

Air Velocity Transmitter

Sensor for Air Velocity Measurement



measuring
•
monitoring
•
analyzing

KAH



- Selectable Working Range: 0...2000/3000/4000 ft/min
- Output Signal: 4...20 mA or 0...10 V_{DC}
- Supply Voltage: 24 V_{AC/DC}
- Low Angular Dependence



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KOBOLD Instruments, Inc.

Description

KAH air velocity sensors are ideal for applications requiring accurate ventilation control. They operate on an innovative hot film anemometer principle. This thin film sensor guarantees accuracy at low air velocity, which is not possible for conventional anemometers with commercial temperature sensors or NTC bead thermistors. The sensor is also much more insensitive to dust and dirt than all other anemometer principles. The KAH delivers high reliability and low maintenance costs. The configuration equipment allows air velocity adjustment of the sensor. The measuring range and the response time can be selected via jumpers by the user. This facilitates easy adjustment to the correct working range upon start-up. By use of the supplied mounting bracket, the insertion depth is infinitely adjustable.

Note: The sensor is to be mounted so that the direction of air-flow is parallel to the sensor duct.

Applications

- HVAC Applications
- Process and Environmental Control

Advantages

- Adjustable Damping Time
- Short Reaction Time
- Adjustable Probe Insertion Length
- Low Angular Dependence
- Easy Installation
- Adjustable to Application Requirements

Technical Details

Measuring Values

Working Range¹⁾:	0 ... 2000 ft/min 0 ... 3000 ft/min 0 ... 4000 ft/min
Output Signal¹⁾:	4 - 20 mA $R_L < 450 \Omega$ 0 ... 10 V $(-1mA < I_L < 1mA)$
Accuracy at 68 °F, 45 % rH, 0 psig:	40 ... 2000 ft/min $\pm (40 \text{ ft/min} + 3\% \text{ of reading})$ 40 ... 3000 ft/min $\pm (40 \text{ ft/min} + 3\% \text{ of reading})$ 40 ... 4000 ft/min $\pm (40 \text{ ft/min} + 3\% \text{ of reading})$
Response Time τ_{90}¹⁾²⁾:	4 seconds (1 second at constant temperature)

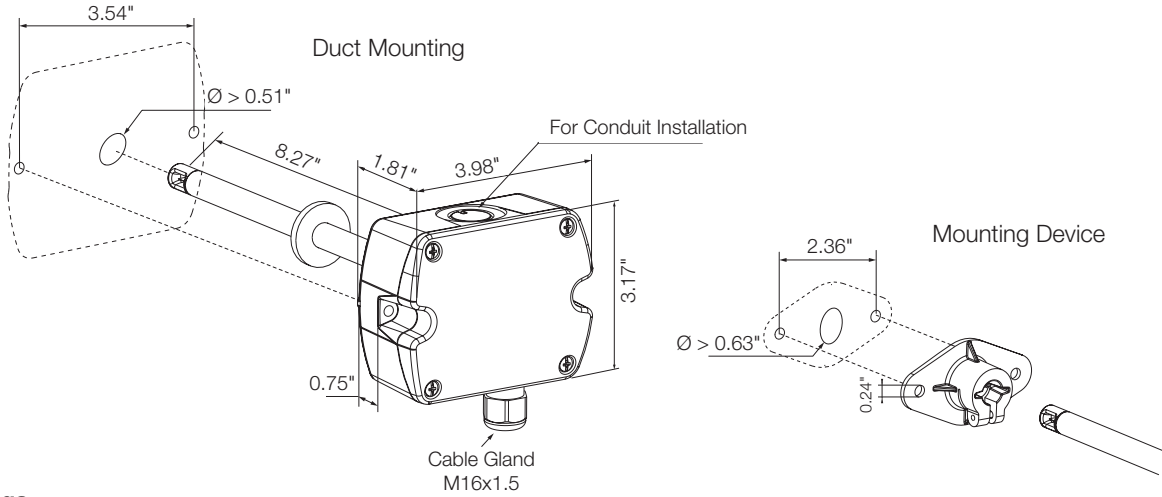


Probe Length:	7.87"
Process Connection:	Clamp for duct mounting
Power Supply:	24 V _{AC/DC} $\pm 20\%$
Current Consumption for AC Supply:	Max. 170 mA
for DC Supply:	Max. 70 mA
Angular Dependence:	< 3% of reading at $ \Delta\alpha < 10^\circ$
Wire Termination:	Screw terminals up to AWG 16 (1.5 mm ²)
Cable Gland:	M16x1.5
Electromagnetic Compatibility:	EN 61326-1 EN 61326-2-3
Housing Material:	Polycarbonate, UL94V-0 approved
Protection:	IP 65
Operating Pressure:	Max. 200 mbar
Temperature Range	
Working Temp. Probe:	-13 ... 122 °F
Working Temp. Electronic:	-14 ... 122 °F
Storage Temp:	-22 ... 140 °F
Working Range Humidity:	5 ... 95 % rH (non-condensing)

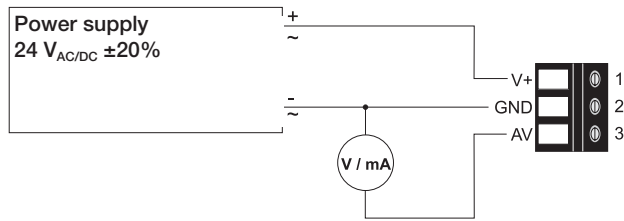
¹⁾ Selectable by jumper

²⁾ Response time τ_{90} is measured from the beginning of a step change of air velocity to the moment of reaching 90% of the step.

Dimensions

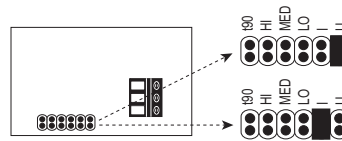


Wiring Settings



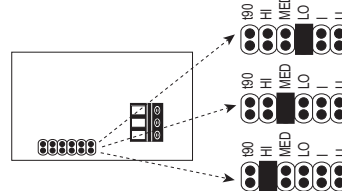
V+ = Supply voltage
 GND = Ground
 AV = Airflow output

Selection of Output Signal



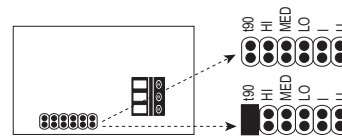
Jumper Voltage (U) = factory setting
 Jumper Current (I)

Selection of Working Range



Jumper 0...2000 ft/min
 Jumper 0...3000 ft/min
 Jumper 0...4000 ft/min = factory setting

Selection of Response Time



No jumper FAST approx. 1 s
 Jumper SLOW approx. 4 s = factory setting

The output signal, working range and response time are selected via the jumpers according to the picture.

Order Details (Example: KAH-22004)

Model	Connection	Sensor Length A	Cable Length	Output/Display
KAH-..	..2.. = Clamp for Duct Mounting	..2.. = 7.87"	..00.. = without Cable	..4 = 4-20 mA, 0-10 V without Display