Maxseal Solenoid Operated Valves

Typical Applications
- 1/4" 3/2 AUTO LATCHING LEVER
- Actuator Control
- Direct Acting Shut Off Valve
- Oil & Gas Applications
- Turbine Fuel Control

Description
- Model: ICO4S 1/4" 3/2 Uni Direct Acting Solenoid Valve
- Low Pressure, High Flow
- Max Inlet Pressure 20 bar (290 psi)
- Reliable and long life, ideal for a one time installation
- Control of pneumatic or hydraulic operated equipment
**Thompson Valves Ltd. - Maxseal Solenoid Operated Valves**

### Standard Features
- **Solenoid Materials of Construction**
  - Solenoid Pot - Stainless Steel - BFC 316
  - Top Cover - Stainless Steel - BFC 316
  - Valve Body & Trim Materials - 316 Stainless Steel
  - O-Rings Seats & Seals - High Nitrile (NBR)
  - Coil Insulation - Class H

- **Maximum Inlet Pressure**
  - 20 Bar (290 PSI)

- **Flow Rates**
  - $C_v = 0.8 \text{ USgpm for 1 psi } \Delta p$
  - $K_v = 11.5 \text{ l/min for 1 bar } \Delta p$

- **Temperature Ratings**
  - Media (Min/Max: -20°C/90°C) - Ambient (Min/Max: 0°C/60°C)

- **Valve Size**
  - 1/4" Balanced Poppet Valve

- **Process Connections**
  - 1/4" NPT

- **Conduit Connection**
  - M20 x 1.5 Conduit Thread

- **Media**
  - Liquid & Gases

- **Weight**
  - 5.5 Kg

### Recommended Spares Kits
- **Soft Spares (O-rings, Springs etc)**
  - Standard & Extreme Service: Y123A010000-SS
  - Low Temperature valves: See Valve Data Sheet

- **Spare Coil Assembly**
  - Standard 24V DC (4.5 Watts): Y123A0101B0
  - Other Variations: See Valve Data Sheet

### Options
- **Valve Body & Trim Materials**
  - Aluminium Bronze - Sea Water Applications
  - Titanium - Extreme Service Applications

- **Low Temperature Options**
  - O-Rings - Low Nitrile / Fluorosilicone (Min Med/Amb: -40°C/-40°C)

- **High Temperature Options**
  - High Temperature Spacer (Max Med/Amb: 120°C/60°C)

- **Process Connections**
  - Thread - 1/4" BSPP

- **Conduit Connection**
  - 1/2" NPT

- **Extreme Service**
  - Increased Power Consumption

- **Product lead time**
  - Y123BA1H1BS - 1 WEEK (SUBJECT TO QUANTITIES)
  - Other Variations - Please call for possible delivery dates
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Technical Specification

Pressures

- Test (Proof) Pressure: 30 bar (435 PSI)
- Maximum Inlet Pressure: 20 Bar (290 PSI)
- Maximum inlet pressure when used in 'Universal Operation': 15 bar (218 PSI)

ATEX Classification

- Complies with ATEX Directive 94/9/EC

ATEX Certificate

- SIRA 00ATEX1147

Certification

- II 2G
- EExd IIC T6 (T_B = -60°C to + 48°C) or
- EExd IIC T4 (T_B = -60°C to + 90°C)

IECEx

- IECEx BAS 04.0019
- EExd IIC T6 (T_B = -40°C to + 60°C) or
- EExd IIC T4 (T_B = -40°C to + 90°C)

GOST 'K'

- EExd IIC T6 (T_B = -40°C to + 60°C)

GOST 'R'

- EExd IIC T6 (T_B = -40°C to + 60°C)

Safety Integrity Level

- Suitable for SIL 3 Application in Simplex Mode
- Suitable for SIL 4 Application in Duplex Mode

Ingress Protection

- IP66/X6, NEMA 4X

Voltage Surge Protection

- Surge Suppression Diodes

Coil Insulation

- Class H

Performance

- Pull-in Voltage: 87.5% of Nominal
- Response Times: Pull-In <150ms, Drop-Out <80ms

Electromagnetic Compability (EMC)

- EN50081-2/82-1

Valve Symbol

Valve Symbol for ENERGISE TO OPEN
(DE-ENERGISED TO CLOSE)
(NORMALLY CLOSED)
20 BAR MAX WORKING PRESSURE
STANDARD OPERATION

Valve Symbol for ENERGISE TO CLOSE
(DE-ENERGISED TO OPEN)
(NORMALLY OPEN)
15 BAR MAX WORKING PRESSURE
UNIVERSAL OPERATION

Extreme Service valves can be offered with 20 Bar (290 psi) for use in the Universal Operation.
### Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Operating Pressure</th>
<th>Port Config.</th>
<th>Operation</th>
<th>Process Connection</th>
<th>Seat/Seal Materials</th>
<th>Conduit Connection</th>
<th>Voltage</th>
<th>Body/Trim Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td></td>
<td>2</td>
<td>3</td>
<td>B</td>
<td>A1</td>
<td>H</td>
<td>1</td>
<td>B S</td>
</tr>
<tr>
<td>ICO4S</td>
<td>0-20 Barg (290 psi)</td>
<td>3/2</td>
<td>UNIVERSAL</td>
<td>AUTOMATIC LATCHING LEVER</td>
<td>A1</td>
<td>H</td>
<td>1</td>
<td>S 316 SS / 316 SS</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>E1</td>
<td>V</td>
<td>2</td>
<td>M Alu Brnz / Alu Brnz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>J 110V AC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R 110V DC</td>
</tr>
</tbody>
</table>

### Ordering Example

<table>
<thead>
<tr>
<th>Y1</th>
<th>Port</th>
<th>3</th>
<th>B</th>
<th>Operating Pressure</th>
<th>Process Connection</th>
<th>Seat/Seal Materials</th>
<th>Voltage</th>
<th>Body/Trim Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICO4S</td>
<td>0-20 Barg (290 psi)</td>
<td>3/2 UNI</td>
<td>A-L-L</td>
<td>1/4&quot; NPT</td>
<td>VITON®</td>
<td>M20 x 1.5</td>
<td>110V AC</td>
<td>Titanium / Titanium</td>
</tr>
</tbody>
</table>

### Power Consumption (At Nominal)

<table>
<thead>
<tr>
<th>DC Standard</th>
<th>AC Standard</th>
<th>Extreme Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 / 33V DC (24V DC)</td>
<td>7.7 W</td>
<td>25W AC</td>
</tr>
<tr>
<td>24V DC</td>
<td>4.5 W</td>
<td>110 AC</td>
</tr>
<tr>
<td>50V DC</td>
<td>5.5 W</td>
<td>240V AC</td>
</tr>
<tr>
<td>115V DC (110V AC)</td>
<td>8.0 W</td>
<td></td>
</tr>
<tr>
<td>115V DC (125V DC)</td>
<td>10.4 W</td>
<td></td>
</tr>
</tbody>
</table>

### Profile and Dimensions mm

1. Valve is energised
   Valve "changes over"
   Flow occurs between ports 'A' & 'B'
   Lever moves to "latched" position

2. Valve is de-energised
   Valve stays in position as lever prevents valve from "changing over"
   Flow occurs between ports 'A' & 'B'

3. Lever is moved to normal position
   Valve "changes over"
   Flow occurs between ports 'B' & 'C'

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