UNC-F11

Plastic Flow Switch

ABZAR TAMIN ARSHIA CO.

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Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶Temperature gradient:	⩽4 °C/s	
▶Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Relay, PNP, NPN
▶Contact State:	Normally Open (NO) + Normally Closed (NC)
▶Contact Rating:	250VAC 5A
	125VAC 7A
	14VDC 20A

Electrical Parameters

▶ Supply Voltage:	24VDC / 220VAC
▶ Operating Current:	⩽100mA
▶ Connection Type:	M12 Connector - 5-pin / direct cable
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	LED Lights * 6
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100bar
▶ Protection Class:	IP67
▶ Medium Temperature:	-20-85 °C
▶ Ambient Temperature:	-20-85 °C
▶ Housing Material:	ABS+PC
▶ Wetted Material:	304 stainless steel

Model Description

F11 - G12E D R M -15mm

- **F11** — Product Model
- **D** — Supply Voltage
  - D=24VDC
  - A=220VAC
- **M** — Lead-out Configuration
  - M = M12 Connector
  - D = Direct Cable
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **R** — Signal Output
  - R = Relay
  - P=PNP
  - N=NPN
- **15mm** — Probe Length

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Operating Principle & Structure

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1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **Features an ABS+PC plastic housing, a single probe, a unitary structure, and a moderate size.**

Features

1. **Suitable for standard ambient temperature and pressure operating conditions;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. Detects the flow state within the pipeline, providing dynamic indication via 6 LED lights and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Yellow LED: Flow velocity = Setpoint; Green LED: Flow velocity > Setpoint);
4. The setpoint can be adjusted on-site via a potentiometer;
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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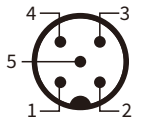
Wiring Instructions

▸ Wiring Diagram:

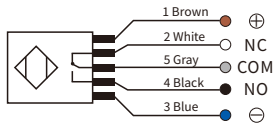


▸ Connector Type:

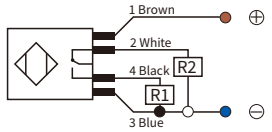
Male connector
(Switch outlet end)

▸ No.	▸ Wire Color	▸ Connection
1	Brown	Positive (+)
2	White	Normally Closed (NC)
3	Blue	Negative (-)
4	Black	Normally Open (NO)
5	Gray	Common (COM)

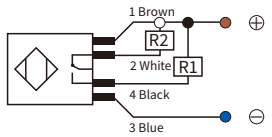
▸ Relay:



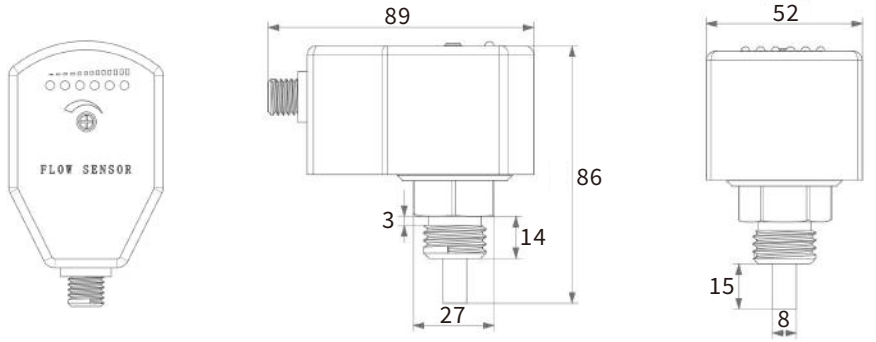
▸ PNP:



▸ NPN:

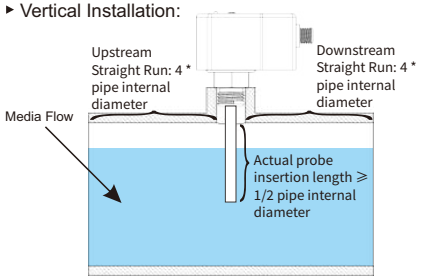


Overall Dimensions

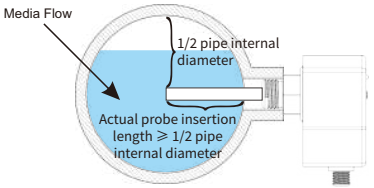


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-F12

Electronic Flow Switch (Combined with Temperature Measurement)

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Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor) +PT100	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶ Temperature gradient:	⩽4 ℃/s	
▶ Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Flow Rate	Relay, PNP, NPN
	Temperature	Resistance Signal
▶Contact State:	Normally Open (NO) + Normally Closed (NC)	
▶Contact Rating:	250 V AC 5 A	
	125 VAC 7 A	
	14 V DC 20 A	

Electrical Parameters

▶ Supply Voltage:	24 V DC/220 V AC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	M12 Connector - 8-pin / direct cable
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	LED Lights * 6
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100 bar
▶ Protection Class:	IP67
▶ Medium Temperature:	-20-100° C
▶ Ambient Temperature:	-20-85 ℃
▶ Housing Material:	ABS+PC
▶ Wetted Material:	304 stainless steel

Model Description

F12 - G12E D RT M -15mm

- **F12** — Product Model
- **D** — Supply Voltage
  - D=24VDC
  - A=220VAC
- **M** — Lead-out Configuration
  - M = M12 Connector
  - D = Direct Cable
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **RT** — Signal Output
  - RT=Relay+ Pt100
  - P=PNP
  - N=NPN
- **15mm** — Probe Length

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Operating Principle & Structure

1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **The device incorporates an additional PT100 platinum resistance temperature detector (RTD), where changes in its resistance reflect corresponding changes in temperature.**
7. **Features an ABS+PC plastic housing, a single probe, a unitary structure, and a moderate size.**

Features

1. **Suitable for operational conditions or application scenarios that require additional temperature monitoring;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. Detects the flow state within the pipeline, providing dynamic indication via 6 LED lights and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Yellow LED: Flow velocity = Setpoint; Green LED: Flow velocity > Setpoint);
4. The setpoint can be adjusted on-site via a potentiometer;
5. **It incorporates a 3-wire PT100 platinum resistance temperature detector (RTD) for real-time, accurate measurement of the medium temperature and provides corresponding feedback;**
6. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
7. Multiple process connection options are available for easy installation and use;
8. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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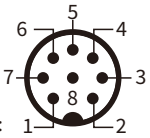
Wiring Instructions

▸ Wiring Diagram:



▸ Connector Type:

Male connector
(Switch outlet end)

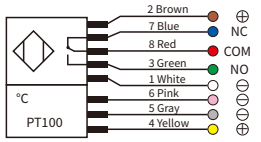
▸ Flow Rate:

▸No.	▸Wire Color	▸Connection
2	Brown	Positive (+)
7	Brown	Normally Closed (NC)
8	Red	Common (COM)
3	Green	Normally Open (NO)
1	White	Negative (-)

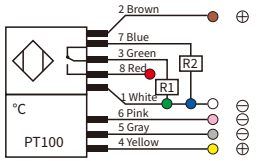
▸ Temperature:

▸No.	▸Wire Color	▸Connection
6	Powder	Negative (-)
5	Gray	Negative (-)
4	Yellow	Positive (+)

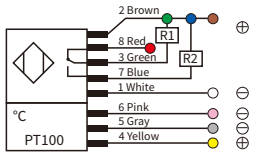
▸ Relay:



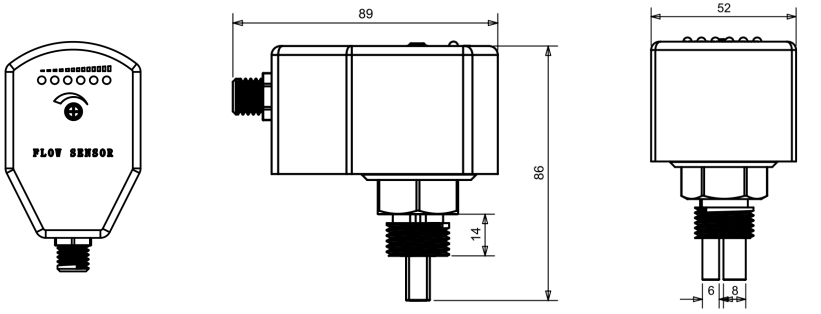
▸ PNP:



▸ NPN:

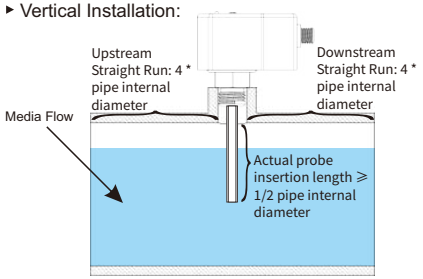


Overall Dimensions

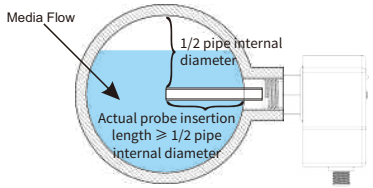


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-F13 Rail-Mounted Flow Switch

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ABZAR TAMIN ARSHIA CO.

Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶ Temperature gradient:	⩽4 °C/s	
▶ Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Relay, PNP, NPN
▶Contact State:	Normally Open (NO) + Normally Closed (NC)
▶Contact Rating:	250 V AC 5 A
	125 VAC 7 A
	14 V DC 20 A

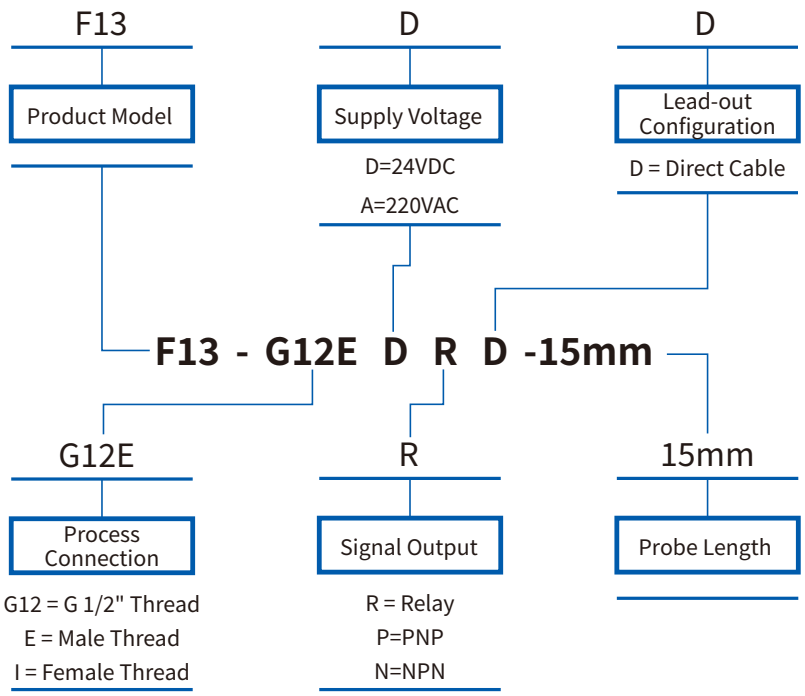
Electrical Parameters

▶ Supply Voltage:	24 V DC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	3P connecting terminal
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	LED Lights * 6
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100 bar
▶ Protection Class:	IP20
▶ Medium Temperature:	-20-85 °C
▶ Ambient Temperature:	-20-85 °C
▶ Housing Material:	ABS+PC
▶ Wetted Material:	304 stainless steel

Model Description



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Operating Principle & Structure

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1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **Features an ABS+PC plastic housing, a single probe, a compact and split structure.**

Features

1. **Suitable for applications with confined installation space and elevated ambient temperatures;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. Detects the flow state within the pipeline, providing dynamic indication via 6 LED lights and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Yellow LED: Flow velocity = Setpoint; Green LED: Flow velocity > Setpoint);
4. The setpoint can be adjusted on-site via a potentiometer;
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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Wiring Instructions

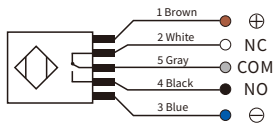
▸ Wiring Diagram:

▸ Connector Type:

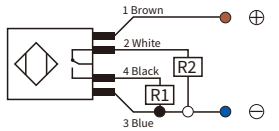
Male connector
(Switch outlet end)

▸No.	▸Wire Color	▸Connection
1	Brown	Positive (+)
2	White	Normally Closed (NC)
3	Blue	Negative (-)
4	Black	Normally Open (NO)
5	Gray	Common (COM)

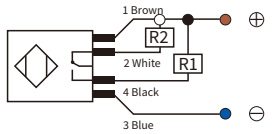
▸ Relay:



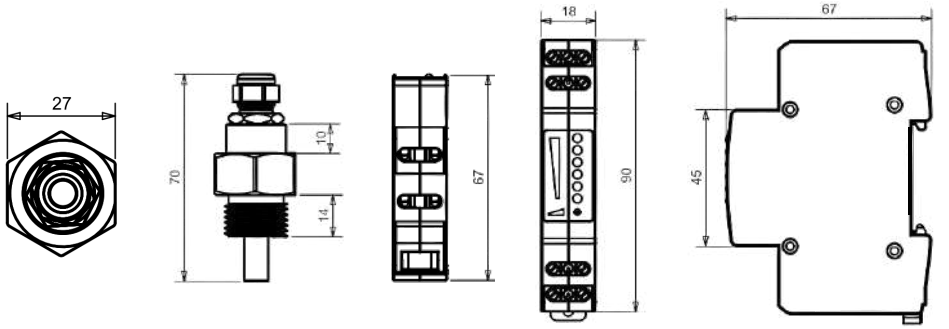
▸ PNP:



▸ NPN:

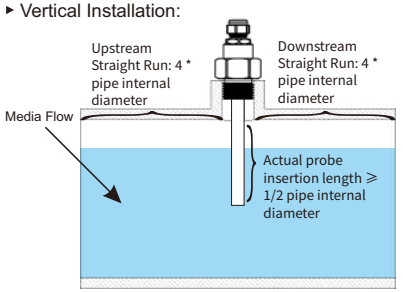


Overall Dimensions

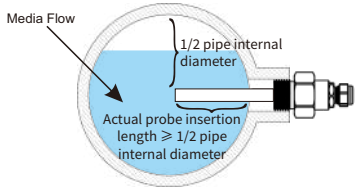


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-F21

Miniature Flow Switch

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ABZAR TAMIN ARSHIA CO.

Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶ Temperature gradient:	⩽4 °C/s	
▶ Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Relay, PNP, NPN
▶Contact State:	Normally Open (NO) + Normally Closed (NC)
▶Contact Rating:	120 V AC 2 A
	24 V DC 2 A

Electrical Parameters

▶ Supply Voltage:	24 V DC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	M12 Connector - 5-pin / direct cable
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	Bi-color LED light *1
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100 bar
▶ Protection Class:	IP65
▶ Medium Temperature:	-20-85 °C
▶ Ambient Temperature:	-20-85 °C
▶ Housing Material:	304 stainless steel
▶ Wetted Material:	304 stainless steel

Model Description

F21 - G12E D R M -15mm

- **F21** — Product Model
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **D** — Supply Voltage
  - D=24VDC
- **R** — Signal Output
  - R = Relay
  - P=PNP
  - N=NPN
- **M** — Lead-out Configuration
  - M = M12 Connector
  - D = Direct Cable
- **15mm** — Probe Length

Operating Principle & Structure

1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **Features a 304 stainless steel housing, a single probe, a compact and unitary structure.**

Features

1. **Suitable for applications with confined installation space and moderate performance requirements;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. **Detects the flow state within the pipeline, providing indication via one bi-color LED light and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Green LED: Flow velocity ⩾ Setpoint);**
4. The setpoint can be adjusted on-site via a potentiometer;
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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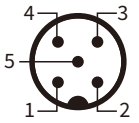
Wiring Instructions

▸ Wiring Diagram:

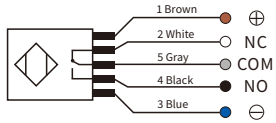


▸ Connector Type:

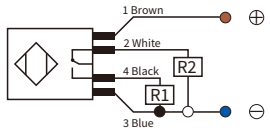
Male connector
(Switch outlet end)

▸No.	▸Wire Color	▸Connection
1	Brown	Positive (+)
2	White	Normally Closed (NC)
3	Blue	Negative (-)
4	Black	Normally Open (NO)
5	Gray	Common (COM)

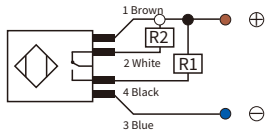
▸ Relay:



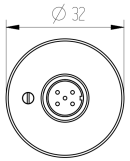
▸ PNP:

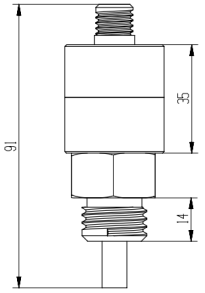


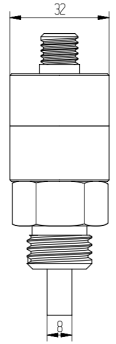
▸ NPN:



Overall Dimensions

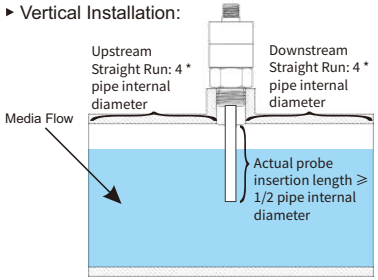




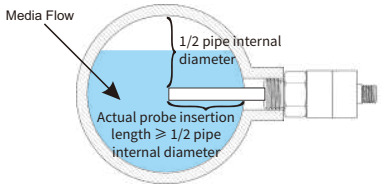


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-F22 Stainless Steel Flow Switch

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ABZAR TAMIN ARSHIA CO.

Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶ Temperature gradient:	⩽4 °C/s	
▶ Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Relay, PNP, NPN
▶Contact State:	Normally Open (NO) + Normally Closed (NC)
▶Contact Rating:	250 V AC 5 A
	125 VAC 7 A
	14 V DC 20 A

Electrical Parameters

▶ Supply Voltage:	24 V DC/220 V AC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	M12 Connector - 5-pin / direct cable
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	LED Lights * 6
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100 bar
▶ Protection Class:	IP67
▶ Medium Temperature:	-20-85 °C
▶ Ambient Temperature:	-20-85 °C
▶ Housing Material:	304 stainless steel
▶ Wetted Material:	304 stainless steel

Model Description

F22 - G12E D R M -15mm

- **F22** — Product Model
- **D** — Supply Voltage
  - D=24VDC
  - A=220VAC
- **M** — Lead-out Configuration
  - M = M12 Connector
  - D = Direct Cable
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **R** — Signal Output
  - R = Relay
  - P=PNP
  - N=NPN
- **15mm** — Probe Length

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Operating Principle & Structure

1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **Features a 304 stainless steel housing, a single probe, a unitary structure, and a moderate size.**

Features

1. **Suitable for corrosive and specialized operating environments;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. Detects the flow state within the pipeline, providing dynamic indication via 6 LED lights and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Yellow LED: Flow velocity = Setpoint; Green LED: Flow velocity > Setpoint);
4. The setpoint can be adjusted on-site via a potentiometer;
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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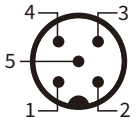
Wiring Instructions

▸ Wiring Diagram:

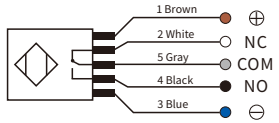


▸ Connector Type:

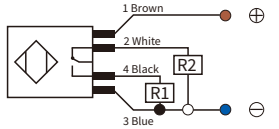
Male connector
(Switch outlet end)

▸No.	▸Wire Color	▸Connection
1	Brown	Positive (+)
2	White	Normally Closed (NC)
3	Blue	Negative (-)
4	Black	Normally Open (NO)
5	Gray	Common (COM)

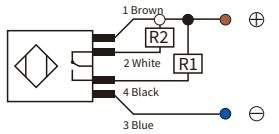
▸ Relay:



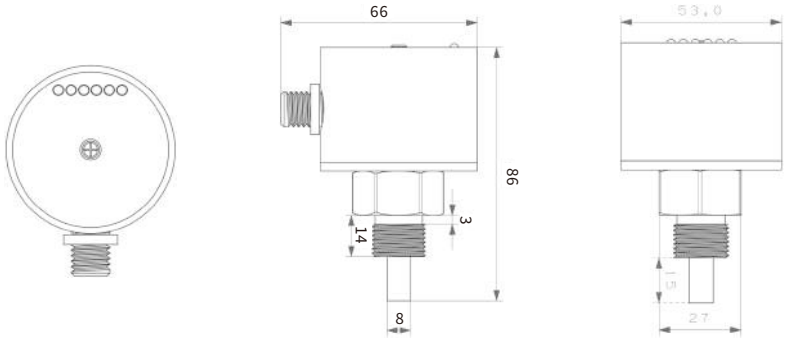
▸ PNP:



▸ NPN:

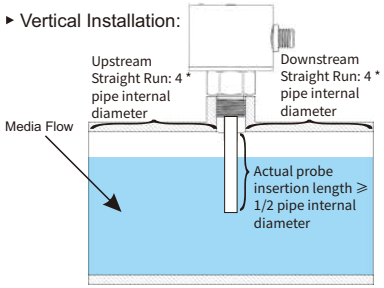


Overall Dimensions

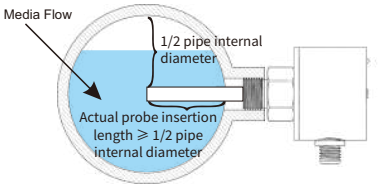


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-F24 Explosion-Proof Flow Switch

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ABZAR TAMIN ARSHIA CO.

Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)	
▶ Measuring Range:	Water	0.01-2 m/s
	Oil	0.03-4 m/s
	Gas	0.2-20 m/s
▶ Temperature gradient:	⩽4 °C/s	
▶ Initialization Time:	⩽8 s	

Output Parameters

▶Signal Output:	Relay, PNP, NPN
▶Contact State:	Normally Open (NO) + Normally Closed (NC)
▶Contact Rating:	250 V AC 5 A
	125 VAC 7 A
	14 V DC 20 A

Electrical Parameters

▶ Supply Voltage:	24 V DC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	5P connecting terminal
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	LED Lights * 6
▶ Setting Method:	Potentiometer
▶ Pressure Rating:	100 bar
▶ Explosion-proof Marking:	Ex db II C T6 Gb
▶ Protection Class:	IP66
▶ Medium Temperature:	-20-85 °C
▶ Ambient Temperature:	-20-85 °C
▶ Housing Material:	Cast aluminum alloy
▶ Wetted Material:	304 stainless steel

Model Description

F24 – G12E D R M20I – 15mm

- **F24** — Product Model
- **D** — Supply Voltage
  - D=24VDC
- **M20I** — Electrical Interface
  - M20=M20 x 1.5
  - I = Female Thread
  - E = Male Thread
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **R** — Signal Output
  - R = Relay
  - P=PNP
  - N=NPN
- **15mm** — Probe Length

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Operating Principle & Structure

1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. This temperature difference is converted into a voltage difference. After amplification, filtering, and other processing, it is fed to the LED indicators and the signal output.
6. **Features a cast aluminum alloy housing, a single probe, a unitary structure, and a large size.**

Features

1. **Suitable for areas with explosion-proof requirements;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. Detects the flow state within the pipeline, providing dynamic indication via 6 LED lights and outputting a switch signal. (Red LED: Flow velocity < Setpoint; Yellow LED: Flow velocity = Setpoint; Green LED: Flow velocity > Setpoint);
4. The setpoint can be adjusted on-site via a potentiometer;
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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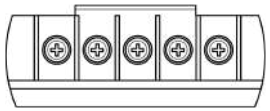
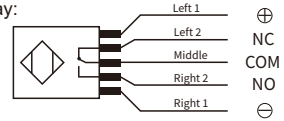
Wiring Instructions

▸ Wiring Diagram:

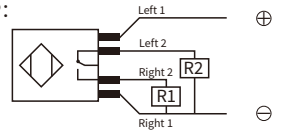


▸No.	▸Wire Color	▸Connection
+	Left 1	Positive (+)
NC	Left 2	Normally closed
COM	Middle	COM
NO	Right 2	Normally open
-	Right 1	Negative (-)

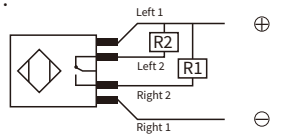
▸ Relay:



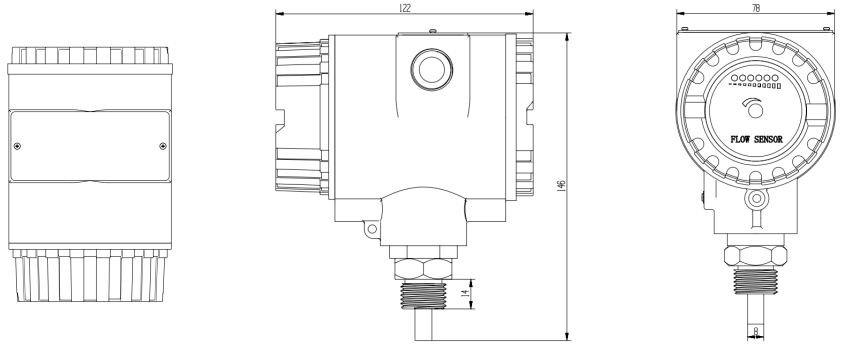
▸ PNP:



▸ NPN:

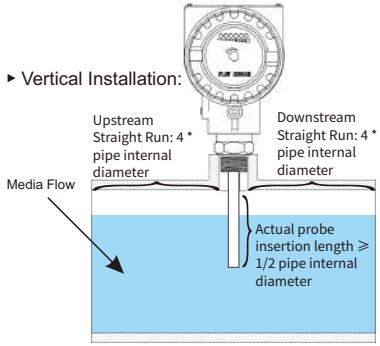


Overall Dimensions

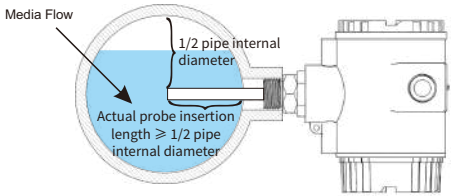


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note ②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-DF1 Digital Display Flow Switch

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ABZAR TAMIN ARSHIA CO.

Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)
▶ Measuring Range:	Flow Velocity 0.00-2.00 m/s (water)
	Temperature 0.0-100.0 °C
▶ Measurement Accuracy:	Flow Velocity ⩽±2.5% F.S
	Temperature ⩽±1.0% F.S
▶ Temperature gradient:	⩽4 °C/s
▶ Initialization Time:	⩽15 s

Output Parameters

▶Signal Output:	Output 1: Flow Velocity	PNP/NPN
	Output 2: Temperature	PNP/NPN/ 4-20 mA
	Output 3: Flow Velocity	4-20 mA
▶Contact State:	Normally Open (NO) / Normally Closed (NC) (Selectable)	
▶Contact Rating:	60 V 1A	
▶Switch Delay:	⩽99 s (settable)	

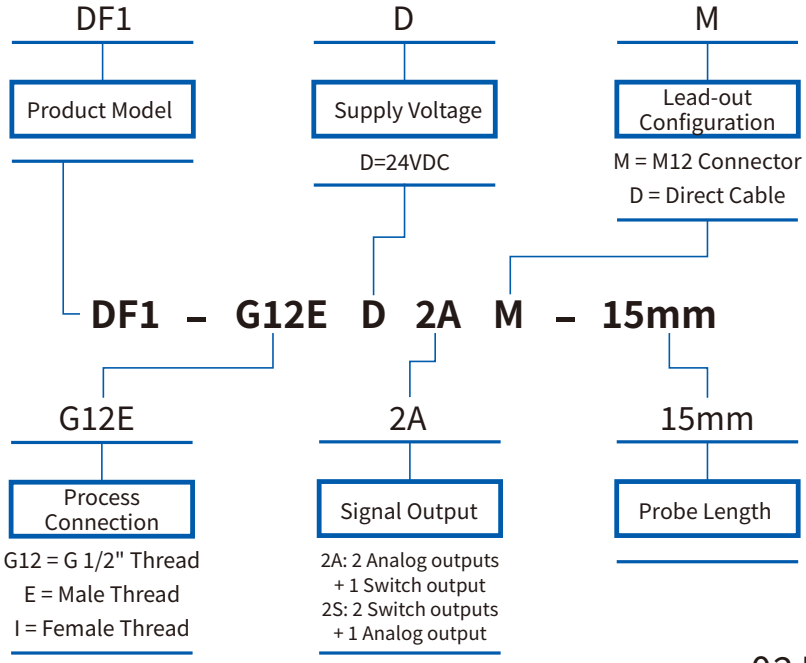
Electrical Parameters

▶ Supply Voltage:	9-36 V DC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	M12 Connector/ direct-lead out
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	1.47" LCD
▶ Setting Method:	Key
▶ Pressure Rating:	100 bar
▶ Protection Class:	IP65
▶ Medium Temperature:	0-100 ° C
▶ Ambient Temperature:	-20-80 ° C
▶ Panel Material:	PC
▶ Key Material:	Silicone rubber
▶ Housing Material:	304 stainless steel
▶ Wetted Material:	304 stainless steel

Model Description



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Operating Principle & Structure

1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. **The temperature difference is converted into a voltage difference. After undergoing amplification, filtering, and other signal conditioning processes, it is fed to the LCD screen and output as signal.**
6. **Features a 304 stainless steel housing, a single probe, a unitary structure, and a moderate size.**

Features

1. **Suitable for applications requiring local display;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. **Detects the flow velocity and temperature of medium within the pipeline, providing real-time indication via two LED lights and 1.47" LCD, outputting corresponding signals;**
4. **On-site adjustment of all setpoints is achieved via push-button configuration;**
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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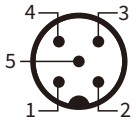
Wiring Instructions

▸ Wiring Diagram:

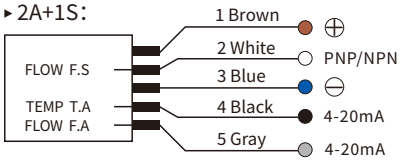


▸ Connector Type:

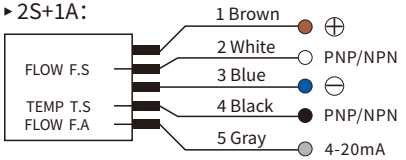
Male connector
(Switch outlet end)

▸No.	▸Wire Color	▸Connection
1	Brown	Positive (+)
2	White	Flow Switch
3	Blue	Negative (-)
4	Black	Temperature Switch/ Simulation
5	Gray	Flow Velocity Simulation

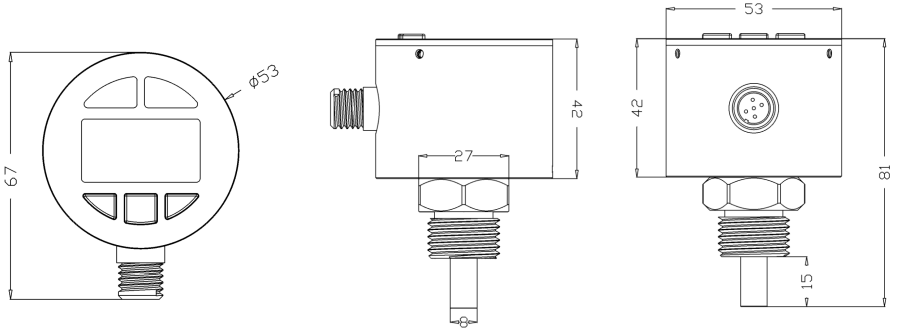
▸ 2A+1S:



▸ 2S+1A:

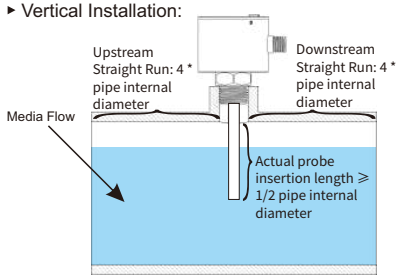


Overall Dimensions

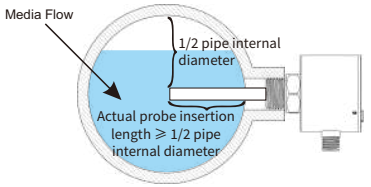


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.

UNC-DF2

Explosion-Proof Digital Display Flow Switch

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Technical Parameters

Measurement Parameters

▶ Measuring Principle:	Thermal conductive (PTC thermistor)
▶ Measuring Range:	Flow Velocity 0.00-2.00 m/s (water)
	Temperature 0.0-100.0 °C
▶ Measurement Accuracy:	Flow Velocity ⩽±2.5% F.S
	Temperature ⩽±1.0% F.S
▶ Temperature gradient:	⩽4 °C/s
▶ Initialization Time:	⩽15 s

Output Parameters

▶Signal Output:	Output 1: Flow Velocity	PNP/NPN
	Output 2: Temperature	PNP/NPN/ 4-20 mA
	Output 3: Flow Velocity	4-20 mA
▶Contact State:	Normally Open (NO) / Normally Closed (NC) (Selectable)	
▶Contact Rating:	60 V 1 A	
▶Switch Delay:	⩽99 s (settable)	

Electrical Parameters

▶ Supply Voltage:	9-36 V DC
▶ Operating Current:	⩽100 mA
▶ Connection Type:	5P connecting terminal
▶ Circuit Protection:	Reverse polarity, overvoltage, short circuit

Structural Parameters

▶ Display Method:	1.47" LCD
▶ Setting Method:	Key
▶ Pressure Rating:	100 bar
▶ Explosion-proof Marking:	Ex db II C T6 Gb; Ex tb III C T80 °C Db
▶ Protection Class:	IP66
▶ Medium Temperature:	0-100 °C
▶ Ambient Temperature:	-20-85 °C
▶ Panel Material:	PC
▶ Key Material:	Silicone rubber
▶ Housing Material:	Cast aluminum alloy
▶ Wetted Material:	304 stainless steel

Model Description

DF2 – G12E D 2A M20I – 15mm

- **DF2** — Product Model
- **D** — Supply Voltage
  - D=24VDC
- **M20I** — Electrical Interface
  - M20=M20×1.5
  - I = Female Thread
  - E = Male Thread
- **G12E** — Process Connection
  - G12 = G 1/2" Thread
  - E = Male Thread
  - I = Female Thread
- **2A** — Signal Output
  - 2A: 2 Analog outputs + 1 Switch output
  - 2S: 2 Switch outputs + 1 Analog output
- **15mm** — Probe Length

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Operating Principle & Structure

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1. Based on the principle of heat transfer. The probe houses two PTC thermistors for detecting the medium temperature.
2. Based on the detected medium temperature, the chip resistors adjacent to the thermistors are continuously heated until a constant temperature difference is established relative to the medium.
3. When the medium is stationary, heat transfer efficiency is low, meaning the rate of heat dissipation is low. The heat generated by the chip resistors is not carried away excessively; the temperature detected by the thermistors approaches that of the chip resistors, creating the maximum temperature difference relative to the medium, i.e., the constant temperature difference.
4. When the medium is flowing, heat transfer efficiency is high, meaning the rate of heat dissipation is high. The heat generated by the chip resistors is continuously carried away by the medium; the temperature detected by the thermistors approaches the medium temperature, resulting in a reduced temperature difference. A higher flow velocity leads to a smaller temperature difference.
5. **The temperature difference is converted into a voltage difference. After undergoing amplification, filtering, and other signal conditioning processes, it is fed to the LCD screen and output as signal.**
6. **Features a cast aluminum alloy housing, a single probe, a unitary structure, and a large size.**

Features

1. **Suitable for areas with explosion-proof and local display requirements;**
2. Minimal flow restriction and pressure drop, capable of detecting very low flow velocities (as low as 0.01 m/s);
3. **Detects the flow velocity and temperature of medium within the pipeline, providing real-time indication via two LED lights and 1.47" LCD, outputting corresponding signals;**
4. **On-site adjustment of all setpoints is achieved via push-button configuration;**
5. Suitable for both gases and liquids; it can detect various media including water, oil, and gas, meeting the requirements of applications such as water equipment, hydraulic systems, and ventilation ducts;
6. Multiple process connection options are available for easy installation and use;
7. No moving mechanical parts, avoiding issues like wear and clogging, thereby reducing maintenance costs.

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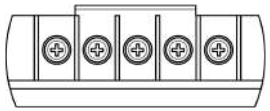
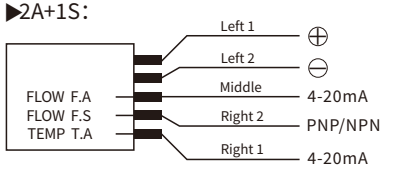
Wiring Instructions

▸ Wiring Diagram:

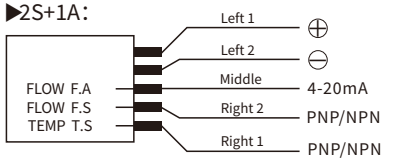


▸No.	▸Wire Color	▸Connection
+	Left 1	Positive (+)
-	Left 2	Negative (-)
F.A	Middle	Flow Velocity Simulation
F.S	Right 2	Flow Switch
T.S/T.A	Right 1	Temperature Switch/ Simulation

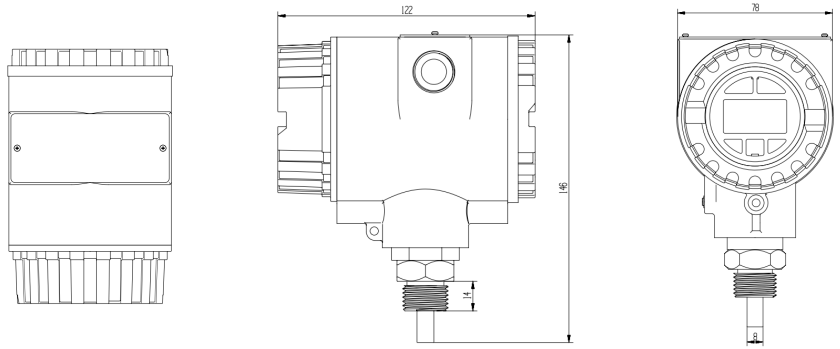
▶2A+1S:



▶2S+1A:

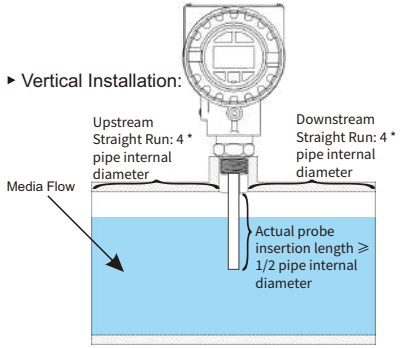


Overall Dimensions

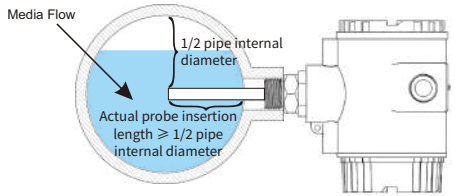


Installation Recommendations

▸ Vertical Installation:



▸ Side Installation:



* Note ①: "Pipe internal diameter" refers to the inner diameter of the pipe.
* Note②: The pipe in the diagram above has a nominal diameter (DN) of 100, with an inner diameter of 100 mm and an outer diameter of 114 mm.
*Note ③: The product probe length shown above is 50 mm as an example.