Ultraljudsgivare EA

www.wallox.se

EA Ultrasonic Level Transmitter

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The ultrasonic level transmitter is a non-contact, low-cost and easy-to-install measuring device. The advanced aeronautic technology now is applied to industrial applications with high capability, robustness and applicability on demand. Most important is the ultrasonic level indicator is an easy-to-install device that make the less maintain requirement.

PRINCIPLE

During in operation, the ultrasonic wave firstly emit to the measured medium level. When the ultrasonic wave reaches the surface and reflects back to the transducer, the time interval between transmission and reception will be converted to the physical parameter like the medium level or distance between the ultrasonic level indicator and medium surface. The formula is D= (334.1+0.6t) x T/2, where the D = the transmission distance; t = temperature; and T= transmission time.

ZMICROFLEX-C is a compact device which consists of electronic component and transducer. With 4~20mA output, it can be connected to the PLC,DSC and SCADA system. Besides that, it is also equipped with exclusive PULSE and AGC (Auto Gain Control) echo tracking technology to ensure accuracy and precision even in the harsh environment.

FEATURES

- 4~20mA 2 wire output
- 13~30Vdc power supply
- IP67 protection casing
- Compct structure
- Detector material: PVDF
- False echo detection
- Standard 2" Pipe Connection
- Non-contact measurement, easy installation
- Fully isolated analog output
- With internal temperature compensation.
- Beam angle: 6
- Not affected by liquid characters such as temperature, S.G, viscosity.

MAIN FUNCTIONS

- Level measurement
- Object distance measurement
- Volume measurement
- Differential level measurement
- Pump control

COMPACT STRUCTURE DESIGN

The compact structure design equips with 3 push buttons and operated in 8 parameters mode and LCD display.

USER FRIENDLY OPERATION

It can be configured for level or distance in meters, unit in feet or inch with zero and span calibration at any two points.

RAPID RESPONSE

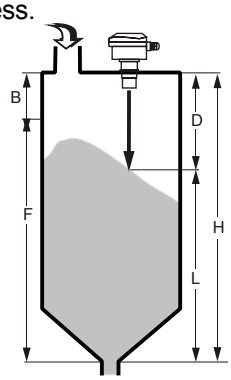
Conventional loop powered ultrasonic level transmitters are generally slow to respond and hard to detect the rapid moving target. The ZMICROFLEX-C compensates the Doppler's effect internally and makes the difference with other competitor's products; it can detect level moving up to 10 m / min without signal lose, . ZMICROFLEX-C is the fastest response of ultrasonic level indicator state-of-the-art.

EXTENSIVE APPLICATIONS

ATEX Hazardous area approved units are available for use in Zone Zero environments. The PVDF transducer is ideal for use in corrosive applications.

FALSE ECHO

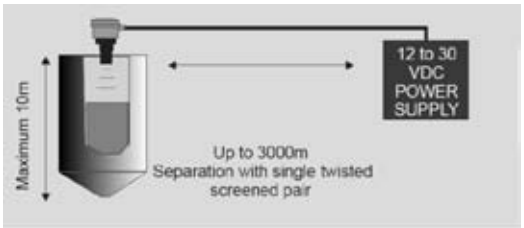
Selectable FER function which enables the instrument to identify two fixed obstructions within the path of the ultrasonic beam, memories their position and ignores them during the measuring process.



B = Blanking distance

D = Distance from transducer to material surface

L = Height in silo



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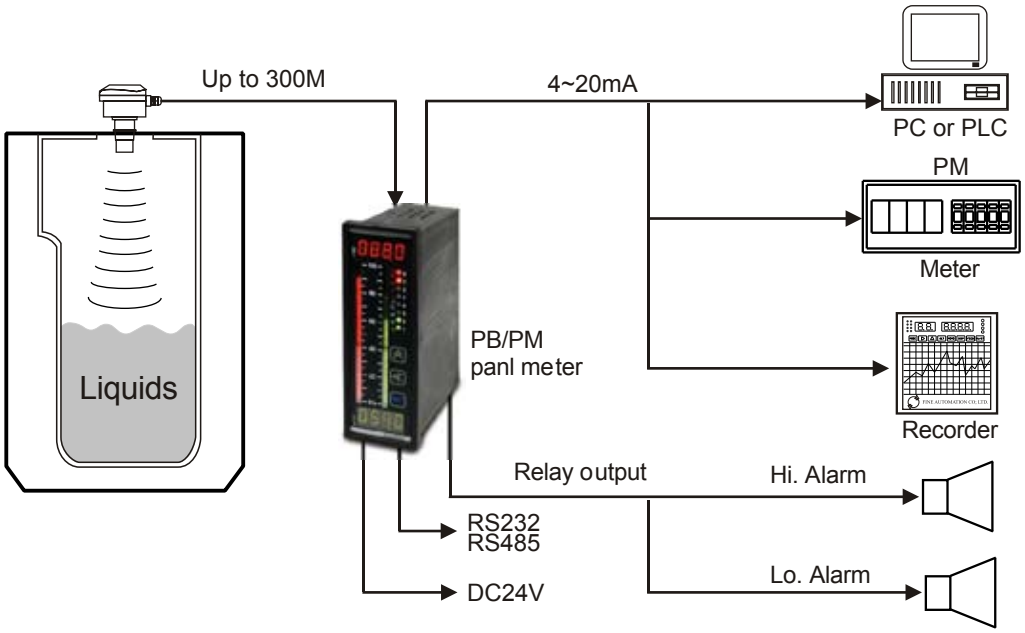
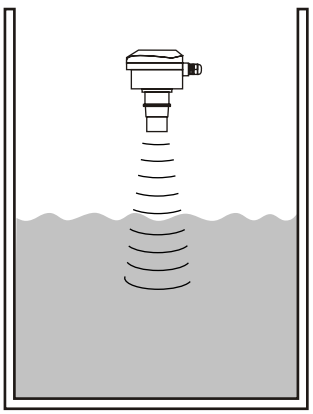
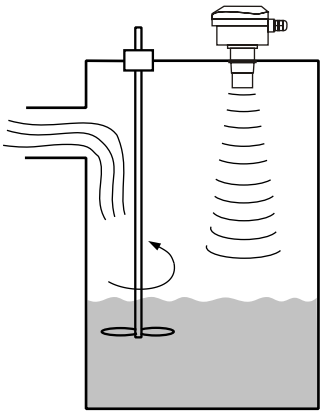
1. Water or waste water treatment equipment: for instance, pump, open channel, dams and wells.
2. Liquid such as edible-oils, sauces, diesel oils and beverages.
3. Chemical material such as solvent, paints, carbonic, water, crude oil, epoxy resin, lime slurry and wax.



Liquid measurement



Silo with rotational aiming kit



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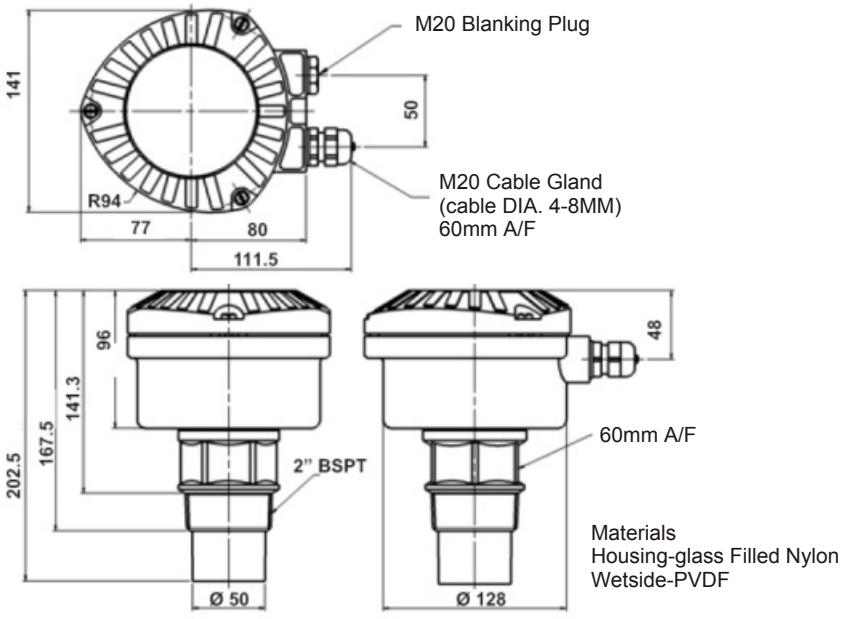
Type / Specifications	ZMICROFLEX-C	ZMICROFLEX-CER	ZMICROFLEX-CIS
Measuring Range	8M(0.3~8M)	10M(0.45~11M)	10M(0.45~11M)
Accuracy	<1.0m ± 5mm. >1.0m ± 0.5%*	<1.0m ± 2.5mm. >1.0m/3.3ft ± 0.25%*	<1.0m ± 2.5mm. >1.0m/3.3ft ± 0.25%*
Resolution	1mm	1mm	1mm
Dead Band	300mm	450mm	300mm
Ambient temperature	-20°C~70°C	-40°C~60°C	-40°C~60°C
Operating temperature	-20°C~70°C	-30°C~70°C	-30°C~70°C
Operating pressure	-0.25~3Bar	-0.25~3Bar	-0.25~3Bar
Power supply	2 wire 12~30Vdc	2 wire 12~30Vdc	2 wire 12~30Vdc
Analog output	4~20mA(750 Ohm)	4~20mA(750 Ohm)	4~20mA(750 Ohm)
Relay output	None	2XSPST/1A 24V DC	None
Communication Protocol	None	HART	HART
Display	4 digital 12mm LCD	4 digital 12mm LCD	4 digital 12mm LCD
Electrical entry	2XM20X1.5	2XM20X1.5	2XM20X1.5
Transducer material	PVDF	PVDF	PVDF
Beam Angle	±6°(3dB)	±6°(3dB)	±6°(3dB)
Casing material	Nylon	Nylon	Nylon
Process connection	2" BSPT/NPT	2" BSPT/NPT	2" BSPT/NPT
Protection rating	IP67	IP67	IP67
Electromagnetic compatibility	CE EN 50081-1 CE EN 50082-2	CE EN 50081-1 CE EN 50082-2	CE EN 50081-1 CE EN 50082-2
Explosion rating	None	None	EEx ia II C T4~T6
Weight	850g	1200g	1200g



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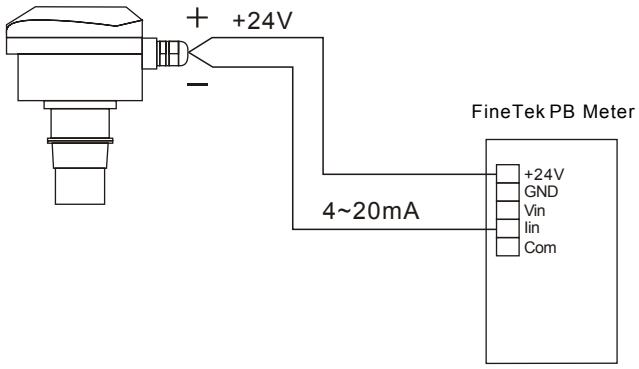
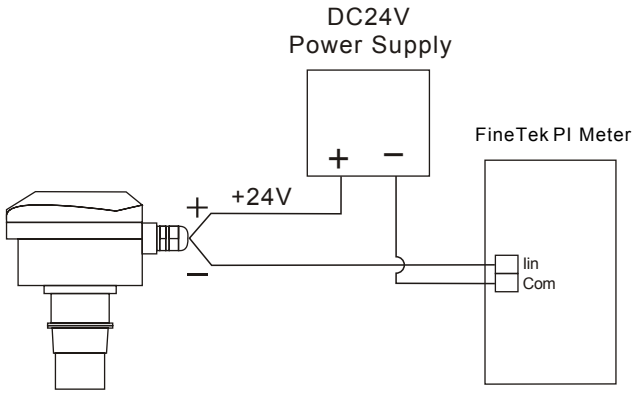
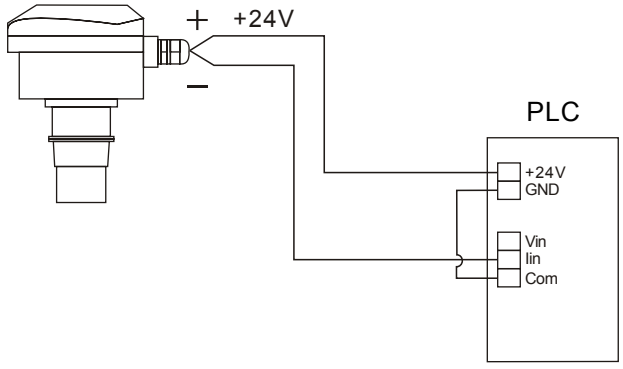
2-wires (Power Supplied by panel meter)



2-wires Power Supply (External)



4-wire (PLC)

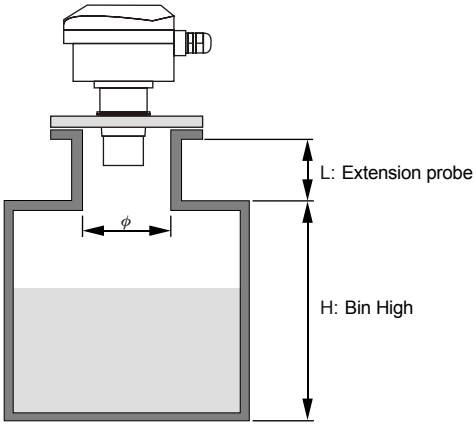


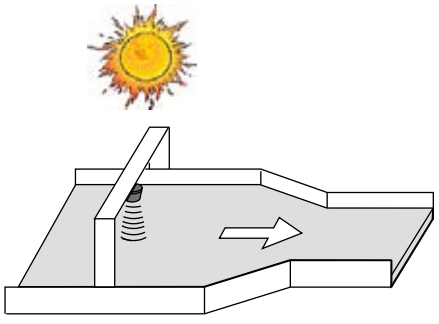
The ultrasonic transducer is mounted to the flange of the extension neck of the tank. Please refer to the instruction below:

Length for dead band:
Dead band has to be 150mm over extension neck.
Dead band needs to be set as 500mm if extension neck is shorter than 500mm.

Extension length:
Please refer to below table and choose the suitable fixed probe

Flange size	Diameter of extension probe(ϕ)Min	Diameter of extension probe L (Max)
3"	75mm	300mm
4"	100mm	300mm
6"	150mm	400mm
8"	200mm	600mm
12"	300mm	600mm





Keep the transducer away from sunshine

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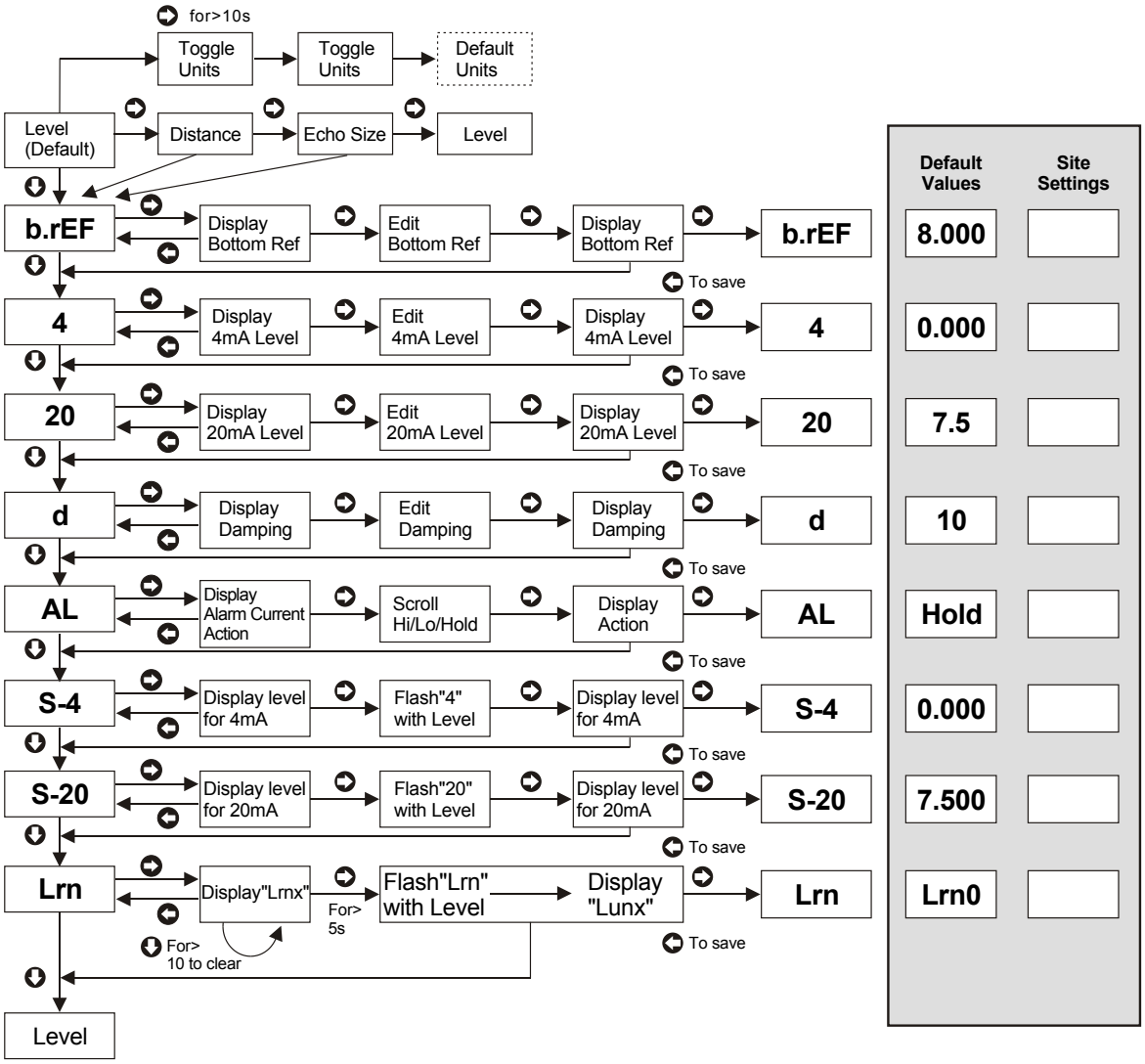
SET UP PROCEDURE



Parameter Function Statement

Item	Parameter	Function Statement
1	Level	Set the showing value corresponds to the level or distance
2	b.rEF	Set the bin high
3	4	Set the showing value on 4~20mA (solid, distance, volume...)
4	20	Set the showing value on 20mA (solid, distance, volume...)
5	D	Set damping time (When the value is getting big which means that the number is more stable but the responding time becomes slow)
6	AL	Set the alarming current (when it is abnormal, the output current can set as 22mA /maintenance/3.5mA)
7	S-4	Set the low point at 4mA (general is low level)
8	S-20	Set the height point at 20mA (general is high level)
9	Lrn	Exclude the obstacles(excluding the false signal reflected from obstacles)

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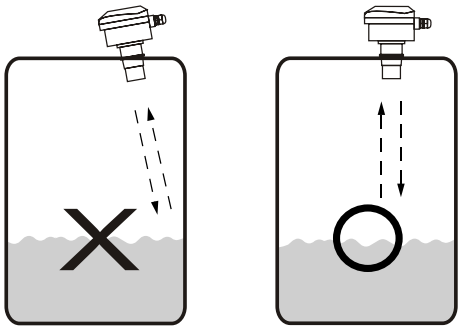
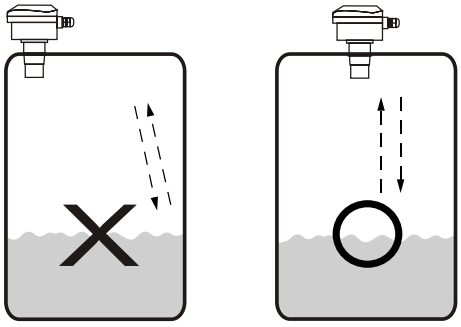
CAUTION BEFORE INSTALLATION

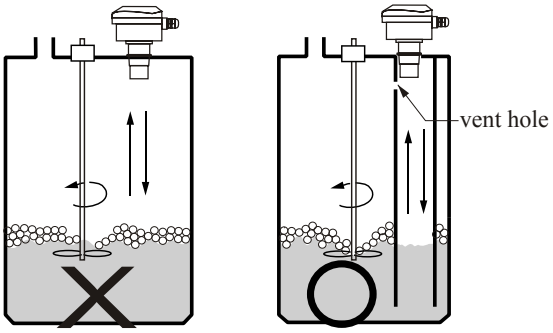
Keep the transducer perpendicular to the liquid surface.



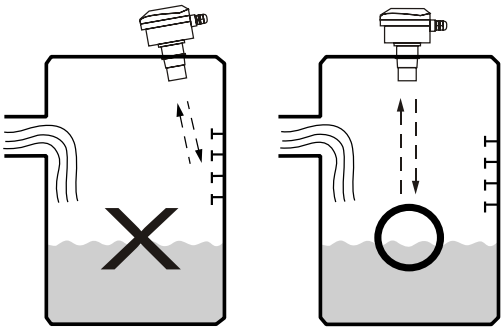
The transducer should not be mounted too close to the tank wall to avoid interference caused by the tank wall.



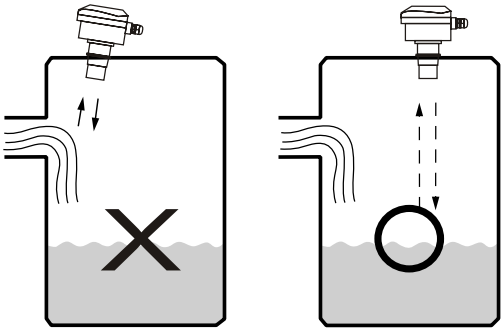
A pipe surrounding the detection path along the ultrasonic wave from emitting to receiving is recommended, thus installation can prevent fake signal caused by turbulence and foam when agitator is equipped in the tank. When the pipe is installed, a vent hole is required to balance the pressure difference between the inside and outside of pipe..



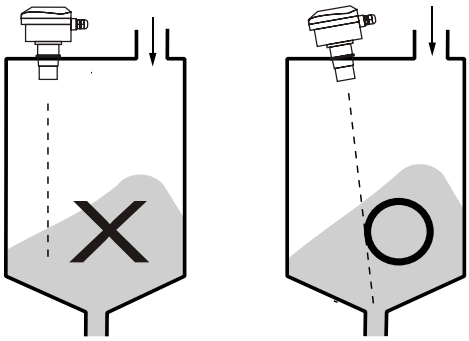
Do not mount the device close to the tank wall in case the fake signal caused by the bracket.



Mount the transducer away from the inlet to avoid interfere by medium.



When user mount the transducer on the solid tank, the transducer must point to the outlet of tank.



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