

Doppler Flowmeter

Model:AM-DFM User Manual



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1.Brief Introduction

Doppler flowmeter is measured by the principle of ultrasonic Doppler. According to different application scenarios, it can be called river flowmeter, sewer flowmeter, channel flowmeter, farmland irrigation flowmeter, non-full pipe flowmeter Wait. It does not need to cut off the pipeline to install a pipe segment sensor like an electromagnetic flow meter, nor does it need to use a shutoff device, let alone install a fixed weir groove to control the water flow from a fixed outlet. Doppler flowmeter can measure in both clean and muddy water, and can also measure reverse flow velocity.

2.Technical Features

- 1) TFT high-resolution color screen ,English interface display, Chinese menu, easier and more convenient operation.
- 2) No need for any standard tank, can be put into use directly
- 3) Solve the problem of partial pipe flow measurement
- 4) 4~20mA transmission output, relay high and low alarm control output, RS485 communication output and other variable output, system intelligent control;
- 5) Double relay upper and lower limit alarm output (optional)
- 6) Fully intelligent, multifunctional, high measurement performance, strong environmental adaptability
- 7) Support customized special function requirements



3. Technical Parameters

Parameters Item		Portable	Wall-mounted
		AM-DFM-P	AM-DFM-W
Range	Flow rate(m/s)	0.03~5.00(other range customized)	
	temperature (°C)	-10~60(°C)	
	Water depth (m)	0.05~10(it can be extended)	
Accuracy	Flow rate(m/s)	±1.0%±1cm/s	
	Temperature (°C)	±1(°C)	
	Water depth (m)	0.5%±0.5cm	
Environment Temperature		0~60°C	
Host power supply(V)		Battery	220VAC/24VDC
Analog		Null	4-20mA
Communication		RS485 Modbus	RS485 Modbus
Relays		Null	4 relays(optional)
IP protection		Host : IP65 ; Sensor :IP68	

Note: There is a gas pipe in the sensor wiring, which needs to be connected to the atmosphere. Ensure that the cable is not bent, otherwise it will affect the accuracy of liquid level measurement

4. Electric connection

Note: In order to ensure the safety of the staff and the instrument, the instrument adopts DC24V power supply (if AC220V is required, please use the factory standard 220V to 24V adapter), AC220V has been cancelled, and the power is directly supplied.



5. Key Introduction

Key	Introduction
1 MENU	Menu key: enter menu options
2 UP	Increase key: used to adjust parameters 0-9 cycle and menu option adjustment
3 MOV	Move key: switch interface, parameter cursor shift in setting mode
4 MSC	Back key: Exit/return to the previous menu, the current setting is not maintained
5 ENT	Enter key: set the current parameters to confirm and save

Note: 4-20 current output always corresponds to the instantaneous flow value

6. Menu Set

Press the MENU button at the same time to enter the password interface. After entering the correct user password (3000), enter the setting mode menu; press the INC key (or MOV key) to display each menu in turn, press the OK key to enter the corresponding menu, after entering the secondary menu, move the cursor with the MOV key, and press INC Press the key to set the value, and press the OK key to save the setting parameters. Note: INC key (can be increased by 0-9 cycle), after modifying the parameter, you need to press the OK key to save, otherwise it will be regarded as invalid.

7. Parameters Set Instruction

Enter the menu	3000 (password)
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Menu	Description
Instrument information	Version information of the instrument
Section type	According to the use requirements, choose different cross-section types (such as quadrilateral, circular, etc.)
Current setting	Input the instantaneous flow corresponding to 20mA and 4mA respectively
Communication settings	Enter the ID of 485 communication
Relay setting 1	Select upper limit alarm or lower limit alarm and enter the corresponding alarm value.
	Set the return difference required to cancel the alarm
Relay setting 2	Select upper limit alarm or lower limit alarm and enter the corresponding alarm value.
	Set the return difference required to cancel the alarm
Relay setting 3	Select upper limit alarm or lower limit alarm and enter the corresponding alarm value.
	Set the return difference required to cancel the alarm
Relay setting 4	Select upper limit alarm or lower limit alarm and enter the corresponding alarm value.
	Set the return difference required to cancel the alarm
time setting	Enter the corresponding time
Current calibration	Correct the deviation between 4mA and 20mA output. Under normal circumstances, 4mA corresponds to 200 and 20mA corresponds to 1000.
Flow calibration	The value of the instantaneous flow that needs to be increased or decreased (only supports fine adjustment)
Temperature calibration	Input temperature modification value (only supports fine adjustment)
Small signal removal	None
Interference removal	Allowable range value
Statistics cumulative flow	Cumulative flow statistics table
Font color settings	modify background color, font color, prompt color, border color
Modify cumulative flow	Enter the cumulative flow to be modified

Cumulative running time	View the current cumulative running time value
Allowable running time	Current allowable running time value
Mode setting	Choose different modes according to working conditions. \It is recommended to select the default mode.
Unit settings	The unit of instantaneous flow can be freely switched to: m ³ /h or L/s
Blind zone setting	No
Damping setting	The larger the damping number, the smoother the change.
Reset	Restore all settings to factory defaults

8.RS485 Communication Code

Byte	Send (PC)	Example	Response	Example
0	address(ID)	0x01	address(ID)	0x01
1	function code	0x03	function code	0x03
2	High bit of data first address	0x00	Data length	0x08
3	Low bit of data first address	0x00	Instantaneous flow(This is 10 times the real flow rate. For example, the value is 291 and the flow rate is 29.1) (unsigned long)	0x00
4	High bit of data length	0x00	Instantaneous flow	0x00
5	Low bit of data length	0x04	Instantaneous flow	0x01
6	CRC check	0x44	Instantaneous flow	0x23
7	CRC check	0x09	Cumulative flow (unit: cubic meter) (unsigned long)	0x00
8			Cumulative flow	0x04

9			Cumulative flow	0x12
			Cumulative flow	0x03
			CRC check	0x5c
			CRC check	0xA1

For example:

PC host sends:01 03 00 00 00 04 44 09

Instrument return value:01 03 08 00 00 01 23 00 04 12 03 5C A1

The analysis information of the return value

(the above data has been converted from hexadecimal to decimal):

instantaneous flow: 29.1m³/h, cumulative flow: 266755m³

(0x00041203)

9.Sample of Application Site



