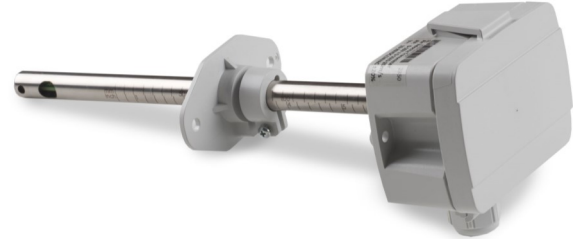


# Air Velocity Series

## PRODUCT INSTALLATION DATA



## GENERAL

The Duct-Mounted and Remote Air Velocity Transmitters are designed for highly accurate measurement of air velocity up to 20 m/s (2000 ft/min). They feature a thin-film sensor which operates according to the hot-film anemometer principle. The mounting flange permits a continuous adjustment of immersion depth at the duct. The measuring range and response time can be adjusted by shifting switches on the circuit board.

These air velocity transmitters are suitable for use in all systems capable of accepting 0...10 VDC inputs and are ideal for accurate and reliable measurement in building automation and ventilation applications. For special applications, please contact the manufacturer.

Part Number	Cable length	Immersion dept
THFDEA0C	--	50-180mm (2-7")
THFDEB0C	--	50-180mm (2-7")
THFRMA1C	1 meter	50-300mm (2-12")
THFRMB1C	1 meter	50-300mm (2-12")

## FEATURES

- Highly accurate measurement of air velocities of up to 20 m/s (2000 ft/min)
- Mounting flange permits continuous adjustment of immersion depth at duct
- Measuring range and response time can be individually set
- Self-compensation for changes in air temperature.

## SPECIFICATIONS

Measurement range  
 Working range 2...10 m/s (400...2000 ft/min)  
 2...20 m/s (400... 4000 ft/min)  
 Accuracy ±0.2 m/s + 3% of m.v. @ 20 °C,  
 50% RH, 1 atm  
 (±40 ft/min + 3% of m.v. @ 68 °F,  
 50% RH 1 atm)  
 Typical response time < 4 s

## GENERAL

Power supply 19...39 VDC VAC  
 Output 0...10 V  
 Current consumption DC power supply: typ. 15 mA  
 AC power supply: typ. 39 mAeff  
 Connection Spring terminals, max. 1.5 mm2  
 Housing material PC/ABS, UL94V-2 appr. (AV-D-10)  
 (AV-R-10)  
 Protection class IP65 / NEMA 4 for enclosure; IP20 for sensing part  
 Cable gland M16 x 1.5 / UL94-V2  
 Working conditions -5...+55 °C (+23...+131 °F)  
 0...95% RH (non-condensing)  
 Storage conditions -25...+60 °C (-13...+140 °F)  
 20...80% RH  
 Dimensions See section "Dimensions & Mounting" on the next page  
 Mounting Duct  
 Approvals CE

## ACCURACY

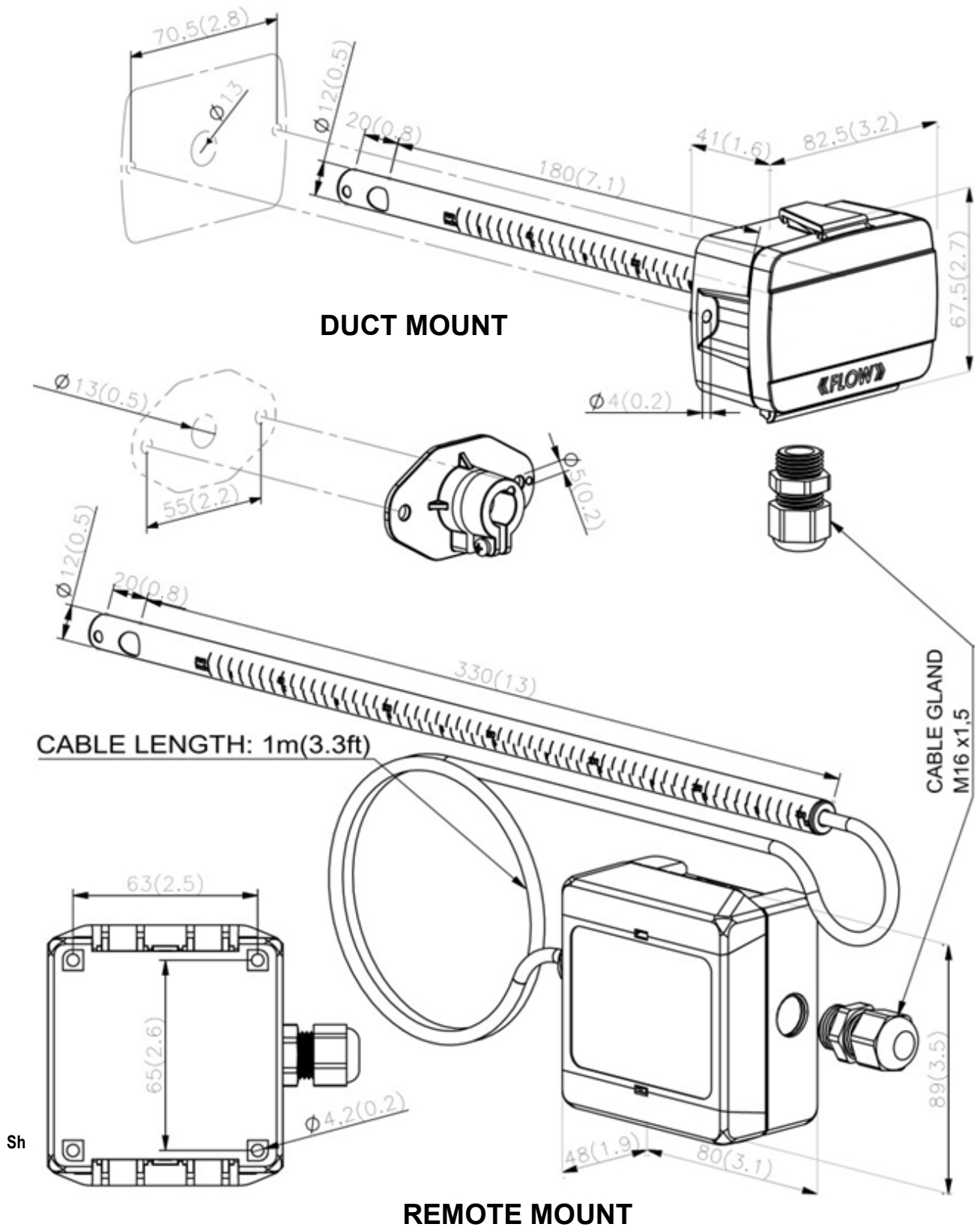
The anemometer is temperature-compensated. The measurement principle establishes a relationship between the flow and the heat capacity of air. Thus, at lower air pressure, the actual flow speed is higher than the indicated flow speed. This is expressed by the following equation:

$$V_{\text{actual}} = V_{\text{indicated}} * 1013 \text{ mbar} / \text{Pressurereal (in mbar)}$$

## MOUNTING

**NOTE:** The accurate and reliable determination of air velocity depends on the correct positioning of the probe. Accurate measurements are possible only if the probe is installed in a location with low-turbulence flow. Extreme mechanical and unspecified strain and corrosive environments and condensation must be avoided.

## DIMENSIONS & MOUNTING



## DIMENSIONS & MOUNTING (CONT.)

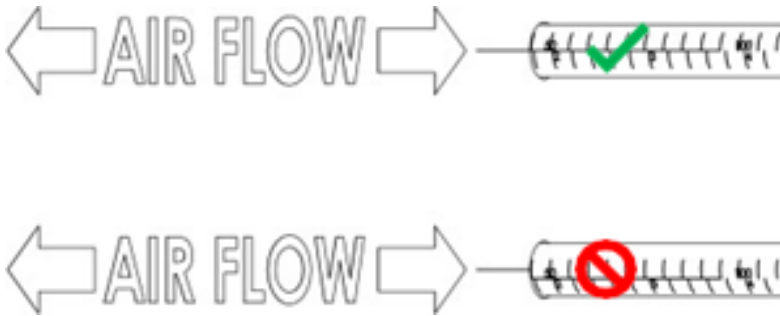


Fig. 7. Align sensor with flow

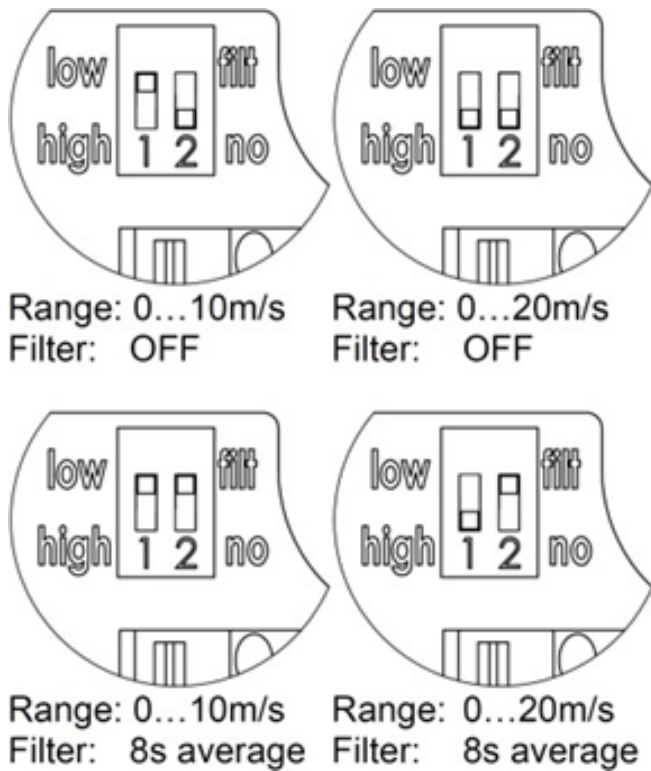


Fig. 8. Dip switch selections

## ELECTRICAL CONNECTION

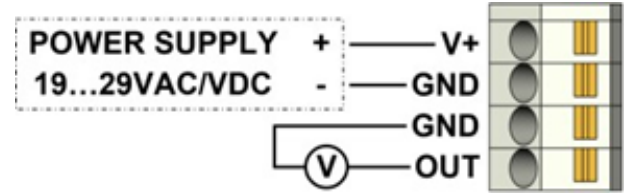


Fig. 9. Connection diagram

## WIRING

wiring run	maximum length
sensor to controller	200 m (660 ft)

**NOTE:** Installation of the sensor near high EMI-emitting devices may lead to faulty measurements.

Use shielded wiring in areas with high EMI. Keep 15 cm (5.9") minimum distance between sensor lines and 230 VAC power lines.

Use two transformers: one for sensors and actuators and one for the controller.

## DISPOSAL

At the end of their useful life the packaging and product should be disposed of according to local waste guidelines.

**DIMENSIONS & MOUNTING (CONT.)**

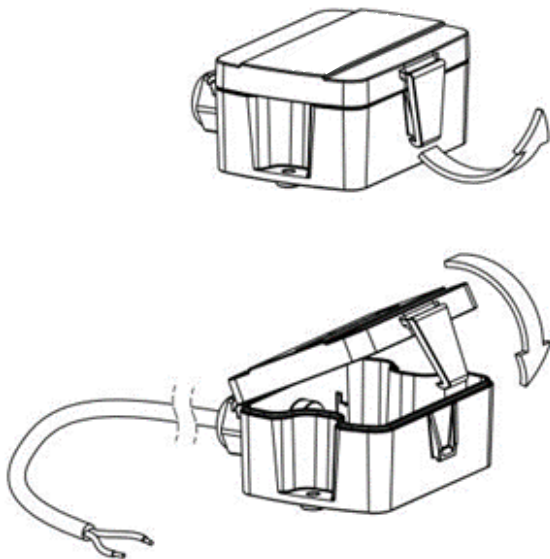


Fig. 2. Opening and closing THFD

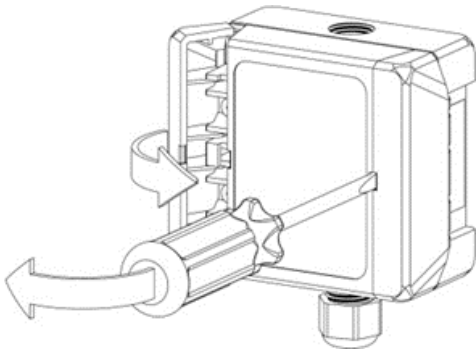


Fig. 3. Opening and closing THFR

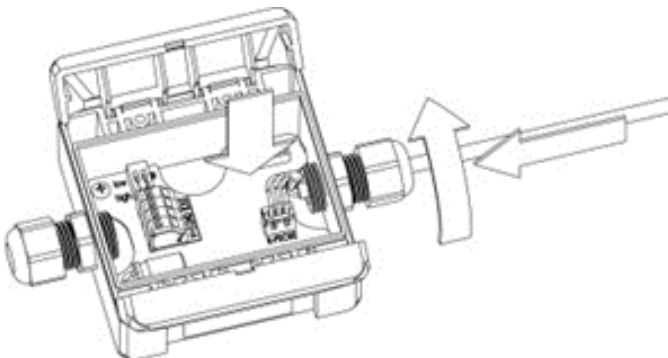


Fig. 4. Assembling THFR  
(insert cable, fasten cable gland,  
insert connector)

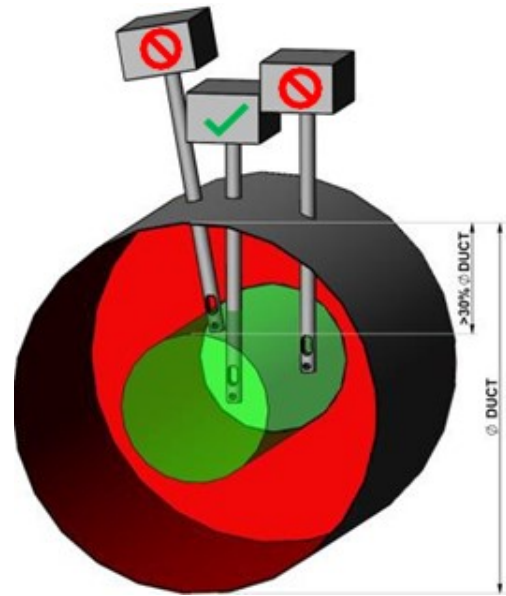


Fig. 5. Mount in the middle of the duct!

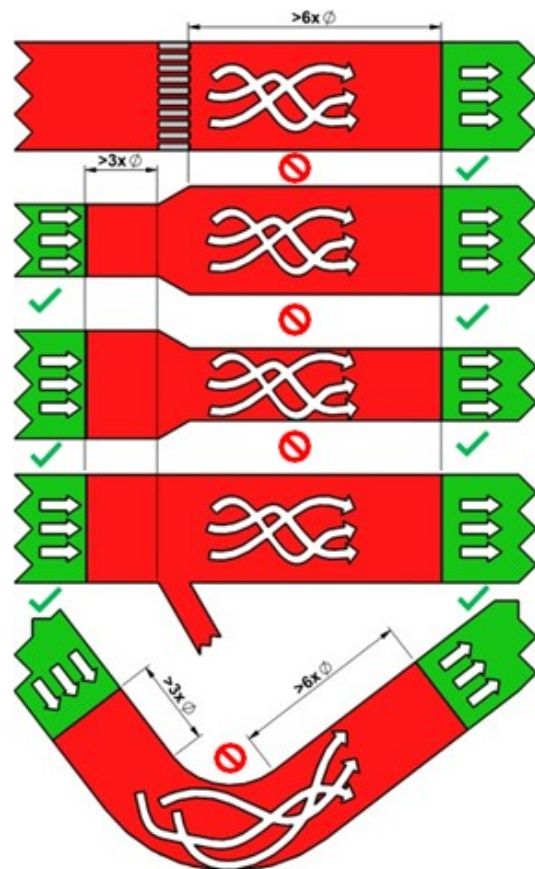


Fig. 6. Mount in location with laminar flow,  
preferably after filter, maintain sufficient distance  
from objects that cause turbulence (diffusers,  
branches, bends, flaps, heaters, coolers, etc.).