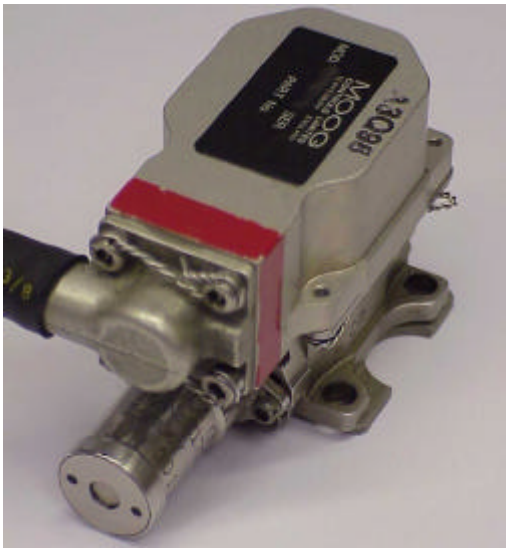
Ashchurch, Tewkesbury, Glos. GL20 8NA Tel: (01684) 296600 Fax: (01684) 278410

Moog Controls Limited

Series 50 Valve with Spool position Feedback



Description

This special version of the MOOG E050 series motorsport servovalve incorporates an integral L.V.D.T. position sensor. The L.V.D.T. (Linear Variable Differential Transformer) allows the valve spool position to be continuously monitored during normal operation.

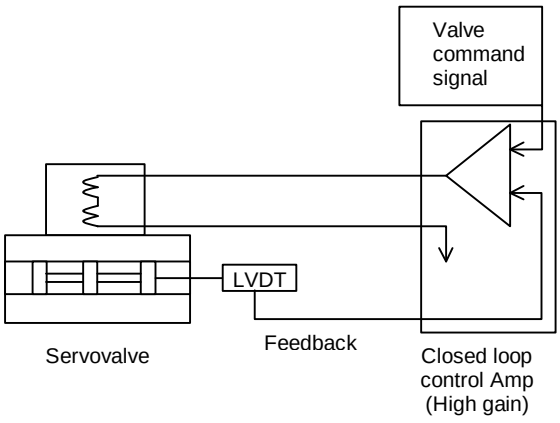
Typical applications for this valve include high-resolution control systems and servovalve condition monitoring for safety critical systems (see below).

Design Features

⇒ Standard series 30 port pattern
⇒ Small size and weight, for motorsport applications
⇒ Rugged construction suitable for motorsport applications
⇒ Integral spool position sensor
⇒ L.V.D.T. sensor is non-contacting giving extended life
⇒ Single flying lead incorporates connections for both the valve drive signal and spool position sensor.

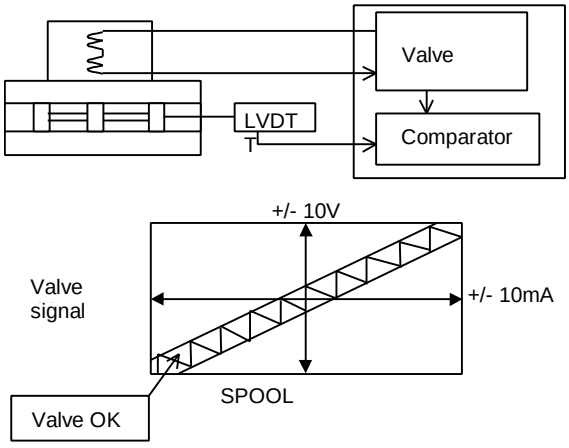
Typical Applications

Valve configured as high-resolution control valve



N.B. Using a high gain electronic controller in the above configuration allows very high valve resolution (typically 0.2%) and minimal null drift

Valve condition monitoring



N.B. Monitoring the difference between demand and actual spool position can sense a spool position error in less than 2mS.

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Specifications

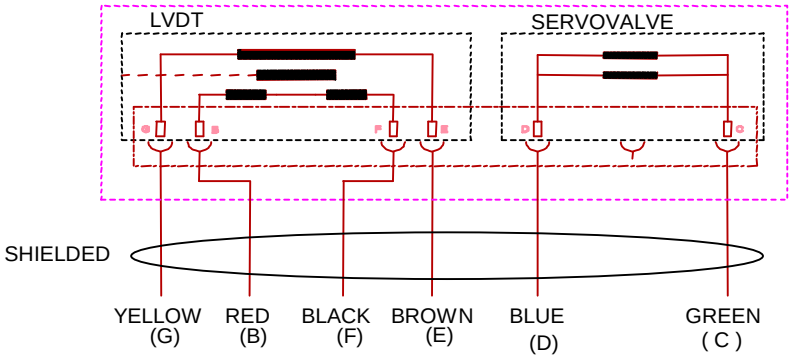
Rated flow at 70 bar	5.0 lpm
Max. Supply pressure	210 bar
Rated Current	
Series coils	5 mA
Parallel coils	10 mA
Resistance per coil	900-1100 Ω ± 10%
Inductance per coil	0.25 H
Null Leakage at 70 bar	<0.7 lpm
Operating temperature	-20°C to + 135°C
Mass of valve + Cable	0.245 kg

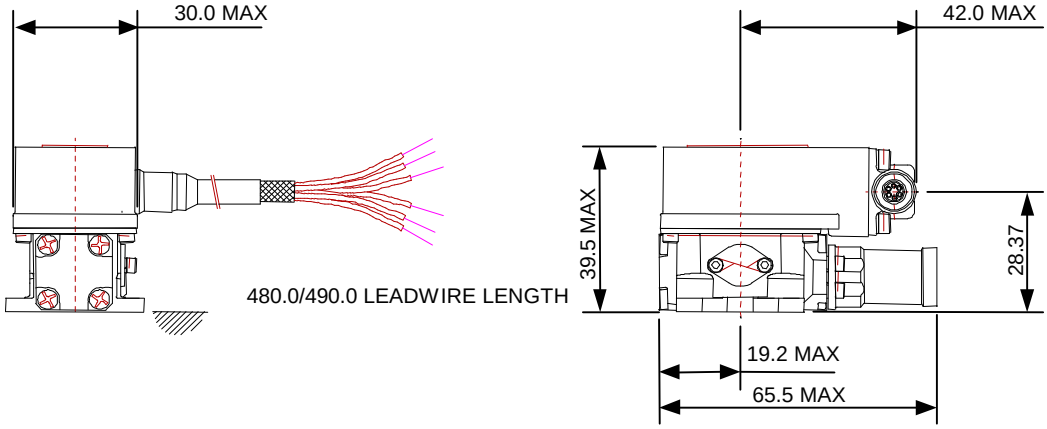
Performance *

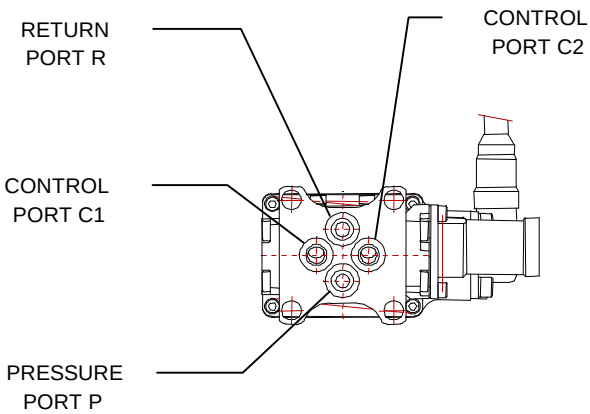
Threshold	<0.5%
Hysteresis	<3.0%
Linearity	< ± 7%
Symmetry	< ± 5%
Null Bias	< 2.0%
Frequency response	
90° phase lag	>150 Hz

*. Performance quoted using internal mechanical feedback spool position system.

Installation Details







NOTE: ALL DIMENSIONS IN MM