## Specifications

**Fluid Supply:**
642 Series proportional valves are intended to operate with constant supply pressure.

**Supply Pressure:**
- Minimum: 500 psi (350 bar) max. (15 to 210 bar);
- 5,000 psi is optional.

**Proof Pressure:**
150% of supply pressure at P, A & B ports; maximum at R port (with internal pilot return).

**Fluid:**
Compatible with common hydraulic fluids. Recommended viscosity range: 60-450 SUS @ 100°F (10-97 cSt @ 38°C).

**Cleanliness Level:**
ISO DIS 4406 code 16/13 max.; 14/11 recommended.

**Operating Temperature:**
- -4°F to 175°F (-2°C to 80°C)

**Rated Flow Tolerance:** ±10%

**Hysteresis:** <1.5%

**Threshold:** <0.25%

**Null Shift:**
- with temperature, 100°F variation: <1.5%

**Null Leakage:** <1.5 gpm (6 lpm)

**Frequency Response:**
See figures 1 and 2.

**Step Response:**
See figures 3 and 4.

* at 2,000 psi (140 bar) pilot supply pressure

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The 642 Series Proportional Valve is suitable for position, velocity or load-control systems on high speed and force level equipment. These high flow valves are multi-stage devices consisting of a separate pilot valve and sliding spool main stage spool is measured by a non-contacting position transducer. Integrated servoelectronics provide on to the transducer, condition its output, and close the loop around the main stage spool.

The design features of these valves include integral drive electronics to simplify installation and setup; an international mounting pattern conforming to ISO 4401 from A16 (CETOP 7); provisions for internal and external pilot supply and return; and available spool position signal for interconnection to other controls or to assist with setup and trouble-shooting.

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**Available Flow and Spool Configurations**

<table>
<thead>
<tr>
<th>Model</th>
<th>Type</th>
<th>Rated Flow (1,000 psi, 4-way)</th>
<th>Spool Type</th>
<th>4-way Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>642-5515</td>
<td>Stub-Shafted, 2-stage</td>
<td>150</td>
<td>&lt;3%</td>
<td>curvilinear</td>
</tr>
<tr>
<td>642-5529</td>
<td>Stub-Shafted, 2-stage</td>
<td>150</td>
<td>20%</td>
<td>curvilinear</td>
</tr>
<tr>
<td>642-3301</td>
<td>Full Area Spool, 3-Stage</td>
<td>150</td>
<td>&lt;3%</td>
<td>curvilinear</td>
</tr>
<tr>
<td>642-3302</td>
<td>Full Area Spool, 3-Stage</td>
<td>150</td>
<td>20%</td>
<td>curvilinear</td>
</tr>
</tbody>
</table>

Optional designs are available with special flow null cuts. Available seal materials: BUNA-N (Std.), VITON, or EPR.
3-STAGE VERSION
MODEL NUMBERS:
642-3301, 3302

2-STAGE VERSION
MODEL NUMBERS:
642-5515, 5529

ELECTRICAL CONNECTOR MATES WITH MOOG CONTROLS P/N 49054F14S6S (MS3106F14S-6S)

SPOOL POSITION ELECTRICAL NULL ADJUST

2X Ø .813 [20.65] DEPTH SHOWN - FARSIDE

4X Ø .626 [15.90] TO DEPTH SHOWN .052 [1.32] O Ø .008 [0.20] M

2X Ø .562 [14.27] DEPTH SHOWN .052 [1.32] O Ø .013 [0.33] M

6X Ø .422 [10.72] THRU Ø .672 [17.07] TO DEPTH SHOWN - FARSIDE

ELECTRICAL CONNECTOR MATES WITH MOOG CONTROLS P/N 49054F14S6S (MS3106F14S-6S)

SPOOL POSITION ELECTRICAL NULL ADJUST

2X Ø .18 [4.6] O Ø .12 [3.0] MAX

COMMON

A
B
C
D
E
F

+15V ±3% (200mA MAX)
-15V ±3% (200mA MAX)

INPUT SIGNAL (+10V)

SPOOL POSITION OUTPUT

POSITIVE SIGNAL AT PIN 'E' RESULTS IN FLOW OUT PORT 'B'.
POSITIVE SIGNAL AT PIN 'D' RESULTS IN FLOW OUT PORT 'A'.

INPUT SIGNAL (+10V)

OPTICAL INPUTS INCLUDE ±10MA, AND 4-20MA (CONTACT FACTORY).

STANDARD ELECTRICAL CONFIGURATION

-4 I I
-5 E I
-6 E E
-7 I E

ACCESSION RIES

Flushing Block: P/N A72037-1
Mating Electrical Connector: P/N 49054F14S6S (MS3106F14S-6S)

Suggested Mounting Bolts:

375-24 UNF x 2.50 long (4):
P/N A01410-540
.925-28 UNF x 2.25 long (2):
P/N A01408-536

Subplate:

for pressures to 5,000 psi (350 bar):
4-way operation: P/N A55693AM1
3-way operation: P/N A72128AM1

Pilot Stage Filters:

61-6XXC:B40414-1
760-XXX:A01713-1

NOTES

Valve Weight: 24.2 lb (11.0kg)
Base O-Ring Size:
(4 req’d) P/N 45122-129 (univ.-118)
(2 req’d) P/N 45122-22 (univ.-13)

Null Adjust: Flow out of port A
will increase with counterclockwise rotation of null adjust potentiometer
(4-turn potentiometer under screw plug).

Surface Finish:
Surface to which valve is mounted requires a finish, flat within 0.001 [0.02] TIR.

Ordering Information
(When ordering, add a dash number after model. I = Internal, E = External)

-4 I
-5 E
-6 E
-7 I

MOOG
Industrial Controls Division
Moog Inc., East Aurora, NY 14052-0018
Telephone: 716/655-3000
Fax: 716/655-1803
Toll Free: 1-800-272-MOOG