



TECHNICAL DATA SHEET

LS-1 Limit Switch

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DESCRIPTION

The LS-1 limit switch easily mounted to any Gemini A500 or 400 Series pneumatic actuator, provides a means to display valve position remotely or to interconnect the valve with associated equipment such as pumps or other valves.

MATERIALS OF CONSTRUCTION

BODY / COVER: Aluminium with Teflon® Impregnated Hard Anodized (PolyLube®) Surfaces

PROBES: 316 Stainless Steel

SEALS - COVER, PROBES: Buna N

RATINGS / SPECIFICATIONS

TEMPERATURE: 10°F to 180°F

CONDUIT CONNECTION: 1/2" NPT

ELECTRICAL RATING: 10 amp. 250VAC maximum; 1/2 amp. 125VDC; 1/4 amp. 250VDC; 5 amp. 125VAC lamp load. Note: each pole must be the same polarity to utilize these ratings.

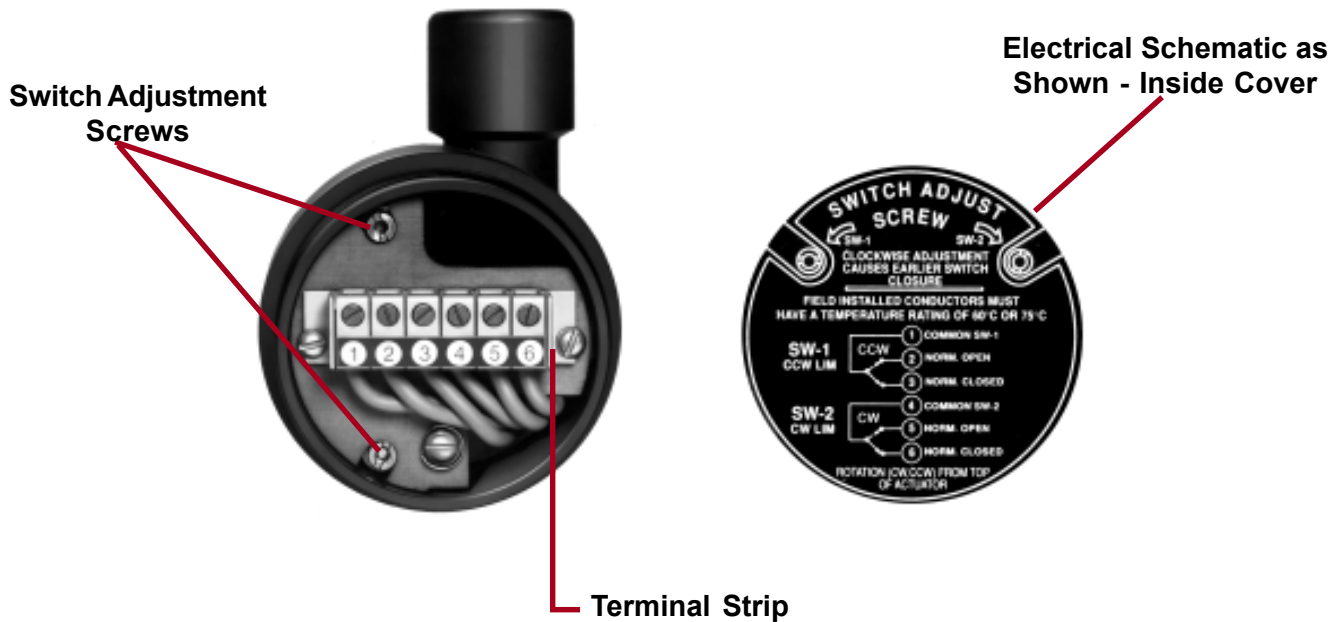
MICROSWITCHES: Mechanical S.P.D.T. (Single Pole Double Throw)

INTERNAL WIRING CONNECTIONS: Screw Clamp

NEMA STANDARDS: NEMA 1 (General Purpose); NEMA 4 (Watertight & Dusttight); NEMA 7 (Hazardous Locations, Class I Groups B, C, & D); NEMA 9 (Hazardous Locations, Class II, Groups E, F, & G); NEMA 12 (Oiltight and Driptight); and NEMA 13 (Oiltight and Dusttight).

UL LISTINGS: Industrial Control Equipment for use in Hazardous Locations, Class I, Groups B,C, & D and Class II, Groups E, F, & G

INTERNAL VIEW



MAINTENANCE

The LS-1 normally requires no maintenance. However, in certain situations the switch adjustment screws may require some attention to either advance or retard the cam actuated switch point. This enables precise adjustment of the switch timing throughout the life of the unit.

INSTALLATION TO A500 SERIES ACTUATORS

Attachment of Limit Switch / NAMUR Mounting Pad

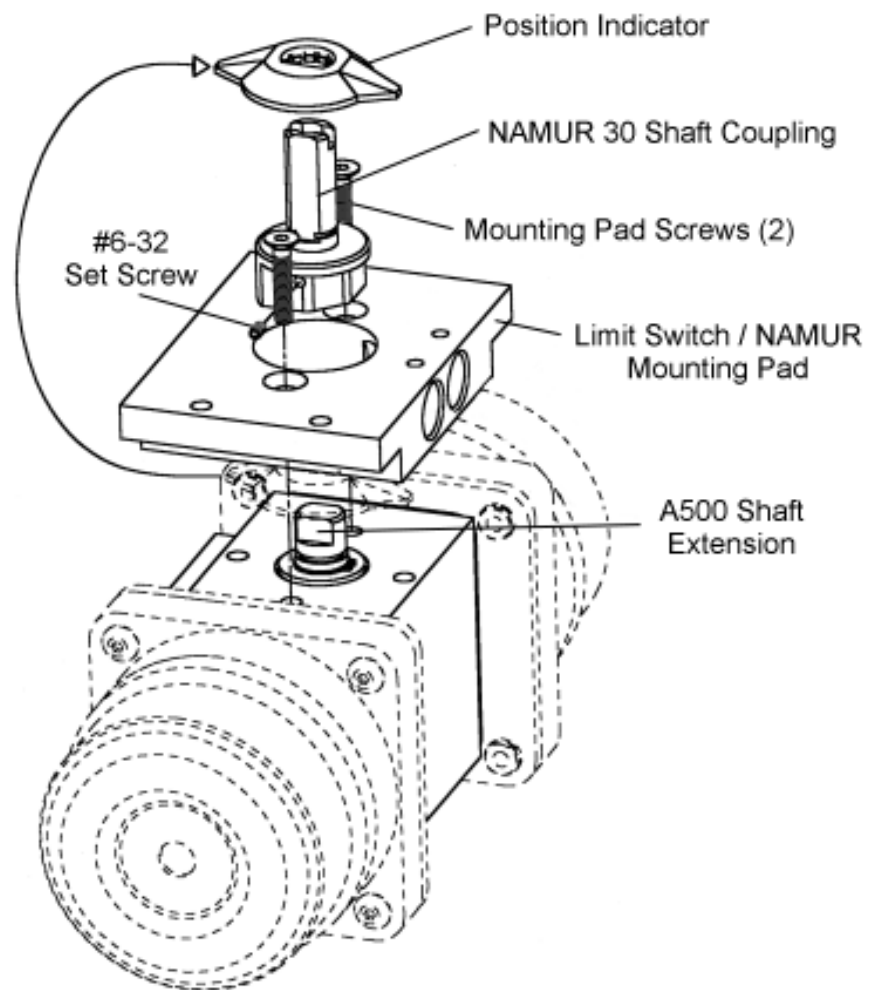
1. Remove the position indicator from atop the actuator and secure the NAMUR 30 Shaft Coupling to the A500 Shaft Extension with the #6-32 Set Screw using a medium strength (nonpermanent) thread locker (not included in mounting kit).

2. Place the Limit Switch / NAMUR Mounting Pad on top of the actuator. Be sure that the lower flats of the NAMUR 30 Shaft Coupling are oriented such that they align with the Limit Switch Mounting holes on the A500 Series Limit Switch / NAMUR Mounting Pad.

3. Fasten the A500 Limit Switch / NAMUR Mounting Pad to the A500 Series actuator using the (2) Mounting Bracket Screws.

4. Slide the position indicator over the NAMUR 30 Shaft Coupling until it 'snaps' into place just above the bracket.

For Mounting of the Gemini LS-1 Limit Switch, see backside of this data sheet for instructions.



INSTALLATION TO A500 SERIES ACTUATORS (continued)

Attachment of Limit Switch

1. Fit the bushings, which extend from the Limit Switch housing, into the matching holes in the mounting pad. Push switch housing against pad and verify that switch body touches pad. Secure switch body to pad with two #10-24 setscrews using a medium strength (nonpermanent) thread locker (not included in mounting kit). Note: Hex wrench supplied with Mounting Kit.

The LS-1 Limit Switch will be operable upon completion of the electrical wiring. See instructions below.

Wiring Instructions

1. Route the wire to be terminated through the conduit hub and up through the access space to the terminal block.
2. Strip insulation back 1/4", insert the stripped ends directly into the proper terminal clamps and tighten screws.
3. Internal interconnections between terminal-block and switches are diagrammed inside the Limit Switch Cover.

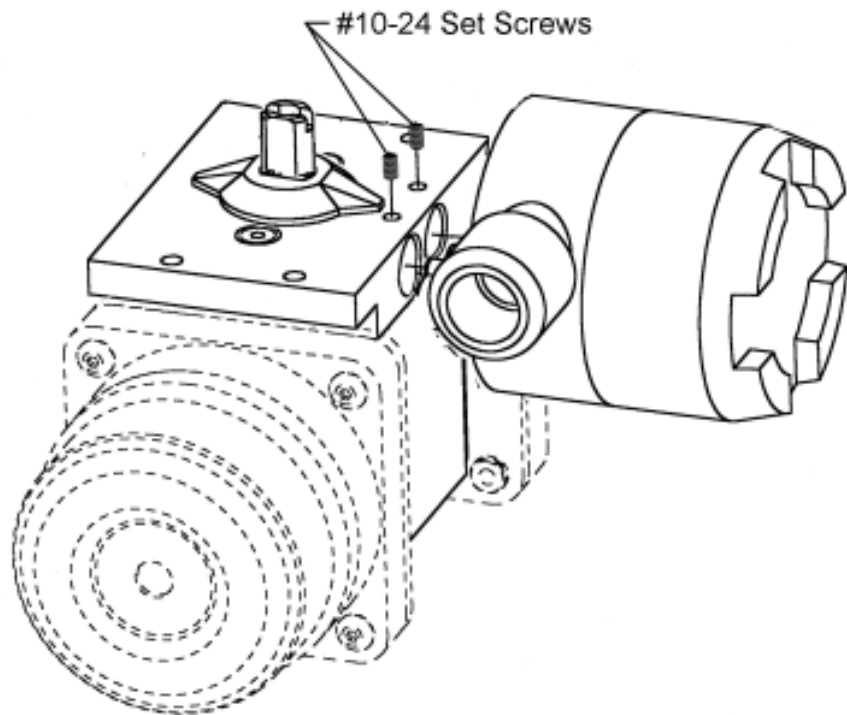
Wiring Specifications

Switch Ratings

AC 250 volts; 10 amps
DC 250 volts; 0.25 amps
125 volts; 0.50 amps
Lamp Load 125 volts; 5 amps

Wire Size

#12 AWG Max.
#24 AWG Min.
Field Installed Conductors Must Have a Temperature Rating of 60C or 75C



Insulation Stripping Length: 1/4"

Note: If the Switch is installed in a hazardous location i.e. where flammable vapors or dust are present in the atmosphere, replace the cover and tighten securely before connect-

ing the electrical supply circuit. If necessary, a screwdriver shank or similar tool may be engaged in the cover wrenching lugs to assist removal and replacement.

INSTALLATION TO 400 SERIES ACTUATORS

These instructions detail the procedure for mounting the Gemini Model LS-1 Limit Switch on Gemini A400 Series Pneumatic Actuators. See backside of this sheet for electrical wiring information necessary to complete the installation. Before proceeding to the detailed instructions, check to insure that you have the appropriate LSM (Limit Switch Mounting) kit.

Mounting Instructions

Fitting of the Operating Cam and Limit Switch Mounting Bracket

1. Remove the two position indicator housing screws, which secure the position indicator housing, from the top of the actuator to which the switch is to be mounted. Remove the position indicator housing. Figure 1.

2. Remove the retaining ring from the actuator shaft. Remove the position indicator and thrustwasher. A spare retaining ring has been provided in the mounting kit for use if the original becomes damaged during removal of the position indicator.) Figure 2.

3. Place the cam in position on the actuator shaft. The flat side of the cam hole must align with the long flat on the actuator shaft. Reinstall the retaining ring atop the cam or install the spare retaining ring from the kit. Tighten the cam setscrew. (Hex wrench is included in the LSM mounting kit.) Figure 3.

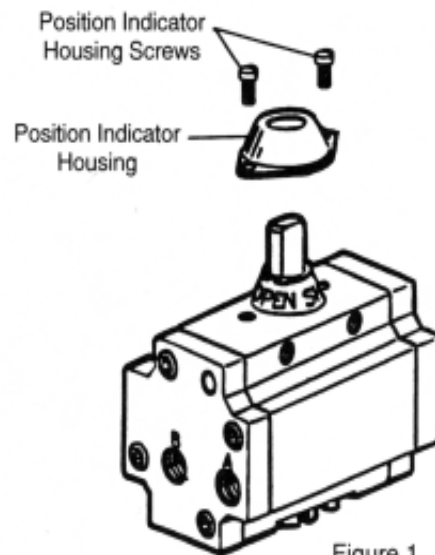


Figure 1

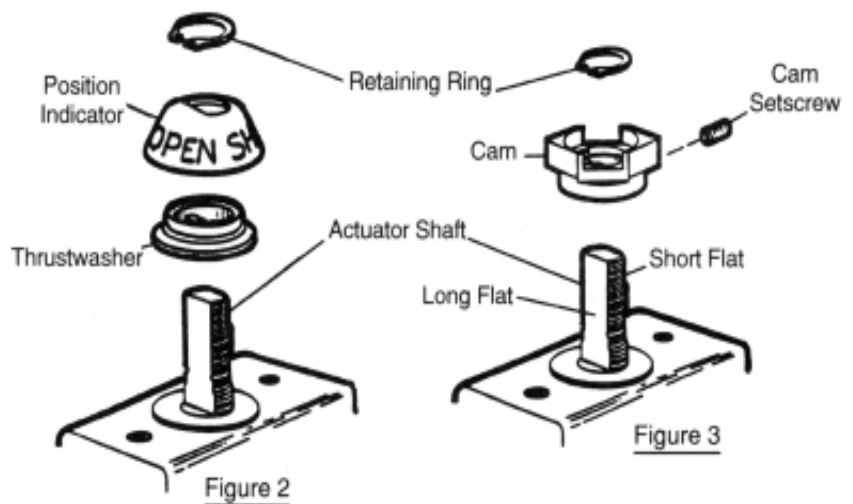


Figure 2

Figure 3

INSTALLATION TO 400 SERIES ACTUATORS (continued)

4. Place the limit switch bracket atop actuator so that the long side faces the side of the actuator on which the limit switch is desired. Secure the bracket with the socket head screws. All factory mounted units are assembled so that the long side is opposite the actuator nameplate side unless otherwise specified. Figure 4

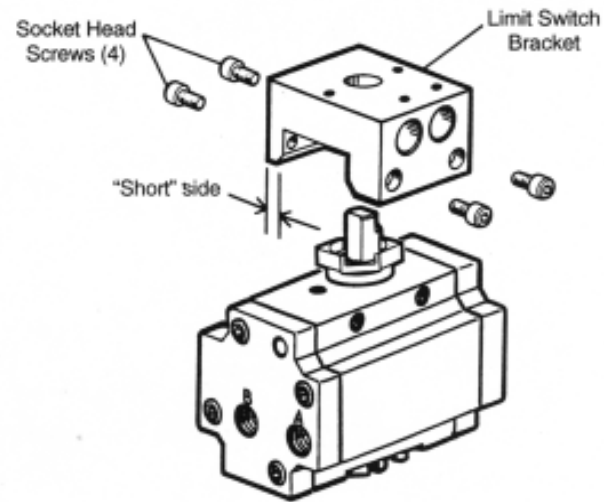


Figure 4

Attachment of Limit Switch

1. Fit the bushings, which extend from the Limit Switch housing, into the matching holes in the long side of the mounting bracket. Push switch housing against bracket and verify that switch body touches bracket. Secure switch body to bracket with two #10-24 setscrews using a medium strength (non-permanent) thread locker (not included in mounting kit). . Note: Hex wrench supplied with LSM Mounting Kit. Figure 5.

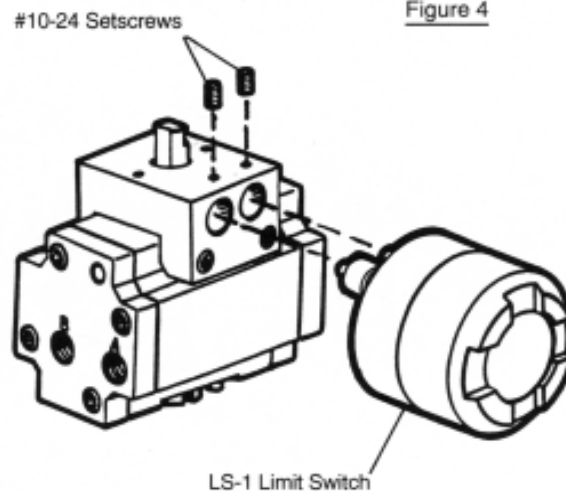


Figure 5

The LS-1 Limit Switch installation should now be operable upon

Wiring Instructions

1. Route the wire to be terminated through the conduit hub and up through the access space to the terminal block.
2. Strip insulation back 1/4", insert the stripped ends directly into the proper terminal clamps and tighten screws.
3. Internal interconnections between terminal-block and switches are diagrammed inside the Limit Switch Cover.

Wiring Specifications

Switch Ratings

AC	250 volts; 10 amps
DC	250 volts; 0.25 amps 125 volts; 0.50 amps
Lamp Load	125 volts; 5 amps

Wire Size

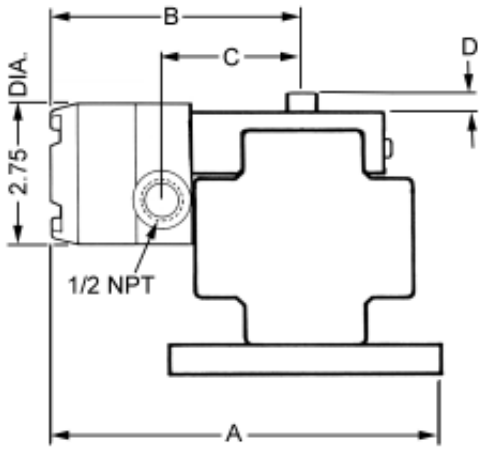
#12 AWG Max. #24 AWG Min.
Field Installed Conductors Must Have a Temperature Rating of 60C or 75C

Insulation Stripping Length: 1/4"

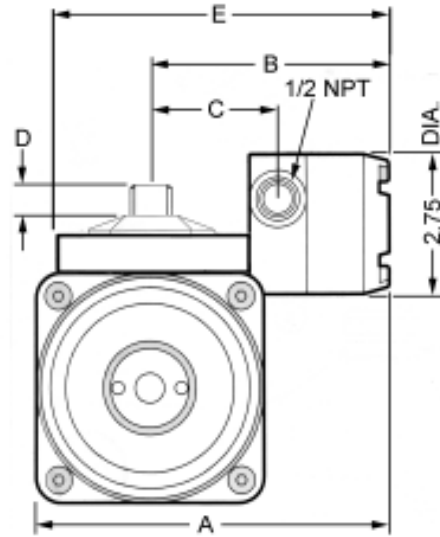
Note: If the Switch is installed in a hazardous location i.e. where flammable vapors or dust are present in the atmosphere, replace the cover and tighten securely before connecting the electrical supply circuit.

If necessary, a screwdriver shank or similar tool may be engaged in the cover wrenching lugs to assist removal and replacement.

DIMENSIONS



B410 & A420 Series



A510 & A520 Series

Actuator Model Series	A	B	C	D	E
B410	5.48	3.98	1.85	.28	-
A510	5.52	3.98	1.85	.97	5.32
A420	7.09	4.69	2.56	.66	-
A520	6.57	4.31	2.18	.63	5.87