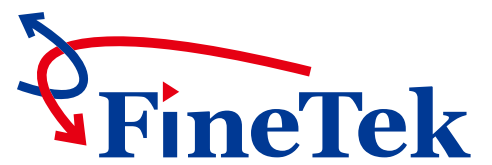




## Magnetostrictive Level Transmitter



[www.fine-tek.com](http://www.fine-tek.com)



# INTRODUCTION

The FineTek magnetostrictive level transmitter identifies the level of liquids and solutions with high precision and reliability.

This versatile sensor is ideal for continuous level measurement of a wide range of liquids. Application ranges from petrochemical industries, marine and shipping to food and beverage production.

The sensor has a loop power supply and provides direct analog or digital output to the user interface.

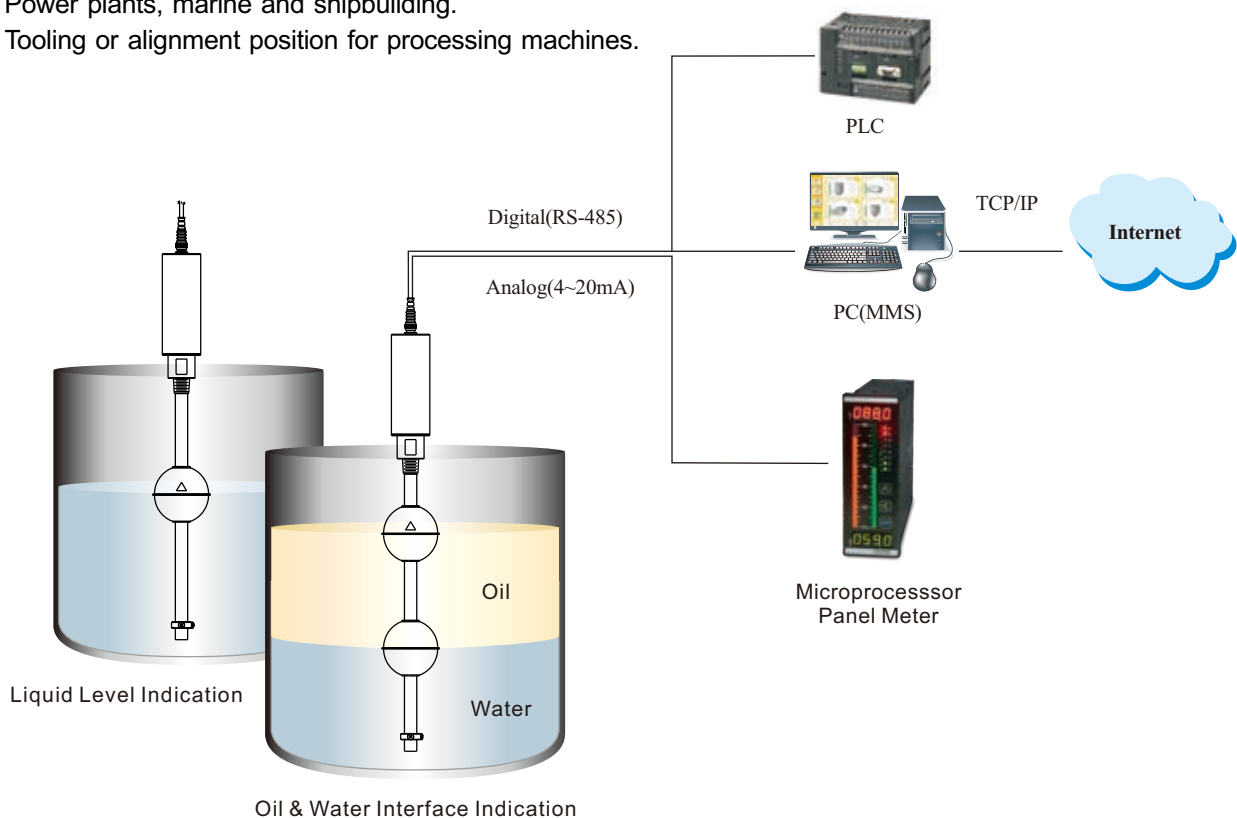
The FineTek magnetostrictive level sensor has proven itself due to its durability in a wide range of temperatures, pressures and operating conditions as well as its low maintenance nature.

## FEATURES

- Absolute positioning output and no calibration required after power failure.
- Stability and reliability.
- Ease installation without calibration & maintenance.
- Prompt response time, high resolution & high accuracy.
- Durable structure, dust-proof, withstands high pressure.
- Oil/water dual level indication.
- The Max. operation temp. is 200°C.
- EG31, 32, 36, 37 adopted loop power structure for wire saving.
- Explosion-proof model available for hazardous environments.
- Housing of EG3 is IP67(Enclosure)/IP69K(Probe).
- Support HART / RS485 and 4~20mA / voltage output.

## APPLICATION

- Liquefied natural gas.
- Crude oil, petroleum's and diesels.
- Chemical processing.
- Pharmaceuticals and medication.
- Food and beverages, breweries.
- Dams, water barriers, wastewater treatment.
- Power plants, marine and shipbuilding.
- Tooling or alignment position for processing machines.



# OPERATING PRINCIPLE

The sensor mainly consists of magnetorestrictive wires sealed in a stem/rod and a permanent magnet sealed into a float that can move up and down the stem. Electrical current travels along the wires in the stem creating an axial magnetic field. When the float's and stem's magnetic field intersect, a torsional force is created with different height levels (see right).

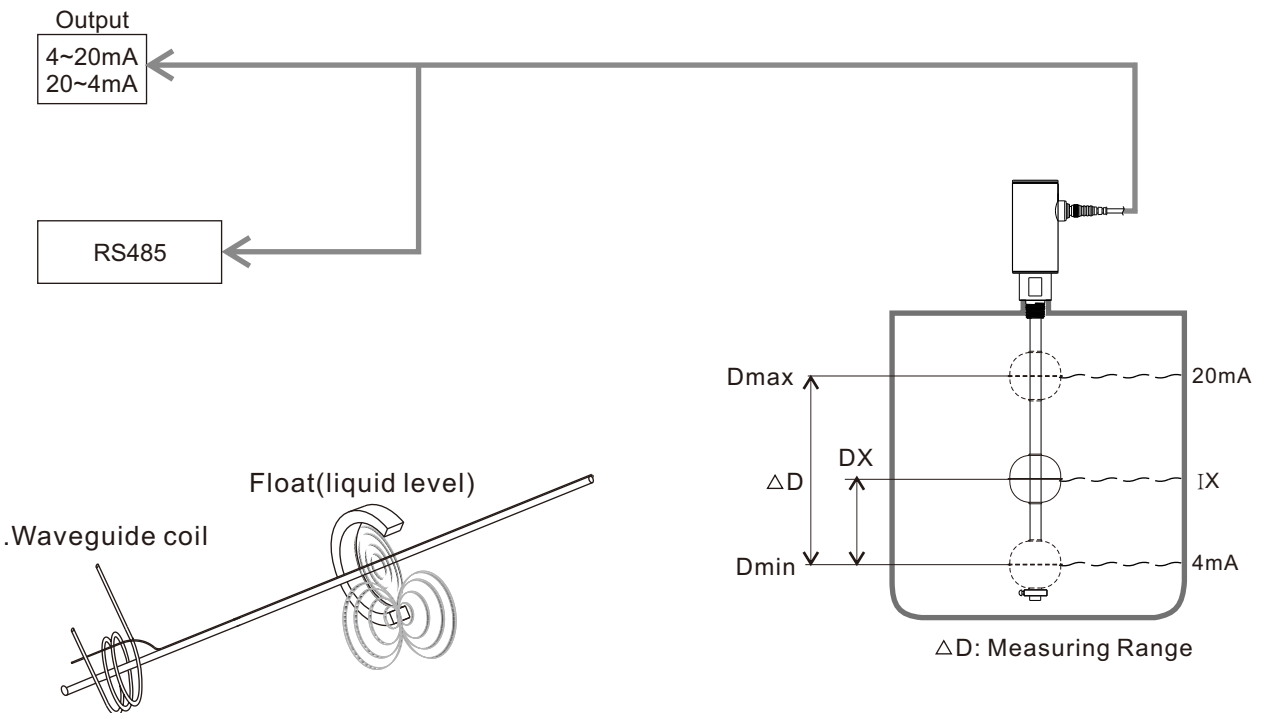
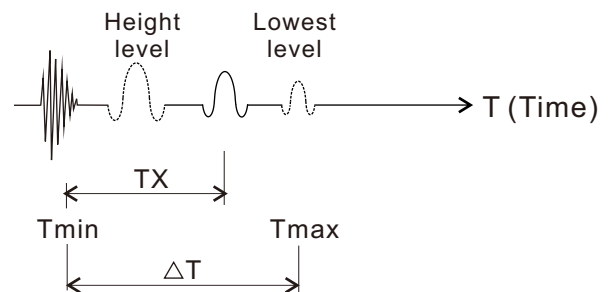
The sensor measures the liquid level (D) by calculating the elapsed time between torsional forces. Using velocity and time, distance can be calculated. This action is timely and continuous. A change in float position will be detected promptly via signal output.

## CONVERSION FORMULA

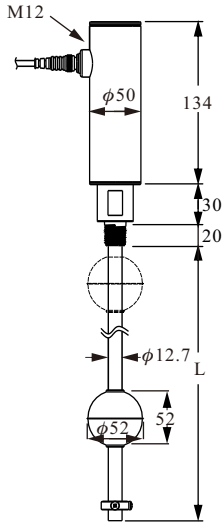
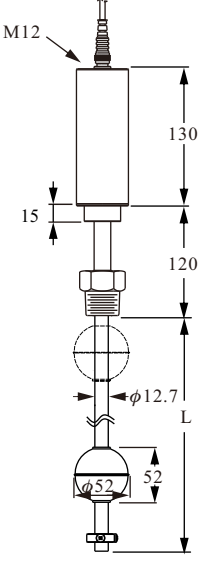
The relation of D & 4~20mA output

$$\frac{IX-4}{(20-4)\text{mA}} = \frac{DT-TX}{\Delta T} = \frac{DX}{\Delta D}$$

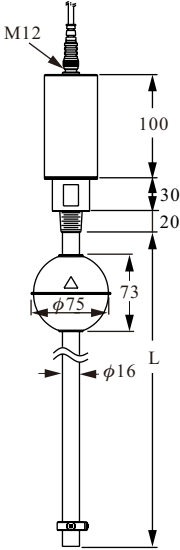
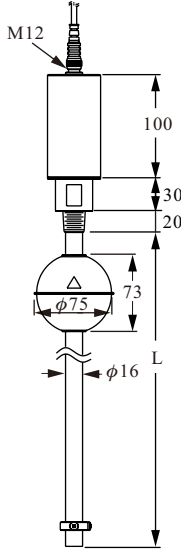
$$\Rightarrow IX = \frac{16DX}{\Delta D} + 4\text{mA} \text{ (The relative current)}$$



# STANDARD MODEL (2 Wire)

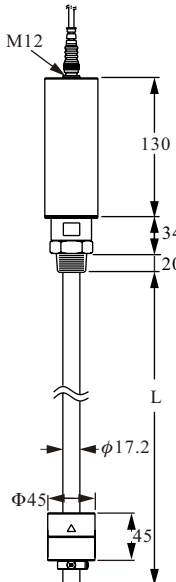
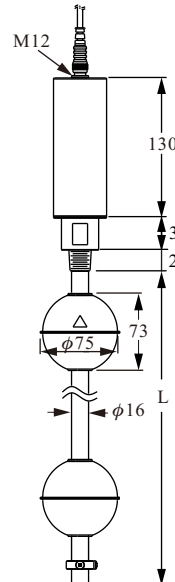
<p><b>Dimensions</b> (Unit: mm)</p>		
<p><b>Model No.</b></p>	<p><b>EG31 (Standard Model)</b></p>	<p><b>EG31 (High Temperature Model)</b></p>
<p><b>Application</b></p>	<p>Two-wire loop power output, for Oil/Water interface, pharmaceutical and food grade level control.</p>	<p>Two-wire loop power output, high process environment application.</p>
<p><b>Measuring range</b></p>	<p>50~5500mm</p>	<p>50~5500mm</p>
<p><b>Non-Linearity</b></p>	<p>± 0.05% F.S. or ± 1.0mm (whichever is greater)</p>	<p>± 0.05% F.S. or ± 1.0mm (whichever is greater)</p>
<p><b>Repeatability</b></p>	<p>± 0.004% F.S.</p>	<p>± 0.004% F.S.</p>
<p><b>Temp. coefficient</b></p>	<p>± 100 ppm/°C</p>	<p>± 150 ppm/°C</p>
<p><b>Operation pressure</b></p>	<p>30 BAR(Max.)</p>	<p>30 BAR(Max.)</p>
<p><b>Ambient temp.</b></p>	<p>-40°C ~ 85°C</p>	<p>-40°C ~ 85°C</p>
<p><b>Operation temp.</b></p>	<p>-40°C ~ 125°C</p>	<p>-40°C ~ 200°C</p>
<p><b>Temp. accuracy</b></p>	<p>± 1°C</p>	<p>± 1°C</p>
<p><b>Output</b></p>	<p>4~20mA / 2 Wire</p>	<p>4~20mA / 2 Wire</p>
<p><b>Maximum load (Ω)</b></p>	<p><math>(VS-18) \div 0.02</math> VS=Supply voltage</p>	<p><math>(VS-18) \div 0.02</math> VS=Supply voltage</p>
<p><b>Digital output</b></p>	<p>RS485 / HART 7.3(option)</p>	<p>RS485 / HART 7.3(option)</p>
<p><b>Power supply</b></p>	<p>18~30V</p>	<p>18~30V</p>
<p><b>Housing material</b></p>	<p>SUS304 (SUS316 option)</p>	<p>SUS304 (SUS316 option)</p>
<p><b>Connection</b></p>	<p>1/2"PT</p>	<p>1/2"PT</p>
<p><b>Wetted material</b></p>	<p>SUS304</p>	<p>SUS304</p>
<p><b>Enclosure</b></p>	<p>IP67 (enclosure )/IP69K(probe)</p>	<p>IP67 (enclosure )/IP69K(probe)</p>

# HIGH ACCURACY MODEL (2 Wire/4 Wire)

<p><b>Dimensions</b> (Unit: mm)</p>		
<b>Model No.</b>	<b>EG32 (High Accuracy Model)</b>	<b>EG34 (High Accuracy Model)</b>
<b>Application</b>	Two-wire loop power output, comply with high accuracy & HART demands.	Four wire output,high speed active in low voltage 5V.
<b>Measuring range</b>	50~5500mm	50~5500mm
<b>Non-Linearity</b>	50~500mm@± 100μm 501~2500mm@± 0.02%F.S. 2501~5500mm@± 0.04%F.S.	50~500mm@± 100μm 501~2500mm@± 0.02%F.S. 2501~5500mm@± 0.04%F.S.
<b>Repeatability</b>	± 0.002% F.S.	± 0.002% F.S.
<b>Temp. coefficient</b>	± 100 ppm/°C	± 100 ppm/°C
<b>Operation pressure</b>	30 BAR(Max.)	30 BAR(Max.)
<b>Ambient temp.</b>	-40°C ~ 85°C	-40°C ~ 85°C
<b>Operation temp.</b>	-40°C ~ 125°C	-40°C ~ 125°C
<b>Temp. accuracy</b>	± 1°C	± 1°C
<b>Output</b>	4~20mA / 2 Wire	0~10V,10~0V,± 10V,0~5V,5~0V,± 5V 4~20mA,20~4mA,0~20mA,20~0mA
<b>Maximum load (Ω)</b>	$(VS-18) \div 0.02$ VS=Supply voltage	$(VS-5) \div 0.02$ VS=Supply voltage
<b>Digital output</b>	RS485,HART 7.3 (option)	RS485
<b>Power supply</b>	18~30V	5~30V
<b>Housing material</b>	SUS304 (SUS316 option)	SUS304 (SUS316 option)
<b>Connection</b>	1/2"PT	1/2"PT
<b>Wetted material</b>	SUS304	SUS304
<b>Enclosure</b>	IP67 (enclosure )/IP69K(probe)	IP67 (enclosure )/IP69K(probe)

# EXPLOSION PROOF MODEL (2 Wire)

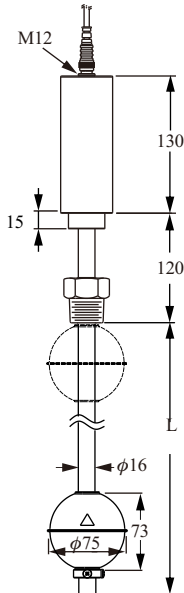
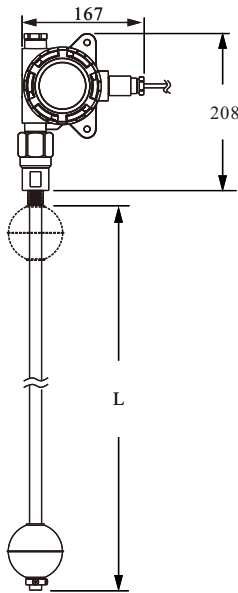


Dimensions (Unit: mm)	 <p>NEPSI PROOF No.GYB101836X Ex ia IIB T2~T6 PTB PROOF NO.13 ATEX 2016X Ⓢ II 1G Ex ia IIB T3~T6</p>	 <p>NEPSI PROOF No.GYB101836X Ex ia IIB T2~T6 PTB PROOF NO.13 ATEX 2016X Ⓢ II 1G Ex ia IIB T3~T6</p>
Model No.	EG374 (Anti-Corrosion Model)	EG371 (Single/dual Float Model)
Application	Two-wire loop power output, for acid/alkali corrosion liquids.	Two-wire loop power output, for single/dual level and interface measurement.
Measuring range	50~2000mm	50~5500mm
Non-Linearity	± 0.05% F.S. or ± 1.0mm (whichever is greater)	± 0.05% F.S. or ± 1.0mm (whichever is greater)
Repeatability	± 0.004% F.S.	± 0.004% F.S.
Temp. coefficient	± 100 ppm/°C	± 100 ppm/°C
Operation pressure	5 BAR(Max.)	30 BAR(Max.)
Ambient temp.	-40°C ~ 85°C	-40°C ~ 85°C
Operation temp.	-20°C ~ 80°C	-40°C ~ 125°C
Temp. accuracy	± 1°C	± 1°C
Output	4~20mA / 2 Wire	4~20mA / 2 Wire
Max load (Ω)	$(VS-18) \div 0.02$ VS=Supply voltage	$(VS-18) \div 0.02$ VS=Supply voltage
Digital output	RS485 / HART 7.3(option)	RS485 / HART 7.3(option)
Power supply	12~30V(4-wire), 18~30V(2-wire), 18~28V(Exp Lotion proof)	12~30V(4-wire), 16~30V(2-wire), 16~28V(Exp Lotion proof)
Housing material	SUS304 (SUS316 option)	SUS304 (SUS316 option)
Connection	3/4"PT	1/2"PT
Wetted material	PP	SUS304
Enclosure	IP67 (enclosure) / IP69K(probe)	IP67 (enclosure) / IP69K(probe)

※ Comply with safety barrier of Ex ia rating is essential for using in hazardous areas.(Refer to P.17)

# EXPLOSION PROOF MODEL (2 Wire)

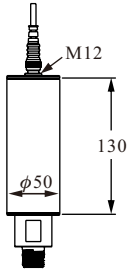
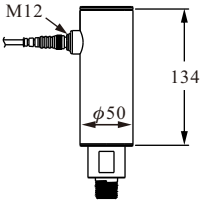
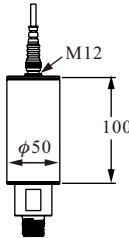
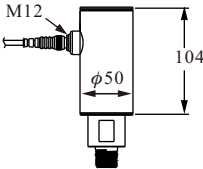


<p><b>Dimensions</b> (Unit: mm)</p>	 <p>NEPSI PROOF No.GYB101836X Ex ia IIB T2~T6 PTB PROOF13 ATEX 2016X II 1G Ex ia IIB T3~T6</p>	 <p>NEPSI PROOF No.GYB14.1530X Ex ia IIB T3~T6Ga</p>
<p><b>Model No.</b></p>	<p><b>EG37A (Ex-proof High Temp. Model)</b></p>	<p><b>EG36 (Diaplay Model)</b></p>
<p><b>Application</b></p>	<p>Two-wire loop power output, explosion-proof model for hazardous environment.</p>	<p>Two-wire loop power output, explosion-proof model with diaplay for hazardous environment.</p>
<p><b>Measuring range</b></p>	<p>50~5500mm</p>	<p>50~5500mm</p>
<p><b>Non-Linearity</b></p>	<p>±0.05% F.S. or ±1.0mm (whichever is greater)</p>	<p>50mm~4000mm ±1mm 4000mm~5500mm ±0.025% F.S.</p>
<p><b>Repeatability</b></p>	<p>±0.004% F.S.</p>	<p>±0.004% F.S.</p>
<p><b>Temp. coefficient</b></p>	<p>±150 ppm/°C</p>	<p>±100 ppm/°C</p>
<p><b>Operation pressure</b></p>	<p>30 BAR(Max.)</p>	<p>30 BAR(Max.)</p>
<p><b>Ambient temp.</b></p>	<p>-40°C ~ 85°C</p>	<p>-40°C ~ 85°C</p>
<p><b>Operation temp.</b></p>	<p>-40°C ~ 195°C</p>	<p>-40°C ~ 125°C</p>
<p><b>Temp. accuracy</b></p>	<p>±1°C</p>	<p>±1°C</p>
<p><b>Output</b></p>	<p>4~20mA / 2 Wire</p>	<p>4~20mA / 2 Wire</p>
<p><b>Max load (Ω)</b></p>	<p><math>(VS-18) \div 0.02</math> VS=Supply voltage</p>	<p><math>(VS-16) \div 0.02</math> VS=Supply voltage</p>
<p><b>Digital output</b></p>	<p>RS485/HART 7.3( option)</p>	<p>RS485/HART 7.3( option)</p>
<p><b>Power supply</b></p>	<p>12~30V(4-wire), 18~30V(2-wire), 18~28V(Exp Losion proof)</p>	<p>12~30V(4-wire), 16~30V(2-wire), 16~28V(Exp Losion proof)</p>
<p><b>Housing material</b></p>	<p>SUS304 (SUS316 option)</p>	<p>Aluminum</p>
<p><b>Connection</b></p>	<p>1/2"PT</p>	<p>1/2"PT</p>
<p><b>Wetted material</b></p>	<p>SUS304</p>	<p>SUS304</p>
<p><b>Enclosure</b></p>	<p>IP67 (enclosure ) / IP69K(probe)</p>	<p>IP67 (enclosure ) / IP69K(probe)</p>

※ Comply with safety barrier of Ex ia rating is essential for using in hazardous areas.(Refer to P.17)

# HOUSING OPTIONS

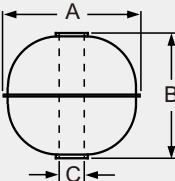
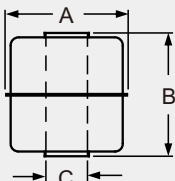
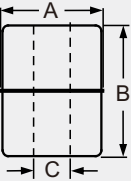
## Mapping table of enclosure

EG31&EG37 explosion-proof (2 wire)	1 Top conduit	2 Side conduit
		
EG32&EG34 high accuracy series	1 Top conduit	2 Side conduit
		

※ Standard model cable length is 2m.



# FLOAT SPECIFICATIONS

Model	Model Number	Dimensions ( $\phi A \times B \times \phi C$ mm)	S.G.	Max. Pressure (kg/cm <sup>2</sup> )	Material	Stem Size
	S5	75x73x20.5	E>0.7	30	SUS 304 / 316	$\phi 16$
	S4	52x52x15	E>0.75	30	SUS 316	$\phi 12.7$
	SD	52x52x15	E>0.9	30	SUS 316	$\phi 12.7$
	SE	75x73x20.5	E>0.9	20	SUS 304 / 316	$\phi 16$
	S3	45x55x15	E>0.7	12	SUS 316	$\phi 12.7$
	SC	45x55x15	E>0.9	12	SUS 316	$\phi 12.7$
	F3	45x45x20	E>0.65	5	PP in Grey	$\phi 18$ (coating)
	FC	45x45x20	E>0.9	5	PP in Grey	$\phi 18$ (coating)
	P3	48x45x18.5	E>0.6	5	PP in Black	$\phi 17.2$ (coating)
	PC	48x45x18.5	E>0.9	5	PP in Black	$\phi 17.2$ (coating)
	NB	48x46x15.6	E>0.5	30	NBR in Black	$\phi 12.7$
	ND	48x45x15.6	E>0.9	30	NBR in Black	$\phi 12.7$
	NC	48x46x20	E>0.5	30	NBR in Black	$\phi 16$
	NE	48x46x20	E>0.9	30	NBR in Black	$\phi 16$

※ S.G(E):specific gravity

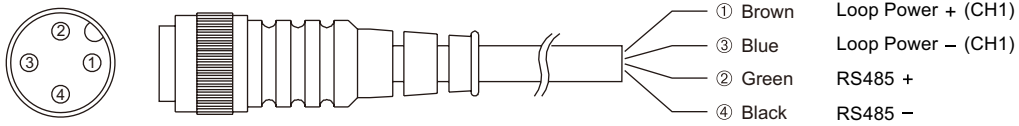
# WIRING

**When RS485(ModBus)is applied,Loop power only as power.**

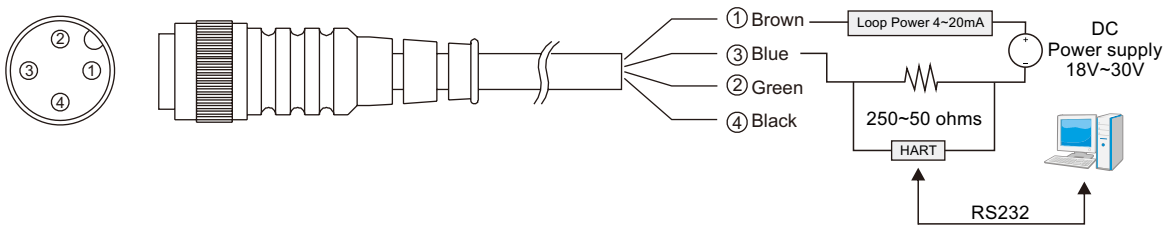
**EG31/EG32/EG37:**

1. Single / Double float +RS485

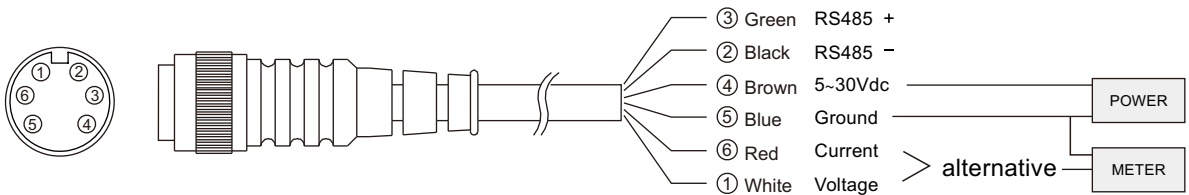
Loop Power 24Vdc ± 10%



2. Single / Double float +HART

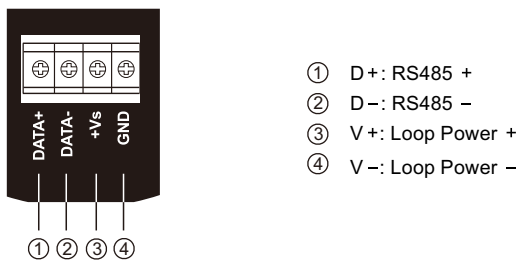


**EG34:**



※The voltage or current is only alternative.

**EG36:**



# CUSTOMIZED STEM LENGTHS ARE AVAILABLE

Note the difference between ordered length and actual measurable stem length below.

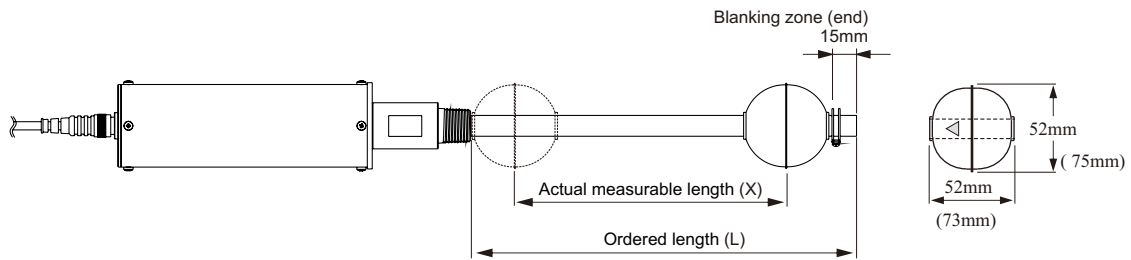
(2M below) = Actual measurable length (X) = Ordered length (L) - 52mm - 15mm, adopted stem  $\phi 12.7$

(2M above) = Actual measurable length (X) = Ordered length (L) - 73mm - 15mm, adopted stem  $\phi 16$

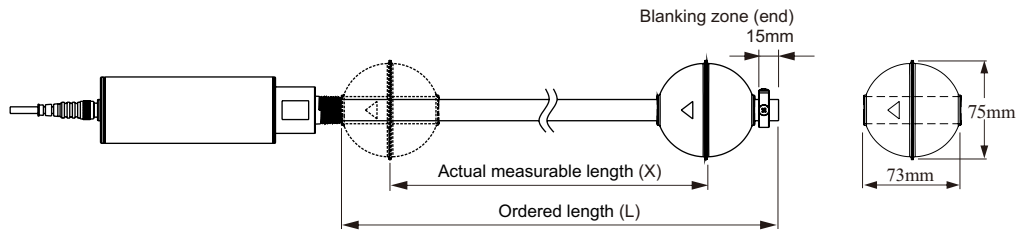
(2M below) = Ordered length (L) = Actual measurable length (X) + 52mm - 15mm, adopted stem  $\phi 12.7$

(2M above) = Ordered length (L) = Actual measurable length (X) + 73mm - 15mm, adopted stem  $\phi 16$

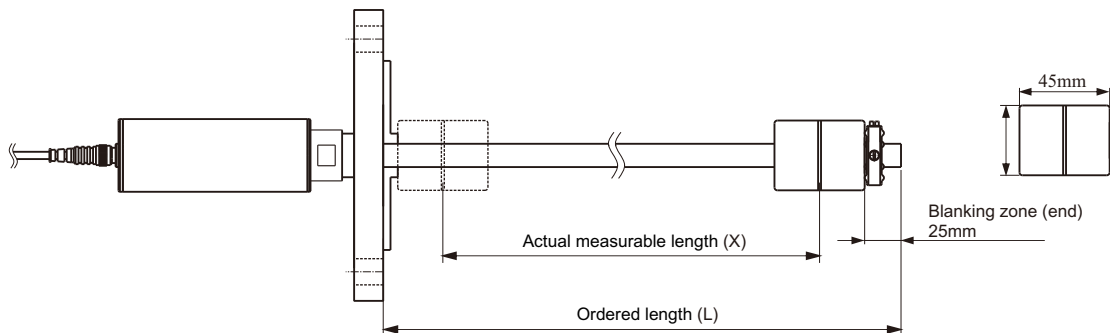
## Below 2M, stem $\phi 12.7$



## Above 2M, stem $\phi 16$



## Below 2M, stem $\phi 12.7$ , with PP coating to $\phi 17.2$

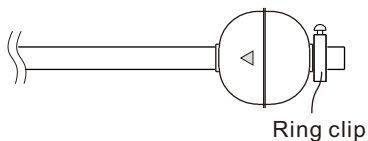


# INSTALLATION

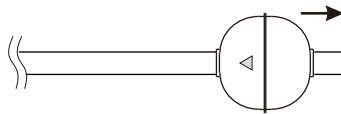
1. Loop power 24Vdc  $\pm$ 10%
2. The product is calibrated before shipment and should be sufficient to meet user needs.
3. Do not bend the stem, put pressure on it or force it in any manner.
4. For best results, use the included float only.
5. When the mounting hole is large enough, guide the stem and float through the hole to install.
6. If the hole is NOT large enough, remove float, install the stem and assemble float from inside the container.
7. When assembling the float onto the stem, the float's direction mark should face the housing.
8. Ensure the float stopper is fixed firmly.
9. If the stem is bent and can not work, it needs to be returned to the factory for calibration.
11. Bubble wrap/foam packaging is necessary to ensure safety during transportation.
12. Unnecessary opening of housing may affect accuracy.

## Removing the float

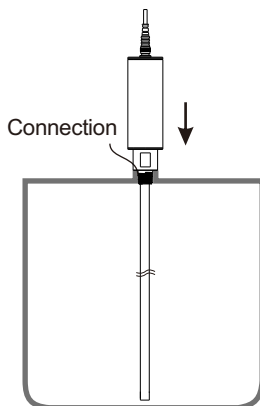
Step 1:  
Loosen the stopper at stem end



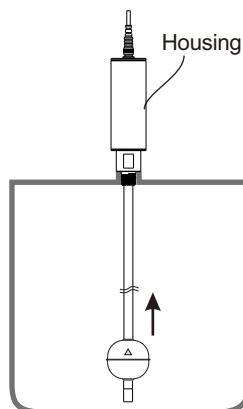
Step 2:  
Take off the float



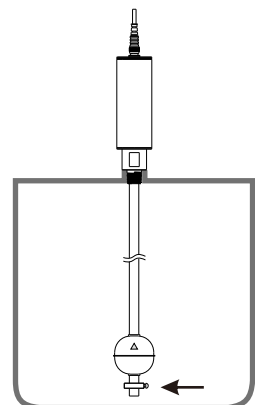
Step 3:  
Install the sensor onto the tank,  
and tighten the connection



Step 4:  
Assemble the float onto the stem  
and tighten the connection the  
housing. Note the direction of float



Step 5:  
Firmly fasten the stopper



# HOW TO ORDER

EG 31    -   -

## Housing

Standard (-40~125°C)                      High Temp. (-40~200°C)  
 1: Top conduit                              A: Top conduit  
 2: Side conduit                              B: Side conduit  
 Anti-corrosion (-40~85°C)  
 4: Top conduit with coated  
 5: Side conduit with coated

## Connection

B---1-1/4"(32A)	H---3"(80A)	M---5kg/cm <sup>2</sup>	Q---PT
B---1/2"(15A)	I---4"(100A)	N---10kg/cm <sup>2</sup>	R---PF
C---3/4"(20A)	J---5"(125A)	O---150 Lbs	T---BSP
D---1"(25A)	K---6"(150A)	P---300 Lbs	U---NPT
E---1-1/2"(40A)	S---Others	W---PN 10	V---GAS
F---2"(50A)		X---PN 16	S---Others
G---2-1/2"(65A)		Y---PN 25	
		Z---PN 40	

※ If installing directly(without removing float), the dimension of connection must be bigger than the float diameter.

Float 1 Please see chart below

Float 2 Please see chart below

Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.
S5	φ75x73xD20.5	SUS304/316	0.7	F3	φ45x45xD20	PP/Gray	0.65	NB	φ48x46xD15.6	NBR/Black	0.5
SE	φ75x73xD20.5	SUS304/316	0.9	FC	φ45x45xD20	PP/Gray	0.9	ND	φ48x46xD15.6	NBR/Black	0.9
S4	φ52x52xD15	SUS316	0.75	P3	φ48x45xD18.5	PP/Black	0.6	NC	φ48x46xD20	NBR/Black	0.5
SD	φ52x52xD15	SUS316	0.9	PC	φ48x45xD18.5	PP/Black	0.9	NE	φ48x46xD20	NBR/Black	0.9
S3	φ45x55xD15	SUS316	0.7	SS	Special Specification						
SC	φ45x55xD15	SUS316	0.9	00	No Float						

※ Probe diameter must be smaller than float's hole diameter.

## Analog output(Bottom~Top)

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

## Digital output

0: None                                      B: RS485                                      C: RS485+Thermal sensor  
 H: HART 7.3                              T: HART 7.3 +Thermal sensor

## Probe material

S:SUS304: φ12.7                      C:SUS316: φ12.7                      E:SUS316L: φ12.7  
 L:SUS304: φ16                      D:SUS316: φ16                      F:SUS316L: φ16

※ For PP coating, stem S, C, E is recommended(after PP coating, stem is up to φ17.2), max. length is 2000mm.  
 ※ If the measuring range is over 2000mm, a stem φ16 is recommended to reduce risk of damage during installation and transportation.

## Stem length

05: 50~500mm                      10: 501~1000mm                      15: 1001~1500mm  
 20: 1501~2000mm                      25: 2001~2500mm                      30: 2501~3000mm  
 35: 3001~3500mm                      40: 3501~4000mm                      45: 4001~4500mm  
 50: 4501~5000mm                      55: 5001~5500mm

※ Probe length = Measuring range + (single float height+15mm)  
 Ex: 500mm (measurement) + (73mm (S5 float height) +15mm) = 588mm (probe length)

# HOW TO ORDER

**EG 3 2**    -   -

## Housing

Standard

- 1: Top conduit
- 2: Side conduit

High Temp.

- A: Top conduit
- B: Side conduit

Anti-corrosion

- 4: Top conduit with coated
- 5: Side conduit with coated

## Connection

3---1-1/4"(32A)	I---4"(100A)	M---5kg/cm <sup>2</sup>	W---PN 10	Q---PT
B---1/2"(15A)	J---5"(125A)	N---10kg/cm <sup>2</sup>	X---PN 16	R---PF
C---3/4"(20A)	K---6"(150A)	O---150 Lbs	Y---PN 25	T---BSP
D---1"(25A)	S---Others	P---300 Lbs	Z---PN 40	U---NPT
E---1-1/2"(40A)				V---GAS
F---2"(50A)				S---Others
G---2-1/2"(65A)		※ If installing directly(without removing float) ,the dimension of connection must be bigger than the float diameter.		
H---3"(80A)				

**Float 1** Please see chart below

**Float 2** Please see chart below

Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.
S5	φ75x73xD20.5	SUS304/316	0.7	F3	φ45x45xD20	PP/Gray	0.65	NB	φ48x46xD15.6	NBR//Black	0.5
SE	φ75x73xD20.5	SUS304/316	0.9	FC	φ45x45xD20	PP/Gray	0.9	ND	φ48x46xD15.6	NBR//Black	0.9
S4	φ52x52xD15	SUS316	0.75	P3	φ48x45xD18.5	PP//Black	0.6	NC	φ48x46xD20	NBR//Black	0.5
SD	φ52x52xD15	SUS316	0.9	PC	φ48x45xD18.5	PP//Black	0.9	NE	φ48x46xD20	NBR//Black	0.9
S3	φ45x55xD15	SUS316	0.7	SS	Special Specification						
SC	φ45x55xD15	SUS316	0.9	00	No Float						

※ Probe diameter must be smaller than float's hole diameter.

## Analog output(Bottom~Top)

- A: 4~20mA
- B: 20~4mA
- O: None

## Digital output

- O: None
- H: HART 7.3
- B: RS485
- T: HART 7.3+Thermal sensor
- C:RS485+Thermal sensor

## Probe material

- S: SUS304: φ12.7
- L: SUS304: φ16
- C: SUS316: φ12.7
- D: SUS316: φ16
- E: SUS316L: φ12.7
- F: SUS316L: φ16

※ If the measuring range is over 2000mm, a stem φ16 is recommended to reduce risk of damage during installation and transportation.

※ For PP coating,stem S.C.E is recommended (after PP coating,stem is up to φ17.2), max. length is 2000mm.

## Measuring range

- 05: 50~500mm
- 20: 1501~2000mm
- 35: 3001~3500mm
- 50: 4501~5000mm
- 10: 501~1000mm
- 25: 2001~2500mm
- 40: 3501~4000mm
- 55: 5001~5500mm
- 15: 1001~1500mm
- 30: 2501~3000mm
- 45: 4001~4500mm

※ Probe length = Measuring range + (single float height+15mm)

Ex: 500mm (measurement) + (73mm (S5 float height) + 15mm) = 588mm (Probe length)

# HOW TO ORDER

EG 3 4    - 0 0   -

## Housing

Standard

- 1: Top conduit
- 2: Side conduit

High Temp.

- A: Top conduit
- B: Side conduit

Anti-corrosion

- 4: Top conduit with coated
- 5: Side conduit with coated

## Connection

3---1-1/4"(32A)	I---4"(100A)	M---5kg/cm <sup>2</sup>	W---PN 10	Q---PT
B---1/2"(15A)	J---5"(125A)	N---10kg/cm <sup>2</sup>	X---PN 16	R---PF
C---3/4"(20A)	K---6"(150A)	O---150 Lbs	Y---PN 25	T---BSP
D---1"(25A)	S---Others	P---300 Lbs	Z---PN 40	U---NPT
E---1-1/2"(40A)				V---GAS
F---2"(50A)				S---Others
G---2-1/2"(65A)				
H---3"(80A)				

※ If installing directly(without removing float)  
the dimension of connection must be  
bigger than the float diameter.

## Float

Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.
S5	φ75x73xD20.5	SUS304/316	0.7	F3	φ45x45xD20	PP/Gray	0.65	NB	φ48x46xD15.6	NBR/Black	0.5
SE	φ75x73xD20.5	SUS304/316	0.9	FC	φ45x45xD20	PP/Gray	0.9	ND	φ48x46xD15.6	NBR/Black	0.9
S4	φ52x52xD15	SUS316	0.75	P3	φ48x45xD18.5	PP/Black	0.6	NC	φ48x46xD20	NBR/Black	0.5
SD	φ52x52xD15	SUS316	0.9	PC	φ48x45xD18.5	PP/Black	0.9	NE	φ48x46xD20	NBR/Black	0.9
S3	φ45x55xD15	SUS316	0.7	SS	Special Specification						
SC	φ45x55xD15	SUS316	0.9	00	No Float						

※ Probe diameter must be smaller than float's hole diameter.

## Analog output(Bottom~Top)

- A: 4~20mA
- B: 20~4mA
- C: 0~20mA
- D: 20~0mA
- E: 0~5V
- F: 5~0V
- G: 0~10V
- H: 10~0V
- I: ±5V
- J: ±10V
- O: None

## Digital output

- O: None
- B:RS485
- C:RS485+Thermal sensor

## Probe material

- S: SUS304: φ12.7
- C: SUS316: φ12.7
- E: SUS316L: φ12.7
- L: SUS304: φ16
- D: SUS316: φ16
- F: SUS316L: φ16

※ If the measuring range is over 2000mm, a stem φ16 is recommended to reduce risk of damage during installation and transportation.

※ For PP coating,stem S.C.E is recommended (after PP coating,stem is up to φ17.2), max. length is 2000mm.

## Measuring range

- 05: 50~500mm
- 10: 501~1000mm
- 15: 1001~1500mm
- 20: 1501~2000mm
- 25: 2001~2500mm
- 30: 2501~3000mm
- 35: 3001~3500mm
- 40: 3501~4000mm
- 45: 4001~4500mm
- 50: 4501~5000mm
- 55: 5001~5500mm

※ Probe length = Measuring range + (single float height+15mm)

Ex: 500mm (measurement) + (73mm (S5 float height) +15mm) = 588mm (Probe length)

# HOW TO ORDER

EG 3 6     -    -

## Housing

Standard  
2: Side conduit

High Temp.  
B: Side conduit

Anti-corrosion  
5: Side conduit with coated

## Connection

3--1-1/4"(32A)	H--3"(80A)	M--5kg/cm <sup>2</sup>	X --PN16	T--BSP
B--1/2"(15A)	I--4"(100A)	N--10kg/cm <sup>2</sup>	Y --PN25	U--NPT
C--3/4"(20A)	J--5"(125A)	O --150Lbs	Z--PN40	V--GAS
D--1"(25A)	K--6"(150A)	P --300Lbs	Q--PT	S--Others
E--1-1/2"(40A)	S--Others	W --PN10	R--PF	
F--2"(50A)				
G--2-1/2(65A)				

※ To be installed directly without removal of float.  
The connection must be greater than the outer diameter of the float.

**Float1** Please see chart below

**Float2** Please see chart below

Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.
S5	φ75x73xD20.5	SUS304/316	0.7	F3	φ45x45xD20	PP/Gray	0.65	NB	φ48x46xD15.6	NBR/Black	0.5
SE	φ75x73xD20.5	SUS304/316	0.9	FC	φ45x45xD20	PP/Gray	0.9	ND	φ48x46xD15.6	NBR/Black	0.9
S4	φ52x52xD15	SUS316	0.75	P3	φ48x45xD18.5	PP/Black	0.6	NC	φ48x46xD20	NBR/Black	0.5
SD	φ52x52xD15	SUS316	0.9	PC	φ48x45xD18.5	PP/Black	0.9	NE	φ48x46xD20	NBR/Black	0.9
S3	φ45x55xD15	SUS316	0.7	SS	Special Specification						
SC	φ45x55xD15	SUS316	0.9	00	No Float						

## Analog output(Bottom~Top)

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

## Digital output

0: None                      B: RS485                      C: RS485+Thermal sensor  
H: HART 7.3                      T: HART 7.3+Thermal sensor

## Probe material

S: SUS304: φ12.7                      C: SUS316: φ12.7                      E: SUS316L: φ12.7  
L: SUS304: φ16                      D: SUS316: φ16                      F: SUS316L: φ16

※ For PP coating, stem S, C, E is recommended(after PP coating, stem is up to φ17.2), max. length is 2000mm.  
※ If the measuring range is over 2000mm, a stem f16 is recommended to reduce risk of damage during installation and transportation.

## Stem length

05: 50~500mm                      10: 501~1000mm                      15: 1001~1500mm  
20: 1501~2000mm                      25: 2001~2500mm                      30: 2501~3000mm  
35: 3001~3500mm                      40: 3501~4000mm                      45: 4001~4500mm  
50: 4501~5000mm                      55: 5001~5500mm

※ Probe length = Measuring range + (single float height+15mm)  
Ex: 500mm (measurement) + (73mm (S5 float height) +15mm) = 588mm (probe length)



# HOW TO ORDER

**EG 37**     -

## Housing

Standard (-40~125°C)

- 1: Top conduit
- 2: Side conduit

Anti-corrosion (-40~85°C)

- 4: Top conduit with coated
- 5: Side conduit with coated

High Temp. (-40~200°C)

- A: Top conduit
- B: Side conduit

## Connection BQ: 1/2"PT (std.)

3---1-1/4"(32A)	H---3"(80A)	M---5kg/cm <sup>2</sup>	Q---PT
B---1/2"(15A)	I---4"(100A)	N---10kg/cm <sup>2</sup>	R---PF
C---3/4"(20A)	J---5"(125A)	O---150 Lbs	T---BSP
D---1"(25A)	K---6"(150A)	P---300 Lbs	U---NPT
E---1-1/2"(40A)	S---Others	W---PN 10	V---GAS
F---2"(50A)		X---PN 16	S---Others
G---2-1/2"(65A)		Y---PN 25	
		Z---PN 40	

※ If installing directly(without removing float),the dimension of connection must be bigger than the float diameter.

## Float 1

Please see chart below

## Float 2

Please see chart below

Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.	Code	Dimension	Material	S.G.
S5	φ75x73xD20.5	SUS304/316	0.7	F3	φ45x45xD20	PP/Gray	0.65	NB	φ48x46xD15.6	NBR/Black	0.5
SE	φ75x73xD20.5	SUS304/316	0.9	FC	φ45x45xD20	PP/Gray	0.9	ND	φ48x46xD15.6	NBR/Black	0.9
S4	φ52x52xD15	SUS316	0.75	P3	φ48x45xD18.5	PP/Black	0.6	NC	φ48x46xD20	NBR/Black	0.5
SD	φ52x52xD15	SUS316	0.9	PC	φ48x45xD18.5	PP/Black	0.9	NE	φ48x46xD20	NBR/Black	0.9
S3	φ45x55xD15	SUS316	0.7	SS	Special Specification						
SC	φ45x55xD15	SUS316	0.9	00	No Float						

※ Probe diameter must be smaller than float's hole diameter.

## Analog output(Bottom~Top)

A: 4~20mA      B: 20~4mA      0: None

## Digital output

0: None      B: RS485      C: RS485+Thermal sensor  
H: HART 7.3      T: HART 7.3+Thermal sensor

## Explosion

0: NEPSI(Ex ia IIB T2....T6)      2: ATEX(Ex ia IIB T3....T6)

## Probe material

S:SUS304: φ12.7      C:SUS316: φ12.7      E:SUS316L: φ12.7  
L:SUS304: φ16      D:SUS316: φ16      F:SUS316L: φ16

※ For PP coating, stem S, C, E is recommended(after PP coating, stem is up to φ17.2), max. length is 2000mm.

※ If the measuring range is over 2000mm, a stem φ16 is recommended to reduce risk of damage during installation and transportation.

## Stem length

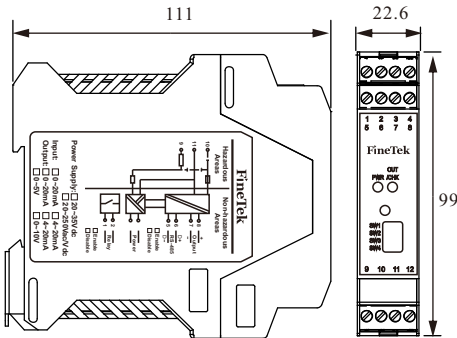
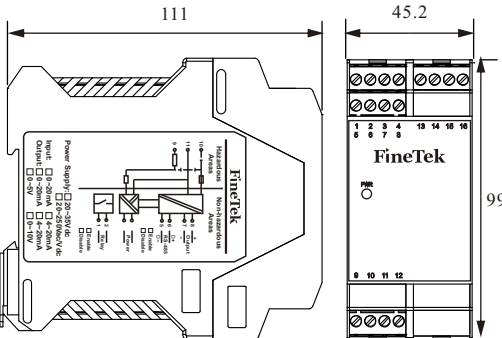
05: 50~500mm      10: 501~1000mm      15: 1001~1500mm  
20: 1501~2000mm      25: 2001~2500mm      30: 2501~3000mm  
35: 3001~3500mm      40: 3501~4000mm      45: 4001~4500mm  
50: 4501~5000mm      55: 5001~5500mm

※ Probe length = Measuring range + (single float height+15mm)

Ex: 500mm (measurement) + (73mm (S5 float height) +15mm) = 588mm (probe length)



# SPECIFICATION

<b>Dimensions (Unit: mm)</b>	 <p>Dimensions of TX100R transmitter: Overall width 111 mm, height 99 mm, and terminal block width 22.6 mm.</p>	 <p>Dimensions of TX101F transmitter: Overall width 111 mm, height 99 mm, and terminal block width 45.2 mm.</p>
<b>Model No.</b>	<b>TX100R</b>	<b>TX101F</b>
<b>Supply voltage</b>	20~35 Vdc	20~250 Vdc/Vac, 50/60 Hz
<b>Power supply protection</b>	Power supply reverse protection	Non-directionality input
<b>Current consumption</b>	< 100 mA @24 V, Load 20mA	< 200 mA @24 V, Load 20mA
<b>Hazardous Zone</b>		
<b>Input</b>	0~20/4~20	
<b>Open loop supply voltage</b>	< 28 Vdc	
<b>Distribution supply voltage</b>	> 15 Vdc (Load 20 mA)	
<b>Safe Zone</b>		
<b>Output</b>	Current: 0~20/4~20 mA    Load resistance: <550 ohm or Voltage: 0~5/0~10V    Load resistance: <20k ohm	
<b>Response time</b>	< 5 ms	
<b>Accuracy</b>	0.1 % F.S., 0.5% @<0.3V (20°C)	
<b>Temp. coefficient</b>	< 100 ppm/°C	
<b>Isolation</b>	2500Vac : Current leakage < 1mA : 1min. 1. Intrinsic end & Non-Intrinsic end 2. Non-Intrinsic end power supply & output	
<b>Ambient temp.</b>	-20~60 °C	
<b>Applicable zone</b>	Zone 0, Zone 1, Zone 2, IIA, IIB, IIC T4~T6	
<b>External equipments</b>	2-Wire transmitter 3-Wire transmitter Current output transmitter	

# HOW TO ORDER

TX10

**Housing & Supply voltage**

0R : 22.5mm (W) ; 20~35 Vdc  
1F : 45mm (W) ; 20~250 Vdc/Vac, 50/60Hz

**Input**

2: 4~20mA  
3: 0~20mA

**Output**

CR-0 : Current output 0~20mA.  
CR-1: Current output 4~20mA.  
CV-0: Voltage output 0~5V.  
CV-1: Voltage output 0~10V.  
CRG0 : Current output 0~20mA + Relay.  
CRG1: Current output 4~20mA + Relay.  
CVG0: Voltage output 0~5V + Relay.  
CVG1: Voltage output 0~10V + Relay.

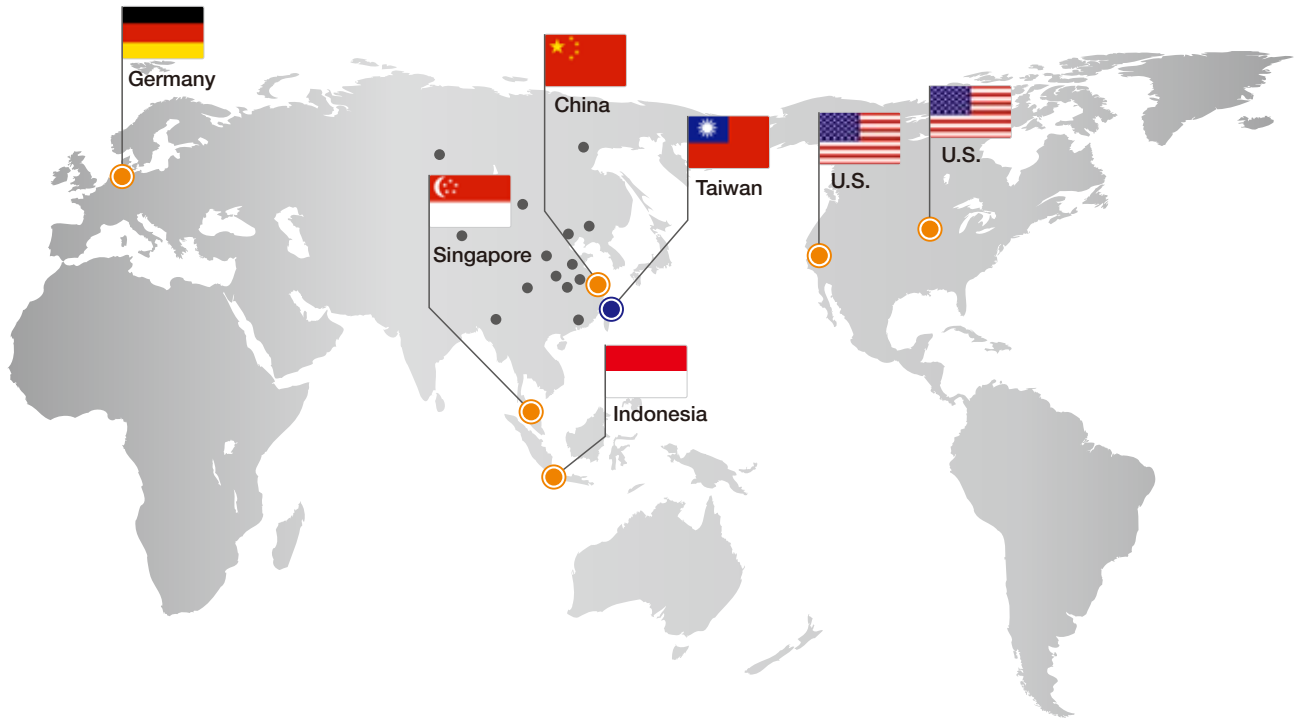
**Digital output**

0: None  
3: RS-485

**Explosion proof**

EX1:NEPSI

# Global Network



## ■ Asia

### ● Taiwan

**FINETEK CO., LTD. - Taipei Head Quarter**  
No.16, Tzuchiang St., Tucheng Industrial Park  
New Taipei City 236, Taiwan  
TEL: 886-2-2269-6789  
FAX: 886-2-2268-6682  
EMAIL: info@fine-tek.com

### FINETEK CO., LTD. - I-Lan Factory

TEL: 886-3-990-9669  
FAX: 886-3-9909659

### FINETEK CO., LTD. - Taichung Branch

TEL: 886-4-2337-0825  
FAX: 886-4-2337-0836

### FINETEK CO., LTD. - Kaohsiung Branch

TEL: 886-7-333-6968  
FAX: 886-7-536-8758

### ● China

#### FINE AUTOMATION CO., LTD. - Shanghai Factory

No.451 DuHui Rd, MinHang District, Shanghai,  
China 201109  
TEL: 86-21-6490-7260  
FAX: 86-21-6490-7276  
EMAIL: info.sh@fine-tek.com

### ● Singapore

#### FINETEK PTE LTD. - Singapore Office

No. 60 Kaki Bukit Place, #07-06 Eunos  
Techpark 2 Lobby B, Singapore 415979  
TEL: 65-6452-6340  
FAX: 65-6734-1878  
EMAIL: info.sg@fine-tek.com

### ● Indonesia

#### FINETEK CO., LTD. - Indonesia Office

Ruko Golden 8 Blok H No.40  
Gading Serpong, Tangerang, Indonesia  
TEL: 62 (021)-2923-1688  
FAX: 62 (021)-2923-1988  
EMAIL: info.id@fine-tek.com

## ■ North America

### ● California, U.S.

**APLUS FINETEK SENSOR INC. - US Office**  
355 S. Lemon Ave, Suite D, Walnut,  
CA 91789  
TEL: 1 909 598 2488  
FAX: 1 909 598 3188  
EMAIL: info@aplusfine.com

### ● Illinois, U.S.

**APLUS FINETEK SENSOR INC.**  
TEL: 1 815 632-3132  
FAX: 1 815 716 8464  
EMAIL: info@aplusfine.com

## ■ Europe

### ● Germany

**FineTeK GmbH - Germany Office**  
Frankfurter Str. 62, OG D-65428  
Ruesselsheim, Germany  
TEL: +49-(0)6142-17608-0  
FAX: +49-(0)6142-17608-20  
EMAIL: info@fine-tek.de



Distributor: