Fan inlet airflow sensor

MFS-FI

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Application

Micatrone flow sensor MFS-FI is designed for mounting in the fan air inlet.

Function

MFS-FI is connected through pressure tubes to a Micatrone Flow transmitter which convert the measured pressure to a flow linear output signal.

The location of the installed sensor is carefully tried out to obtain a correct and stable average value of the air flow. Depending on different design of the fan, it may be necessary to adjust the K-factor of the flow sensor, K_m, if the measured value should correspond to withstanding formula.

Flow, Q, is calculated with below standing formula:

$$Q = K_m \times A \times K_{korr} \times \sqrt{\Delta p}$$

$$Q = m^3 / s$$

$$\Delta p = \text{Pa}$$

$$K_m = 0{,}86$$

$$A = \left(\frac{D}{2}\right)^2 \times \pi$$

D = fan inlet diameter in metres closest to the fan wheel.

NOTE! On double suction fans the area (A) is multiplied with 2 ($A \times 2$).

K_{korr} = Correction factor, 0,8...1,2, normally at first calculation, let K_{korr} be 1,0

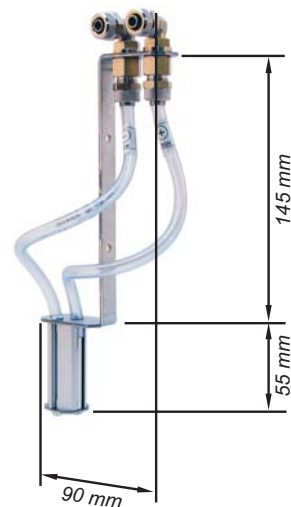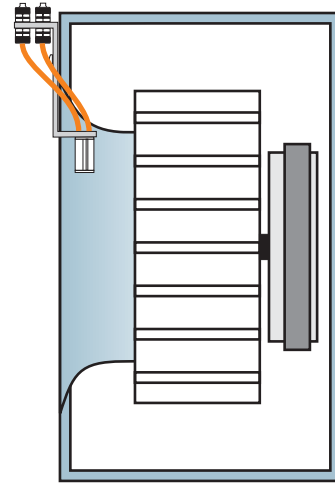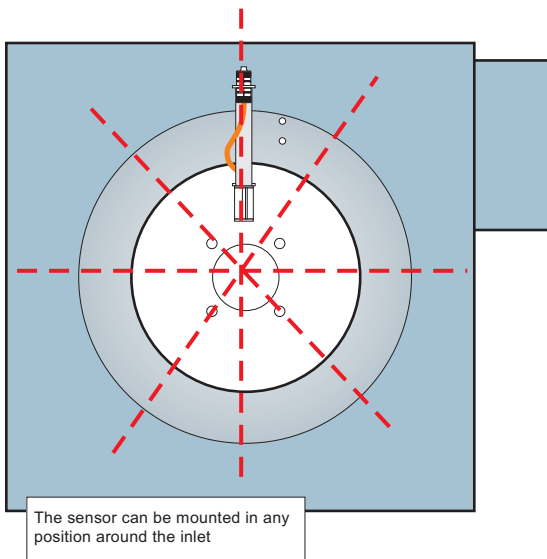Adjustment with K_{korr} can be performed in connection with air flow trimming.
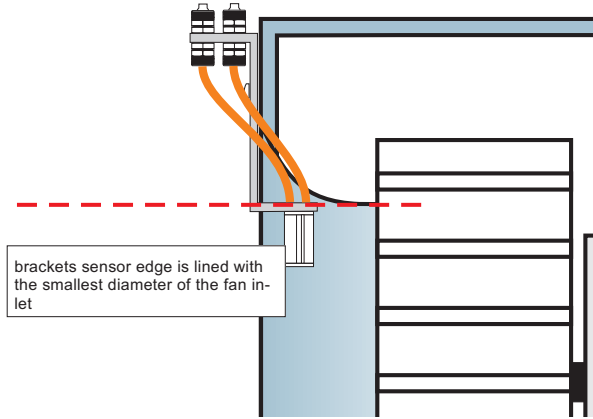
Mounting

The flow sensor mounting bracket is fastened on to the fan housing according to figure in such a way that the brackets sensor edge is lined with the smallest diameter of the fan inlet, +/- 10mm.

The sensor can be mounted in any position around the inlet but must be in line with the fan wheel centre.

The flow sensor is in standard delivered with 90° rapid fittings of swivel type for 8/6 plastic tube. Other fittings are available as option.

brackets sensor edge is lined with the smallest diameter of the fan inlet

The sensor can be mounted in any position around the inlet

145 mm

55 mm

90 mm

web reference - http://www.micatrone.se/prod_detail.php?secID=2&lang=gb&id=59