Honeywell

MICRO SWITCH™ Premium Miniature Basic Switches

V7 Series

Honeywell V7-1C13D8-201

Datasheet

ПРОМЭЛЕКТРОНИКА / sales@prom-elec.com

MICRO SWITCH™ V7 Series Premium Miniature Basic Switches

Honeywell's MICRO SWITCH™ V7 miniature switches are designed for long term-reliability in a rugged switch packaged with a thermoplastic housing. These switches may be installed in a wide range of applications from simple or precision on/off limits, presence/absence sensing, or embedded in pressure or temperature assemblies.

The V7 switch is available as a pin plunger style or with optional integral or auxiliary levers to actuate the switch and offer versatility in the application. The switch requires as little as 0,15 Newtons [approximately ½ ounce] to operate for extremely sensitive applications or an operating force of almost 4 Newtons [14 ounces] where higher forces are required. The V7 switch can reliably control logic level electrical loads from less than 0.1 A to power duty switching up to 25 A. Agency certifications for the MICRO SWITCH™ V7 switches are provided through CSA, ENEC, and UL for global use around the world.

What makes our switches better?

- Certified with CSA, ENEC, and UL for global acceptability
- Reliable snap-spring mechanism with more than 60 years of proven service
- Available with pin plungers, integral levers (fitted two positions), or auxiliary levers to meet equipment requirements
- Electrical ratings from 0.1 A up to 25 A for design flexibility in one package size

Big performance in a small package.

COST OPTIMIZATION • RELIABILITY
PERFORMANCE • GLOBAL ACCEPTANCE

Features and Benefits

ACTUATION ON TIME

MICRO SWITCH™ V7 Series basic switches **operate with forces as low as 15 g** and carry options to increase to 397 g, and can thereby easily accommodate different actuator mechanisms.

Global acceptance: UL, CSA, ENEC

RELIABLE PERFORMANCE IN HARSH CONDITIONS

Switches feature **industry-leading temperature ranges** of -40 °C to 175 °C [-40 °F to 347 °F] to allow for years of reliable performance in harsh conditions.

LONG LIFE CYCLE RATING

The long life cycle rating (up to **10,000,000 cycles**) reduces the need to replace switches over the life of OEM platform applications, therefore reducing total system cost.

DESIGN FLEXIBILITY

Available with pin plungers, integral levers (fitted 2 positions), and auxiliary levers to meet a variety of equipment requirements, MICRO SWITCH™ V7 Series switches also boast electrical ratings from 0.1 A up to 25 A for design flexibility in one package size.

Potential Applications

VENDING MACHINE MOTORS

Switch controls motors or solenoids in vending machines for dispensing of product.

MICROWAVE DOOR INTERLOCK

Switch in door interlock of microwave that disconnects power if door opened.

OVEN CLEANING LATCH

Switch in door latch for oven clean operation.

PRESSURE SWITCH ASSEMBLY

Pressure switch senses incoming water pressure for power washer.

V7 Series

PRODUCT NOMENCLATURE

V7 — 1 C 1 7 D8 — —

Switch Type[A]

V7 Series Miniature	

Operating Force

1	150 g max.
1[N]	175 g max.
1[P]	225 g max.
2[G]	75 g max.
3[H]	50 g max.
4[I]	25 g max.
5[J]	15 g max.
6	6 oz to 14 oz max.
7	8 oz max.
9	300 g max.

Electrical Rating[C,F]

	North America	Europe (ENEC)
A	5 A @ 125 Vac	3 A
B	11 A @ 125 Vac	10 A
C[K]	15 A @ 125 Vac	—
D	1 A @ 125 Vac	1 A
E	10 A @ 125 Vac	5 A
F	3 A @ 125 Vac	—
H	No rating	—
K	22 A @ 125 Vac	20 A
S[L]	0.1 A @ 125 Vac	1 A
V	21 A @ 125 Vac	16 A
W[E,M]	15.1 A @ 125 Vac	—
X[E,K]	6 A @ 125 Vac	—
Z	25 A @ 125 Vac	20 A

Circuitry Code

1	SPDT
2	SPNO
3	SPNC

Mounting/Construction[D,F]

3	150 °C 2,9 mm [0.11 in] mtg. holes
4	150 °C 3,1 mm [0.12 in] mtg. holes
7	85 °C 2,9 mm [0.11 in] mtg. holes
8	85 °C 3,1 mm [0.12 in] mtg. holes
9[F]	85 °C 2,9 mm [0.11 in] mtg. holes
0[F]	85 °C 3,1 mm [0.12 in] mtg. holes
A[E]	177 °C with 2,9 mm [0.11 in] mtg. holes

ONLY

Termination Style (Inches)

D8	0.187 x 0.02 quick connect
E8	0.187 x 0.02 quick connect spread
D9	0.250 x 0.032 quick connect
E9	0.250 x 0.032 quick connect spread
P02	Left angle PCB
P07	SPNO on edge PCB

Formed quick-connect terminals available

Lever Style[B]

002	Straight 22,1 mm [0.87 in]
022	Straight 35,6 mm [1.4 in]
201	Roller 20,6 mm [0.81 in]
207	Roller 34,0 mm [1.34 in]
263	Sim. roller 32,8 mm [1.29 in]
266	Tall sim. roller 34,0 mm [1.34 in]
048	Straight 59,4 mm [2.34 in]
636	Paddle 139,5 mm [5.5 in]

Formed levers available

Special Designator

Use only if this switch has a special feature. Could be any number.

NOTES:

[A] Not all possible combinations are available, these are only guidelines
[B] Lever length measured from center of back mounting hole to end of straight lever or center of roller
[C] All ratings are UL/CSA, and where noted are also European-rated ENEC
[D] Consider the temperature required and the mounting hole size when making this selection
[E] Electric ratings "W" and "X" only used with "A" Mounting Construction and vice versa
[F] European ENEC rating requires Mounting Construction code "9" or "0", and Electrical Ratings A,B,D,E,K,S,V,Z
[G] Not applicable for Electrical Ratings C,K,V,W,X,Z
[H] Not applicable for Electrical Ratings B,C,K,V,W,X,Z
[I] Applies to Electrical Ratings A,D,F,S only
[J] Applies to Electrical Ratings D,F,S only
[K] Applies to 150 g Operate Force and higher
[L] Applies to 15 g to 150 g Operate Force
[M] Applies to only 300 g Operate Force
[N] Applies to only Electrical Rating V
[P] Applies to only Electrical Ratings K,Z

MICRO SWITCH™ Premium Miniature Basic Switches

Table 1. Specifications

Characteristic	Parameter
Circuitry	SPDT, SPNC, SPNO
Operating force	0,25 N to 3,9 N [15 g to 397 g]
Termination	quick connect; 4,75 mm x 0,51 mm [0.187 in x 0.02 in] quick connect: 6,35 mm x 0,81 mm [0.25 in x 0.032 in] PCB (printed circuit board)
Actuators	pin plunger, integral lever options, auxiliary lever options
Agency certification	CSA, ENEC, UL; RoHS compliant
Operating temperature	-40 °C to 85 °C [-40 °F to 185 °F], options for 175 °C [347 °F]
Mechanical life	up to 10 million cycles
Contact material	silver, gold plated, gold alloy
Housing material	high strength thermoplastic

Table 2. Electrical Ratings

Rating code	UL, CSA	ENEC[3]
A	5 A 125 Vac, 250 Vac, 277 Vac 1/10 HP 250 Vac	3 (1) A, 250 Vac [2]
B	11 A 1/3 HP 125 Vac, 250 Vac or 277 Vac 1/2 A 125 Vdc; 1/4 A 250 Vdc 4 A 125 Vac "L" [1]	10 (3) A, 250 Vac [2]
C	15.1 A 1/2 HP 125 Vac, 250 Vac or 277 Vac 1 /2A 125 Vdc 1/4 A 250 Vdc; 5 A 125 Vac "L" [1]	–
E	10 A 1/3 HP 125 Vac, 250 Vac or 277 Vac 1/2 A 125 Vdc 1/4 A 250 Vdc, 4 A 125 Vac "L" [1]	5 (2) A, 250 Vac [2]
F	3 A 125 Vac, 250 Vac, 277 Vac 1/10 HP 250 Vac	–
S	0.1 A, 125 Vac	1 (0.05) A, 250 Vac [2]
V	21 A 1 HP 125 Vac, 250 Vac, 277 Vac 2 HP 250 Vac, 277 Vac	16 (4) A, 250 Vac [2]
W	15.1 A 125 Vac, 250 Vac, 277 Vac	–
Z	25 A, 277 Vac 1 HP, 125 Vac; 2 HP, 250 Vac	20 (5) A, 250 Vac [2]

[1] Incandescent lamp rating

[2] XX(Y) - XX = max. rated resistive value in amps, and (Y) = max. rated inductive value in amps

[3] European ENEC rating requires Mounting Construction code "9" or "0". See page four, Mounting Construction column

V7 Series

PRODUCT SPECIFICATIONS AND LISTINGS

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O.F. • Operating force
R.F. • Release force
P.T. • Pretravel
O.T. • Overtravel
D.T. • Differential travel
O.P. • Operating position

	Catalog Listing	Elect. Rating UL/CSA (CE)	Elect. Rating Spec. (page 4)	Contacts	O.F. max. newtons [grams]	O.P. nominal mm [inches]	P.T. max. mm [inches]	O.T. min. mm [inches]	D.T. mm [inches]
Pin plunger	**V7-2S17DB**	0.1 A (---)	S	SPDT	0,79 [75]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1S17D8	0.1 A (---)	S	SPDT	1,47 [150]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-5F17D8	3 A (---)	F	SPDT	0,15 [15]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-4A17D8	5 A (---)	A	SPDT	0,25 [25]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-3E17D8	10 A (---)	E	SPDT	0,49 [50]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1B37D8	11 A (---)	B	SPNC	1,47 [150]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-2B17D8	11 A (---)	B	SPDT	0,74 [75]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-2B17E9	11 A (---)	B	SPDT	0,74 [75]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-7B17D8	11 A (---)	B	SPDT	2,22 [227]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1C17D8	15 A (---)	C	SPDT	1,47 [150]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1C17E9	15 A (---)	C	SPDT	1,47 [150]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1C37B8	15 A (---)	C	SPNC	1,47 [150]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1V19E9	21 A (16 A)	V	SPDT	1,72 [175]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1V29E9	21 A (16 A)	V	SPNO	1,72 [175]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1V39E9	21 A (16 A)	V	SPNC	1,72 [175]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1Z19E9	25 A (20 A)	Z	SPDT	2,21 [225]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1Z29E9	25 A (20 A)	Z	SPNO	2,21 [225]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
	V7-1Z20E9*	25 A (20 A)	Z	SPNO	2,21 [225]	14,7 [0.578]	1,19 [0.047]	1,27 [0.050]	0,05 - 0,25 [0.002-0.010]
Lever 22,1 mm [0.87 in]	**V7-1C17D8-002**	15 A (---)	C	SPDT	1,57 [160]	15,2 [0.600]	1,52 [0.060]	0,89 [0.035]	0,36 [0.015] max.
	V7-1C17E9-002	15 A (---)	C	SPDT	1,57 [160]	15,2 [0.600]	1,52 [0.060]	0,89 [0.035]	0,36 [0.015] max.
	V7-6C18D8-002*	15 A (---)	C	SPDT	4,05 [413]	15,2 [0.600]	1,52 [0.060]	0,89 [0.035]	0,36 [0.015] max.

*3,1 mm mtg holes

MICRO SWITCH™ Premium Miniature Basic Switches

O.F. • Operating force
R.F. • Release force
P.T. • Pretravel
O.T. • Overtravel
D.T. • Differential travel
O.P. • Operating position

PRODUCT SPECIFICATIONS AND LISTINGS

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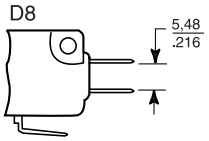
	Catalog Listing	Elect. Rating UL/CSA (CE)	Elect. Rating Spec. (page 4)	Contacts	O.F. max. newtons [grams]	O.P. nominal mm [inches]	P.T. max. mm [inches]	O.T. min. mm [inches]	D.T. mm [inches]
Lever 35,6 mm [1.40 in]	**V7-1S17D8-022**	0.1 A (---)	S	SPDT	0,83 [85]	15,2 [0.60]	3,04 [0.120]	2,16 [0.085]	0,76 [0.030] max.
	V7-3S17D8-022	0.1 A (---)	S	SPDT	0,29 [30]	15,2 [0.60]	3,04 [0.120]	2,16 [0.085]	0,76 [0.030] max.
	V7-3S17E9-022	0.1 A (---)	S	SPDT	0,29 [30]	15,2 [0.60]	3,04 [0.120]	2,16 [0.085]	0,76 [0.030] max.
	V7-1B17D8-022	11 A (---)	B	SPDT	0,80 [82]	15,3 [0.603]	3,04 [0.120]	1,70 [0.067]	0,69 [0.027] max.
	V7-1B19D8-022	11 A (10 A)	B	SPDT	0,80 [82]	15,3 [0.603]	3,25 [0.128]	1,78 [0.070]	0,71 [0.028] max.
	V7-2B17D8-022	11 A (---)	B	SPDT	0,40 [41]	15,3 [0.603]	3,04 [0.120]	1,70 [0.067]	0,71 [0.027] max.
	V7-6B19E9-022	11 A (10 A)	B	SPDT	2,11 [215]	15,2 [0.60]	3,25 [0.128]	1,35 [0.053]	0,76 [0.030] max.
Lever 59,4 mm [2.34 in]	**V7-3S17D8-048**	0.1 A (---)	S	SPDT	0,16 [16]	15,3 [0.603]	5,97 [0.235]	3,00 [0.118]	1,27 [0.050] max.
	V7-2B17D8-048	11 A (---)	B	SPDT	0,20 [20]	15,3 [0.603]	5,97 [0.235]	2,92 [0.115]	1,27 [0.050] max.
	V7-1C17D8-048	15 A (---)	C	SPDT	0,44 [45]	15,2 [0.603]	5,94 [0.234]	4,19 [0.165]	1,52 [0.060] max.
	V7-1V19E9-048	21 A (16 A)	V	SPDT	0,54 [55]	15,4 [0.605]	6,35 [0.250]	3,05 [0.120]	1,40 [0.055] max.
	V7-9W1AE9-048**	15 A (---)	W	SPDT	0,88 [90]	15,2 [0.603]	6,35 [0.250]	3,15 [0.124]	1,37 [0.054] max.
Lever Sim. Roll 32,8 mm [1.29 in]	**V7-1S17D8-263**	0.1 A (---)	S	SPDT	0,88 [90]	18,54 [0.730]	2,79 [0.110]	1,90 [0.075]	0,76 [0.030] max.
	V7-3E19E9-263	10 A (5 A)	E	SPDT	0,32 [33]	18,54 [0.730]	2,54 [0.100]	1,90 [0.075]	0,76 [0.030] max.
	V7-1B17D8-263	11 A (---)	B	SPDT	0,88 [90]	18,54 [0.730]	2,79 [0.110]	1,52 [0.060]	0,76 [0.030] max.
	V7-1C17D8-263	15 A (---)	C	SPDT	0,89 [91]	18,54 [0.730]	2,79 [0.110]	1,55 [0.061]	0,61 [0.024] max.
	V7-1V29E9-263	21 A (16 A)	V	SPNO	1,08 [110]	18,49 [0.728]	2,90 [0.114]	1,62 [0.064]	0,64 [0.025] max.
	V7-1Z10E9-263*	25 A (20 A)	Z	SPDT	1,33 [136]	18,49 [0.728]	2,90 [0.114]	1,62 [0.064]	0,64 [0.025] max.
Lever, Roller 20,57 mm [0.81 in]	**V7-2S17D8-201**	0.1 A (---)	S	SPDT	0,88 [90]	20,57 [0.810]	1,19 [0.047]	1,02 [0.040]	0,38 [0.015] max.
	V7-6B19E9-201	11 A (10 A)	B	SPDT	4,50 [459]	20,52 [0.808]	1,42 [0.056]	0,86 [0.034]	0,33 [0.013] max.
	V7-7B17D8-201	11 A (---)	B	SPDT	2,78 [283]	20,52 [0.808]	1,42 [0.056]	0,86 [0.034]	0,33 [0.013] max.
	V7-1C17D8-201	15 A (---)	C	SPDT	1,72 [175]	20,57 [0.810]	1,19 [0.047]	0,81 [0.032]	0.30 [0.012] max.
Lever, Roller 34,04 mm [1.34 in]	**V7-1S17D8-207**	0.1 A (---)	S	SPDT	0,83 [85]	20,57 [0.810]	2,84 [0.112]	2,03 [0.080]	0,76 [0.030] max.
	V7-2A17D8-207	5 A (---)	A	SPDT	0,42 [43]	20,57 [0.810]	2,92 [0.115]	1,52 [0.060]	0,64[0.025] max.
	V7-1B17D8-207	11 A (---)	B	SPDT	0,83 [85]	20,57 [0.810]	2,92 [0.115]	1,52 [0.060]	0,76 [0.030] max.
	V7-1C17D8-207	15 A (---)	C	SPDT	0,88 [90]	20,57 [0.810]	2,92 [0.115]	1,52 [0.060]	0,64[0.025] max.
	V7-1V19E9-207	21 A (16 A)	V	SPDT	0,98 [100]	20,52 [0.808]	3,07 [0.121]	1,65 [0.065]	0,76 [0.030] max.

*3,1 mm mtg holes
** 177 °C [350 °F]

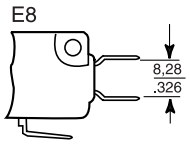
V7 Series

AVAILABLE TERMINALS

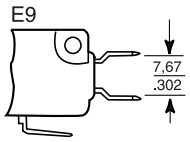
Quick Connect (QC)



D8 Terminals: 0.187 in wide x 0.020 in thick.

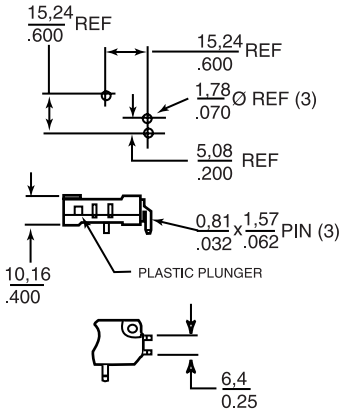


E8 Terminals: 0.187 in wide x 0.020 in thick.



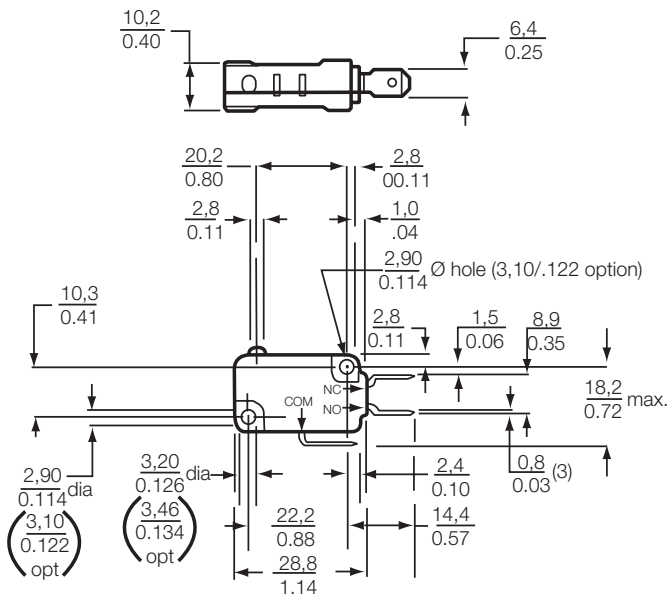
E9 Terminals: 0.250 in wide x 0.032 in thick.

Printed Circuit Board (PO2)

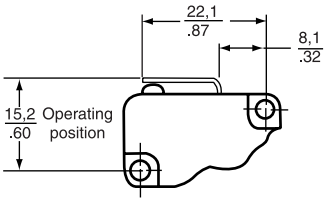


These terminals interface with snap-on receptacles and other components from AMPMODU interconnection system.

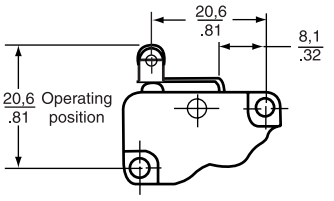
STANDARD ACTUATOR OPTIONS



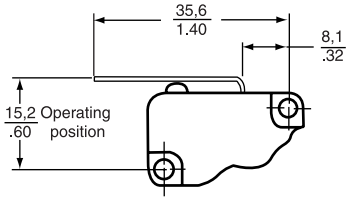
Straight Lever (-002)



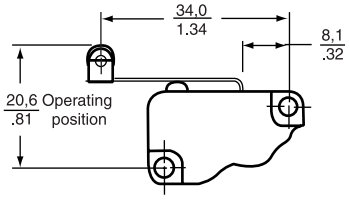
Roller Lever (-201)



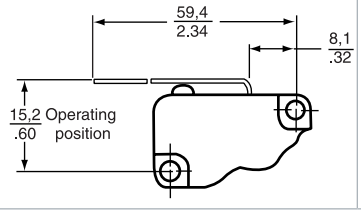
Straight Lever (-022)



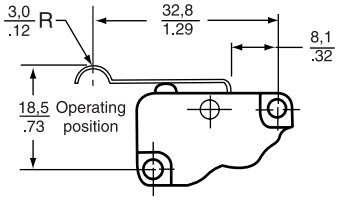
Roller Lever (-207)



Straight Lever (-048)



Simulated Roller Lever (-263)



ACCESSORIES

	Part Number	Description
	15PA177-V7	Insulator packet: 500 pieces of 0,46 mm [0.018 in] thick varnished fiberglass
	15PA260	Plunger boot seal: Elastomer, dust and splash resistant (Switch not included)