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COMBUSTIÓN INDUSTRIAL Y CONTROL S.A. DE C.V.

LAR Training

Electro-Mechanical Safety Shut Off Valves

Mark Lampe

May, 18 2015

Honeywell

Electro-Mechanical SSOV

- Electrically actuated valves with powerful closing spring provide closure in less than 1 second for reliable, long-life operation
- A variety of optional body materials and body connections provide reliable operation even for highly corrosive fuels and for oxygen.
- Cast iron, carbon steel, low temperature carbon steel and stainless steel body assemblies
- Cv flow factors up to 1230, and line pressures up to 125 PSIG (8.6 bar)

Installations

Numbe

Sizes and Certifications

- Application flexibility provided with 3/4” (DN20) through 8” (DN150) line sizes & line pressures up to 125 psig
- Electro-mechanical gas valves meet Fluid Control Institute (FCI) 70-2 control valve standard for Class VI seat leakage
- Factory Mutual, CSA, UL and CE approved; Canadian registration obtained on all valve bodies
- Hazardous Locations valves approved for Non-incendive Class I, Division 2 areas
- Full assessment to IEC 61508 as SIL 3 capable
- Ambient and gas temperature ranges of -20°F to 140°F
- Internal trim options to handle general purpose or corrosive gases; oxygen compatibility available

Shut off and Vent Valves

- Field rotatable top assemblies in 90° increments to fit specific application requirements
- Actuator assemblies available with manual reset or automatic reset operators
- Normally-closed and normally-open versions available
- Over travel position switches for open and closed position
- Visual position indication provided
- Unique bonnet design eliminates packing adjustments, reducing maintenance and minimizing drag on closing

Class VI Leakage Performance Per FCI-70-2

Metal to metal Seats – Wear In not Out

Shut-Off and Vent Valves

- Rising Stem Valves
  - Typically used for gas applications
  - Shut-Off and Vent options available
  - Electrically actuated w/manual reset
  - Electrically actuated w/automatic reset
  - Air actuated w/automatic reset
  - Hazardous Location Classification

Shut-Off and Vent Valves

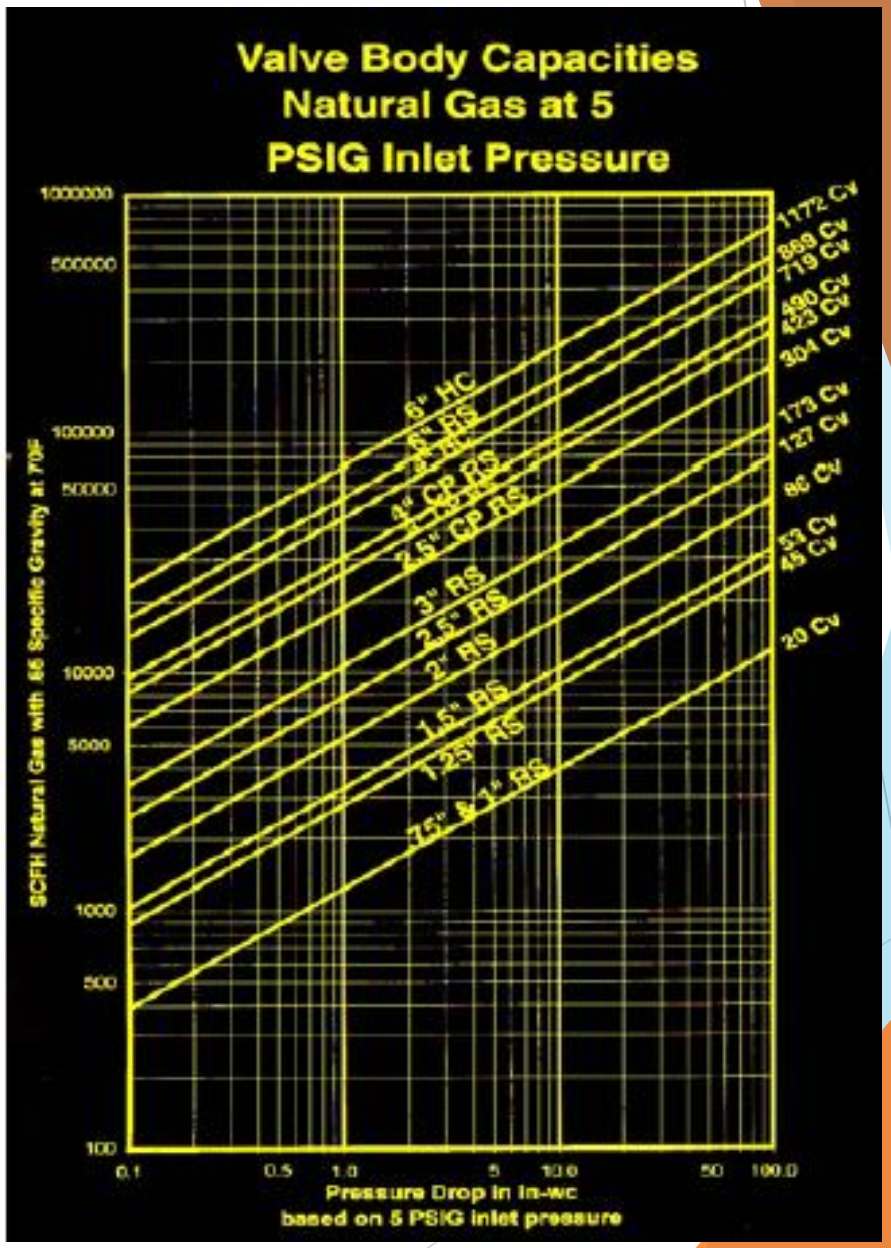
- Swinging Gate ValvesTypically used for gas applications
  - Typically used for liquid applications
  - Shut-Off valve option only
  - Electrically actuated w/manual reset
  - Electrically actuated w/automatic reset
  - 3/8" through 2”" diameter line sizes,
  - Flow factors up to 218, and line pressures up to 550 PSIG.
- Handles flowing fluid temperatures: -20˚F (-28˚C) to +550˚F (+288˚C)
- Any ambient temperature from -20˚F (-28˚C) to +140˚F (+60˚C)
- Minimize line pressure drops with straight-through flow swinging gate valve bodies

Installation Options

- Visual indication should be visible when installed.
- Rotating the Top Assembly: Series 700, 23300, 33000, 4700, 25300, 33479, 808, STO-M, 5000, STO-A & all “NI”
  - Rotate 30 degrees beyond.
  - Back to desired position and re-fasten.
  - Inspect top assembly internals for proper alignment.
- 4 Valve Positions
  - ‘R’ Position Right
  - ‘L’ Position Left
  - ‘TO’ Position Toward
  - ‘AW’ Position Away

Start Up & Installation

- Select the correct valve for the application.
  - Normally Closed vs. Normally Open
  - Manual vs. Automatic
  - Electric vs. Pneumatic
  - Gases vs. Liquid
- Size valve properly‘R’ Position Right
  - Valve pressure rating
  - Determine maximum amount of pressure drop allowed to insure good control



Electro-Mechanical Assembly No. Pages

Assembly Numbers

Gas Electro-mechanical Valves

To determine the Configured Item Number:

Select one choice each from the following five categories

Configured Item Number				
Value size	Flow capacity	Value type	Normal position	Area classification

Value size
075 - 3/4"
100 - 1"
125 - 1-1/4"
150 - 1-1/2"
200 - 2"
250 - 2-1/2"
300 - 3"
400 - 4"
600 - 6"

Flow capacity:
S - Standard
C - CP body construction
H - High capacity

Value type
MA - MA400 Automatic (motorized)
MM - MA400 Manual valve

Normal position
1 - Normally-closed shut-off valve
2 - Normally-open vent valve

Area classification
1 - General purpose
2 - Non-incendive, Class I, Div. 2
4 - Valve body only

Configured Item Numbers are designated as follows:

Value size space Flow capacity space Value type, normal position, area classification

Example:

To order a 3" C P body, automatic valve, normally-closed shut-off valve for general purpose use, make the following selections:

Value size 300
Flow capacity C
Value type ..... MA
Normal position 1
Area classification 1

The Configured Item Number for this valve is: 300 C MA11

Start Up & Installation

- Leave valve caps on inlet/outlet connections until ready to install valve.
- All covers should remain tightly secured until wiring is required.
- Piping should be blown free of all debris prior to valve installation.
- The flow arrow of the valve should be consistent with the process flow.
- Establish piping centerline prior to the valve installation.
- Properly support your piping to eliminate stress on the valve body.

Start Up & Installation

- Review nameplate before installation.
  - Voltages
  - Fluid
  - Temperature/Pressure
  - Ratings

- Once the valve is installed,electrical connections should be carefully wired.
- Check the continuity between the switches.
- Adhere to your local electric codes.

Maintenance & Inspection

- Switch assembly
  - Check to see if switch continuity is made at full open and/or full close.
  - Electrically actuated valves use the VOS1 switch to shut motor off at full open for SOV.
- Solenoid assembly
  - Check to see if the solenoid fully engages, “clicks,” when power is applied and fully retracts on removal of power.
  - Motor assembly – thermal fuse in assembly.
- Valve body assembly
  - Piping connections should be tight.
- Electrical connections
  - Terminal block need to be tight and free of debris.
- Actuator cover screws
  - Need to be tightly secured.

Maintenance & Inspection

- Understand the modes of operation
- Normally Closed Shut-Off
  - Valve Valve will open when power is applied.
  - Valve will close when power is removed.
  - Leakage rates per customer's accepted levels.
    - Every Maxon valve is operationally tested and meets the requirements of ANSI B16.104 Class VI seat leakage when it leaves our plant.
- Normally Open Vent Valve (STO)
  - Valve will close when power is applied.
  - Valve will open when power is removed.
  - Leakage rates per customer's accepted levels.
    - Every Maxon valve is operationally tested and meets the requirements of ANSI B16.104 Class VI seat leakage when it leaves our plant.

Maintenance & Inspection-SOV Opening Cycle

- Periodically cycle valve and note opening time:
  - Electrically actuated valves standard opening time is approximately 6 seconds (optional 2 ½ & 14 sec.)
  - Air actuated valves opening time depends on supply pressure. Typically at 65 psig inlet pressure the opening time should be 4 seconds.
- Failure to open in required time:
  - Electrically actuated valves:
    - Check motor to determine if it is functioning properly.
    - Check solenoid/clutch to determine if is functioning properly.
    - Remove actuator covers and visually inspect internals.
  - Pneumatically actuated valves:
    - Check supply pressure, minimum required is on nameplate.
    - Check solenoid valve to determine if it is functioning properly.