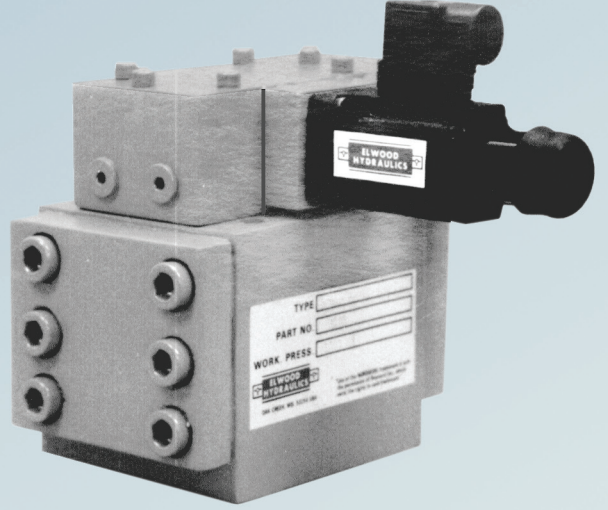


HIGH FLOW / FAST RESPONSE 3-WAY SERVO CONTROL VALVE

www.elwood.com



ELWOOD[®] **FLUID**
POWER

ISO 9001
CERTIFIED COMPANY

Elwood 3-Way Pressure Control Valve

The Elwood 3-Way Pressure Control Valve is designed to accurately maintain a controlled pressure for 97/3 high water content fluid, but is also suitable for other low viscosity fluids and mineral oil, and an optional version is available for use with raw water upon request. The valve is commanded by an electrical signal from the closed loop controller to the proportional/servo solenoid.

- This valve is designed for sub plate or manifold mounting.
- When the valve is operated from a suitable current source, such as the Elwood
 - Closed Loop Controller, the pressure feedback signal is used to accurately control
 - a set pressure. The controller, by varying the solenoid command signal, will supply fluid to the system or relieve fluid from the system.
- The valve is constructed with main body assembly containing the supply spool and
 - relief spool. The upper body contains proportional/servo pilot control section, along
 - with a manually set relief to limit maximum pressure.

Closed Loop Control

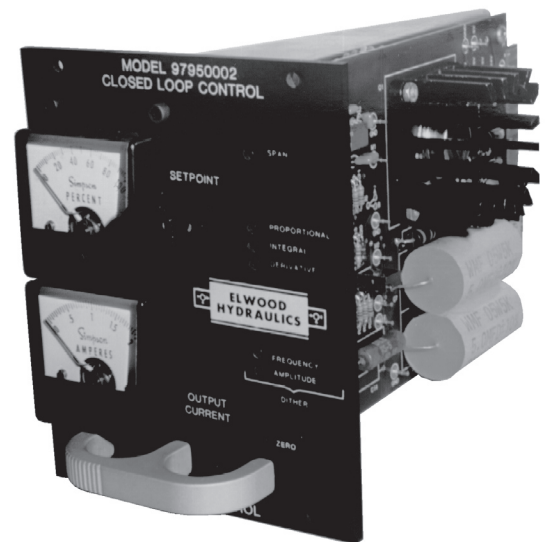
Description:

The Model 9795-0002 accepts a command signal and provides current to operate the valve solenoid. The module is equipped with an integral power supply operating from line voltage.

An analog meter indicates the command signal in percent and an analog meter indicates the output current in amperage.

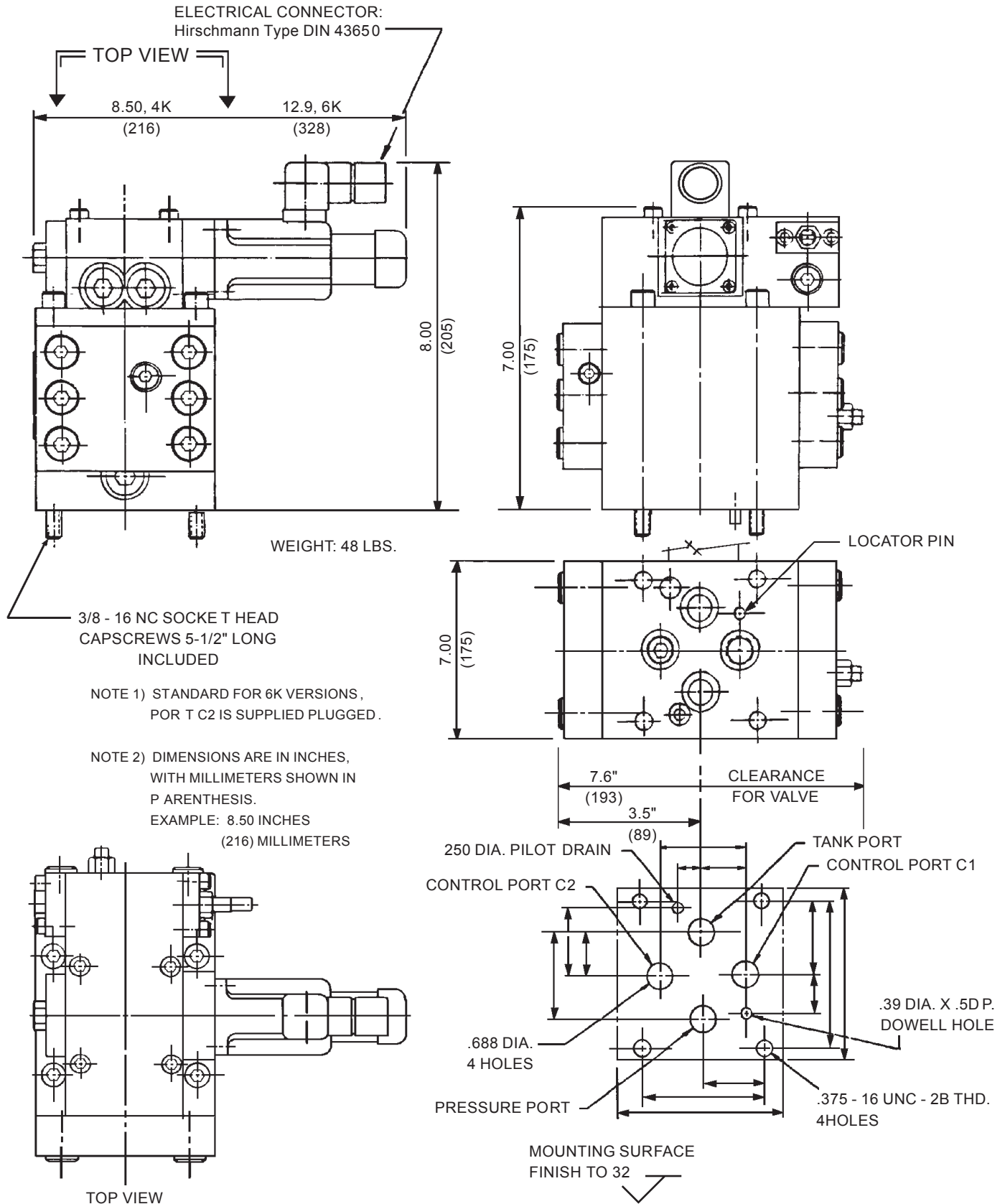
The Model 9795-0002 provides a flow proportional to the command signal.

The Model 9795-0002 can be sub-panel mounted utilizing the Model 9795-0006 enclosure or may be rack mounted using the Model 9795-0007 enclosure.

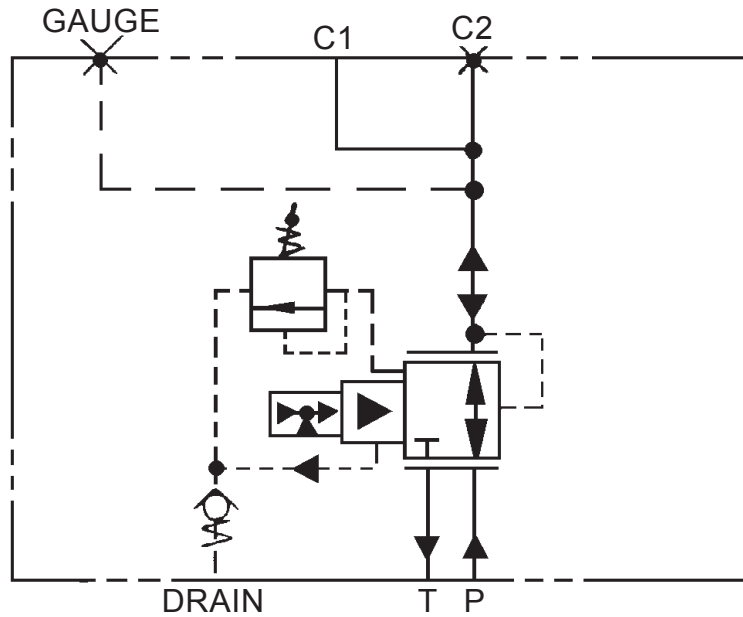


The Elwood Hydraulics Analog Valve controller has been designed, as an active interface, to directly drive a proportional valve from a low level setpoint signal. This setpoint signal can be either supplied by the user from a remote location, or the controller can be hardwired to use its front panel setpoint potentiometer.

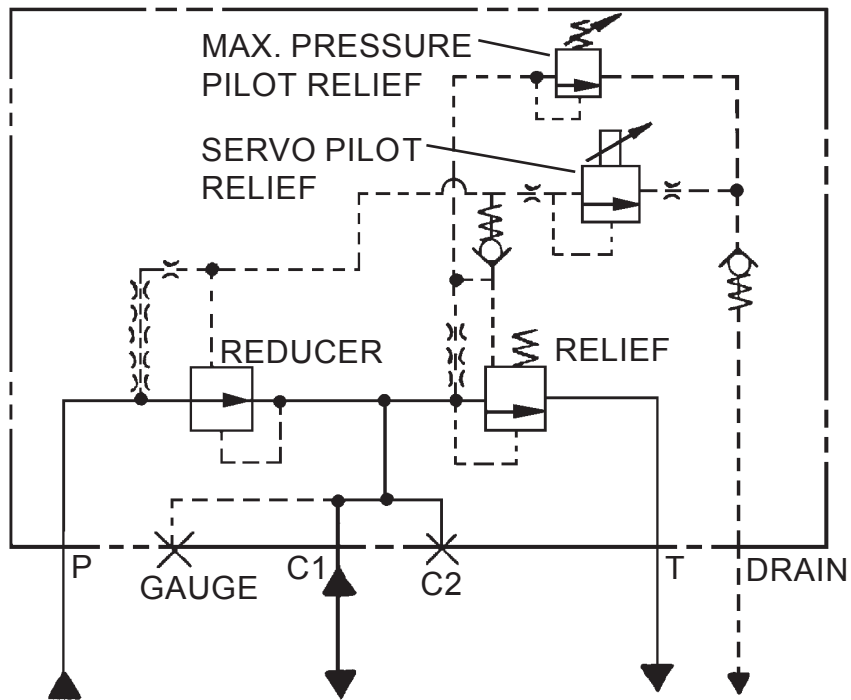
General Arrangement



Simplified Schematic



Complete Schematic



Technical Data

Electrical Characteristics:

Type of Solenoid Supply: Direct Current

| Solenoid | (4K) | (6K) |
|-----------------------|---|---------------------|
| Resistance | 10.59 Ohms | 6.95 Ohms |
| Power: | 22 Watts Continuous | 36 Watts Continuous |
| Inductance | Current Build-up, 364 mh Current Decay, 145 mh | 93.8 mh 22.5 mh |
| Electrical Connector: | Hirshmann Type DIN 43650 | |
| Insulation: | Exceeds NEMA Class B Requirement | |

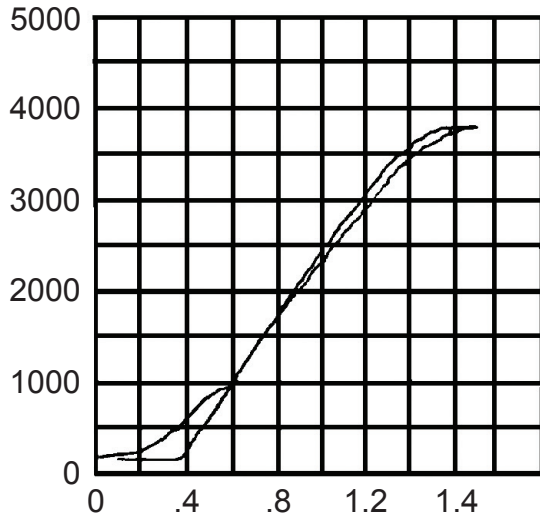
Hydraulic Characteristics:

| | |
|--|--|
| Maximum Inlet Pressure: | 6000 PSI (414 bar) |
| Maximum Recommended Control Pressure: | (4K)---3800 psi (262 bar) (6K)---5800 psi (400 bar) |
| Minimum Recommended Control Pressure 6K: | 395 psi (27 bar) Approximately |
| Minimum Recommended Control Pressure 4K: | 305 psi (21 bar) |
| Minimum Pressure: | 145 psi (10 bar) Approximately |

Note: Inlet pressure should be a minimum of 200 psi (14 bar) above maximum control pressure

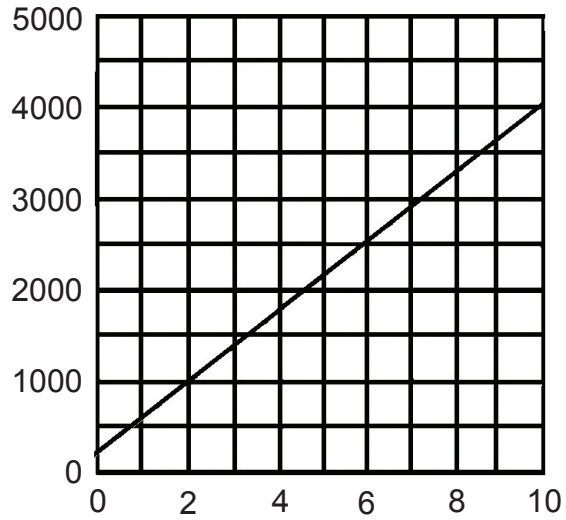
| | |
|----------------------------------|---|
| Pilot Drain Flow: | 0.67 GPM (2.5 l/min.) with Inlet at 3500 psi (241 bar) and 145 psi (10 bar) Minimum Pressure (zero solenoid current). |
| Pilot Drain Flow: | 0.46 GPM (1.7 l/min.) with Inlet 3500 psi (241 bar) and Control Pressure 2000 psi (138 bar) |
| Rated Flow (No Load): | 40 GPM (151 l/min.) at 500 psi DP (34 bar) 70 GPM (265 l/min.) at 1000 psi DP (69 bar) |
| Hysteresis Closed Loop: | Less than 1%, Repeatability Closed Loop: ± 0.5 % |
| Hydraulic Fluid: | HWCF, 97/3 Soluble Oil in Water, Synthetics Mineral Oil and Kerosene (Raw Water Version Available) |
| Viscosity Range at 100°F (38°C): | 20 SSU (1.2 Cst.) to 1800 SSU (385 Cst.) |
| Recommended Filtration: | 40 Micron |
| Fluid Temperature: | HWCF 35 to 160°F (2 to 71°C) Mineral Oil, 5 to 160°F (-15 to 71°C) |

Performance Data



SOLENOID CURRENT IN AMPERES

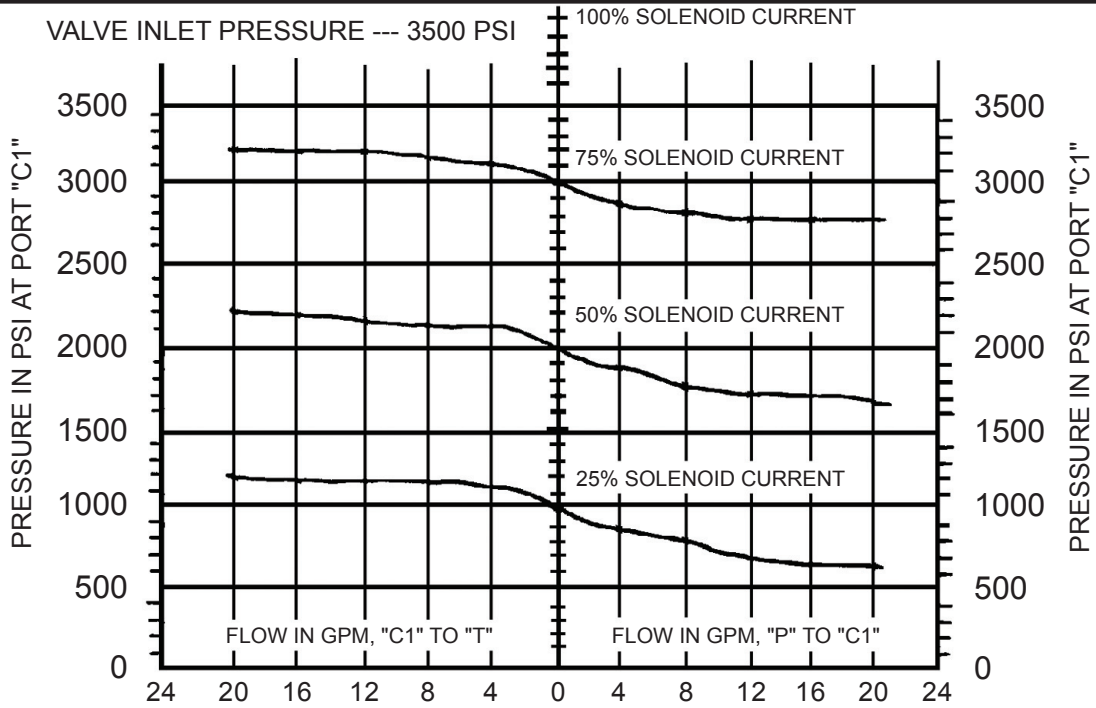
CURRENT vs. PRESSURE



INPUT VOLTAGE TO CONTROLLER

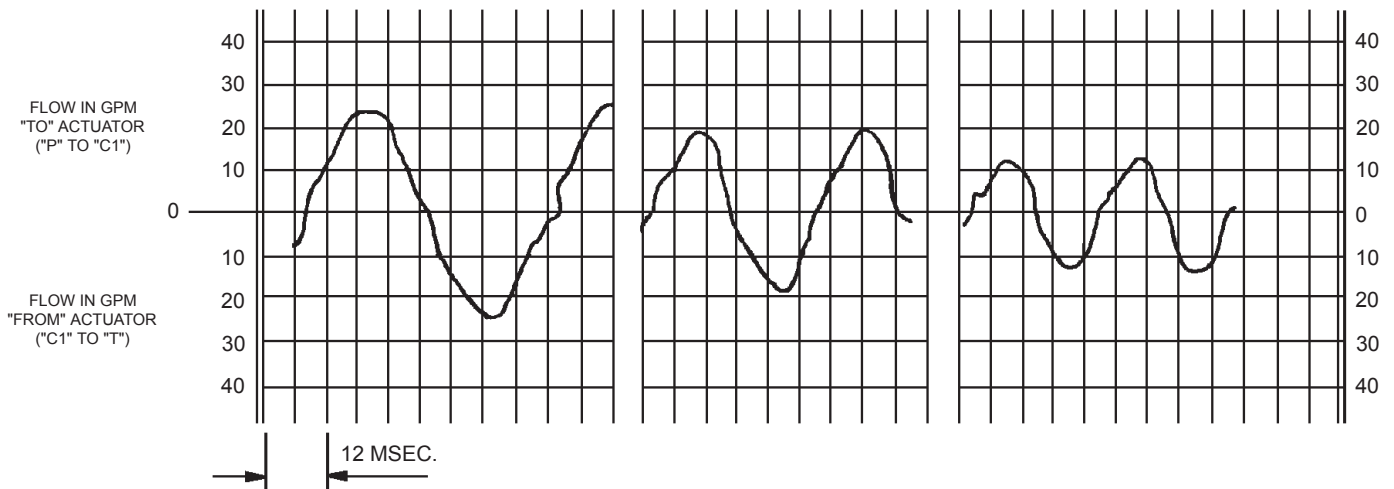
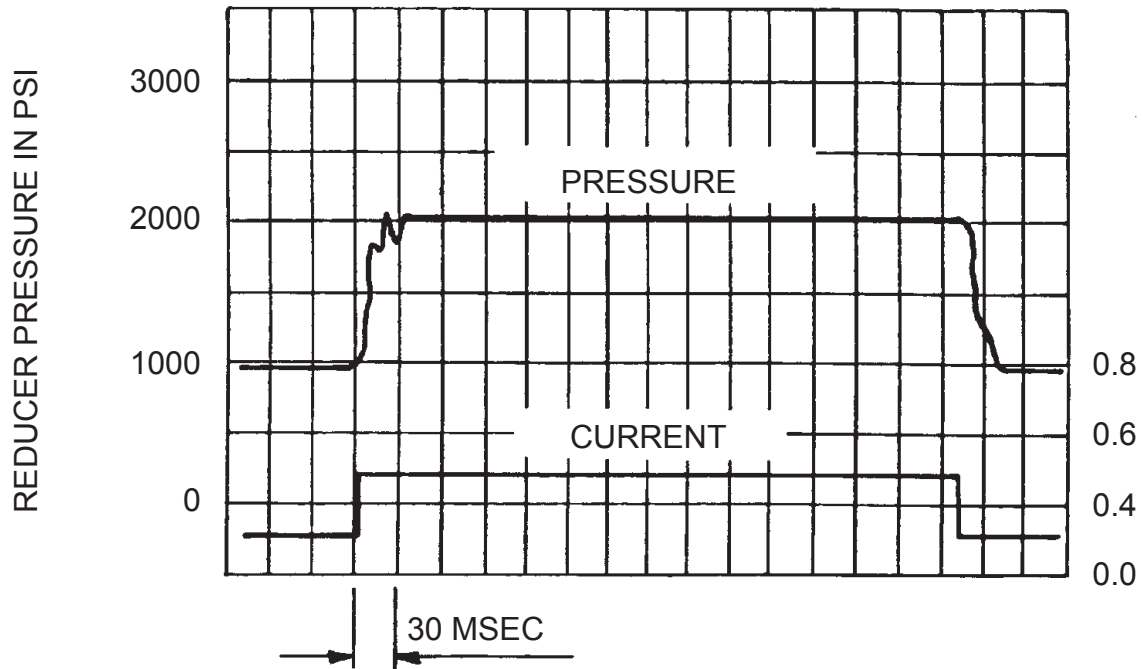
"CLOSED LOOP" COMMAND SIGNAL vs. PRESSURE

Actuator Flow



TYPICAL "OPEN LOOP" PRESSURE vs. FLOW RELATIONSHIP

Typical Pressure Step Response Time



TYPICAL FLOW "TO" AND "FROM" A 2.0 DIA. ACTUATOR AT 2100 PSI REDUCED PRESSURE WITH A SOLENOID CURRENT AMPLITUDE OF 800 ma PEAK TO PEAK

Ordering Data Servo Control Valve

3SV - A3 - 6K - * - SR - 1C - M

3-WAY SERVO CONTROL VALVE

| SIZE | INCH (MM) |
|------|------------|
| P2 | 1/2 (12.7) |
| A3 | 3/4 (19.5) |
| • B4 | 1 (25.4) |

| PRESSURE RANGE | |
|----------------|--------------------|
| 2K | 2000 PSI (138 BAR) |
| 4K | 4000 PSI (276 BAR) |
| 6K | 6000 PSI (414 BAR) |

• STANDARD

| MOUNTING | |
|----------|----------|
| M | MANIFOLD |

| COIL | |
|------|-------------|
| 1C | SINGLE COIL |

| | |
|-------|-------------------|
| SR | STANDARD RESPONSE |
| • SR1 | HIGH RESPONSE |

| | |
|-----------------------------|---------|
| * 6K MODEL HAS PORT PLUGGED | |
| INDICATE PREFERENCE | |
| C1 | PORT C1 |
| • C2 | PORT C2 |

Controller and mounting rack are ordered separately