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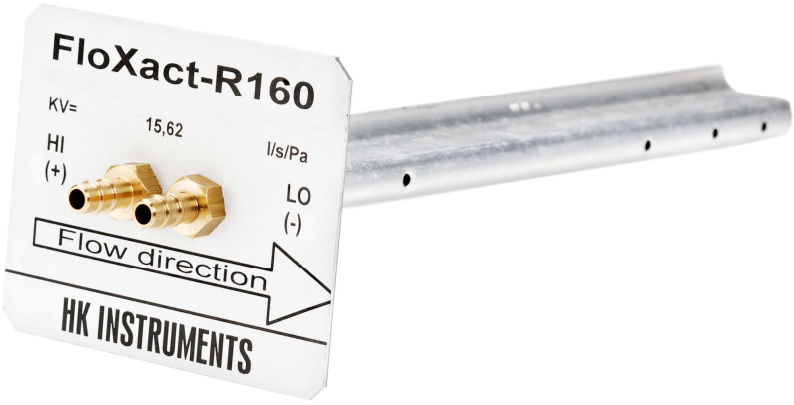
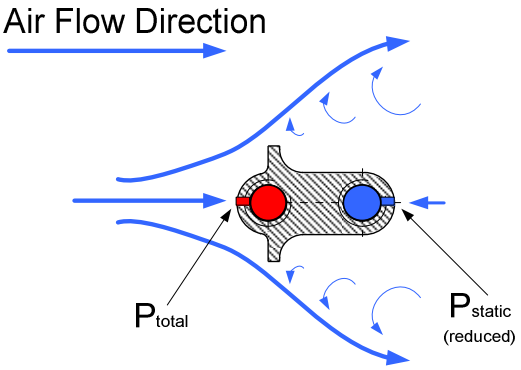
FloXact™



Application

The FloXact™ Stick is a differential air pressure device designed to measure air velocities in a duct. It includes multiple sensing points to measure total and static pressures. The FloXact™ Stick incorporates a unique design to amplify the differential pressure by approximately 2.5 times for accurate measurement of lower air velocities down to 200 fpm. It is easy to install and cost effective.



Operation of the FloXact™

Design features

- Multiple sensing points for greater accuracy
- Easy installation
- Chamfered sensing points for consistent readings
- 2% accuracy
- 2.5X signal amplification
- Accepts 1/4” OD tubing

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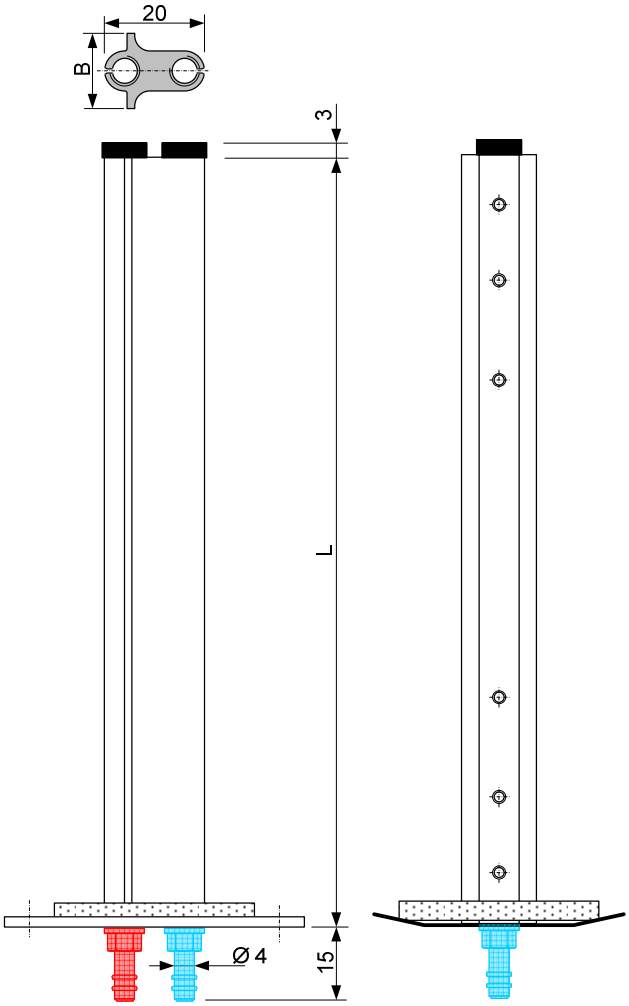
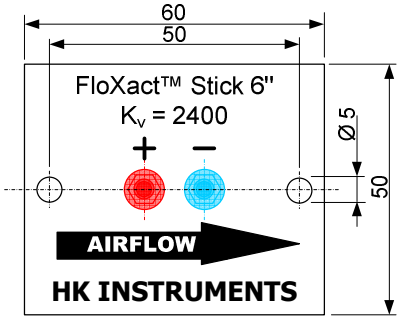
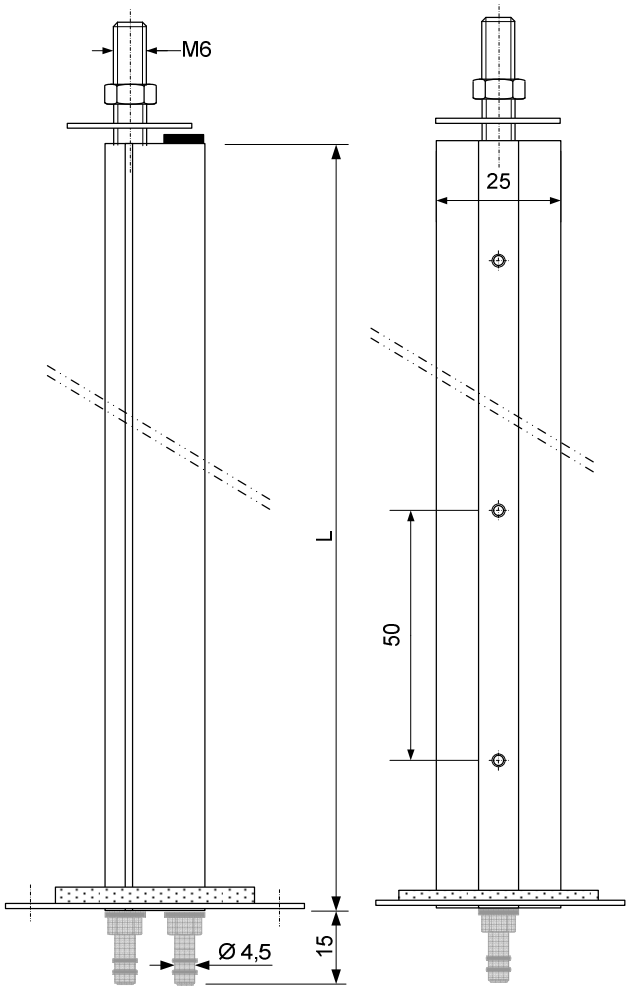
Dimensions

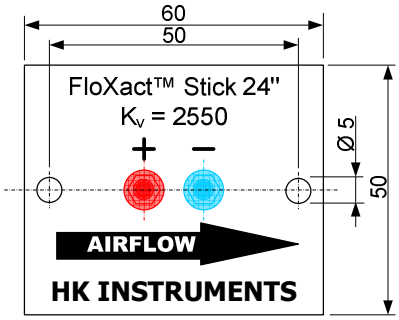
FloXact™-R available models :
100, 125, 160, 200, 250, 315, 400 and 450





FloXact™-L available models :
250, 300, … 1200 (50mm steps)





Dimensions FloXact™-Rxxx

	100	125	160	200	250	315	355	400
L	95	120	156	196	146	311	351	396
B	15				25			

Dimensions in millimetres

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Operation

The FloXact™-Stick operates on the pitot tube principle and measures the total and static pressure components of airflow. The pressure ports located on the leading surface are sensing the total pressure (Pt) and sensing ports positioned at the rear, sense the static pressure (Ps). The difference between the total pressure and the static pressure is the dynamic pressure (Pd) which relates to the squared air velocity as:

v = velocity in m/s

To simplify mathematics and include the amplification and duct area, the FloXact™-Sticks are provided with a K_v value.
The air volume can be determined with the following formula:

$$Q = K_v \times \sqrt{P_{fs}}$$

Model	100	125	160	200	250	315	355	400
Kv	5,60	9,17	15,62	25,06	38,43	62,85	80,83	103,76
P_{fs} in Pa	Air volume in l/s							
2	8	13	22	35	54	89	114	147
3	10	16	27	43	67	109	140	180
4	11	18	31	50	77	126	162	208
5	13	21	35	56	86	141	181	232
6	14	22	38	61	94	154	198	254
7	15	24	41	66	102	166	214	275
8	16	26	44	71	109	178	229	293
9	17	28	47	75	115	189	243	311
10	18	29	49	79	122	199	256	328
12	19	32	54	87	133	218	280	359
14	21	34	58	94	144	235	302	388
16	22	37	62	100	154	251	323	415
18	24	39	66	106	163	267	343	440
20	25	41	70	112	172	281	362	464
25	28	46	78	125	192	314	404	519
30	31	50	86	137	210	344	443	568
35	33	54	92	148	227	372	478	614
40	35	58	99	159	243	397	511	656
45	38	62	105	168	258	422	542	696
50	40	65	110	177	272	444	572	734
60	43	71	121	194	298	487	626	804
70	47	77	131	210	322	526	676	868
80	50	82	140	224	344	562	723	928
90	53	87	148	238	365	596	767	984
100	56	92	156	251	384	628	808	1.038
125	63	103	175	280	430	703	904	1.160
150	69	112	191	307	471	770	990	1.271
175	74	121	207	332	508	831	1.069	1.373
200	79	130	221	354	543	889	1.143	1.467
225	84	138	234	376	576	943	1.213	1.556
250	89	145	247	396	608	994	1.278	1.641
275	93	152	259	416	637	1.042	1.340	1.721
300	97	159	270	434	666	1.089	1.400	1.797

- Kv values are based on $D_{nom.}$ = D - 3 mm.
- The table above is for air with 1.20 kg/m^3 density (20°C, 50% r.h. and 1013 mbar).
- The correction for different densities is determined with the following formula : $Corr = \sqrt{(\rho/1.20)}$

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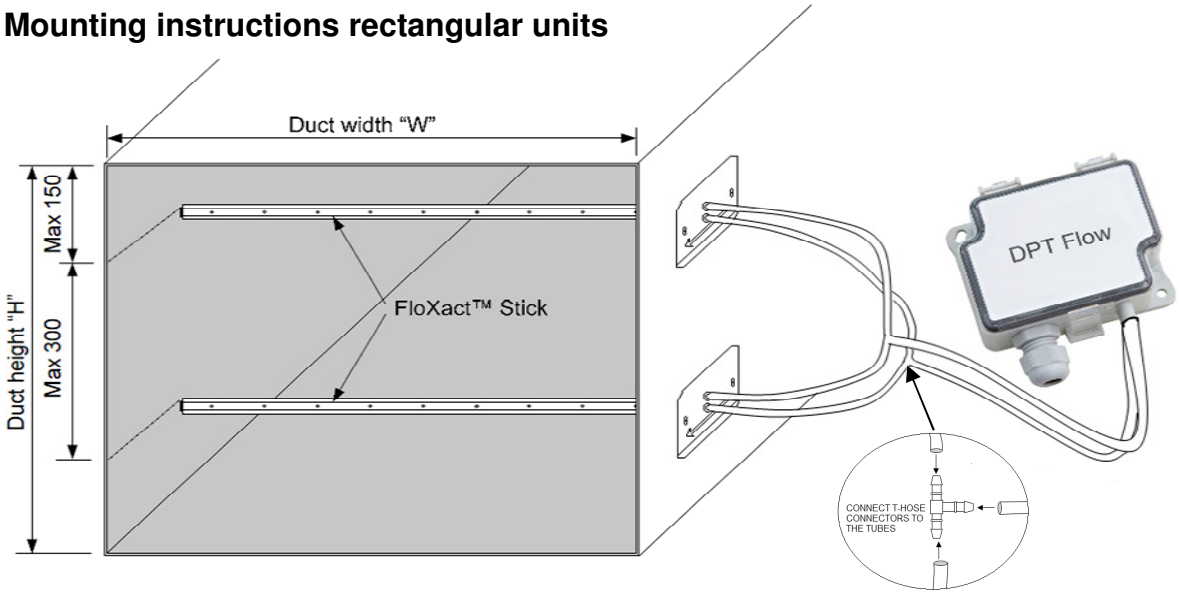
Mounting instructions rectangular units



		Duct or unit width "W"													
Duct	N° off	200	250	300	350	400	450	500	600	700	800	900	1000	1100	1200
"H"	FloXact™	K_v value in l/s/Pa													
150	1	23,0	28,8	34,5	40,3	46,0	51,8	57,5	69,1	80,6	92,1	104	115	127	138
200		33,1	41,4	49,7	58,0	66,3	74,6	82,9	99,4	116	133	149	166	182	199
250		41,4	51,8	62,1	72,5	82,9	93,2	104	124	145	166	186	207	228	249
300		47,0	58,7	70,4	82,2	94	106	117	141	164	188	211	235	258	282
350	2	55,2	69,1	82,9	96,7	110	124	138	166	193	221	249	276	304	331
400		65,4	81,7	98,1	114	131	147	163	196	229	261	294	327	360	392
450		73,7	92,1	110	129	147	166	184	221	258	295	331	368	405	442
500		83,8	105	126	147	168	189	209	251	293	335	377	419	461	503
600		101	127	152	177	203	228	253	304	354	405	456	506	557	608
700	3	115	144	173	201	230	259	288	345	403	460	518	575	633	691
800		133	167	200	234	267	300	334	400	467	534	601	667	734	801
900		152	190	228	266	304	342	380	456	532	608	684	760	836	911
1000	4	166	207	249	290	331	373	414	497	580	663	746	829	911	994
1100		184	230	276	322	368	414	460	552	644	737	829	921	1013	1105
1200		203	253	304	354	405	456	506	608	709	810	911	1013	1114	1215

- The air volume can be determined with the following formula:

$$Q = K_v \times \sqrt{P_{fs}}$$

Q = air volume in l/s
K_v = K_v value in l/s/Pa
P_{fs} = pressure difference measured by the FloXact™ Stick in Pa

- The table above is for air with 1.20 kg/m^3 density (20°C, 50% r.h. and 1013 mbar). The correction for different densities is determined with the following formula : $Corr = \sqrt{(\rho/1.20)}$

- For intermediate sizes, please contact our office

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SIZING THE PRESSURE TRANSMITTER

To size a pressure transmitter for your application, use formula "B". The K-Value for R-model can be found in the calibration chart and the air volume must be known or closely approximated. To calculate the velocity use formula "A". For the L-model K-value see the table on the previous page.

Formula A:

$$Q = [l/s] = K \cdot \sqrt{\Delta P}$$

Formula B:

$$\Delta P = [Pa] = (\frac{Q}{K})^2$$

Calibration Chart								
R model	100	125	160	200	250	315	355	400
K-value	5,60	9,17	15,62	25,06	38,43	62,85	80,83	103,76

Q = air volume in l/s

K = K-value in l/s/Pa

ΔP = pressure difference measured by the FloXactTM Stick in Pa

DPT Flow-U Transmitter

DPT Flow-U-1000-AZ (pressure range 0…1000 Pa) is recommended to use with FloXact because dynamic duct pressure is rarely over 500 Pa. Typical pressure range in the duct is 0…250 Pa. DTP Flow also converts pressure to air flow.

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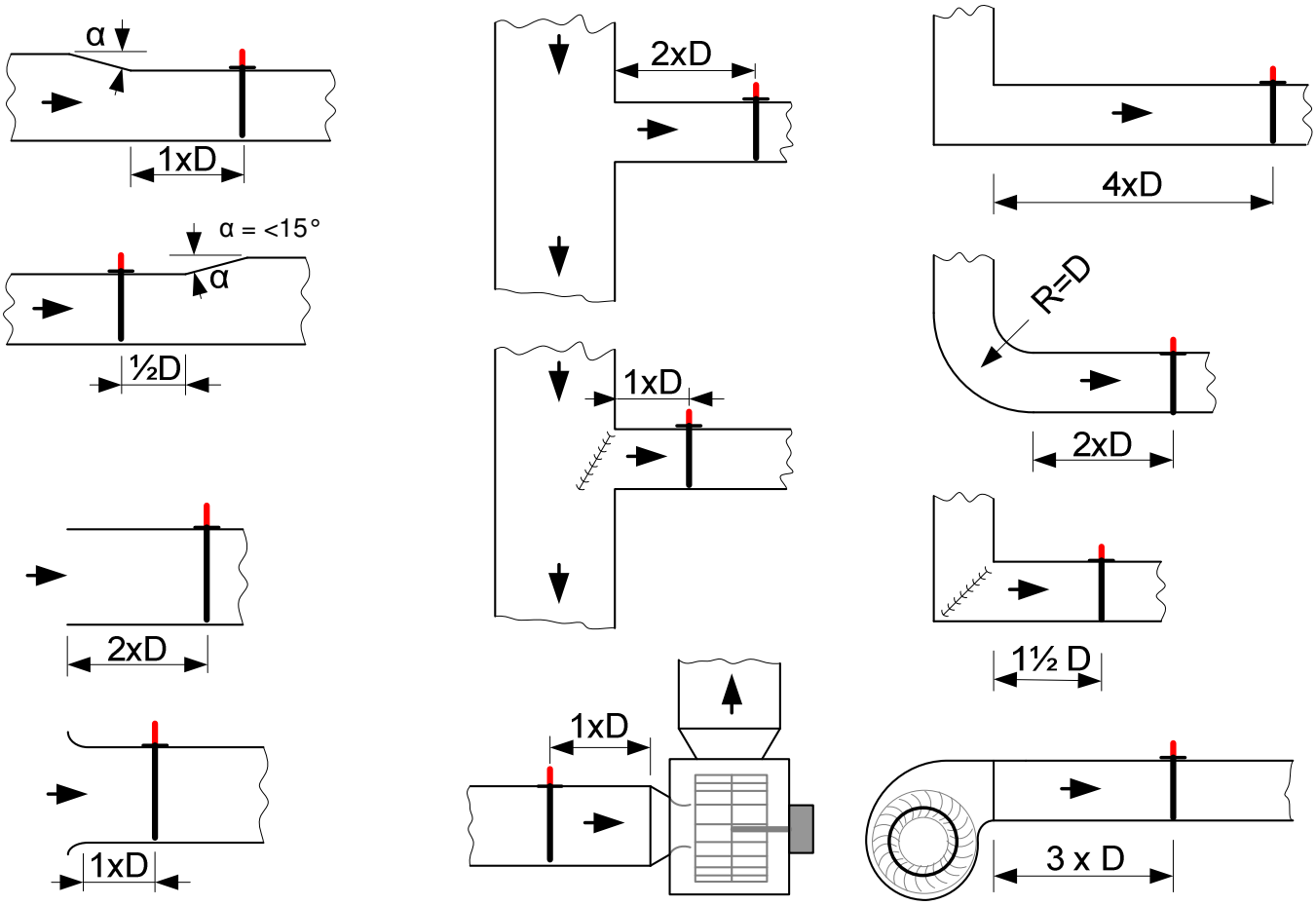
Mounting instructions

- Check that the FloXact™ Stick size corresponds with the duct or terminal were it is installed.
- The FloXact™ Stick is mounted in the duct by drilling a ø25 mm hole.
- Secure the opposite end with the provided threaded bolts.
- Check to make sure that the flow direction of the air in the duct corresponds with the arrow printed on the label of the FloXact™ Stick.
- For round ducts, we recommend to install the FloXact™ Stick diagonally in the duct to minimize the irregularities of the air flow patterns in the horizontal and vertical planes.
- For non standard applications, please contact our office

Minimum straight duct approach



D = duct diameter or equal diameter