



MICRO SWITCH

FREPORT, ILLINOIS, U.S.A.
A DIVISION OF HONEYWELL

FED. MFG. CODE 91929

SWITCH-BASIC

CATALOG LISTING

V3-15

CK-A1500

V3-15

M

DRAWING NUMBER

1819

ISSUE

1816

1819

REVISIONS

A CO20189

M B F 11 MAY 65

B CO21688

M B F 3 OCT 66

C CO31509

R E R 22 JAN 73

D CO32395

K S W 24 FEB 76

E CO47241

G J W MAR 80

F CO 56987

S M A 1 OCT 85

G CO74634

K D R 5 MAY 93

REPLACES

RELEASE NO.

20MAY65

20MAY65

18MAY65

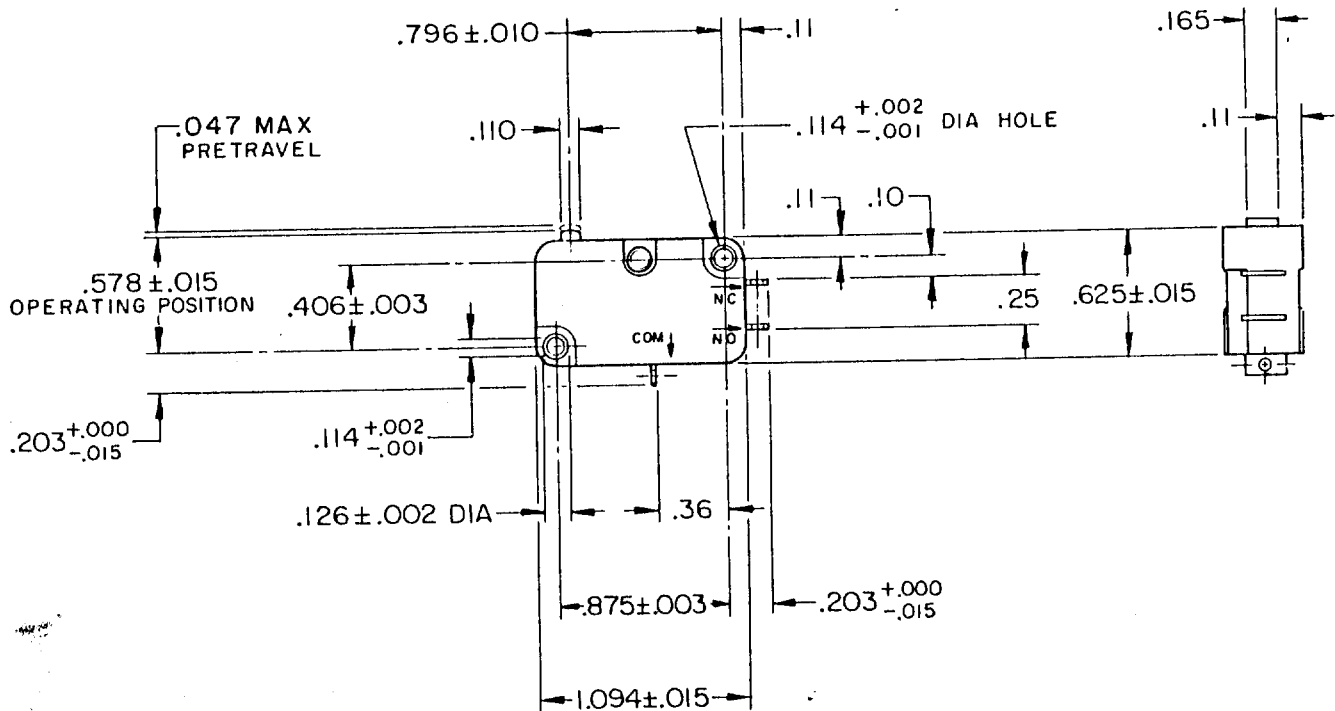
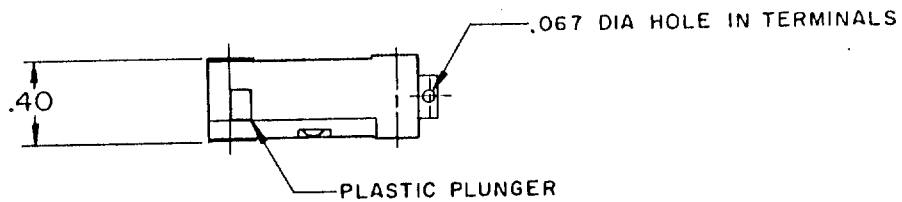
15D

14MAY65

14MAY65

11MAY65

11MAY65



NOTE-

- 1 - TERMINALS ARE PLATED FOR SOLDERING
- 2 - PLUNGER MATERIAL WILL WITHSTAND TEMPERATURE OF 300°F

THIS DRAWING COVERS A PROPRIETARY ITEM AND IS THE PROPERTY OF MICRO SWITCH, A DIVISION OF HONEYWELL. THIS DRAWING IS NOT TO BE COPIED OR USED WITHOUT THE APPROVAL OF MICRO SWITCH.

CHARACTERISTICS

OPERATING FORCE — — — — 6 - 14 OZ

RELEASE FORCE — — — — 4 OZ MIN

RELEASE TRAVEL — — — — .007 MIN

DIFFERENTIAL TRAVEL — — — .006 - .016

OVERTRAVEL — — — — .040 MIN

FREE POSITION — — — — .625 MAX

ELECTRICAL DATA

CONTACT ARRANGEMENT
S P D T

L83
15.1A 1/2HP 125 OR 250 VAC
1/2A 125 VDC, 1/4A 250 VDC
5A 125 VAC "L"



SCALE FULL

DO NOT SCALE PRINT

UNLESS OTHERWISE NOTED

DIMENSIONS ARE IN INCHES

TOLERANCES ARE:

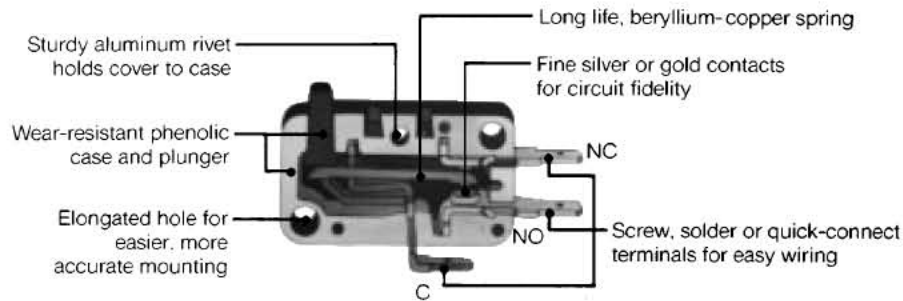
ONE PLACE	(.0)	±.030
TWO PLACE	(.00)	±.015
THREE PLACE	(.000)	±.005
ANGLES		±

WEIGHT .015 LB

0-50378

Basic Switches Miniature

CUT-A-WAY V3 MINIATURE BASIC SWITCH



GENERAL INFORMATION

V3 miniature basic switches feature high electrical capacity and long life. Their size and shape meet design requirements in all types of applications.

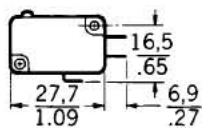
There is a choice of SPDT, SPNC, and SPNO circuitry. Many lever styles, contact materials, and terminal variations can be furnished. Contact the 800 number for ordering information.

FEATURES

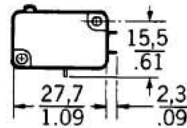
- Low operating force to .53 ounce maximum
- Sensitive differential travel as low as .006 inch maximum
- Power load switching capability up to 25 amperes—silver contacts
- Gold alloy crosspoint, silver cadmium, and other contact material for special applications
- Long mechanical life of 10,000,000 cycles—95% survival for V3-100, V3-1100, V3-2100, V3-3000 Series
- Temperature tolerance up to +180°F (82°C) on standard construction
- High temperature construction for use up to +600°F (316°C)
- 3,1 mm mounting holes available
- UL recognized File #E12252, CSA certified File #LR41370

AVAILABLE TERMINALS

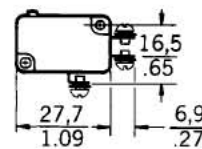
SOLDER



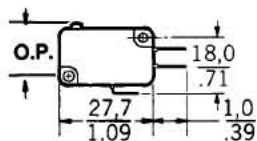
SHORT SOLDER



SCREW

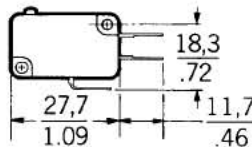


D8



QUICK CONNECT

D9



.188 wide x .020 thick terminals

.250 wide x .032 thick terminals

Dimensions shown are for reference only

Key: $\frac{0.0}{0.00} = \frac{\text{mm}}{\text{inches}}$

Mounting torque:
2 inch pounds min.
5 inch pounds max.

This section covers only **60** of our most popular V3 Series catalog listings. If you don't find what you're looking for, it's likely one of the approximately **850** other active V3 listings will meet your needs. Contact the 800 number.

Basic Switches Miniature

V3 Series

Characteristics: O.F. — Operating Force;
R.F. — Release Force; P.T. — Pretravel;
O.T. — Overtravel; D.T. — Differential Travel;
O.P. — Operating Positon; F.P. — Free Position
* Characteristics taken with actuator assembled on Catalog Listing V3-100 switch as shown.

AUXILIARY ACTUATORS

Switches are not included with actuators

ORDER GUIDE - SWITCHES ARE NOT INCLUDED WITH ACTUATORS

Catalog Listing	Description	Actuator Length "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches	F.P. max. mm inches
JV-26	Long lever	44,5 † 1.75	0,39 1.4	0,06 .21	8,33 .328	3,58 .141	4,75 .187	12,7±3,18 .500±.125	—



Dim. Dwg. Fig. 14

JV-20	Roller lever	19,1 † .750	0,83 3	0,14 .5	4,78 .188	1,57 .062	1,98 .078	19,5±1,4 .766±.055	23,8 .936
--------------	--------------	-----------------------	------------------	-------------------	---------------------	---------------------	---------------------	------------------------------	---------------------



Dim. Dwg. Fig. 14

JV-220	Roller lever	17,7 † .695	0,83 3	0,14 .5	4,78 .188	1,57 .062	1,98 .078	19,5±1,1 .766±.045	23,8 .936
---------------	--------------	-----------------------	------------------	-------------------	---------------------	---------------------	---------------------	------------------------------	---------------------



Dim. Dwg. Fig. 14

JV-30	One-way roller lever	20,6 .81	3,34 12	1,11 4	2,03 .080	0,51 .020	0,38 .015	25,7±0,76 1.010±.030	27,7 1.09
--------------	----------------------	--------------------	-------------------	------------------	---------------------	---------------------	---------------------	--------------------------------	---------------------



Dim. Dwg. Fig. 11

JV-91**	Tandem leaf	20,6 .81	5,00 18	1,67 6	1,57 .062	0,89 .035	—	14,9±0,76 .588±.030	16,5 .650
----------------	-------------	--------------------	-------------------	------------------	---------------------	---------------------	---	-------------------------------	---------------------



Dim. Dwg. Fig. 17

JV-82**	Tandem roller leaf	20,6 .81	5,00 18	1,67 6	1,57 .062	0,89 .035	—	20,5±0,76 .806±.030	21,8 .860
----------------	--------------------	--------------------	-------------------	------------------	---------------------	---------------------	---	-------------------------------	---------------------



Dim. Dwg. Fig. 17

NOTE: Contact the 800 number for application assistance when actuators will be used at temperatures above 300°F (149°C).
** Travel characteristics on tandem actuators vary with actual basic switch characteristics. These shown are typical for the assembly.
† "A" measurement is from the pivot point of lever to the point indicated on drawing.

ROLLER LEVERS



Dim. Dwg. Fig. 7

ORDER GUIDE

Catalog Listing	Recommended For	Electrical Data And UL Codes Page 20	Length of Lever "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches
V3L-1117-D8	General use.	10 Amps TT	20,6 .81	0,89 3.2	0,10 .35	1,2 .047	1,14 .045	0,33 .013	20,6±0,76 .810±.030
V3L-2103-D8	Low force.	10 Amps V	20,6 .81	0,58 2.1	0,03 .11	1,42 .056	0,86 .034	0,33 .013	20,6±0,76 .810±.030
V3L-139-D8	Higher force. Most applications.	11 Amps T	20,6 .81	2,22 8	0,56 2	1,5 .060	1,02 .040	0,41 .016	20,6±0,76 .810±.030
V3L-3-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	20,6 .81	3,89 14	0,83 3	1,52 .060	1,02 .040	0,41 .016	20,6±0,76 .810±.030
V3L-3003-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	20,6 .81	1,89 6.8	0,15 .53	1,2 .047	1,02 .040	0,05 - 0,25 .002 - .010	20,6±0,76 .810±.030

V3L-1101-D8	General use.	10 Amps TT	34 1.34	0,44 1.6	0,04 .14	3,18 .125	2,16 .085	0,76 .030	20,6±1,5 .810±.060
V3L-2104-D8	Low force.	10 Amps V	34 1.34	0,31 1.1	0,02 .07	3,18 .125	2,16 .085	0,76 .030	20,6±1,5 .810±.060
V3L-111-D8	Higher force. Most applications.	11 Amps T	34 1.34	1,11 4	0,14 .5	3,18 .125	2,16 .085	1,27 .050	20,6±1,5 .810±.060
V3L-4-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	34 1.34	2,22 8	0,28 1	3,18 .125	2,16 .085	1,27 .050	20,6±1,5 .810±.060
V3L-3004-D8	Higher force. Up to 15.1 amps load handling.	15.1 Amps U	34 1.34	0,89 3.2	0,14 .5	3,18 .125	2,16 .085	0,76 .030	20,6±1,5 .810±.060

 Miniature/
Subminiature

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

* Characteristics taken with actuator assembled on Catalog Listing V3-1 switch as shown.

AUXILIARY ACTUATORS



Dim. Dwg. Fig. 11

ORDER GUIDE - SWITCHES ARE NOT INCLUDED WITH ACTUATORS

Catalog Listing	Description	Actuator Length "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches	F.P. max. mm inches
JV-1	Leaf type	21,3 .84	3,34 12	1,11 4	1,19 .047	0,79 .031	0,41 .016	15±0,38 .590±.015	16,4 .645



Dim. Dwg. Fig. 11

JV-7	Long leaf	32,3 1.27	2,50 9	1,11 4	1,57 .062	1,27 .050	0,64 .025	14,5±0,76 .570±.030	17,4 .685
------	-----------	--------------	-----------	-----------	--------------	--------------	--------------	------------------------	--------------



Dim. Dwg. Fig. 11

JV-5	Roller leaf	20,6 .81	3,34 12	1,11 4	1,52 .060	0,79 .031	0,41 .016	20,3±0,64 .800±.025	22,1 .870
------	-------------	-------------	------------	-----------	--------------	--------------	--------------	------------------------	--------------

NOTE: Contact a MICRO SWITCH Sales Office for application assistance when actuators will be used at temperatures above 300°F (149°C).

Characteristics: O.F. – Operating Force; R.F. – Release Force; P.T. – Pre-travel; O.T. – Overtravel; D.T. – Differential Travel; O.P. – Operating Position.

ORDER GUIDE

STRAIGHT LEVERS



Dim. Dwg. Fig. 4

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	Length of Lever "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P. mm inches
V3L-1105-D8	General use.	10 Amps TT	21,3 .860	0,72 2.6	0,10 .35	1,5 .060	1,14 .045	0,33 .013	15,2±0,51 .600±.020
V3L-2101-D8	Low force. Added overtravel.	10 Amps V	21,3 .860	0,50 1.8	0,50 .18	1,5 .060	1,14 .045	0,33 .013	15,2±0,51 .600±.020
V3L-101-D8	Higher force. Most applications.	11 Amps T	21,3 .860	2,50 9	0,56 2	1,5 .060	1,02 .040	0,41 .016	15,2±0,51 .600±.020
V3L-1-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	21,3 .860	3,89 14	0,83 3	1,5 .060	1,02 .040	0,41 .016	15,2±0,51 .600±.020
V3L-3001-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	21,3 .860	1,47 5.3	0,15 .53	1,5 .060	1,02 .040	0,28 .011	15,2±0,51 .600±.020

V3L-1108-D8	General use.	10 Amps TT	35,6 1.40	0,39 1.4	0,04 .14	2,79 .110	2,29 .090	0,76 .030	15,2±1,5 .600±.060
V3L-2102-D8	Low force.	10 Amps V	35,6 1.40	0,31 1.1	0,02 .07	2,79 .110	2,29 .090	0,76 .030	15,2±1,5 .600±.060
V3L-104-D8	Higher force. Most applications.	11 Amps T	35,6 1.40	1,11 4	0,14 .5	3,18 .125	2,29 .090	1,27 .050	15,2±1,5 .600±.060
V3L-2-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	35,6 1.40	2,22 8	0,28 1	3,18 .125	2,29 .090	1,27 .050	15,2±1,5 .600±.060
V3L-3005-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	35,6 1.40	.86 3.1	0,06 .21	3,05 .120	2,29 .090	0,81 .032	15,2±1,5 .600±.060

V3L-2425-D8	Lower force.	5 Amps YY	59,4 2.34	0,07 .25	—	5,08 .200	4,06 .160	1,4 .055	15,2±2 .600±.080
V3L-1122-D8	General use.	10 Amps TT	59,4 2.34	0,22 .81	0,02 .07	5,08 .200	4,06 .160	1,4 .055	15,2±1,8 .600±.070
V3L-2106-D8	Low force.	10 Amps V	59,4 2.34	0,16 .56	0,01 .04	5,08 .200	4,06 .160	1,4 .055	15,2±1,8 .600±.070
V3L-131-D8	Higher force. Most applications.	11 Amps T	59,4 2.34	0,58 2.1	0,12 .42	6,6 .260	3,81 .150	2,29 .090	14,7±2 .580±.080
V3L-6-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	59,4 2.34	1,11 4	0,14 .50	6,95 2.60	3,81 .150	2,29 .090	14,35±1,5 .565±.060
V3L-3013-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	59,4 2.34	0,39 1.4	0,03 .11	5,33 .210	4,06 .160	1,52 .060	15,2±1,9 .600±.075

V3L-2472-D8	Lowest force.	3 Amps VV	69,45 2.75	0,03 .11	—	5,97 .235	5,08 .200	1,60 .063	15,2±2,54 .600±.100
V3L-1124-D8	General use.	10 Amps TT	69,45 2.75	0,19 .70	0,01 .04	7,74 .305	3,68 .145	1,65 .065	15,31±2,54 .603±.100
V3L-145-D8	Most applications.	11 Amps T	69,45 2.75	0,54 1.93	0,10 .36	0,76 .300	4,57 .180	2,54 .100	14,48±2,03 .570±.080
V3L-14-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	69,45 2.75	0,83 3	0,14 .50	8,38 .330	4,32 .170	2,54 .100	13,72±2,03 .540±.080



Dim. Dwg. Fig. 4

Basic Switches

Miniature

V3 Series

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

PIN PLUNGERS

ORDER GUIDE by ascending electrical capability



Dim. Dwg. Fig. 1

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	O.F. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. mm inches	O.P.** mm inches
V3-343-D8	General use. Gold alloy crosspoint contacts.	1 Amp X	2,22 8 max.	0,56 2	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-2451-D8	Lowest force.	3 Amps VV	0,15 .53	—	1,2 .047	1,27 .050	0,051-0,25 .002-.010	14,7 .578
V3-2401-D8	Lower force.	5 Amps YY	0,24 .9	—	1,2 .047	1,27 .050	0,051-0,25 .002-.010	14,7 .578
V3-70101-D8	Most 5 amp applications.	5 Amps ZZ	2,22 8	0,56 2	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-1101-D8	General use.	10 Amps TT	0,72 max. 2.6	0,10 .35	1,2 .047	1,27 .050	0,051-0,25 .002-.010	14,7 .578
V3-2101-D8	Low force.	10 Amps V	0,50 max. 1.8	0,05 .18	1,2 .047	1,27 .050	0,051-0,25 .002-.010	14,7 .578
V3-101-D8	Higher force. Most applications.	11 Amps T	2,22 8 max.	0,56 2	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-1-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	1,67-3,89 6-14	1,11 4	1,21 .047	1,0 .040	0,15-0,4 .006-.016	14,7 .578
V3-3001-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	1,47 max. 5.3	0,15 .53	1,2 .047	1,27 .050	0,051-0,25 .002-.010	14,7 .578
V3-2800-D9	Up to 20 amps load handling	20 Amps AA	0,63 - 1,22 2.3 - 4.4	0,20 0.7	1,2 .047	1,27 .050	0,25 0.10 max.	14,7 .578
V3-2900-D9	Up to 25 amps load handling	25 Amps BB	1,22 - 2,20 4.4 - 7.9	0,31 1.1	1,2 .047	1,27 .050	0,25 0.10 max.	14,7 .578

Miniature/
Subminiature



Dim. Dwg. Fig. 2

V3-1001 (MS25253-1)	MIL-S-8805 application requirements (SPDT)	10 Amps UU	1,67-3,89 6-14	1,11 4	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-1002 (MS25253-3)	MIL-S-8805 application requirements (SPNC)	10 Amps UU	1,67-3,89 6-14	1,11 4	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-1003 (MS25253-2)	MIL-S-8805 application requirements (SPNO)	10 Amps UU	1,67-3,89 6-14	1,11 4	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-129*	Operating in temperature to +302°F (150°C)	11 Amps T	2,22 8 max.	0,56 2	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578
V3-245*	Operating in temperature to +400°F (204°C)	10 Amps W	2,78-6,95 10-25	1,67 6	1,2 .047	1,02 .040	0,15-0,41 .006-.016	14,7 .578

*For actuators, contact MICRO SWITCH Sales Office.

**Tolerances ±0.38
±0.15

ORDER GUIDE

SIMULATED ROLLER



Dim. Dwg. Fig. 3

Catalog Listing	Recommended For	Electrical Data And UL Code Page 20	Length of Lever "A" mm inches	O.F. max. newtons ounces	R.F. min. newtons ounces	P.T. max. mm inches	O.T. min. mm inches	D.T. max. mm inches	O.P.* mm inches
V3L-1123-D8	General use.	10 Amps TT	32,6 1.285	0,39 1.4	0,05 .18	2,54 .100	2,03 .080	0,76 .030	18,5 .730
V3L-2105-D8	Low force.	10 Amps V	32,6 1.285	0,33 1.2	0,02 .07	2,54 .100	2,03 .080	0,76 .030	18,5 .730
V3L-121-D8	High force. Most applications.	11 Amps T	32,6 1.285	1,11 4	0,14 .5	3,18 .125	1,57 .062	0,81 .032	18,5 .730
V3L-5-D8	Highest force. Up to 15.1 amps load handling with reduced life.	15.1 Amps U	32,6 1.285	2,22 8	0,28 1	3,18 .125	1,57 .062	0,81 .032	18,5 .730
V3L-3014-D8	High force. Up to 15.1 amps load handling.	15.1 Amps U	32,6 1.285	0,94 3.4	0,07 .25	2,54 .100	1,90 .075	0,76 .030	18,5 .730

*±1.5 mm
±.060 in.

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

Miniature/
Subminiature

Basic Switches

Miniature

MOUNTING DIMENSIONS (for reference only)

PIN PLUNGERS

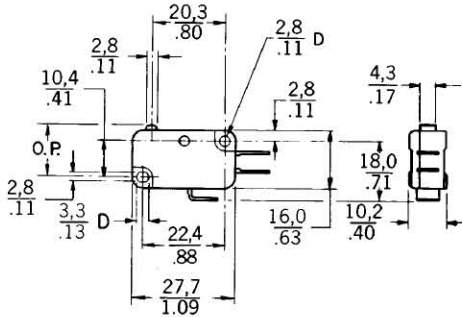


Fig. 1

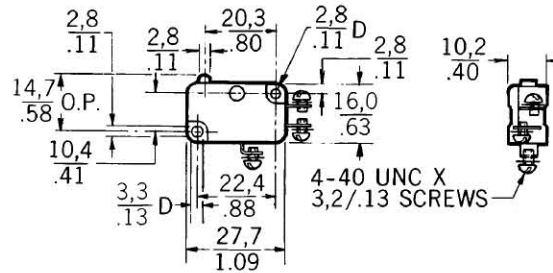


Fig. 2

SIMULATED ROLLER

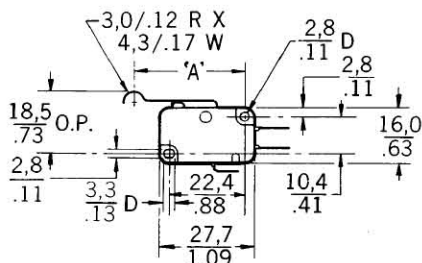


Fig. 3

STRAIGHT LEVER

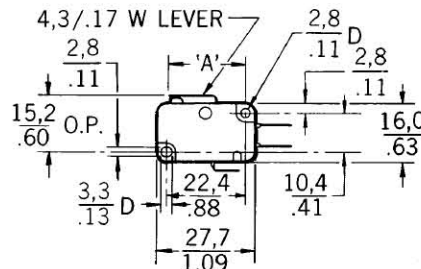


Fig. 4

ROLLER LEVER

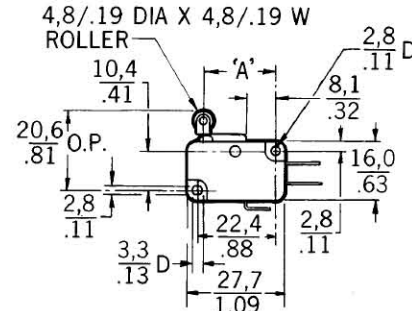


Fig. 7

AUXILIARY ACTUATORS

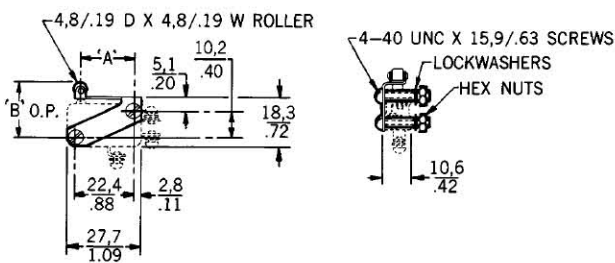


Fig. 11

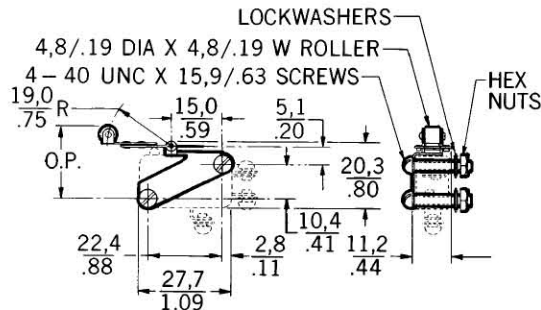


Fig. 14

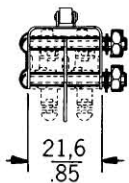


Fig. 17

NOTE: Operate point dimensions taken at top of lever/roller.

Key: 0,0 = mm
0.00 = inches