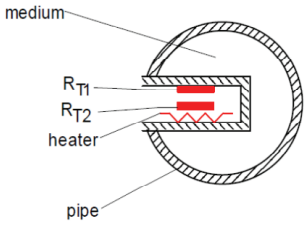
FCR08 – Thermal Flow Sensor

- **Wide measuring range**
- **Setting point or measuring range programmable through keys**
- **More parameters programmable through hand-hold device or computer**
- **8 LEDs display for switching status and flow trend**
- **PNP/NPN/Relay output selectable**
- **Compact design (diameter 36mm)**

Based on thermodynamic principle, FCR08 features 2 temperature sensors inside the probe: one for medium temperature, the other one is heated a few degrees up compared to the medium into which it projects. When the medium flows, the heat generated in the sensor is conducted away by the medium. The difference between these two sensors can be measured to get the flow rate. All-metal housing; 8 LEDs for switching status and flow trend display; No moving parts to minimize maintenace; Applicable to various medium.



Specifications

Measuring Range	
Water	1...200cm/s
Oil	3...300cm/s
Air	20...2000cm/s
Applicable Medium	Water, oil and gas which is compatible with 316 stainless steel
Repeatability	1%@<0.6m/s; 3%@<1.5m/s; 10%@>1.5m/s (for water)
Pressure Rating	100bar (200bar selectable)
Initialization Time	1...8s
Response Time	2s typical
Power Supply	24±10%Vdc
Current Consumption	≤40mA (power supply 24Vdc, no-load)
Switching Output(NC+NO)	
Output type	PNP/NPN/relay output optional, NC/NO programmable
Load capacity	500mA (power supply 24Vdc, NPN/PNP output),
	60W (relay output)
Wiring Protection	Reverse polarity, overvoltage and short-circuit
Display	3 red LEDs （flow velocity < switch point）
	1 yellow LED （flow velocity = switch point）
	4 green LEDs （flow velocity > switch point）
Temperature	
Operating/storing	-40...85℃
Medium	-20...85℃; up to130℃（not more than 2 hours）
Material(housing/probe)	304 stainless steel/304 stainless steel or 316L stainless steel
Protection Class	IP67
Electrical Connection	M12x1plug

Applications

- **Hydraulic system**
- Lubrication system
- **Pump protection**
- Cooling water monitoring
- Venting systems
- Water treatment
- Leaking test
- Machinery manufacture
- Equipment manufacture
- Engineering project

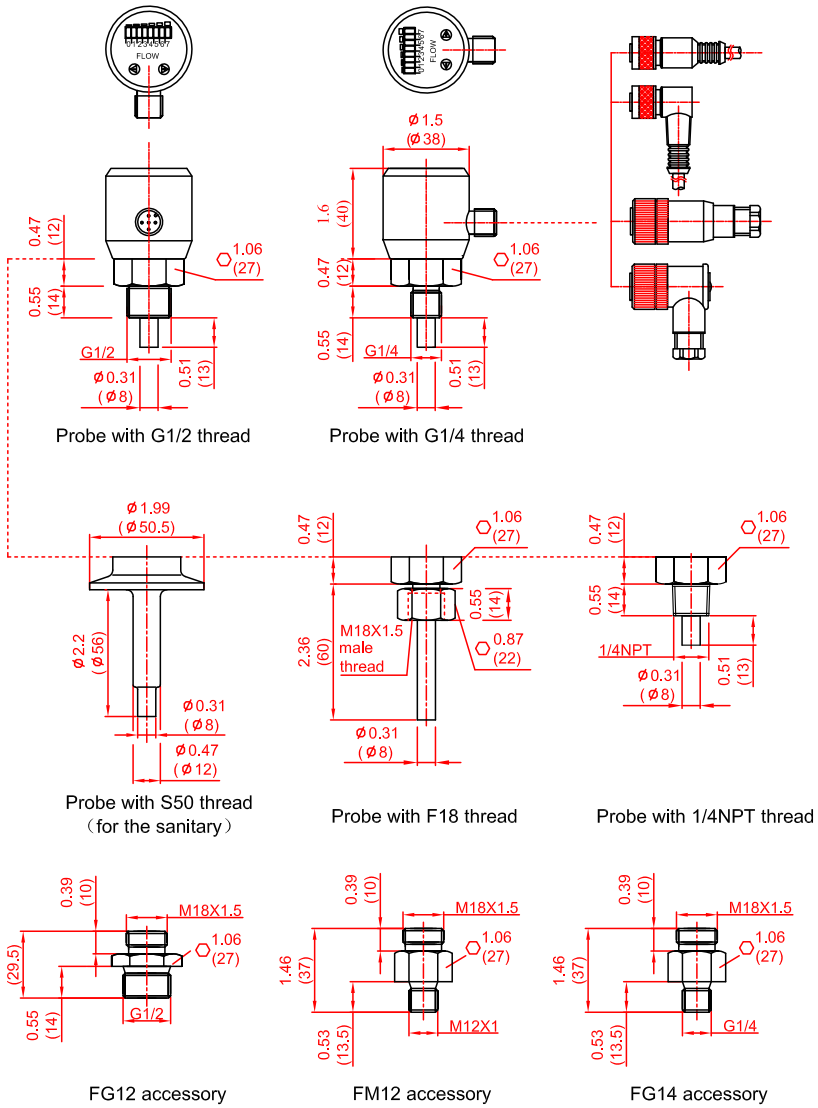
LED Function & Setup

■■■□□□□□	Red LED indicates that current flow is less than switch point.
■■■■□□□□	Yellow LED indicates that switch point was reached and switch state changes.
■■■■■■□□	Green LED indicates that current flow is higher than switch point, switch keeps state. More green LEDs indicate higher flow rate.

Install the switch properly and set the flow rate to what you want to monitor, adjust the switch using the magnetic bar to make the first green light on. Once done, switch state changes if flow rate is lower than current flow.

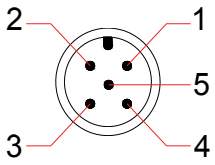
Setup through Magnectic bar, hand-hold device or computer

Dimensions in inches (mm)



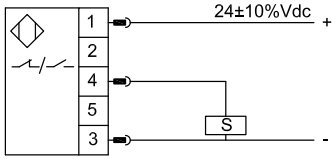
Wiring

Signal	Plug	Cable
U+	1	Brown
U-	3	Blue
Output 1	4	Black
Output 2	2	White
Communication	5	Gray



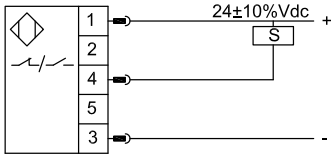
PNP output

PNP



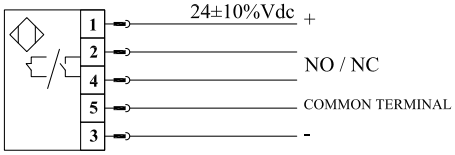
NPN output

NPN



Relay output

relay



Order code

FCR :	**Thermal flow sensor**
08:	Series#
P :	**PNP output**
N :	NPN output
R :	Relay output
G12M :	G1/2 male thread
G14M :	G1/4 male thread
N14M :	NPT1/4 male thread
F18F:	M18×1.5 female thread
S50F:	Tri-clamp connection for sanitary standards

FCR	08/	P	G12M	S	M025

S :	M12X1 with 5-pin plug
MXXX :	Probe length (metric system) L=XXX mm
IXXX :	Probe length (english system) L=XXX inch

Note: One of the connectors FG12, FM12 or FG14 must be ordered for sealing purpose if probe is F18.

Special Order on Request