

# Fan Inlet Sensor with Throat Mount

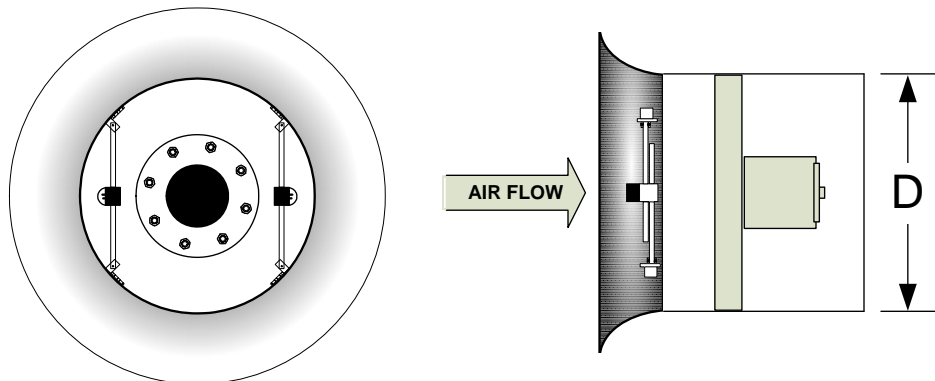
## Installation Guide

### -F Fan Inlet Sensors

with Throat Mount Brackets (Part number 700-30xx)

For use with Gold Series GF2 and  
Hybrid Series HF1/SF1 Fan Inlet Sensors

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Fan Inlet Sensor Throat Mount

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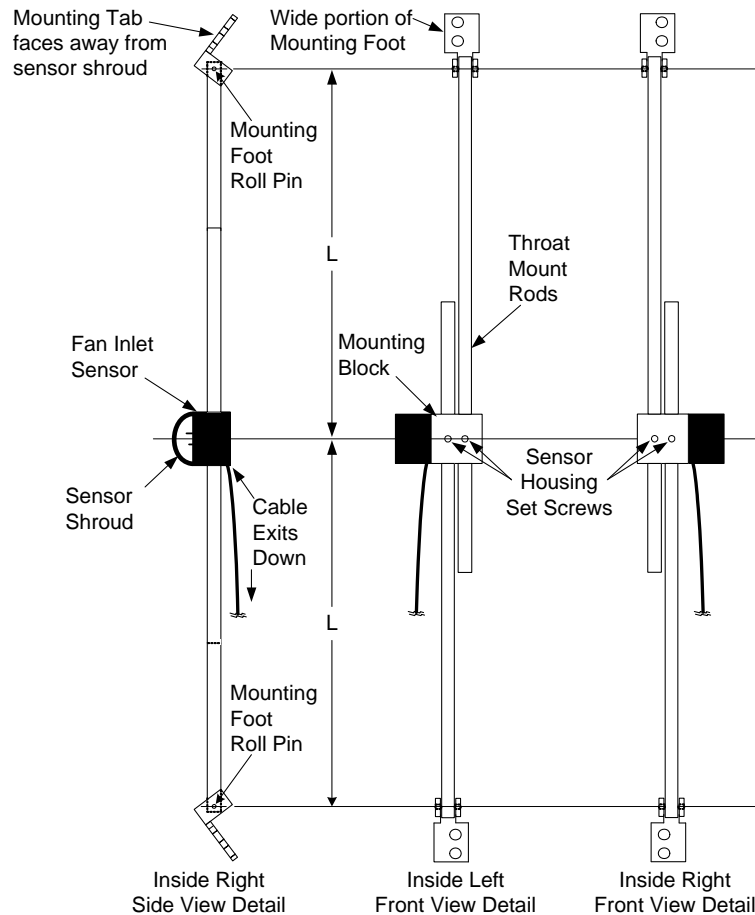
**1 OVERVIEW**

This document provides the instructions necessary to install Fan Inlet Sensors (P.N. 610-18xx) supplied with Throat Mount Brackets (P.N. 700-30xx) as shown in Figures 1 and 2.

For DWDI (Dual Wheel Dual Inlet) and SWSI (Single Wheel Single Inlet) applications, sensors are always factory specified in pairs at the inlet opening. **Only on Fan Array applications may single sensors be specified by the factory for single left or single right installation.** Table 1 shows standard Throat Mount Sizes available. The throat mount version is designed for mounting directly in the inlet bell of centrifugal fans, or upstream of the impeller in vane axial fan applications.

**Table 1. Throat Mount Standard Sizes**

Standard Size Code	Inlet Throat Diameter 'D'				Rod Pack Part Number (2 rods per pack)	Rod Pack Part Number (4 rods per pack)
	is greater than or equal to		and is less than			
	inches	mm	inches	mm		
1	10	254.00	15	381.00	700-3155	700-3055
2	14	355.60	23	584.20	700-3156	700-3056
3	18	457.20	32	812.80	700-3157	700-3057
4	27	685.80	49	1244.60	700-3158	700-3058
5	35	889.00	66	1676.40	700-3159	700-3059



**Figure 1. Fan Inlet Sensor with Throat Mount Kit Components**

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## 2 PREPARATION FOR INSTALLATION

- Determine the specified location for the Fan Inlet Airflow Sensor as indicated on the engineer's plans. Ensure that the cable supplied with the sensor is of sufficient length to reach the planned transmitter installation site. It is recommended that the sensor be installed first to ensure that the included cable will reach the transmitter after routing and securing the cable.
- Carefully open the Fan Inlet Sensor and Throat Mount Installation Kit packages and inspect for damage. If damage is noted, immediately file a claim with carrier.
- Throat mount sensors are supplied with straight rods and brackets for installation in the throat of the inlet cone as shown in Figures 2 and 3. Verify that the proper rods have been supplied for the intended application before proceeding with installation using Table 1.



### CAUTIONS/WARNINGS

Select suitable hardware for the installation and ensure that the hardware will not interfere with the moving parts of the fan. Failure to properly secure the fan inlet sensor can result in personal injury and damage to sensors and fan.

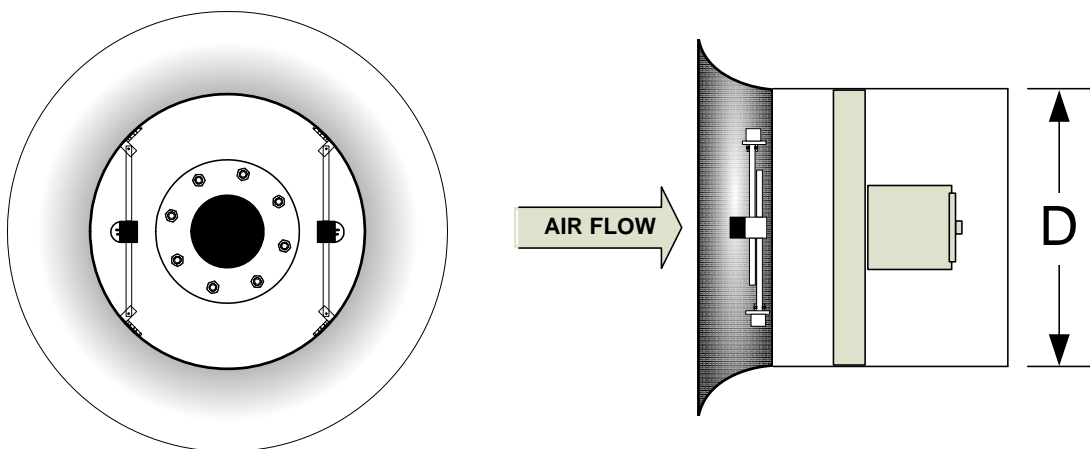
Setting the specified rod length is essential for proper installation and sensor performance.

The cable ordered must be of sufficient length for the distance between the transmitter and the furthest sensor probe as well as any necessary cable routing at the site.

Improper or excessive lubrication of the fan bearings can result in lubricant carry over and build up of foreign material on the sensor.

Avoid placement in the absorption area of humidifiers which will adversely affect performance.

Failure to properly install, set up and/or secure the Fan Inlet sensor assembly can result in sensor and/or fan damage.



**Figure 2. Typical Application, Fan Inlet Sensor Throat Mount in Vane Axial Fan**

### 3 FAN INLET SENSOR WITH THROAT MOUNT KIT INSTALLATION

For DWDI (Dual Wheel Dual Inlet) and SWSI (Single Wheel Single Inlet) applications, sensors are always factory specified in pairs at the inlet opening. **Only on Fan Array applications may single sensors be specified by the factory for single left or single right installation.** Sensors are marked for their intended location (INSIDE LEFT, INSIDE RIGHT) in the fan inlet, and all cables must exit downward. DWDI and SWSI inlet sensor pairs shall be parallel to one another. Check for obstructions at the fan inlet prior to installation. It may be necessary to rotate the orientation of the sensors to avoid any interfering obstructions in the fan inlet. Refer to Figures 1, 2 and 3 for installation detail. For specific installation questions, concerns or assistance, please contact EBTRON Applications Engineering Team at 800.2EBTRON (800.232-8766).

- a. Physically locate the fan indicated on the engineer's plans where the air flow measuring station is to be installed.
- b. Measure the diameter ("D") of the inlet of the fan where the sensor assemblies will be installed (small diameter of throat) as shown in Figures 2 and 3. Refer to Table 1 to verify that the proper sensors and rod packs have been received.
- c. For sensors marked "INSIDE LEFT", insert a mounting rod into sensor mounting block inner rod hole with sensor oriented as shown in Figure 1 with cable exit facing down. (Note offset in mounting feet as shown in Figure 1).
- d. Insert a second mounting rod from the opposite direction into the outermost hole as shown in Fig. 6.
- e. Repeat steps c and d for sensor marked "INSIDE RIGHT", being sure to note the offset on the mounting feet shown in Figure 1.

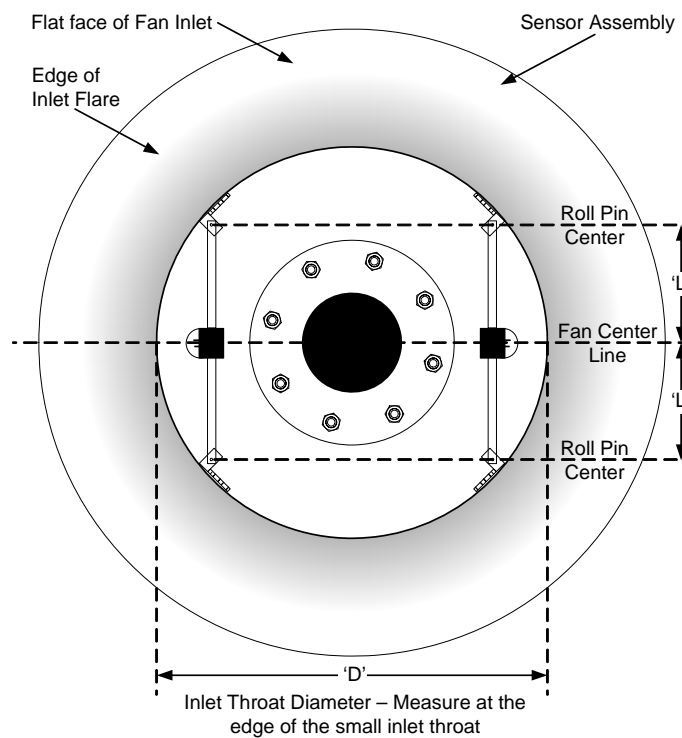


Figure 3. Fan Inlet Throat Mount Installation Detail

- f. Using the Inlet Diameter "D" measurement from step b, locate DIMENSION 'L' in Table 4 to determine the setup distance, "L", measured from roll pin to sensor set screws.

**Table 2. Throat Mount Dimension 'L' Determination**

Inlet Diameter "D" (in.)	L (in.)	Inlet Diameter "D" (mm)	L (mm)	Inlet Diameter "D" (in.)	L (in.)	Inlet Diameter "D" (mm)	L (mm)	Inlet Diameter "D" (in.)	L (in.)	Inlet Diameter "D" (mm)	L (mm)
6	1 14/16	152.40	48.24	26	9 1/16	660.40	229.66	46	16 2/16	1168.40	409.54
7	2 4/16	177.80	57.52	27	9 6/16	685.80	238.66	47	16 8/16	1193.80	418.53
8	2 10/16	203.20	66.74	28	9 12/16	711.20	247.66	48	16 13/16	1219.20	427.51
9	3	228.60	75.91	29	10 2/16	736.60	256.66	49	17 3/16	1244.60	436.50
10	3 6/16	254.00	85.04	30	10 7/16	762.00	265.66	50	17 9/16	1270.00	445.49
11	3 11/16	279.40	94.15	31	10 13/16	787.40	274.66	51	17 14/16	1295.40	454.48
12	4 1/16	304.80	103.24	32	11 3/16	812.80	283.66	52	18 4/16	1320.80	463.46
13	4 7/16	330.20	112.32	33	11 8/16	838.20	292.65	53	18 10/16	1346.20	472.45
14	4 12/16	355.60	121.38	34	11 14/16	863.60	301.65	54	18 15/16	1371.60	481.43
15	5 2/16	381.00	130.43	35	12 4/16	889.00	310.64	55	19 5/16	1397.00	490.42
16	5 8/16	406.40	139.47	36	12 9/16	914.40	319.63	56	19 11/16	1422.40	499.41
17	5 14/16	431.80	148.51	37	12 15/16	939.80	328.63	57	20	1447.80	508.39
18	6 3/16	457.20	157.54	38	13 5/16	965.20	337.62	58	20 6/16	1473.20	517.38
19	6 9/16	482.60	166.57	39	13 10/16	990.60	346.61	59	20 12/16	1498.60	526.36
20	6 15/16	508.00	175.59	40	14	1016.00	355.60	60	21 1/16	1524.00	535.35
21	7 4/16	533.40	184.61	41	14 6/16	1041.40	364.59	61	21 7/16	1549.40	544.33
22	7 10/16	558.80	193.62	42	14 11/16	1066.80	373.58	62	21 13/16	1574.80	553.32
23	8	584.20	202.63	43	15 1/16	1092.20	382.57	63	22 2/16	1600.20	562.30
24	8 5/16	609.60	211.64	44	15 7/16	1117.60	391.56	64	22 8/16	1625.60	571.29
25	8 11/16	635.00	220.65	45	15 12/16	1143.00	400.55	65	22 14/16	1651.00	580.27
								66	23 3/16	1676.40	589.26

L = distance between locking set screw at sensor housing and mounting foot roll pin

- g. Adjust inner and outer rods so that the distance between the roll pin of each foot and the set screws on the mounting block are equal to "L" as shown in Figure 1 for both sensors.
- h. Tighten the set screws using the hex wrench provided.
- i. Install the sensor assembly labeled "INSIDE LEFT" at left side of fan inlet with the sensor shroud pointing outward and cable exit downward. Select suitable hardware for the installation that will not hinder rotation of the fan.
- j. Install the sensor assembly labeled "INSIDE RIGHT" at right side of fan inlet with the sensor shroud pointing outward and cable exit downward. Select suitable hardware for the installation that will not hinder rotation of the fan.
- k. Strap down sensor cables to the mounting rods using the tie wraps provided (minimum two tie wraps per sensor).
- l. Route sensor cables to the area where the transmitter will be located and secure the cables with appropriate hardware. Sensor installation is complete. Refer to the separate transmitter technical manual for connection and set up of the transmitter.
- m. For dual fan inlet applications, repeat steps c through l to install sensors at the other fan inlet opening.

For any application specific installation questions, concerns or assistance, please contact the Ebtron Applications team at 800.2EBTRON (800. 232-8766).