

AF1-SERIES

SHORT INSTRUCTION MANUAL

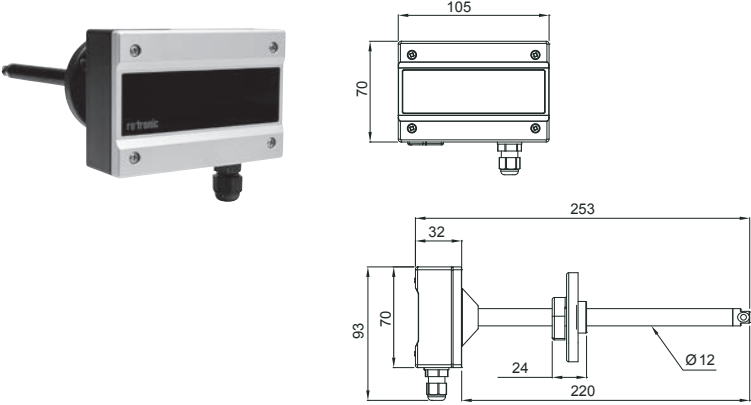
Congratulations on the purchase of your new AF1-Series measurement transducer! Read these short instructions through carefully before installing the device.

General Description

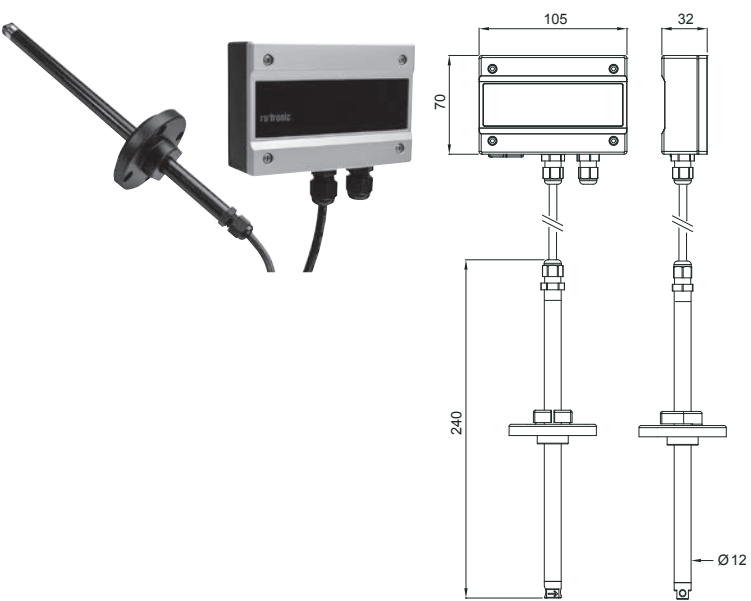
The devices in the AF1 Series are measurement transducers for airspeed measurements. You will find more information at www.rotronic.com

Dimensions / Connections

Duct version



Cable version



Recommended Tools for Installation

- Phillips screwdriver
- Standard screwdriver
- Open-end wrench, 27 mm

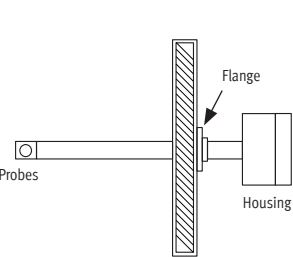
Mechanical Installation

General Recommendations

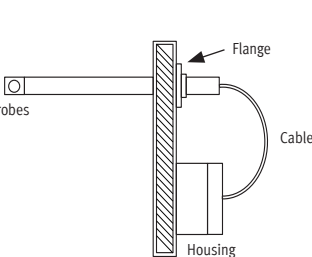
Airspeed measurement is heavily dependent on the conditions of installation. The prerequisite for exact measurement is that the measuring head is placed exactly at the position to be measured. The position chosen for installation can therefore have a significant influence on the precision of the device. Adhering to the following guidelines ensures that you can make optimum use of the device:

- Choose a representative position for installation:
Install the measuring head in a place at which the conditions of airspeed, humidity, temperature and pressure are typical of the environment to be measured
- Ensure that the ambient pressure at the point of measurement is kept as constant as possible
- Ensure that there are no undesirable eddies or asymmetry in the flow profile at the point of measurement
- Ensure that the measuring head is aligned correctly on the direction of airflow. (Note the alignment arrow on the sensor)
- Avoid installation close to heating elements, refrigeration units, or cold or warm walls
- Do not install the measurement transducer in potentially explosive environments
- Install the measurement transducer indoors
- Avoid any physical contact with the sensor
- Avoid installation in dusty environments
- Avoid physical shocks or vibrations

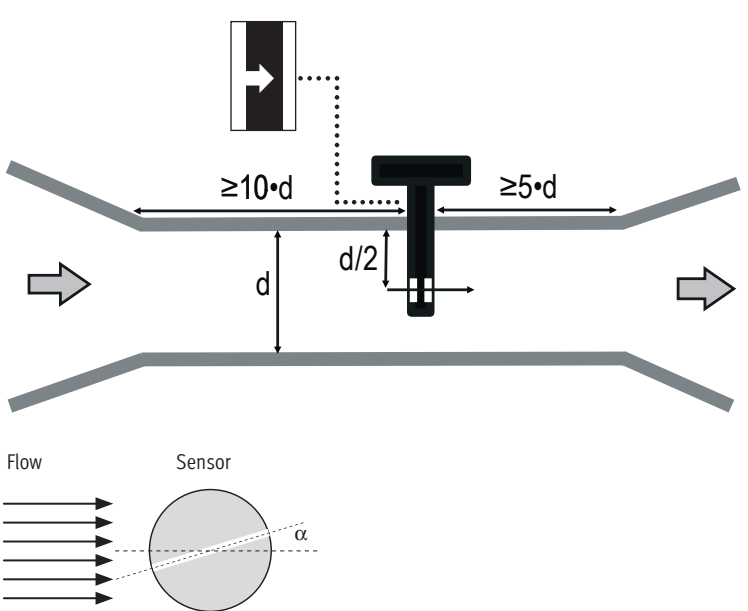
Mounting the duct version



Mounting the cable version



Mounting position



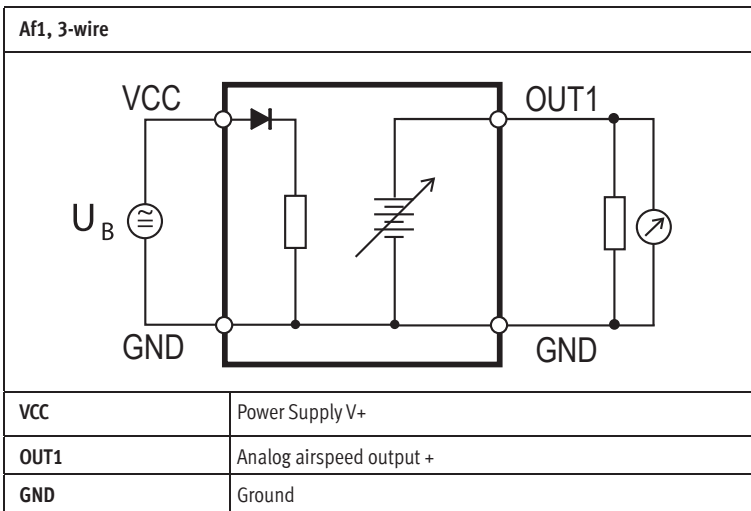
Electrical Installation



Caution:
Although the measurement transducer is fitted with over-voltage and reverse-polarity protection, incorrect electrical installation can lead to the destruction of the transducer.

Power Supply V+	Load	Output
3-wire		
8...35 VDC or 12...30 VAC	< 500 Ω or 10kΩ	4...20 mA or 0...10 V

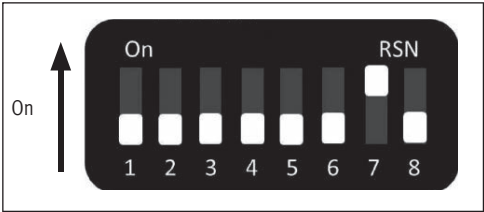
Terminal allocation / Connection schematic



Setting via DIP switch

The settings of the device can be made via DIP switches, as follows:

- Connect AF1 to the power supply
- Set switch position 1 to "ON".
- Set DIP switches as desired
- Isolate AF1 from the power supply (for at least 10 s)
- Reconnect AF1 to the power supply



Switch position 2 (analog output type)

Switch 2	Analog output
ON	0...10 V
OFF	4...20 mA

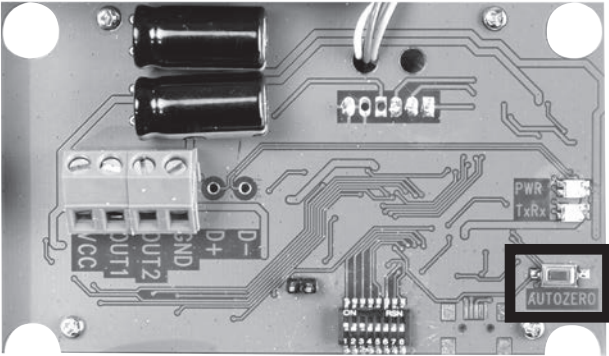
Switch positions 3 to 5 (measurement range)

Switch 3	Switch 4	Switch 5	Measurement range
ON	OFF	OFF	2 m/s
OFF	ON	OFF	5 m/s
ON	ON	OFF	10 m/s
OFF	OFF	ON	15 m/s
ON	OFF	ON	20 m/s

Zero adjustment

The AF1 permits manual zero adjustment by pressing a button:

- Place the AF1 measuring head in an environment free of airflow
- Connect the AF1 to the power supply
- Press "AUTOZERO" and hold down for at least 5 s



Periodical calibration of the AF1

The flow sensor and the associated electronics are very stable, and normally do not need to be changed or calibrated after calibration at the factory. To ensure maximum precision, we recommend regular calibration of the device.

Technical Data

Housing material	Polycarbonate
IP protection type	IP65
Medium	Air and non-aggressive gases
Installation position	Sensor at 90° to airflow
Electrical connections	Internal screw terminals
Feed	8...35 VDC / 12...30 VAC 50/60 Hz
Over-voltage protection	45 VDC / 40 VAC
Temperature of medium	0...80 °C (sensors)
Application range	0...50 °C (electronics)
Storage conditions:	-20...60 °C / 0...100 %RH, non-condensing
Analog outputs	1
Analog output type	4...20 mA or 0...10 V (reconfigurable)
Permissible load	>10 kΩ (voltage output)
Maximum load	<500 Ω (current output)

Flow measurement

Measuring principle	Calorimetric
Measurement ranges	2 / 5 / 10 / 15 / 20 m/s
Precision	±3.0 % full-scale at 23 °C ±3 K, 45 %RH, 1013 mbar
Influence of installation position	<3 % of measured value at α < ±10°

