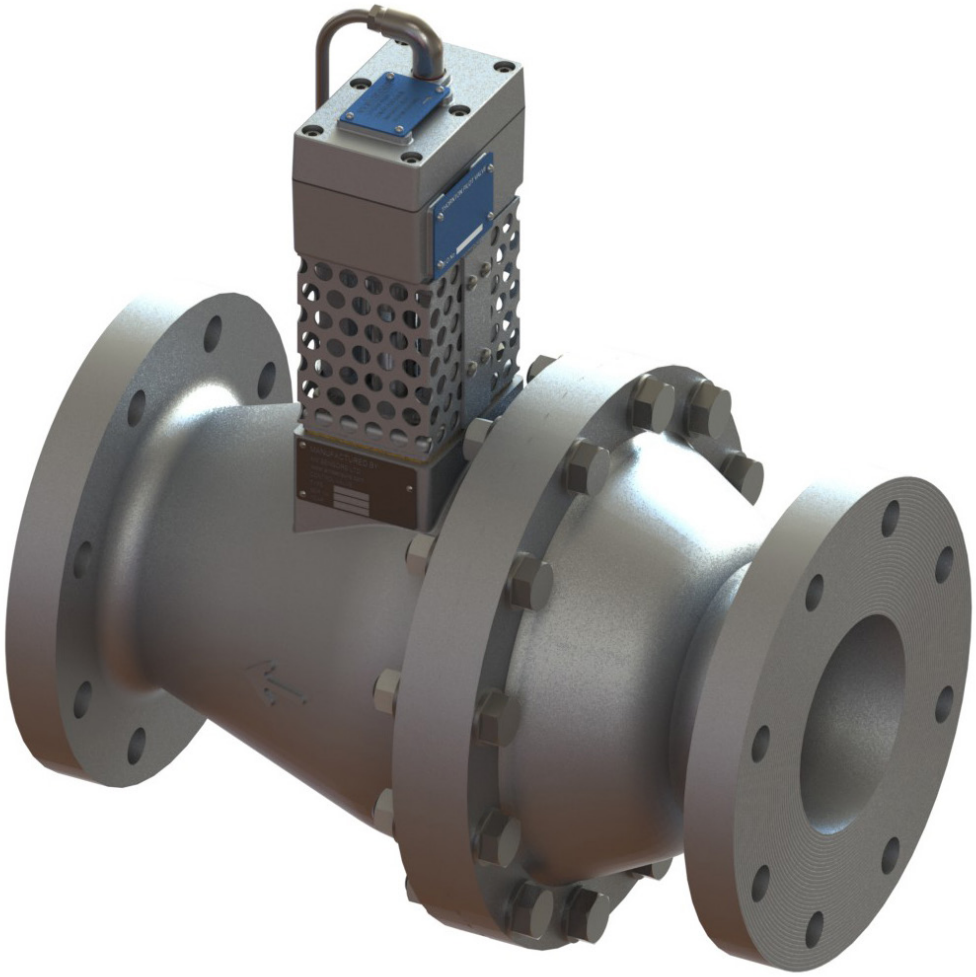
ams
INSTRUMENTATION & CONTROL



SPECIFICATION // DATA SHEET

PILOT CONTROLLED SERVO VALVES

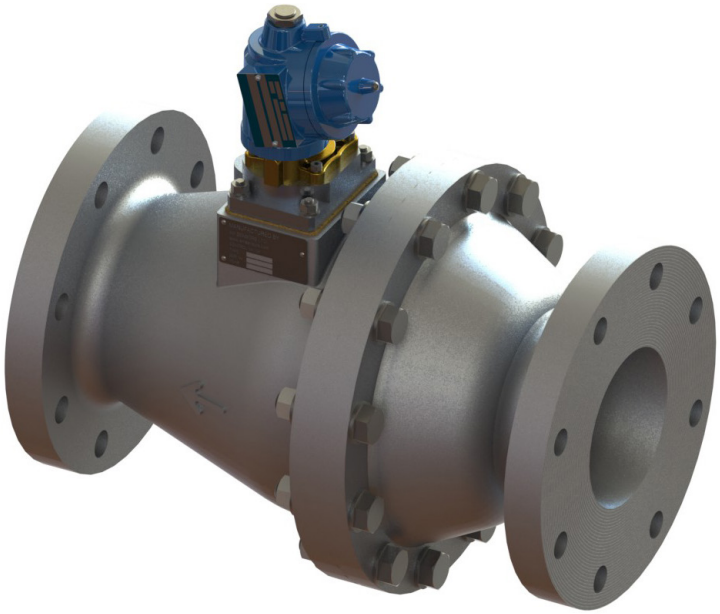
AMS-S-089/DS/04.2016 (ISSUE 1)

Introduction

AM Sensors brand Servo Control Valves are widely used in aviation bulk fuel and other storage installations, for safety shut off on Filter Water Separators controlled by a water level sensing valve, pressure sensing or emergency shutdown systems.

They are also used in shipboard and other hazardous applications in view of their proven reliability and long service history (Ex Alan Cobham).

Designed for installation into a pipeline system, 1.5", 2", 3" and 4" variants are available with a range of inlet and outlet flange connections.



TANK FILLING CONTROL VALVE

- Differential piston operated
- Self-powered by inlet pressure
- Low pressure loss in line design
- Aluminium or stainless steel variants
- Wide range of pilot control variants
- For pressure / flow regulation, solenoid or remote shut-off

Introduction

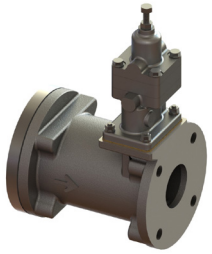
A range of external pilots are available for fitment to the port plate. Simple shut-off can be provided by solenoid, level sensing, manual or remote shut off valve. Alternatively a diaphragm operated pilot can provide either fixed or externally adjustable control of upstream or downstream pressure.

The latter is available in frame mounted form for Military field use. In conjunction with an orifice plate the unit can be used to regulate flow and can be fitted with a remote shut off lanyard. With an additional valve in the piston pilot port they can be used as a vessel isolation and non-return valve.

Solenoid Operated - Tank Filling Control Valve

Using a range of ATEX approved solenoid valves our servo valve is widely used within the Oil & Gas/Petrochemical industries for overfill protection of storage tanks during fuel delivery.

Installed in the fuel delivery line and used with a high level switch, the valve provides a controlled closure without any sudden shock that could affect the pumps operation.



SINGLE BACK PRESSURE REGULATING VALVE

Density Sensitive Valve – Fuel Grade Monitoring

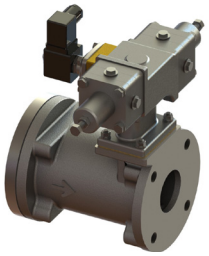
Using our unique mechanically operated Thornton Pilot, our servo valves have been widely used to prevent the delivery of the wrong grade of fuel into a tank. The valve and pilot combination monitors the fuel on delivery and automatically shuts off the valve if the wrong fuel density is detected.

Installed applications include:

- Airport fuel delivery to storage tanks
- Fuel delivery at fuel storage terminals
- Mixed product storage facilities

Mechanical Pressure Regulating Valves

Our purpose built mechanical pressure regulators can be fitted to our servo valves to control upstream and or downstream pressures. Using an internal diaphragm the pressure, back pressure and dual back pressure regulators can be set and adjusted with the simple twist of a locking screw. These valves have been used extensively within the MoD, Marine and Oil & Gas Industries.



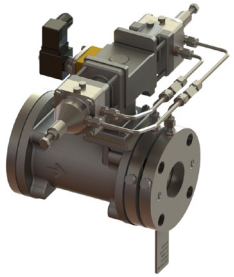
DUAL BACK PRESSURE REGULATING VALVE

Constant Flow Valve with Dual Pressure Regulator

Available in 2", 3" and 4" variants the flow regulating pilot uses the servo valve to maintain a set flow/pressure across a built in orifice plate. It offers switched flow control between two set points and has been successfully installed in fuels systems, regulating fuel flow as well as chilled water by-pass applications. The standard 2" valve maintains a flow rate of 75-115 GPM, with a change in the orifice plate size allow for different flows/pressures as required.

Mechanical Float Shut Off on Filter Water Separators

A remote float operated valve, situated in either a tank or bund can be used as a pilot to operate our servo valve within a drain line. These valves have been used successfully in oil water or filter water separators with one float option sensing the interface level between fuel and water and automatically controlling the servo drain valve. A similar configuration has also been used as a purely mechanical safety function to activate a shut off servo valve.



CONSTANT FLOW VALVE

Operation

With no flow in the system the valve is kept closed by a piston return spring.

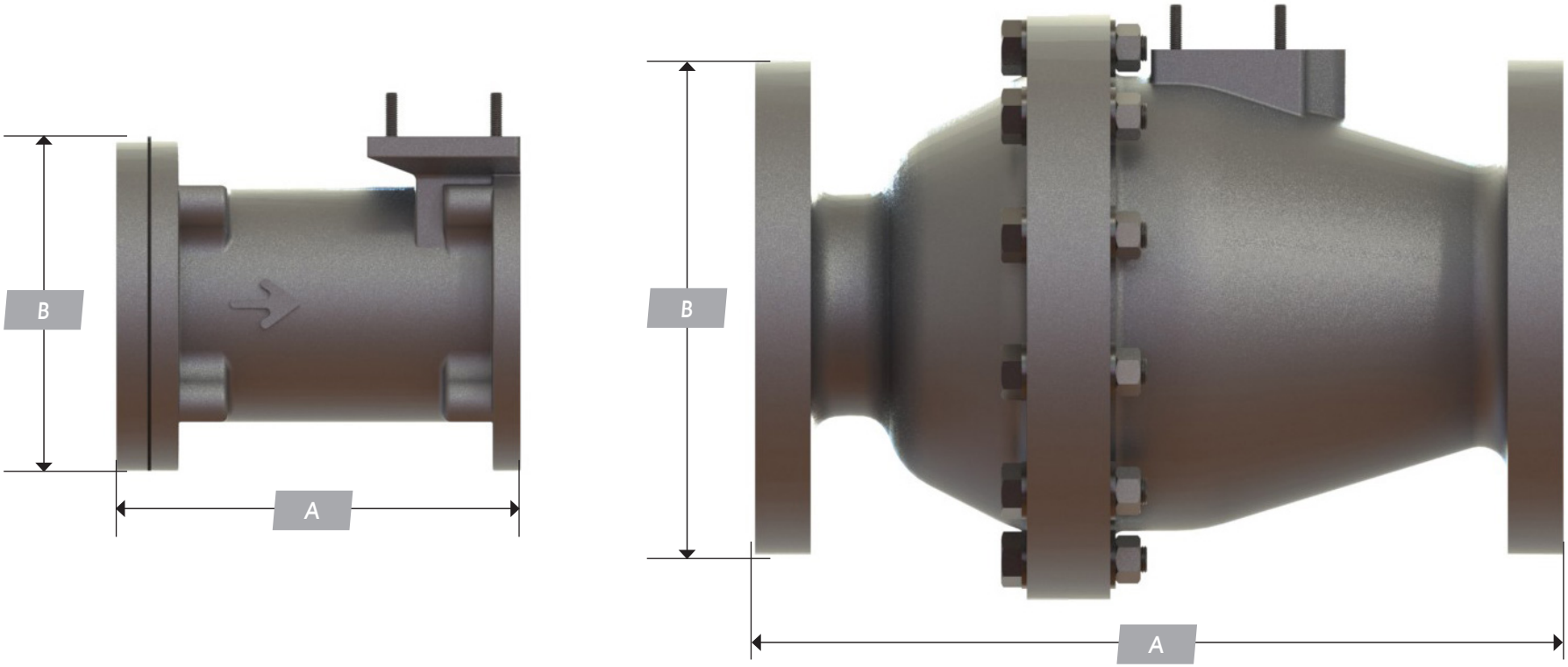
As pressure is applied to the liquid with the pilot valve closed, it passes through the valve stem into the cylinder exerting a greater pressure against the piston forcing the valve head against its seating therefore preventing liquid flow.

When liquid flow is required through the system,
the pilot valve is opened releasing the liquid from the cylinder and increasing the pressure at the valve head, forcing it off its seating. The piston is forced open allowing the liquid to flow through the valve.

Specification

Nominal Sizes	1 ½", 2", 3" and 4"
Flanges	1 ½" & 2" BS10 Table E (Optional ANSI / ASME Class 150) 3" & 4" ANSI / ASME Class 150
Body Material	Aluminium Alloy (Optional 2" version in Stainless Steel 316L SV2043)
Seal Material	Nitrile or Viton
Max. Working Pressure	150 Psi (10 Bar)
Max. Rate of Flow	1 ½" – 80 gpm UK (364 l/min) 2" – 130 gpm UK (600 l/min) 3" & 4" – 1000 gpm UK (4500 l/min)
Max. Working Temperature	+80 °C
Min. Working Temperature	-20 °C (Providing no water is present in the system)

Dimensions



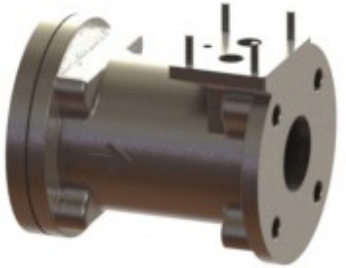
Valve Designation	Dimensions		Pilot Mounting	Flange Size (Standard)
	A	B		
SV1507	158.75	133.35	2x 1/8" BSPT (38.1mm Ctrs)	4x Threaded ½"UNF on 98.4mm PCD
SV2023			4x ¼" UNF Studs (47.6 x 69.8mm Ctrs)	
SV2035	184.15	152.4	2x 1/8" BSPT (38.1mm Ctrs)	4x Threaded 5/8" UNF on 114.3mm PCD
SV2043			4x ¼" UNF Studs (47.6 x 69.8mm Ctrs)	
SV4636	393.7	190.5	4x ¼" UNF Studs (47.6 x 69.8mm Ctrs)	4x Ø19mm on 150.4mm PCD
SV4000	368.3	228.6	4x ¼" UNF Studs (47.6 x 69.8mm Ctrs)	8x Ø19mm on 190.5mm PCD

Basic Servo Valve Range

1 ½" - SV1507 Aluminium

2" - SV2035 Aluminium

2" - SV2023 Aluminium



2" - SV2043 St/St

3" - SV4636 Aluminium

4" - SV4000 Aluminium

AM Sensors Ltd,
Chedzoy Lane, Chedzoy,
Bridgwater, Somerset
TA7 8QS

t +44 (0)1278 444 650
f +44 (0)1278 434 449
e info@amsensors.com
www.amsensors.com

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