

PRELIMINARY

COMING SOON

MFD series

ULTRASONIC FLOW SENSOR



Features

- Clamp-on design, piping-free and quick installation
- Easy installation in gaps
- Pipe surface temperature sensing
- 3-color status indicator for early maintenance warning
- Detachable design for flexible installation
- Multi-signal capability
- Applicable industries: Semiconductor, cooling system, IoT

Specifications

Model			0810		1520		
Measured flow rate range			0 ~ 20 L/min	0 ~ 30 L/min	0 ~ 60 L/min	0 ~ 100 L/min	
Pipe size	Outer diameter size		ø13~16 mm	ø16~18 mm	ø20~23 mm	ø23~28 mm	
	Nominal pipe size A		8A (DN8)	10A (DN10)	15A (DN15)	20A (DN20)	
	Nominal pipe size B		1/4"	3/8"	1/2"	3/4"	
Pipe material *1			Metal pipe, hard resin pipe				
Detection method			Ultrasonic (ΔToF)				
Fluid *2			Ultrasonically conductive fluid (Water, oil, chemical liquids, etc)				
Display	Display		2" 65K full color TFT-LCD display				
	Instant flow rate	Zero cut flow range	0.3 L/min		0.5 L/min		
		Set resolution	L/min	0.1 (0.01, 1 selectable)			
			m³/h	0.01 (0.001, 0.1, 1 selectable)			
	gal/min		0.01 (0.001, 0.1, 1 selectable)				
	Accumulated flow	Set resolution	L	1 (Max. 9 digits)			
			m³	1 (Max. 7 digits)			
			gal	1 (Max. 9 digits)			
	Temperature	Display range	0.0 ~ 85.0 °C				
		Set resolution	°C	0.1			
Accuracy *3	Flow	Indicator accuracy	± 3 % F.S.				
		Analog output accuracy	± 1 % F.S.				
		Repeatability	± 1% F.S. ± 1 digit				
	Temperature	Indicator accuracy	± 2 °C (pipe temperature of 0 ~ 50 °C) ; ± 3 °C (pipe temperature of 50 ~ 85 °C)				
Switch output			2 NPN open collector outputs Max. load current : 200 mA Max. supply voltage : 24 V DC Voltage drop : ≤ 1.5 V		2 PNP open collector outputs Max. load current : 200 mA Max. supply voltage : 24 V DC Voltage drop : ≤ 1.5 V		
	Output mode		Hysteresis mode, window comparator mode, accumulated output, accumulated pulse output				
	Hysteresis		Adjustable				
	Response time		5.0 s (0.5 s, 1.0 s, 2.5 s, 10.0 s, 30.0 s, 60.0 s, 120.0 s, 200.0 s selectable)				
	Output short circuit protection		Yes				
	Accumulated pulse output		1 L/Pulse				
Switch on indicator			Green indicator : OUT1 & OUT2 (Error : Red indicator)				
Status indicator			Green LED, orange LED, red LED				
Analog output *4			DC 1 ~ 5 V, 0 ~ 10 V, 4 ~ 20 mA				
External input *4			Non-voltage input, < 0.4 V, ≥ 30 ms				
Communication interface			RS485 Modbus RTU				
Power	Power supply voltage		15 ~ 24 V DC ± 10 %, Ripple (P-P) ≤ 10 %				
	Current consumption		≤ 80 mA				
Environment	Enclosure		IP65 *5				
	Working fluid temp.		0 ~ 85 °C (No condensation or freezing)				
	Ambient temp. Range		Operation: 0~50 °C ; Control panel 0~60 °C ; storage: -10~60 °C (No condensation or freezing)				
	Ambient humidity range		Operation / storage: 35 ~ 85 % R.H. (No condensation)				
Weight (without 2 meter lead wire)			Approx. 464 g (MFD-0810) : Approx. 511 g (MFD-1520)				

*1. Flow values may be unstable due to lining pipes, coating pipes, or internal scaling.
Applicable pipe materials: metal (carbon steel, stainless steel) and hard resin (PVC, VP).
*2. Flow values may be unstable due to bubbles, foreign matters, or non-full pipe condition.

*3. CONDITION : Clean water, fluid and ambient temperature at 25 °C.
Deviations may occur due to pipe type, usage conditions, fluid, temperature, etc..
*4. Switchable, please follow the manual for setup.
*5. Connectors rated IP65 or higher are required.

MFD Order example & Dimensions

ULTRASONIC FLOW SENSOR



Order example

MFD – 0810

MODEL

PORT SIZE

0810: 8A (1/4"), for flow rate range 20 L/min ;
10A (3/8"), for flow rate range 30 L/min
1520: 15A (1/2"), for flow rate range 60 L/min;
20A (3/4"), for flow rate range 100 L/min

* Cable sold separately.

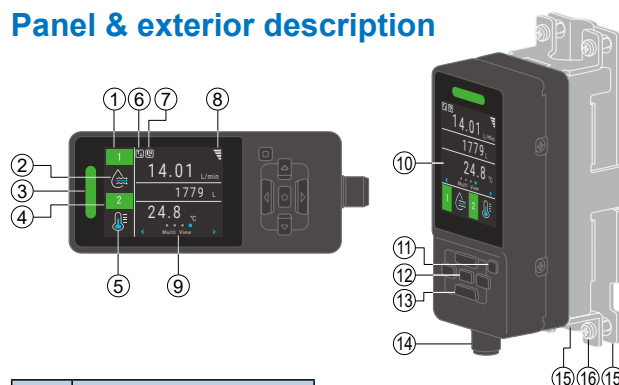
Remote mounting kit (Option)

MFD – A

REMOTE
MOUNTING KIT

* For separate mounting of control panel and sensor; includes connector and mounting bracket.

Panel & exterior description



No.	Panel description
1	Output 1 indicator
2	Output 1 type
3	Status indicator
4	Output 2 indicator
5	Output 2 type
6	Modbus indicator
7	External input indicator
8	Ultrasonic signal indicator
9	Main display

No.	Exterior description
10	TFT-LCD
11	Home button
12	Set button
13	Direction button
14	Connector (M12, 8 Pin, A-coded, male)
15	Mounting clamp
16	Mounting screw × 4

Cable (Option)

Wiring & Pin assignment

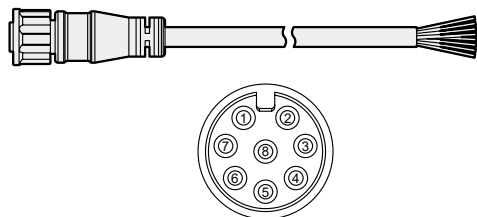
Model: **M128A-SFW-PVC-2M**

M12, 8 Pin, A-code, straight female - wire

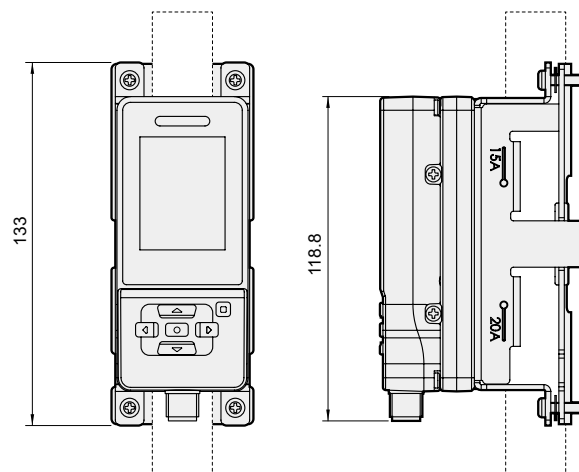
Cable material: PVC

Cable length: 2000 mm

* The cable shield is not intended for grounding.



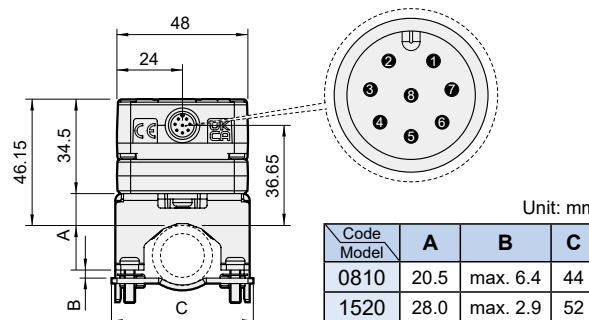
Dimensions



Pinout

Pin No.	Color	Content
1	White	RS485 B-
2	Brown	+24V DC
3	Green	Analog Output: 1 ~ 5 V or 0 ~ 10 V or 4 ~ 20 mA
4	Yellow	OUT1: NPN or PNP
5	Black	OUT2: NPN or PNP
6	Violet	External Input: NPN or PNP
7	Blue	0 V
8	Orange	RS485 A+

* Wiring must follow terminal pin layout.



Unit: mm

Code Model	A	B	C
0810	20.5	max. 6.4	44
1520	28.0	max. 2.9	52