

KFKC INSTRUMENT CO.,LTD



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I. General Introduction

LWY liquid turbine flow meters Turbine flow sensor and receiving from the electrical pulse signal composed of intelligent display devices. Used to measure the low-viscosity liquids in closed conduits instantaneous volume flow and volume in petroleum, chemical industry, metallurgy, aviation and scientific research departments have been widely used.

LWY liquid turbine flow sensor from the turbine body and pre-amplifier. Display Instrument developed and manufactured by our company using SMIT-E-Y01 Intelligent Flow Totalize.

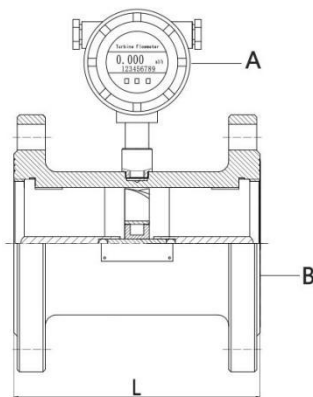
The flow meter JG198-94 tests the implementation of national regulations and Q/12KF3989-2001 LWY Series Turbine Flow meter enterprise standard.

II. Structure and Operating Principle

2.1 Construction

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A--display
B--sensor



2.2. Working principle

Sensor is based on the torque balance theory, when the liquid flows through the sensor, in the special structure of rectifiers (D1) to be rectified under the action and speed, due to turbine blades and fluid flow into a certain angle, in accelerating the fluid under the action of the impeller (D2) produce rotational torque to overcome friction torque and fluid resistance, the turbine begins to rotate, to a certain flow range, the turbine's rotational speed and flow rate is proportional to volume flow. Impeller rotating-cut magnetic lines, periodically changing the coil (D3) in the magnetic flux, so that both ends of the coil sensor and the volume of fluid flow is proportional to the pulse signal, the signal after amplification, filtering, reconstructive surgery into the Flow Totalizer (A) to computing processing, and display on the LCD on the spot.

III. Main technology data

Material: Stainless Steel

DN range (mm): DN8-DN500

Output: pulse/current4-20Am/RS-485/Hart

Accuracy: 1.0%

Medium: liquid

Flow range (mm): 0.25-4000

Power supply: 12+-10% VAC / 24+-10% VAC / 24VDC

Medium temperature (centigrade): -20-80

Environment temperature (centigrade): -20-50

Atmospheric pressure: 86-106KPa

Nominal Pressure: 1.6 – 42 MPa

Anti-Explosion Grade: IaIICT4, dIIBT4

Connection type: flange / screw thread / clamping band

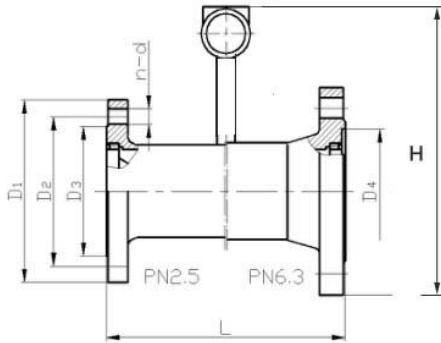
IV. Flow rate and dimension

4.1 flow rate

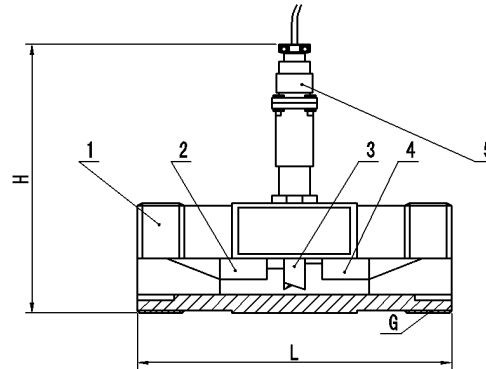
type \ item	inside nominal diameter (mm)	Flow rate (m ³ /h)	Liquid temperature (°C)	Press (Mpa)
		1.0		
LWGY-10	10	0.2-1.2	-20~+120	1.6
LWGY-15	15	0.6-6		
LWGY-25	25	1-10		
LWGY-40	40	2-20		6.3
LWGY-50	50	4-40		
LWGY-80	80	10-100		

LWYG-100	100	20-200		
LWGY-150	150	30-300		
LWGY-200	200	80-800		

4.2 Dimension



(1)



(2)

1.The installation of sensor according to the different specifications,the use of thread or

flange connection, installation size .

diameter (mm)	4	6	10	15	20	25	32	40	50	65	80	100	125	150	200
L (mm)	50	50	50	75	85	100	120	140	150	175	200	220	250	300	360
H (mm)	145	145	165	170	175	180	220	178	252	270	287	322	340	367	415

4.3 Encode Table

LWGY-

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1	2	3	4	5	6	explanation
inside nominal diameter	counter	pressure	feature	Transmitter	working temperature	
						Turbine flow meter
8						diameter8mm
15						diameter15mm
25						diameter25mm
40						diameter40mm
50						diameter50mm
80						diameter80mm
100						diameter100mm
150						diameter150mm
200						diameter200mm

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250						diameter250mm
300						diameter300mm
	W					pulse
	J					Mechanical arithmometer
	E					Electronic arithmometer
	H					Auto Zero arithmometer
		1.6				pressure1.6Mpa
		2.5				pressure2.5 Mpa
		4.0				pressure4.0 Mpa
		6.3				pressure6.3 Mpa
			C304			Rotor is stainless 304
			C316			Rotor is stainless 316

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			CC304			Crust and Rotor is stainless 304
			CC316			Crust and Rotor is stainless 316
				F		Pulse output
				I		Currency output
					A	working temperature-20~+80
					B	working temperature-20~+150
					C	working temperature-20~+250
					D	working temperature-20~+350

V. Installation

1. Installation of Sensor according to the different specifications, using threaded or flange connections.
2. Sensors can be horizontal, vertical installation. The flow direction must be bottom-up when Vertical installation. Liquid should be filled with pipes, without air bubbles.
3. Installation, the liquid flow direction should be indicated on the flow sensor housing the arrow in the same direction, the upper straight run piping should be at least 20 times reaches of the nominal diameter, the down straight run piping should be at least 5 times reaches of the nominal diameter.
4. Sensors should stay away from the outside electric and magnetic fields, if necessary; shielding should be effective measures to prevent external interference.
5. In order to repair without affecting the normal fluid transport, it is recommended to install by-pass pipeline near sensor.
6. Sensor open-air installation, please do amplifiers and plugs Department waterproofing

treatment.

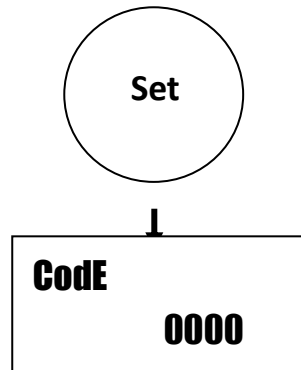
VI. Menu setting step:

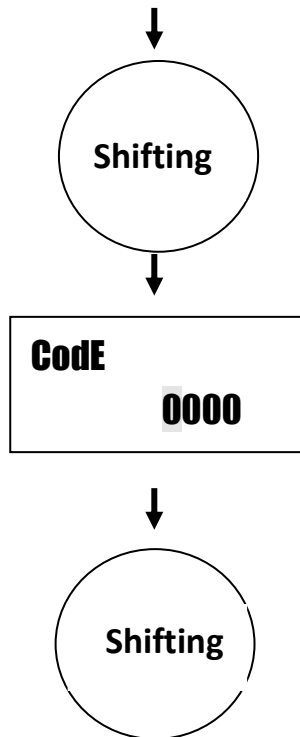
1. Button definition:

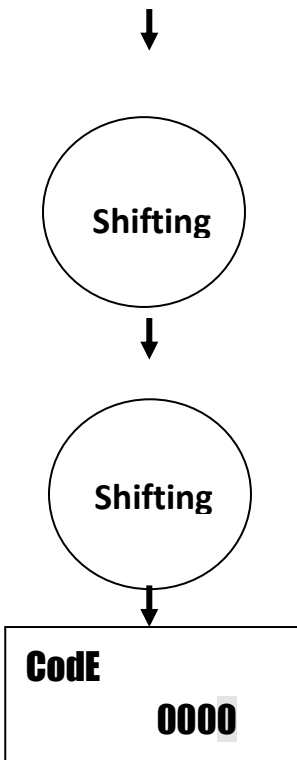
Name		Note
Operation button	Set	<ul style="list-style-type: none"> ● Press this button to enter setting status under measuring status. ● When parameter symbol is showed under setting status, press this button and then you can go to next group of parameter or return to measuring status.
	Shifting	<ul style="list-style-type: none"> ● Press this button to switchover the display of instant flow and turbine frequency ● Under setting status: ① call original parameter value out. ② move modified bit
	Affirm	<ul style="list-style-type: none"> ● It is invalid under measuring status. ● Store parameter value which has been modified or check the

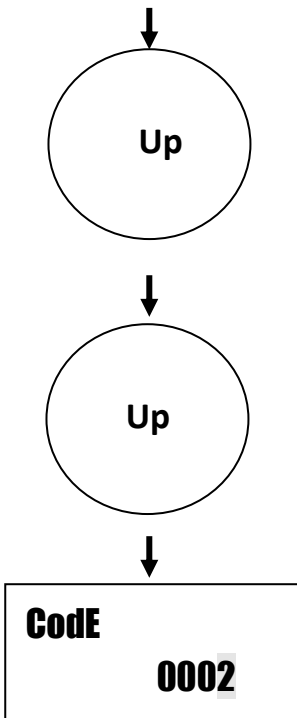
		next parameter under setting status.
	Up	<ul style="list-style-type: none">● It is invalid under measuring status.● Increase parameter value or change setting type under setting status
	Down	<ul style="list-style-type: none">● It is invalid under measuring status.● Decrease parameter value or change setting type under setting status

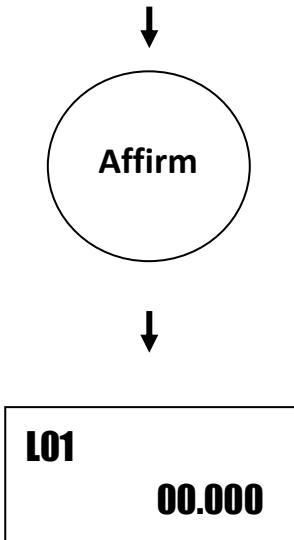
2. Setting method:











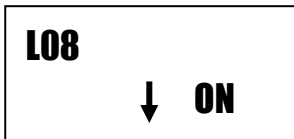
Primary menu (Default code: 0002):

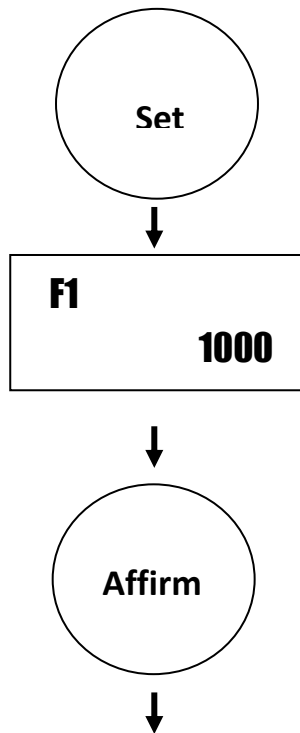
L01	Instant flow's scaling position 0~4. The sequence of 0~4 corresponds to 0.0000,00.000, 000.00,000.0,0000. This item can be out of concern.
L02	discharge coefficient's scaling position 0~4. The sequence of 0~4 corresponds to 0.0000,00.000, 000.00,000.0,0000. This item can be out of concern.
L03	Sensor discharge coefficient. Unit: 1/litre.
L04	Media's density value. Unit: t/m ³ . 1.000 is default value. This item

	can be flow amending factor.
L05	Unit of instant flow measurement: 0~3. 0: l/m. 1: m3/min. 2: m3/h. 3: l/h.
L06	Filtering time setting (s) : 1~20. The default setting is 1.
L07	Small-signal excision value 0—9999. 0 is default and means not opening signal excision. A small flow value Excision can be done in accordance with actual condition.
L08	

	Broken line's revision function selecting: 0: OFF.1: ON. OFF is default and means not opening broken line's revision function. Non-factory staff cannot modify this parameter.
L09	Set range of 20mA. (Power supply by dry battery has no this item).

If L08 (broken line's revision function) is set to "ON", then press "setting" button to go into modification of subsection frequency and subsection coefficient. If L08 is set to "OFF", then press "setting" button to quit the setting status.





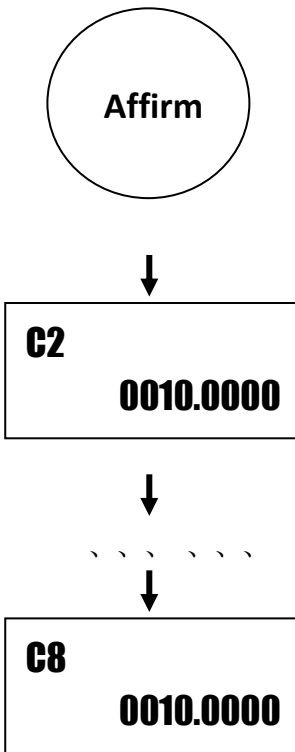
C1
0010.0000

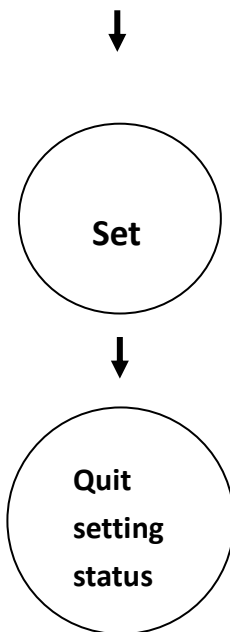


Affirm



F2
↓ **2000**





Broken line revision menu:

F1	The frequency value (Hz) of first subsection of flow sensor. It is minimum.
C1	The discharge coefficient of first section of flow sensor (1/litre).
F2	The frequency value (Hz) of second subsection of flow sensor.
C2	The discharge coefficient of second section of flow sensor (1/litre).
F3	

	The frequency value (Hz) of third subsection of flow sensor.
C3	The discharge coefficient of third section of flow sensor (1/litre).
F4	The frequency value (Hz) of fourth subsection of flow sensor.
C4	The discharge coefficient of fourth section of flow sensor (1/litre).
F5	The frequency value (Hz) of fifth subsection of flow sensor.
C5	The discharge coefficient of fifth section of flow sensor (1/litre).

F6	The frequency value (Hz) of sixth subsection of flow sensor.
C6	The discharge coefficient of sixth section of flow sensor (1/litre).
F7	The frequency value (Hz) of seventh subsection of flow sensor.
C7	The discharge coefficient of seventh section of flow sensor (1/litre).
F8	The frequency value (Hz) of eighth subsection of flow sensor.
C8	The discharge coefficient of eighth section of flow sensor (1/litre). It is maximum.

Secondary menu (default code:2222)

L11	External magnetic steel zero clearing permission. ON: yes. OFF: no.
L12	“Downwards” button zero clearing permission. ON: yes. OFF: no.

Tertiary menu (the super code is fixed to 6210)

BA0	4-20mA null point adjustment. It can be out of concern. The
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	electricity supplying of battery has no this item.
BAI	4-20mA full scale adjustment. It can be out of concern. The electricity supplying of battery has no this item.
L13	Primary menu code modification (0002).
L14	Secondary menu code modification (0002).
L15	Clear integer part of accumulated flow to zero.
L16	Clear decimal part of accumulated flow to zero.

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