Heater Control Valves

What's at the Heart of Your Heater Control System?
Thank you for your interest in Thermotion’s heater control valves. We are proud to offer the most innovative line-up of valves in order to give you more design and application flexibility.

Thermotion heater control valves have been “on the road” since the 1960’s and are designed to meet OEM requirements. Our valves are manufactured in the USA in our ISO certified facility.

What’s at the Heart of Your Heater Control System?

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EMAIL: sales@thermotion.com

Product Appearance & Specification

(All products are subject to appearance and specification change without notice)
Heater Control Valves

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MODULATING 4-PORT VALVES
MODULATING 2-PORT

FEATURES

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS OR 2-PORT, 3/4” (19mm) HOSE CONNECTIONS
- 4-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 12 VDC THROUGH 24 VDC OPERATION
- INTEGRAL FEEDBACK CAPABILITY
- POSITIVE VALVE POSITION CONTROL WHEN INTERFACED WITH ON-BOARD CONTROLLER
- 6 GPM (23L/min) NOMINAL FLOW RATE
- LIGHTWEIGHT UNDER-HOOD DESIGN
- MEETS AUTOMOTIVE OEM SPECIFICATIONS
- VALVE OPERATING TEMPERATURE RANGE: -20°F TO 250°F (-28°C TO 121°C)
- ACTUATOR OPERATING TEMPERATURE RANGE: -40°F TO 185°F (-40°C TO 85°C)
- ENCLOSED PROTECTION CLASS: UNSEALED, IP-40

Please advise on intended use of heater control valve:

If your application calls for ON/OFF (not modulating) a resistor must be added to the actuator.
**Heater Control Valves**

* Maximum operating current = 300 milliamps @ 12 VDC or 600 milliamps @ 24 VDC

<table>
<thead>
<tr>
<th>P/N</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>354-65002</td>
<td>WIRE HARNESS (2ft LEADS)</td>
</tr>
<tr>
<td>354-69492</td>
<td>2-PORT 3/4” (19mm)</td>
</tr>
<tr>
<td>354-69493</td>
<td>2-PORT 5/8” (16mm)</td>
</tr>
<tr>
<td>354-69494</td>
<td>4-PORT 5/8” (16mm)</td>
</tr>
<tr>
<td>354-69500</td>
<td>CONTROL MODULE RUNS ON USER SUPPLIED REF. VOLTAGE</td>
</tr>
<tr>
<td>354-69515</td>
<td>CONTROL MODULE WITH WIRE</td>
</tr>
<tr>
<td>354-69530</td>
<td>10 KΩ POTENTIOMETER &amp; KNOB</td>
</tr>
</tbody>
</table>

**PIN ASSIGNMENTS**

- MOTOR (-) Red
- MOTOR (+) Black
- FEEDBACK (-) Yellow
- FEEDBACK POT White
- FEEDBACK POT (+) White

**MATING CONNECTOR:**

- P/N 354-65001
- CONNECTOR PINS (5) P/N 354-65000
- 20/22 Gauge Wire

**Dimensions:**

- 4.3 (109mm)
- 5.0 (128mm)
CONTROL MODULE

Designed for Modulating 2-Port & Modulating 4-Port Valves

FEATURES

- EASY INSTALLATION
- SMALL PROFILE — SIMPLE TO MOUNT
- PROVIDES A WIDE RANGE OF CONTROL
- SEALED CONTROL MODULE
- OPERATING TEMPERATURE RANGE
  -40°F to 180°F (-40°C to 82°C)

DESCRIPTION

Thermotion introduces its new ECCIII Control Module (with Harness).

This advanced Control Module interfaces between Thermotion’s 2-Port (354-69492 3/4”, 354-69493 5/8”) and 4-Port (354-69494 5/8”) Modulating Heater Control Valves and a 10 KΩ potentiometer (354-69530).

This Control Module provides precise control for the user, allowing for a wide range of control.

Standard model 354-69515 is designed for a command and feedback (5-10 KΩ) potentiometer to run on supply voltages of 12VDC through 24VDC.

Custom model 354-69500 is designed for a command and feedback (5-10 KΩ) potentiometer to run on a reference supply voltage supplied by the user.
* Maximum operating current = 300 milliamps @ 12 VDC or 600 milliamps @ 24 VDC
THERMO-MAGNETIC ACTUATOR

Rotate and Hold Design

FEATURES

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 2-PORT, 3/4” (19mm) HOSE CONNECTIONS
- FLOW: 6 GPM (23L/min) NOMINAL
- 12 VOLT, 24 VOLT
- LESS THAN 5 WATTS OF POWER USED
- LONG LIFE – DESIGN TARGET OF 250,000+
  CYCLES
- ENCLOSURE PROTECTION CLASS: IP-68
- FAIL-SAFE, SPRING RETURN

GLASS FILLED NYLON INLET/GLASS FILLED NYLON BODY W/ THERMO-MAGNETIC ACTUATOR

<table>
<thead>
<tr>
<th>P/N</th>
<th>DESCRIPTION</th>
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<tbody>
<tr>
<td>TRC101</td>
<td>12V, 5/8” x 5/8” NORMALLY CLOSED</td>
</tr>
<tr>
<td>TRC102</td>
<td>12V, 3/4” x 3/4” NORMALLY CLOSED</td>
</tr>
<tr>
<td>TRO101</td>
<td>12V, 5/8” x 5/8” NORMALLY OPEN</td>
</tr>
<tr>
<td>TRO102</td>
<td>12V, 3/4” x 3/4” NORMALLY OPEN</td>
</tr>
<tr>
<td>TRC201</td>
<td>24V, 5/8” x 5/8” NORMALLY CLOSED</td>
</tr>
<tr>
<td>TRC202</td>
<td>24V, 3/4” x 3/4” NORMALLY CLOSED</td>
</tr>
<tr>
<td>TRO201</td>
<td>24V, 5/8” x 5/8” NORMALLY OPEN</td>
</tr>
<tr>
<td>TRO202</td>
<td>24V, 3/4” x 3/4” NORMALLY OPEN</td>
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</tbody>
</table>
Thermo-Magnetic Actuator vs. Electro-Thermal Actuator

Power Comparison

Thermo-Magnetic Actuator vs. Electro-Thermal Actuator
Power Comparison

Performance Test

Notes: Tested @ 70°F, No external load, 28 VDC
ELECTRO-THERMAL ACTUATOR

FEATURES

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 2-PORT, 3/4” (19mm) HOSE CONNECTIONS
- FLOW: 6 GPM (23L/min) NOMINAL
- FAIL-SAFE, SPRING RETURN
- 12VDC, 24VDC OPERATION
- OPERATING TEMPERATURE RANGE -20°F to 180°F (-28°C TO 82°C)

740 SERIES - GLASS FILLED NYLON INLET/GLASS FILLED NYLON BODY W/ ELECTRO-THERMAL ACTUATOR

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>740975WV</td>
<td>5/8&quot; x 5/8&quot; 12 Volts Std. NC specify NO</td>
<td></td>
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<tr>
<td>740976WV</td>
<td>3/4&quot; x 3/4” 12 Volts Std. NC specify NO</td>
<td></td>
</tr>
<tr>
<td>740982WV</td>
<td>5/8&quot; x 5/8” 12 Volts Std. NC specify NO</td>
<td></td>
</tr>
<tr>
<td>740984WV</td>
<td>3/4” x 3/4” 12 Volts Std. NC specify NO</td>
<td></td>
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5/8”, 3/4” NIPPLE/BODY ARE INTERCHANGEABLE – PLEASE SPECIFY
740975WV
5/8" x 5/8"
12V- Normally Closed

Note:
2 lb Load @ 70°F
## VACUUM ACTUATOR
### 266-SERIES 4-PORT

**FEATURES**
- **4-PORT**: 4 x 5/8” (16mm) HOSE CONNECTIONS
- **FLOW**: 6 GPM (23L/min) NOMINAL
- **VACUUM ACTUATOR**: 6.2-10 inHg
- **MEETS OEM SPECIFICATIONS**

**Part Number** | **Description**
--- | ---
266-67727-51 | Replaces M-56315-59, -22, and -24
266-67727-52 | Replaces M-56315-6
266-67727-53 | Replaces M-56315-7, -12, and -18
266-67727-54 | Replaces M-56315-11, -25, and -40
266-67727-55 | Replaces M-56315-19, and -20
266-67727-56 | Replaces M-56315-11, -25, and -40

All drawings show “Flow Direction” from left to right →
Part Number | Description
------------|-------------
266-67727-57 | Replaces M-56315-57
266-67727-58 |

Part Number | Description
------------|-------------
266-67727-59 |

Normally Open — No Power

Open Position

Power Applied Closes

Closed Position

Heater Control Valves

VACUUM ACTUATOR
266-SERIES 4-PORT

(CONTINUED)
VACUUM ACTUATOR
V-SERIES 2-PORT

**FEATURES**

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 2-PORT 3/4” (19mm) HOSE CONNECTIONS
- FLOW: 6 GPM (23L/min) NOMINAL
- BI-DIRECTIONAL
- SHUT-OFF CAPABLE
- VACUUM ACTUATOR: 6.2-10 inHg
- MEETS OEM SPECIFICATIONS
- COMPACT DESIGN
- FAIL-SAFE, SPRING RETURN

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>V2P625NO</td>
<td>5/8” X 5/8” NORMALLY OPEN</td>
</tr>
<tr>
<td>V2P625NC</td>
<td>5/8” X 5/8” NORMALLY CLOSED</td>
</tr>
<tr>
<td>V2P750NO</td>
<td>3/4” X 3/4” NORMALLY OPEN</td>
</tr>
<tr>
<td>V2P750NC</td>
<td>3/4” X 3/4” NORMALLY CLOSED</td>
</tr>
<tr>
<td>V2P6H7NO</td>
<td>5/8” X 3/4” NORMALLY OPEN</td>
</tr>
<tr>
<td>V2P6H7NC</td>
<td>5/8” X 3/4” NORMALLY CLOSED</td>
</tr>
<tr>
<td>V2P7H6NO</td>
<td>3/4” X 5/8” NORMALLY OPEN</td>
</tr>
<tr>
<td>V2P7H6NC</td>
<td>3/4” X 5/8” NORMALLY CLOSED</td>
</tr>
</tbody>
</table>
VACUUM ACTUATOR
266-SERIES 2-PORT

FEATURES

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 2-PORT, 3/4” (19mm) HOSE CONNECTIONS
- FLOW: 6 GPM (23L/min) NOMINAL
- INTERNAL BY-PASS RATE: 10cc/min MAX
- MEETS OEM SPECIFICATIONS
- FAIL-SAFE, SPRING RETURN

All drawings show “Flow Direction” from left to right →

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>266-67625</td>
<td>5/8” x 5/8” Normally Open</td>
</tr>
<tr>
<td>266-68936</td>
<td>5/8” x 5/8” Normally Closed</td>
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<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>266-67750</td>
<td>3/4” x 3/4” Normally Open</td>
</tr>
<tr>
<td>266-67751</td>
<td>3/4” x 3/4” Normally Closed</td>
</tr>
</tbody>
</table>
CABLE PULL C-SERIES 2-PORT

FEATURES

- 2-PORT, 5/8” (16mm) HOSE CONNECTIONS
- 2-PORT, 3/4” (19mm) HOSE CONNECTIONS
- FLOW: 6 GPM (23L/min) NOMINAL
- SHUT-OFF CAPABLE
- BI-DIRECTIONAL VALVE
- COMPACT DESIGN
- PULL TO OPEN
- PULL TO CLOSE

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>C2P625PO</td>
<td>5/8” X 5/8” PULL TO OPEN</td>
</tr>
<tr>
<td>C2P625PC</td>
<td>5/8” X 5/8” PULL TO CLOSE</td>
</tr>
<tr>
<td>C2P750PO</td>
<td>3/4” X 3/4” PULL TO OPEN</td>
</tr>
<tr>
<td>C2P750PC</td>
<td>3/4” X 3/4” PULL TO CLOSE</td>
</tr>
<tr>
<td>C2P6H7PO</td>
<td>5/8” X 3/4” PULL TO OPEN</td>
</tr>
<tr>
<td>C2P6H7PC</td>
<td>5/8” X 3/4” PULL TO CLOSE</td>
</tr>
<tr>
<td>C2P7H6PO</td>
<td>3/4” X 5/8” PULL TO OPEN</td>
</tr>
<tr>
<td>C2P7H6PC</td>
<td>3/4” X 5/8” PULL TO CLOSE</td>
</tr>
</tbody>
</table>
WARRANTY

THERMOTION, LLC warrants that the products manufactured by it are free from defects in material and workmanship. Seller’s liability under this warranty shall be limited to the repair or replacement - at Seller’s sole discretion - of any products it finds defective under this warranty, upon return of product per its RETURNS policies.

DURATION: The warranty period shall begin on the date of shipment to the first purchaser and extend for twelve (12) months.

DISCLAIMER: Purchaser shall be solely responsible for determining suitability for use and in no event shall THERMOTION be liable in this respect.

LIMITATION OF LIABILITY: SELLER MAKES NO OTHER WARRANTY OR REPRESENTATION OF ANY KIND WHATSOEVER, EXPRESSED, OR IMPLIED, EXCEPT THAT OF TITLE AND ALL IMPLIED WARRANTIES, INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED.
A Certified Quality Management System

ISO 9001: 2008 WITH DESIGN

THERMOTION LLC
CERT. # 02.009.1

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