

GE-1208 Open Channel Ultrasonic Flow Meter

User Manual



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1. Function:

This flowmeter need used with Parshall flume, the sensor will not contact with the liquid, so it will be much more safety and stability

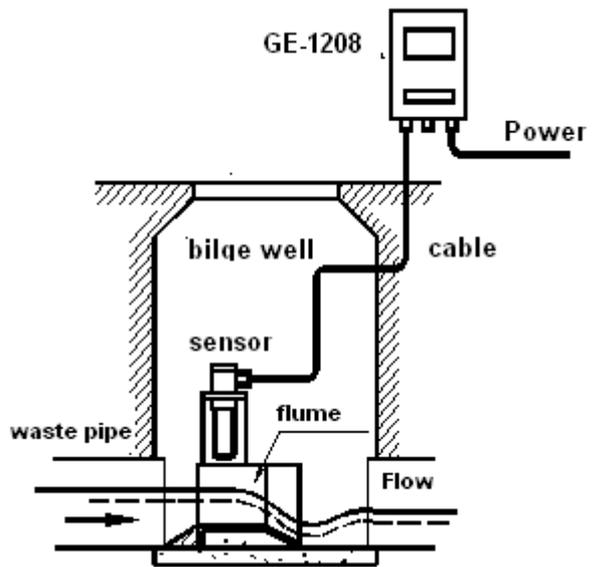
2. Principle

GE-1208 Meter measure the liquid level directly, the Parshall flume transfer the flow rate to the liquid level. This meter measure the liquid level, then calculte the flow rate, show the result on the screen.

2.1 the flume measure the flow

If we use the Parshall flume to measure the flow, there is relativity between the flow and the level, it mainly depend on the physical dimension.

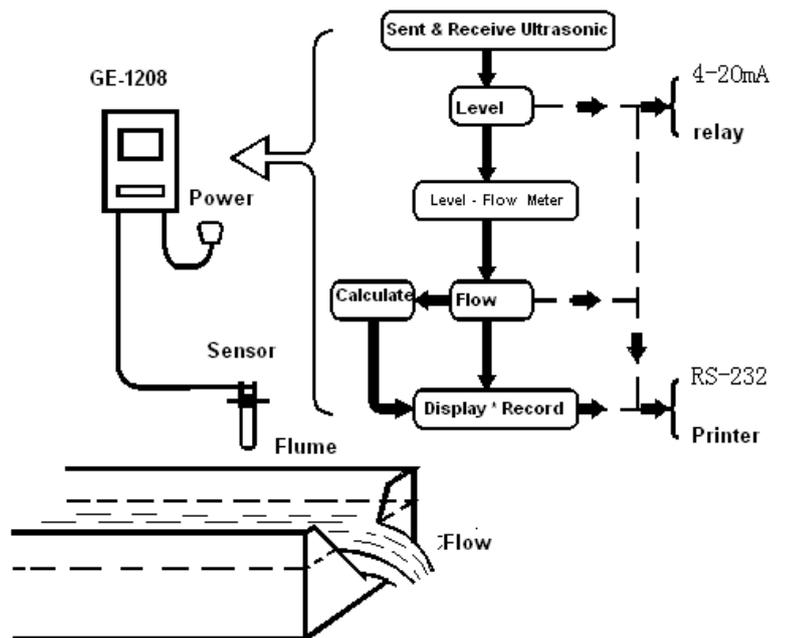
When we use the GE-1208 Flowmeter, we must know the relation between the flow rate and the liquid level. We could get this relation from the supplier of parshall flume, or check the standard data from the attached file.



2.2 The principle of meter

The flowmeter sent and receive the ultrasonic, transfer it to liquid level. there is the relative data in the meter, it could measure the flow by the level.

It have 4-20mA, reply, RS232 output.



3. Parameter Setup

Press "MENU" Button, then you will go to setup the parameter

Press "MENU" Button, it will turn page on the screen

Press "▶" Button, it will move the Changeable digit position

Press "▲" Button, it will change the value of the changeable digit

Press "RUN" button, it will finish setup, start to work

1. Display screen

```
0700 mm Wale
000L/S Flow
00000000m3/h
```

Wale: the liquid level, measured by the sensor

Flow: It is the flow velocity

m3/h: it is cumulation for flow

Press "MENU" Button, setup the parameter

```
Parameter SET
20mA 0500.00
CleAcc 0 ADDE 001
Bad mold 0000mm
```

20mA 100L/s, means when 100L.s, the output is 20mA

ADDER 0000, it is RS485 address

Bad mold 0000, after install the sensor on the rack, connect with the meter, when there is no water in parshall flume, at this time, the GE-1208 meter show the value of liquid level; input this value as "Bad Mold" value by "▶" Button and "▲" Button, then the value of liquid level change to zero. then, when liquid flow into the flume, the GE-1208 will show the actual value of liquid level.

Alarm setup 1

Press "MENU" Button, setup the parameter

```
Parameter SET
I-Corre 0000%
A: ON 0000 mm
A: OFF 0000 mm
```

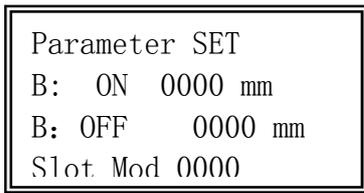
I-Corre 0000% The adjustmant of the 4-20mA current output

A ON 0000mm, Relay A, L<H switch ouput, L=0000mm

A OFF 0000mm, Relay A, L<H switch ouput, H=0000mm

Alarm setup 2

Press “MENU” Button, setup the parameter



B ON 0000mm, Relay B, L<H switch output, L=0000mm

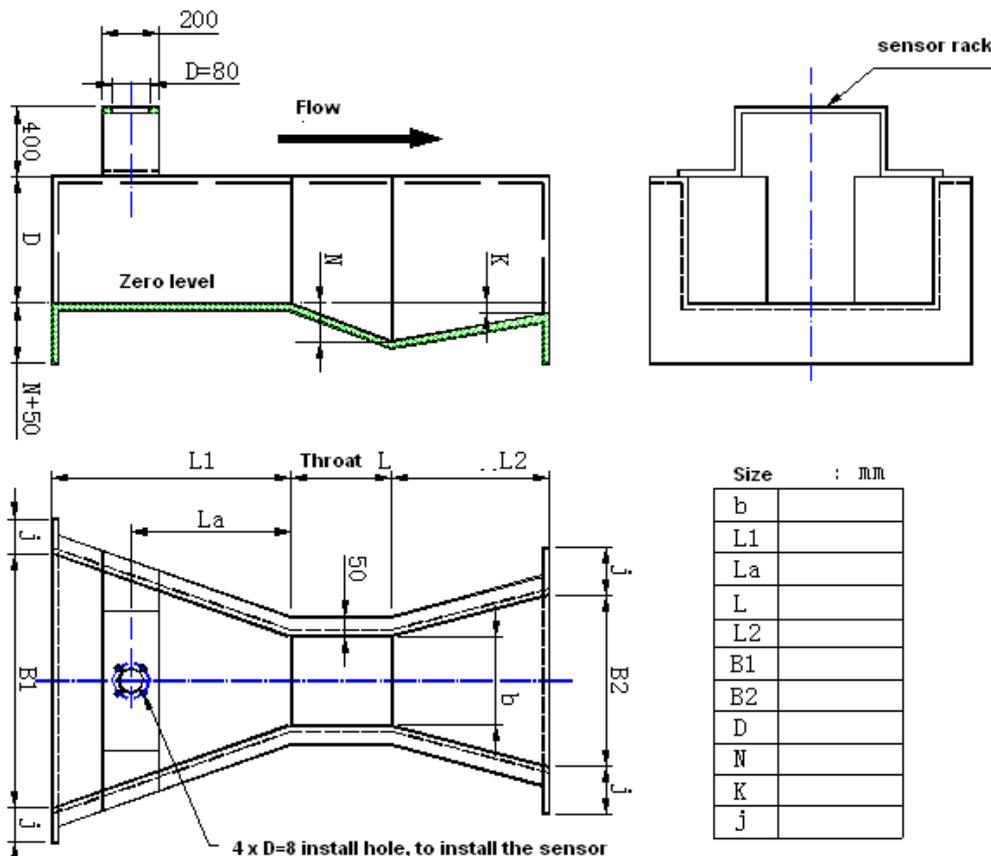
B OFF 0300mm, Relay B, L<H switch output, H=0300mm

Slot Mod, please check the attached data about parshall flume, if 0002, it relate to No.2 data sheet, $b=0.051$, flow is $50\text{m}^3/\text{h}$.

After finish setup the parameter, press “▶” and “▲” at the same time, it will save the setup parameter.

4. Parshall flume

if the flow is more than 40L/s, we advise the parshall flume for you. Actually, in most condition, the flow is more than 40L/s.



Size	: mm
b	
L1	
La	
L	
L2	
B1	
B2	
D	
N	
K	
j	

The above drawing is for parshall flume, there is standard method to produce the parshall flume, so you just need check the value for b , $L1$, La , L , $L2$, $B1$, $B2$, D , N , K

Throat size “b” could be 0.051, 0.076, 0.152, 0.228, 0.3m, the parshall flume have standard technology data for the relation between the liquid level and the flow.

0.051m Throat size: Level: meter; Flow: L/s

Level	0.000	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090
Flow	0.0000	0.0959	0.2807	0.5263	0.8221	1.1617	1.5411	1.9571	2.4071	2.8892
Level	0.100	0.110	0.120	0.130	0.140	0.150	0.160	0.170	0.180	0.190
Flow	3.4018	3.9434	4.5127	5.1089	5.7307	6.3775	7.0484	7.7429	8.4602	9.1997
Level	0.200	0.210	0.220	0.230	0.240	0.250	0.260	0.270	0.280	0.290
Flow	9.9610	10.743	11.547	12.370	13.214	13.214	13.214	13.214	13.214	13.214
Level	0.300	0.310	0.320	0.330	0.340	0.350	0.360	0.370	0.380	0.390
Flow	13.214	13.214	13.214	13.214	13.214	13.214	13.214	13.214	13.214	13.214

0.076 m Throat size: Level: meter; Flow: L/s

Level	0.000	0.010	0.020	0.030	0.040	0.050	0.060	0.070	0.080	0.090
Flow	0.0000	0.1407	0.4119	0.7722	1.2062	1.7046	2.2613	2.8716	3.5319	4.2393
Level	0.100	0.110	0.120	0.130	0.140	0.150	0.160	0.170	0.180	0.190
Flow	4.9914	5.7860	6.6214	7.4960	8.4085	9.3575	10.342	11.361	12.413	13.499
Level	0.200	0.210	0.220	0.230	0.240	0.250	0.260	0.270	0.280	0.290
Flow	14.616	15.764	16.942	18.151	19.389	20.655	21.950	23.272	24.621	25.998
Level	0.300	0.310	0.320	0.330	0.340	0.350	0.360	0.370	0.380	0.390
Flow	27.400	28.829	30.283	31.763	31.763	31.763	31.763	31.763	31.763	31.763

0.152 m Throat size: Level: meter; Flow: L/s

Level	0.000	0.020	0.040	0.060	0.080	0.100	0.120	0.140	0.160	0.180
Flow	0.0000	0.9588	2.7689	5.1490	7.9961	11.250	14.870	18.825	23.092	27.652
Level	0.200	0.220	0.240	0.260	0.280	0.300	0.320	0.340	0.360	0.380
Flow	32.488	37.589	42.941	48.536	54.363	60.416	66.586	73.167	79.854	86.740
Level	0.400	0.420	0.440	0.460	0.480	0.500	0.520	0.540	0.560	0.580
Flow	93.821	101.09	108.55	116.19	116.19	116.19	116.19	116.19	116.19	116.19

0.228 m Throat size: Level: meter; Flow: L/s

Level	0.000	0.020	0.040	0.060	0.080	0.100	0.120	0.140	0.160	0.180
Flow	0.0000	1.3466	3.8889	7.2319	11.231	15.801	20.885	26.440	32.433	38.837
Level	0.200	0.220	0.240	0.260	0.280	0.300	0.320	0.340	0.360	0.380
Flow	45.630	52.794	60.312	68.169	76.354	84.854	93.661	102.76	112.16	121.83
Level	0.400	0.420	0.440	0.460	0.480	0.500	0.520	0.540	0.560	0.580
Flow	131.77	141.99	152.46	163.19	174.17	185.40	196.86	208.56	220.50	232.66
Level	0.600	0.620	0.640	0.660	0.680	0.700	0.720	0.740	0.760	0.780
Flow	245.05	257.64	257.64	257.64	257.64	257.64	257.64	257.64	257.64	257.64

0.300 m Throat size: Level: meter; Flow: L/s

Level	0.000	0.020	0.040	0.060	0.080	0.100	0.120	0.140	0.160	0.180
Flow	0.0000	1.7690	5.0760	9.4067	14.570	20.458	26.996	34.130	41.815	50.019
Level	0.200	0.220	0.240	0.260	0.280	0.300	0.320	0.340	0.360	0.380
Flow	58.713	67.873	77.477	87.507	97.948	108.79	120.01	131.60	143.55	155.85
Level	0.400	0.420	0.440	0.460	0.480	0.500	0.520	0.540	0.560	0.580
Flow	168.50	181.48	194.79	208.41	222.35	236.59	251.14	265.97	281.10	296.51
Level	0.600	0.620	0.640	0.660	0.680	0.700	0.720	0.740	0.760	0.780
Flow	312.20	328.17	344.41	360.91	377.67	394.70	411.98	429.51	447.29	447.29

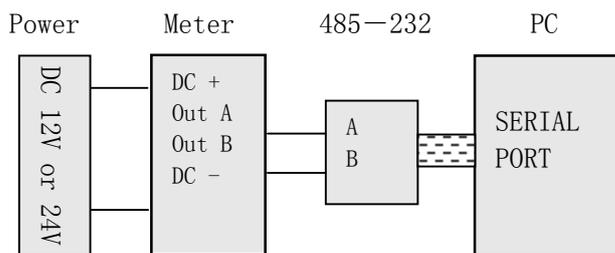
If the user have special need about the parshall flume, we could supply drawing picture, direct to build the flume

Wire Diagram

AC 220V L	L
AC 220V N	N
AC 220V GND	T
DC24V+	DC-IN
4-20mA - (24V GND)	GND
4-20mA +	4-20mA
2# Sensor-gray wire	485-
2# Sensor-blue or yellow wire	485+
2# Sensor - brown wire	DC-OUT
2# Sensor black wire	GND
1# Sensor-gray wire	485-
1# Sensor-blue or yellow wire	485+
1# Sensor - brown wire	DC-OUT
1# Sensor black wire	GND
D relay NO terminal	D-OFF
D relay NC terminal	D-ON
D relay common terminal	D-AND
C Relay NO Terminal	C-OFF
C Relay NC Terminal	C-ON
C Relay Common Terminal	C-AND
B Relay NO Terminal	B-OFF
B Relay NC Terminal	B-ON
B Relay Common Terminal	B-AND
A Relay NO Terminal	A-OFF
A Relay NC Terminal	A-ON
A Relay common Terminal	A-AND

Output with other meter

1. Connect with PC



2. relay output

