

Snap-action Microswitches – Miniature V9N

V9N

Characteristics	<ul style="list-style-type: none"> ■ Robust metal housing ■ IEC IP67 sealed mechanism ■ High temperature unwired versions ■ Pre-wired options - vertical and horizontal leads
Rating	Up to 250 VAC, 10 A
Dimensions (mm)	42.3 x 28.1 x 16 42.3 x 32 x 16 (lever variant)
Actuator	Plunger, plain lever, 2 roller levers, reverse action plain lever, reverse action roller lever
Approvals	UL and CSA



Preferred Product Range

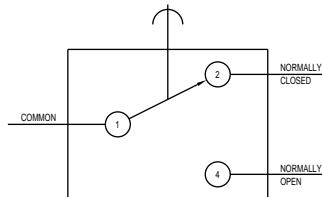
Ordering Reference	Actuating Force (N)	Actuating Force (oz)	Sealing	Operating position (mm)	Operating position (in)	Terminal	Circuit	Actuator	Contacts	Electrical rating
V9N	5.5	19.80	IP67	21.3	0.840	M3 screw	CO	Plunger	Silver	Up to 250 VAC, 10 A
V9NLR	6.0	21.60	IP67	27.5	1.080	M3 screw	CO	Roller lever - short	Silver	Up to 250 VAC, 10 A
V9NLR1	4.5	16.20	IP67	34.5	1.360	M3 screw	CO	Roller lever - long	Silver	Up to 250 VAC, 10 A
V9NL	3.0	10.80	IP67	24.7	0.970	M3 screw	CO	Plain lever	Silver	Up to 250 VAC, 10 A
V9NML	4.5	16.20	IP67	23.6	0.930	M3 screw	CO	Reverse action lever - long	Silver	Up to 250 VAC, 10 A
V9NV	5.5	19.80	IP67	21.3	0.840	Pre-wired	CO	Plain plunger	Silver	Up to 250 VAC, 10 A
V9NLRV	6.0	21.60	IP67	27.5	1.080	Pre-wired	CO	Roller lever - short	Silver	Up to 250 VAC, 10 A
V9NLR1V	4.5	16.20	IP67	34.5	1.360	Pre-wired	CO	Roller lever - long	Silver	Up to 250 VAC, 10 A
V9NLV	3.0	10.80	IP67	24.7	0.970	Pre-wired	CO	Plain lever	Silver	Up to 250 VAC, 10 A
V9NMLV	4.5	16.20	IP67	23.6	0.930	Pre-wired	CO	Reverse action lever - long	Silver	Up to 250 VAC, 10 A
V9NMRV	9.5	34.20	IP67	32.9	1.295	Pre-wired	CO	Reverse action roller lever - short	Silver	Up to 250 VAC, 10 A
V9NMLRV	5.0	18.00	IP67	34.0	1.340	Pre-wired	CO	Reverse action roller lever - long	Silver	Up to 250 VAC, 10 A

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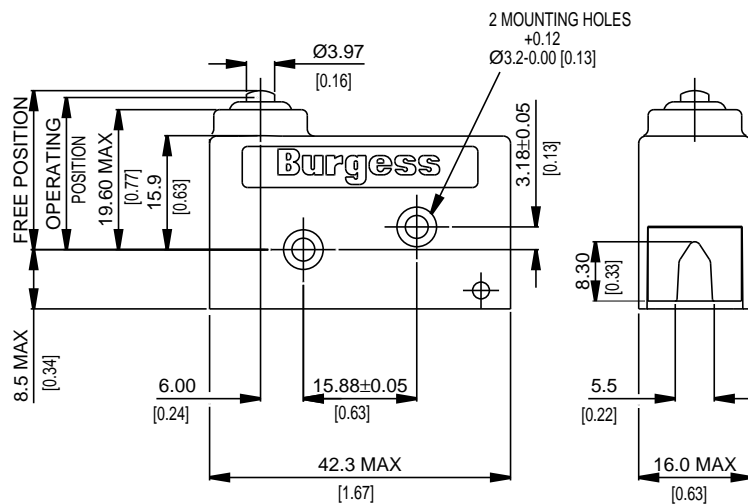
Specifications

Housing	Zinc diecasting
Plunger	Acetal
Mechanism	Snap-action, single pole
Functions	Change-over
Cowl	Silicon rubber
Contacts	Silver
Terminals °C	M3 screws with captive washers
Temperature range	-40°C to +125°C, switch only -10°C to +85°C pre-wired
Mechanical life	10 ⁶ cycles minimum, impact-free actuation
Protection	IP67 (enclosure)
Mounting	Side mounting
Actuators	Plain levers - stainless steel, roller levers - stainless steel, nylon roller

Circuit diagram



Dimensions
mm [in]


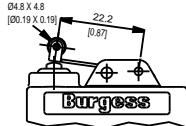
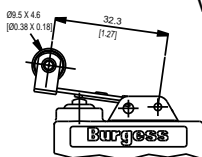
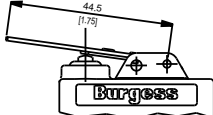
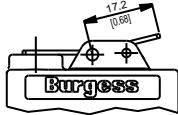
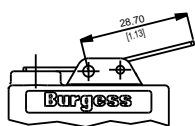
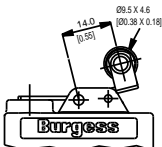
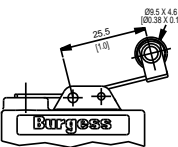


Recommended Maximum Electrical Ratings

Voltage (max)	Load (A)	Approval
250 VAC	10 (0.75 pf)	UL 1054/CSA 22.2 No. 55 - 6,000 operations (85°C)
0 - 15 VDC	10	General rating - 50,000 operations (85°C)
15 - 30 VDC	10	General rating - 50,000 operations (85°C)

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Operating Characteristics

Actuator	Reference	Actuating Force Maximum		Release Force Minimum		Free Position Maximum		Operating Position		Movement Differential		Over travel Maximum	
		(N)	(oz)	(N)	(oz)	(mm)	(in)	(mm)	(in)	(mm)	(in)	(mm)	(in)
Plunger 	V9N	5.5	19.8	1.0	3.6	22.6	0.89	21.3 ± 0.3	0.84 ± 0.012	0.35	0.014	*	
Roller lever–short mm [in] 	V9NLR	6.0	21.6	1.3	4.7	31.0	1.22	27.5 ± 0.5	1.08 ± 0.02	0.35	0.014	*	
Roller lever–long mm [in] 	V9NLR1	4.5	16.2	0.8	2.9	39.0	1.54	34.5 ± 0.7	1.36 ± 0.028	0.60	0.024	*	
Plain lever mm [in] 	V9NL	3.0	10.8	0.6	2.1	31.0	1.22	24.7 ± 0.10	0.97 ± 0.039	0.70	0.028	*	
Reverse action lever–short mm [in] 	V9NM	7.5	27.0	1.5	5.4	26.0	1.02	22.4 ± 0.5	0.88 ± 0.02	0.50	0.020	3.50	0.137
Reverse action lever–long mm [in] 	V9NML	4.5	16.2	1.0	3.6	29.0	1.14	23.6 ± 0.10	0.93 ± 0.039	1.20	0.047	6.00	0.236
Reverse action roller lever–short mm [in] 	V9NMR	9.5	34.2	1.5	5.4	36.0	1.42	32.9 ± 0.5	1.295 ± 0.02	0.45	0.018	2.00	0.079
Reverse action roller lever–long mm [in] 	V9NMLR	5.0	18.0	1.0	3.6	39.5	1.56	34.0 ± 0.10	1.34 ± 0.039	1.00	0.039	5.50	0.216

Operating characteristics are specified from lower mounting hole

* Plunger can be depressed flush with housing. The housing should not be used as an end stop.

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Ordering Reference – How to Build a Part Number

Type	V9N	
Actuators	No digit	Plain plunger
	LR	Roller lever - short
	LR1	Roller lever - long
	L	Plain lever
	M	Reverse action lever - short
	ML	Reverse action lever - long
	MR	Reverse action roller lever - short
	MLR	Reverse action roller lever - long
Wiring	No digit	M3 screws with captive washers
	V	Pre-wired with vertical 1 m lead
	H	Pre-wired with horizontal 1 m lead
Approvals	No digit	UL and cUL