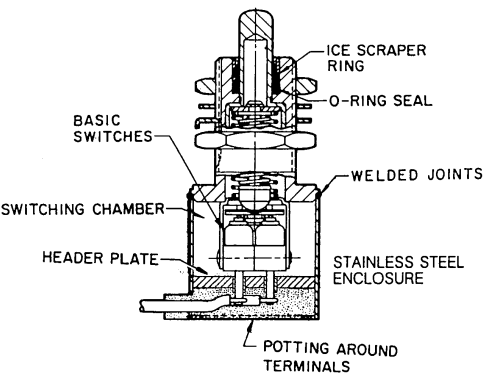
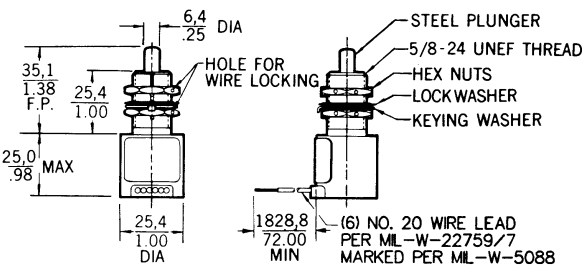


Position Sensors
Environment-Sealed Limit Switches

EN Series



1EN1-6



ELECTRICAL SPECIFICATIONS
The electrical ratings charted below are referenced in the order guides. Refer to appropriate MIL specification for ratings applicable to specific switches.

DC RATINGS (Amps)

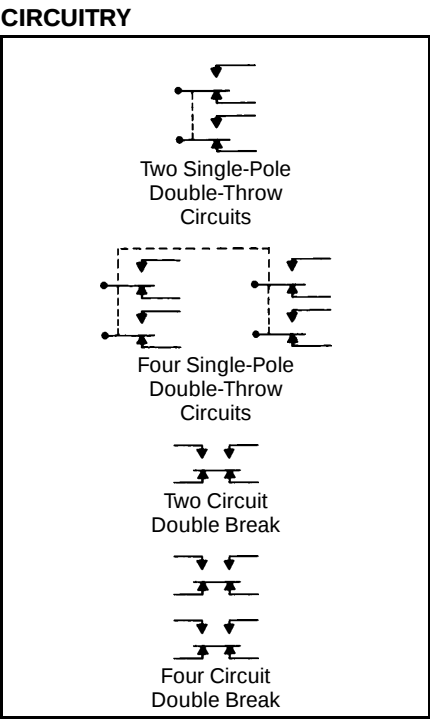
Rating ² Code	Voltage	Sea Level				50,000 Feet			
		Inrush	Motor	Res.	Ind.	Inrush	Motor	Res.	Ind.
A	28 VDC	24	4	4	2	24	4 ³	4 ¹	2
B	28 VDC	36	6	10	3	36	6 ³	10	3
C	28 VDC	30	5	15	10	30	5 ³	15	10
D	28 VDC	24	4	5	3	N/A			
E	28 VDC	N/A		1	.5	N/A		1	.5
F	28 VDC	24	4	7	4	24	4 ³	7	2.5

Notes:
¹ 5 amps for rotary switches
² For other electrical data, contact your nearest MICRO SWITCH Sales Office. MIL-S-8805 ratings apply when this specification is invoked.
³ Application information only.

AC RATINGS (Amps)

Rating Code	Voltage	Sea Level			
		Motor		Res.	Ind.
		Make	Break		
A&D	125/460 VAC @ 60 Hz	24	4	5	3
	125 VAC @ 400 Hz	24	4	5	5
B	125/250 VAC @ 60 Hz	20	3	5	5
	460 VAC @ 60 Hz	20	3	3	3
	125 VAC @ 400 Hz	36	6	10	6
C	125/250 VAC @ 60 Hz	20	3	5	5
	460 VAC @ 60 Hz	20	3	3	3
	125 VAC @ 400 Hz	30	5	10	6
F	125/460 VAC @ 60 Hz	12	2	2	2
	125 VAC @ 400 Hz	24	4	5	5

- FEATURES
- Environment-proof seal per Symbol 4, MIL-S-8805
 - Qualified to MIL-S-8805
 - Standard temperature range: -65°F to +185°F (-54°C to +85°C)
 - High temperature range listings: -65°F to +257°F (-54°C to +125°C)
 - Meets or exceeds mechanical and electrical life as defined in MIL-S-8805



Position Sensors

Courtesy of Steven Engineering, Inc. • 230 Ryan Way, South San Francisco, CA 94080-6370 • Main Office: (650) 588-9200 • Outside Local Area: (800) 258-9200 • www.stevenengineering.com

Position Sensors

Environment-Sealed Limit Switches

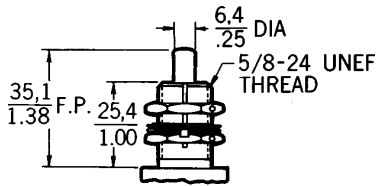
TERMINATION

Termination is specified in the order guides. Leadwires are generally six feet long, and of the gage and Military Specifications noted in the order guides.

OPERATION

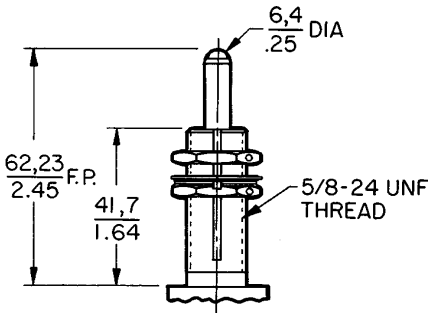
Plunger Actuators

For in-line actuation. An ice scraper ring cleans the actuator with each operation.



Ball Bearing Plunger Actuator

For random direction operation. An ice scraper ring cleans the actuator with each operation. For further information, contact your nearest MICRO SWITCH Sales Office.



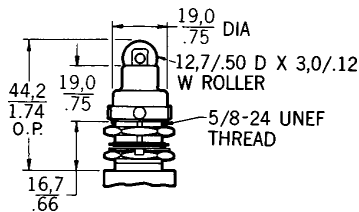
MOUNTING

Plunger actuator switches mount through 5/8 inch or 15/32 inch diameter holes. Lock washer, keyed washer, and wire lock hexagon mounting nuts lock the switches in their mounting holes.

Rotary actuator switches mount through 15/32 inch diameter holes. A lock washer wire lock hexagon nut and locating pins on the top of the housing prevent switch rotation.

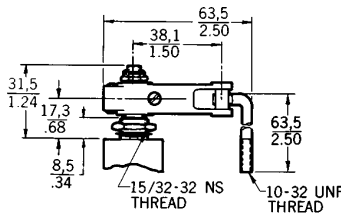
Roller Plunger Actuators

For cam and slide actuation not to exceed 20° rise. Roller adjusts laterally in 45° increments. An ice scraper ring cleans the actuator with each operation.



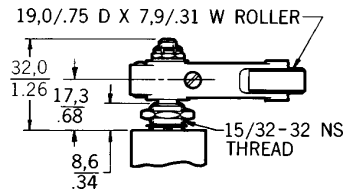
Rotary Linkage Lever Actuator

A threaded rod attaches to the rotary lever for positive actuation. The rotary lever operates in either direction and adjusts laterally to any position through 360°. The threaded rod pivots in two planes. The actuator has no spring return, but is controlled directly by the movement of the actuating device.



Rotary Roller Lever Actuator

For cam and slide actuation with more than a 30° rise. A spring returned mechanism, this actuator is available in clockwise and counterclockwise operation designs. The actuator adjusts laterally to any position through 360°. The roller is laminated phenolic.



Key: 0.0 = mm
0.00 = inches

DIMENSIONS SHOWN ARE FOR REFERENCE ONLY

Position Sensors

Environment-Sealed Limit Switches

EN Series

MIL-S-8805 PERFORMANCE APPROVED SWITCHES
EN Standard Size Switches

Catalog Listing	Procurement Part No.	Terminal Strength Newtons lbs.	Strength of Actuating Means Newtons lbs.	Strength of Mounting Bushing Nm in. lbs.	Vibration	Shock	Moisture Resistance	Salt Spray	Explosion	Acceleration	Seal Resilient (Symbol 4)
1EN1-6 2EN1-6 3EN1-6 4EN1-6	MS24331-1 MS24331-2 MS24331-3 MS24331-4	66,7 15	133 30	1,7 15	10-58 Hz at .060 in. (1,52mm) Double Amplitude 58-500 Hz at 10gs	100gs .006 sec. pulse sawtooth	Applicable test	Applicable test	Applicable test	N/A	Applicable test
31EN11-6 31EN1-6 32EN11-6 32EN1-6 33EN11-6 33EN1-6 34EN11-6 34EN1-6	MS21320-1 MS21320-2 MS21320-3 MS21320-4 MS21320-5 MS21320-6 MS21320-7 MS21320-8	66,7 15	44,5 10	1,7 15	10-58 Hz at .060 in. (1,52mm) Double Amplitude 58-500 Hz at 10gs	100gs .006 sec. pulse sawtooth	Applicable test	Applicable test	Applicable test	N/A	Applicable test
41EN1-6 42EN1-6 43EN1-6 44EN1-6	MS24420-1 MS24420-2 MS24420-3 MS24420-4	66,7 15	—	1,7 15	10-58 Hz at .060 in. (1,52mm) Double Amplitude 58-500 Hz at 10gs	100gs .006 sec. pulse sawtooth	Applicable test	Applicable test	Applicable test	N/A	Applicable test
1EN75-R3	M8805/65-001	—	44,5 10	1,7 15	10-70 Hz at .060 in. (1,52mm) Double Amplitude 70-2000 Hz at 15gs	High impact type "H"	Applicable test	Applicable test	Applicable test	20g	Applicable test



1EN1-6



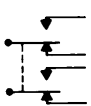
1EN1-S



1EN42-R

Characteristics: O.F. - Operating Force; R.F. - Release Force; P.T. - Pretravel; O.T. - Overtravel; D.T. - Differential Travel.

EN STANDARD SIZE SWITCHES ORDER GUIDE

Circuitry	Actuator	Termination	Elec. Rating ¹ Code	Catalog Listing	Characteristics					Housing Dimensions ²			Repl. Mtg. Hdw. Pkt. ⁶
					O.F. N lbs.	R.F. min. N lbs.	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	Height mm inches	Dia. mm inches	Wgt. max. g oz.	
 Two Single-Pole Double-Throw Circuits	Plunger	No. 20 Leadwire MIL-W-22759/7	A	1EN1-6 (MS24331-1) (8805/40)	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	24,9 .980	25,4 1.0	207 7.3	1
	Ball Bearing Plunger	as above	A	2001EN1-6	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	24,9 .980	25,4 1.0	207 7.3	1
	Plunger	Screw ⁴	A	1EN1-S	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	38,2 1.505	25,4 1.0	99 3.5	3
	Plunger	Side ⁵ Receptacle	A	1EN42-R	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	26,9 1.06	58,4 ³ 2.3	221 7.8	3

Notes:

¹ Electrical ratings are on page 25.

² Combine housing diameter and height with actuator on page 26 for overall size.

³ Maximum length rather than housing diameter.

⁴ This listing has 4-48 NF × .175 inch round head screws with lockwashers. Terminals are well isolated by phenolic barriers and epoxy casting resin.

⁵ These listings have pin receptacles (mating connectors should be ordered from a local supplier).

⁶ See page 33 for replacement mounting hardware packet catalog listings.

N = Newtons

Position Sensors

Position Sensors

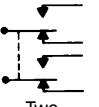
Environment-Sealed Limit Switches

EN Series



EN STANDARD SIZE SWITCHES ORDER GUIDE

Characteristics: O.F. — Operating Force; R.F. — Release Force;
P.T. — Pretravel; O.T. — Overtravel; D.T. — Differential Travel.

Circuitry	Actuator	Termination	Elec. Rating ¹ Code	Catalog Listing	Characteristics					Housing Dimensions ²			Repl. Mtg. Hdw. Pkt. ⁴
					O.F. N lbs.	R.F. min. N lbs.	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	Height mm inches	Dia. mm inches	Wgt. max. g oz.	
 Two Single-Pole Double-Throw Circuits	Plunger	Bottom ³ Receptacle	A	1EN43-R	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	53,3 2.1	25,4 1.0	204 7.2	3
	Plunger	No. 18 Leadwire MIL-W-22759/7	B	2EN1-6 (MS24331-2) (8805/40)	26,7-53,4 6-12	22,8 5	1,27 .050	6,35 .250	0,89 .035	38,1 1.5	38,1 1.5	156 5.5	1
	Roller Plunger	No. 20 Leadwire (MIL-W-22759/7)	A	21EN9-6	26,7-53,4 6-12	17,8 4	1,02 .040	6,35 .250	0,51 .020	24,9 .980	25,4 1.0	252 8.9	4
	Roller Plunger	No. 18 Leadwire (MIL-W-22759/7)	B	22EN9-6	26,7-53,4 6-12	22,2 5	1,02 .040	6,35 .250	0,76 .030	38,1 1.5	38,1 1.5	38,3 13.5	4
	Rotary Roller Lever	No. 20 Leadwire MIL-W-22759/7	A	31EN11-6 (CW) (MS21320-1) (8805/48) 31EN1-6 (CCW) (MS21320-2)	1,4-2,8 Nm max. 12-25 in. lb.	1,0 Nm 9 in. lb.	13"	32"	4" max.	53,6 2.11	25,4 1.0	269 9.5	5 5
	Rotary Roller Lever	No. 18 Leadwire MIL-W-22759/7	B	32EN11-6 (CW) (MS21320-3) (8805/48) 32EN1-6 (CCW) (MS21320-4) (8805/48)	1,4-2,8 Nm max. 12-25 in. lb.	1,0 Nm 9 in. lb.	20"	25"	6" max.	68,6 2.7	38,1 1.5	368 13	5 5
	Rotary Linkage Lever	No. 20 Leadwire MIL-W-22759/7	A	41EN1-6 (MS24420-1)	0,34 Nm max. 3 in. lb.	—	—	—	12" max.	25,4 1	25,4 1.0	213 7.5	5
	Rotary Linkage Lever	No. 18 Leadwire MIL-W-22759/7	B	42EN1-6 (MS24420-2) (8805/49)	0,57 Nm max. 5 in. lb.	—	—	—	12" max.	42,2 1.66	38,1 1.5	220 7.75	5

Notes:
¹ Electrical ratings are on page 25.
² Combine housing diameter and height with actuator on page 26 for overall size.

³ These listings have pin receptacles (mating connectors should be ordered from a local supplier).
⁴ See page 33 for replacement mounting hardware packet catalog listings.
N = Newtons