

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.
1801 Parkway View Drive
Pittsburgh, PA 15205
Main Office:
1.800.998.1020
1.412.788.4890
info@koboldusa.com
www.koboldusa.com

Description

KAH air velocity transmitters 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 with jumpers by the user. This facilitates easy adjustment to the correct working range on start-up. Using the mounting device, the penetration 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

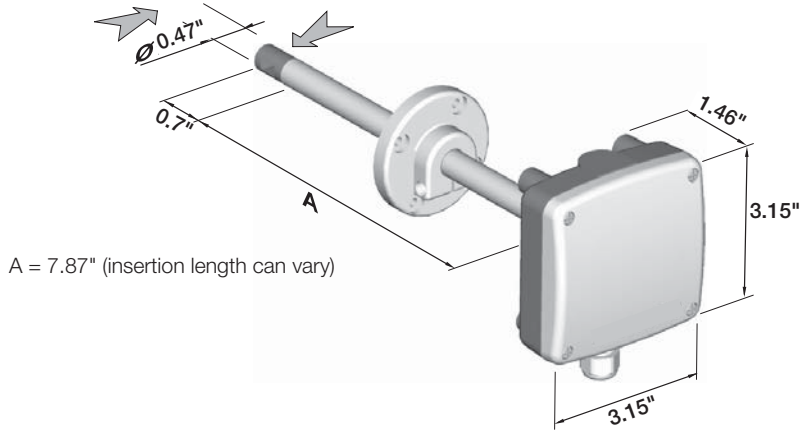
Working Range¹⁾:	0 ... 2000 ft/min 0 ... 3000 ft/min 0 ... 4000 ft/min
Output Signal¹⁾:	4 - 20 mA $R_L < 450 \Omega$ 0 ... 10 V $(-1mA < I_L < 1mA)$
Accuracy at 68 °F, 45 % rH, 0 psig:	40 ... 2000 ft/min $\pm (40 \text{ ft/min} + 3\% \text{ of reading})$ 40 ... 3000 ft/min $\pm (40 \text{ ft/min} + 3\%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

Response Time τ_{90}¹⁾²⁾:	4 seconds (0.7 seconds 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. 150 mA
for DC Supply:	Max. 90 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, UL94HB approved
Protection:	IP 65
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)

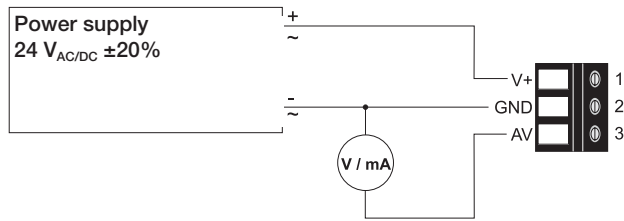
¹⁾ Selectable by jumper

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

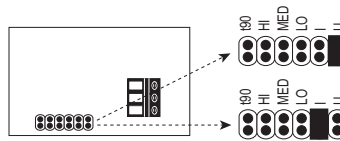


Wiring Settings



V+ =
GND =
AV =

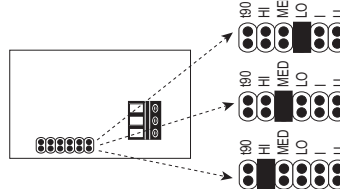
Selection of Output Signal



Jumper
Voltage (U)
= factory setting

Jumper
Current (I)

Selection of Working Range

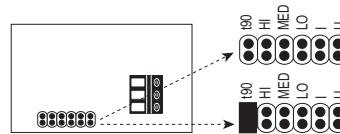


Jumper
0... 2000 ft/min

Jumper
0... 3000 ft/min

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

Selection of Response Time



No jumper
FAST approx. 0.7 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-12004)

Model	Connection	Sensor Length A	Cable Length	Output/Display
KAH-	..1.. = Clamp for Duct Mounting	..2.. = 7.87"	..00.. = without Cable	..4 = 4-20 mA, 0-10 V without Display