reliable.
★ Non contact & long operation life span.
★ Multi output selection.
★ Easy installation & no periodic maintenance
★ High resolution & high precision.
★ Durable structure & IP66.

APPLICATION

■ Natural gas liquid medium.
■ Pharmaceutical / beverages
■ Water Dam / barrier.
■ Water / Wastewater Treatment.
■ Chemical Process.
■ Crude oil / Oil industry.
■ Normal liquid environment.

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OPERATING PRINCIPLE

The EG series Magnetostrictive sensor consists of (1)a magnetostrictive waveguide sensing element(wire) in the stem; (2) and an external permanent magnet inside the float; (3) when the sensing wire pulses a current signal at stem in fixed time intervals;(4) and create one magnetic field; (5) travel along with the waveguide tube, on the other hand, the moving float's permanent magnet will create another magnetic field following the liquid up/down change, those two magnetic field will be intersected and produce a torsion stress wave; (6) (waveguide twist) to be induced in the wire, the torsion wave propagates along the wire at a sonic speed until the pulse is detected at the housnig of sensing elements;(7) then it will convert the received mechnical torsion into an electrical return pulse by measuring the elapsed time between the start and return pulse, then converts it into a 4~20mA output proportional to level being measured.
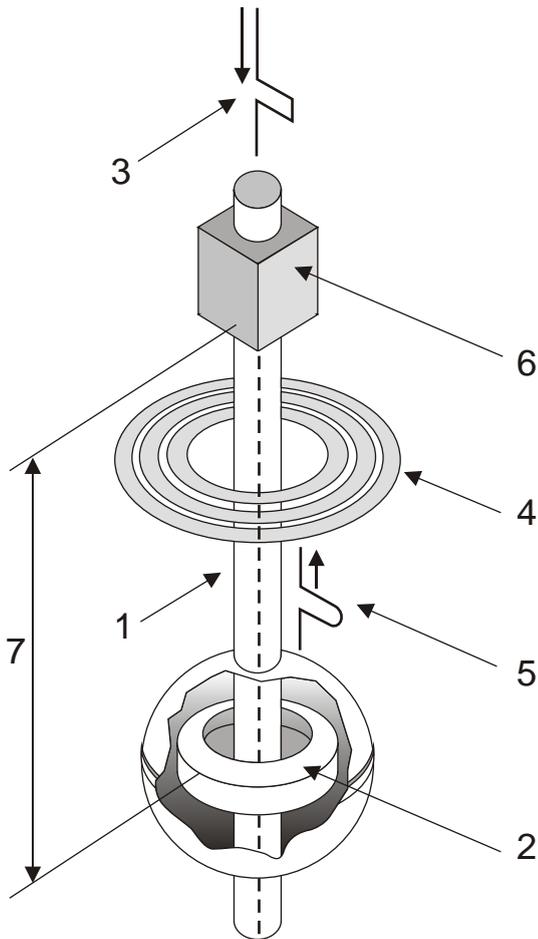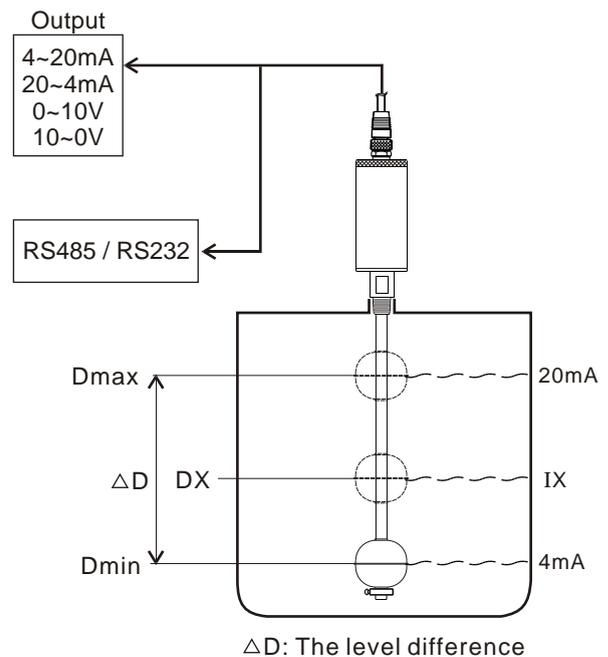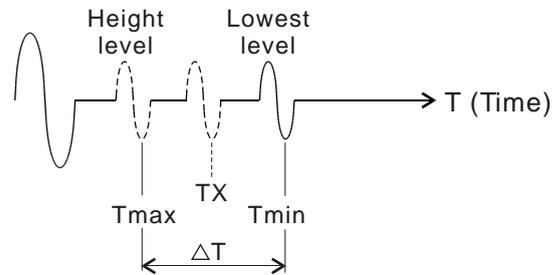
TRANSFER EQUATION

The relation of $\triangle D$ & 4~20mA output

$$\frac{IX}{(20-4)mA} \text{ (Current output)} = \frac{TX}{\triangle T} \text{ (Time)}$$

$$= \frac{DX}{\triangle D} \text{ (Distance)}$$

$$\frac{IX}{16mA} = \frac{TX}{\triangle T} = \frac{DX}{\triangle D}$$

$$\Rightarrow IX = \frac{16 \times DX}{\triangle D} \text{ (The relative current)}$$


$$\triangle D: \text{The level difference}$$

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SPECIFICATIONS

SPECIFICATIONS

Resolution: ±0.01% FS
Linearity: 0.1% FS
Repeatability: ±0.01% FS
Operation pressure: 30BAR
Ambient temp.: -10°C ~ 55°C
Operation temp.: -20°C ~ 70°C
Temp. Accuracy: ±1.5°C
Output: 4 ~ 20 mA (std.)

      20~4mA(Maximum Load 600W)

      0 ~ 10V, 10~0V(Maximum Load 2 mA)

      RS232-TTL (option)

      RS485 Modbus protocol RTU or ASCII model

Power supply: 24Vdc±20%
Power consumption:≤ 80mA(min load condition)
Enclosure: IP66
Material: SUS304 (SUS316 option)
Connection: Screw 1/2" PT (by order)

      If installing directly(without removing
      float),the dimension of connection
      must be bigger than the external
      radius of the float (>1-1/2")
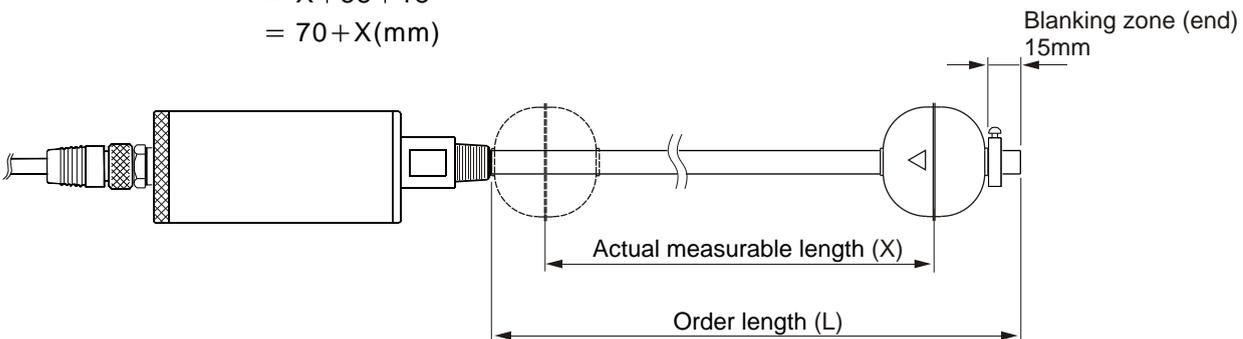
Float spec.: (ϕ52 × 52 (S4) S.G. >0.5)
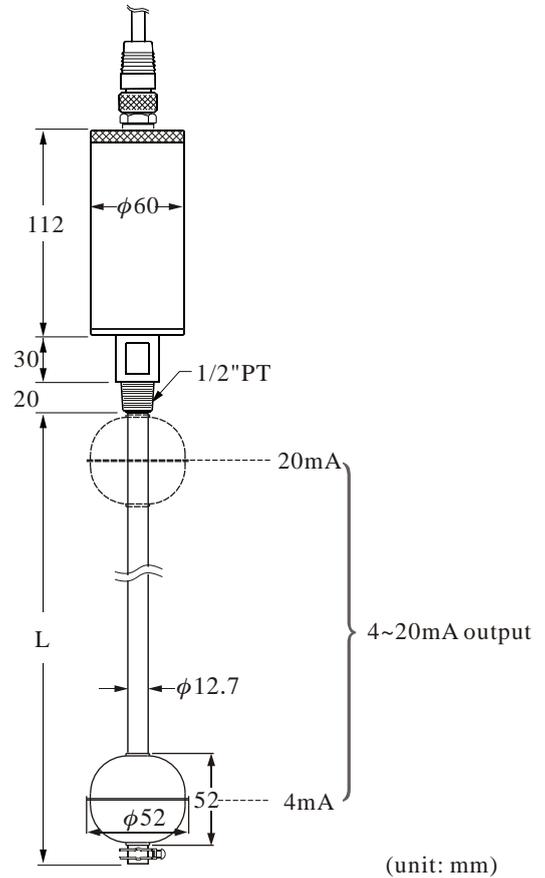
※ **Also combine with Panel Meter series of our company.**

DIMENSIONS

(unit: mm)

DETERMINE THE LENGTH DURING ORDERING INSTRUCTION

Please refer below diagram for actual length
of stem and the measurable length of the stem:

Order length (L) = Actual measurable length (X) + Length of float + Blanking zone (end)

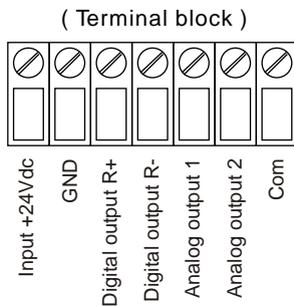   = X + 55 + 15

      = 70 + X (mm)

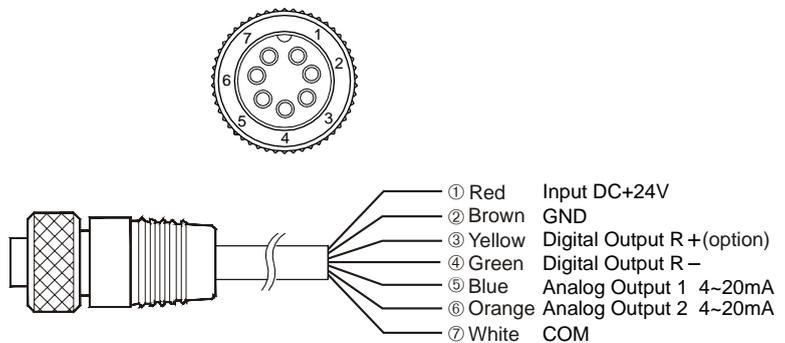FineTek

WIRING

INSTALLATION

- After mounting, please make sure that the float arrow (△)is facing the same direction as before due to the removing of float for installation. (There is an arrow (△) sign indicating up or down)on the float.

- Do not attempt to replace the type or model of the float by yourself to avoid malfunction to the products.

- As the transmitter is a product of high precision instrument, please avoid any bents to the stem during installation as this might affect the precision of the instrument or even cause malfunction of the product.
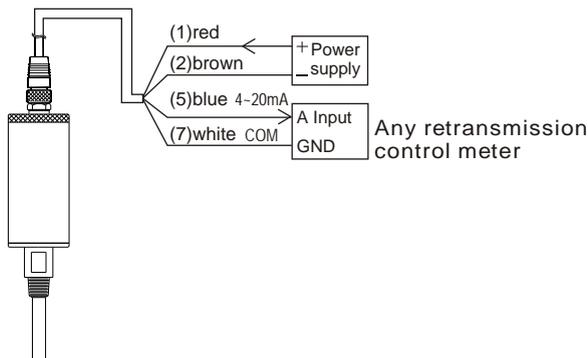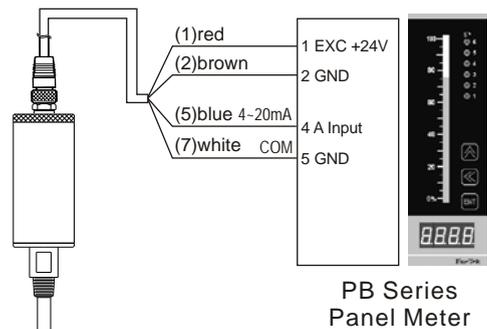
DESCRIPTION

Terminal Type

(Terminal block)
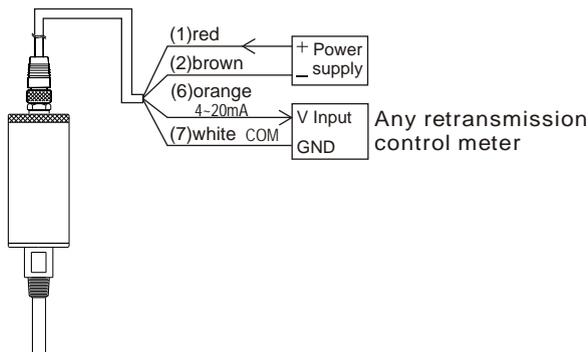
Input +24V/dc
GND
Digital output R+
Digital output R-
Analog output 1
Analog output 2
Com

Cable Type

① Red   Input DC+24V
② Brown   GND
③ Yellow   Digital Output R +(option)
④ Green   Digital Output R −
⑤ Blue   Analog Output 1 4~20mA
⑥ Orange Analog Output 2 4~20mA
⑦ White   COM

CONNECTIONS

(A) 4~20mA connection

(1)red
(2)brown
+ Power
_ supply

(5)blue 4~20mA
(7)white COM
A Input
GND
Any retransmission control meter

(B) 4~20mA connects to Panel Meter series meter

(1)red
(2)brown
1 EXC +24V
2 GND

(5)blue 4~20mA
(7)white COM
4 A Input
5 GND

PB Series Panel Meter

(C) 0~10V connection

(1)red
(2)brown
+ Power
_ supply

(6)orange 4~20mA
(7)white COM
V Input
GND
Any retransmission control meter

(D) 0~10V connect to Panel Meter series meter

(1)red
(2)brown
1 EXC +24V
2 GND

(6)orange 4~20mA
(7)white COM
3 V Input
5 GND

PB Series Panel Meter

FineTek
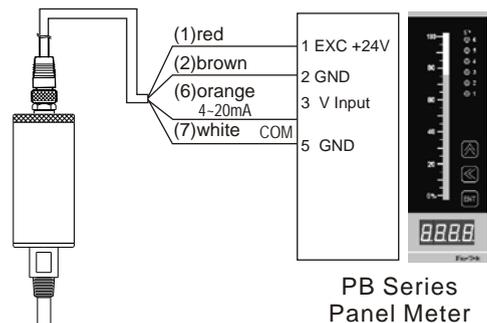
ORDER INFORMATION

EG10 **A** **0** **BQ** **S4** **1 5 0 0**

Analog output

0: None
A: 4~20mA
B: 20~4mA

Digital output

0: None
2: RS232-TTL
4: RS485

Connection

BQ: 1/2"PT
SS:others

★ If installing directly(without removing float),the dimension of connection must be bigger than the external radius of the float(>1-1/2")

Float Type

Model	Dimension	S.G.	Pressure
S4	52x52x15 mm	E>0.55	30 kg/cm^2

Length (L) unit: mm

★ Tolerance of the total product length is ±5mm.

★ Characteristic, specifications and dimensions are subject to change without prior notice.

★ Please contact us for further informations.

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