



# EAX30000-B

## Ultrasonic Level Transmitter

### Operation Manual



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# 1. Reading Labels

Thanks for purchasing FineTek's Product. This operation manual describes the product features, working principles, operation and maintenance methods. It makes the user fully understand how to use the product correctly, so as to prevent dangerous situations such as device damage or operator injury.

- Please read this operation manual completely and carefully before using the product.
- Please contact the company if this operation manual can't satisfy your demands.
- The content of the operation manual is updated based on the version upgrade, which will be uploaded to the website for the user to access.
- Please don't disassemble or repair the product on your own, as this will make you disqualified from availing of the warranty service. Please send the product back to the company for repair and calibration, or just contact the company.
- Explanation of warning signs:



Danger→ It indicates that wrong operation will cause death or major disasters.



Note→ It indicates that wrong operation will cause injury and device damage to some extent.



Electric shock→ It warns of possible electric shock.



Fire→ It warns of possible fire.



Prohibited→ It indicates the prohibited wrong behavior.

## 2. Product Warranty

### 2.1 New Product Warranty

- We don't charge for the inspection, part/s and repair for the product of the company that has a defect within 12 months from the delivery date and meets the warranty terms.
- If the product defect is not due to human error during its transportation, user may change to a new unit from the company within 7 days from delivery date.
- When the product needs to be sent back to the factory for repair, please send the whole set, and don't disassemble the parts. Moreover, please be sure it is completely packed to avoid damage and causing more loss and defect during the transportation.
- The warranty is not available for causes that fall under the following circumstances, for which the company shall charge for the inspection, part/s and repair according to the actual condition:
  - The product or its parts are beyond the warranty period.
  - Fault or damage is caused by not following the instruction and use environment described on the operation manual.
  - The product damage is caused by a force majeure factor (natural disasters, floods, fire, earthquakes, lightning, typhoon, etc.), human destruction (scratches, dropping, latch broken, tapping, cracks and punching), human error (using improper voltage, high-humidity, water leakage, stain, corrosion, loss, improper storage, etc.) and other abnormal factors.
  - The damage is caused by the customer or the 3rd party through the installation, addition, expansion, modification and repair of parts not authorized or certified by the company.
  - The volume label information is wrong or unclear, so the product serial number can't be confirmed.

### 2.2 Repair Warranty

A **6-month** warranty service is provided for the repaired part of the product, during which the same product can be repaired free of charge in case of the same fault.

## 2.3 Service Network

Company	Address	Telephon	Fax
<b>Taipei Headquarters (Taiwan)</b>	No.16, Tzuchiang St., Tucheng Industrial Park, New Taipei City 23678	+886 2 2269 6789	+886 2 2268 6682
<b>Taichung Sales office (Taiwan)</b>		+886 4 2465 2820	+886 4 2463 9926
<b>Kaohsiung Sales office (Taiwan)</b>		+886 7 333 6968	+886 7 536 8758
<b>Fine automation Co., Ltd. (China)</b>	No. 451, Duhui Road, Zhuangqiao Township, Minhang District, Shanghai City 201109	+86 021 64907260	+86 021 6490 7276
<b>Aplus FineTek (Sensor Inc.)</b>	355 S. Lemon Ave, Suite D, Walnut, CA 91789	1 909 598 2488	1 909 598 3188
<b>FineTek Pte Ltd. (Singapore Branch)</b>	No. 60 Kaki Bukit Place, #07-06 Eunos Techpark 2 Lobby B, Singapore 415979	+65 6452 6340	+65 6734 1878
<b>FineTek GmbH (Germany Branch)</b>	Bei den Kämpen 26 21220 Seevetal-Ramelsloh, Germany	+49 (0) 4185 8083 12	+49 (0) 4185 8083 80
<b>FineTek Co., Ltd. (Indonesia Branch)</b>	Ruko Golden 8 Blok H No.38 Gading Serpong, Tangerang Indonesia 15810	+62 (21) 2923 1688	+62 (21) 2923 1988

## 3. Product Inspection

### 3.1 Check Content

- Ultrasonic Level Transmitter x1
- Distribution cable 10m
- Operation Manual x1

### 3.2 Safety Inspection

- Please check whether the external package is deformed or damaged. Please remember to take a picture for evidence for compensation later.
- After unpacking, please check whether the content is deformed or damaged, or has any quality problem. Please remember to take a picture for evidence for compensation later.
- After unpacking, please check whether the content is consistent with the ordering info, and whether the quantity is right.
- Please contact the company within 7 days if any of the above situations occur (attach the picture together with your complaint). Otherwise, we won't compensate for, change or repair the product defect.

## 4. Summary

EAX is a compact, 4-wires ultrasonic level transmitter for continuous measurement of liquids. As a price leader, it does not compromise on good value; and provides effortless and intuitive operation. Easy and flexible mounting combined with high chemical compatibility and 10-metre measuring range makes the EAX suitable in multiple applications in all industries.

## 5. Product Features

- 4~20mA 4 wire output (Fully isolated)
- IP65 protection
- Transducer material: PP
- False echo detection
- Internal temperature compensation.
- Not affected by liquid temperature, S.G, viscosity

# 6. Ordering Information

EAX 3 <sup>05</sup> <sup>06</sup>   0 0 - <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>05</sup> <sup>06</sup> **Model** \_\_\_\_\_  
 00: Standard type  
 04: Remote type

<sup>09</sup> **Measuring distance** \_\_\_\_\_  
 A: 0.25~7.5m (Standard type)  
 B: 0.3~10m (Standard type)  
 C: 0.3~20m (Remote type)

<sup>10</sup> **Transducer** \_\_\_\_\_  
 A: PP(Standard type)  
 B: Sensor surface: Epoxy, Housing: PP (Remote type)  
 C: PVDF (Remote type)

**Connection** \_\_\_\_\_

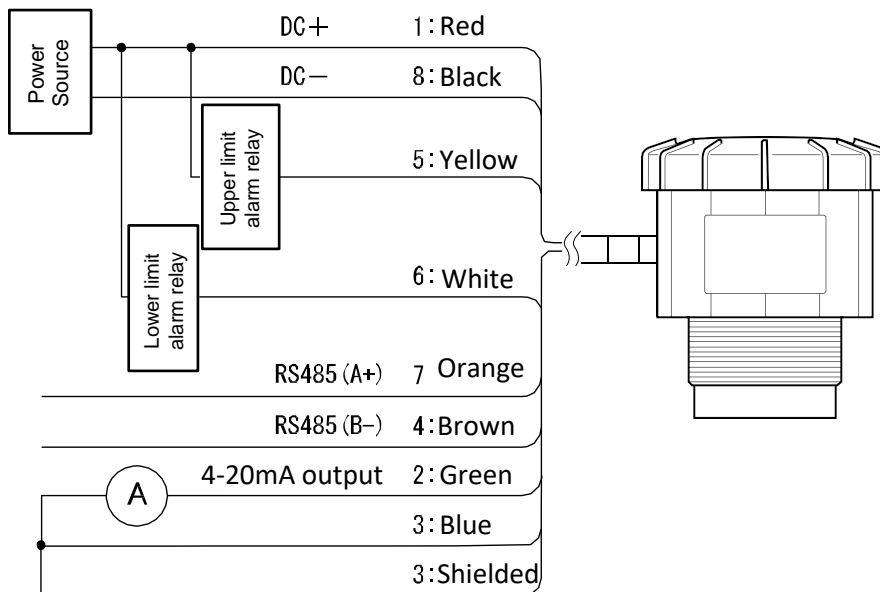
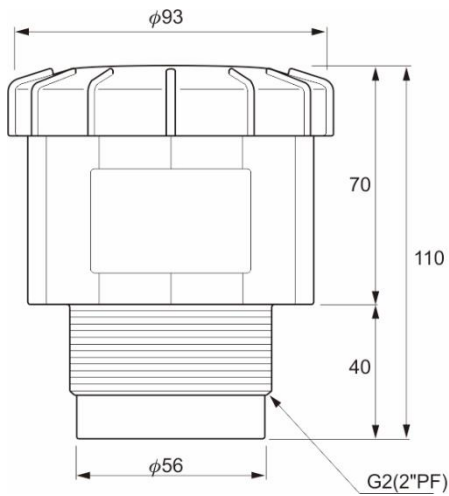
<sup>11</sup> <sup>12</sup>  
 AA: JIS

<sup>13</sup> <sup>14</sup>  
 A8: 1"  
 B2: 2"

<sup>15</sup> <sup>16</sup>  
 01: PT male  
 03: PF male

PS: Transducer A: AAB203  
 Transducer B: AAA801  
 Transducer C: AAA803

## 7. Dimensions & Wiring



- Red lead wire: Power source 12-24 VDC(+)
- Black lead wire: Power source 0V(-)
- Yellow lead wire: Upper limit alarm SW (Open collector output, NPN type)
- White lead wire: Lower limit alarm SW (Open collector output, NPN type)
- Orange lead wire: RS485(A+)
- Brown lead wire: RS485(B-)
- Green lead wire: 4-20mA output(+)
- Blue lead wire: GND (Upper/lower limit alarm SW, 4-20mA output)
- Shielded wire: Grounding (Connect Shielded wire to Blue lead wire and to Ground)

[Caution] Output rating of upper/lower limit alarm is 30V/0.1A.  
When a relay etc. is connected, the output rating of relay to be used must be within the above voltage and current



## 8. Working Principles

During operation, the device emits a wave to the medium to be measured. The wave reflects off the surface and moves back to the device where a transducer calculates the distance. The distance is based on the time interval between transmission and reception of the wave.  $D = (334.1 + 0.6t) \times T/2$ , where the D = the transmission distance; t = temperature; and T = transmission time.

With 4~20mA output, it can be connected to the PLC, DCS and SCADA systems. In addition, it is also equipped with exclusive PULSE and AGC (Auto Gain Control) echo tracking technology to ensure accuracy and precision even in the harshest environments.

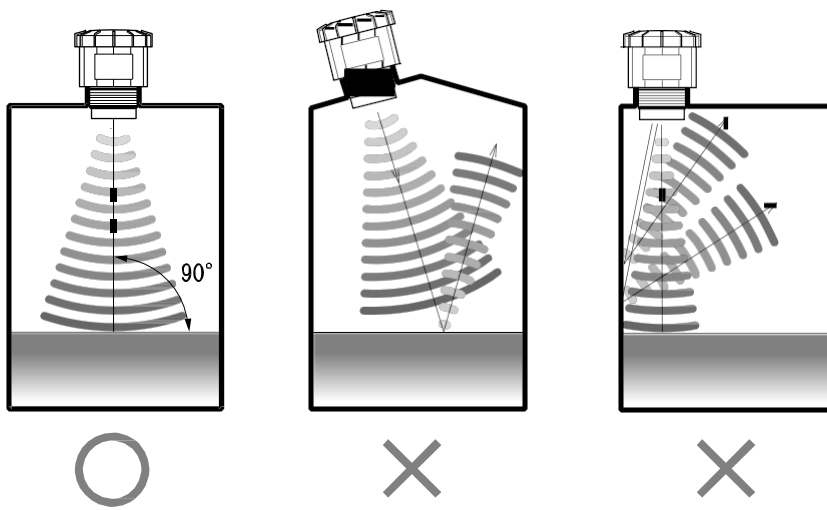
## 9. Specification

Model	EAX30000-B(Four wires)
Ultrasonic frequency	50kHz
External dimensions	Dia. 93 x 110mm
Rated power source	24VDC±10%
Max. power consumption	3W
Output current	4-20mA +/- 0.02mA DC
Relay Output	Upper and lower limit alarm output switches(NPN open collector)
RS-485 Output	Yes
Measurement range	0.3 - 10m
Measurement object	Liquid / Powder
Beam angle	14 deg (-6dB) / 10 deg (-3dB)
Memory backup	FERAM
Display	Graphic LCD (128x64dot)
Setting	Key operation
Resolution	1mm
Temperature compensation sensor	-20~+70 °C, +/- 2 °C
Measurement accuracy	+/- 0.25% of F.S.
Installation screw	G2 (2"PF)
Transducer	Transducer A: PP (Polypropylene)
Housing structure	IP65(Without lid: IP20)
Weight	350g
Standard	EN61326-1: 2013
Ambient temperature	-20~+60°C
Ambient humidity	Max. 80%RH(at 31°C )
Operation temperature	-20~+70°C
Distribution cable	Length of distribution cable: 10m Detachable waterproof connector 8 wires x 0.3mm <sup>2</sup>

## 10. Installation

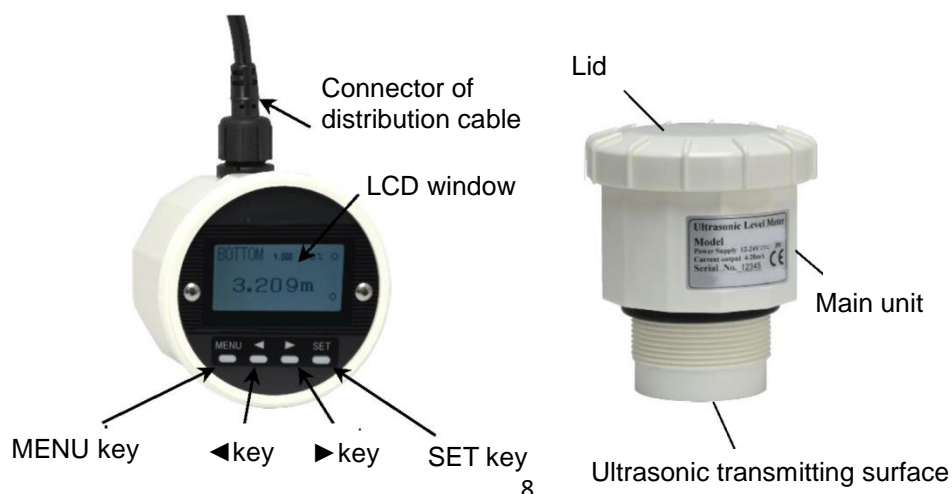
### 10.1 Installation precautions

- EAX30000-B should be mounted 1/3 the diameter of the vessel from the vessel wall
- Unit should never be closer than 300mm (12") to the liquid surface
- Install EAX30000-B on the top of tank horizontally.
- Screw in EAX30000-B into the resin flange with G2(2"PF) to the tank.
- Do not use metal nut or flange to install EAX30000-B to the tank to avoid the incorrect measurement. Use the resin nut or flange to install EAX30000-B to the tank.

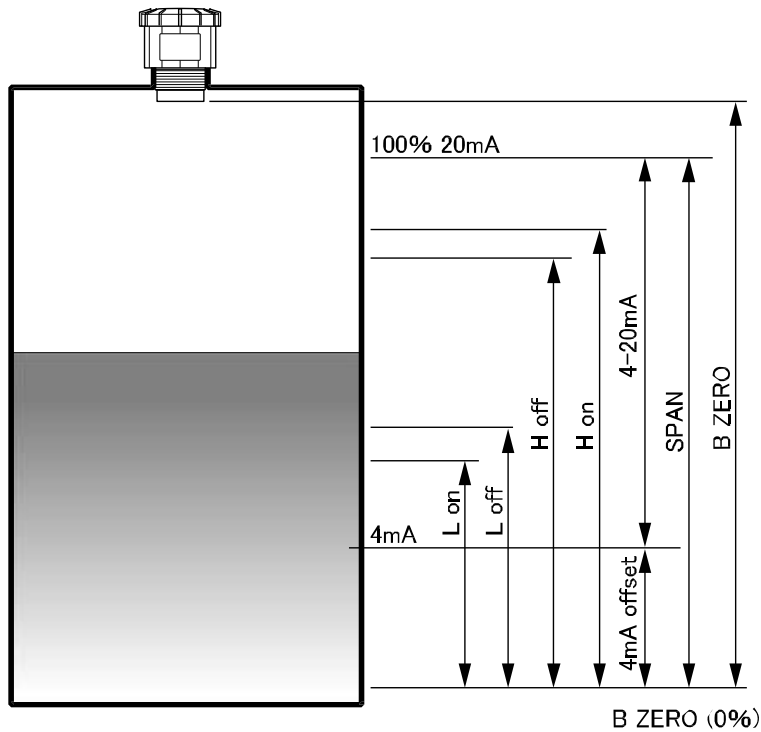


- Install EAX30000-B so that the ultrasonic transmitting surface becomes parallel to the liquid surface.
- Do not install EAX30000-B close to the sidewall of tank to avoid the incorrect measurement due to the undesired reflections from the sidewall.
- Do not screw in EAX30000-B with too much force.
- Avoid the direct sunlight to EAX30000-B.
- Do not install the multiple ultrasonic sensors to the same tank. To avoid the mutual interference of ultrasound.

### 10.2 Names of parts



### 10.3 Settings according to the tank



- 1) Press MENU key to indicate MENU.
- 2) Change the indicated parameter by ◀▶ keys and select the parameter by SET key. Change the setting value by ◀▶ keys. Press SET key again to determine the setting value. Press MENU key not to determine the setting value.
- 3) B ZERO;  
Distance from the ultrasonic transmitting surface to the tank bottom  
B ZERO can be the distance from the ultrasonic transmitting surface to arbitrary 0% level.
- 4) SPAN;  
Level from 0% to 100%  
Set the level from 0% which is set at B ZERO to 100%.
- 5) SW H/L;  
Level setting of alarm switch  
Set the level of SW H/L ON/OFF.  
Pay attention to the functions of SW H/L ON/OFF.
- 6) 4mA OFST;  
Set the offset of 4mA output.

# 11. Parameter Functions

## 11.1 Operating Instructions

### **Basic key operation**

Press MENU key to indicate MENU.

Change the indicated parameter by ◀▶ keys and select the parameter by key. Change the setting value by ◀▶ keys.

Press SET key again to determine the setting value. Press SET key not to determine the setting value.

Press MENU key again to escape from MENU.

### **Operating mode**

There are 2 operating modes, Level meter mode and Weir flowmeter mode. Select the operating mode at 20.FLOWmod in MENU.

### **Display mode**

Select the display mode from the following 4 modes.

The selectable display modes depend on Level meter mode and Weir flowmeter mode.

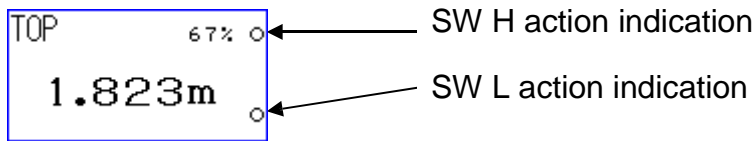
<Level meter mode>

- A ..... TOP-based distance display
- B ..... BOTTOM-based level display
- C ..... % display
- D ..... Ultrasonic A mode display

<Weir flowmeter mode>

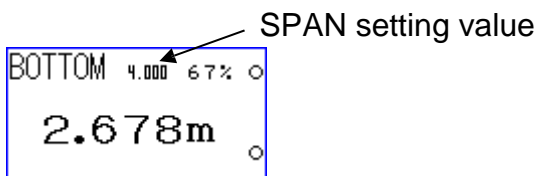
- A ..... Weir flowmeter display
- B ..... BOTTOM-based level display
- C ..... % display
- D ..... Ultrasonic A mode display

DISPMODE A - C <Level meter mode>  
DISPMODE A (TOP-based distance display)

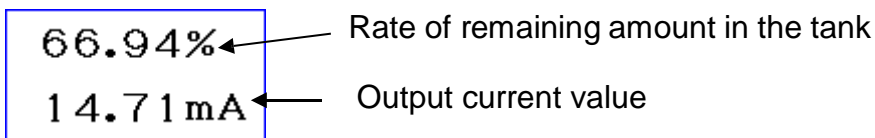


SW action indication;  
ON: ● OFF: ○

DISPMODE B (BOTTOM-based level display)

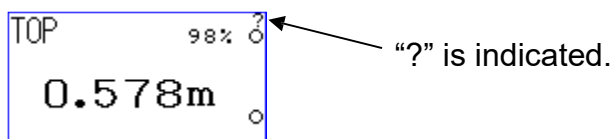


DISPMODE C (% display)



Switch DISPMODE by ◀▶ keys.

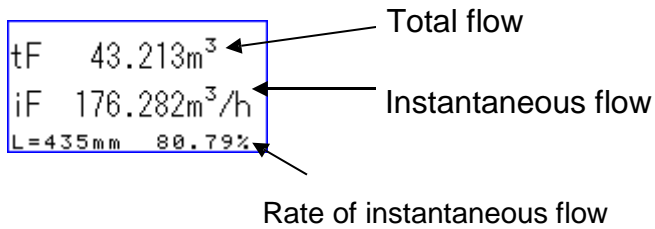
<Measurement error indication>



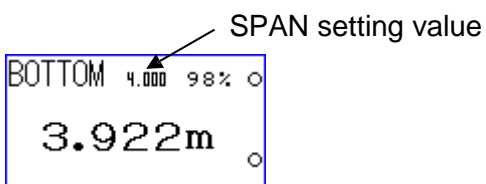
"?" is indicated at the upper right corner when the ultrasonic reflection echo cannot be detected.

DISPMODE A - C <Weir flowmeter mode>  
DISPMODE A (Weir flowmeter display)

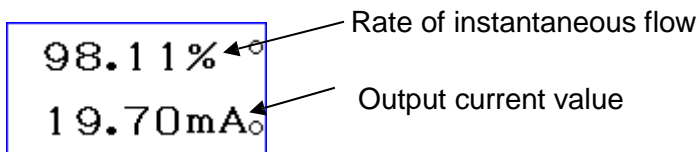
tF: Total flow  
iF: Instantaneous flow



DISPMODE B (BOTTOM-based level display)



DISPMODE C (% display)

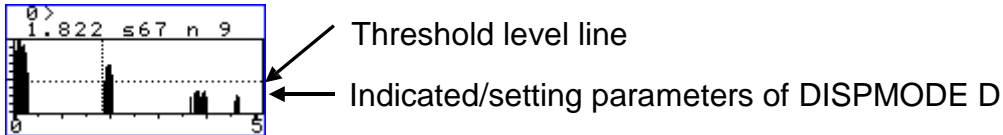


DISPMODE D (Ultrasonic A mode display )

Set the parameters related to the ultrasonic measurement based on the indicated waveform of ultrasonic reflections.

Measured value and setting value are indicated at the bottom of display. Change the indicated parameter by ◀▶ keys and select the parameter by SET key. (While selecting, underlined characters are indicated.)

Change the setting value by ◀▶ keys after the parameter is selected and determine the setting value by SET key.



● Indicated/Settingparameter

Indicated parameters: 0>: Measured value s: Signal level n: Noise level

<1> RANGE: Indicated range scale

Setting range: Min. 1m - Max. 10m (1m step)

<2> STC: Sensitivity Time Control

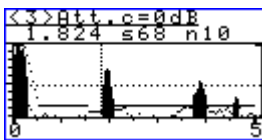
Sensitivity of close range is decreased to lower the undesired reflections from the close range.

Setting range: 0 - 10 (Default: 0)

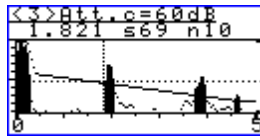
Larger value: Sensitivity of close range is lower.

<3> Att.c: Mask level for the entire area

Mask level gets lower according to the ultrasonic attenuation based on the distance from the sensor.

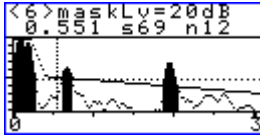


Att.c=0dB

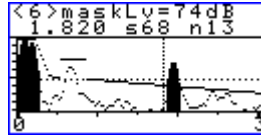


Att.c=60dB

- <4> maskP: Start position of rectangular mask
  - <5> maskW: Rectangular mask width
  - <6> maskLv: Rectangular mask level
- Settings of rectangular mask to avoid the undesired reflections from an obstacle within the measuring range.

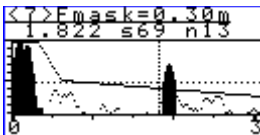


Att.c=0dB

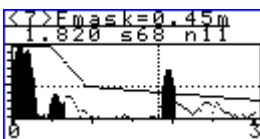


Att.c=60dB

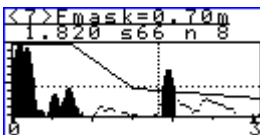
- <7> Fmask: Reverb mask width
- Reverb mask width should be wider to avoid incorrect measurement when the oscillation reverb is too long.



Fmask: 0.30m



Fmask: 0.45m



Fmask: 0.70m

[Caution] Distance within Reverb mask width cannot be measure at all.

- <8> THRESH: Threshold level
- Setting range: -4dB - -36dB (Default: -20dB)  
 Signal at the threshold level and lower is not be detected. Threshold level should be larger when 2 or 3 times that of actual distance is detected caused by the multiple reflections.

- <9> FREQ: Ultrasonic frequency
- Setting range:  
 EAX30000-A :45 - 55kHz (1kHz step)  
 EAX30000-B 90 - 110kHz (1kHz step)  
 Set the value so that the signal level can be larger.

- <10> NoiseSup: Noise suppression
- Setting range: 0 - 3  
 Select the value so that the noise level can be smaller.



## 11.2 Menu Setup

Press MENU key to indicate MENU.

Press MENU key again to escape from MENU.

After no key operation for 3 min., the display returns to the main display, automatically.

### **DISPMODE:** A - D

Select the appropriate one.

### **B ZERO:** EAX30000-A: 0.5 - 10m

Set the distance from the ultrasonic transmitting surface to the tank bottom or the channel floor.

### **SPAN:** EAX30000-A: 0 - 10m

Set the measuring range from the tank bottom or Max. overflow level.

SPAN is the range of 4-20mA output.

[Caution] If "4mAOFST" is any other than 0, "4mAOFST" to "SPAN" is 4-20mA output range.

### **RESPONSE:** 1000m/min - 0.01m/min

Fast <-> Slow

Set the response speed to the measured distance change.

### **SW H ON/OFF:** EAX30000-A: 0 – 10m

Set the level from the tank bottom to turn ON/OFF the upper limit SW.

### **SW L ON/OFF:** EAX30000-A:0 – 10m

Set the level from the tank bottom to turn ON/OFF the upper limit SW.

[Caution] The function of SW ON/OFF depends on the setting value of SW H/L ON/OFF.

[Caution] In case SW H/L ON and OFF are switched frequently, the difference between SW H/L ON and OFF should be larger to give hysteresis characteristics.

### **4mA OFST:** 0 – SPAN or lower

"4mAOFST=0" means that the tank bottom is the distance/level of 4mA output.

[Caution] If "4mAOFST" is any other than 0, "4mAOFST" to "SPAN" is 4-20mA output range.

**I4-20:** Norm(Normal) or Reve(Reverse) Set the basis of 4-20mA output. Normal: 4mA = 0%, 20mA = 100% Reverse: 20mA = 0%, 4mA = 100%

\*If any other than 0 is set to [4mA OFST], OFFSET works at 0% side.

**BRIGHT:** OFF <-> AUTO <-> ON

Set the back light function.

AUTO: ON for 10 min. after power power-on, OFF after 10 min. passes

1 hour: ON for 1 hour after any key operation, OFF after 1 hour passes

**4-20SET:** normal <-> i4mA - i20mA

Parameter for the connection test of 4-20mA output. normal: Current of measured value is output.

i4mA: 4mA is output forcibly. I20mA: 20mA is output forcibly.

normal <-> i4mA <-> i8mA <-> i12mA <-> i16mA <-> i20mA Once escape from MENU, setting gets "normal".

**Dist Adj:** -50 - +50mm

Set the value for the distance correction.

**Err Cond:** hold <-> i4fix <-> i20fix

Set the current output for the measurement error.

Hold: Current output of measured value before measurement error happens is output.

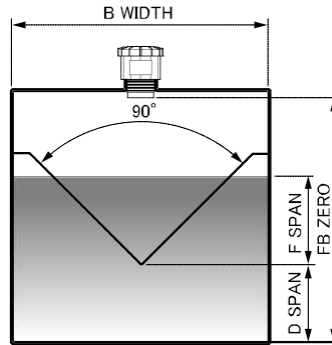
i4fix: 4mA is output when the measurement error happens. i20fix: 20mA is output when the measurement error happens.

### 11.3 Weir flowmeter setting

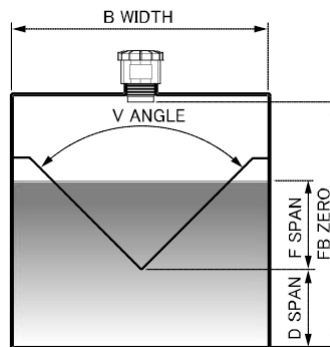
FLOWmod: Selection of Weir flowmeter function  
 OFF: Level meter mode  
 Others: Weir flowmeter mode

Level meter mode: OFF

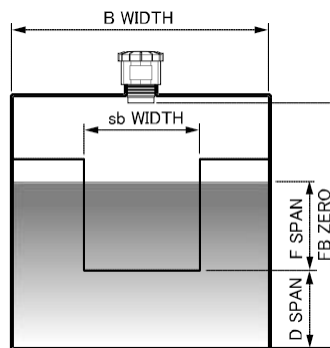
90 deg V-notch weir: 90ang



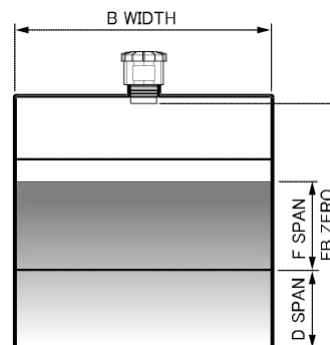
Arbitrary V-notch weir: AngleV



Contracted rectangular weir: Squar1

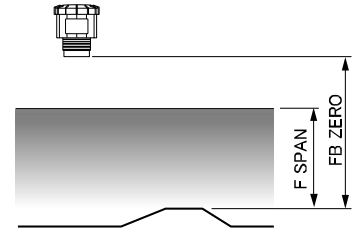


Suppressed rectangular weir: Squar2



Parshall flume flowmeter

- <-> PF-1(1inches) <-> PF-2(2inches) <-> PF-3(3inches)
- <-> PF-6(6inches) <-> PF-9(9inches) <-> PF-10(1feet)
- <-> PF-15(1.5feet) <-> PF-20(2feet) <-> PF-30(3feet)
- <-> PF-40(4feet) <-> PF-50(5feet) <-> PF-60(6feet)
- <-> PF-70(7feet) <-> PF-80(8feet)



**FBZERO:** Distance from the ultrasonic transmitting surface to the channel floor  
Setting range: 0.3 - 5m

**FSPAN:** Max. overflow level  
Setting range: 0.05 - 3m  
Max. measurable flow depends on FSPAN.  
While FSPAN is set, Max. measurable flow is showed at the bottom of display as "MaxFlow=XX.XXm<sup>3</sup>

**B WIDTH:** Channel width  
Setting range: 0.4 - 32m

**D SPAN:** Height from the channel floor to the lower edge of weir  
Setting range: 0.001 - 3.5m

**sbWIDTH:** Cutout width of contracted rectangular weir  
Setting range: 0.15 - B WIDTH

**V ANGLE:** Arbitrary angle of V-notch (for AngleV) Setting range: 45.0 - 100.0 deg

**F CUT OF:** Low cut OFF of flow  
Setting range 0.0 - 10.0% of Max. measurable flow Flow at F CUT OF or lower is recognized as no flow. Output current of flow at F CUT OF or lower is 4mA.  
While FSPAN is set, Max. measurable flow is showed at the bottom of display as "MaxFlow=XX.XXm<sup>3</sup>

Parshall flume setting

- FBZERO: Distance for Min. flow
- FSPAN: Distance for Max. flow

#### 11.4 Setting parameters

No	Parameter	Explanation	Setting range Selectable item
0	DISPMODE	Display mode	A TopDis B BotDis C Percen D Echo
1	B ZERO	Distance from the ultrasonic transmitting surface to the tank bottom	0.5 - 10 Unit [m]
2	SPAN	Level from 0% to 100%	0 – 10 Unit [m]
3	RESPONSE	Response speed to The measured distance change	0.01 - 1,000 Unit [m/min]
4	SW H ON	Level from the tank bottom to turn on the upper limit alarm SW	EAX30000-B: 0 - 10 Unit [m]
5	SW H OFF	Level from the tank bottom to turn off the upper limit alarm SW	
6	SW L ON	Level from the tank bottom to turn on lower limit alarm SW	
7	SW L OFF	Level from the tank bottom to turn off the lower limit alarm SW	
8	4mA OFST	Offset of 4mA output	0 - SPAN setting value Unit [m]
9	I4-20	Basis of 4-20mA output	Norm, Reve
10	Temp	Sensor temperature	
11	Echo Lv	Signal level	
12	NoiseLv	Noise level	
13	BRIGHT	Back light setting	OFF, Auto, ON
14	4-20SET	Connection test of 4-20mA output	normal, i4mA, i8mA, i12mA, i16mA, i20mA
15	Dist Adj	Distance correction	-50 - +50 Unit [mm]
16	Err Cond	Current output for measurement error	Hold, i4fix, i20fix
17	B WIDTH	RS485 MODBUS NO.	0.4 – 32 Unit [m]
18	D SPAN	Baud rate for RS485 communication	0.01 - 3.5 Unit [m]
19	sbWIDTH	Parity check for RS485 communication	0.15 - B WIDTH Unit [m]
20	V ANGLE	Weir flowmeter function	45 – 100 Unit [deg]

No	Parameter	Explanation	Setting range Selectable item
21	F CUT OF	Distance from the ultrasonic transmitting surface to the channel floor	0.3 – 5 Unit [m]
22	Total Flow RST	Max. overflow level	0.3 – 5 Unit [m]
23	SYSTEM RESET	Channel width	0.4 – 32 Unit [m]
24	D SPAN	Height from the channel floor to the lower edge of weir	0.01 - 3.5 Unit [m]
25	sbWIDTH	Cutout width of contracted rectangular weir	0.15 - B WIDTH Unit [m]
26	V ANGLE	Arbitrary angle of V- notch	45 – 100 Unit [deg]
27	F CUT OF	Low cut OFF of flow	0 – 10 Unit [%]
28	Total Flow RST	Total flow reset	
29	SYSTEM RESET	System reset	

## 12. Connection to the computer (RS485)

### Specifications of RS485

Communication protocol	MODBUS(RTU)
Electrical characteristics	Compliant with EIA RS485
Communication method	2 wire and half-duplex(Poling/selecting)
Synchro system	Asynchronous method
Baud rate	Selectable from 2400, 4800, 9600, 19200,38400, 57600 or 115200
Start bit	1 bit
Data length	8 bit
Parity	Selectable from None, ODD or EVEN
Stop bit	1 bit
Delimiter	Silent interval for 3.5 characters
Character code	Binary code
Transmission control procedure	No control sequence
Number of unit which can be concatenated	32 units including host unit
Unit address	Selectable from 1 – 99
Max. length of communication cable	1200m in total
Error check	CRC
Response speed	Within the time for 10 characters

Default of unit address

Default of unit address is 0.

Select the unit address from 1 - 99 when you use RS485 communication.

### 13. RS485 MODBUS communication format

- 1: In case of no incoming command for 3.5-character-time, EXA30000-B recognizes the completion of incoming command and the command processing is done.
- 2: Unit address can be selected from 1 to 99

#### MODBUS RTU command message frame

START Time for 3.5characters	ADDRESS 8 bits	FUNCTION 8 bits	DATA N * 8 bits	CRC CHECK 16 bits	END Time for 3.5characters
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#### Correspondent command

03	Read Holding Register	Readout of holding register
04	Read Input Register	Readout of input register
06	Preset Single Register	Write of holding register
08	Diagnostics	Loop-back test

Command = 04 Readout of input register

#### Query

Slave Address	Function	Starting Address Hi Lo	No. of Points Hi Lo	CRC
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#### Response

Slave Address	Function	Byte Count	Data n Hi Lo	Data n+1 Hi Lo	CRC
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Register address	Content	Example	Readout value
0	Distance	2000mm	2000
2	Level from the tank bottom	3000mm	3000
4	%	100%	10000
6	Noise	10	10
8	Signal	80	80
10	Sensor temperature	25.0 deg C	250
12	Temperature inside of EXA30000-B	25.0 deg C	250
13	Max. instantaneous flow	100.0 m3/h	100
14	Instantaneous flow	20.0 m3/h	20
15	Total flow	1000.0 m3	1000
16	Max. overflow level	255mm	255
17	Rate of instantaneous flow	100%	10000
18	Total flow (High 16bits )	1000.0 m <sup>3</sup> /h	1000
19	Total flow (Low 16 bits)		



Command = 03 Readout of holding register, Command = 06 Write of holding register

Query(03,06)

Slave Address	Function	Starting Address Hi Lo	No. of Points Hi Lo	CRC
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Response(03)

Slave Address	Function	Byte Count	Data n Hi Lo	Data n+1 Hi Lo	CRC
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Response(06)

Slave Address	Function	Register Address Hi Lo	Preset Data Hi Lo	CRC
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Register address	Content	Readout value (Example)	Range of write value
0	RESPONSE	5	0 - 5
1	THRESHOLD	0	0 - 8
2	STC	1	0 - 10
3	AVERAGE	6	1 - 30
4	BOTTOM ZERO	830	30 - 2030
5	SPAN	800	0 - 2000
6	SW H ON	700	0 - 2000
7	SW H OFF	699	0 - 2000
12	SW L ON	100	0 - 2000
13	SW L OFF	101	0 - 2000
14	4-20mA OFFSET	0	0 - 2000
28	B?WIDTH	800	400 - 7000
29	bb_WIDTH	400	150 - 5000
30	D_SPAN	100	1 - 3500
31	V_ANGLE	900	450 - 1000
32	FLOW MODE	6	0 - 22
36	LOW CUT OFF	0	0 - 100
37	FLOW ZERO	2000	300 - 5000
38	FLOW SPAN	200	50 - 3000
39	TOTAL FLOW RESET	0	Write 1 to reset total value.

## 14. Transportation and Storage

To prevent the EAX Ultrasonic Level Transmitter from damage during the transportation, please keep the packaging condition as how it was when it was shipped from the factory before arriving at the installation site. The storage conditions should meet the following:

- Appropriate rainproof and damp-proof treatment must be conducted .
- Vibration must be reduced and collision with other objects must be prevented during its transportation.
- The storage temperature must be in the range of -20 ~ 70°C
- The humidity should be lower than 80%
- To store the used sensors, clean the tested medium attached on the lining and the electrode, and avoid oxidation by not exposing it to too much air for a long time.
- Outdoor storage may degrade the performance of the flow meter.