



DYNOPTIC

ASY-185

Fail Safe Shutter Kit for DSL Opacity / Dust / Particulate Monitors



The Fail Safe Shutter Kit is designed specifically for use with DynOptic Systems opacity, dust and particulate monitors:

- In situ optical system protection from flue gas contamination
- Includes FSS valves (stainless steel); flow restrictors and ancillary connections
- Easy to install or retrofit*
- Simple to operate with low maintenance requirements
- Rugged stainless steel external enclosure; IP65 rated
- Suitable for use with the DSL Compressed Air Kit

The DSL range of stack monitors use optical techniques to make opacity and/or dust measurements. Therefore, each measurement head has an optical surface, which is exposed to the dirty and potentially harmful environment inside the stack. To protect the optical surfaces from contamination by particle depositions and the damaging effects of heat and/or corrosive stack gas, it is necessary to use an air-purge system to prevent the stack gas from coming into contact with the measurement heads.

An air-purge system produces a flow of clean and dry air, which flows away from the measurement head, repelling the stack gas, and then flows into the stack. This continuous flow of air provides a clean air barrier between the optics and the stack gas.

An unexpected failure of the air purge system can prove to be a costly exercise, not just in repair costs, but also when downtime restrictions apply to monitoring equipment under site license conditions. A fail safe shutter system is installed to automatically isolate the opacity monitor and protect the optical surfaces from the stack gas contamination in the event of the loss of purge airflow.

The DSL Fail Safe Shutter Kit operates with a compressed air purge supply and consists of a pneumatically controlled flap valve which will close if the compressed air supply fails. The fail safe shutter flap valve is normally closed. To fully open the flap valve requires a compressed air feed with a pressure of at least 2.5 bar (36 psi). If the pressure drops below 1.0 bar (15 psi) the flap valve will close.

Once installed, the Fail Safe Shutter Kit should require very little maintenance. It is recommended that during a suitable routine maintenance check (e.g. every 2 to 6 months) the compressed air purge supply is turned off in order to verify that the flap valve closes correctly. Other routine maintenance includes checking that the compressed air tubing is not damaged or leaking and that all connections are secure plus visual inspection of the rubber seal around the inlet to the fail safe shutter valve assembly.



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Specification:

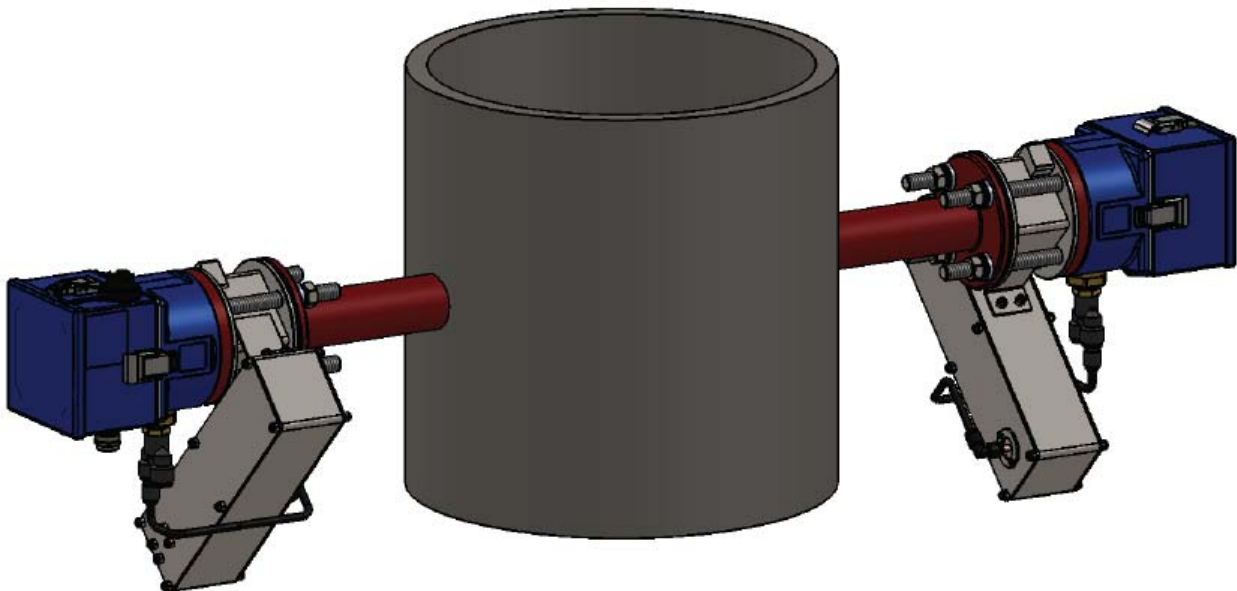
Compressed Air Requirements

No	Parameter	Units	Min	Max	Comment
1	Air Pressure to open valve	bar psi	2.5 36	10.0 145	Recommended operating range is 3 to 5 bar
2	Air Pressure to close valve	bar psi	0 0	1.0 15	
3	Particulate and Oil Mist Filtering	µm		0.01	

Physical

4	Stack Gas Temperature	°C		600	
5	Ingress Protection		IP65		For external use
6	Operating Temperature	°C	-20	+55	Air temperature around the equipment
7	Operating Humidity	%	0	100	Air humidity around the equipment
8	Materials				Stainless Steel (shutter valve housing)
9	Dimensions	mm	210 x 290 x 80		Shutter valve
10	Weight	kg		3.6	Shutter valve
11	Warranty	months	24		Return to base warranty

Installation Example:



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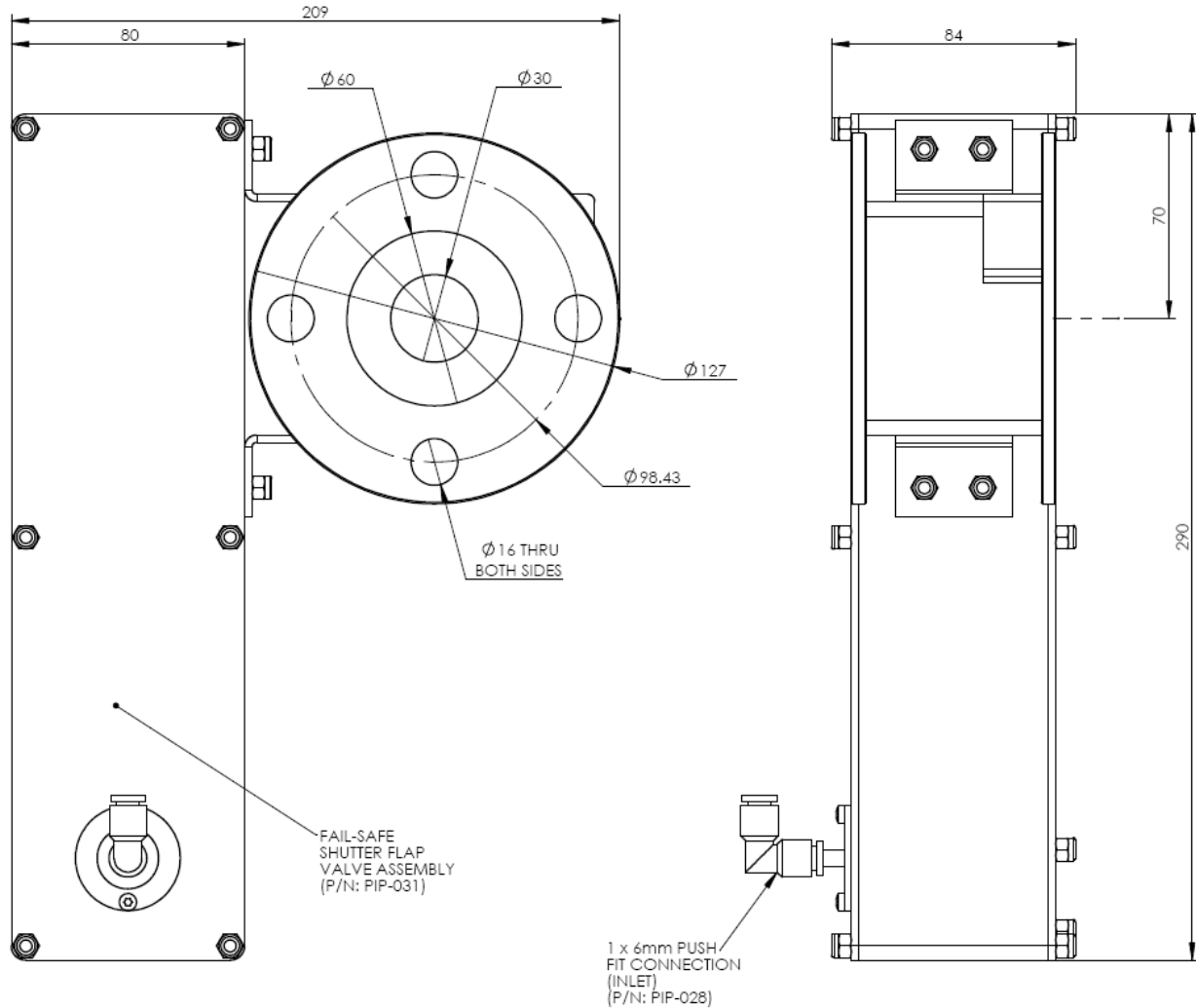


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Dimensions of Shutter Valve Assembly (mm):



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Options & Accessories:

Description	Order Code	Notes
Fail Safe Shutter Kit 	ASY-185	Kit contains 2 of each of the following PIP-031: Shutter Valve MTL-370: Flange Gasket PIP-022: Y-piece (3/8" male to 12mm) PIP-027: Reducer (12mm to 6mm) PIP-028: Elbow (6mm push-fit) PIP-032: 6mm OD tubing, 0.5m long MTL-327: Flow restrictor
Fixing Kit	ASY-186	Comprises M14 studding (170mm long), nuts and washers.
Pneumatic Tubing	PIP-025	12mm OD, nylon tubing (blue), 25m reel.
Tube Cutting Tool 	PIP-033	

Note that the actual part may differ from the above representative pictures.



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