

IOTAFLOW
SYSTEMS PVT. LTD

DIGITAL WATER METER USER MANUAL

Electronic Flowmeter Display Manual

" If You Want To Manage It, Measure It "

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OVERVIEW

The Electronic Display of the flow meter is a battery-powered intelligent ultra-low power meter. The central processing unit adopts MSP430F247 Chip and flowmeter coefficients can be set to realize segmental compensation, which can greatly improve the turndown ratio of the flowmeter.

FEATURES

- Use MSP430F247 Chip, liquid crystal display, ultra-low power consumption.
- Adopt ferro electric data memory, with high reliability data power failure protection function (fast storage speed, data will not be lost after countless power-on shocks).
- High precision D / A Conversion chip, guarantee 4-20mAStable current output.
- Built-in setting button and reset button, and external operation buttons to complete full-function operation.
- Pulse output function.
- When the external environment temperature is lower than minus five degrees Celsius, it can be automatically heated to ensure the normal operation of the display screen.
- RS232 and RS485 The communication interface can work online with computers and other intelligent instruments.

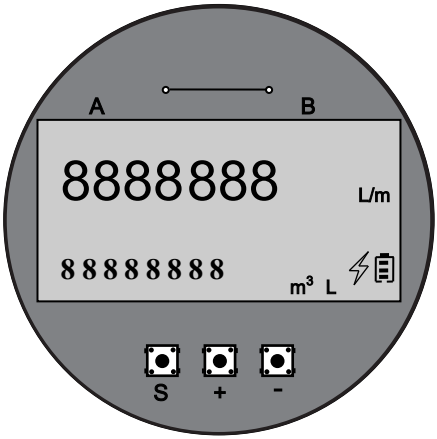
INSTRUMENT DIAGRAM

Display method:

Double-row LCD display, the default display mode is as follows:

Upper XX.XXXXXX eight-digit instantaneous flow (m^3/h or m/L)

XX.XXXXXX eight-digit cumulative flow (m^3 Or L)



External power supply mode

Battery power supply mode and battery power display

this A,BThe position is the magnetic induction point, and the magnetic steel is used in t he A Bit or B Swipe over the position to switch the display of the meter content (such as time, time).

INSTRUCTIONS

The Electronic Display of the flow meter is a battery-powered intelligent ultra-low power meter. The central processing unit adopts MSP430F247 Chip and flowmeter coefficients can be set to realize segmental compensation, which can greatly improve the turndown ratio of the flowmeter.

4.1 Keyboard description

EH6400A There are three buttons 【S】【+】【-】, two key methods
(short press and long press (press and hold until it is displayed) Show changes)),

【S】: In the running state(,Short press) Switch between single volume and cumulative volume. (Long press) Clear the single volume.

In the setting state, (Short press) Move the flashing digit (namely modify the digit)

【+】: In the running state, (long press) clear the accumulated amount.

In the setting state, (short press) the flashing bit increases 1 (I.e. modify the bit)
(Long press) means [Confirm]

4.2 Parameter settings

EH6400AIn the running state, (Press) 【-】Enter the password input state.
After entering the correct password, (Press)【-】The Instrument enters the setting state. There are four groups of operation menus in the setting status of the instrument "L Parameter settings"

"F Parameter settings" "C parameter settings" "change Password" Four groups of operations passed (long press)[-] Carry out cycle switching. When you need to modify a parameter, you can pass【S】【+】【-】(dog) to realise.

4.3 Exit settings

EH6400AIn the setting state, press【+】+【-】(Means pressing at the same time, the latter is the same) indicator display SAUEd,this

Time (long press【) -】The instrument saves the parameters successfully and displays SUCCESS Flashing to return to running state, display failed to save Err

The flashing will return to the running state. (dog)【S] Then return to running state without saving.

4.4 Parameter Description

P00— P04: The equivalent of five pulses of the flowmeter (unit:L,P22 The parameter is set to 0 Time only P00 The coefficient is valid).
P05— Maximum flow of flow meter (used for 4-20mA,unit:m3/h).
P06— Instantaneous return to zero time, greater than this time there is no flow signal instantaneous return to zero (unit: second).
P07— 4-20mA Zero adjustment (generally twenty three, Adjustable) .
P08— 4-20mA Fully (usually 3950, Adjustable).
P09— Instantaneous quantity unit selection (set to 0 When m^3/h, Set as 1 Hour is liters/minute).
P10— Instantaneous calculation period (unit: second) .
P11— P14: Flowmeter segment value, unit:m3 /h(when P09=0 When using this unit).
P15— P18: Flowmeter segment value, unit: liters/minute.(when P09=1 , Use this unit).
P19— Pulse output width.(Output pulse high level width, unitms)
P20— Pulse output mode.(1 Is real-time pulse output,0 Is modulated pulse output)
P21— Pulse equivalent value when modulating pulse output (P20 The parameters are 0 Valid).
P22— Switch of segment equivalent (fto. r 0 When, without segmentation, the coefficient is P00,for 1 , The segmentation coefficient is P00-P04)
P23— mailing address. (0~16)
P24— Communication baud rate.
P25— Display content parameters, display content parameters (set to 0 When the cumulative amount is displayed at the top of the screen, and the bottom is displayed Instantaneous amount; set to 1 When the time, the upper part of the screen displays the instantaneous amount, and the lower part displays the cumulative amount)
P26— reset. (Set as 123 After saving and exiting, the factory settings can be restored) .
P27— Signal input sensor type (0: Wiegand sensor,1: Transmitter, Hall, Encoder) .
P28— Communication check digit setting (0: No check digit,1:Odd parity,2: Even parity).
P29— The segmentation reference coefficient is used for segmentation. Generally, it is the coefficient calibrated using normal flow before the coefficient segmentation.
P30— The number of instantaneous filtering times, the default value 10, Which means that the instantaneous quantity is collected 10 The average value after times.
P31— Stable width of instantaneous quantity, default value 5,unit L.
P32— 4~20mA Output test, the last digit is valid

1: Output 8mA	2: Output 12mA
3: Output 16mA	4: Output 20mA

This parameter cannot be saved. Exiting the parameter will automatically cancel the debugging current output.

The instrument is wired according to the wiring diagram, and at the same time connected to the ammeter, and connected to the external switching power supply (12V,24VAnything).

(1). Zero adjustment: enter in the parameter setting P07 Page, press s Key to move to the parameter value, press + or-, when P07 Parameter value When it changes, the value of the ammeter also changes,P07 The smaller the value, the smaller the current, when the ammeter is 4mAWhen, press s key, Shift to P07 Flashing, press + key, display P08 Parameters, after zero adjustment, enter full adjustment.

(2), Adjust full: adjust the parameters to P08, The method is the same as zero adjustment, by adjusting the parameters, the ammeter is 20mA After the adjustment, according to 4.4.4 Step save and exit the setting.

4.6 Method of traffic segmentation

There is a gap in the flow coefficient of the flowmeter at different flow rates, especially at the minimum flow rate, which affects its turndown ratio. The electronic meter head can be effectively overcome by comparison of the flow rate segmentation.
The description is as follows:
When the actual instantaneous flow ≤ P11 When using P00 Pulse equivalent when P11 < Actual instantaneous flow ≤P12 When using P01 Pulse equivalent P12 < Actual instantaneous flow ≤ P13 When using P02 Pulse equivalent P13 < Actual instantaneous flow ≤P14 When using P03 Is the pulse equivalent when the actual instantaneous flow > L08 When using P04 If the pulse equivalent does not use the flow segmentation function, only one pulse equivalent is used, and only the P22 Set to 0. At this time, the meter is used regardless of the flow rateP00 As the pulse equivalent.

4.7 Instrument debugging method

(1). When debugging the instrument, first P22 Set to 0(That is, the flow is not segmented) .

(2), let the flowmeter run in the middle flow, adjust P00 Pulse equivalent, so that the flow count and the metering number match.

(3). Select the instantaneous quantity unit, namelyP09 for 1 still is 0. (4), putP10 Set to 1.

(5). Setting P06 Is about one-third of the minimum flow rate, when the instantaneous amount is less than P06 , The instantaneous quantity will be displayed as 0.

(6). If the compensation is not divided into different flow segments, the instrument debugging will end. If segment compensation, continue to step (7).

(7). Adjust the flow to the minimum according to the instantaneous amount displayed on the meter, calculate the equivalent through the measuring tank and record it, adjust the flow to different flow segments, and calculate the corresponding equivalents respectively.

(8). Try to take as many flow points as possible in the entire flow range, analyze the equivalent values of these different flow points, according to P09 Yes 0 still is 1 To set P11-P14 or P15-P18, And then combine the different equivalents into P00-P04.

(9). Finally, switch back and forth between different flow points to see if the accuracy of the instrument meets the requirements, if necessary 4-20mA Output function, verify whether the current value is correct, complete.

Five, the cumulative flow is cleared

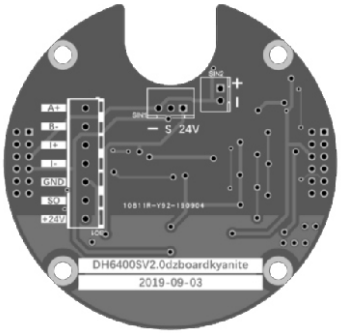
The instrument has 2 Cumulative amount 1 the unit is L, Grand total 2 the unit ism3 1, Grand total 1 Cleared Hold down the key, about 5 Seconds later, the daily flow rate on the screen is displayed as 0.000L, The reset is completed after releasing. 2,Grand total 2 Cleared Hold down the key, about 10 After seconds, the total screen flow is displayed as 0.000 m3, The reset is completed after releasing. Note:

1). It will be displayed after the daily flow and total flow are cleared 3 Decimal places.
2). When the screen displays the full value, the decimal point will move backward automatically.
3). When no decimals are full, (ie 9999999), automatically cleared.

Six, Parameters

1, Input: voltage pulse.
2, sensor: a, Wiegand sensor (high frequency)b, Hall sensor (low frequency).
3, Display: Adopt pen-segment liquid crystal.
4, Output: a, Voltage pulse b,4-20mA
5, Communication interface: a,RS232 b. RS485
6, Protocol: Modbus
7, Powered by:DC3.6V, The battery is powered for two years, and the battery icon is battery when the battery power is [+ -] Will flash to prompt the user to replace low.
8. External power supply is required for pulse output, 4-20mA output, communication, and automatic heating. The external power supply is DC24V.

Seven, wiring



Rear view of terminal block

Terminal 1 For communication 485A
Terminal 2 For communication 485B
Terminal 3 Two-wire system 4~20mACurrent output
terminal 4 Two-wire system 4~20mACurrent output
Terminal 5 catchDC24VGND(Two-wire system 4~20mADo not connect during current output)
Terminal 6 Output for voltage pulse signal
Terminal 7 catchDC24VPower+

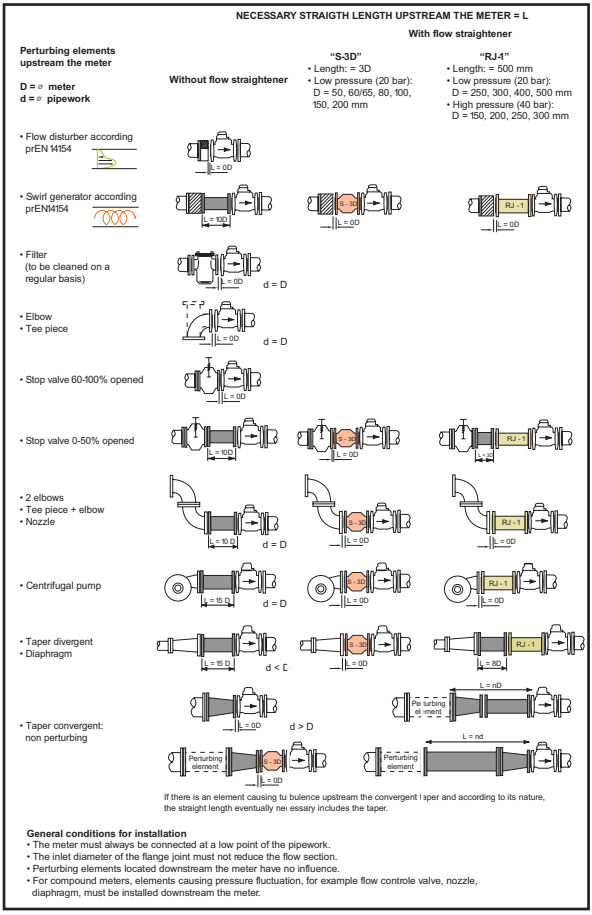
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General conditions of installation and use

Drawings for installation of horizontal helix Woltmann or compound meters

The accuracy of horizontal helix meters can be affected by turbulences caused by all types of fittings such as T-pieces, non-return valves, pumps, double elbows, regulating valves…, installed upstream of the meter.
Therefore, it is recommended to fit a straight length of pipe before the meter in cases described in the table.

However, this length may be reduced or replaced by a flow straightener located upstream and connected to the meter.



General conditions for installation

- The meter must always be connected at a low point of the pipework.
- The inlet diameter of the flange joint must not reduce the flow section.
- Perturbing elements located downstream the meter have no influence.
- For compound meters, elements causing pressure fluctuation, for example flow controle valve, nozzle, diaphragm, must be installed downstream the meter.

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Contact Us:-

IOTAFLOW SYSTEMS PVT. LTD.

A-2/13, Mayapuri Industrial Area
Phase-II, New Delhi - 110064
Call: +91 9910693866
+91 7982674054
Email: contact@iotaflow.com



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