Honeywell

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This PDF catalog information was published in November 2000.



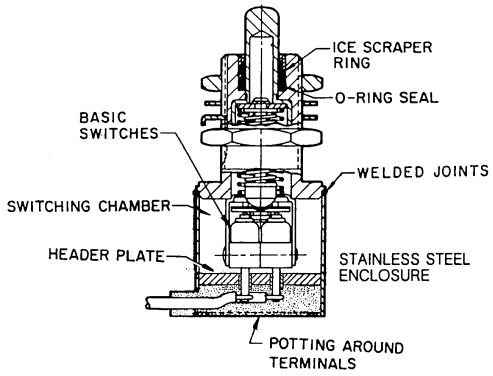
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Sensing and Control
Honeywell Inc.
11 West Spring Street
Freeport, IL 61032

www.honeywell.com/sensing

Environment-Sealed Limit Switches

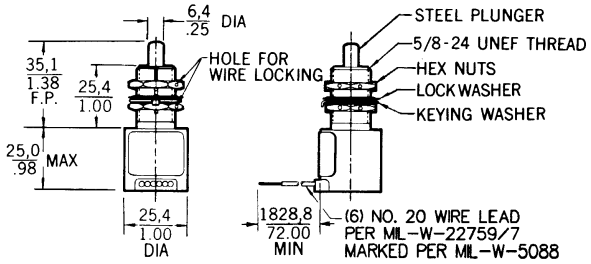




FEATURES

- 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

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)

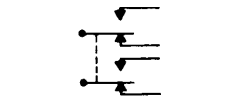
Rating[2] Code	Voltage	Sea Level				50,000 Feet			
		Inrush	Motor	Res.	Ind.	Inrush	Motor	Res.	Ind.
A	28 VDC	24	4	4	2	24	4[3]	4[1]	2
B	28 VDC	36	6	10	3	36	6[3]	10	3
C	28 VDC	30	5	15	10	30	5[3]	15	10
D	28 VDC	24	4	5	3	N/A			
E	28 VDC	N/A		1	.5	N/A		1	.5
F	28 VDC	24	4	7	4	24	4[3]	7	2.5

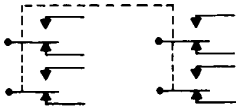
Notes:
[1] 5 amps for rotary switches
[2] For other electrical data, contact your nearest MICRO SWITCH Sales Office. MIL-S-8805 ratings apply when this specification is invoked.
[3] Application information only.

AC RATINGS (Amps)

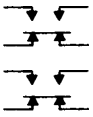
Rating Code	Voltage	Sea Level			
		Motor		Res.	Ind.
		Make	Break		
A&D	125/460 VAC @ 60 Hz	24	4	5	3
	125 VAC @ 400 Hz	24	4	5	5
B	125/250 VAC @ 60 Hz	20	3	5	5
	460 VAC @ 60 Hz	20	3	3	3
	125 VAC @ 400 Hz	36	6	10	6
C	125/250 VAC @ 60 Hz	20	3	5	5
	460 VAC @ 60 Hz	20	3	3	3
	125 VAC @ 400 Hz	30	5	10	6
F	125/460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

CIRCUITRY


Two Single-Pole Double-Throw Circuits


Four Single-Pole Double-Throw Circuits


Two Circuit Double Break


Four Circuit Double Break

Environment-Sealed Limit Switches

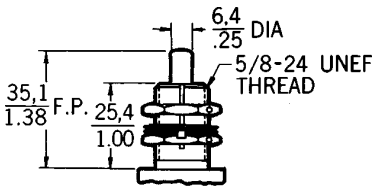
TERMINATION
Termination is specified in the order guides. Leadwires are generally six feet long, and of the gage and Military Specifications noted in the order guides.

MOUNTING
Plunger actuator switches mount through ⅝ inch or 15/32 inch diameter holes. Lock washer, keyed washer, and wire lock hexagon mounting nuts lock the switches in their mounting holes.

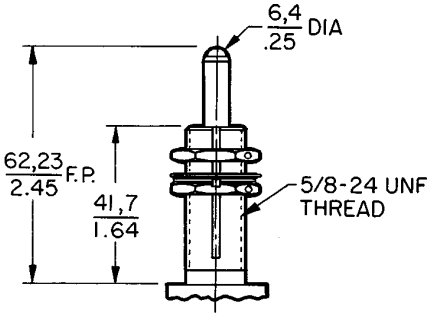
Rotary actuator switches mount through 15/32 inch diameter holes. A lock washer wire lock hexagon nut and locating pins on the top of the housing prevent switch rotation.

OPERATION

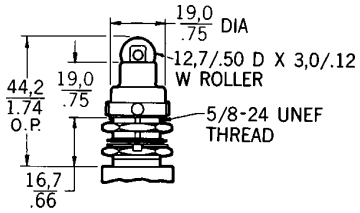
Plunger Actuators
For in-line actuation. An ice scraper ring cleans the actuator with each operation.



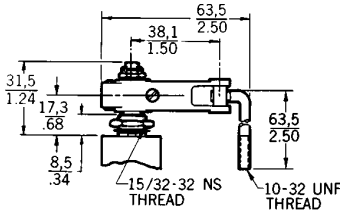
Ball Bearing Plunger Actuator
For random direction operation. An ice scraper ring cleans the actuator with each operation. For further information, contact your nearest MICRO SWITCH Sales Office.



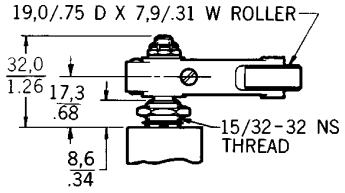
Roller Plunger Actuators
For cam and slide actuation not to exceed 20° rise. Roller adjusts laterally in 45° increments. An ice scraper ring cleans the actuator with each operation.



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

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	Acceler-ation	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



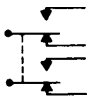
1EN1-S



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 O.F. N lbs.	R.F. min. N lbs.	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	Housing Dimensions[2] Height mm inches	Dia. mm inches	Wgt. max. g oz.	Repl. Mtg. Hdw. Pkt.[6]
	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
Two Single-Pole Double-Throw Circuits	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

Environment-Sealed Limit Switches


1EN43-R


2EN1-6


41EN1-6


21EN9-6


22EN9-6

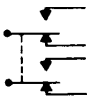

42EN1-6


31EN1-6


32EN1-6

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.[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

Position Sensors

EN Series

Environment-Sealed Limit Switches


5EN1-6


25EN9-6


3EN1-6


23EN9-6


33EN1-6


4EN1-6

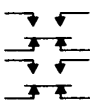

24EN9-6


34EN1-6


44EN1-6

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]		Wgt. max. g oz.	Repl. Mtg. Hdw. Pkt.[3]
					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		
Four Single-Pole Double-Throw Circuits	Plunger	No. 20 Leadwire (MIL-W-5086)	A	5EN1-6	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,76 **.030**	30,5 **1.2**	38,1 **1.5**	346 **12.2**	3
(See p. 25 for circuit drawing)	Roller Plunger	No. 20 Leadwire (MIL-W-5086)	A	25EN9-6	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,76 **.030**	30,5 **1.2**	38,1 **1.5**	360 **12.7**	4
 Two Circuit Double Break	Plunger	No. 18 Leadwire MIL-W-22759/7	C	3EN1-6 (MS24331-3) (8805/40)	26,7-53,4 **6-12**	22,2 **5**	1,52 **.060**	6,35 **.250**	0.89 **.035**	33,3 **1.31**	38,1 **1.5**	241 **8.5**	1
	Roller Plunger	No. 18 Leadwire (MIL-W-5086)	C	23EN9-6	26,7-53,4 **6-12**	22,2 **5**	1,52 **.060**	6,35 **.250**	0.89 **.035**	33,3 **1.31**	38,1 **1.5**	255 **9**	4
	Rotary Roller Lever	No. 18 Leadwire MIL-W-22759/7	C	33EN11-6 (CW) (MS21320-5) (8805/48) 33EN1-6 (CCW) (MS21320-6) (8805/48)	1,4-2,8 Nm **12-25 in. lb.**	0.9 Nm **8 in. lb.**	**15°**	**30°**	**5°**	62 **2.44**	38,1 **1.5**	269 **9.5**	5 5
 Four Circuit Double Break	Plunger	No. 18 Leadwire MIL-W-22759/7	C	4EN1-6 (MS24331-4) (8805/40)	26,7-53,4 **6-12**	22,2 **5**	1,78 **.070**	6,35 **.250**	1,14 **.045**	43,2 **1.7**	38,1 **1.5**	368 **13**	1
	Roller Plunger	No. 18 Leadwire (MIL-W-5086)	C	24EN9-6	26,7-53,4 **6-12**	22,2 **5**	1,78 **.070**	6,35 **.250**	1,14 **.045**	43,2 **1.7**	38,1 **1.5**	368 **13**	4
	Rotary Roller Lever	No. 18 Leadwire MIL-W-22759/7	C	34EN11-6 (CW) (MS21320-7) (8805/48) 34EN1-6 (CCW) (MS21320-8) (8805/48)	1,4-2,8 Nm **12-25 in. lb.**	0,9 Nm **8 in. lb.**	**15°**	**30°**	**10°**	71,6 **2.82**	38,1 **1.5**	439 **15.5**	5 5
	Rotary Linkage Lever	No. 18 Leadwire MIL-W-22759/7	C	44EN1-6 (MS24420-4) (8805/49)	1,1 Nm max. **10 in. lb.**	—	—	—	**20″**	45,7 **1.8**	38,1 **1.5**	451 **15.9**	5

Notes:
[1] Electrical ratings are on page 25.
[2] Combine housing diameter and height with actuator dimension on page 26 for overall size.
[3] See page 33 for replacement mounting hardware packet catalog listings.
N = Newtons

Position Sensors

EN Series

Environment-Sealed Limit Switches

1EN194-S (similar in appearance but has screw terminals)



1EN51-6
1EN231-6



1EN61-6



1EN75-R



1EN76-R



1EN75-R3



21EN75-R1



21EN75-2

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

EN SPECIAL REQUIREMENTS ORDER GUIDE

Special[2] Requirement	Actuator	Termination	Circuitry	Elec. Rating[1] Code	Catalog Listing	Characteristics					Wgt. max. g oz.	Repl. Mtg. Hdw. Pkt.[3]
						O.F. N lbs.	R.F. min. N lbs.	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches		
High Velocity Actuation	Plunger	No. 20 Leadwire (MIL-W-22759/1)	(2)SPDT	A	1EN231-6	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	5,84 **.230**	0,51 **.020**	207 **7.3**	3
Low Force Operation	Plunger	No. 20 Leadwire (MIL-W-5086)	(2)SPDT	A	1EN51-6	13,3-26,7 **3-6**	8,9 **2**	1,02 **.040**	6,35 **.250**	0,51 **.020**	213 **7.5**	3
Increased Overtravel	Plunger	No. 20 Leadwire (MIL-W-5086)	(2)SPDT	A	1EN61-6	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	12,7 **.500**	0,51 **.020**	227 **8**	3
Increased Overtravel	Plunger	Screw	(2)SPDT	A	1EN194-S	26,7-53,4 **6-12**	17,8 **4**	0,38-1,02 **.015-.040**	21,8 **.860**	0,51 **.020**	113 **4**	7
High Shock	Plunger	Bottom Receptacle	(2)SPDT	A	1EN75-R	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	198 **7**	8
High Shock	Plunger	Side Receptacle	(2)SPDT	A	1EN76-R	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	227 **8**	8
High Shock	Plunger	Bottom Receptacle	(2)SPDT	D	1EN75-R3 (M8805/65-001)	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	198 **7**	8
High Shock	Roller Plunger	Bottom Receptacle	(2)SPDT	A	21EN75-R1	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	204 **7.2**	11
High Shock	Roller Plunger	No. 20 Leadwire (MIL-W-22759/7)	(2)SPDT	A	21EN75-2	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	207 **7.3**	11

Notes:
[1] Electrical ratings are on page 25.

[2] These are just a few of the designs that have been developed to meet special application requirements. If you have similar or different special requirements, contact MICRO SWITCH for the right switch to meet them.

[3] See page 33 for replacement mounting hardware packet catalog listings
N = Newtons

EXPLANATIONS OF SWITCHES WITH SPECIAL REQUIREMENTS

High velocity actuation
This switch is designed to withstand near ''hammer-blow'' actuation as is found in over-center locking mechanisms. It is dimensionally interchangeable with standard listing 1EN1-6.

Low force operation
Special spring construction within this switch reduces the normal 6 to 12 pound (26,7 to 53,4 N) EN operating force to 3 to 6 pounds (13,3 to 26,7 N). This switch is also dimensionally interchangeable with the standard size 1EN1-6. Low force 600 series ENs have 3 to 6 pounds (13,3 to 26,7 N) of operating force.

Increased overtravel
A longer plunger and bushing on the switch extends the EN overtravel capabilities from the normal .250 inch to .860 (6,35 to 21,8 mm). The longer bushing also permits additional adjustment of the plunger position.

High impact shock
Catalog listing 1EN75-R3 (M8805/65-001) has been qualified to MIL-S-8805, including high impact shock class H. Other switches rated for high impact shock applications incorporate the same plunger mechanism and internal switch design as used in the 1EN75-R3 and are expected to conform to the same requirements.

Terminations of these listings are:

1EN75-R DM-9601-7P-1D
Deutch receptacle

1EN75-R3 GS02-16S-1P-003
Cannon receptacle

1EN76-R DM-9601-7P-1D
Deutch receptacle

21EN75-R1 GS02-16S-1P-003
Cannon receptacle

21EN75-2 MIL-W-22759/7
Two foot lead wire 20 gage

MICRO SWITCH does not furnish mating connectors with these products.

Position Sensors

Environment-Sealed Limit Switches


Miniature


Standard

FEATURES

- Meets or exceeds mechanical and electrical life as defined in MIL-S-8805.
- Seal definition: Environment-proof. Resilient per MIL-S-8805, symbol 4.
- Military specification: MIL-S-8805
- Temperature range: −67°F to +185°F (−55°C to +85°C)

ELECTRICAL RATINGS

Refer to page 25.

MINIATURE TYPE SWITCHES

Miniature type EN switches meet the demand for smaller size and lighter weight without sacrificing performance or electrical capacity. These types are of the same construction, seal, and materials as the standard size EN switches.

Type 400EN switches are directly interchangeable with their standard size EN counterpart, yet are smaller in diameter and lighter in weight. The miniature listing housing is .312 inch (7,92mm) smaller in diameter, and the switch weight ½ ounce (14,2g) less.

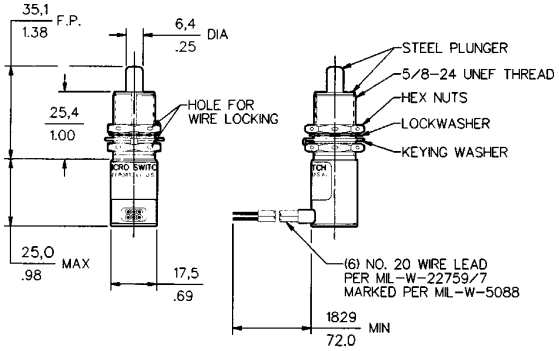
MIL-S-8805 PERFORMANCE APPROVED SWITCHES
EN Miniature Switches

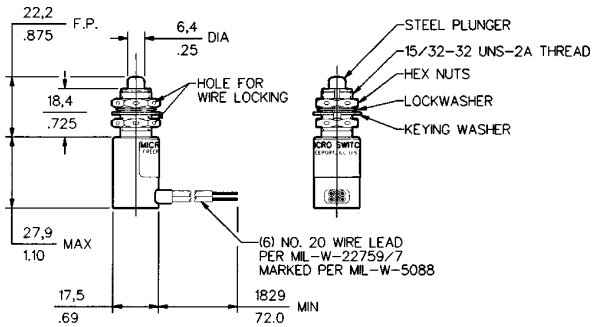
Catalog Listing	Procurement Part No.	Terminal Strength Newtons lbs.	Strength of Actuating Means Newtons lbs.	Strength of Mounting Bushing Nm in. lbs.	Vibration	Shock	Moisture Resistance	Salt Spray	Explosion	Acceleration	Seal Resilient (Design 4)
402EN1-6 404EN1-6	MS21321-1 MS21321-2	66,7 **15**	133 **30**	1,7 **15**	10-70 Hz at .060 in. (1,52mm) D.A.[1] 70-2000 Hz at 15gs	100gs .006 sec. pulse sawtooth	Applicable test	Applicable test	Applicable test	N/A	Applicable test
602EN1-6 604EN1-6 622EN1-6 624EN1-6 602EN222-6 604EN222-6 622EN222-6 624EN222-6	MS27240-1 MS27240-2 MS27240-3 MS27240-4 MS27240-5 MS27240-6 MS27240-7 MS27240-8	66,7 **15**	44,5 **10**	1,7 **15**	10-70 Hz at .060 in. (1,52mm) D.A.[1] 70-2000 Hz at 15gs	100gs .006 sec. pulse sawtooth	Applicable test	Applicable test	Applicable test	N/A	Applicable test

Notes:
[1]D.A. = double amplitude or displacement.


402EN1-6


602EN1-6





Position Sensors

EN Series

Environment-Sealed Limit Switches


442EN1-6


404EN1-6


444EN1-6


622EN1-6


604EN1-6


602EN602-6

EN MINIATURE SWITCHES ORDER GUIDE

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

Circuitry	Actuator	Elec. Rating Code	Catalog Listing	Characteristics					Housing Dimensions[1]		Wgt.	Repl. Mtg. Hdw. Pkt[3]
				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	g oz.	
Two Single-Pole Double-Throw Circuits	Plunger	F	402EN1-6 (MS21321-1) (8805/39)	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	24,9 **.980**	17,5 **.688**	204 **7.2**	1
	Rotary Linkage Lever	F	442EN1-6	34 Nm max. **3 in. lbs.**	—	—	—	12″	25.4 **1.0**	17.5 **.688**	207 **7.3**	9
Four Single-Pole Double-Throw Circuits	Plunger	F	404EN1-6 (MS21321-2) 8805/39)	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	6,35 **.250**	0,51 **.020**	30,5 **1.2**	25,4 **1.0**	354 **12.5**	1
	Rotary Linkage Lever	F	444EN1-6	.34 Nm max. **3 in. lbs.**	—	—	—	12″	30,2 **1.19**	25,4 **1.0**	340 **12**	6
Two SPDT Circuits	Plunger	F	602EN1-6 (MS27240-1) (8805/43)	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	3,18 **.125**	0,51 **.020**	25,4 **1.0**	17,5 **.688**	176 **6.2**	2
		E	602EN222-6 (MS27240-5) (8805/43)									2
	Roller Plunger	F	622EN1-6 (MS27240-3) (8805/43)	26,7-53,4 **6-12**	17,8 **4**	1,02 **.040**	3,18 **.125**	0,51 **.020**	25,4 **1.0**	17,5 **.688**	204 **7.2**	10
		E	622EN222-6 (MS27240-7) (8805/43)									10
Four SPDT Circuits	Plunger	F	604EN1-6 (MS27240-2) (8805/43)	26,7-53,4 **6-12**	17,8 **4**	1,02 **040**	3,18 **.125**	0,51 **.020**	30,5 **1.2**	25,4 **1.0**	354 **12.5**	2
		E	604EN222-6 (MS27240-6) (8805/43)									2
	Roller Plunger	F	624EN1-6 (MS27240-4) (8805/43)	26,7-53,4 **6-12**	17,8 **4**	1,02 **040**	3,18 **.125**	0,51 **.020**	30,5 **1.2**	25,4 **1.0**	354 **12.5**	10
		E	624EN222-6 (MS27240-8) (8805/43)									
Two SPDT Circuits	.125 Dia. Plunger	F	602EN602-6	8,9-17,8 **2-4**	4,4 **1**	0,38 **.015±.010**	6,35 **.250**	0,51 **.020**	25,4 **1.0**	17,5 **.688**	170 **6.0**	2

Notes:

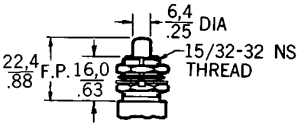
[1] Combine housing diameter and height with actuator dimension on this page or page 26 for overall size of the switch.

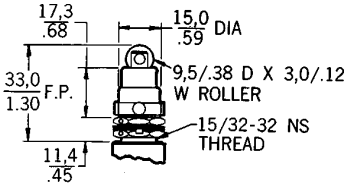
[2] All miniature EN limit switches listed here have 6 foot (1,8m) lengths of No. 20 leadwire per MS22759-7, marked per MIL-W-5088. For variations, contact MICRO SWITCH.

[3] See page 33 for replacement mounting hardware packet catalog listings

N = Newtons

600EN ACTUATOR DIMENSIONS





400EN actuator dimensions are the same as those shown for standard size ENs on page 26.

EN REPLACEMENT PARTS ORDER GUIDE

	Catalog Listing	Description	For Use on:
	**6PA30**	Roller lever arm	30EN series
	**6PA31** **6PA357**	Linkage lever arm Threaded rod only	40EN series
	**6PA32** **6PA202**	Roller lever arm Roller lever arm	1EN & 1HE series 600EN & 600HE series
	**15PA104** **15PA105**	Roller guide and locking ring Roller guide and locking ring	21EN, 422/424EN series (⅝″ bushing) 622/624EN series (15⁄32″ bushing)
	**15PA137** **15PA107**	Locking ring only Locking ring only	21EN 422/424EN series (⅝″ bushing) 622EN & 624EN series (15⁄32″ bushing)
	**19PA8** **19PA9**	Military-type mounting hardware Military-type mounting hardware	1EN series (⅝″ bushing) 600EN series (15⁄32″ bushing)

REPLACEMENT MOUNTING HARDWARE PACKETS
Refer to EN order guides on previous pages (catalog listing column and right hand column) for switch/mounting hardware cross-reference.

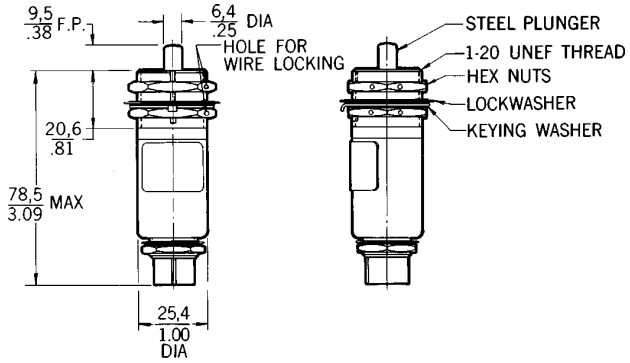
Repl. Mtg. Hdw. Pkt.	Catalog Listing	Repl. Mtg. Hdw. Pkt.	Catalog Listing
1	19PA8	7	19PA120-EN
2	19PA9	8	19PA121-EN
3	19PA78-EN	9	19PA122-EN
4	19PA115-EN	10	19PA123-EN
5	19PA117-EN	11	19PA124-EN
6	19PA119-EN		

[1] Other packets are available. Contact your local MICRO SWITCH sales office for more information.

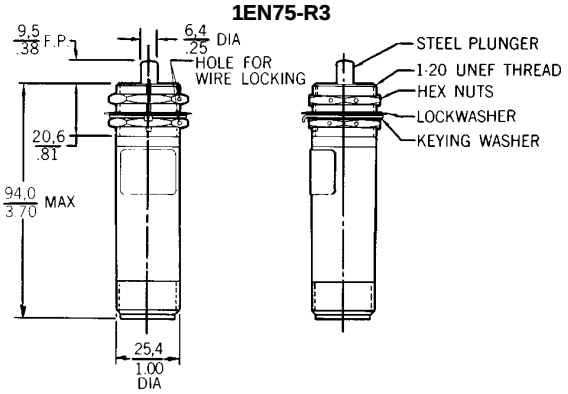
EN MOUNTIND DIMENSIONS (For reference only)

Standard size EN switches

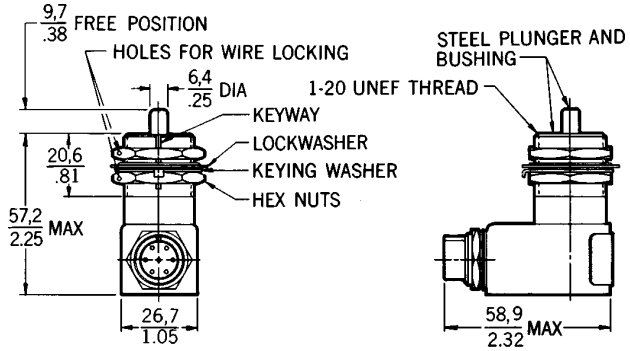
1EN75-R



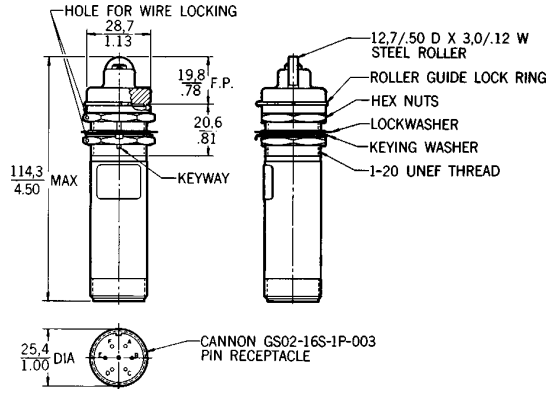
1EN75-R3



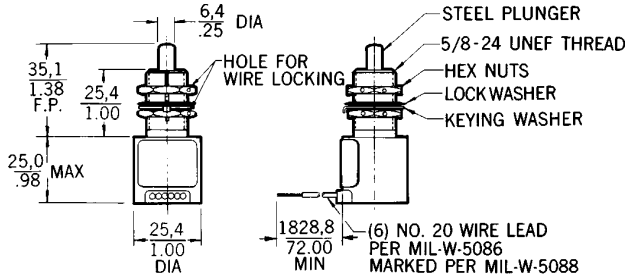
1EN76-R



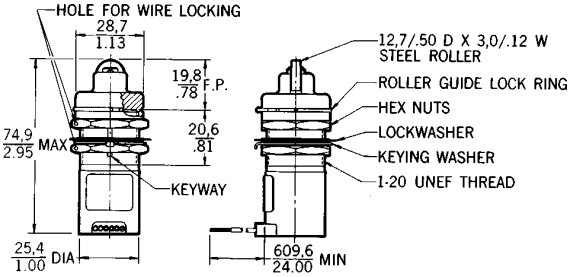
21EN75-R1



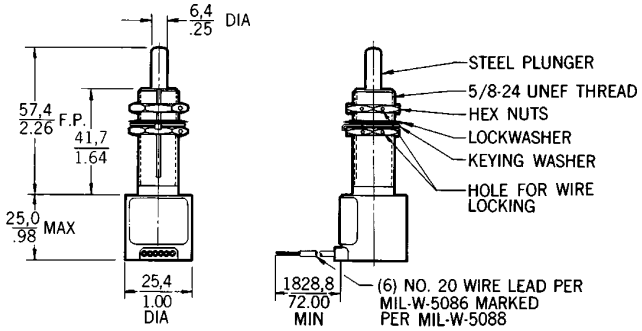
1EN51-6
1EN231-6



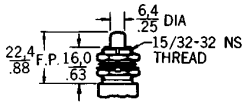
21EN75-2



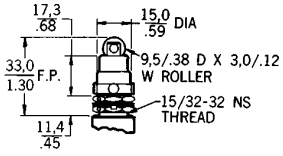
1EN61-6



600EN actuators



Plunger



Roller plunger

Key: 0,0 = mm / 0.00 = inches