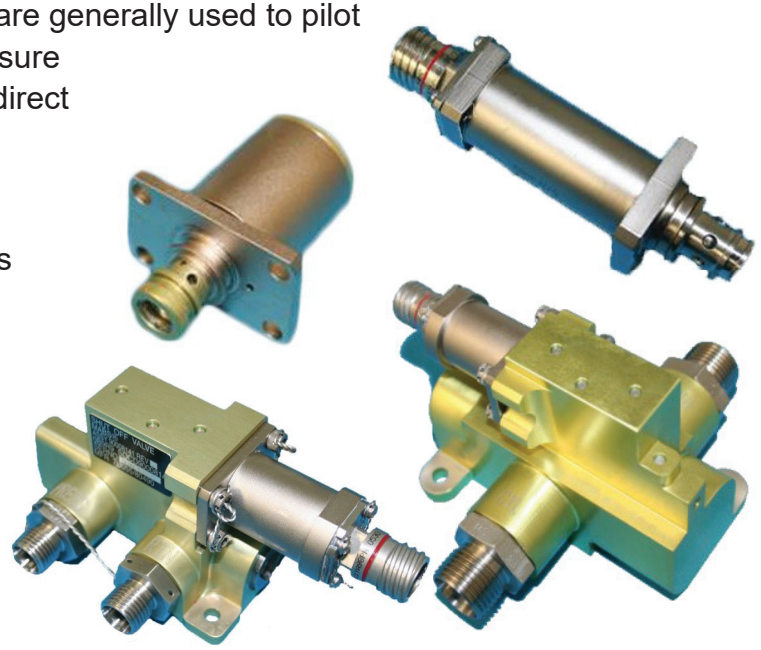
CRISSAIR INC.

SOLENOID OPERATED VALVES

Crissair Inc. designs and manufactures a variety of Solenoid Operated Valves: Direct Acting Solenoid Valves and Piloted Operated Shutoff Valves.

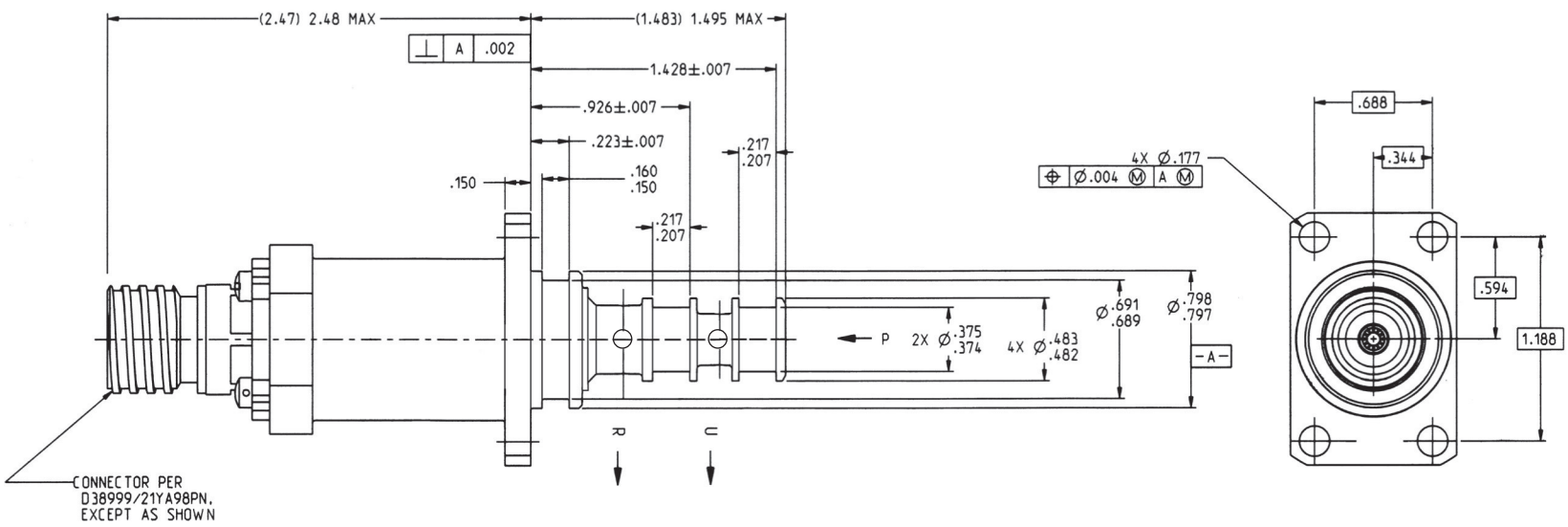
- Direct Acting Solenoid Valves have many uses in fluid control systems. For high pressure systems, they are generally used to pilot larger cylinders and spools. For lower pressure systems, they can be used to shut-off or redirect supply pressure.

- Pilot Operated Shut-off Valves are more complex in nature. A Pilot Solenoid Valve is packaged into a manifold which drives a larger Spool or Piston to redirect or shutoff system pressure and flow. In some cases, restriction and damping is added to improve and better control transient characteristics of pressure spikes and flow rates.



This catalog contains a small sample of drawings. Please contact Crissair for additional drawings and/or configurations.

PART NUMBER: 80370-X SOLENOID VALVE, 2POS 3WAY, NORMALLY CLOSED



PERFORMANCE SPECIFICATIONS:

FLUIDS: PHOSPHATE ESTER PER AS1241 TYPE IV CLASS 1 AND 2 AND AS1241 TYPE V*

MATERIAL: VALVE BODY 15-5PH CRES

NOMINAL SUPPLY PRESSURE: 3000 PSIG

TEMPERATURE RANGE: -67° TO 200°F

ENERGIZED FLOW: 0.5 GPM MINIMUM FROM PORT P TO U AT 3000 PSID

DE-ENERGIZED FLOW: 0.5 GPM MINIMUM FROM PORT U TO R AT 3000 PSID

INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 1 CC/MIN MAX

OPERATING VOLTAGE RANGE: 16 TO 32 VDC NOMINAL

COIL RESISTANCE: 42±2 OHMS AT 70°F

PULL-IN VOLTAGE: 13.5 VDC MAX AT 3000 PSID AND 80±20°F

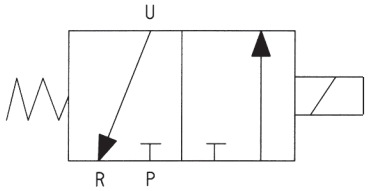
DROP-OUT VOLTAGE: 1.5 TO 7.5 VDC AT 3000 PSID AND 80±20°F

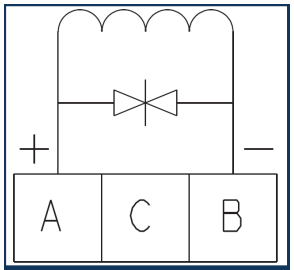
PEAK INVERSE VOLTAGE: ±60 VDC MAX

DUTY CYCLE: CONTINUOUS

*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

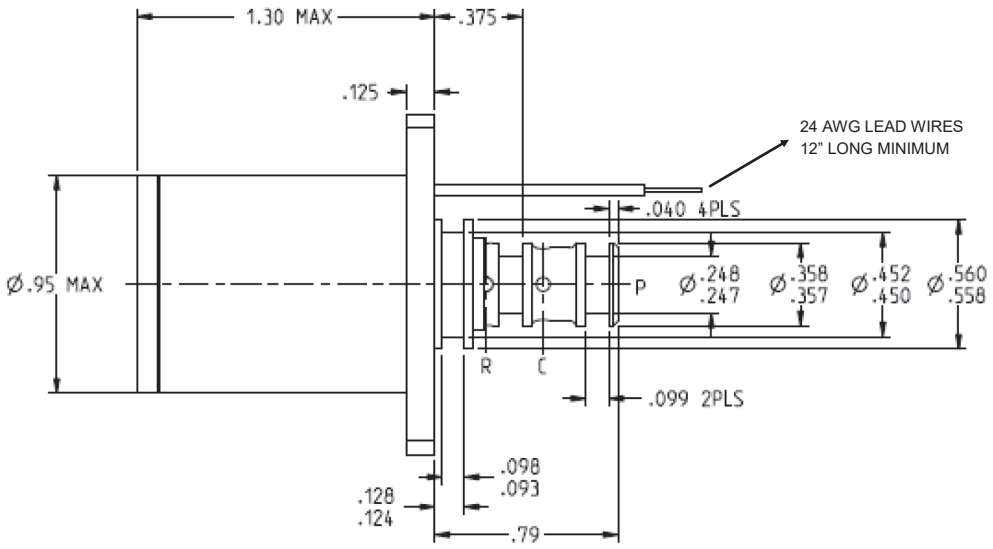
HYDRAULIC SCHEMATIC

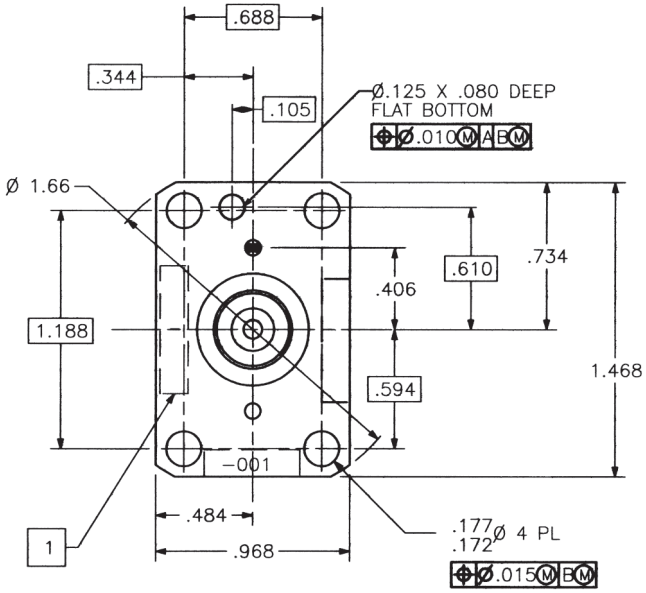




ELECTRICAL SCHEMATIC

PART NUMBER: 50700-X SOLENOID VALVE, 2POS 3WAY, NORMALLY CLOSED





PERFORMANCE SPECIFICATIONS:

FLUIDS: MIL-PRF-5606, MIL-H-6083, MIL-H-83282 OR MIL-PRF-83282*

MATERIAL: VALVE BODY 303 CRES

NOMINAL SUPPLY PRESSURE: 3000 PSIG

TEMPERATURE RANGE: -65 TO 275°F

ENERGIZED FLOW (PRESS TO CYL): 1.2 GPM MINIMUM AT 3000 PSID

DE-ENERGIZED FLOW (CYL TO RET): 1.2 GPM MINIMUM AT 3000 PSID

INTERNAL LEAKAGE IN ANY POSITION: 5 CC/MIN MAX AT 3000 PSID

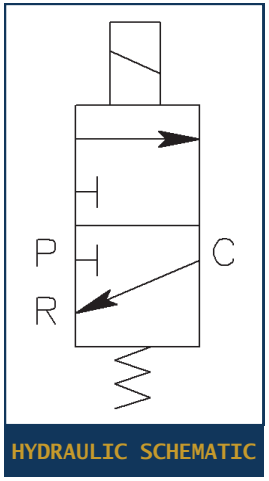
OPERATING VOLTAGE RANGE: 14 TO 30 VDC NOMINAL

COIL CURRENT: 1 AMP MAX AT 28 VDC AND 70°F

RESPONSE TIME (ENERGIZED AND DE-ENERGIZED): 30 MSEC MAX

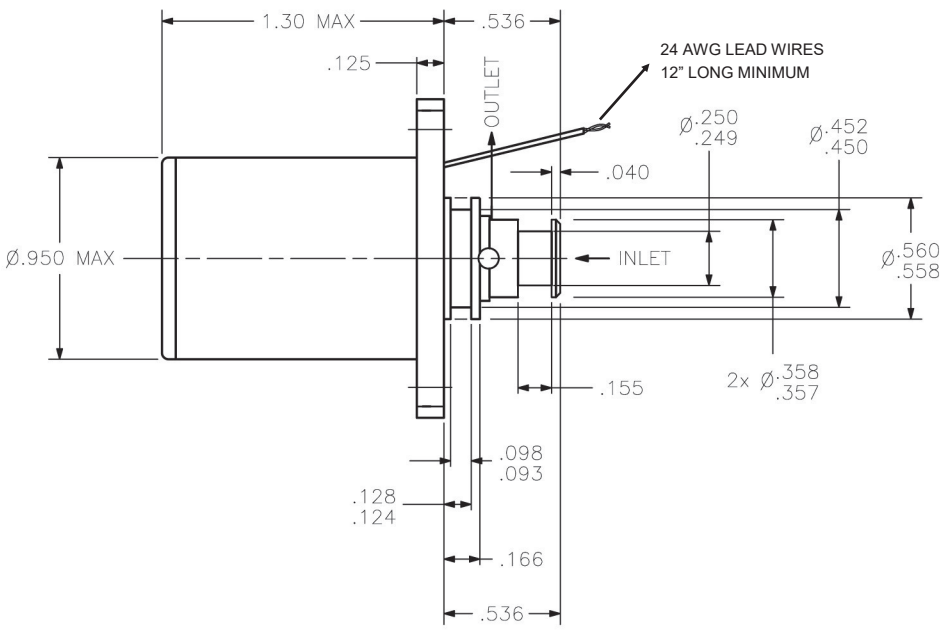
WEIGHT: 0.26 LBS MAX

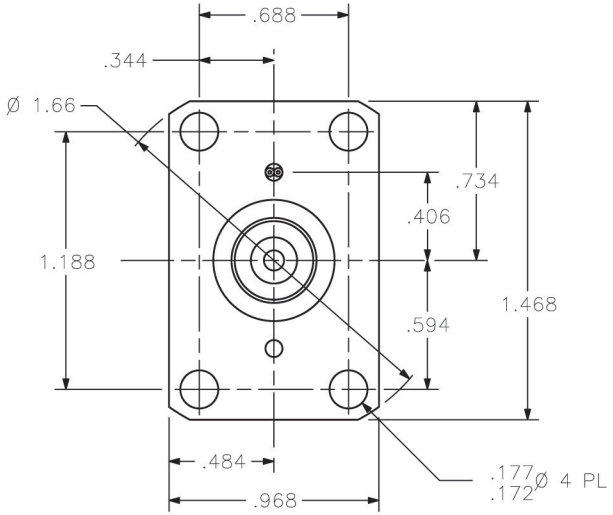
*PHOSPHATE ESTER FLUID ACCEPTABLE WITH ELASTOMER CHANGE



HYDRAULIC SCHEMATIC

PART NUMBER: 50710 SOLENOID VALVE, 2POS 2WAY, NORMALLY OPEN





PERFORMANCE SPECIFICATIONS:

FLUIDS: MIL-PRF-5606, MIL-H-6083, MIL-H-83282*

MATERIAL: VALVE BODY 303 CRES

NOMINAL SUPPLY PRESSURE: 3000 PSIG

TEMPERATURE RANGE: -65 TO 275°F

FLOW (ENERGIZED): 0.25 GPM MINIMUM AT 200 PSID

INTERNAL LEAKAGE (DE-ENERGIZED): 5 CC/MIN MAX AT 3000 PSID

OPERATING VOLTAGE RANGE: 18 TO 32 VDC NOMINAL

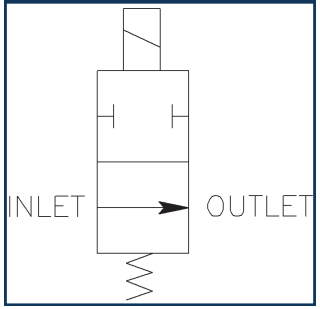
COIL CURRENT: 0.75 AMP MAX AT 28 VDC

RESPONSE TIME (ENERGIZED AND DE-ENERGIZED): 30 MSEC MAX

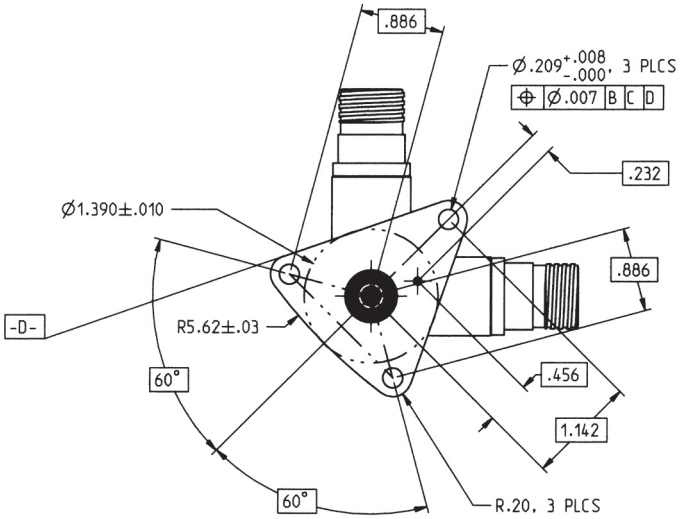
DUTY CYCLE: CONTINUOUS

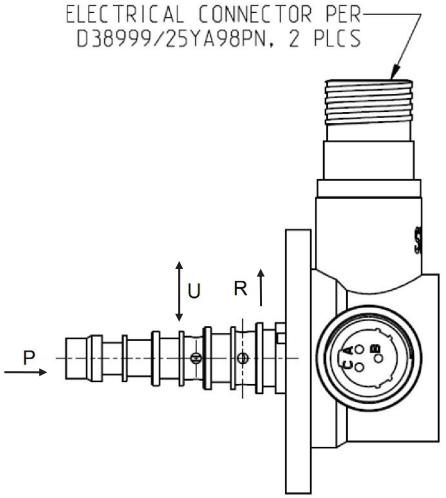
*PHOSPHATE ESTER FLUID ACCEPTABLE WITH ELASTOMER CHANGE

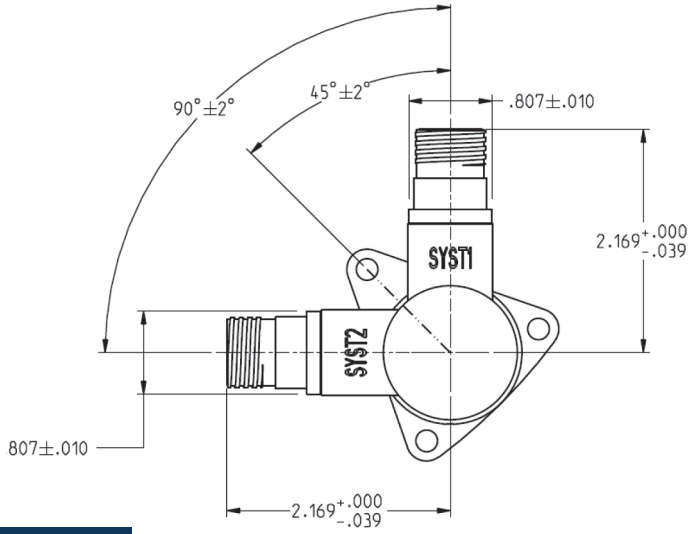
HYDRAULIC SCHEMATIC



PART NUMBER: 80050-X SOLENOID VALVE, 2POS 3WAY, NORMALLY CLOSED



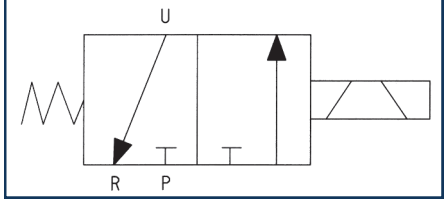




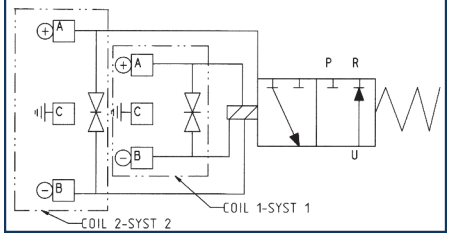
PERFORMANCE SPECIFICATIONS:

FLUIDS: LOW DENSITY PHOSPHATE ESTER FLUID TYPE IV, V*
MATERIAL: VALVE BODY 15-5PH CRES
NOMINAL SUPPLY PRESSURE: 3000 PSIG
ENERGIZED FLOW (P TO U): 0.198±0.026 GPM AT 3000 PSID MAX
DE-ENERGIZED FLOW (U TO R): 0.79 GPM MINIMUM AT 3000 PSID MAX
INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 1.0 CC/MIN MAX
OPERATING VOLTAGE RANGE: 26 TO 32 VDC
COIL RESISTANCE: 42±2 OHMS
PULL-IN VOLTAGE: 13.5 VDC MAX AT 3000 PSID AND 80±20°F
DROP-OUT VOLTAGE: 1.0 VDC MIN AT 1015 PSID AND 80±20°F
PEAK INVERSE VOLTAGE: ±60 VDC MAX
DUTY CYCLE: CONTINUOUS
WEIGHT: 0.595 LBS MAX
*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE

HYDRAULIC SCHEMATIC

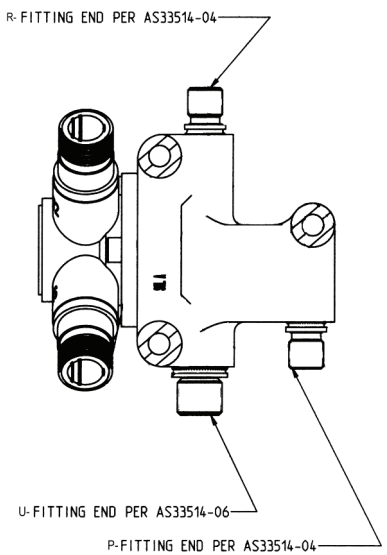


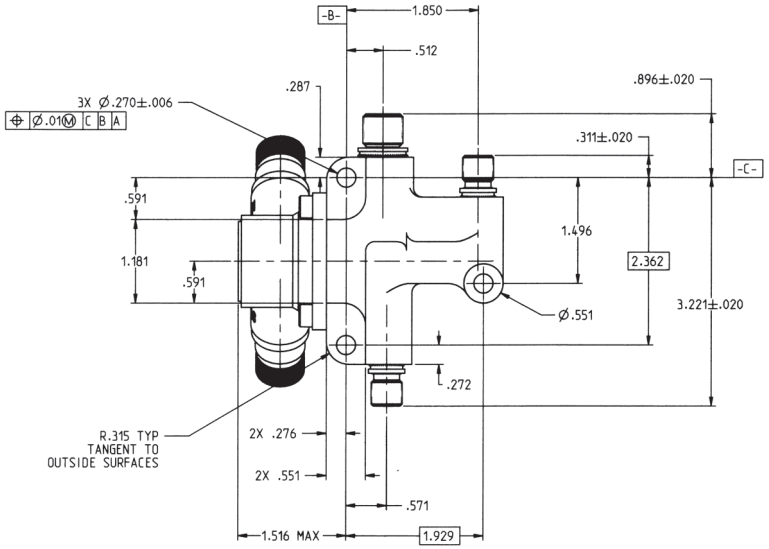
ELECTRICAL SCHEMATIC

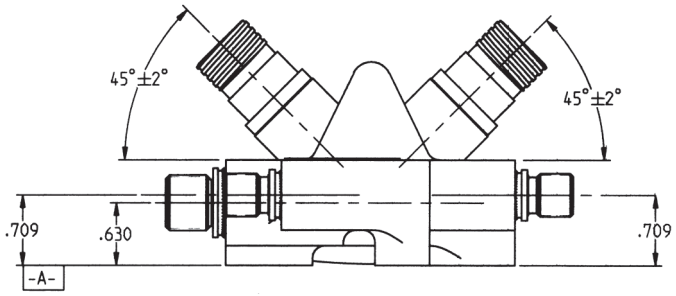


CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 80080-X, SOLENOID VALVE, 2POS 3WAY, NORMALLY CLOSED



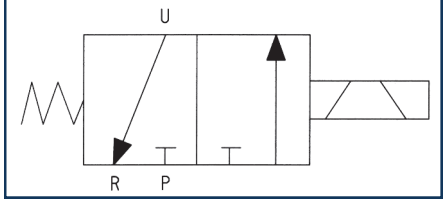




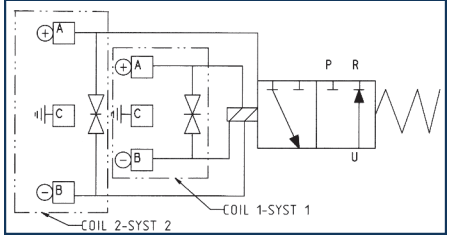
PERFORMANCE SPECIFICATIONS:

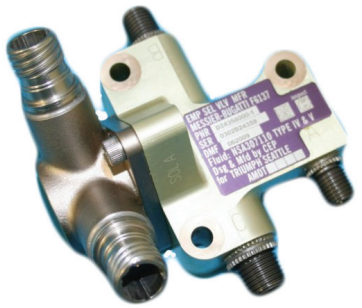
FLUIDS: LOW DENSITY PHOSPHATE ESTER FLUID TYPE IV, V*
MATERIAL: MANIFOLD 6061-T6 AL
NOMINAL SUPPLY PRESSURE: 3000 PSIG
ENERGIZED FLOW (P TO U): 0.198±0.026 GPM AT 3000 PSID MAX
DE-ENERGIZED FLOW (U TO R): 0.79 GPM MINIUM AT 3000 PSID MAX
INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 1.0 CC/MIN MAX
OPERATING VOLTAGE RANGE: 26 TO 32 VDC
COIL RESISTANCE: 42±2 OHMS
PULL-IN VOLTAGE: 13.5 VDC MAX AT 3000 PSID AND 80±20°F
DROP-OUT VOLTAGE: 1.0 VDC MIN AT 1015 PSID AND 80±20°F
PEAK INVERSE VOLTAGE: ±60 VDC MAX
DUTY CYCLE: CONTINUOUS
WEIGHT: 1.08 LBS MAX
*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE

HYDRAULIC SCHEMATIC



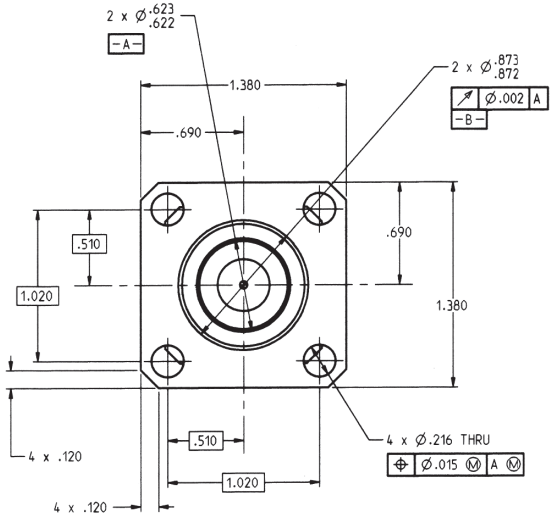
ELECTRICAL SCHEMATIC

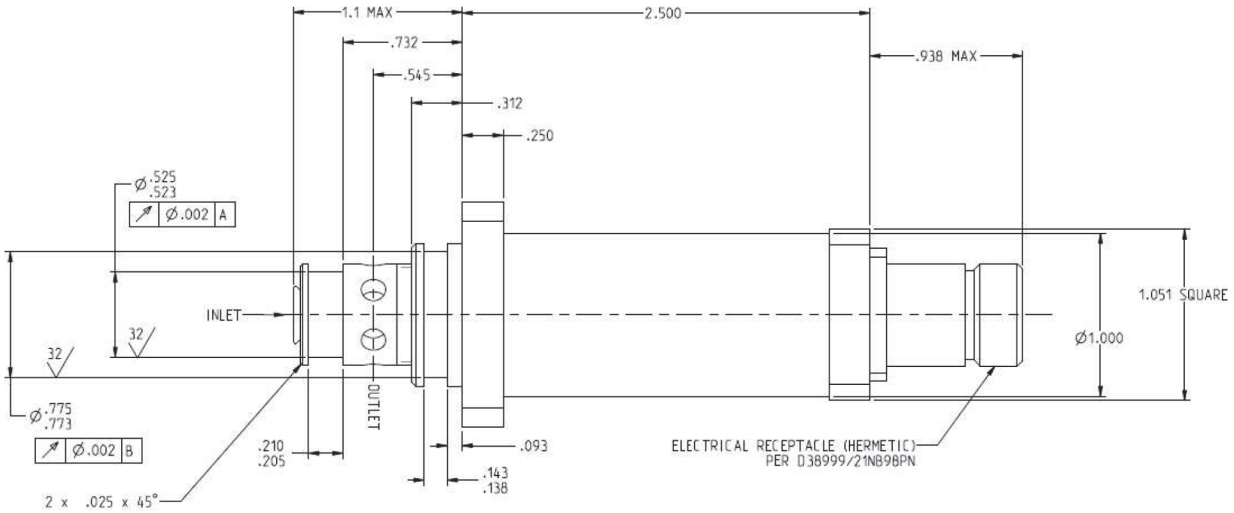




CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 34680-X SOLENOID VALVE, 2POS 2WAY, NORMALLY CLOSED

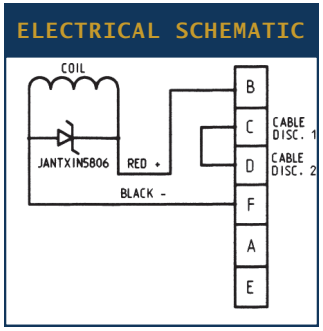




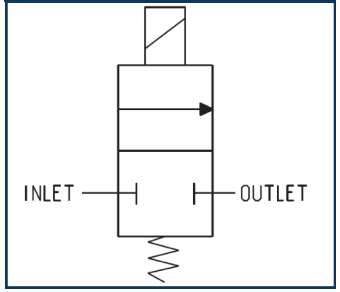
PERFORMANCE SPECIFICATIONS:

FLUIDS: MIL-H-46170 OR MIL-PRF-83282*
MATERIAL: VALVE BODY 440C CRES
NOMINAL SUPPLY PRESSURE: 1650 PSIG
TEMPERATURE RANGE: -25° TO 250°F
FLOW (ENERGIZED): 1.35 GPM MINIMUM AT 20 PSID
INTERNAL LEAKAGE (DE-ENERGIZED): 6 CC/MIN MAX @ 1650 PSID
OPERATING VOLTAGE RANGE: 18 TO 33 VDC NOMINAL
COIL CURRENT: 1 AMP MAX @ 28 VDC AND 70°F
RESPONSE TIME (ENERGIZED AND DE-ENERGIZED): 100 MSEC MAX
DUTY CYCLE: CONTINUOUS
WEIGHT: 0.70 LBS MAX
*PHOSPHATE ESTER FLUID ACCEPTABLE WITH ELASTOMER CHANGE

ELECTRICAL SCHEMATIC

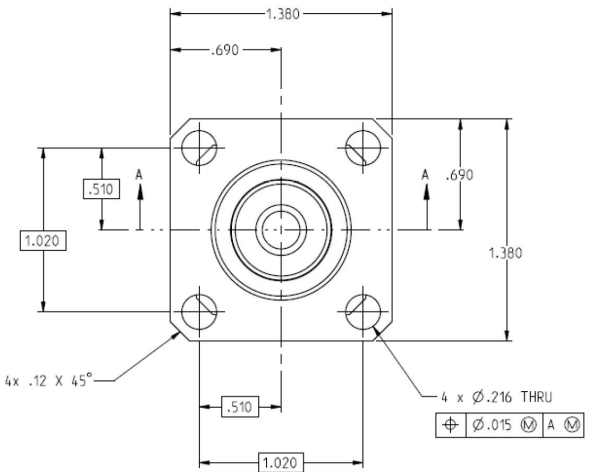


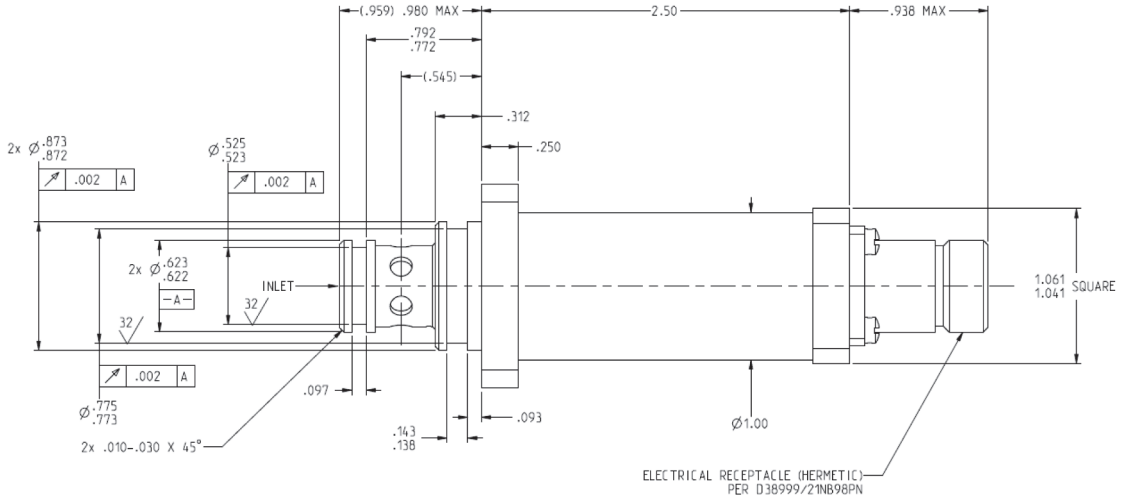
HYDRAULIC SCHEMATIC



CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 50740-X SOLENOID VALVE, 2POS 2WAY, NORMALLY OPEN



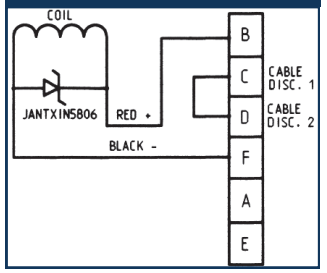


PERFORMANCE SPECIFICATIONS:

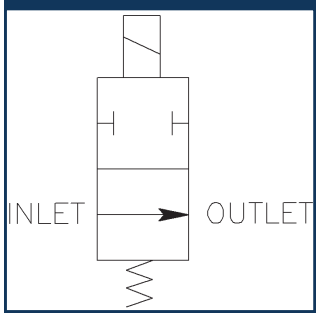
FLUIDS: MIL-PRF-83282*
MATERIAL: VALVE BODY 304 CRES
NOMINAL SUPPLY PRESSURE: 100 PSIG
TEMPERATURE RANGE: -67° TO 275°F
FLOW (ENERGIZED): 5 GPM MINIMUM AT 64 PSID
INTERNAL LEAKAGE (DE-ENERGIZED): 10 CC/MIN MAX @ 5.8 PSID
OPERATING VOLTAGE RANGE: 12 TO 32 VDC NOMINAL
COIL CURRENT: 1 AMP MAX @ 28 VDC AND 70°F
PULL-IN VOLTAGE: 12 VDC MAX AT 0.145 PSID AND 70°F
DROP-OUT VOLTAGE: 1.0 TO 8 VDC WHEN VOLTAGE IS DECREASED FROM 28 VDC
RESPONSE TIME (ENERGIZED AND DE-ENERGIZED): 100 MSEC MAX
WEIGHT: 0.70 LBS MAX

*PHOSPHATE ESTER FLUID ACCEPTABLE WITH ELASTOMER CHANGE

ELECTRICAL SCHEMATIC

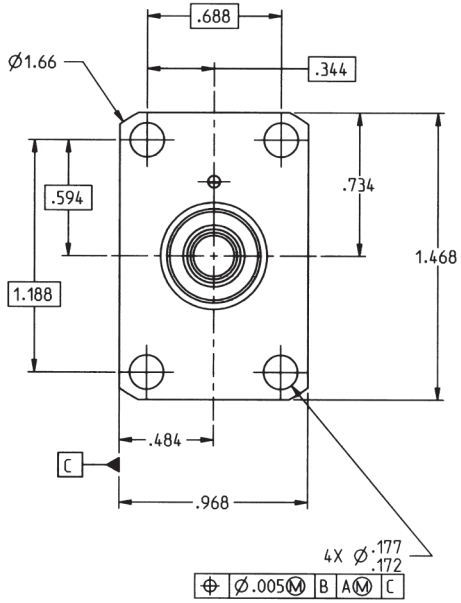


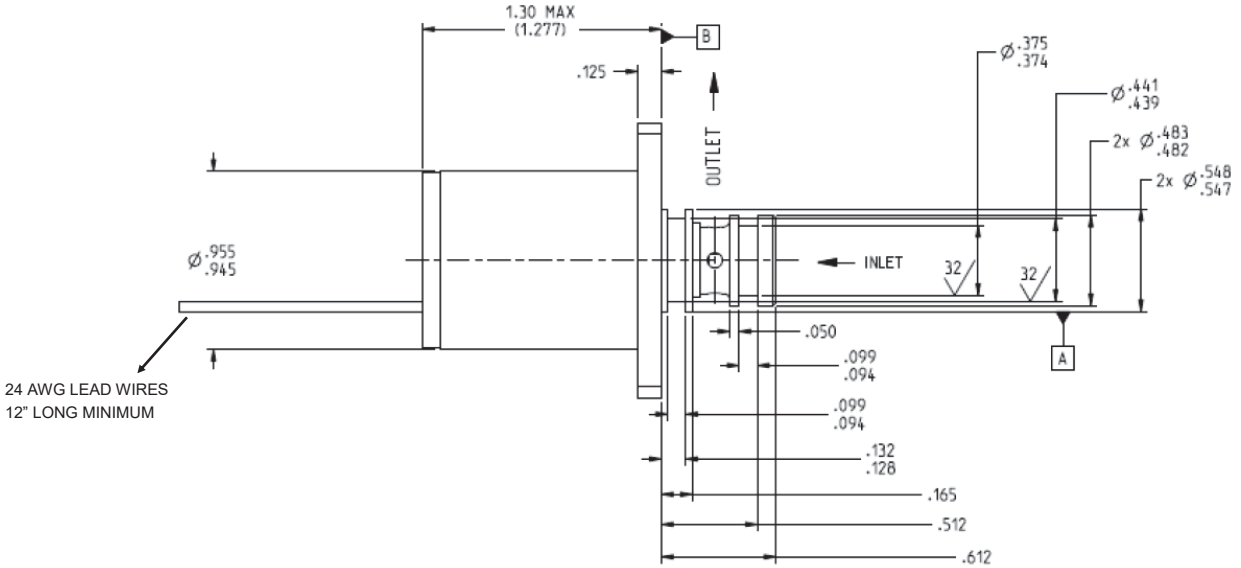
HYDRAULIC SCHEMATIC



CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 50770-X SOLENOID VALVE, 2POS 2WAY, NORMALLY CLOSED





PERFORMANCE SPECIFICATIONS:

FLUIDS: ETHYLENE GLYCOL/WATER*

MATERIAL: VALVE BODY 6061-T6 AL

NOMINAL SUPPLY PRESSURE: 75 PSIG

TEMPERATURE RANGE: -60° TO 194°F

FLOW (ENERGIZED): 0.53 GPM AT 5 PSID MAX

INTERNAL LEAKAGE (DE-ENERGIZED): 1 DPM MAX AT 75 PSID

OPERATING VOLTAGE RANGE: 18 TO 32 VDC NOMINAL

COIL CURRENT: 0.6 AMPS MAX AT 24 VDC AND 80°F

PULL-IN VOLTAGE: 16 VDC MAX AT 75 PSID AND 70°F

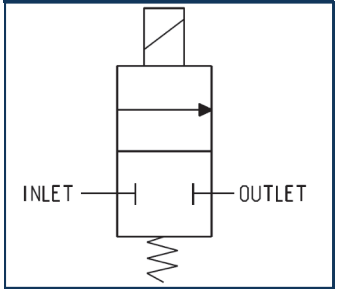
DROP-OUT VOLTAGE: 1.5 VDC MINIMUM AT 5 PSID AND 70°F

DUTY CYCLE: CONTINUOUS

WEIGHT: 0.24 LBS MAX

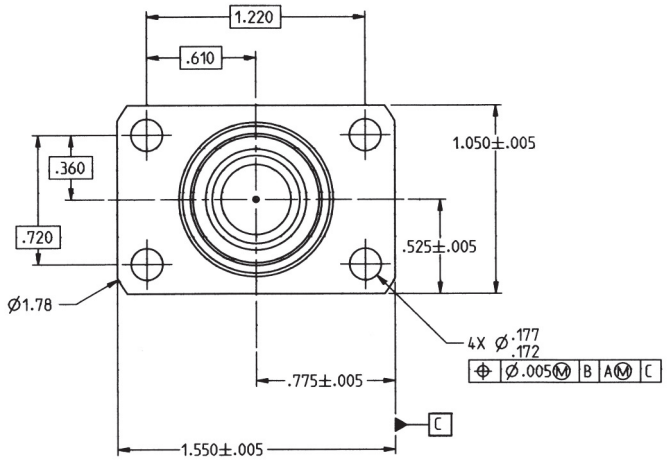
*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

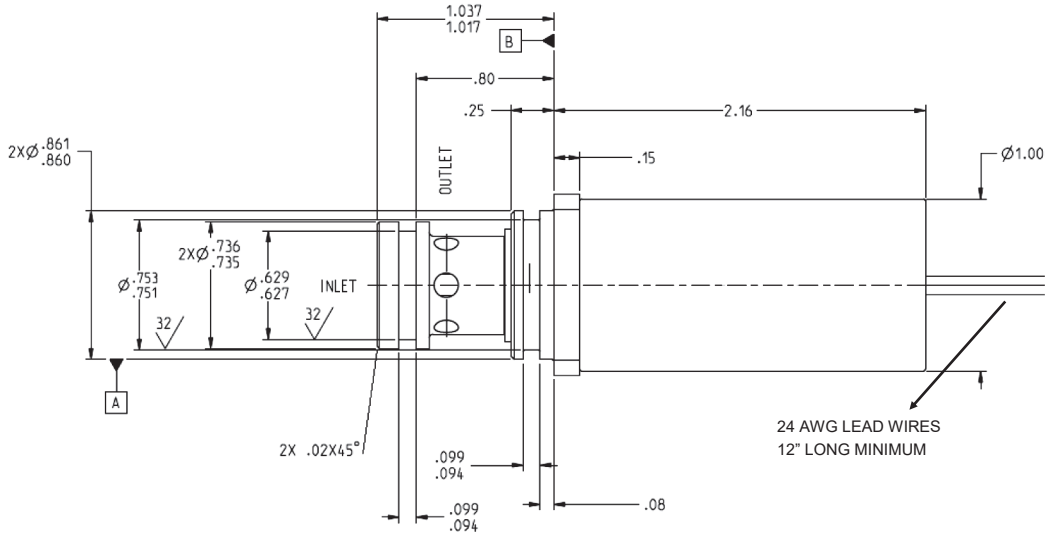
HYDRAULIC SCHEMATIC



CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 50780-X SOLENOID VALVE, 2POS 2WAY, NORMALLY CLOSED





PERFORMANCE SPECIFICATIONS:

FLUIDS: ETHYLENE GLYCOL/WATER*

MATERIAL: VALVE BODY 6061-T6 AL

NOMINAL SUPPLY PRESSURE: 75 PSIG

TEMPERATURE RANGE: -60° TO 194°F

FLOW (ENERGIZED): 2.2 GPM AT 5 PSID MAX

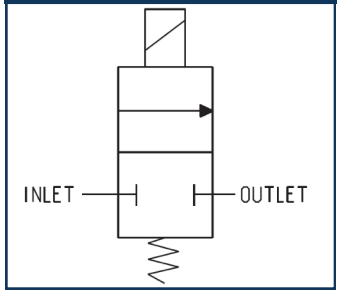
INTERNAL LEAKAGE (DE-ENERGIZED): 1 DPM MAX AT 75 PSID

- OPERATING VOLTAGE RANGE: 18 TO 32 VDC NOMINAL
- COIL CURRENT: 1.0 AMPS MAX AT 28 VDC AND 80°F
- PULL-IN VOLTAGE: 16 VDC MAX AT 75 PSID AND 70°F
- DROP-OUT VOLTAGE: 1.5 VDC MINIMUM AT 5 PSID AND 70°F
- DUTY CYCLE: CONTINUOUS

WEIGHT: 0.575 LBS MAX

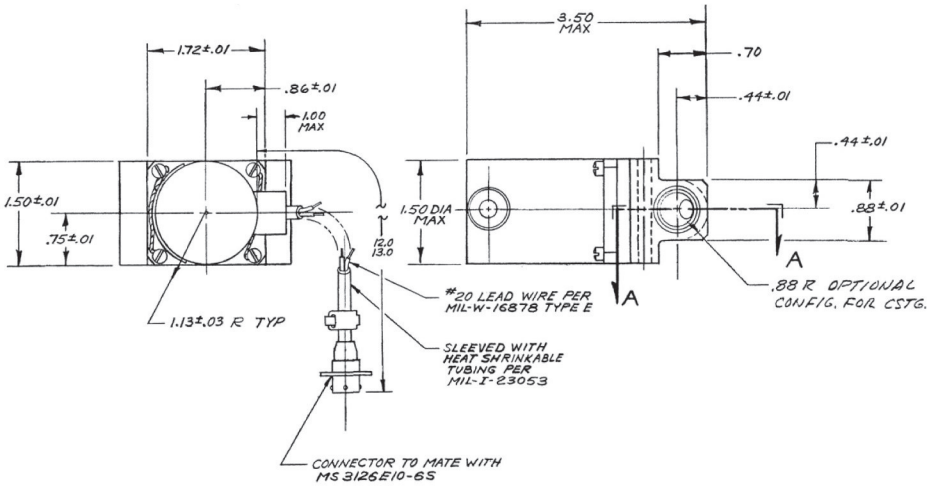
*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

HYDRAULIC SCHEMATIC

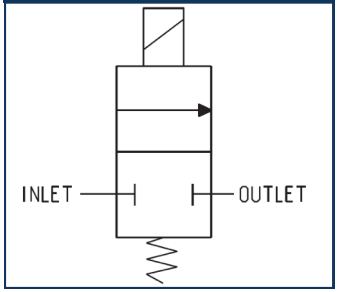


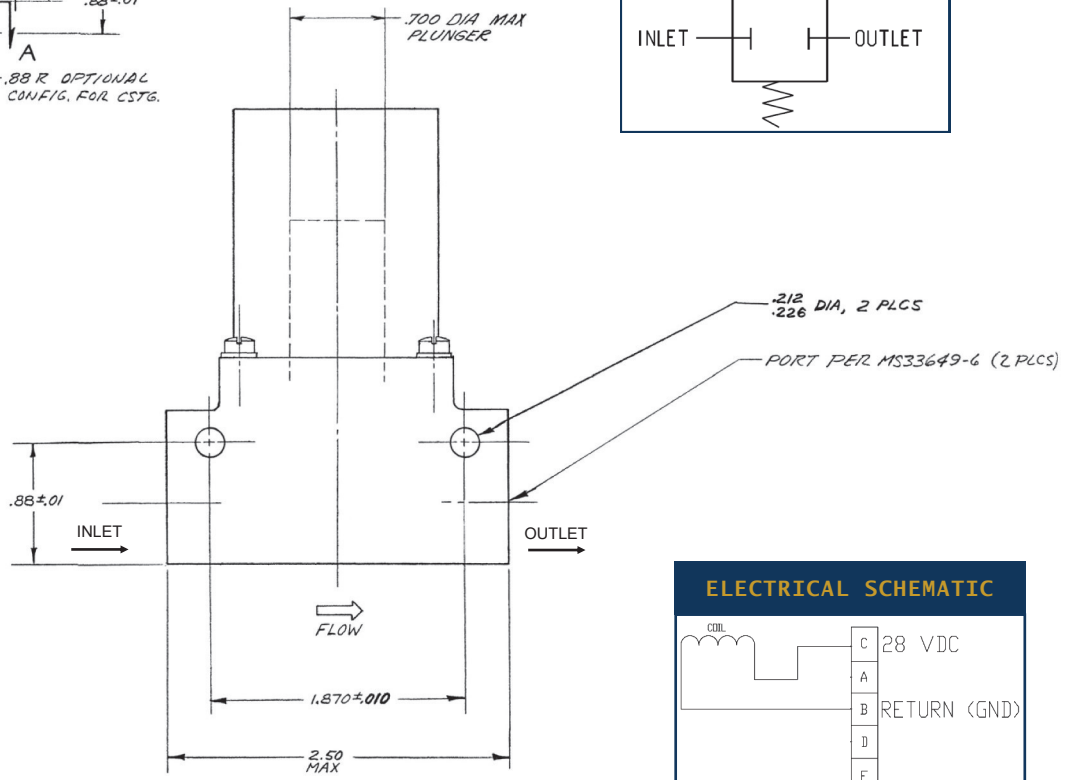
CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 4S1076 SOLENOID VALVE, NORMALLY CLOSED



HYDRAULIC SCHEMATIC





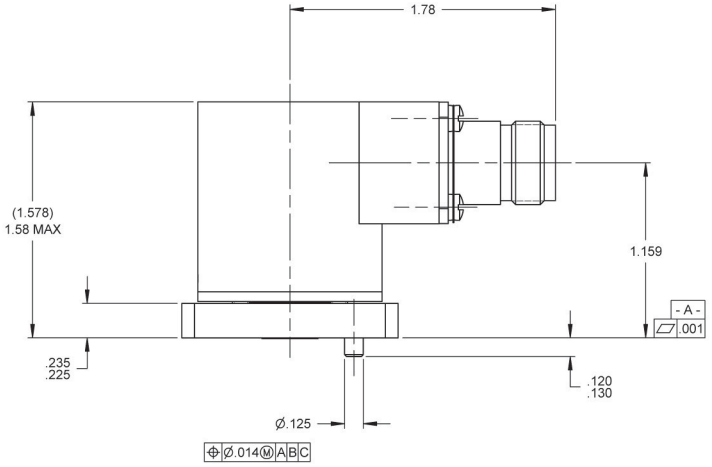
PERFORMANCE SPECIFICATIONS:

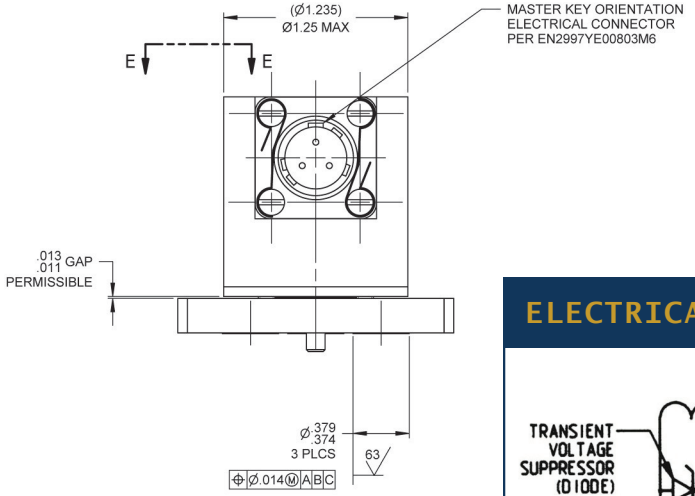
FLUIDS: AIR OR CORVIS OIL*
MATERIAL: VALVE BODY 2024-T351 AL
ELASTOMER VITON
NOMINAL SUPPLY PRESSURE: 25 PSIG
TEMPERATURE RANGE: -65° TO 250°F
FLOW (ENERGIZED): 1.5±0.25 GPM AT 3 PSID
INTERNAL LEAKAGE (DE-ENERGIZED): 0 AT 50 PSID IN FLOW DIRECTION
OPERATING VOLTAGE RANGE: 22 TO 30 VDC NOMINAL
WEIGHT: 1.5 LBS MAX
*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

ELECTRICAL SCHEMATIC

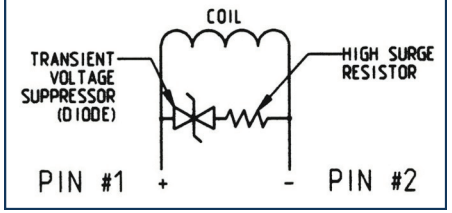
CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 4S1096 SOLENOID VALVE, NORMALLY CLOSED





ELECTRICAL SCHEMATIC



PERFORMANCE SPECIFICATIONS:

FLUIDS: PHOSPHATE ESTER BASED TYPE IV, V*

MATERIAL: VALVE BODY 17-4PH CRES

NOMINAL SUPPLY PRESSURE: 5076 PSIG (PORT P AND PORT C)
1015 PSIG (PORT R)

TEMPERATURE RANGE: -40°F TO 203°F

FLOW (ENERGIZED): 0.156 ± .053 GPM AT 5076 PSID
(DE-ENERGIZED): 0.396 GPM MINIMUM AT 5076 PSID

INTERNAL LEAKAGE IN ANY POSITION: 1 CC/MIN MAX FROM PORT R WITH 5076 PSID AT PORT P WITH PORT C CAPPED

OPERATING VOLTAGE RANGE: 18 TO 32.5 VDC NOMINAL

COIL CURRENT: 1.0 AMPS MAX AT –40°F TO 203°F

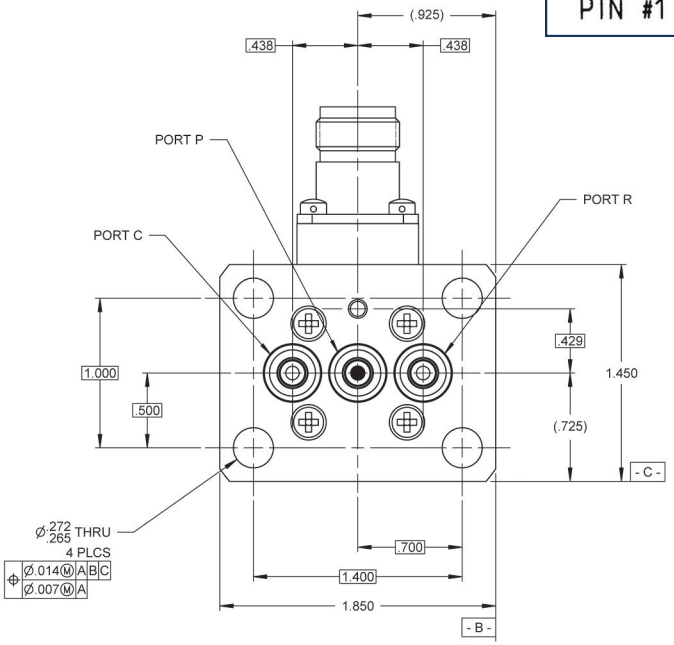
PULL-IN VOLTAGE: 17 VDC MAX UNDER ALL SPECIFIED TEMP
12 VDC MAX AT AMBIENT TEMP

DROP-OUT VOLTAGE: 2.0 VDC MINIMUM AT –65°F
2.8 TO 6.0 VDC AT AMBIENT TEMP

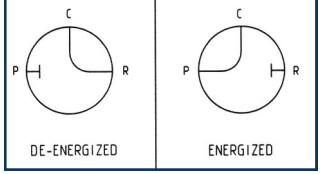
DUTY CYCLE: CONTINUOUS

WEIGHT: 0.52 LBS MAX

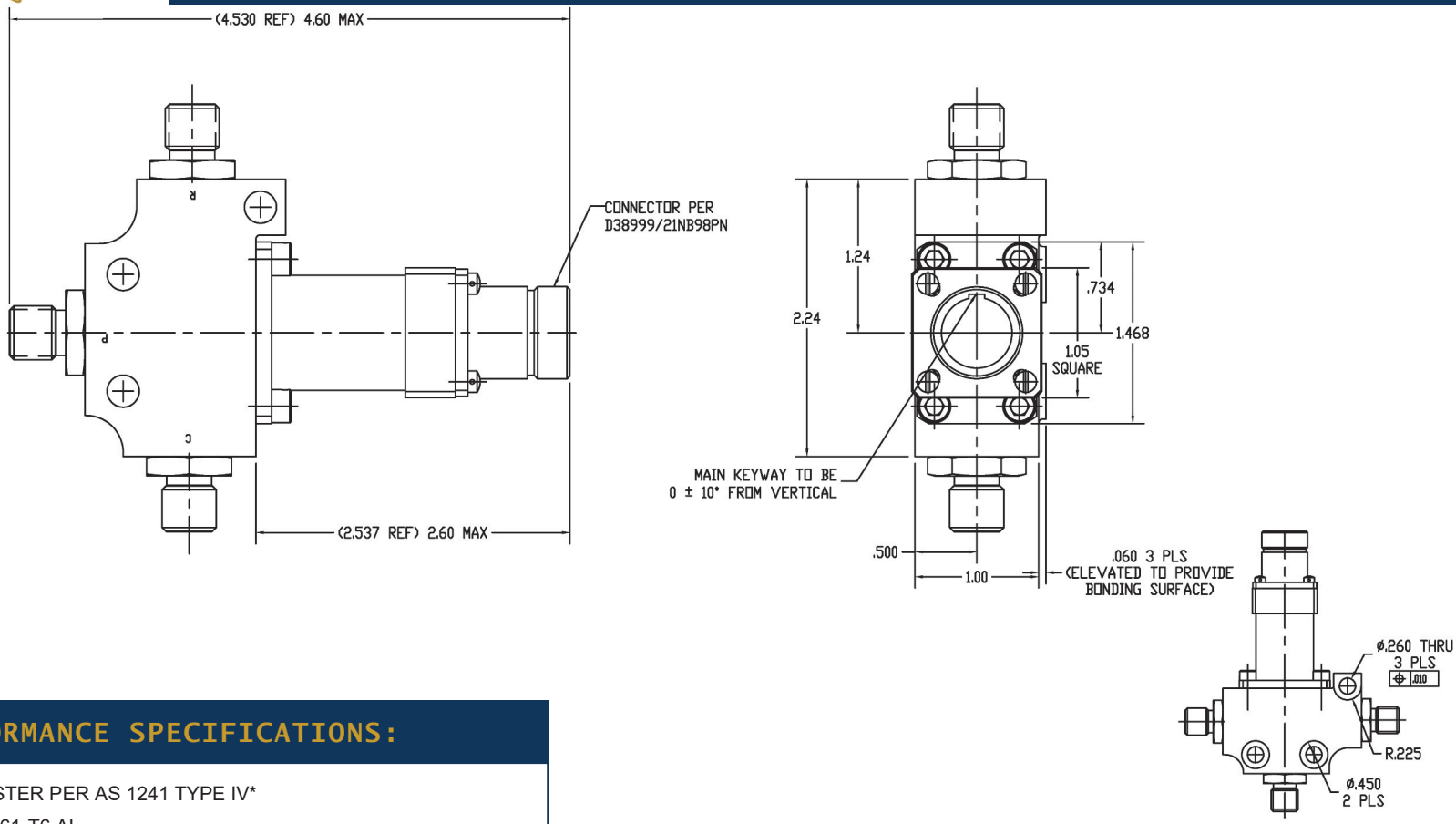
*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE



FLOW SCHEMATIC



PART NUMBER: 36660-X SOLENOID VALVE



PERFORMANCE SPECIFICATIONS:

FLUIDS: PHOSPHATE ESTER PER AS 1241 TYPE IV*

MATERIAL: HOUSING 6061-T6 AL

NOMINAL SUPPLY PRESSURE: 3150 PSIG

TEMPERATURE RANGE: -67° TO 165°F

FLOW (ENERGIZED): 0.4±0.4 GPM AT 3000 PSID

INTERNAL LEAKAGE IN ANY POSITION: 10 CC/MIN MAX AT 3000 PSID

OPERATING VOLTAGE RANGE: 18 TO 32 VDC NOMINAL

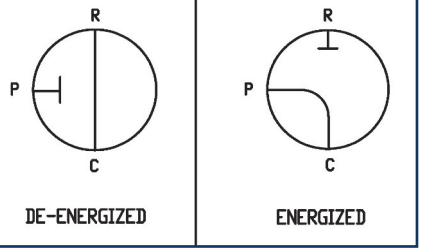
COIL CURRENT: 0.6 AMPS MAX AT 24 VDC AND 70°F TO 90°F

DUTY CYCLE: CONTINUOUS

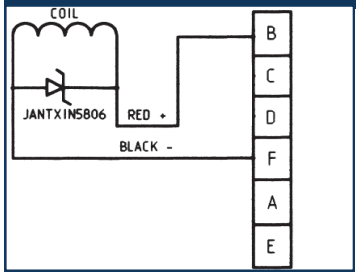
WEIGHT: 1.0 LBS MAX

*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

HYDRAULIC SCHEMATIC

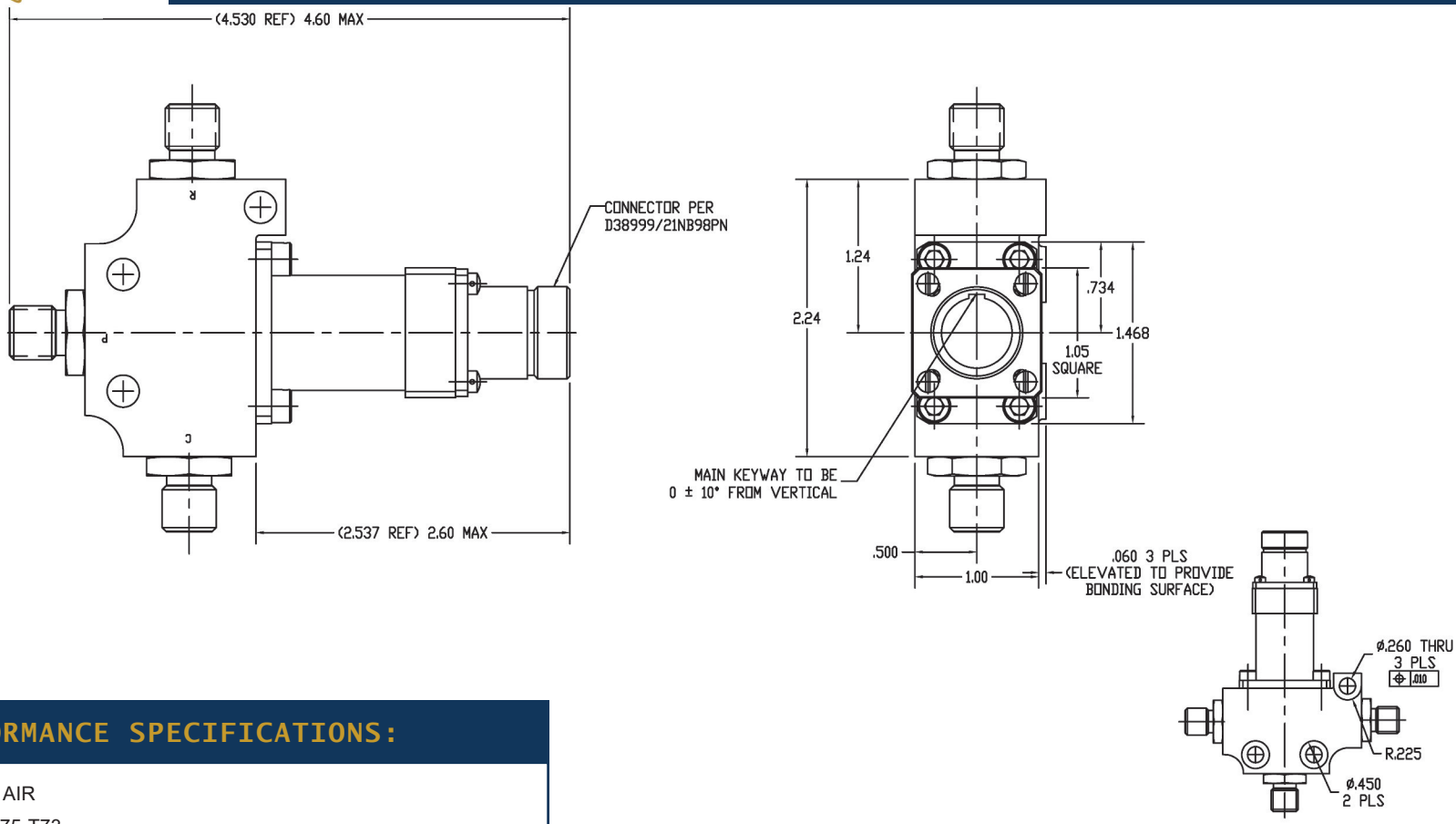


ELECTRICAL SCHEMATIC



CATEGORY 4: DIRECT ACTING SOLENOID VALVES

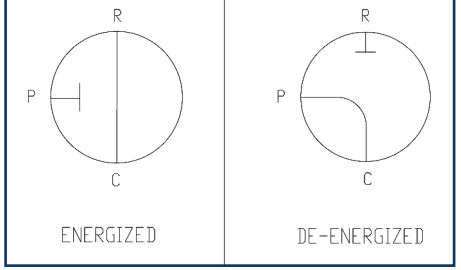
PART NUMBER: 1M1346 SOLENOID VALVE



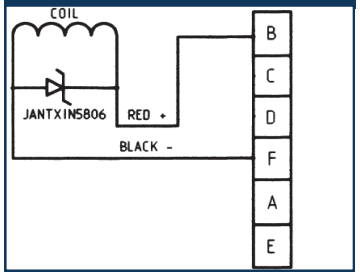
PERFORMANCE SPECIFICATIONS:

FLUIDS: ENGINE BLEED AIR
MATERIAL: HOUSING 7075-T73
NOMINAL SUPPLY PRESSURE: 27.5 PSIG
TEMPERATURE RANGE: -40° TO 392°F
FLOW (DE-ENERGIZED): 0.398 SCFM AT 24 PSID
INTERNAL LEAKAGE IN ANY POSITION: 200 SCCM MAX AT 24 PSID
OPERATING VOLTAGE RANGE: 18 TO 32 VDC NOMINAL
COIL CURRENT: 0.6 AMPS MAX AT 24 VDC AND 70°F TO 90°F
DUTY CYCLE: CONTINUOUS
WEIGHT: 1.0 LBS MAX

HYDRAULIC SCHEMATIC

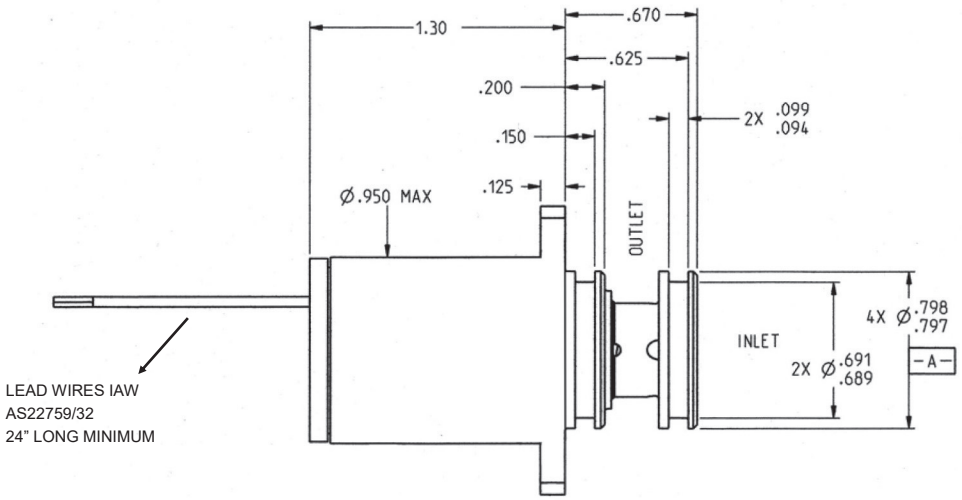


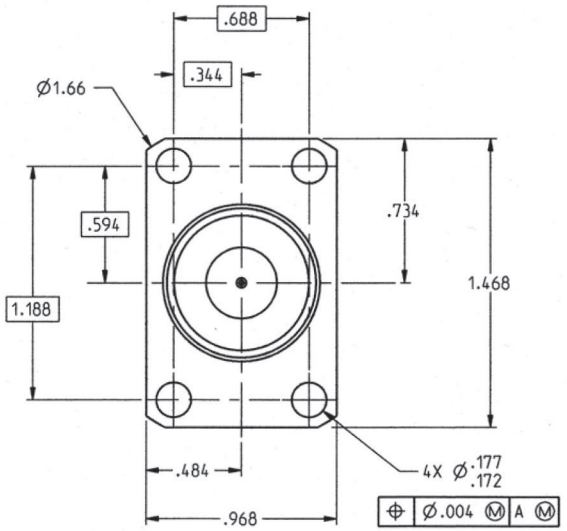
ELECTRICAL SCHEMATIC



CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 80470 SOLENOID VALVE, PROPORTIONAL, NORMALLY CLOSED





PERFORMANCE SPECIFICATIONS:

FLUIDS: MIL-PRF-87252*

MATERIAL: VALVE BODY 303 CRES

NOMINAL SUPPLY PRESSURE: 200 PSIG

TEMPERATURE RANGE: -106° TO 246°F

FLOW (ENERGIZED): 1.05 GPM AT 5 PSID MAX AT 125°F

VALVE POSITION: PROPORTIONAL TO PWM SIGNAL SUPPLIED AT FIXED FREQUENCY GREATER THAN 1000 HZ

INTERNAL LEAKAGE (DE-ENERGIZED): 2 CC/MIN MAX AT 15 PSID

OPERATING VOLTAGE RANGE: 22 TO 32 VDC (28 VDC NOMINAL)

PULL-IN VOLTAGE: 18 VDC MAX AT 15 PSID AND 70°F

DROP-OUT VOLTAGE: 1.5 VDC AT 5 PSID AND 70°F

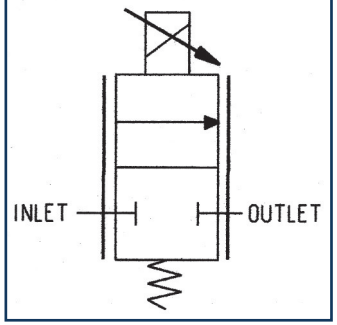
COIL CURRENT: 0.6 AMPS MAX AT 24 VDC AND 70°F

DUTY CYCLE: CONTINUOUS

WEIGHT: 0.350 LBS MAX

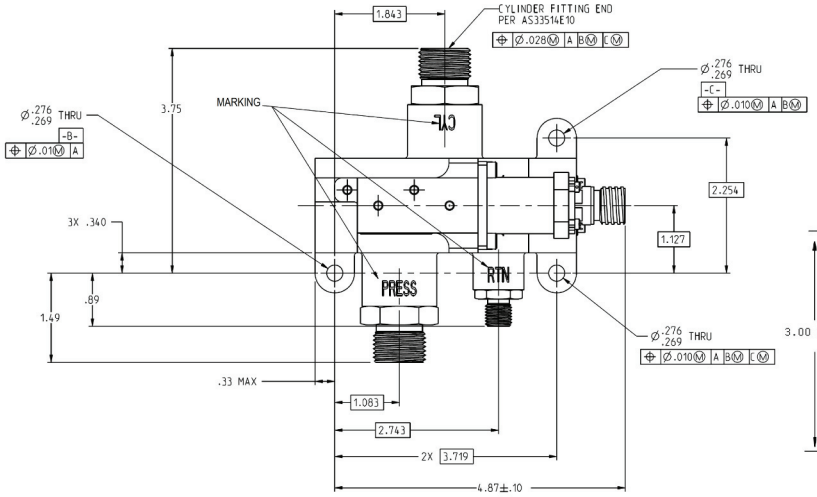
*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE

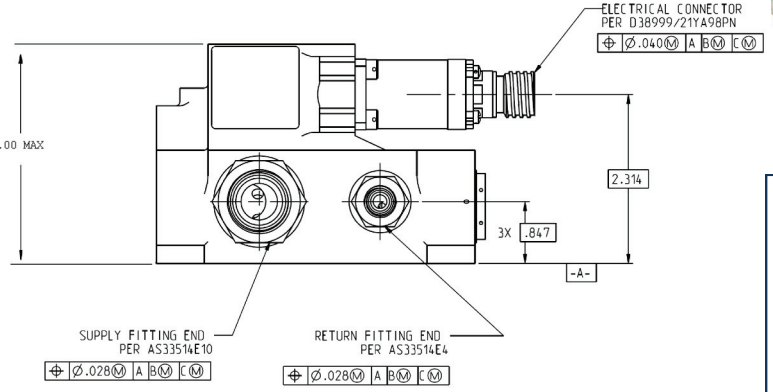
HYDRAULIC SCHEMATIC

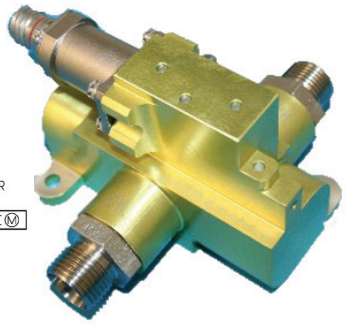


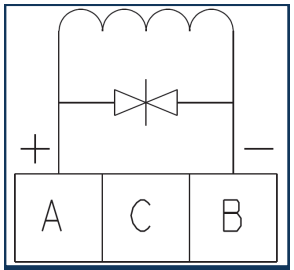
CATEGORY 4: DIRECT ACTING SOLENOID VALVES

PART NUMBER: 80360-X SHUT-OFF VALVE









ELECTRICAL SCHEMATIC

PERFORMANCE SPECIFICATIONS:

FLUIDS: LOW DENSITY PHOSPHATE ESTER FLUID TYPE IV, V*

MATERIAL: MANIFOLD 7075-T6 AL

NOMINAL SUPPLY PRESSURE: 3000 PSIG

ENERGIZED FLOW (PRESS TO CYL): 10 GPM AT 60 PSID MAX AND 100°F

DE-ENERGIZED FLOW (CYL TO RET): 2 GPM AT 70 PSID MAX AND 100°F

INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 15.0 CC/MIN MAX

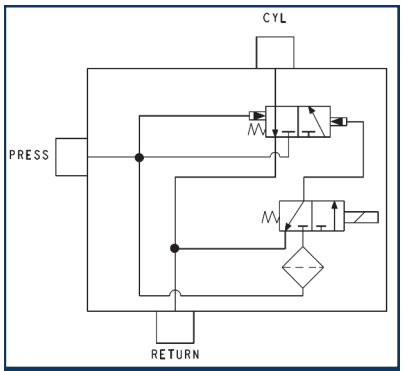
OPERATING VOLTAGE RANGE: 16 TO 31.5 VDC

COIL RESISTANCE: 42±2 OHMS

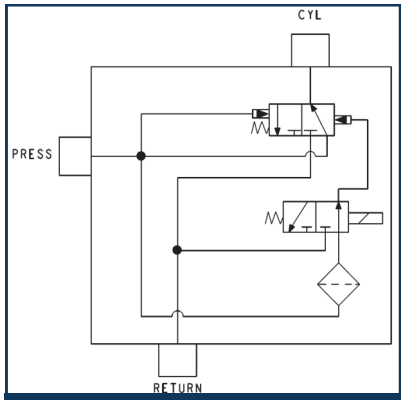
PEAK INVERSE VOLTAGE: ±60 VDC MAX

WEIGHT: 2.60 LBS MAX

*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE



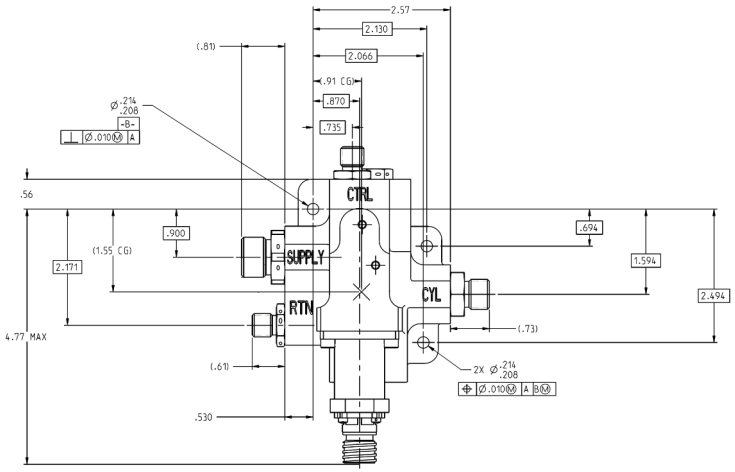
HYDRAULIC SCHEMATIC
(SHOWN DE-ENERGIZED)

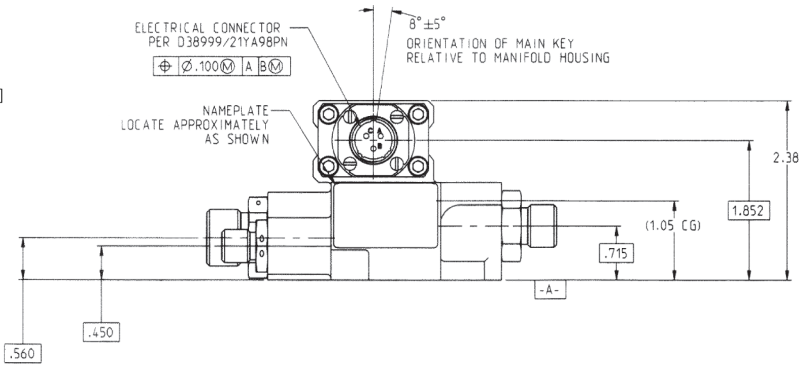


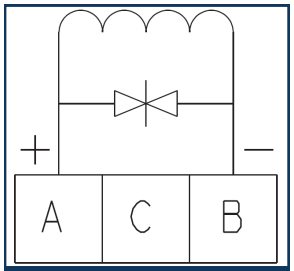
HYDRAULIC SCHEMATIC
(SHOWN ENERGIZED)

CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

PART NUMBER: 80390-X SHUT-OFF VALVE







ELECTRICAL SCHEMATIC

PERFORMANCE SPECIFICATIONS:

FLUIDS: LOW DENSITY PHOSPHATE ESTER FLUID TYPE IV, V*

MATERIAL: MANIFOLD 7075-T6 AL

NOMINAL SUPPLY PRESSURE: 3000 PSIG

ENERGIZED FLOW (CYL TO RET): 1.1±0.1 GPM AT 2600 PSID MAX AND 100°F

DE-ENERGIZED FLOW (SUP TO CYL): 6.4 GPM AT 60 PSID MAX AND 100°F

INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 15.0 CC/MIN MAX

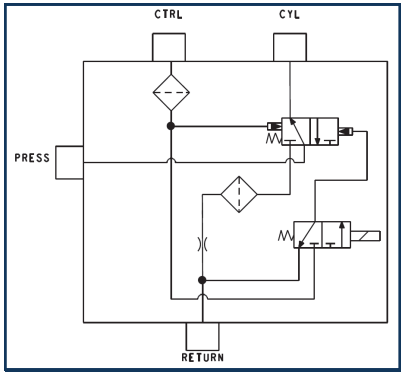
OPERATING VOLTAGE RANGE: 16 TO 31.5 VDC

COIL RESISTANCE: 42±2 OHMS

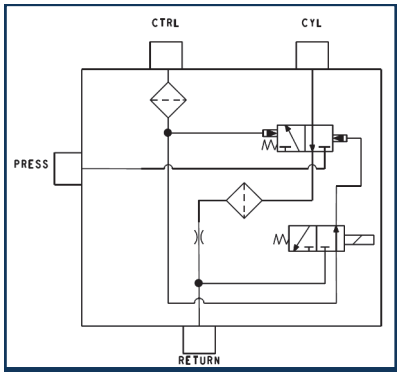
PEAK INVERSE VOLTAGE: ±60 VDC MAX

WEIGHT: 2.00 LBS MAX

*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE



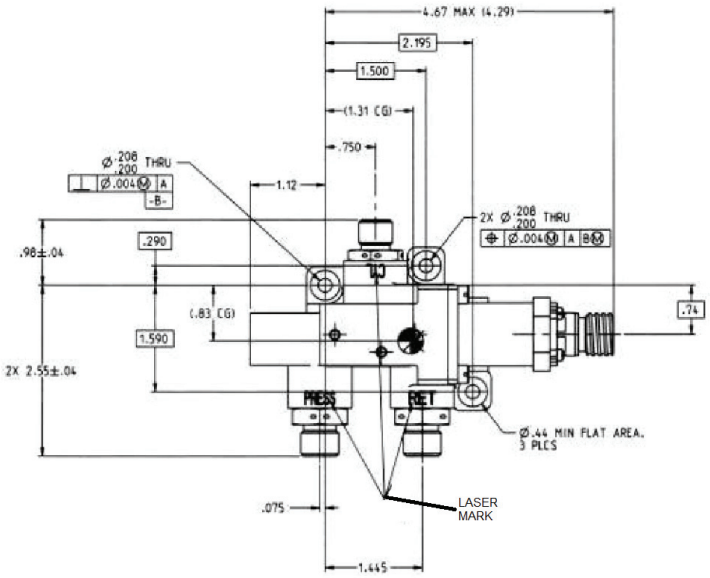
HYDRAULIC SCHEMATIC
(SHOWN DE-ENERGIZED)

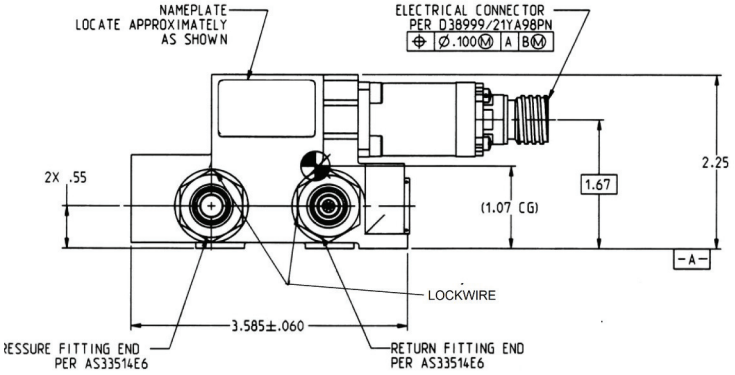


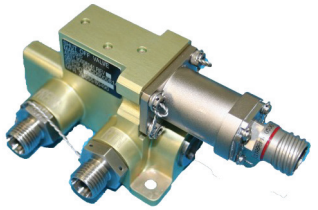
HYDRAULIC SCHEMATIC
(SHOWN ENERGIZED)

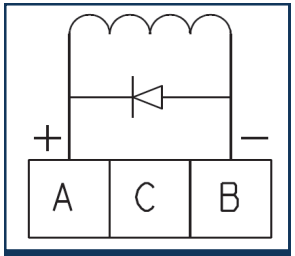
CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

PART NUMBER: 80490-X SHUT-OFF VALVE





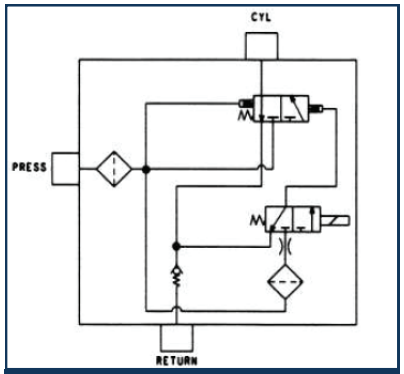




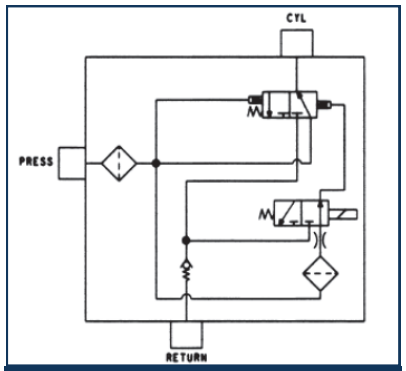
ELECTRICAL SCHEMATIC

PERFORMANCE SPECIFICATIONS:

FLUIDS: MII-PRF-5606 OR MIL-PRF-83232*
MATERIAL: MANIFOLD 7075-T73 AL
NOMINAL SUPPLY PRESSURE: 3000 PSIG
ENERGIZED FLOW (PRESS TO CYL): 3 GPM AT 250±25 PSID AND 100°F
DE-ENERGIZED FLOW (CYL TO RET): 3 GPM AT 300 PSID MAX AND 100°F
INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 0.5 CC/MIN MAX
OPERATING VOLTAGE RANGE: 16 TO 32 VDC
COIL RESISTANCE: 100±8 OHMS
OPENING TRANSIENT: 60 MSEC MAX
CLOSING TRANSIENT: 100 MSEC MAX
PEAK INVERSE VOLTAGE: ±600 VDC
WEIGHT: 1.40 LBS MAX
*PHOSPHATE ESTER BASE ACCEPTABLE WITH ELASTOMER CHANGE



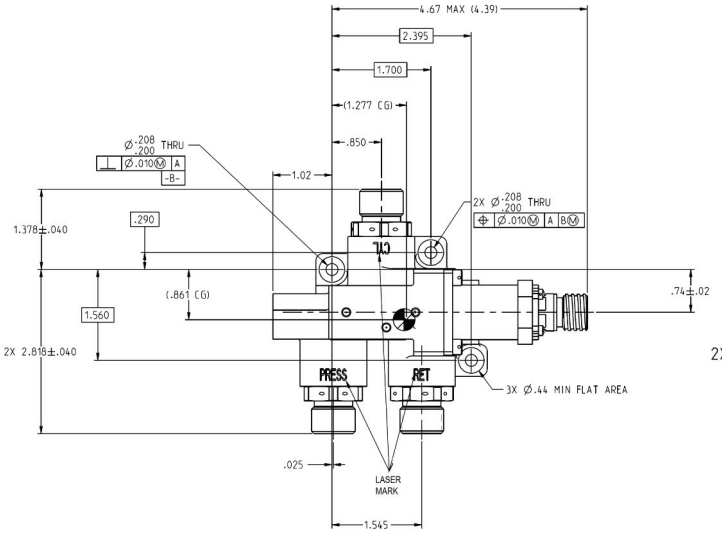
HYDRAULIC SCHEMATIC
(SHOWN DE-ENERGIZED)

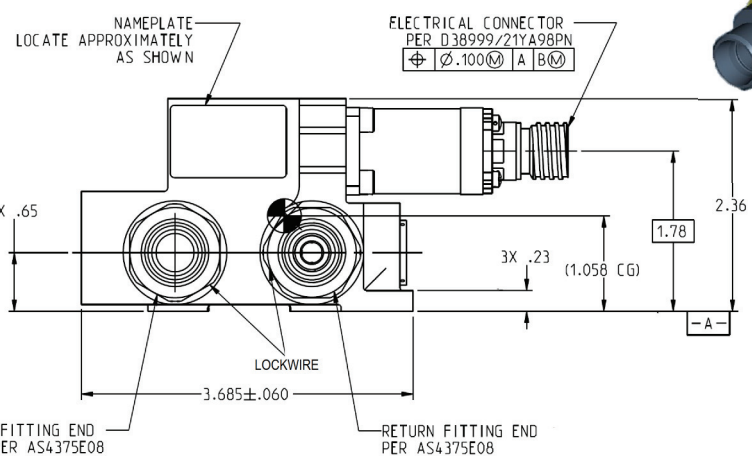


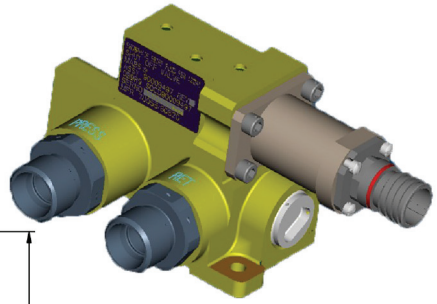
HYDRAULIC SCHEMATIC
(SHOWN ENERGIZED)

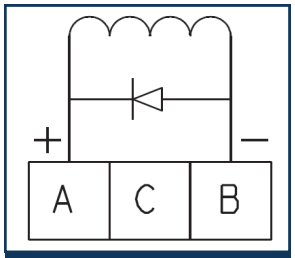
CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

PART NUMBER: 80520-X SHUT-OFF VALVE





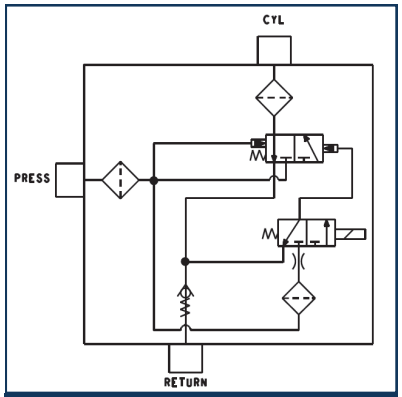




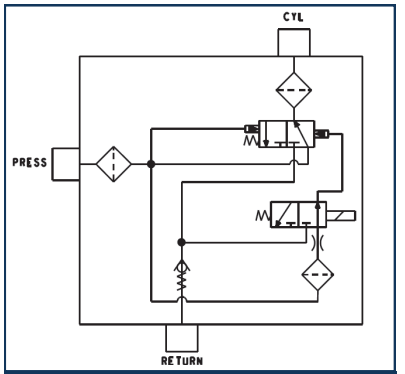
ELECTRICAL SCHEMATIC

PERFORMANCE SPECIFICATIONS:

FLUIDS: LOW DENSITY PHOSPHATE ESTER FLUID TYPE IV, V*
MATERIAL: MANIFOLD 7075-T73 AL
NOMINAL SUPPLY PRESSURE: 3000 PSIG
ENERGIZED FLOW (PRESS TO CYL): 6 GPM AT 377±23 PSID AND 100°F
DE-ENERGIZED FLOW (CYL TO RET): 3 GPM AT 110 PSID MAX AND 100°F
INTERNAL LEAKAGE AT 3000 PSID IN ANY POSITION: 0.25 CC/MIN MAX
OPERATING VOLTAGE RANGE: 16 TO 32 VDC
COIL RESISTANCE: 100±8 OHMS
OPENING TRANSIENT: 60 MSEC MAX
CLOSING TRANSIENT: 100 MSEC MAX
PEAK INVERSE VOLTAGE: ±600 VDC
WEIGHT: 1.77 LBS MAX
*MIL-PRF-83282 ACCEPTABLE WITH ELASTOMER CHANGE



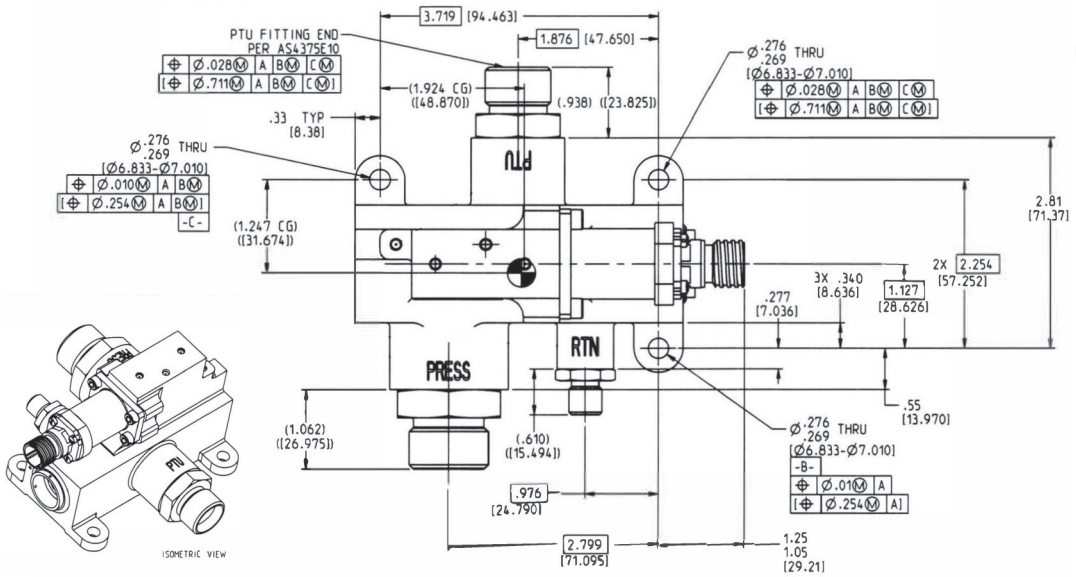
HYDRAULIC SCHEMATIC
(SHOWN DE-ENERGIZED)

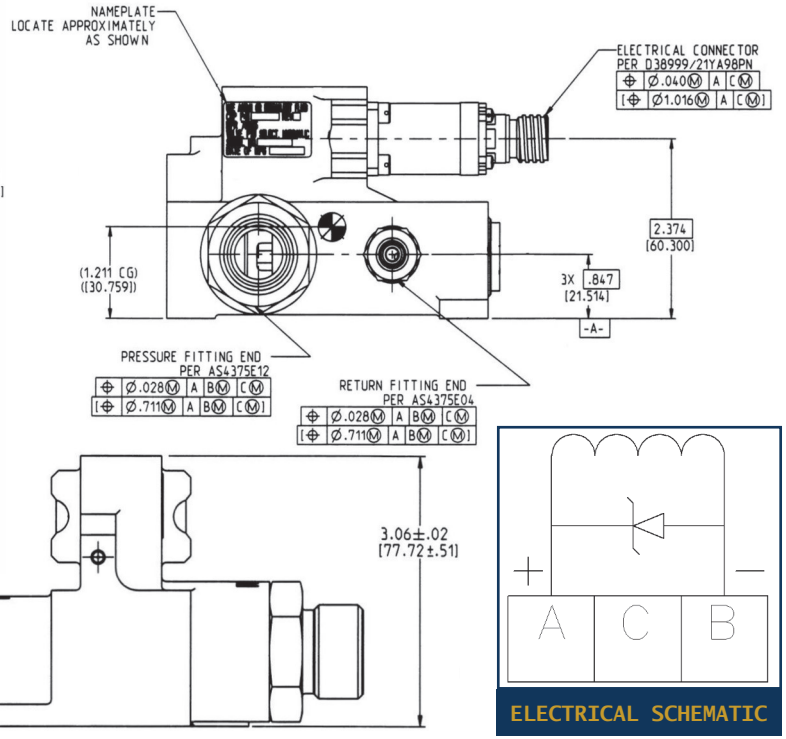


HYDRAULIC SCHEMATIC
(SHOWN ENERGIZED)

CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

PART NUMBER: 80440 SHUT-OFF VALVE

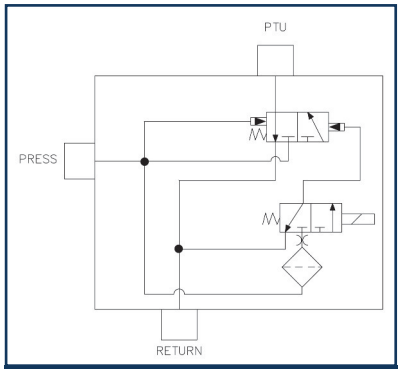




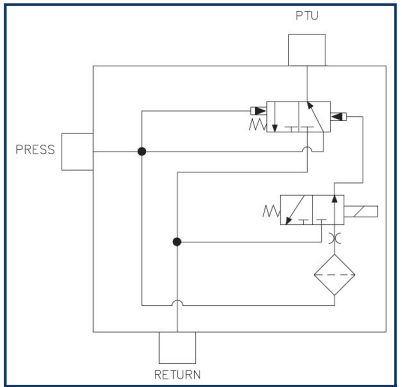
ELECTRICAL SCHEMATIC

PERFORMANCE SPECIFICATIONS:

FLUIDS: SKYDROL AS1241 TYPE IV CLASS 1 OR 2 AND TYPE V*
MATERIAL: MANIFOLD 7075-T73 AL
NOMINAL SUPPLY PRESSURE: 3000 PSIG
TEMPERATURE RANGE: -65° TO 185°F
ENERGIZED FLOW (PRESS TO PTU): 18 GPM AT 50 PSID MAX
ENERGIZED LEAKAGE (PTU TO RTN): 15 CC/MIN MAX AT 3000 PSID
DE-ENERGIZED FLOW (PTU TO RET): 2 GPM AT 60 PSID MAX
DE-ENERGIZED LEAKAGE (PRESS TO PTU): 15 CC/MIN MAX AT 3000 PSID
OPERATING VOLTAGE RANGE: 16 TO 32 VDC
PULL-IN VOLTAGE: 13.5 VDC MAX AT 3000 PSID AND 80°F±20°F
DROP-OUT VOLTAGE: 3 VDC AT 3000 PSID AND 70°F
PEAK INVERSE VOLTAGE: ±60 VDC MAX
COIL CURRENT: 0.6 AMPS MAX AT 24 VDC AND 70°F
DUTY CYCLE: 500,000 ACTUATION CYCLES MINIMUM
WEIGHT: 3.09 LBS MAX
*OTHER FLUIDS ACCEPTABLE WITH ELASTOMER CHANGE



HYDRAULIC SCHEMATIC
(SHOWN DE-ENERGIZED)

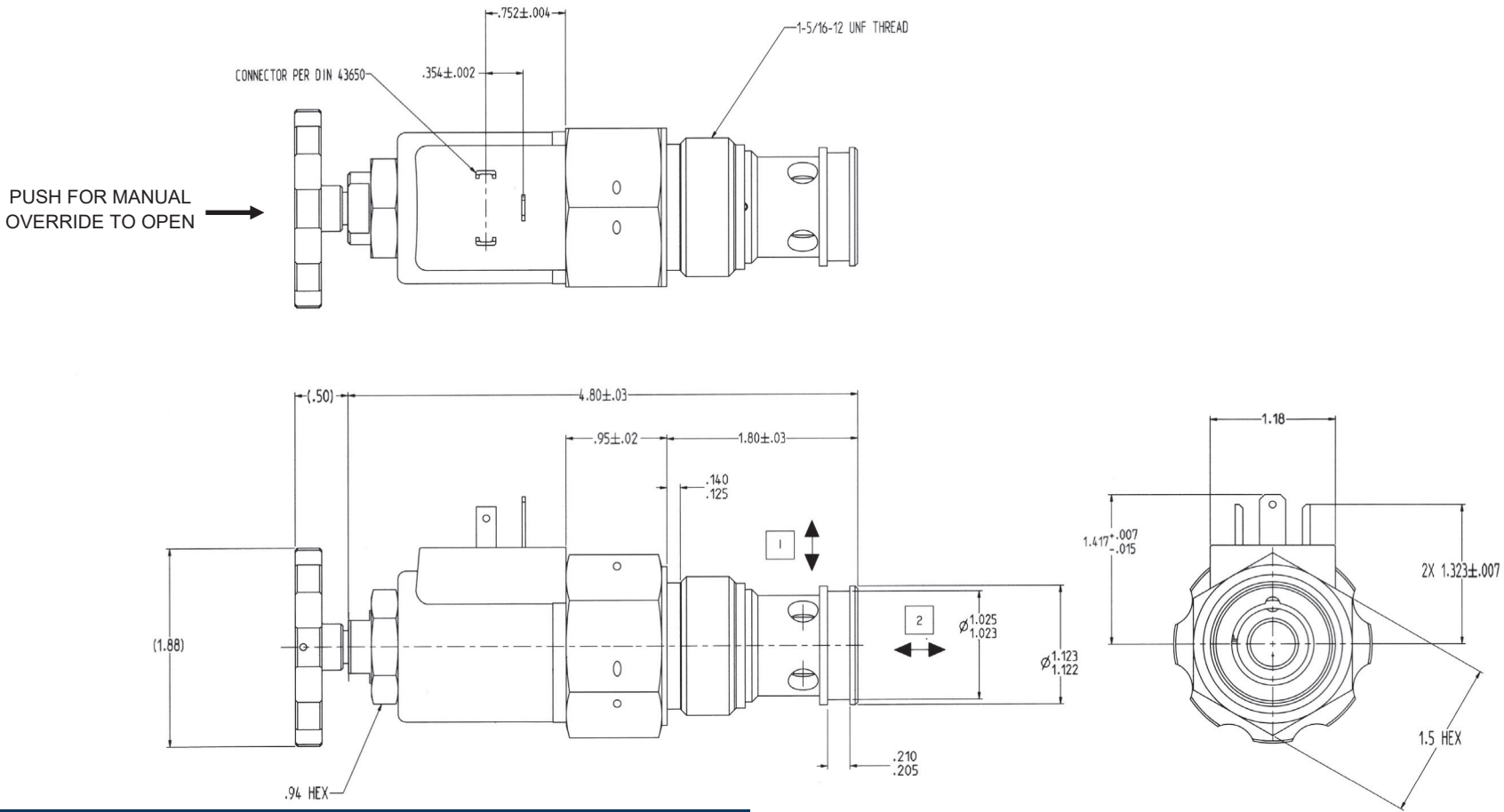


HYDRAULIC SCHEMATIC
(SHOWN ENERGIZED)

CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

CRISSAIR INC.

PART NUMBER: 80300 SOLENOID VALVE, BI-DIRECTIONAL, 2POS 2WAY, NORMALLY OPEN



PERFORMANCE SPECIFICATIONS:

FLUIDS: MIL-PRF-83282*

MATERIAL: VALVE BODY 17-4PH CRES

NOMINAL SUPPLY PRESSURE: 3000 PSIG

FLOW (DE-ENERGIZED): (1 TO 2) 29.1 GPM AT 70 PSID AND 80°F±20°F

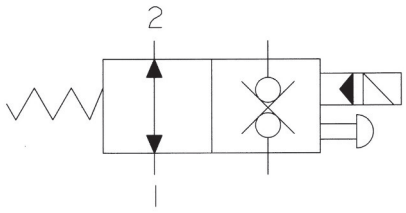
(2 TO 1) 9.2 GPM AT 70 PSID AND 80°F±20°F

INTERNAL LEAKAGE (ENERGIZED): 1 CC/MIN MAX AT 3000 PSID AND 80°F±20°F

OPERATING VOLTAGE: 100 VDC

*PHOSPHATE ESTER BASE ACCEPTABLE WITH ELASTOMER CHANGE

HYDRAULIC SCHEMATIC



CATEGORY 4: SHUT-OFF VALVES, PILOT SOLENOID OPERATED

CRISSAIR HAS VARIOUS OTHER SOLENOID VALVES NOT LISTED IN THE

CATALOG WITH DIFFERENT MATERIALS, FITTINGS, AND SIZE CONFIGURATIONS.

CONTACT CRISSAIR FOR ADDITIONAL INFORMATION/DRAWINGS AT

(661) 367-3300 OR SALES@CRISSAIR.COM.

YOU CAN ALSO VISIT WWW.CRISSAIR.COM.