ELECTROVENT

Smoke Dampers

ESD

The ESD is a low leakage damper suitable for elevated temperatures designed for use in HVAC smoke control systems.

Standard Construction

Frame 180mm wide from 1.6mm thick galvanised sheet with 30mm wide flanges.
Blades 150mm wide, single profile galvanised steel. Parallel action is standard.
Linkage Concealed in the frame.
Bearings Brass pressed into frame.
Leakage To SANS 193:2004 (Fire Dampers)

Minimum / Maximum Size 150mm x 150mm / 1200mm x 1200mm. Wider dampers in multiple sections
Seals Stainless steel flexible side seals.
Motors 220v or 24v, spring return factory fitted
Axles 13mm plated hex steel.
Mounting Vertical or horizontal.

Pressure Drop Through Damper.

EXAMPLE:

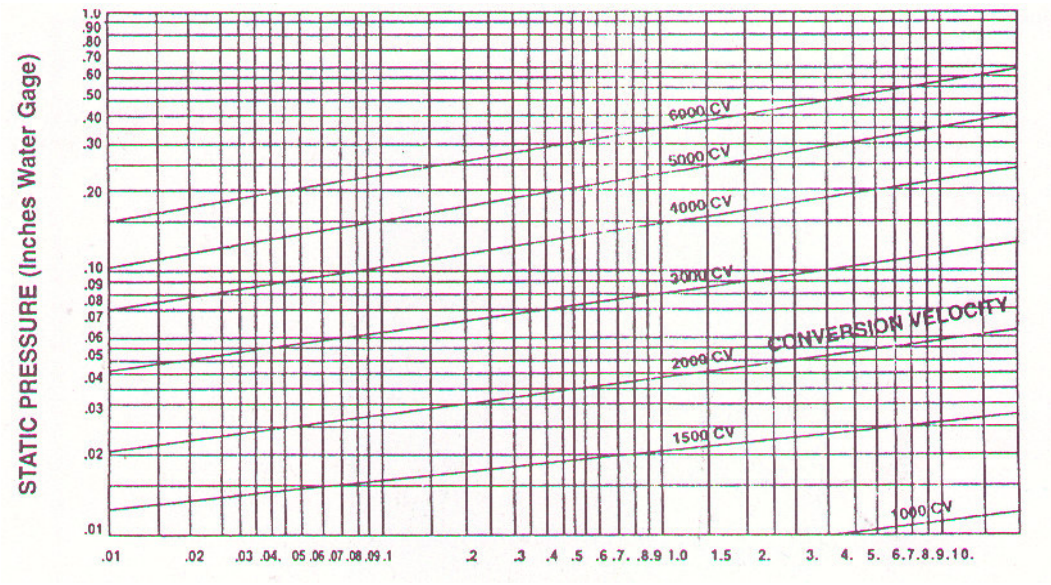
To find the pressure drop through a 600w x 600h ESD that is handling 5714 cfm.

1. The damper will handle 5714 cfm and measures 600 x 600. The area factor for this damper having these dimensions is .35.
2. Multiply cfm by area factor to find conversion velocity:
   5714 (cfm) x .35 (area factor) = 2000 (conversion velocity)

Ht Dim. B	Width – Dimension A													
	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
150	5.41	3.26	2.31	1.79	1.48	1.24	1.55	1.56	1.21	1.09	.99	.91	.84	.78
300	3.07	1.84	1.30	1.01	.83	.70	.78	.68	.60	.54	.49	.45	.42	.39
450	1.81	1.09	.77	.59	.49	.41	.43	.38	.34	.30	.27	.25	.23	.22
600	1.29	.77	.55	.42	.35	.29	.30	.26	.23	.21	.19	.17	.16	.15
750	1.04	.62	.45	.34	.29	.24	.23	.21	.18	.17	.16	.14	.13	.12
900	.80	.48	.34	.26	.22	.18	.18	.16	.14	.13	.12	.11	.10	.09

3. With area factor from step 1, enter at bottom of airflow resistance chart and proceed upward to appropriate conversion velocity line (CV). From CV/area factor intersection point, read left straight across to pressure drop.
4. Pressure drop through a 600 x 600 damper handling approximately 5714 cfm is found to be approximately 0.034 in. w.g., or 0.86mm w.g.

PRESSURE DROP CHART



NOTE:

1. Ratings are based on AMCA Standard 500. Static Pressure and Conversion Velocities are corrected to .075lb./cu. ft. air density.
2. For installations where damper is not installed in ductwork such as return air from ceiling plenum through damper into return air shaft, multiply static pressure drop obtained from the above table by $2.8 + \sqrt{(1 \div \text{Area factor})}$.
3. The above performance data is based on dampers with an equal blade pitch of 150mm. Intermediate sizes will be fitted with blanking angles.