KELE AIRFLOW MEASURING STATION

KMS2 SERIES

DESCRIPTION

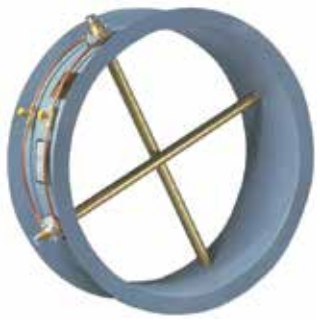
The **Kele KMS2 Series airflow measurement station** consists of single or multiple airflow elements, factory mounted and pre-piped in a casing designed for flanged connection to the ductwork. The station can also incorporates an airflow straightening section constructed of aluminum honeycomb having a ½ inch opening and 3 inch depth. Standard materials consist of a G90 galvanized casing, 6063-T5 anodized aluminum flow sensors, and optional 3003 aluminum airflow straightener.

The total pressures sensed by the upstream ports are continually averaged within an isolated chamber. The static sensing ports (located where the influence of the velocity head is zero) are averaged in a second isolation chamber. Multiple elements are manifolded together for connection to a differential measurement device for flow measurement and indications.

KMS2-R Pictured with Airflow Straightener

KMS2-R Pictured without Airflow Straightener

KMS2-C Pictured with Airflow Straightener



KMS2-C Pictured without Airflow Straightener

FEATURES

- ***Multiple total and static pressure sensing ports along the length of the element***
- ***Factory mounted and pre-piped in a flanged duct section (casing)***
- ***Optional: Honeycomb airflow straightening section***
- ***±2% accuracy from 100 to 800 FPM***
- ***Construction includes a galvanized casing, aluminum flow sensors***
- ***Operation up to 350°F***
- ***Operation from 0 to 100% humidity***
- ***Standard airflow stations have good salt air resistance and are suitable for most HVAC applications***

SPECIFICATIONS

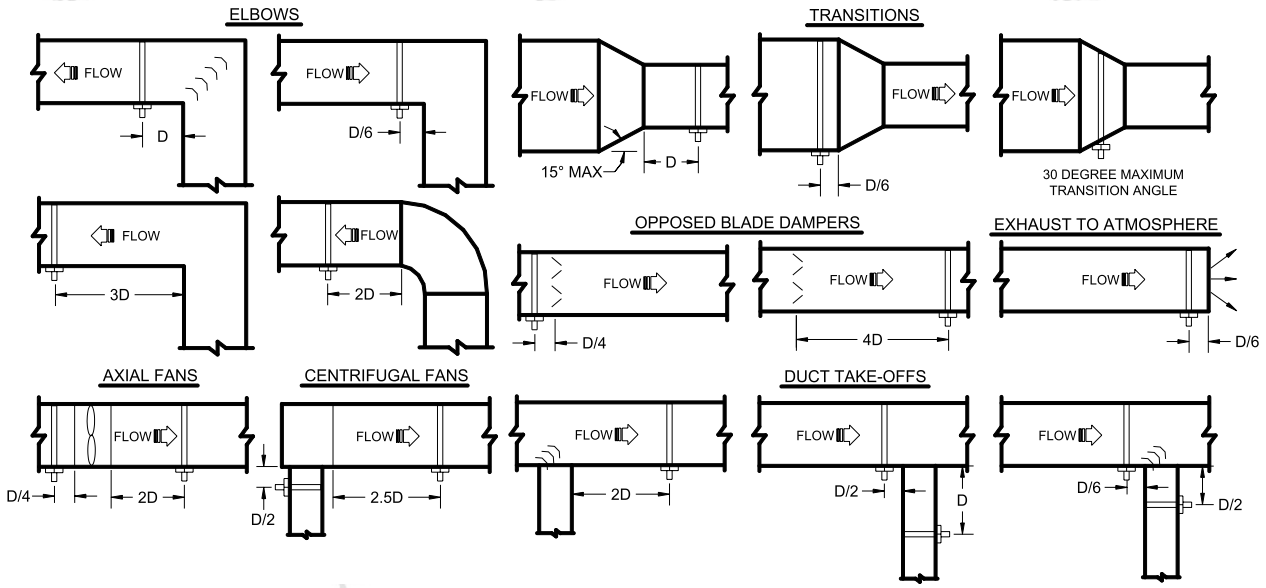
Supply Voltage	Not required Requires a Differential Pressure Transmitter
Signal Output	Differential air pressure ports (Total P. & Static P.)
Min/Max Air Velocity	100 fpm Min, 10,000 fpm Max
Velocity Formula*	FPM = 4005 x (√ ΔP in "WC)
Transmitter Formula*	$(FPM / 4005)^2 = \Delta P$
Accuracy	±2% with Velocity >100FPM
Sensor Type	PITOT array with 2 ports, Total P. & Static P.
Measurement Range	.0006 "WC to 6.23 "WC
Size limits	4" to 120" in 1/4 increments
Pressure Drop	≈0.001 "WC to 1.00 "WC from 300 to 10,000 FPM
Operating Pressure	Not Specified
Operating Temperature	Up to 350°F (177°C)
Operating Humidity	0 to 100% Non-condensing

Formulas based on standard air density = 0.075 lb / ft^3

Media Compatibility	Clean HVAC duct air
Process Connection	1/4" Compression for copper or poly tube
Wiring	Pressure transmitter per MNFR
Mounting	See Matrix on page 382
Best Results	≈2 duct dia from any transition (See install sheet)
Construction	Assembly per order size
Casing	16-gauge galvanized steel
Sensor	Rigid anodized aluminum array
Straightener	Aluminum hex w/0.5" cells, 3" long
Enclosure Rating	None
Dimensions	See Matrix on Page 382
Approvals	Not Specified
Warranty	1 year

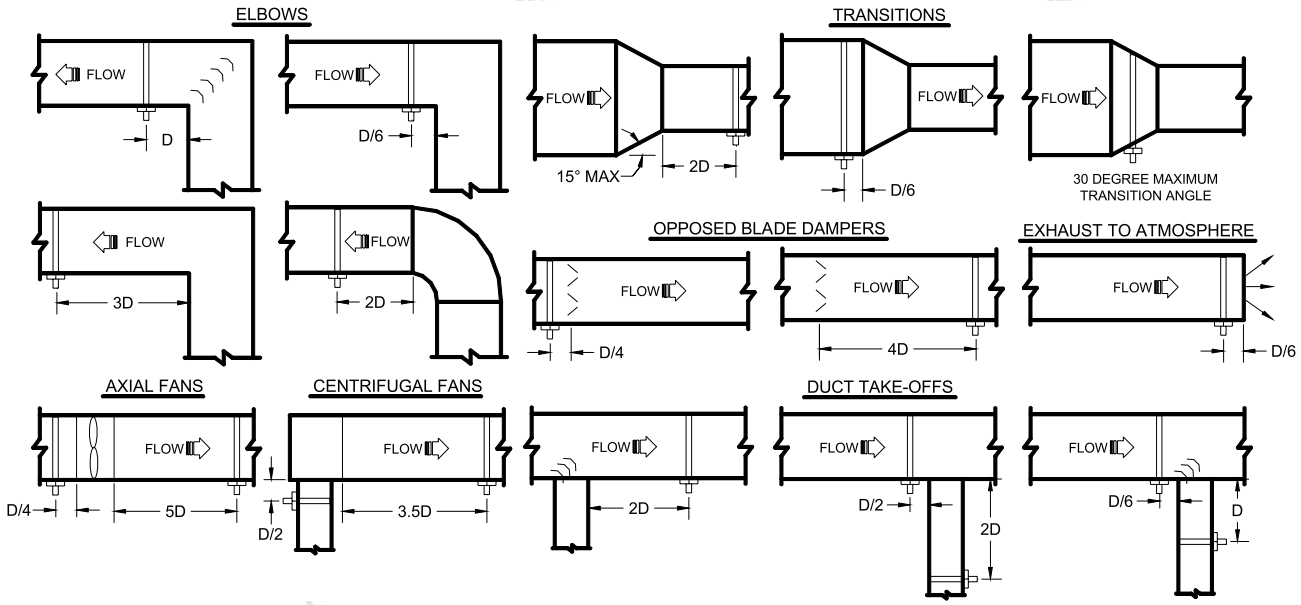
INSTALLATION GUIDELINES - KMS2 WITH AIRFLOW STRAIGHTENER

The elements may be installed in any duct configuration. However, the accuracy of the installation is dependent on the flow conditions in the duct. The minimum installation requirements for the elements based upon a uniform velocity profile approaching the duct disturbance for flow rates less than 2,500 fpm are shown below. Add one duct diameter to the installation requirements shown below for each additional flow rate of 1,000 fpm. These are not ideal locations. It is always best to locate the elements as far as possible from all duct disturbances, with upstream disturbances being the most critical consideration. Note: D=1 Duct Diameter



INSTALLATION GUIDELINES - KMS2 WITHOUT AIRFLOW STRAIGHTENER

The elements may be installed in any duct configuration. However, the accuracy of the installation is dependent on the flow conditions in the duct. The minimum installation requirements for the elements based upon a uniform velocity profile approaching the duct disturbance for flow rates less than 2,500 fpm are shown below. Add one duct diameter to the installation requirements shown below for each additional flow rate of 1,000 fpm. These are not ideal locations. It is always best to locate the elements as far as possible from all duct disturbances, with upstream disturbances being the most critical consideration. Note: D=1 Duct Diameter



KELE AIRFLOW MEASURING STATION

KMS2 SERIES

DIMENSIONS

Circular Dimensions				
Station Size	Flange Thickness	Flange Size	Casing Length with Straightener	Casing Length without Straightener
6" - 15"	0.064"	1.0"	8"	6"
16" - 44"	0.064"	1.5"	8"	6"
45" - 72"	0.188"	1.5"	10"	10"
73" & Over	0.188"	2.0"	12"	12"

Retanglular Dimensions			
Station Size	Flange Size	Casing Length with Straightener	Casing Length without Straightener
8" - 72"	1.5"	8"	5"
73" & Over	2.0"	8"	5"

ORDERING INFORMATION

MODEL	DESCRIPTION		
KMS2-R	Duct Mount Airflow Measuring Station Rectangular		
	DUCT WIDTH x DUCT HEIGHT (in 1/4" Increments)		
	-x	Smaller in inches >, 04" to 120"	
	-y	Larger in inches >, 04" to 120"	
		AIRFLOW STRAIGHTENER	
		A	No Airflow Straightener
		B	Aluminum Airflow Straightener

Part Number Example:
KMS2-R-24-20-B

Description
Duct mount AMS rectangular 24"W x 20"H with airflow straightener

MODEL	DESCRIPTION		
KMS2-C	Duct Mount Airflow Measuring Station Circular		
	DUCT DIAMETER (in 1/4" Increments)		
	-D	Duct Diameter 04" to 120"	
		AIRFLOW STRAIGHTENER	
		A	No Airflow Straightener
		B	Aluminum Airflow Straightener

Part Number Example:
KMS2-C-18-A

Description
Duct mount AMS circular 18" diameter without airflow straightener