PPR PRESSURE CONTROL VALVE

• PPs Airtight Valve to DIN 1946 Part 4
• External Air Tight to DIN 24194 Part 4
• Max. speed 0..60° rotation is 1s
• 12 mm Ø Stainless drive shaft PPs Coated
• Heavy duty Damper Blade Seal
• Shaft bearings for low rotation torque
• Spigot Connection for welded installation
• Standard Flanges can be welded on site
• Can be installed vertical and horizontal
• All CMR fast actuators can be factory fitted
• Custom mounting brackets are optional
• 24 month warranty
• 30 Years field application experience

Valve Body Construction
The PVR Venturi Valve is manufactured to the highest engineering precision with CNC machines. The valve is formed from PPs Plastic and machined to provide very close tolerances.

The valve is supplied with spigots on either side but flanges can be factory welded as an optional. Normally, the contractor welds the flanges on on site depending on the installation. The 400mm Valve is supplied with two re-informent rings welded around the body of the valve to provide an airtight solution. The damper blade consists of two PPs plates which sandwiches a silicone disc seal.

A 12mmØ stainless steel axle (PPs coated) is embedded between the two plates to provide a heavy duty functionality. Air tight bearings on both sides of the valve provide smooth action with relatively low torque. The blade and axle are designed for very fast motor rotation i.e. 1 second from open to closed position.

With such high speeds, the axle will withstand the enormous torque which develops on the shaft when turning from open to close in small steps to provide high accuracy control without a fluctuating Hysteresis.
PPR CONTROL VALVE SPECIFICATIONS

Selection of Volume Control Damper
It is essential to determine the air volume during the design stage. Normally there is a minimum and a maximum volume which has to be controlled.

The duct area should be calculated so that the velocity is approximately 2.5 m/s at the minimum volume and preferably 5 m/s at the operating point if possible. If the velocity is more than 5 m/s at the maximum volume then the noise level criteria needs to be considered. The maximum velocity should not exceed 9 m/s as the duct resistance shall increase and the overall energy consumption shall go up. Use selection Table 1 on page 3.

The PPR Valve is equipped with a bracket to fit the actuator. It has a damper blade with an embedded seal. The heavy duty stainless steel shaft is PPs coated and molded into the valve damper blade. It is designed to withstand the very high momentary torque developed by the fast actuator. The shaft is guided by sealed bearings on either side of the valve body.

Installation
The PPR Valve works in any position. It can be installed vertically or horizontally with the actuator being on the side rather than having the actuator hanging down. This way, the weight is reduced on the seals and provides a long term efficient operation. It is also easier for the maintenance engineers to replace an actuator. When the damper is installed, Care must be taken to leave sufficient space for the engineers to inspect the motor - a 500mm space would be perfect.

Hysteresis
The PPR Venturi Valves have a very low hysteresis due to the sturdy single blade construction and therefore the damper can be moved very accurately to a control position.

Maintenance
The PPR Venturi Valve is maintenance free.

Materials
PPR valve Body - PPs
Blade - PPs with Nylon Rivots
Drive Shaft - Stainless Steel coated in PPs
Drive Shaft Seal - 'O'Rings
Bearing - PPs
Outer Duct Seals - Formed
Actuator Brackets - PPs

Valve sizes see table on right.
Valve diameters are sized to fit standard round PPs duct. Alternative Brackets on request.

Specifications
Recommended minimum air velocity is 2.5 m/s
Recommended operating air velocity is 5 m/s
Maximum recommended air velocity is 9 m/s

Humidity 10% to 90% preferably non condensing.
Operating Temperature (dry condition) -20 to 70°C

PPR Control Valve dimensions

<table>
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<tr>
<th>Size Ø</th>
<th>Stock Code</th>
<th>L</th>
<th>ØD1</th>
<th>Ød1</th>
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<tr>
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<td>PPR-160-310</td>
<td>310</td>
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**PPR SELECTIONS AND NOISE LEVELS**

### Part Number Selection Table 1

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
<th>Size DN (mm)</th>
<th>Length L (mm)</th>
<th>Area ($m^2$)</th>
<th>Volume at 3m/s ($m^3/s$)</th>
<th>Volume at 5m/s ($m^3/s$)</th>
<th>Volume at 9 m/s ($m^3/s$)</th>
<th>Volume at 3m/s ($m^3/h$)</th>
<th>Volume at 5m/s ($m^3/h$)</th>
<th>Volume at 9 m/s ($m^3/h$)</th>
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The Part Number is made of the Type i.e. PPR-160 is the diameter and 310 is the length L

### Noise Levels

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<tr>
<th>Valve Size Ø</th>
<th>Velocity Volume m/s m3/h</th>
<th>Static Pressure at Venturi in Pa</th>
<th>Power level</th>
<th>Static Pressure at Venturi in Pa</th>
<th>Power level</th>
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**CMR CONTROLS**

**Precision Air Pressure and Volume Sensors**

22 Repton Court Repton Close
Basildon Essex SS13 1LN GB
Phone +44 (0) 1268 287222
Fax +44 (0) 1268 287099
web www.cmr-controls.com
mail sales@cmr-controls.com

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