Maxseal Solenoid Operated Valves

ICO4S
1/4" 2/2 AUTO

1/4" 2/2 ENERGISE TO OPEN - AUTOMATIC
1/4" 2/2 ENERGISE TO CLOSE - AUTOMATIC
Actuator Control
Direct Acting Shut Off Valve
Oil & Gas Applications
Turbine Fuel Control

Typical Applications

Description
Model: ICO4S 1/4" 2/2 EO & EC
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
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 (290PSI)

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
- 5.0 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
- Y121AA1H1BS - 1 WEEK (SUBJECT TO QUANTITIES)
- Y122AA1H1BS - 1 WEEK (SUBJECT TO QUANTITIES)
- Other Variations - Please call for possible delivery dates
Thompson Valves Ltd. - Maxseal Solenoid Operated Valves

**Technical Specification**

**Pressures**
- Test (Proof) Pressure: 30 bar (435 PSI)
- Maximum Inlet Pressure: 20 Bar (290PSI)
- ATEX Classification: Complies with ATEX Directive 94/9/EC
- ATEX Certificate: SIRA 00ATEX1147

**Certification**
- II 2G
  - EExd IIC T6 (Ta = -60ºC to + 48°C) or
  - EExd IIC T4 (Ta = -60ºC to + 90°C)

**IECEx**
- IECEEx BAS 04.0019
  - EExd IIC T6 (T_a = -40ºC to + 60ºC) or
  - EExd IIC T4 (T_a = -40ºC to + 90ºC)

**GOST ‘K’**
- EExd IIC T6 (T_a = -60ºC to + 48°C)

**GOST ‘R’**
- EExd IIC T6 (T_a = -40ºC to + 60ºC)

**Safety Integrity Level**
- Suitable for SIL 3 Application in Simplex Mode
- Suitable for SIL 4 Application in Duplex Mode

**Ingress Protection**
- IP66/X8, 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 Compatibility (EMC)**
- EN50081-2/82-1

**Valve Symbol**

**Valve Symbol for ENERGISE TO OPEN (NORMALLY CLOSED)**
20 BAR MAX WORKING PRESSURE

**Valve Symbol for ENERGISE TO CLOSE (NORMALLY OPEN)**
20 BAR MAX WORKING PRESSURE
### 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>2</td>
<td>1</td>
<td>A</td>
<td>A1</td>
<td>H</td>
<td>1</td>
<td>B</td>
<td>S</td>
</tr>
<tr>
<td>ICO4S</td>
<td>0-20 Barg (290 psi)</td>
<td>2/2 EO</td>
<td>Automatic</td>
<td>A1</td>
<td>H</td>
<td>1</td>
<td>B</td>
<td>S</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>E1</td>
<td>High Nitrile</td>
<td>M20x1.5</td>
<td>C</td>
<td>Alu Brnz / Alu Brnz</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>V</td>
<td>2</td>
<td>1/2&quot; NPT</td>
<td>J</td>
<td>110V AC</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1/4&quot; BSPP</td>
<td></td>
<td></td>
<td>M</td>
<td>240V AC</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R</td>
<td>115V DC</td>
</tr>
</tbody>
</table>

### Ordering Example

<table>
<thead>
<tr>
<th>Model</th>
<th>Operating Pressure</th>
<th>Port Config.</th>
<th>Operation</th>
<th>Pressure Port Config.</th>
<th>Operation Process</th>
<th>Connection</th>
<th>Body/Trim Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td>2</td>
<td>1</td>
<td>A</td>
<td>A1</td>
<td>V</td>
<td>1/4&quot; NPT</td>
<td>S</td>
</tr>
<tr>
<td>ICO4S</td>
<td>0-20 Barg (290 psi)</td>
<td>2/2 EO</td>
<td>Auto</td>
<td>VITON®</td>
<td>1/2&quot; NPT</td>
<td>240V AC</td>
<td>M</td>
</tr>
</tbody>
</table>

### Power Consumption (At Nominal)

<table>
<thead>
<tr>
<th></th>
<th>DC Standard</th>
<th>AC Standard</th>
<th>Extreme Service</th>
</tr>
</thead>
<tbody>
<tr>
<td>12V / 24V DC</td>
<td>5 W</td>
<td>6 W</td>
<td>9.6 W</td>
</tr>
<tr>
<td>24V DC</td>
<td>4.5 W</td>
<td>6.5 W</td>
<td>Others Available</td>
</tr>
<tr>
<td>50V DC</td>
<td>5.5 W</td>
<td>6.2 W</td>
<td></td>
</tr>
<tr>
<td>110V DC (110V DC)</td>
<td>8.0 W</td>
<td></td>
<td></td>
</tr>
<tr>
<td>115V DC (250V DC)</td>
<td>10.4 W</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Profile and Dimensions mm

![Profile and Dimensions Diagram](image)

### 2/2 ENERGISE TO OPEN

1. Valve is energised
   - Valve 'changes over'
   - Flow occurs between ports 'A' & 'B'
2. Valve is de-energised
   - Valve resets
   - No flow occurs between ports 'A' & 'B'

### 2/2 ENERGISE TO CLOSE

1. Valve is energised
   - Valve 'changes over'
   - No flow occurs between ports 'A' & 'B'
2. Valve is de-energised
   - Valve resets
   - Flow occurs between ports 'A' & 'B'

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