

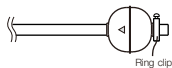
# EG37 (EGX1001B-B1/EGX1001B-A1/EGX1021B-A1) Explosion Proof Magnetostrictive Level Transmitter Operation Manual

## INSTALLATION RECOMMENDATION

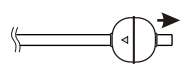
- Rate voltage is 18~28Vdc wide power input.
- The product is calibrated before shipment, so the user can't change the measuring position or distance randomly.
- The magnetostrictive level transmitter is a high-accuracy measuring device. The pipe can't be bended, or it may affect the measurement accuracy, and even the machine doesn't work normally.
- Please do not change magnetic float to avoid effect on measurement accuracy.
- User can install the product directly without having to take off the float, when connection hole at site is bigger than float diameter.
- Please take off the float before installation, when connection hole at site is smaller than float diameter.
- Please install the float by specific direction (mark on the float has to be toward the product enclosure).
- The stopper has to be fixed well on the stem score.
- Please do not drop the magnetic float, to avoid magnet breakage inside the float.
- Do not pressure the product with heavy weight, to bend the stem. If the stem is bent and can not work, please send back to us for calibration.
- Package by bubble bag or foam is necessary to ensure safety during transportation.
- Please do not open the product enclosure to assure measurement accuracy.

## INSTALLATION METHOD IF THE FLOAT HAS TO BE TAKEN OFF BEFORE INSTALLATION

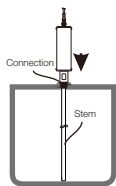
**Step 1 :**  
Loosen the ring clip at stem end



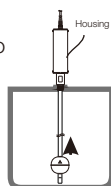
**Step 2 :**  
Take off the float.



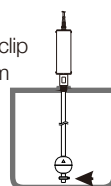
**Step 3 :**  
Install the product itself into the tank, and screw the connection well.



**Step 4 :**  
Put back the float onto the stem by specific direction mark on the float has to be toward the housing

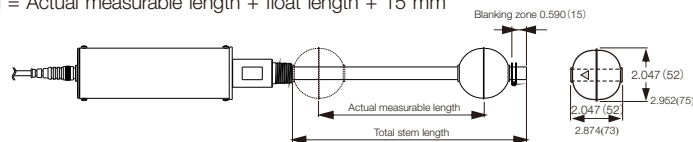


**Step 5 :**  
Screw the ring clip well on the stem



### Instructions for actual measurable length in advance:

The relationship between the stem length of and the actual measurable length is shown in the illustration below.  
Total stem length = Actual measurable length + float length + 15 mm  
For example:



Total stem length= 500mm (Actual measurable length) + 73mm (S5 float)+15mm =588mm

※The float ball varies in size depending on different options.

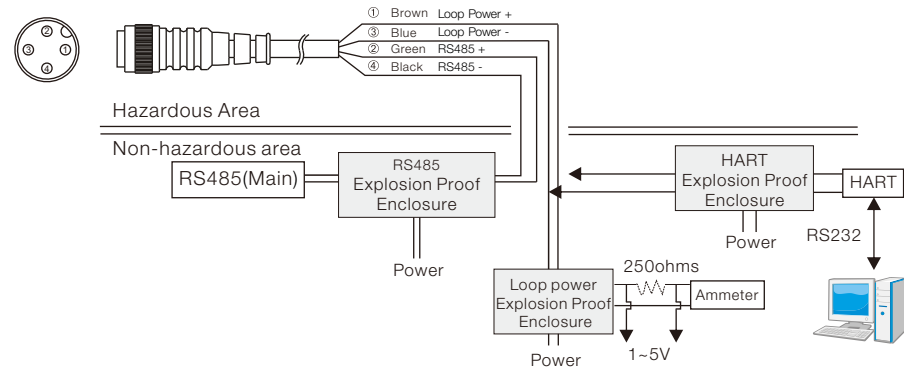


NEPSI PROOF Ex ia IIB T3~T6 Ga  
Intrinsic Safety Ex-proof GB3836.1, GB3836.4 , GB3836.20  
ATEX PROOF Ex II 1G Ex ia IIB T3~T6  
Intrinsic Safety Ex-proof EN60079-0, EN60079-11, EN60079-26

## PRODUCT SPECIFICATIONS

|                              |  |                         |                         |
|------------------------------|--|-------------------------|-------------------------|
| Power supply                 | 12~30V(Four-wire)<br>Loop power 18~30Vdc(Two-wire)<br>Loop power 18~28Vdc(Ex zone) | Repeatability           | ±0.01% FS               |
| Measuring range              | 25~5500 mm   | Hysteresis degree       | ± 0.02% FS              |
| Output range                 | 4~20 or 20~4 mA  | Temp. effect            | ±100 ppm / °C           |
| Maximum load (Ω)             | (Vs-18)÷0.02<br>Vs = supply voltage  | Temp. sensor            | PT100 (Optional)        |
| Non-Linearity (precision um) | 25~2000 mm ±1mm<br>2001~5500 mm ±0.05% FS  | Temp. accuracy          | ±1 °C                   |
|                              |  | Communication interface | HART / RS485 (Optional) |
|                              |  | IP rating               | IP67 / IP69             |

## WIRING INSTRUCTION



※Please ignore connection of RS-485 when ordering without RS-485

※Please ignore connection of HART when ordering without HART

## OPERATING SPECIFICATIONS FOR EXPLOSION-PROOF PRODUCTS

- Condition for operating product safely  
The connected device must be the isolated safety barrier.
- Notes for using the product

1. The correspondence relationship of intrinsic safety parameters is as listed below:

| Circuit       | Max input<br>Ui (V) | Max input<br>Ii(mA) | Max input<br>Pi(mW) | Max parameter value inside |        |
|---------------|---------------------|---------------------|---------------------|----------------------------|--------|
|               |                     |                     |                     | Ci(μF)                     | Li(mH) |
| Signal        | Vi=28               | Ii=100              | Pi=651              | Ci=0                       | Li=0.3 |
| Communication | Vi=8.5              | Ii=90               | Pi=192              | Ci=0                       | Li=0   |
| Communication | Vo=4.1              | Io=8.74             | Po=9                | Co=20                      | Li=10  |

- To operate the magnetostrictive level transmitter in explosive hazard environment with explosive gas mixture, it must be connected with the device that passes the ex-proof certification to form an explosion proof system. The system wiring must follow the instructions on the user's manuals of the magnetostrictive level transmitter and the connected device, and the wiring terminal must be connected correctly.
- The connection cable between the product and the connected device must be shielding cable with insulating housing, and the shielding layer must be grounded.
- The user is not allowed to change the parts of the products in person. It should consult with the product manufacturer to resolve the fault found in operation, so as to avoid damage.
- The correspondence relationship between the temperature type, the max ambient temperature and the measured media temperature is as listed below:

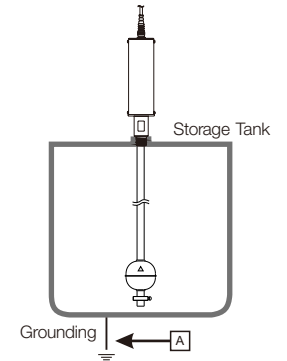
| EG37XX Series            |    | Ambient Temperature | Media Temperature |
|--------------------------|----|---------------------|-------------------|
| Standard Type            | T6 | -40~61 °C           | -40~80 °C         |
|                          | T5 | -40~76 °C           | -40~95 °C         |
|                          | T4 | -40~85 °C           | -40~130 °C        |
|                          | T3 | -40~85 °C           | -40~130 °C        |
| High-temperature Type    | T6 | -40~61 °C           | -40~80 °C         |
|                          | T5 | -40~76 °C           | -40~95 °C         |
|                          | T4 | -40~85 °C           | -40~130 °C        |
|                          | T3 | -40~85 °C           | -40~195 °C        |
| Corrosion-resistant Type | T6 | -40~61 °C           | -40~80 °C         |
|                          | T5 | -40~76 °C           | -40~80 °C         |
|                          | T4 | -40~85 °C           | -40~80 °C         |
|                          | T3 | -40~85 °C           | -40~80 °C         |

※ The actual temperature tolerant of the product is subject to the latest brochure released by the company, and in conformation to the explosion-proof certification label.

- The product installation, operation and maintenance shall follow the product manual and the following standards: GB3836.13 (IEC 60079-19) "Electric Apparatus for Explosive Gas Atmospheres Part 13: Repair and Overhaul for Explosive Gas Atmospheres", GB3836.15(IEC 60079-14) "Electric Apparatus for Explosive Gas Atmospheres Part 14: Electrical Installation in Hazardous Area (Other than Coal Mine)", GB3836.16(IEC60079-17) "Electric Apparatus for Explosive Gas Atmospheres Part 16: Electric Apparatus Inspection and Maintenance(Other than Coal Mine)", and GB50257 "Electric Equipment Installation Engineering Code for Construction and Acceptance of Electric Device within Explosion and Fire Hazard Environments".

## SPECIAL REQUIREMENTS

- When installing EG37 level transmitter, it must be connected with the tank. For the metal tank, it must be firmly grounded, as shown in Figure A.
- EG37 level transmitter is equipped with permanent magnet in the float. When the float is operated on the level surface, it will attract the magnetic component in the probe. When the liquid is at the minimum level, the float will firmly contact the probe and the ring (It must conduct maintenance on the float, and clean the impurities attached between the float and the probe regularly.).



## MODBUS TABLE

|    | Name                      | Address(Hex) | Address(Dec) | Data Types | Quantity | Unit/Code                       | Definition |
|----|---------------------------|--------------|--------------|------------|----------|---------------------------------|------------|
| 1  | FineTek ID                | 0x1000       | 4096         | STRING     | 1        | FINE-TEK                        | READ       |
| 2  | Product Type              | 0x1004       | 4100         | UINT16     | 1        | EG                              | READ       |
| 3  | Product Number            | 0x1005       | 4101         | UINT16     | 1        | 0x0005                          | READ       |
| 4  | Product Version           | 0x1006       | 4102         | UINT16     | 1        | 0x0001                          | READ       |
| 5  | Float 1 distance          | 0x1007       | 4103         | FLOAT      | 1        | 1mm                             | READ       |
| 6  | Float 2 distance          | 0x100a       | 4106         | FLOAT      | 1        | 1mm                             | READ       |
| 7  | Measurable Range          | 0x1010       | 4112         | FLOAT      | 1        | 1mm                             | READ       |
| 8  | Display Percentage 1      | 0x1026       | 4134         | FLOAT      | 1        | %                               | READ       |
| 9  | Display Percentage 2      | 0x1028       | 4136         | FLOAT      | 1        | %                               | READ       |
| 10 | Temp Value                | 0x102a       | 4138         | FLOAT      | 1        | °C                              | READ WRITE |
| 11 | MODBUS ID                 | 0x102c       | 4140         | UINT16     | 1        | ID=1                            | READ WRITE |
| 12 | MODBUS BAUDRATE           | 0x102d       | 4141         | UINT16     | 1        | BAUD=9600                       | READ WRITE |
| 13 | Float 1 High Limit        | 0x1034       | 4148         | FLOAT      | 1        | 1mm                             | READ WRITE |
| 14 | Float 1 Low Limit         | 0x1036       | 4150         | FLOAT      | 1        | 1mm                             | READ WRITE |
| 15 | Save System Var to EEPROM | 0x1054       | 4180         | UINT16     | 1        | Set up value = 1 (save setting) | READ WRITE |
| 16 | Save Calibration Setting  | 0x1057       | 4183         | UINT16     | 1        | Set up value = 1 (save setting) | READ WRITE |

## WARRANTY

Warranty 12 months after delivery. No fee such as testing, parts and maintenance will be charged in warranty. Any flaws caused by delivery can be filed to us within 7 days given related evidence.

We will be responsible for repair or replacement.

Please send back the whole unit to us and pack well to prevent break-down during delivery.

The following will be charged:

- Out of warranty
- Do not follow operation instruction in manual, or over product spec as indicated in catalogue.
- Any cause by force majeure such as flood, earthquake, typhoon etc.



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