# AVC-IS-TFS Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.


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## Thermal Flow Switch

# AVC-IS-TFS

The AVCOMM's AVC-IS-TFS flow switch primarily monitors the flow rate in pipelines for media such as water, air, and oil. When the flow rate exceeds or falls below a certain point, it triggers an output alarm signal and transmits it to the unit. After receiving the signal, the system can make corresponding actions to prevent or reduce the occurrence of "dry burning" in the host. It can be widely used in industrial automation, mechanical equipment, air compression industry, refrigeration, and air conditioning fields.

Based on the thermal principle, two resistors are contained in the enclosed probe, one of which is heated as the probe resistor and the other is not heated as the reference resistor. When there is a medium flowing, the heat received by the thermal sensor will change with the flow rate of the medium, and the thermal sensor converts this temperature difference signal into an electrical signal. When the flow rate reaches a certain set point, the thermal flow switch outputs a switch quantity signal.

## Features

- No moving parts
- Maintenance-free
- Easy installation
- One model suitable for multiple pipe diameter
- Continuous adjustment of the switch quantity
- Extremely low pressure loss
- LED displays flow trends and switch status
- Compact structure

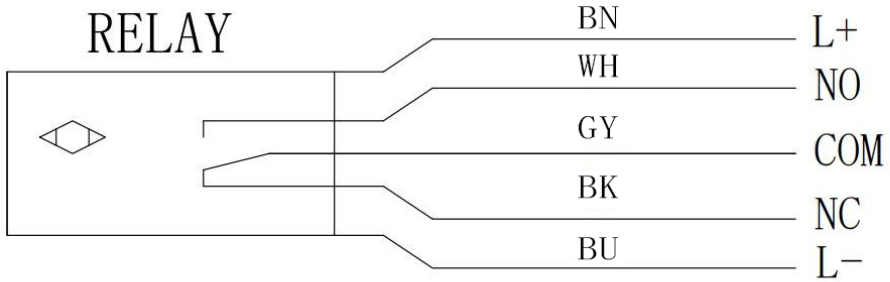
## Ordering Information

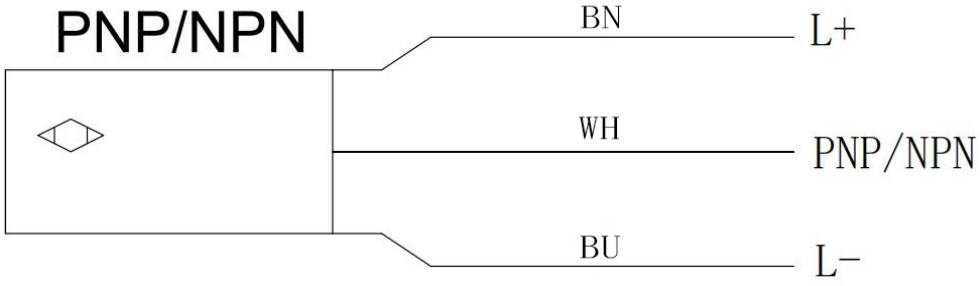
| Model Name | Description |
|---|---|
| **AVC-IS-TFS** | Flow Switch, Relay/PNP/NPN output, monitoring for water, air and oil, -20°C to +80°C, 24V±20%DC, IP67 |
| **AVC-IS-TFS-H** | Flow Switch, Relay/PNP/NPN output, monitoring for water, air and oil, -20°C to +80°C, 24V±20%DC, IP67, Ex d IIC T6 Gb |

| Technical | |
|---|---|
| **Range** | 1~150cm/s（water）, 3~300cm/s（oil），20~2000cm/s（air） |
| **Accuracy** | ±2% |
| **Signal Output** | Relay, PNP,NPN |
| **Power Supply** | 24V±20%DC |
| **Power on** | PNP or NPN: 400mA（ Max）, Relay: 1A@36VAC/DC（Max） |
| **No Load Current** | 80mA Max |
| **Setting Mode** | Potentiometer |
| **Withstand Voltage** | 100bar |
| **Medium Temperature Variation** | ≤4℃/s |
| **Response Time** | 1s~13s，typical value 2s |
| **Initialization Time** | 8s |
| **Electric Protection** | Phase-reversal protection, short circuit protection, overload protection |
| **Mechanical** | |
| **Material** | Probe: stainless steel, Casing: stainless steel/cast aluminum |
| **explosion-proof** | Ex d IIC T6 Gb (only for AVC-IS-TFS-H) |
| **Ingress Protection** | IP67 |
| **Environmental** | |
| **Medium Temperature** | -20℃~+90℃ |
| **Operating Temperature** | -20℃~+80℃ |
| **Storage Temperature** | -20℃~+80℃ |

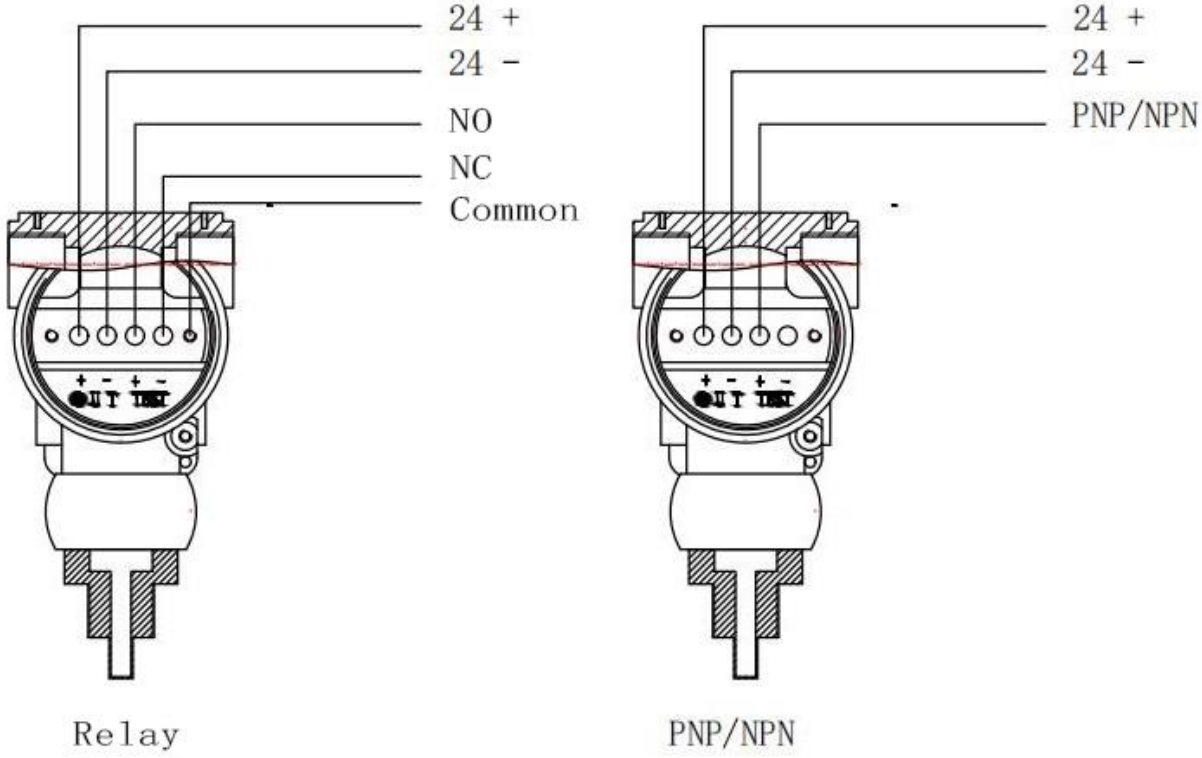
## Connection

- **Wiring diagram for standard flow switch**




- **Wiring diagram for explosion-proof flow switch**

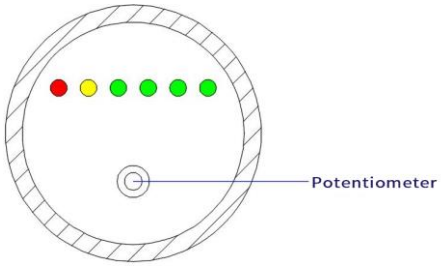


## Debugging

**Red LED on:**
Flow interruption or flow rate below set value, the switch released

**Yellow LED on:**
The flow rate is equal to the set value, the switch will activate

**Yellow and green LED on:**
The flow rate is greater than the set value, the green LED will become brighter, and the more LEDs are lit, the higher the flow rate.




When the pipe is powered on without flow rate, detect several LED, if all the green lights are lit, please do not rotate clockwise, but rotate counterclockwise until the red light is lit. If the red light is lit, do not rotate counterclockwise.

When the pipeline reaches a stable flow rate as set, adjust the potentiometer clockwise until one green light is lit momentarily. Then, rotate counterclockwise until the yellow light is lit. After that, wait for approximately 10 seconds, and then rotate counterclockwise until the red light is lit.

## Installation dimensions

Unit: mm