



TeleMetrix

Pesage Mesure Surveillance Industrielle

Sonde de niveau électromécanique

BOB

Client	Matériel	Date

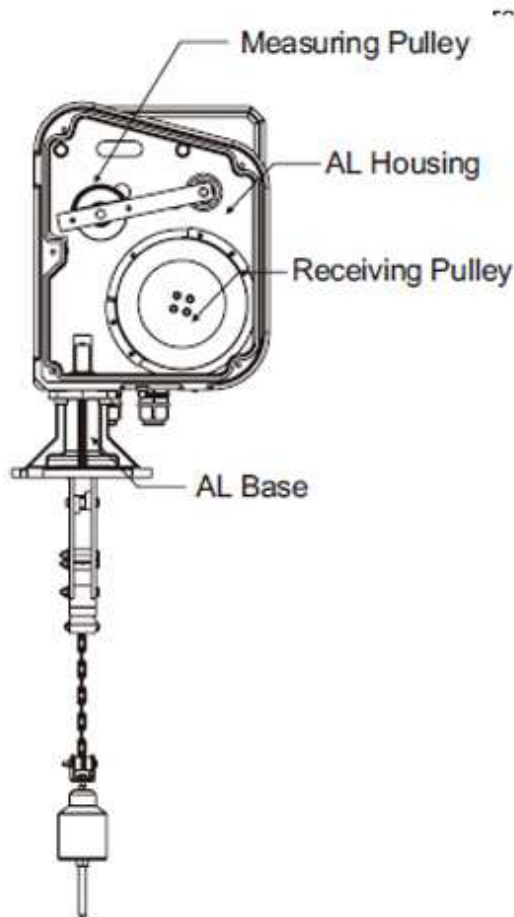
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PRINCIPE



Rear View: Wiring Mechanism

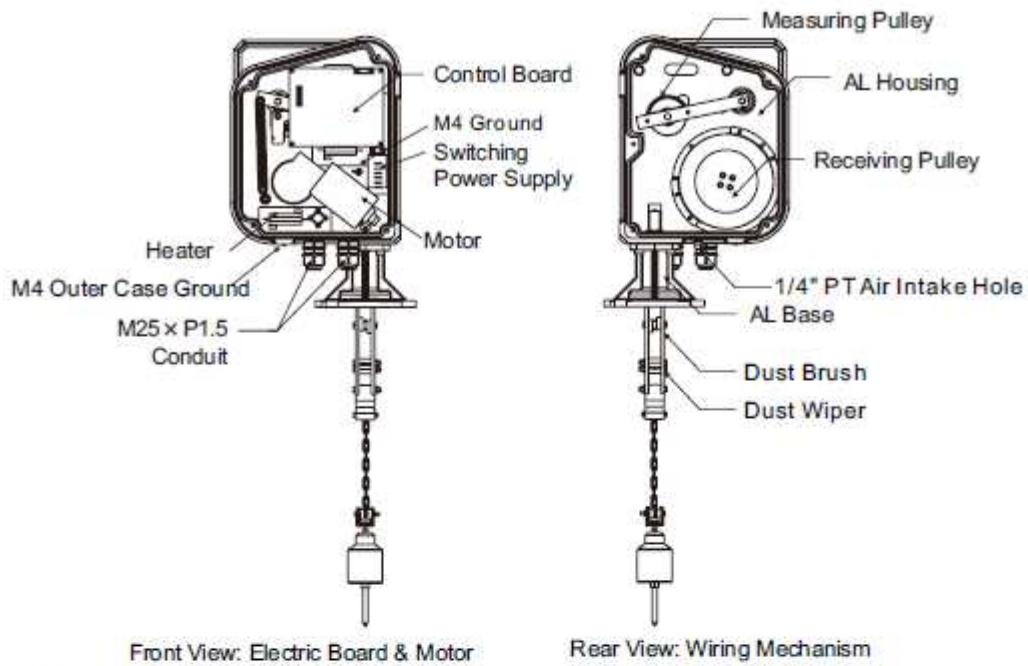
FEATURES

- Measurement immune from the interference of environment such as sound waves, dust, capacitance, or temperature change.
- User-friendly in touch buttons with microprocessor-based calculation design.
- High level and low level alarm.
- LCD Dot matrix: 8 x 2.
- Analog output: 4-20mA dc.
- Pulse output:
 - Transistor output NPN/PNP (10mm/pulse)
 - Relay output 3A/250Vac (100mm/pulse)
- Cable Break Alarm: System will detect cable broken during measuring.
- Plumb Buried Alarm: System will detect plumb buried by the medium.
- Four Start Modes: auto start, manual start, intelligent start, and external triggered start.
- Intelligent Start: Measuring interval is inverse proportional to medium level.
- Auto Return Setup: Prevent sensing weight from buried or sliding into the tank pivot and avoid damage facility equipment while tank is empty.
- Material Fill-Up Protection: Reduce the possibility of plumb being buried.
- Measuring range of 30m (Standard), max. up to 40 m.
- RS485 MODBUS communication protocol.
- Various selections of .

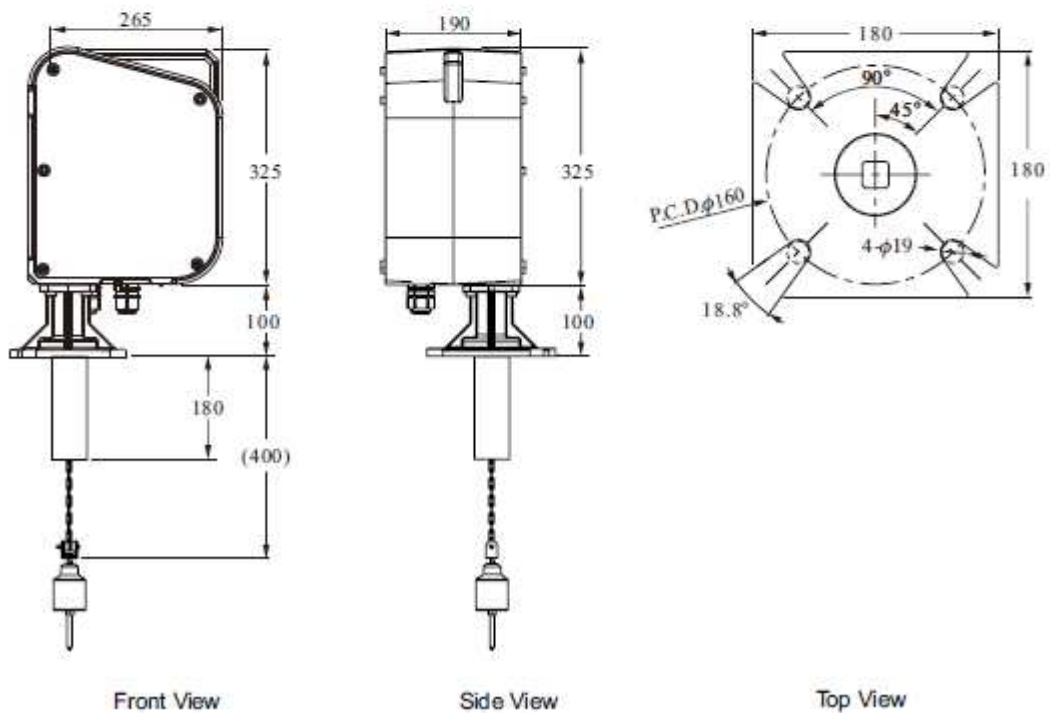
CARACTERISTIQUES

No.	Category	Specification														
1	Power Supply	100~240Vac \pm 10%, 50/60 Hz														
2	Transistor Measuring Resolution	\pm 3pulse(version with10mm/pulse)														
3	Relay Output Measuring Resolution	\pm 1pulse(version with100mm/pulse)														
4	Measuring Speed	0.23m/s														
5	Analog Output	0/4-20mA \pm 1%														
6	Pulse Output	1. NPN / PNP (10mm/pulse) System sends pulse output every 1cm. Each pulse has interval of 10ms. 2. Relay 3A/250Vac (100mm/pulse) System sends pulse output every 10cm. Each pulse has interval of 15ms.														
7	Display	LCD (Dot matrix , 8 X 2)														
8	Status LED	<table border="0"> <tr> <td>1.Lock (Fill-Up Protection)</td> <td>(Red) On</td> </tr> <tr> <td>2.RUN</td> <td>(Yellow) On</td> </tr> <tr> <td>3.Buried</td> <td>(Red) Blink for 1 second</td> </tr> <tr> <td>4.Break</td> <td>(Red) Blink for 2 seconds</td> </tr> <tr> <td>5.Auto</td> <td>(Blue) On</td> </tr> <tr> <td>6.High Alarm</td> <td>(Red) On</td> </tr> <tr> <td>7.Low Alarm</td> <td>(Red) On</td> </tr> </table>	1.Lock (Fill-Up Protection)	(Red) On	2.RUN	(Yellow) On	3.Buried	(Red) Blink for 1 second	4.Break	(Red) Blink for 2 seconds	5.Auto	(Blue) On	6.High Alarm	(Red) On	7.Low Alarm	(Red) On
1.Lock (Fill-Up Protection)	(Red) On															
2.RUN	(Yellow) On															
3.Buried	(Red) Blink for 1 second															
4.Break	(Red) Blink for 2 seconds															
5.Auto	(Blue) On															
6.High Alarm	(Red) On															
7.Low Alarm	(Red) On															
9	Ambient Temperature	-35°C- 60°C														
10	Operating Temperature	-35°C- 80°C														
11	Measuring Range	30m Max														
12	Protection Level	IP66														
13	Relay Output	SPDT 3A/250Vac X 3 1. HI Alarm 2. LO Alarm 3. Buried: Blink for 1 second when alarm triggers Break : Blink for 2 seconds when alarm triggers Lock : LED on when alarm triggers														
14	Anti-Dew Heater	Start heating <16°C (prevent frostbite, prevent dew) in 100 W optional														
15	Cable Break Detection	Yes														
16	Sensing Weight Buried Detection	Yes														
17	Manual/Auto Measuring Mode	Yes (0.1-99h)														
18	Motor Protection	Yes														
19	Malfunction Diagnosis Display	Yes														
20	Material Fill-Up Protection	Yes														
21	Communication Protocol (RS485)	<table border="1"> <tr> <td rowspan="2">Yes</td> <td>Frame</td> <td>C8N1.C8N2.C801.C8E1.C7N2.C701.C7E1.C702. C7E2.</td> </tr> <tr> <td>Baudrate</td> <td>1200.2400.4800.9600. 11520. 14400.19200.28800.57600</td> </tr> </table>	Yes	Frame	C8N1.C8N2.C801.C8E1.C7N2.C701.C7E1.C702. C7E2.	Baudrate	1200.2400.4800.9600. 11520. 14400.19200.28800.57600									
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	Baudrate	1200.2400.4800.9600. 11520. 14400.19200.28800.57600														
22	Intelligent Start	Measuring interval is inverse proportional to medium level.														
23	Reset Output	Reset (3A/250Vac)														
24	Cable Wire	1.2mm ^φ														

Sketch & Drawing

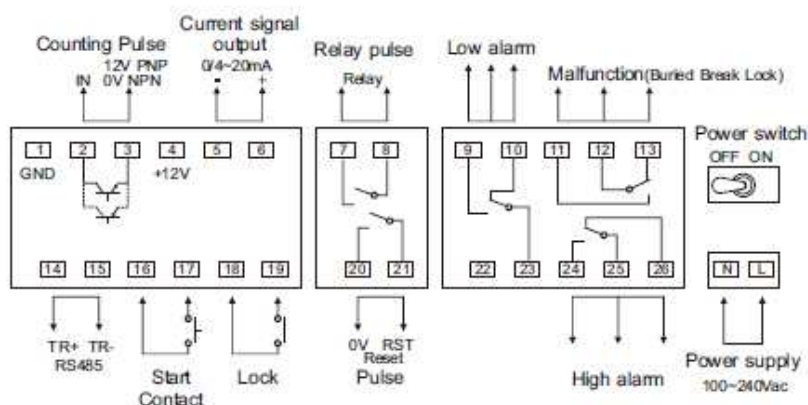


Dimension

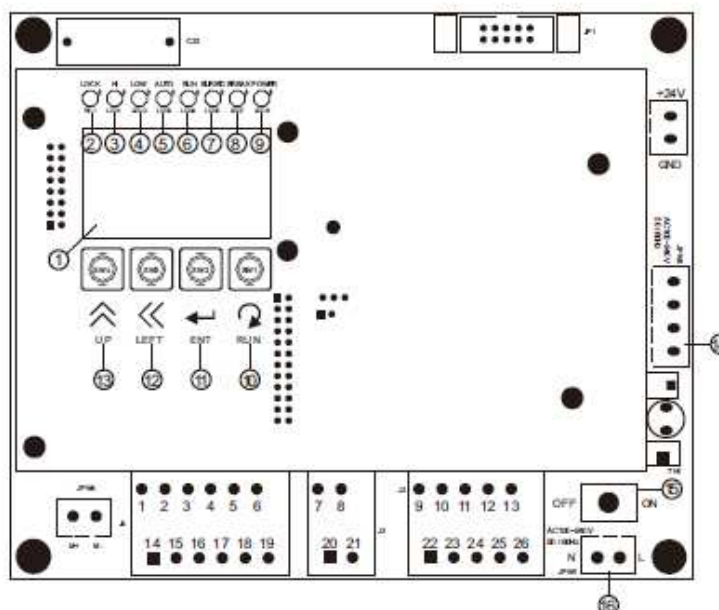


CABLAGE

Wiring Diagram

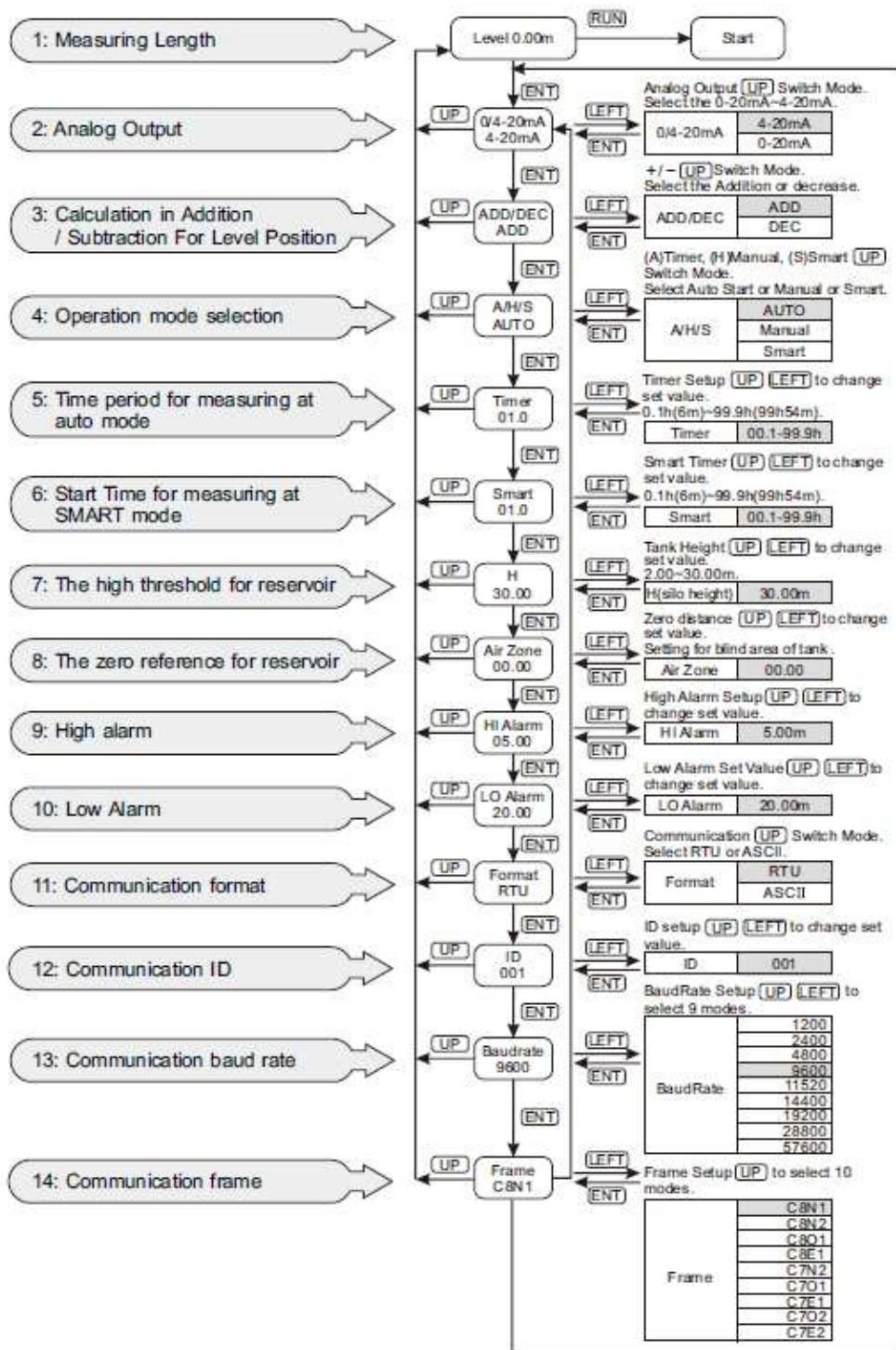


Description of Panel



- ① Characteristic LCD (Dot matrix , 8 × 2), provides the status, level command and error message.
- ② Material Fill-Up Protection Indicator (LOCK), the EE will be turned off and hold LOCK indication while the reservoir is filling up procedure.
- ③ High Level Alarm Indicator (HI), light on if the material level exceeds the preset high threshold.
- ④ Low Level Alarm Indicator (LOW), light on if the material level is below the preset low threshold.
- ⑤ Auto Start Indicator (AUTO), light on to indicate EE is in automatic operation mode.
- ⑥ Start Indicator (RUN), light on if the EE is in measuring period, and it turns light off status while the measurement completed.
- ⑦ Weight Head Buried (BURIED), blink light on /off in 1 sec period to warn operator, the LCD will show BURIED message.
- ⑧ Cable Break Indicator (BREAK), blink light on /off in 2 sec period to warn operator, the LCD will show BREAK message.
- ⑨ Power Indicator (POWER), "Light On" for power on and "Light Off" to indicate power off.
- ⑩ "Start", start the operation.
- ⑪ "Enter", acts as "confirm button" at setting mode and as "page select button" at menu mode.
- ⑫ "Shift", acts as "decimal shift" while enter digits and as "enter button" at menu mode.
- ⑬ "UP", acts as "Increment button" while enter digits and as "Escape button" at menu mode.
- ⑭ Terminal (H1.H2) for heater.
- ⑮ Power switch: to turn on, turn off power
- ⑯ Power connector (L.N), accepts the power of 100~240Vac, 50/60Hz

PROGRAMMATION



Caution

While the reservoir or storage is in empty, or the field level is not in normal status, please don't start this EE300. Be sure the tank and reservoir is in normal and avoid from the sensing weight head has the possibility of being stuck by conveyor or stirred by any mechanism near inlet or outlet. Before setting, user should note that the measuring level should not exceed the bottom of reservoir or storage, and not install EE300 accompany with any obstacle around.

Definition

K Tank Height:

distance between connecting flange to tank outlet

S Blind Distance:

distance from connecting flange to the tip of the weight

Z Safety Distance:

To avoid obstacle and prevent weight sliding into the outlet.

H Measuring Height:

Full measuring range from drop and return with full pulse signal record.

A Air Zone(deadband):

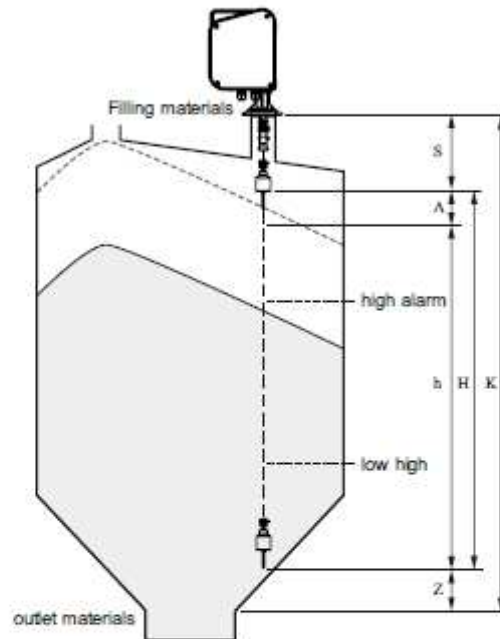
Variation of tank capacity and real medium level. Default setting is 0.

H Effective measuring distance:

distance will change according to A value and corresponds to 0/4~20mA output signal.

Hi Alarm: High level alarm setup.

Lo Alarm: Low level alarm setup.



Example (Smart Mode)

Smart mode operates the measurement according to the capacity and level of reservoir. In smart mode, the next measuring time period is depend on the current level distance measured. It is roughly a step by step (0.1 hr for each step), in quasi-linear relation, as indicated below. (Note: Timer value should be larger than Smart value).

Example:

Timer=1.1h/**Smart**=0.1h/**H**=10m

Measuring time at next, $t=(\text{Smart}+(A/H)\times(\text{Timer}-\text{Smart}))$

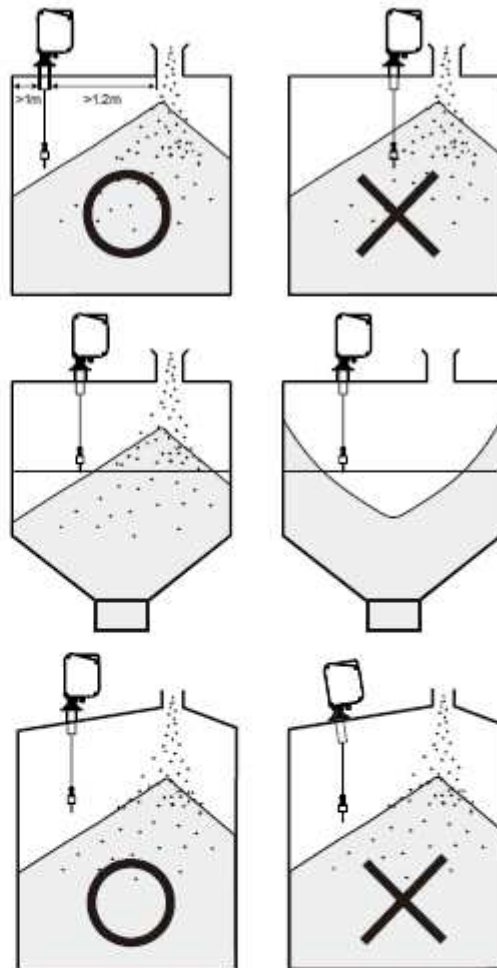
Where the **Timer** is the maximum standby time to detect, **Smart** is the minimum standby time to detect, A is the measuring level distance, H is the High Alarm value. T is the next measuring time since this measurement.

Ex: A is 10m, the next start detect time is $0.1+1\times 1=1.1\text{h}$

A is 1m, the next start detect time is $0.1+0.1\times 1=0.2\text{h}$

Installation Position

- Installation position should be away from the inlet or outlet of reservoir at least 1.2 m, and avoid from interfering with the conveying system to damage facility.
- Reservoir or tank equipped with observation window is suggested; it will be beneficial for maintenance in future. The installation location should be away from the ladder, frame or any protrusion. The minimum distance between the EE300 center and tank wall should be 1 m or more. The optimal position is at the average depth of measured material, it will generally locate at mountainside between the peak and bottom (the cone angle from by the pouring process), indicates below.



Installation Instruction

- The flange should be mounted at horizontal. Besides, the housing and cable wire should be keep vertical direction related to measured material level. It should be carefully checked if the flange can let the wire cable move free and no rub against the body. On demand, user may connect an extended tube to connect the flange. If you do that, keep in mind that minimum diameter should not be less than 4". For leakage, FineTek suggests the customer to use O-ring seal or washer between the flange connections and secure it indeed.

Caution

- The position and method of inlet condition installation:
 1. Direct Injection: Please install at either side of inlet.
 2. Vortex Injection: Please install at left side of inlet in case of clockwise direction or at right side of inlet in case of counter-clockwise direction.
 3. Sprinkle Injection: Please install furthest at the opposite to inlet to avoid impact by injection.
- During installation, user should carefully check the cable wire is wined up well in pulley set and no fold, broken, or any abnormal compress on the cable wire.
- The cable wire should put on the hole of weight head connect and be secured indeed by screwdriver.
- Firmly secure the screws to fix the front cover and body, otherwise the dust or powder will pour into the electric board.
- The opening portion for the weight head and cable wire must be larger than 104 mm.

Wiring Instruction

FineTek suggests 0.75mm² non-twist multiple-cores isolated electric wire to connect with the terminal block. The power line should be separated with the signal lines. It should leave a flexible length of electric wire to avoid pull and drag the electric board. Peer off the skin of electric wire in appropriate length, not leave to much naked wire to avoid from the electric close. All naked wire should be well welding and secure well by terminal block. Wiring label should be clearly identified and in correct connect. The wiring diagram is Below.



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CERTIFICATION ET CONFORMITE



Product Code	Description & fabricant
BOB-EE300	Sonde de niveau

Sécurité

CEI 1010-1, EN 61010-1 : Règles de sécurité pour les équipements électriques de mesure, de contrôle Partie 1.

Compatibilité Electromagnétique

Emission et immunité conformes à EN 61326 : Equipements électriques de mesure, de contrôle et utilisés en laboratoire, Partie 1

Immunité au regard des sources industrielles EN 50082-2

Décharge électrostatique EN 61000-4-2 Niv 2 : Au contact : 4 kV Niv 3 : Dans l'air : 8 kV

Champ électromagn. RF EN 61000-4-3 Niv 3 : 10 V/m 1.De 80 MHz à 1 GHz

Transitoires rapides (rafale)

EN 61000-4-4 Niv 4 : 2 kV (E/S) Niv 3 : 2 kV (alimentation)

Interférences RF conduites EN 61000-4-6 Niv 3 : 10 Vrms de 150 kHz à 80 MHz

Simulation d'un téléphone sans fil EN 55011 Niv 3 : 10 V/m

900 MHz \pm 5 MHz

200 Hz, rapport cyclique 50%

Emissions en référence à EN 50081-2

Interférence RF EN 55011 Boîtier Classe A

Alimentation Classe A

Nota :

1. Pertes de performance récupérées lors d'une perturbation EMI à 10 V/m Les mesures peuvent accuser une déviation durant la perturbation EMI. Pour un fonctionnement sans perte de performance, l'appareil doit être installé dans une zone conforme. Les câbles de puissance et faible signaux doivent cheminer dans des conduits métalliques raccordés à la terre par des tresses de masses. Pour plus d'informations, consultez les documents relatifs aux installations pour la CEM.

PRODUITS COMPLEMENTAIRES

Protection des convoyeurs à bande gamme PROLINE



Arrêt d'urgence à câble série 60-31 60-34



Déport de bande 60-32

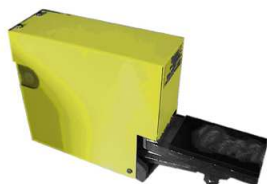


Contrôleur de rotation TNRV



Capteur de vitesse 60-12

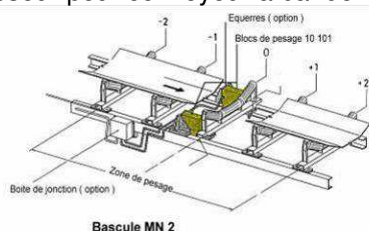
Pesage dynamique RAMSEY



Bloc peseur pour convoyeur à bande IDEA



Intégrateur série TMX101



Bascule MN 2

Bascule intégratrice 10-30



Intégrateur série MICROTECH

Contrôle de débit solide



Granuflow série DTR



Granuflow série GTR

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