INSTALLATION AND OPERATION MANUAL
AIRFLOW SENSOR K-FACTORS
FOR VAV TERMINAL UNITS

Model Series:
3000 Single Duct
3210 Dual Duct
35S-OAI Series Fan Powered w/ O.A. Damper
38S Underfloor Fan Powered

Inlet Size	Type	Duct Area (sq. ft.)	K-Factor (cfm)	Velocity (fpm)	F-Factor (amp.)
4	ROUND	0.087	202	2315	2.99
5		0.136	325	2384	2.82
6		0.196	490	2496	2.58
7		0.267	686	2567	2.43
8		0.349	943	2701	2.20
9		0.441	1197	2709	2.18
10		0.545	1536	2816	2.02
12	OVAL	0.754	2058	2729	2.15
14		0.970	2554	2633	2.31
16		1.186	3035	2559	2.45
24 x 16	RECT.	2.667	6797	2549	2.47

Model Series:
36VRS Square/Rectangular Retrofit

Inlet Size	Type	Damper (valve) Size (inches)	Damper (valve) Area (sq. ft.)	K-Factor (cfm)	Velocity (fpm)	F-Factor (amp.)
7	SQUARE OR RECT.	5 x 5	0.174	479	2753	2.12
8		6 x 6	0.250	689	2756	2.11
9		8 x 6	0.333	919	2760	2.11
10		10 x 8	0.555	1531	2759	2.11
11		14 x 8	0.778	2150	2763	2.11
11A		18 x 6	0.750	2068	2757	2.11
12		12 x 10	0.833	2297	2758	2.11
13		18 x 10	1.250	3446	2757	2.11
14		18 x 12	1.500	4135	2757	2.11
15		20 x 14	1.944	5360	2757	2.11
15A		30 x 12	2.500	6892	2757	2.11
16		22 x 16	2.444	6739	2757	2.11
17		24 x 18	3.000	8270	2757	2.11
18		30 x 20	4.167	11486	2756	2.11
19		40 x 20	5.555	15315	2757	2.11

Model Series:
3100 Single Duct
3230 Dual Duct
3240 "Blendmaster" Dual Duct
33SZ Chilled Water Fan Powered
35N Parallel Fan Powered
35S Series Fan Powered
35S-CVP Pressurization Series Fan Powered
35SST "Stealth™" Series Fan Powered
35SXC "Super Stealth™" Series Fan Powered
36VRR Round Retrofit
36VRTR Round Retrofit Trane
36FMS Round Flow Measuring Station • Sleeve Type
36FMI Round Flow Measuring Station • Insert Type
36FMSD Round Flow Measuring Station with Balancing Damper • Insert Type
37N Low Profile Parallel Fan Powered
37S Low Profile Fan Powered
37SST Low Profile "Stealth™" Fan Powered

Inlet Size	Type	Duct Area (sq. ft.)	K-Factor (cfm)	Velocity (fpm)	F-Factor (amp.)
4	ROUND	0.087	202	2315	2.99
5		0.136	325	2384	2.82
6		0.196	490	2496	2.58
7		0.267	686	2567	2.43
8		0.349	943	2701	2.20
9		0.441	1197	2709	2.18
10		0.545	1536	2816	2.02
12		0.785	2206	2809	2.03
14		1.068	2872	2687	2.22
16		1.395	3888	2785	2.07
18	OVAL	1.683	4323	2569	2.43
24x16	RECT.	2.667	6797	2549	2.47
14x8		0.777	2035	2619	2.34
14x10		0.972	2417	2487	2.59

Equations:

$Q = K \times \sqrt{\Delta P}$ $\quad \Delta P = \left(\frac{Q}{K}\right)^2$ $\quad F = \left(\frac{4005 \times A}{K}\right)^2$

Where: Q = Airflow Rate (cfm)
ΔP = Sensor Differential Pressure ("w.g.)
K = K-Factor Calibration Constant (standard air)
F = Amplification Factor (sensor gain)
A = Nom. Duct Area (sq. ft.)

The K-Factors tabulated in the above tables are the airflow required to produce a 1.0" w.g. differential pressure at the Airflow Sensor.

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Model Series:
30HQX Single Duct Exhaust (Hospital Grade)
30X Single Duct Exhaust

Inlet Size	Type	Valve Inlet Size (inches)	Valve Inlet Area (sq. ft.)	K-Factor (cfm)	Velocity (fpm)	F-Factor (amp.)
4	SQUARE OR RECT.	3.4 x 3.4	0.080	210	2625	2.33
5		4.3 x 4.3	0.128	345	2695	2.21
6		5.5 x 5.5	0.210	580	2762	2.10
7		5.8 x 6.3	0.254	680	2677	2.24
8		6.7 x 7.2	0.335	970	2896	1.91
9		8.6 x 7.1	0.424	1209	2851	1.97
10		9.5 x 8.0	0.528	1539	2915	1.89
12		13.6 x 8.1	0.765	2269	2966	1.83
14		12.9 x 10.8	0.968	2521	2604	2.36
16		18.3 x 10.8	1.373	3586	2612	2.35
24 x 16		26.1 x 16.3	2.954	7009	2373	2.85

Equations:

$$Q = K \times \sqrt{\Delta P} \qquad \Delta P = \left(\frac{Q}{K}\right)^2 \qquad F = \left(\frac{4005 \times A}{K}\right)^2$$

Where: Q = Airflow Rate (cfm)
ΔP = Sensor Differential Pressure ("w.g.)
K = K-Factor Calibration Constant (standard air)
F = Amplification Factor (sensor gain)
A = Nom. Duct Area (sq. ft.)

The K-Factors tabulated in the above tables are the airflow required to produce a 1.0" w.g. differential pressure at the Airflow Sensor.