



PFD-S(C)

*Curtain Type Fire Damper
Partition Wall Mounted*



Introduction

With its simple yet robust design, Prudent Aire Curtain Type Fire Damper Partition Wall Mounted PFD-S(C) are used to localize areas of fire in ventilation systems and thus impeding the spread of fire and hazardous gases.

The design principle based on interlocking blades that closes under gravitation force when the connecting thermal link break at set temperature (74°C).

With interlocking blades design, the damper provides the maximum free area and imposes minimal resistance to air flow system.

CONSTRUCTIONS & MATERIALS

- In-airstream, static rated fire damper
- Minimal resistance to air flow system
- Fire integrity rating of 2 hours
- UL33 compliance thermal link rating of 74°C
- SS 333:2012 standard compliance
- Damper sizing:
 - Minimum single module: 100mm (w) x 100mm (h)
 - Maximum single module: 600mm (w) x 1200mm (h)
 - Maximum size (multiple module): 1200mm (w) x 1200mm (h) (1x2 module)

Frame Construction



Galvanized Steel

Blade Construction



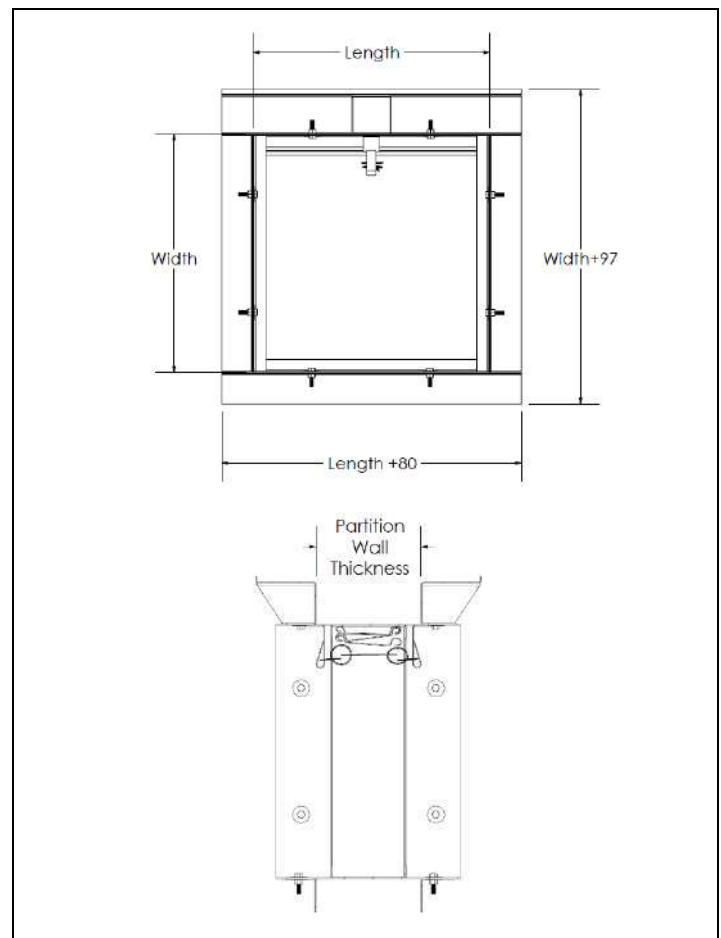
Galvanized Steel

Flange Construction



Galvanized Steel

DIMENSIONS



TESTING COMPLIANCE

- Fire Resistance Test (TUV Sud, 2 Hour)
- Multiple Curtain Fire Damper Modulus Assessment (TUV Sud, 1200mm x 1200mm maximum allowable size)
- Closing Reliability Test (TUV Sud, Show no evidence of undue wear or damage)
- Closed Leakage Test (TUV Sud, Leakage Flow Rate within allowable limits)

AERODYNAMIC PERFORMANCE

Damper Free Area

- Single module damper configuration
- Free area approximate accuracy +/- 5%

		Length (mm)				
		V	150	300	400	500
Height (mm)	150	0.013	0.028	0.039	0.049	0.060
	300	0.028	0.065	0.088	0.112	0.137
	400	0.036	0.087	0.122	0.156	0.197
	500	0.049	0.113	0.156	0.200	0.243
	600	0.061	0.139	0.191	0.243	0.295
	700	0.075	0.165	0.226	0.286	0.347
	800	0.088	0.191	0.260	0.330	0.400
	900	0.100	0.217	0.295	0.374	0.453
	1000	0.133	0.243	0.330	0.417	0.505
	1100	0.126	0.269	0.365	0.461	0.558
	1200	0.139	0.205	0.400	0.505	0.611

Pressure Drop Estimation

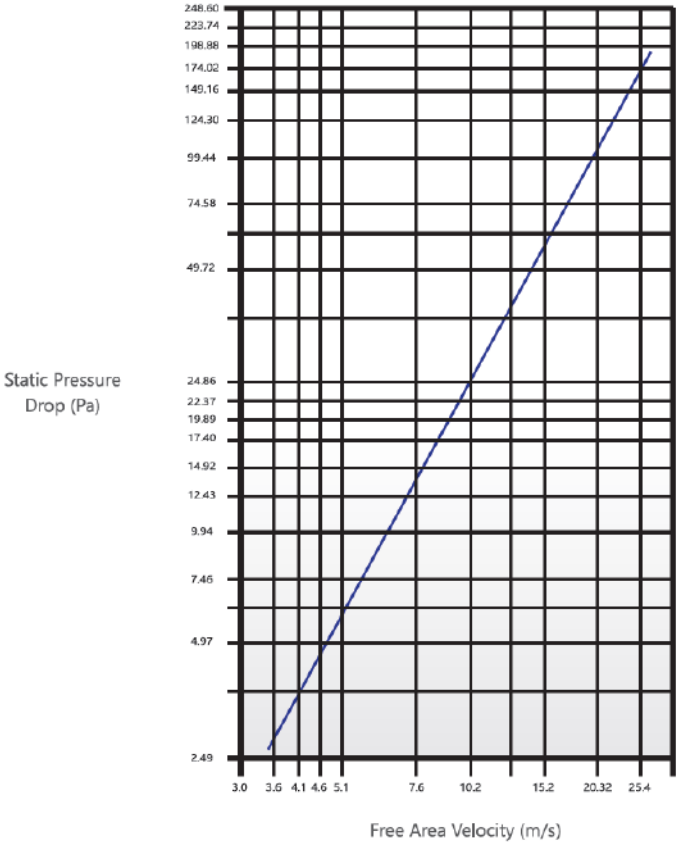
To estimate the pressure drop across open damper:

- Calculate free area velocity as shown below
- Find velocity on curve (Free Area Velocity VS Static Pressure Drop Graph)
- Read across for static pressure drop

$$\text{Free Area Velocity (m/s)} = \frac{(\text{Volume Flowrate, m}^3/\text{s})}{(\text{Free Area, m}^2)}$$

AERODYNAMIC PERFORMANCE CONTD'

Free Area Velocity VS Static Pressure Drop



Closed Damper Leakage

Air Leagkage Test (SS333: 2012 clause 6.4):

Differential Pressure (Pa)	Air Leakage (L/S/m ²)	SS 333:2022 Requirements (max L/S/m ²)
250	132	190
500	177	250
750	218	310
1000	254	350
1250	282	390

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證書 ◆ CERTIFICADO ◆ CERTIFICAT



PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS1B 081455 0013 Rev. 00

Initial No. -

Certificate Holder: Prudent Aire Sdn Bhd
 Lot 2102, Jalan KPB 12, Off Jalan Suria Park 1,
 Kampong Baru Balakong,
 Seri kembangan,
 43300 Selangor Selangor
 MALAYSIA

UEN - 200001011431 (514037-D)

Local Agent: Proflex(s) Aire Pte Ltd
 48 Toh Guan Road East, #01-105, Enterprise Hub, Singapore
 608586, SINGAPORE
 UEN - 202031326N

Certification Mark:



TÜV SÜD PSB

Product: Fire Dampers
Brand Name: PRUDENT AIRE
Model(s): PFD-S(C)

Product Details: Refer to following page(s)

Standard(s): SS 333:2012 Cl 6.3, 6.4 & 6.5
Country of Origin: Malaysia

Test Report(s): 7191306835-MEC23-DV, 7191311172-MEC23-FA, PSB
 Supplement 7191306835

Valid until: 2027-03-31

Products listed under Class 1B must have TÜV SÜD PSB PLS mark as shown above affixed/printed on them. Failure to comply with this requirement may result in revocation of this certificate.

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Issued on: 2023-08-15

Vice-President (Certification Department)
 TÜV SÜD PSB



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TÜV SÜD PSB Pte Ltd 15 International Business Park TÜV SÜD @ IBP Singapore 609937





PSB Singapore

CERTIFICATE OF CONFORMITY

No. CLS1B 081455 0013 Rev. 00

Initial No. -

Product Details:

Integrity: 120mins

Galvanised steel curtain vertical fire damper mounted on a nominally 125mm thick drywall partition

Max Size: 600mm (w) x 1200mm (h) for single module; 1200mm (w) x 1200mm (h) for 1x2 multiple modules

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Issued on: 2023-08-15

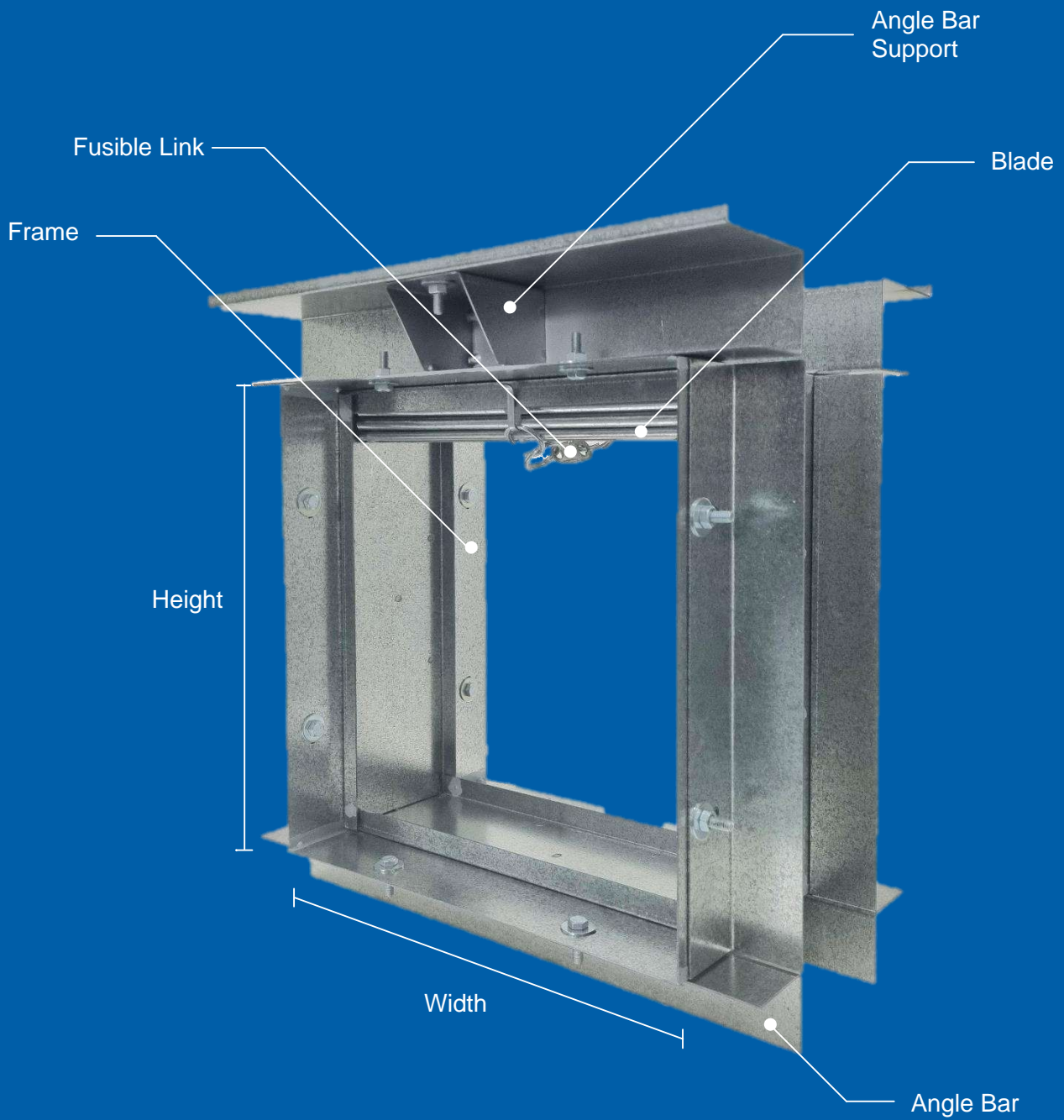
Vice-President (Certification Department)
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Notice:

Damper Size would be fabricate as exact neck size



PFD-S(C)

*Curtain Type Fire Damper
Partition Wall Mounted*

Products Range

- Grilles 
- Diffusers 
- Dampers 
- Fire & Smoke Protection 
- VAV 
- Others 
- Accessories 



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