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## RF Admittance Level Transmitter

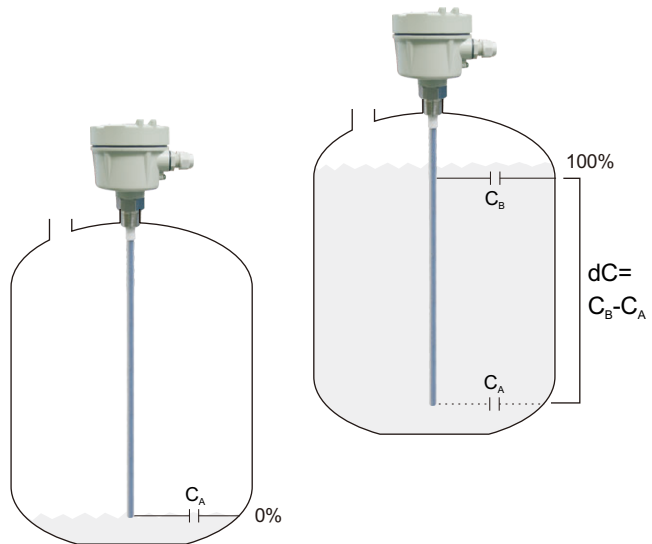


# PRODUCT INTRODUCTION

## PRINCIPLE

RF Admittance Level Transmitter utilizes the capacitance formed between the sensing probe and the reference probe or the metal vessel wall to calculate the level of the medium inside the vessel according to the capacitance theory that the capacitance and vessel are proportional increased.

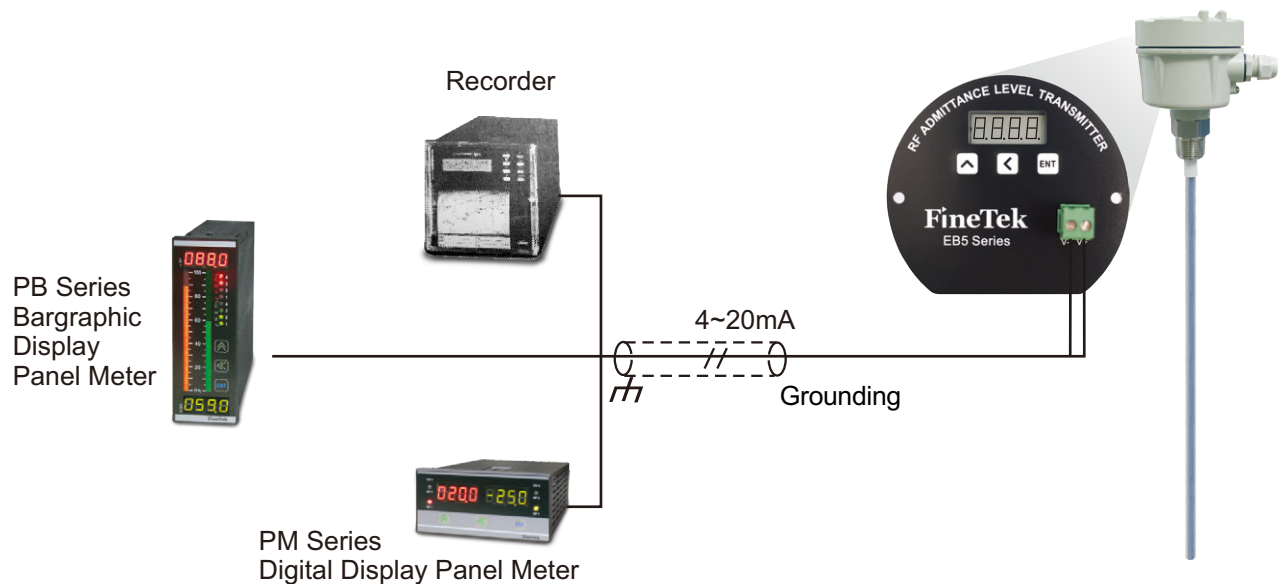
When the probe is surrounding by the air, little capacitance ( $C_A$ ) is measured by the equivalent capacitor, the capacitance increase gradually as computing media, the max. capacitance ( $C_B$ ) will be measured while the tank is full, the difference ( $dC$ ) between  $C_A$  and  $C_B$  is proportional to the level.  
(Recommend range  $dC = 25 \sim 2000 \text{ pF}$ )



## FEATURES

- 4~20mA 2 wire Loop power
- Low consumption of power (20mA Max)
- High accuracy of linearity ( $< \pm 1\% \text{ FS}$  or  $\pm 0.5\text{pF}$ )
- Temperature compensation, low temperature effect ( $\pm 0.2\% \text{ FS}/^\circ\text{C}$  or  $0.1\text{pF}/^\circ\text{C}$ )
- Easy calibration (Any 2 points for calibration)
- No blind distance, ideal for different tanks
- Suitable for high temperature, high pressure and corrosive environment
- LCD local display

## APPLICATION EXAMPLE



## APPLICATION EXAMPLE

|                                                                | EB5200 | EB5201 | EB52A0 | EB52A1 | EB5300 | EB5301 | EB53A0 | EB53A1 | EB5400 | EB54A0 |
|----------------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Conductive Tank                                                | ★      | ★      | ★      | ★      | ★      | ★      | ★      | ★      | ✗      | ✗      |
| Non-Conductive Tank                                            | ▲      | ▲      | ▲      | ▲      | ✗      | ✗      | ✗      | ✗      | ★      | ★      |
| Height of Vessel > 4m                                          | ✗      | ✗      | ✗      | ✗      | ★      | ★      | ★      | ★      | ✗      | ✗      |
| Height of Vessel < 4m                                          | ★      | ★      | ★      | ★      | —      | —      | —      | —      | ★      | ★      |
| Operation Temperature > 80°C<br>(Not more than 200°C)          | ✗      | ★      | ✗      | ★      | ✗      | ★      | ✗      | ★      | ✗      | ✗      |
| Dielectric Constant of Media>4                                 | ✗      | ✗      | ★      | ★      | ✗      | ✗      | ★      | ★      | ✗      | ★      |
| Dielectric Constant of Media<4                                 | ★      | ★      | —      | —      | ★      | ★      | —      | —      | ★      | —      |
| Corrosive Media                                                | ✗      | ✗      | ★      | ★      | ✗      | ✗      | ★      | ★      | ✗      | ★      |
| Agitator inside the vessel                                     | ▲      | ▲      | ▲      | ▲      | ✗      | ✗      | ✗      | ✗      | —      | —      |
| ★ Good    ▲ Pipe shield is suggested    ✗ Unsuitable    — Fair |        |        |        |        |        |        |        |        |        |        |

|                                                      | EB5200 | EB5201 | EB52A0 | EB52A1 | EB5300 | EB5301 | EB53A0 | EB53A1 | EB5400 | EB54A0 |
|------------------------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Aqueous Solution                                     | ✗      | ✗      | ★      | ★      | ✗      | ✗      | ★      | ★      | ✗      | ★      |
| Oil Solution                                         | ▲      | ▲      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      |
| Acid or Alkali Solution                              | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ✗      | ★      |
| Feed & Grain                                         | ★      | ★      | ✗      | ✗      | ★      | ★      | ✗      | ✗      | ✗      | ✗      |
| Mining & Cement                                      | ★      | ★      | ✗      | ✗      | ★      | ★      | ✗      | ✗      | ✗      | ✗      |
| ★ Good    ▲ Pipe shield is suggested    ✗ Unsuitable |        |        |        |        |        |        |        |        |        |        |

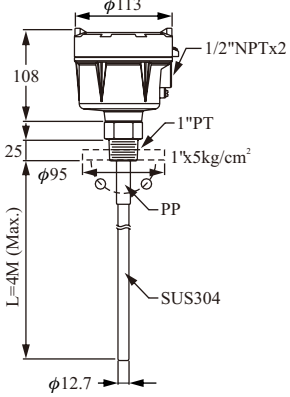
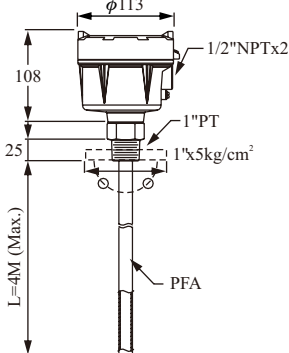
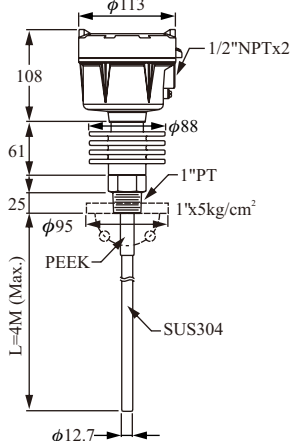
## DIELECTRIC CONSTANTS CHART

| Material   | Dielectric Constant | Material  | Dielectric Constant | Material | Dielectric Constant | Material       | Dielectric Constant |
|------------|---------------------|-----------|---------------------|----------|---------------------|----------------|---------------------|
| Air        | 1                   | Heavy Oil | 2.6~3.0             | Cement   | 4~6                 | Acetone        | 20~30               |
| Gasoline   | 1.9                 | Grain     | 2.5~4.5             | Butanol  | 11                  | Carbide Powder | 25~30               |
| Diesel     | 2.1                 | Corn      | 2.3~2.6             | Ethanol  | 16~31               | Sulfuric Acid  | 84                  |
| Edible Oil | 2~4                 | Rice      | 3~8                 | Ammonia  | 21                  | Water          | 81                  |

## WIRING AND CAUTION

- After installation of the Admittance Level Transmitter on the top of tank, please make sure the cover of the transmitter is contacted with tank perfectly. Please avoid the grounding of panel meter to touch the tank wall.
- While the panel meter is not supplied with a power supply, please prepare a 24V power supply for use.
- The max cable length is depends on the max resistance .Maximum resistance is not to exceed  $(V_s-22) \times 50\Omega$  to ensure the accuracy of measurement.
- Make sure to separate the signal cable with other big power cables (such as pump, conveyor and solenoid valve)while wiring. Before turning on power, make sure all wirings are correct.
- Connect isolation cable with GND of power.
- If there is heater or other electric device in the application, contacting the cover of the transmitter and tank can decrease EMI.

## STANDARD TYPE

|                         |                                                                                             |                                                                                      |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Dimensions<br>(unit:mm) |            |    |          |
|                         | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material | Suitable for middle/big tank<br>Media: Dielectric Constant >4<br>Conductive Material | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material |
| Model No.               | EB5200 Rod Probe                                                                            | EB52A0 Rod Coating Type                                                              | EB5201 Hi-Temp Rod Probe                                                                    |
| Probe material          | SUS304                                                                                      | SUS304 with PFA Coating                                                              | SUS304                                                                                      |
| Ambient temperature     | -40~85°C                                                                                    | -40~85°C                                                                             | -40~85°C                                                                                    |
|                         | LCD monitor: -20~85°C                                                                       | LCD monitor: -20~85°C                                                                | LCD monitor: -20~85°C                                                                       |
| Operating temperature   | -40~85°C                                                                                    | -40~85°C                                                                             | -40~200°C                                                                                   |
| Operation voltage       | 18~30Vdc                                                                                    | 18~30Vdc                                                                             | 18~30Vdc                                                                                    |
| Analog output           | 4~20mA(two wire)                                                                            | 4~20mA(two wire)                                                                     | 4~20mA(two wire)                                                                            |
| Digital output          | HART(option)                                                                                | HART(option)                                                                         | HART(option)                                                                                |
| Measuring range         | 20~2000pF                                                                                   | 20~2000pF                                                                            | 20~2000pF                                                                                   |
| Accuracy                | ± 1% FS or ± 0.5pF                                                                          | ± 1% FS or ± 0.5pF                                                                   | ± 1% FS or ± 0.5pF                                                                          |
| Effect temp.            | < ± 0.2% FS/°C or 0.1pF/°C                                                                  | < ± 0.2% FS/°C or 0.1pF/°C                                                           | < ± 0.2% FS/°C or 0.1pF/°C                                                                  |
| Protection              | IP65                                                                                        | IP65                                                                                 | IP65                                                                                        |
| Connection              | 1"PT or 1"x5kg/cm² flange                                                                   | 1"PT or 1"x5kg/cm² flange                                                            | 1"PT or 1"x5kg/cm² flange                                                                   |
| Weight                  | Approx. 2.3kg(1m)                                                                           | Approx. 2.3kg(1m)                                                                    | Approx. 2.8kg(1m)                                                                           |
| Operating pressure      | 40kg/cm²                                                                                    | 32kg/cm²                                                                             | 40kg/cm²                                                                                    |

Note :Hi-Temp Wire Coating Type is available, the model is EB52A1 with PFA Coating

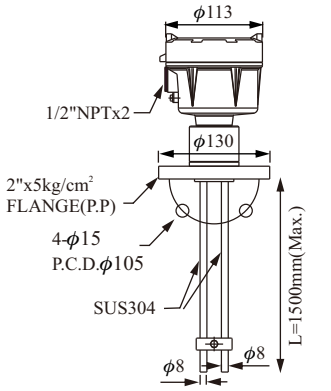
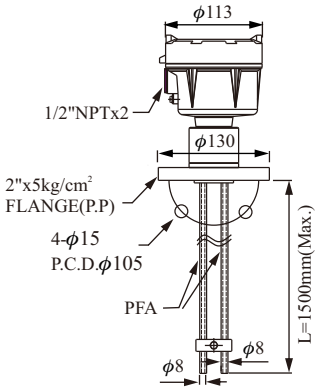
## STANDARD TYPE

|                         |                                                                                             |                                                                                      |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Dimensions<br>(unit:mm) |                                                                                             |                                                                                      |                                                                                             |
|                         | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material | Suitable for middle/big tank<br>Media: Dielectric Constant >4<br>Conductive Material | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material |
| Model No.               | EB5300 Cable Type                                                                           | EB53A0 Cable Coating Type                                                            | EB5301 Hi-Temp Cable Type                                                                   |
| Probe material          | SUS304                                                                                      | SUS304 with PFA Coating                                                              | SUS304                                                                                      |
| Weight material         | SUS304                                                                                      | PTFE                                                                                 | SUS304                                                                                      |
| Ambient temperature     | -40~85°C                                                                                    | -40~85°C                                                                             | -40~85°C                                                                                    |
|                         | LCD monitor: -20~85°C                                                                       | LCD monitor: -20~85°C                                                                | LCD monitor: -20~85°C                                                                       |
| Operating temperature   | -40~85°C                                                                                    | -40~85°C                                                                             | -40~200°C                                                                                   |
| Tensile strength        | 2000Kgf                                                                                     | 2000Kgf                                                                              | 2000Kgf                                                                                     |
| Operation voltage       | 18~30Vdc                                                                                    | 18~30Vdc                                                                             | 18~30Vdc                                                                                    |
| Analog output           | 4 ~20mA(two wire)                                                                           | 4 ~20mA(two wire)                                                                    | 4 ~20mA(two wire)                                                                           |
| Digital output          | HART(option)                                                                                | HART(option)                                                                         | HART(option)                                                                                |
| Measuring range         | 20~2000pF                                                                                   | 20~2000pF                                                                            | 20~2000pF                                                                                   |
| Accuracy                | ± 1% FS or ± 0.5pF                                                                          | ± 1% FS or ± 0.5pF                                                                   | ± 1% FS or ± 0.5pF                                                                          |
| Effect temp.            | < ± 0.2% FS/°C or 0.1pF/°C                                                                  | < ± 0.2% FS/°C or 0.1pF/°C                                                           | < ± 0.2% FS/°C or 0.1pF/°C                                                                  |
| Protection              | IP65                                                                                        | IP65                                                                                 | IP65                                                                                        |
| Connection              | 1"PT or 1"x5kg/cm² flange                                                                   | 1"PT or 1"x5kg/cm² flange                                                            | 1"PT or 1"x5kg/cm² flange                                                                   |
| Weight                  | Approx. 2.3kg(1m)                                                                           | Approx. 2.3kg(1m)                                                                    | Approx. 2.8kg(1m)                                                                           |
| Operating pressure      | 40kg/cm²                                                                                    | 32kg/cm²                                                                             | 40kg/cm²                                                                                    |

Note :Hi-Temp Wire Coating Type is available, the model is EB53A1 with PFA Coating

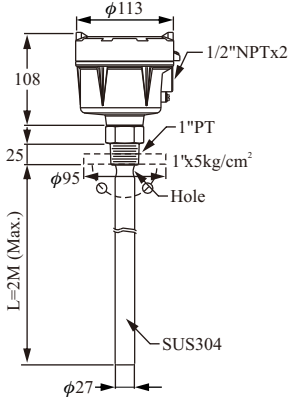


## STANDARD TYPE

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dimensions<br/>(unit:mm)</b> |  <p>Diagram of the EB5400 Two Rode Probe. It shows a vertical probe with a top flange labeled '2"x5kg/cm² FLANGE(P.P)' and a diameter of <math>\phi 113</math>. Below the flange is a connection point labeled '1/2"NPTx2' and a diameter of <math>\phi 130</math>. The main body has four holes labeled '4-<math>\phi 15</math> P.C.D.<math>\phi 105</math>'. The material is labeled 'SUS304'. The bottom has two small holes labeled '<math>\phi 8</math>'. The total length is indicated as 'L=1500mm(Max.)'.</p> <p>Suitable for middle/ small non-conductive tank<br/>Media : non-conductive material<br/>low moisture material</p> |  <p>Diagram of the EB54A0 Two Coating Rode Probe. It shows a vertical probe with a top flange labeled '2"x5kg/cm² FLANGE(P.P)' and a diameter of <math>\phi 113</math>. Below the flange is a connection point labeled '1/2"NPTx2' and a diameter of <math>\phi 130</math>. The main body has four holes labeled '4-<math>\phi 15</math> P.C.D.<math>\phi 105</math>'. The material is labeled 'PFA'. The bottom has two small holes labeled '<math>\phi 8</math>'. The total length is indicated as 'L=1500mm(Max.)'.</p> <p>Suitable for middle/ small non-conductive tank<br/>Media: Conductive Material</p> |
| <b>Model No.</b>                | <b>EB5400<br/>Two Rode Probe</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>EB54A0<br/>Two Coating Rode Probe</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Probe material</b>           | SUS304                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | SUS304 with PP / PFA Coating                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Ambient temperature</b>      | -40~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|                                 | LCD monitor: -20~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | LCD monitor: -20~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Operating temperature</b>    | -40~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | -40~85°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Operation voltage</b>        | 18~30Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 18~30Vdc                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Analog Output</b>            | 4 ~20mA(two wire)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 4 ~20mA(two wire)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Digital output</b>           | HART(option)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | HART(option)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Measuring range</b>          | 20~2000pF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 20~2000pF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Accuracy</b>                 | $\pm 1\%$ FS or $\pm 0.5\text{pF}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | $\pm 1\%$ FS or $\pm 0.5\text{pF}$                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Effect temp.</b>             | $< \pm 0.2\%$ FS/°C or 0.1pF/°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | $< \pm 0.2\%$ FS/°C or 0.1pF/°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Protection</b>               | IP65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | IP65                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Connection</b>               | 2"x5kg/cm² flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 2"x5kg/cm² flange                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Weight</b>                   | Approx. 2.3kg(1m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Approx. 2.3kg(1m)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Operating pressure</b>       | 5kg/cm²                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 5kg/cm²                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

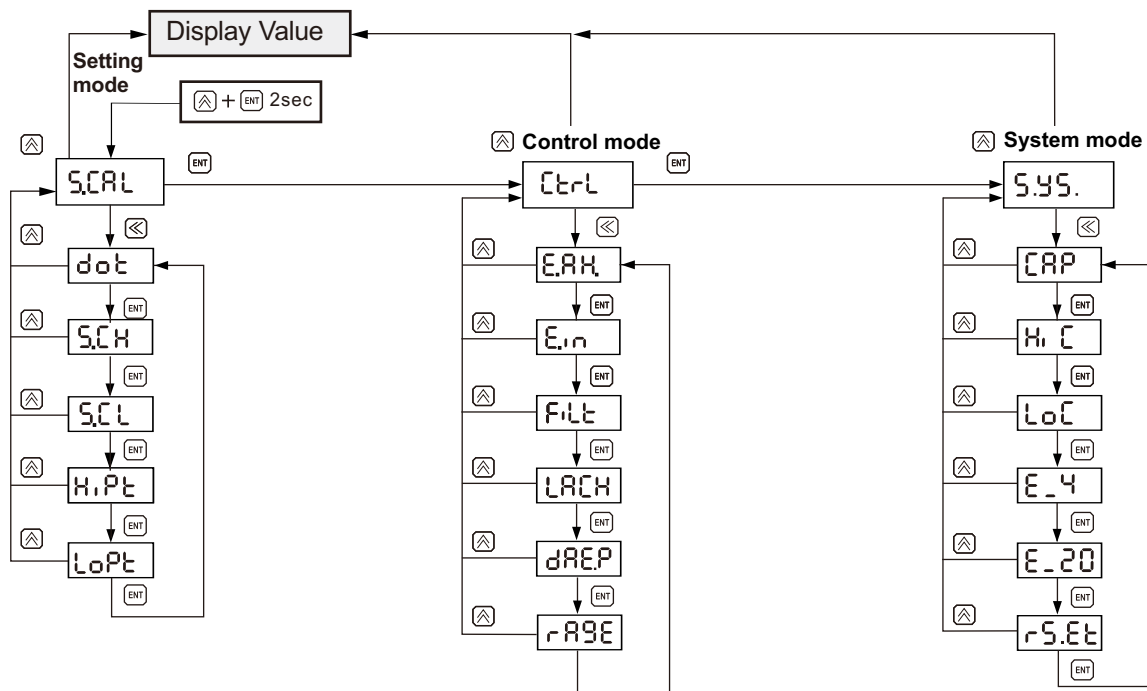
Note:Min. Connection is 2" flange

## STANDARD TYPE

|                         |                                                                                             |                                                                                      |                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| Dimensions<br>(unit:mm) |            |                                                                                      |                                                                                             |
|                         | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material | Suitable for middle/big tank<br>Media: Dielectric Constant >4<br>Conductive Material | Suitable for middle/ small tank<br>Media : non-conductive material<br>low moisture material |
| Model No.               | EB5500 Anti-wave tube Type                                                                  | EB55A0 Anti-wave tube Type                                                           | EB5501 Hi-Temp Anti-wave tube Type                                                          |
| Probe material          | SUS304                                                                                      | SUS304 with PFA Coating                                                              | SUS304                                                                                      |
| Ambient temperature     | -40~85°C<br>LCD monitor: -20~85°C                                                           | -40~85°C<br>LCD monitor: -20~85°C                                                    | -40~85°C<br>LCD monitor: -20~85°C                                                           |
| Operating temperature   | -40~85°C                                                                                    | -40~85°C                                                                             | -40~200°C                                                                                   |
| Operation voltage       | 18~30Vdc                                                                                    | 18~30Vdc                                                                             | 18~30Vdc                                                                                    |
| Analog output           | 4~20mA(two wire)                                                                            | 4~20mA(two wire)                                                                     | 4~20mA(two wire)                                                                            |
| Digital output          | HART(option)                                                                                | HART(option)                                                                         | HART(option)                                                                                |
| Measuring range         | 20~2000pF                                                                                   | 20~2000pF                                                                            | 20~2000pF                                                                                   |
| Accuracy                | ± 1% FS or ± 0.5pF                                                                          | ± 1% FS or ± 0.5pF                                                                   | ± 1% FS or ± 0.5pF                                                                          |
| Effect temp.            | < ± 0.2% FS/°C or 0.1pF/°C                                                                  | < ± 0.2% FS/°C or 0.1pF/°C                                                           | < ± 0.2% FS/°C or 0.1pF/°C                                                                  |
| Protection              | IP65                                                                                        | IP65                                                                                 | IP65                                                                                        |
| Connection              | 1"PT or 1"x5kg/cm² flange                                                                   | 1"PT or 1"x5kg/cm² flange                                                            | 1"PT or 1"x5kg/cm² flange                                                                   |
| Weight                  | Approx. 2.3kg(1m)                                                                           | Approx. 2.3kg(1m)                                                                    | Approx. 2.8kg(1m)                                                                           |
| Operating pressure      | 40kg/cm²                                                                                    | 32kg/cm²                                                                             | 40kg/cm²                                                                                    |

Note :Hi-Temp Wire Coating Type is available, the model is EB55A1 with PFA Coating

# CALIBRATION & SETUP



A: A B: b C: C D: d E: E F: F G: G H: H I: I J: J  
 K: k L: L M: E N: n O: o P: P Q: Q R: r S: S T: t  
 U: U V: U W: 3 X: H Y: y Z: 2

| Main Menu | Sub-Menu | Range          | Default | Description                                                                                                                                        |
|-----------|----------|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| S.CAL     | dot      | 0~3            | 1       | Decimal point setting                                                                                                                              |
|           | S.CH     | -1999~9999     | 100.0   | 20mA corresponding display value                                                                                                                   |
|           | S.CL     | -1999~9999     | 0       | 4mA corresponding display value                                                                                                                    |
|           | H.Pt     | -1999~9999     | 100.0   | Value for high point (Hipt).                                                                                                                       |
|           | LoPt     | -1999~9999     | 0       | Value for low point (Lopt).                                                                                                                        |
| Ctrl      | E.AH     | SAVE,RSET BACK | SAVE    | Memory for max & mini value during operation.<br>SAVE: Save value into Eeprom<br>REST: Clean present value and memory<br>BACK: Go back to sub-menu |
|           | E.in     | SAVE,RSET BACK | SAVE    |                                                                                                                                                    |
|           | FilT     | Lo,MID,HI      | LO      | Software Filter                                                                                                                                    |
|           | LACH     | ON, OFF        | OFF     | Output latch                                                                                                                                       |
|           | dREF     | 1~60sec        | 1       | Reflash time                                                                                                                                       |
|           | rAGE     | HI,Lo          | HI      | Measuring range                                                                                                                                    |
| S.YS.     | CAP      | 0~9999         |         | Capacity Value                                                                                                                                     |
|           | HiC      | 0~9999         | 2200    | High point Capacity Value                                                                                                                          |
|           | LoC      | 0~9999         | 200     | Low point Capacity Value                                                                                                                           |
|           | E_4      | -1999~9999     | 0       | 4mA fine turn                                                                                                                                      |
|           | E_20     | -1999~9999     | 0       | 20mA fine turn                                                                                                                                     |
|           | rS.Et    |                |         | Load default                                                                                                                                       |

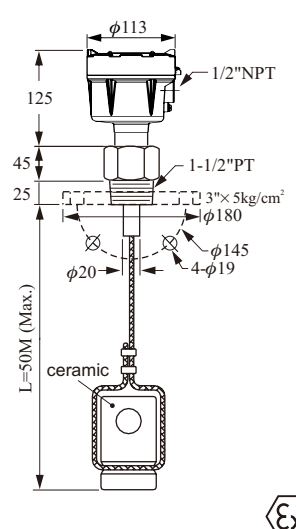
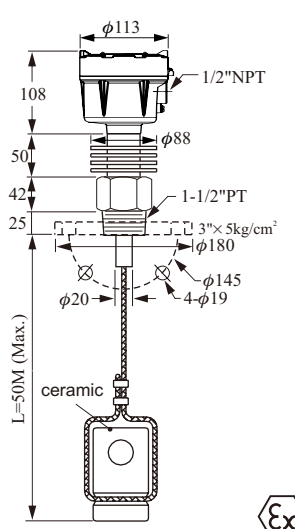
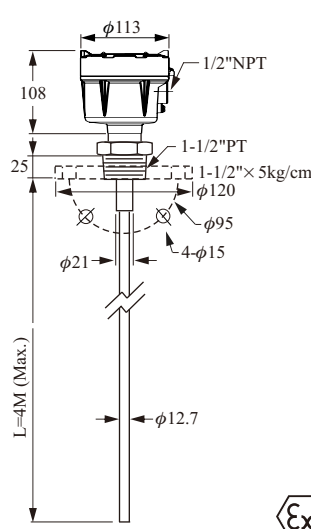
Note 1: The setting of Hipt, LoPt please refer to calibration procedures on the manual

Note 2: The output will latch when display is 110% or -10%

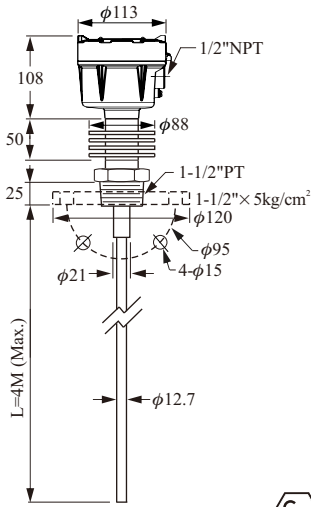
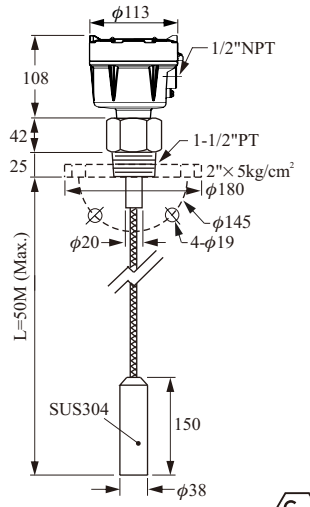
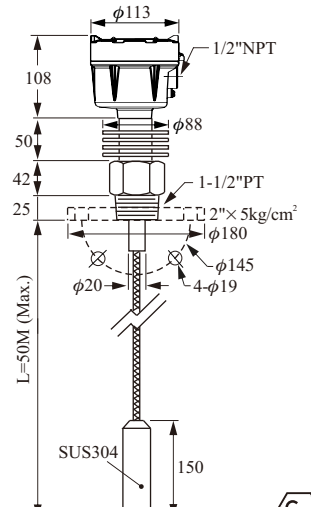
Note 3: Re-Calibration is necessary if measuring range is changed



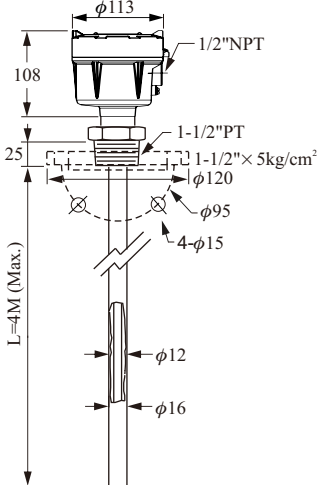
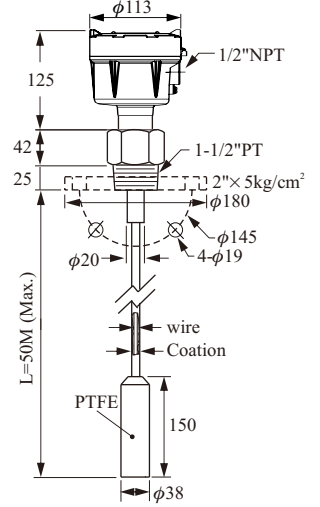
## EXPLOSION PROOF TYPE

|                              |                                                                                                                                             |                                                                                                                                              |                                                                                                                                                       |                         |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Dimensions<br>(unit:mm)      |  <p>Suitable for non-conductive material and big tank.</p> |  <p>Suitable for non-conductive material and big tank.</p> |  <p>Suitable for non-conductive material and middle-size tank.</p> |                         |
|                              | <b>Model No.</b>                                                                                                                            | <b>EB1710 Wire Probe</b>                                                                                                                     | <b>EB1711 Hi-Temp Wire Probe</b>                                                                                                                      | <b>EB1720 Rod Probe</b> |
|                              | <b>Probe material</b>                                                                                                                       | SUS304                                                                                                                                       | SUS304                                                                                                                                                | SUS304/316              |
|                              | <b>Weight material</b>                                                                                                                      | CERAMIC                                                                                                                                      | CERAMIC                                                                                                                                               | ————                    |
| <b>Ambient temperature</b>   | -20~70℃                                                                                                                                     | -20~70℃                                                                                                                                      | -20~70℃                                                                                                                                               |                         |
| <b>Operating temperature</b> | -40~80℃                                                                                                                                     | -40~200℃                                                                                                                                     | -40~80℃                                                                                                                                               |                         |
| <b>Tensile strength</b>      | 2000Kgf                                                                                                                                     | 2000Kgf                                                                                                                                      | ————                                                                                                                                                  |                         |
| <b>Operation voltage</b>     | 12~36Vdc                                                                                                                                    | 12~36Vdc                                                                                                                                     | 12~36Vdc                                                                                                                                              |                         |
| <b>Output current</b>        | 4 ~20mA(two wire)                                                                                                                           | 4 ~20mA(two wire)                                                                                                                            | 4 ~20mA(two wire)                                                                                                                                     |                         |
| <b>Measuring range</b>       | 0~5000pF                                                                                                                                    | 0~5000pF                                                                                                                                     | 0~5000pF                                                                                                                                              |                         |
| <b>Accuracy</b>              | ± 1%FS (25℃)                                                                                                                                | ± 1%FS (25℃)                                                                                                                                 | ± 1%FS (25℃)                                                                                                                                          |                         |
| <b>Protection</b>            | IP65                                                                                                                                        | IP65                                                                                                                                         | IP65                                                                                                                                                  |                         |
| <b>Connection</b>            | 3"x5kg/cm² flange or 1-1/2"PT screw                                                                                                         | 3"x5kg/cm² flange or 1-1/2"PT screw                                                                                                          | 1-1/2"x5kg/cm² flange or 1-1/2"PT screw                                                                                                               |                         |
| <b>Weight</b>                | Approx. 3.7kg(1M)                                                                                                                           | Approx. 4.2kg(1M)                                                                                                                            | Approx. 2.3kg(1M)                                                                                                                                     |                         |
| <b>Operating pressure</b>    | 40kg/cm²                                                                                                                                    | 40kg/cm²                                                                                                                                     | 40kg/cm²                                                                                                                                              |                         |

# EXPLOSION PROOF TYPE

|                                |                                                                                                                                                     |                                                                                                                                              |                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dimensions</b><br>(unit:mm) |  <p>Suitable for non-conductive material and middle-size tank.</p> |  <p>Suitable for non-conductive material and big tank.</p> |  <p>Suitable for non-conductive material and big tank.</p> |
| <b>Model No.</b>               | <b>EB1721 Hi-Temp Rod Probe</b>                                                                                                                     | <b>EB1730 Wire Probe</b>                                                                                                                     | <b>EB1731 Hi-Temp Wire Probe</b>                                                                                                              |
| <b>Probe material</b>          | SUS304/316                                                                                                                                          | SUS304                                                                                                                                       | SUS304                                                                                                                                        |
| <b>Weight material</b>         | ————                                                                                                                                                | SUS304                                                                                                                                       | SUS304                                                                                                                                        |
| <b>Ambient temperature</b>     | -20~70°C                                                                                                                                            | -20~70°C                                                                                                                                     | -20~70°C                                                                                                                                      |
| <b>Operating temperature</b>   | -40~200°C                                                                                                                                           | -40~80°C                                                                                                                                     | -40~200°C                                                                                                                                     |
| <b>Tensile strength</b>        | ————                                                                                                                                                | 2000Kgf                                                                                                                                      | 2000Kgf                                                                                                                                       |
| <b>Operation voltage</b>       | 12~36Vdc                                                                                                                                            | 12~36Vdc                                                                                                                                     | 12~36Vdc                                                                                                                                      |
| <b>Output current</b>          | 4 ~20mA(two wire)                                                                                                                                   | 4 ~20mA(two wire)                                                                                                                            | 4 ~20mA(two wire)                                                                                                                             |
| <b>Measuring range</b>         | 0~5000pF                                                                                                                                            | 0~5000pF                                                                                                                                     | 0~5000pF                                                                                                                                      |
| <b>Accuracy</b>                | ± 1%FS (25°C)                                                                                                                                       | ± 1%FS (25°C)                                                                                                                                | ± 1%FS (25°C)                                                                                                                                 |
| <b>Protection</b>              | IP65                                                                                                                                                | IP65                                                                                                                                         | IP65                                                                                                                                          |
| <b>Connection</b>              | 1-1/2"x5kg/cm² flange<br>or 1-1/2"PT screw                                                                                                          | 2"x5kg/cm² flange<br>or 1-1/2"PT screw                                                                                                       | 2"x5kg/cm² flange<br>or 1-1/2"PT screw                                                                                                        |
| <b>Weight</b>                  | Approx. 2.8kg(1M)                                                                                                                                   | Approx. 2.3kg(1M)                                                                                                                            | Approx. 2.8kg(1M)                                                                                                                             |
| <b>Operating pressure</b>      | 40kg/cm²                                                                                                                                            | 40kg/cm²                                                                                                                                     | 40kg/cm²                                                                                                                                      |

## EXPLOSION PROOF TYPE

|                                       |                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                               |
|---------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dimensions</b><br><b>(unit:mm)</b> |  <p>EB1740 --- PVDF Coating <br/> EB1742 --- PP Coating<br/> EB1743 --- FEP Coating<br/> Suitable for conductive/ corrosive material and middle-size tank.</p> |  <p>EB1752 --- PP Coating <br/> EB1753 --- FEP Coating<br/> Suitable for conductive/ corrosive material and big tank.(weight can not be fixed at the bottom of tank)</p> |
| <b>Model No.</b>                      | <b>EB1740/42/43 Anti-Corrosion</b>                                                                                                                                                                                                                                                                                               | <b>EB1752/53 Anti-Corrosion Wire Probe</b>                                                                                                                                                                                                                                                                                                    |
| <b>Probe material</b>                 | SUS304+Coating                                                                                                                                                                                                                                                                                                                   | SUS304+Coating                                                                                                                                                                                                                                                                                                                                |
| <b>Weight material</b>                | —                                                                                                                                                                                                                                                                                                                                | SUS304+PTFE                                                                                                                                                                                                                                                                                                                                   |
| <b>Ambient temperature</b>            | -20~70°C                                                                                                                                                                                                                                                                                                                         | -20~70°C                                                                                                                                                                                                                                                                                                                                      |
| <b>Operating temperature</b>          | -40~80°C                                                                                                                                                                                                                                                                                                                         | -40~80°C                                                                                                                                                                                                                                                                                                                                      |
| <b>Tensile strength</b>               | —                                                                                                                                                                                                                                                                                                                                | 2000Kgf                                                                                                                                                                                                                                                                                                                                       |
| <b>Operation voltage</b>              | 12~36Vdc                                                                                                                                                                                                                                                                                                                         | 12~36Vdc                                                                                                                                                                                                                                                                                                                                      |
| <b>Output current</b>                 | 4 ~20mA(two wire)                                                                                                                                                                                                                                                                                                                | 4 ~20mA(two wire)                                                                                                                                                                                                                                                                                                                             |
| <b>Measuring range</b>                | 0~5000pF                                                                                                                                                                                                                                                                                                                         | 0~5000pF                                                                                                                                                                                                                                                                                                                                      |
| <b>Accuracy</b>                       | ± 1%FS (25°C)                                                                                                                                                                                                                                                                                                                    | ± 1%FS (25°C)                                                                                                                                                                                                                                                                                                                                 |
| <b>Protection</b>                     | IP65                                                                                                                                                                                                                                                                                                                             | IP65                                                                                                                                                                                                                                                                                                                                          |
| <b>Connection</b>                     | 1-1/2"x5kg/cm² flange<br>or 1-1/2"PT screw                                                                                                                                                                                                                                                                                       | 2"x5kg/cm² flange<br>or 1-1/2"PT screw                                                                                                                                                                                                                                                                                                        |
| <b>Weight</b>                         | Approx. 2.3kg(1M)                                                                                                                                                                                                                                                                                                                | Approx. 2.3kg(1M)                                                                                                                                                                                                                                                                                                                             |
| <b>Operating pressure</b>             | 40kg/cm²                                                                                                                                                                                                                                                                                                                         | 40kg/cm²                                                                                                                                                                                                                                                                                                                                      |

## ORDER INFORMATION

| Model Number | Order Code  |
|--------------|-------------|
| EB5200       | EBX10000-A1 |
| EB52A0       | EBX10000-B1 |
| EB52A1       | EBX10200-B1 |
| EB5201       | EBX10200-A1 |
| EB5300       | EBX10000-A2 |
| EB53A0       | EBX10000-B2 |
| EB53A1       | EBX10200-B2 |
| EB5301       | EBX10200-A2 |
| EB5400       | EBX10000-A3 |
| EB54A0       | EBX10000-B3 |
| EB5500       | EBX10000-A4 |
| EB55A0       | EBX10000-B4 |
| EB5501       | EBX10200-A4 |

| Model Number | Order Code         |
|--------------|--------------------|
| EB1710       | EBX1001C-A8        |
| EB1711       | EBX1021C-A8        |
| EB1720       | EBX1001C-A1        |
| EB1721       | EBX1021C-A1        |
| EB1730       | EBX1001C-A2        |
| EB1731       | EBX1021C-A2        |
| EB1740       | EBX1001C-B1□□□□□24 |
| EB1742       | EBX1001C-B1□□□□□18 |
| EB1743       | EBX1001C-B1□□□□□14 |
| EB1752       | EBX1001C-B2□□□□□18 |
| EB1753       | EBX1001C-B2□□□□□03 |

# ORDER INFORMATION

EBX1 05060708-091011121314151617181920212223

## ⑤⑥ Type

- 00: Standard Type
- 02: Hi-Temp. Type
- 03: Sanitary Type
- 32: Sanitary+Hi-Temp. Type

## ⑦⑧ Certificate

- 00: None
- 1C: ATEX-Sealed Explosion-proof
- 1D: ATEX-Dust Explosion-proof
- 7C: NEPSI-Sealed Explosion-proof
- 7D: NEPSI-Dust Explosion-proof

## ⑨⑩ Probe Type

- A1: Rod Probe Type
- A2: Cable Type
- A3: Two Rod Probe Type
- A4: Anti-wave tube Type
- A5: Anti-wave tube Coating Type
- A8: Insulator Type
- B1: Rod Coating Type
- B2: Cable Coating Type
- B3: Two Coating Rod Probe
- B4: Anti-wave tube Two Coating Type

## Connection

⑪⑫

Flange item  
AK: JIS-FF  
AN: ANSI-RF  
AS: DIN-FF

Thread item

AA: JIS  
AB: ISO  
AC: ANSI  
AD: DIN

⑬⑭

A8: 1"  
B1: 1-1/2"  
B2: 2"  
B4: 2-1/2"  
B5: 3"

D8: DN25  
E1: DN40  
E2: DN50  
E3: DN65  
E4: DN80

⑮⑯

01: PT male  
03: PF male  
05: BSP male  
07: NPT male  
13: GAS male  
40: 5 kg/cm<sup>2</sup>  
42: 10 kg/cm<sup>2</sup>  
48: 150 Lbs  
49: 300 Lbs  
57: PN10  
58: PN16

(Next page)

EBX1 <sup>05</sup> <sup>06</sup> <sup>07</sup> <sup>08</sup> - <sup>09</sup> <sup>10</sup> <sup>11</sup> <sup>12</sup> <sup>13</sup> <sup>14</sup> <sup>15</sup> <sup>16</sup> <sup>17</sup> <sup>18</sup> <sup>19</sup> <sup>20</sup> <sup>21</sup> <sup>22</sup> <sup>23</sup>

<sup>17</sup><sup>18</sup> **Probe Material**

MA: SUS 304  
MB: SUS 316  
03: FEP  
14: PFA  
18: PP  
24: PVDF

<sup>19</sup> **Communication**

A: None  
B: HART

<sup>20</sup><sup>21</sup><sup>22</sup><sup>23</sup> **Length**

| Code      | Probe Range                                                   |
|-----------|---------------------------------------------------------------|
| 0500~4000 | 500mm~4000mm, Rod Probe Type                                  |
| 0500~1500 | 500mm~1500mm, Two Rod Probe Type                              |
| 0500~A500 | 500mm~50000mm, Cable Type( "A" means multiplied by 100 times) |

\* Tolerance of the total product length is  $\pm 5\text{mm}$

\* Characteristics, specifications and dimensions are subject to change without notice.

\* Please contact your nearest distributing office for further informations.



# INSTALLATION

1. Please choose Two Rod Probe type for non conductive tank (Fig.1), or install a concentric circles metal pipe shield with vent hole at the top outside the probe (Fig. 2)
2. The rod or wire probe should be parallel to the tank wall. To prevent material from sticking between the probe and tank wall, the probe shouldn't be too close to the tank wall.
3. If the container is irregular-shaped, such as a cylindrical, and the medium is liquid with low viscosity, the rod should be placed inside a concentric circles metal pipe shield with vent hole at the top.(Fig. 2)
4. Coating Probe type is necessary for conductive media (eg. Water...) , as the bare electrode can't operation normally in conductive media.
5. During the installation, the process connection should be grounded. An installation without proper grounding will not guarantee normal operation of the device later on.
6. For non-conductive medium of powder or granules in big tank, the wire probe should be fixed to the bottom of tank
7. When all electrical connections inside of Admittance Level Transmitter housing are finished, the housing cover and the conduit opening should be sealed and tightened to prevent moisture from soaking in.
8. If an agitator is in place (see fig. 4), a pipe shield outside the probe is recommended.

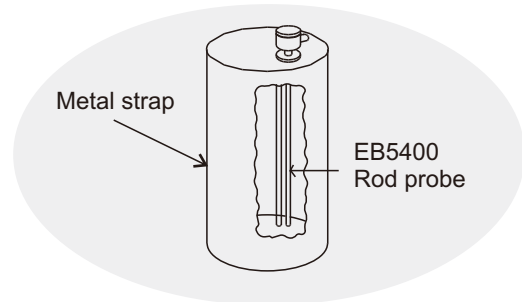


Fig. 1

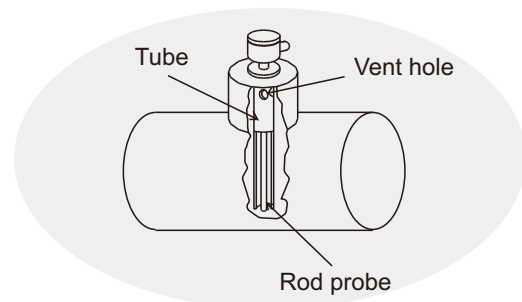


Fig. 2

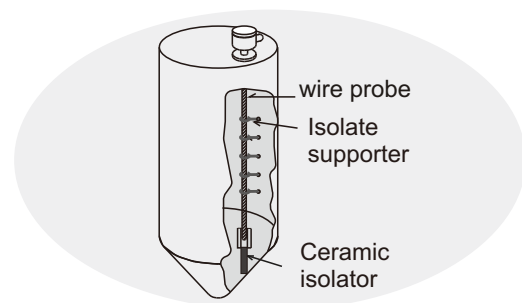


Fig. 3

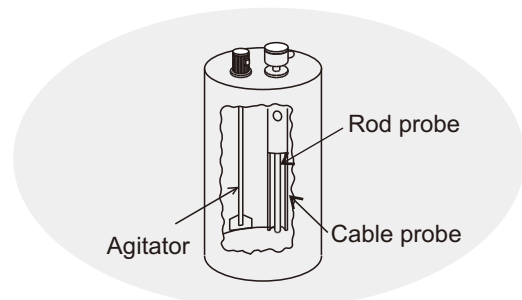
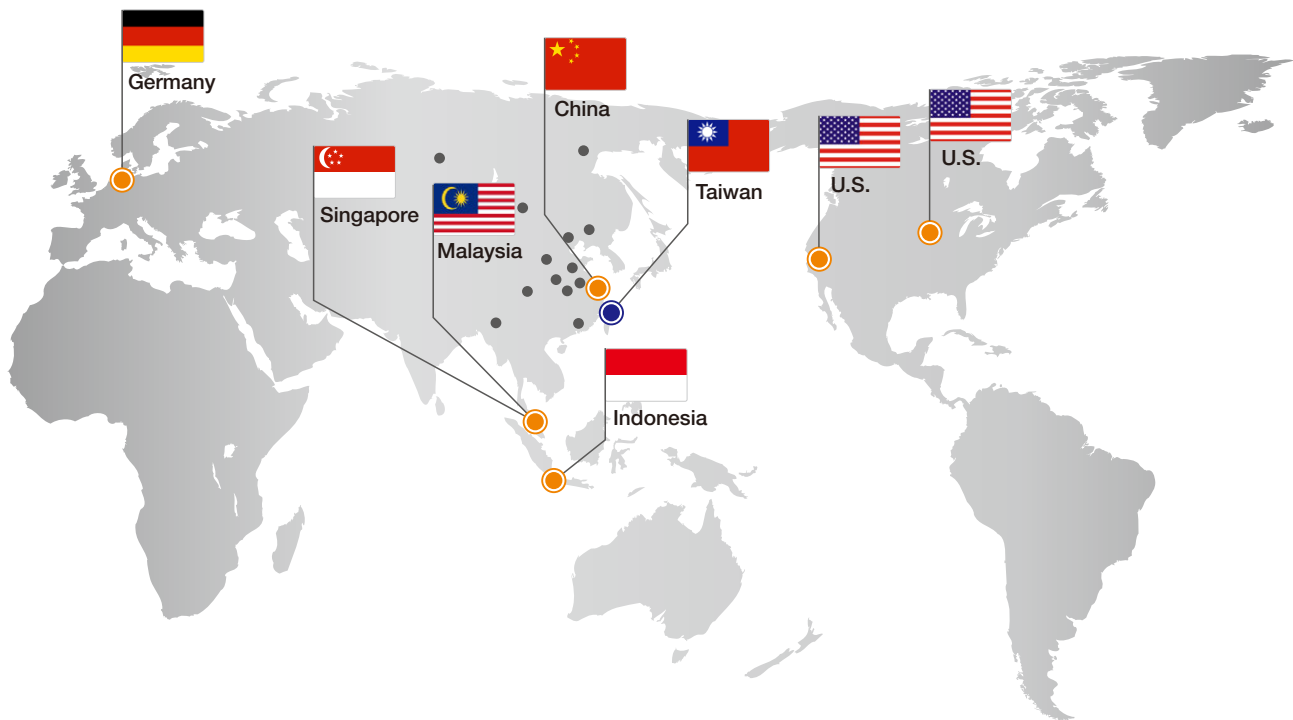


Fig. 4

# Global Network



## ■ Asia

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