Type 1249B

SOLENOID CONTROL VALVE DRIVER

The Type 1249 Control Valve Driver provides the drive signal required to operate the MKS Type 148 and 248 Proportioning Solenoid Valves used for pressure or flow control. It is intended for use with PC’s, PLC’s, or other controllers that provide the necessary PID control functions, but which don’t have the current output necessary to drive these valves. (Open-loop control of these valves, i.e., no PID control, is not recommended)

The Type 1249 can be powered by common power supplies of ±15 VDC or 24 VDC, consuming less than one Watt of power (not including the valve). It accepts control signal inputs of 0-5 VDC, 0-10 VDC, or 4-20 mA from a PC, PLC, or another system controller. The Type 1249’s output signal is tailored to match the requirements of the MKS Type 148 or 248 Proportioning Control Valve. The 1249 may also be used to drive an MKS Type 154 Valve if the power applied to the 1249 is ±15 VDC or +30 VDC. Consult Applications Engineering at (800) 227-8766 for details.

The 1249 provides a convenient and economical solution for pressure or flow control where the necessary power and PID control functions are already available in the system.

Features & Benefits

• Enables PC, PLC, or other user-supplied control algorithm to operate a proportioning control valve
• Makes use of existing system capabilities to lower the cost of pressure or flow control
• Flexible power and signal requirements
• Small package can be mounted wherever space is available
• CE Mark Compliant — meets requirements for European Union
Application Schematics

Flow Control application for Type 1249

Upstream Pressure Control application for Type 1249

Downstream Pressure Control application for Type 1249
### Specifications

#### Type 1249 Solenoid Control Valve Driver

**Power Input Required**
- ±15 VDC ±5% @ 330 mA max. or
- 24 VDC ±10% @ 270 mA max. (including valve)

**Input Signal**
- Analog
  - 0-5 VDC, 0-10 VDC or 4-20 mA (user selectable)
- Digital
  - TTL or open collector overrides to open or close valve

**Output Signal**
- 0-300 mA

**Input Connector/Output Connector**
- 15-pin Type “D” male/9-pin Type “D” female

**Indicators**
- Valve open/valve closed LED

**Adjustments**
- Manual bias pot

**Dimensions**
- 1.13"H x 3.28"L x 4.12"D (28.7 mm x 83.3 mm x 104.6 mm)

**Operating Temperature Range**
- 0°C to +50°C

**Operating Humidity Range**
- 0% to 95% RH non-condensing

**Electromagnetic Compatibility**
- CE compliant to EMC Directive 2014/30/EU
- RoHS2 compliant Directive 2011/65/EU

#### Type 148JA Compatible Control Valve

**Full Scale Flow Ranges**
- 10 - 30,000 sccm

**Minimum Controllable Flow**
- 2% F.S.

**Closed Leakage**
- Standard
  - 1% of F.S.

**Wetted Materials**
- Standard
  - 316 S.S., nickel, Teflon®

**Fittings**
- Standard
  - 4 VCR® male compatible

**Operating Temperature Range**
- 15°C to +150°C

**Electromagnetic Compatibility**
- CE compliant to EMC Directive 89/336/EEC¹
  - (Does not comply to CE Compliant EMC Directive 2014/30/EU)

#### Type 248D Compatible Control Valve

**Full Scale Flow Ranges**
- 10 - 10,000 sccm

**Minimum Controllable Flow**
- 0.1% of F.S. (≥100 sccm)
- 0.2% of F.S. (<100 sccm)

**Closed Leakage**
- Standard
  - <1 × 10⁻⁵ scc/sec He (at 1 atmosphere differential)

**Wetted Materials**
- Standard
  - 316 S.S., nickel, Viton®
  - Optional Seat Material
    - Neoprene®, Buna-N, Kalrez®

**Fittings**
- Standard
  - ¼" Swagelok® (4 VCR optional)

**Operating Temperature Range**
- -10°C to +60°C

**Electromagnetic Compatibility**
- CE compliant to EMC Directive 2014/30/EU
- RoHS2 compliant Directive 2011/65/EU

¹For CE compliance an overall metal braided shielded cable, properly grounded at both ends, must be used.
### Type 1249B

**Ordering Code Example: 1249B**

<table>
<thead>
<tr>
<th>Code</th>
<th>Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1249B</td>
<td>1249B</td>
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</tbody>
</table>

**Type 1249 Solenoid Control Valve Driver**

### Type 148J

**Ordering Code Example: 148JA11CR1M**

<table>
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**Type 148JA Control Valve**

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<tr>
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<tbody>
<tr>
<td>10 sccm</td>
<td>11C</td>
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<tr>
<td>20 sccm</td>
<td>21C</td>
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<td>24C</td>
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<tr>
<td>30,000 sccm</td>
<td>34C</td>
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</table>

**Fittings**

- Swagelok 4 VCR  
  | R | R |

**Valve**

- Normally closed  
  | 1 | 1 |

**Valve Seal Material**

- Metal  
  | M | M |

### Type 248D

**Ordering Code Example: 248D00010SV**

<table>
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**Type 248D Control Valve**

<table>
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<th>Code</th>
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<tr>
<td>20 sccm</td>
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<tr>
<td>50 sccm</td>
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<td>05000</td>
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<tr>
<td>10,000 sccm</td>
<td>10000</td>
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</table>

**Fittings**

- Swagelok  
  | S (standard) | S |
- Swagelok 4 VCR  
  | R (optional) | S |

**Seal Material**

- Viton  
  | V (standard) | V |
- Neoprene  
  | N (optional) | V |
- Buna-N  
  | B (optional) | V |
- Kalrez  
  | K (optional) | V |

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**Valve Solutions**

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