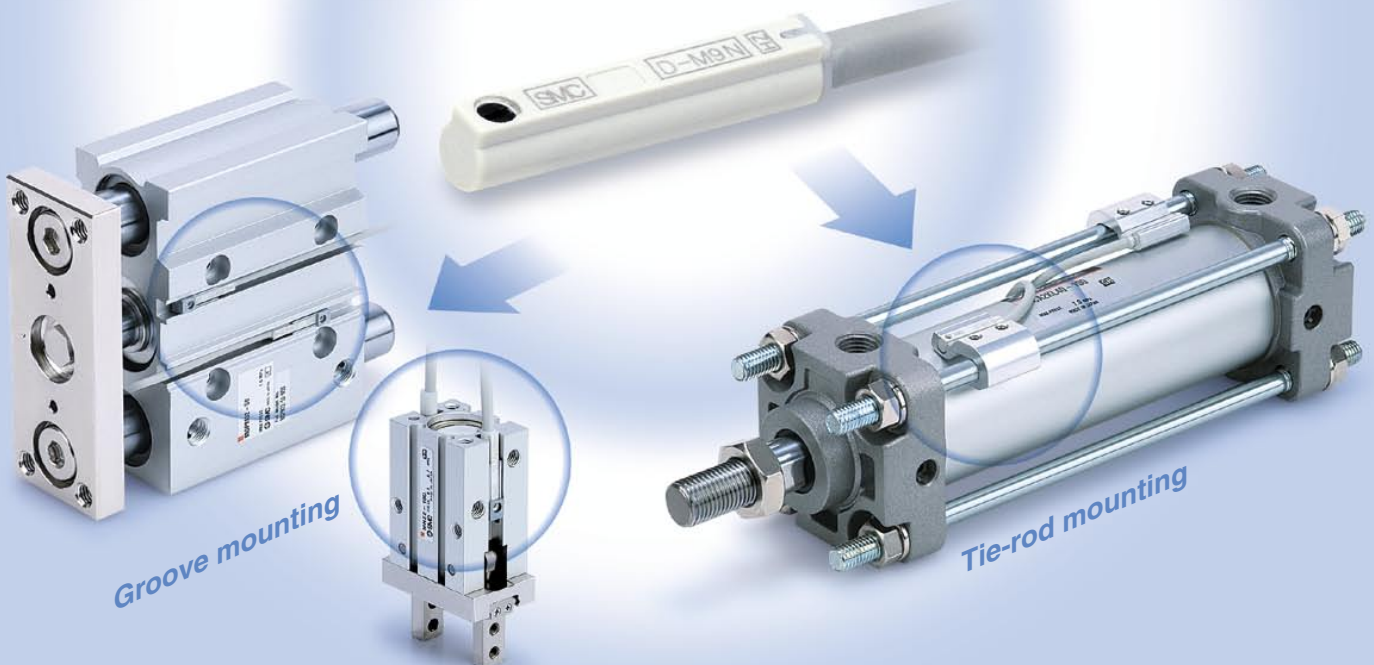


Expanding the number of actuator series that accept compact auto switches!

One auto switch for four different mounting types.









All-round Auto Switch



Consolidate your auto switches.
Simplify your onsite inventory control.

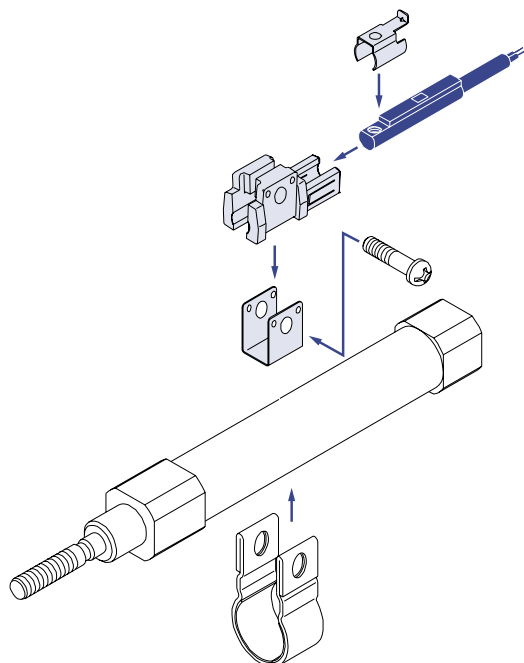
Cylinder Band Mounting

	Description	Series	Size
	Air cylinder Standard	CDJ2	6, 10, 16
	End lock cylinder	CDBJ2	16
	Fine lock cylinder	CDLJ2	10, 16
	Low-speed cylinder	CDJ2X	
	Air cylinder Standard	CM2	20, 25, 32, 40
	End lock air cylinder	CDBM2	
	Fine lock cylinder	CDLM2	
	Low-speed cylinder	CDM2X	
	Smooth cylinder	CDM2Y	
	Air cylinder (European specification)	C76	32, 40
	Air cylinder (European specification)	C85 <small>Note 1)</small>	8, 12, 16, 20, 25
	Air cylinder Standard	CDG1	20, 25, 32, 40, 50, 63
	End lock air cylinder	CDBG1	
	Fine lock cylinder	CDLG1	20, 25, 32, 40
	Cylinder with lock	CDNG1	
	Smooth cylinder	CDG1Y	20, 25, 32, 40, 50, 63
	Cylinder with guide	MGG	20, 25, 32, 40, 50, 63
	Cylinder with guide Compact	MGC	20, 25, 32, 40, 50
	Fine lock cylinder with guide	MLGC	20, 25, 32, 40
	Stopper cylinder	RSDG	40, 50
	Sine cylinder	REC	20, 25, 32, 40
	High power cylinder	RHC	20, 25, 32, 40, 50, 63

Note 1) Mountable only with solid state switches.

Band Mounting

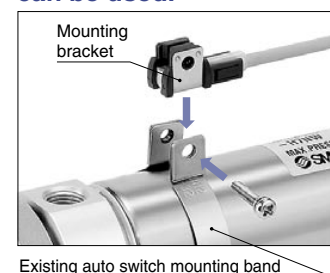
Mountable compact auto switches for circular cylinders.



Switches can be moved without sliding the bands.

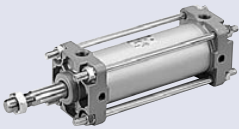
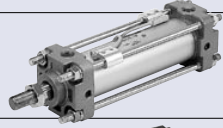



Old type switch bands can be used.



- 1) Switch mounting bracket (blue shaded parts in the left figure): BJ3-1
- 2) Switch mounting bracket (BJ3-1): Please combine the band corresponding to the appropriate cylinder.
- 3) Refer to SMC Information leaflet ('04-E514) for how to order major cylinders.
- 4) Watertight (D-F9BAL(Z)) and vertical electrical entry types (D-M9□V/D-A9□V) cannot be used.

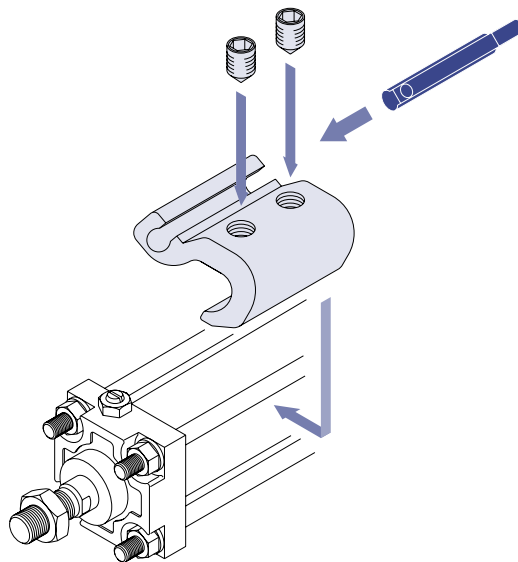
Cylinder Tie-Rod Cylinder Mounting

Description		Series	Size
	Air cylinder Standard	CDA2	40, 50, 63, 80, 100
	End lock air cylinder	CDBA2	
	Fine lock cylinder	CDLA	
	Cylinder with lock	CDNA	40, 50, 63, 80, 100 Note 1)
	Locked-up cylinder	CL1	
	Low-speed cylinder	CDA2X	
	Air-hydro cylinder	CDA2H	
	Low-friction cylinder	CDA2Q	
	Smooth cylinder	CDA2Y	
	Air cylinder Standard	MDB	32, 40, 50, 63, 80, 100, 125
	End lock air cylinder	MDBB	32, 40, 50, 63, 80, 100
	Cylinder with lock	MDNB	
	Air cylinder Standard	CDS1	125, 140, 160, 180, 200
	Cylinder with lock	CDNS	125, 140, 160
	Cylinder with lock	CDLS	125, 140, 160, 180, 200
	Locked-up cylinder	CL1	125, 140, 160
	Air cylinder (European specification)	C95	32, 40, 50, 63, 80, 100, 125, 160, 200 Note 2)

Note 1) ø50: Only solid state switches can be attached.

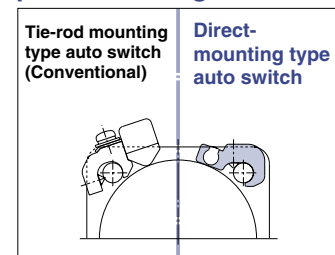
Note 2) Cannot be mounted on ø250.

Tie-Rod Mounting

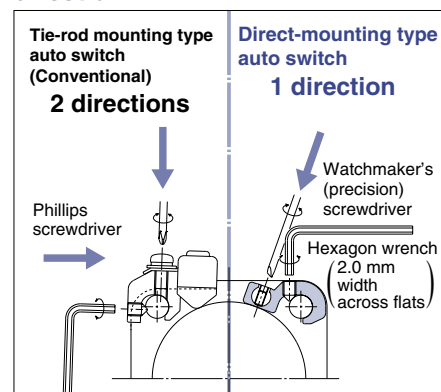


- 1) Switch mounting bracket (blue shaded parts in the above figure) varies according to the cylinder model and bore size.
- 2) Refer to SMC Information leaflet ('04-E514) for how to order major cylinders.





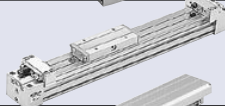
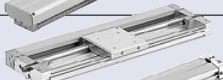

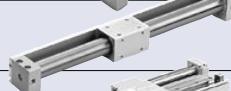

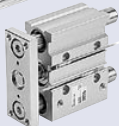


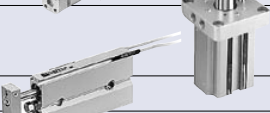

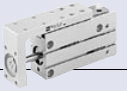
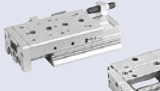
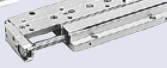

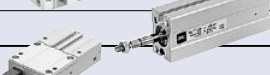
Reduction in auto switch protrusion height



Auto switch mounting and position adjustment are possible from one direction.



Cylinder Groove Mounting

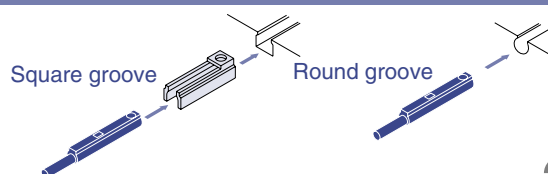
	Description	Series	Size
	Mini free mount cylinder	CUJ Note 3)	6, 8, 10
	Free mount cylinder	CDU	6, 10, 16, 20, 25, 32
	Free mount cylinder with air cushion	CDU	20, 25, 32
	Free mount cylinder for vacuum	ZCDUK	10, 16, 20, 25, 32
	Low-speed cylinder	CDUX	
	Compact cylinder	CDQS	
	Low-speed cylinder	CDQSX	12, 16, 20, 25
	Smooth cylinder	CDQSY	
	High precision scale cylinder	CEP1	12, 20
	Air cylinder Standard	MDB1	32, 40, 50, 63, 80, 100
	Air cylinder (European specification)	CP95	32, 40, 50, 63, 80, 100, 125, 160
	Rodless cylinder Slider bearing	MY1M	16, 20, 25, 32, 40, 50, 63 Note 2)
	Rodless cylinder Cam follower guide	MY1C	16, 20, 25, 32, 40, 50, 63 Note 2)
	Rodless cylinder High-precision guide Single axis	MY1H	10, 16, 20, 25, 32, 40 Note 2)
	Rodless cylinder with protection cover	MY1MW	16, 20, 25, 32, 40, 50, 63 Note 2)
		MY1CW	16, 20, 25, 32, 40, 50, 63 Note 2)
	Rodless cylinder Cam follower guide	MY2C	16, 25, 40
	Rodless cylinder High precision guide Single/double axis	MY2H/HT	16, 25, 40
	Rodless cylinder Standard type	MY3A/3B	16, 25, 40, 63
	Rodless cylinder Direct mount	CY1R	6, 10, 50, 63
		CY3R	15, 20, 25, 32, 40
	Sine rodless cylinder Direct mount	REAR	10, 15, 20, 25, 32, 40
		REBR	15, 25, 32
	Rodless cylinder Low center of gravity guide type	CY1F	10, 15, 25
	Compact cylinder with guide	MGP	12, 16, 20, 25, 32, 40, 50, 63, 80, 100
		MGQ	
	Compact guide cylinder with lock	MLGP	20, 25, 32, 40, 50, 63, 80, 100
	Guide table	MGF Note 1)	40, 63, 100
	Non-rotating double power cylinder	MGZ	20, 25, 32, 40, 50, 63, 80
	Non-rotating double power cylinder with rod side	MGZ	40, 50, 63
	Double power cylinder	MGZR	20, 25, 32, 40, 50, 63, 80
	Heavy duty stopper cylinder	RSH Note 1)	20, 32
		RS1H Note 1)	50, 63, 80
	Dual rod cylinder	CXSJ	6, 10, 15, 20, 25, 32
	Compact slide Linear guide	MXH	6, 10, 16, 20
	Compact slide Miniature guide	MXU	6, 10, 16
	Air slide table Cross roller	MXS	6, 8, 12, 16, 20, 25
	Air slide table Linear guide	MXQ	
	Compact air slide table Cross roller	MXF	8, 12, 16, 20
	Air slide table Linear guide	MXW	8, 12, 16, 20, 25
	Air slide table Linear guide	MXP	6, 8, 10, 12, 16
	Air slide table Long stroke	MXY	6, 8, 12
	Precision cylinder	MTS	8, 12, 16, 20, 25, 32, 40
	Escapement	MIS/MIW Note 1)	8, 12, 20, 25, 32

[Note 1\)](#) Only solid state switches can be attached.

[Note 2\)](#) Over ø25: Only solid state switches can be attached.


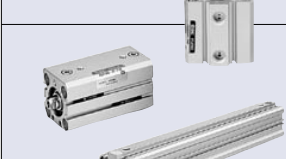
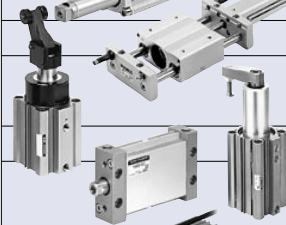
[Note 3\)](#) Some specific strokes can only accept solid state switches.

Groove Mounting



- 1) Use a switch mounting bracket (BMG2-012) for cylinders with T-slot type grooves.
- 2) Refer to SMC Information leaflet ('04-E514) and Best Pneumatics Catalogue for how to order major cylinders.
- 3) Two types of switch mounting brackets are used for MB1 and MGZ(R).

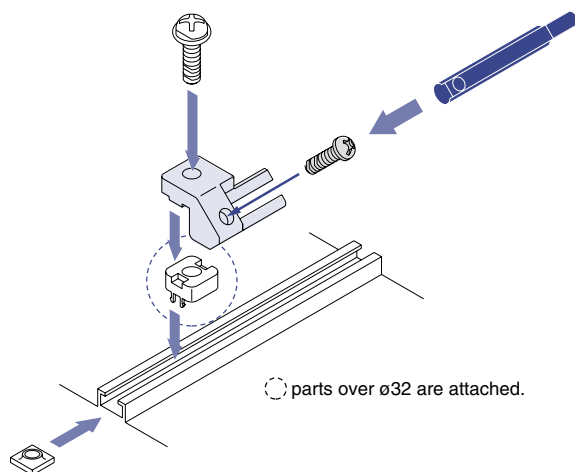
Cylinder Rail Mounting/Groove Mounting

Description		Series	Size
	Compact cylinder	CDQ2	12, 16, 20, 25, 32, 40, 50, 63, 80, 100 125, 140, 160, 180, 200
	Compact cylinder Axial piping type	CDQP2	12, 16, 20, 25, 32, 40, 50, 63, 80, 100
	Compact end lock cylinder	CDBQ2	20, 25, 32, 40, 50, 63, 80, 100
	Compact cylinder with lock	CDLQ	
	Low-speed cylinder	CDQ2X	32, 40, 50, 63, 80, 100
	Smooth cylinder	CDQ2Y	
	Compact cylinder Guide rod type	CDQM	12, 16, 20, 25, 32, 40, 50
	Compact cylinder with air cushion	RDQ	20, 25, 32, 40, 50, 63, 80, 100
	Air cushion compact cylinder with lock	RDLQ	32, 40, 50, 63
	Compact cylinder (European specification)	C55	20, 25, 32, 40, 50, 63
	Compact cylinder (US specification)	NCQ8	9/16", 3/4", 1-1/16", 1-1/2", 2", 2-1/2"
	3-position cylinder	RZQ	32, 40, 50, 63
	Platform cylinder	CXT	12, 16, 20, 25, 32, 40
	Rotary clamp cylinder Standard type	MK	12, 16, 20, 25, 32, 40, 50, 63
	Rotary clamp cylinder Heavy duty type	MK2	20, 25, 32, 40, 50, 63
	Stopper cylinder	RSDQ	12, 16, 20, 32, 40, 50
	Plate cylinder	MDU <small>Note 1)</small>	25, 32, 40, 50, 63
	Plate cylinder with lock	MDLU <small>Note 1)</small>	25, 32, 40, 50
	Stroke reading cylinder	CE1 <small>Note 2)</small>	12, 20, 32, 40, 50, 63

Note 1) Only solid state switches can be attached.

Note 2) ø12: Only solid state switches can be attached.

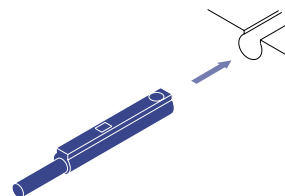
Rail Mounting



- 1) Switch mounting bracket (blue shaded parts in the above figure) part no: BQ2-012
- 2) Refer to SMC Information leaflet ('04-E514) and Best Pneumatics Catalogue for how to order major cylinders.
- 3) CDQ2, MK, CE over ø32: If the auto switch is attached to any side other than the port side, ○ parts (BQ-2: option) are necessary.

Groove Mounting

Groove mounting is possible, depending on the model and bore size.






















Not applicable cylinder series

Description	Series
Stainless cylinder	CJ5/CG5 Series
Magnetically coupled rodless cylinder Slider type/Slider bearing	CY1S Series
Magnetically coupled rodless cylinder Slider type/Ball bushing bearing	CY1L Series
Magnetically coupled rodless cylinder High precision guide	CY1H Series
Rodless cylinder Standard	MY1B Series
Mechanically jointed rodless cylinder High rigidity/high precision guide (Double axis)	MY1HT Series

Description	Series
Sine rodless cylinder Slider type/Slider bearing	REAS Series
Sine rodless cylinder Slider type/Ball bushing bearing	REAL Series
Sine rodless cylinder High precision guide	REAH/HT Series
Sine rodless cylinder High precision guide	REBH/HT Series
Slide unit	CXWM/CXWL Series
Dual rod cylinder	CXS Series

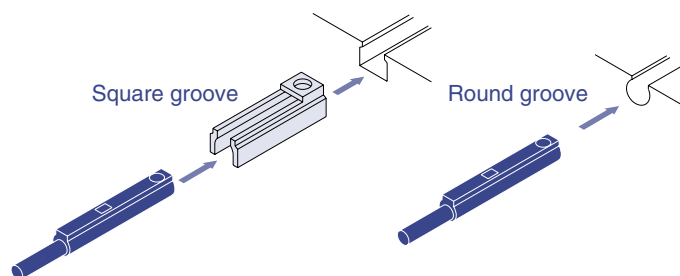
* Contact SMC for other models.

Air chuck Groove Mounting/Rail Mounting

	Description	Series	Size
	Low profile air gripper	MHF2	8, 12, 16, 20
	Linear guide Standard	MHZ2	6, 10, 16, 20, 25, 32, 40
	Linear guide Dust cover	MHZJ2	6, 10, 16, 20, 25
	Linear guide Long stroke	MHZL2	10, 16, 20, 25
	Wide opening	MHL2	10, 16, 20, 25, 32, 40
	2-finger rotary actuated	MDHR2	10, 15, 20, 30
	3-finger rotary actuated	MDHR3	10, 15
	2-finger slide guide	MHK2	12, 16, 20, 25
	2-finger slide guide	MHS2	16, 20, 25, 32, 40, 50, 63
	3-finger slide guide Standard	MHS3	16, 20, 25, 32, 40, 50, 63, 80, 100, 125
	3-finger slide guide Dust cover	MHSJ3	16, 20, 25, 32, 40, 50, 63, 80
	3-finger slide guide Through hole	MHSH3	16, 20, 25, 32, 40, 50, 63, 80
	3-finger slide guide Long stroke	MHSL3	16, 20, 25, 32, 40, 50, 63, 80, 100, 125
	4-finger slide guide	MHS4	16, 20, 25, 32, 40, 50, 63
	Angular style Standard	MHC2	6, 10, 16, 20, 25
	Angular style Toggle	MHT2	32, 40, 50, 63 Note 1)
	180° angular style Cam type	MHY2	10, 16, 20, 25
	180° angular style Gear type	MHW2	20, 25, 32, 40, 50
	Rotary gripper	MRHQ	10, 16, 20, 25

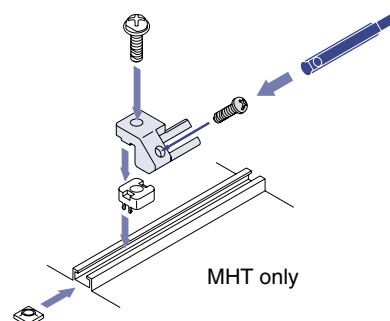
Note 1) A reed switch can only be attached to the MHT series air gripper.

Groove Mounting



1) Use a switch mounting bracket (BMG2-012) for cylinders which have T-slot type grooves.

Rail Mounting



- 1) Switch mounting bracket (blue shaded parts in the above figure) part no: BQ2-012
- 2) Refer to Best Pneumatics Vol. 7 to 12 for how to order major cylinders.

Applicable Auto Switch

Solid State Auto Switch

D-M9N(V)/D-M9P(V)/D-M9B(V)



- Lead wires
Oilproof heavy-duty vinyl cable: $\phi 2.7 \times 3.2$ ellipse
D-M9B(V) 0.15 mm² x 2 cores
D-M9N(V), D-M9P(V) 0.15 mm² x 3 cores

PLC: Programmable Logic Controller

D-M9□/D-M9□V (With indicator light)						
Auto switch part no.	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED illuminates when ON.					

2-colour Indication Solid State Switch

D-F9NW(V)/D-F9PW(V)/D-F9BW(V)



- Lead wires
Oilproof heavy-duty vinyl cable: $\phi 2.7, 0.15 \text{ mm}^2 \times 3$ cores (Brown, Black, Blue),
0.18 mm² x 2 cores (Brown, Blue), 0.5 m

PLC: Programmable Logic Controller

D-F9□W/D-F9□WV (With indicator light)						
Auto switch part no.	D-F9NW	D-F9NWV	D-F9PW	D-F9PWV	D-F9BW	D-F9BWV
Electrical entry	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay IC, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less		80 mA or less		5 to 40 mA	
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)		0.8 V or less		4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating position Red LED illuminates. Optimum operating position Green LED illuminates.					

Reed Switch

D-A90(V)/D-A93(V)/D-A96(V)



- Lead wires
D-A90(V)/D-A93(V) — Oilproof heavy-duty vinyl cable: $\phi 2.7, 0.18 \text{ mm}^2 \times 2$ cores (Brown, Blue), 0.5 m
D-A96(V) — Oilproof heavy-duty vinyl cable: $\phi 2.7, 0.15 \text{ mm}^2 \times 3$ cores (Brown, Black, Blue), 0.5 m

PLC: Programmable Logic Controller

D-A90/D-A90V (Without indicator light)			
Auto switch part no.	D-A90/D-A90V		
Applicable load	IC circuit, Relay, PLC		
Load voltage	24 V AC/DC or less	48 V AC/DC or less	100 V AC/DC or less
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (including lead wire length of 3 m)		
D-A93/D-A93V/D-A96/D-A96V (With indicator light)			
Auto switch part no.	D-A93/D-A93V		D-A96/D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Load current range and max. load current	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	D-A93 — 2.4 V or less (to 20 mA)/3 V or less (to 40 mA) D-A93V — 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when ON		

Note 1) In conditions of less than 5 mA, indicator light visibility lowers, and may be unreadable in conditions of less than 2.5 mA. However, if contact output is above 1 mA, no problems will arise.

Caution for Using Auto Switches

Caution

1. Use the compact auto switch after reviewing the cautions in the SMC Information leaflet (04-E514) and our Best Pneumatics catalogue.

Caution for Replacing Compact Auto Switches

Caution

1. Place a purchase order after confirming the applicable model since auto switches vary according to each actuator type and bore size.
2. Only use the auto switch after thoroughly confirming its specifications, as each auto switch's characteristics (electrical characteristics, operating range, etc.) can be different depending upon the applicable actuator model.
3. The compact auto switch can be attached to the same actuator model shipped in the past, by using the new type mounting brackets. Contact SMC if the current model has a different model no. or shape from the past model.
4. Please place a purchase order after confirming the part number and quantity because up to two different types of mounting brackets can be required for mounting the compact auto switch.

Caution for Replacing Solid State Compact Switches

Caution

Use the compact solid state auto switch (D-M9 series) after examining the differences between the old and new models. The differences are listed below.

- 1) Since short circuit protection is not built-in, the switch will be instantly damaged when a load short-circuits. Use caution to avoid reverse wiring between the power supply line (brown) and the output line (black), especially for 3-wire types.
- 2) When the auto switch is used for replacing an older auto switch, please pay attention to the detection range of the auto switch because it is shorter than the older switch's.
- 3) Please use the tool listed below when the ends of the lead wires are stripped, because the insulator will be damaged by general purpose tools.
Exclusive tool model no.: D-M9N-SWY

SMC CORPORATION (Europe)

Austria	☎ +43 226262280	www.smc.at	office@smc.at
Belgium	☎ +32 (0)33551464	www.smc-pneumatics.be	post@smc-pneumatics.be
Bulgaria	☎ +359 2 9744492	www.smc.bg	office@smc.bg
Croatia	☎ +385 1 377 66 74	www.smc.hr	office@smc.hr
Czech Republic	☎ +42 0541424611	www.smc.cz	office@smc.cz
Denmark	☎ +45 70252900	www.smc.dk	smc@smc-pneumatik.dk
Estonia	☎ +372 (0)6593540	www.smc-pneumatics.ee	smc@smc-pneumatics.ee
Finland	☎ +358 207 513513	www.smc.fi	smc@smc.fi
France	☎ +33 (0)164761000	www.smc-france.fr	contact@smc-france.fr
Germany	☎ +49 (0)61034020	www.smc-pneumatik.de	info@smc-pneumatik.de
Greece	☎ +30 (0)13426076	www.smceu.com	parianos@hol.gr
Hungary	☎ +36 13711343	www.smc.hu	office@smc.hu
Ireland	☎ +353 (0)14039000	www.smc-pneumatics.ie	sales@smc-pneumatics.ie
Italy	☎ +39 (0)292711	www.smcitalia.it	mailbox@smcitalia.it
Latvia	☎ +371 (0)7779474	www.smc.lv	info@smc.lv

Lithuania	☎ +370 5 264 81 26		
Netherlands	☎ +31 (0)205318888	www.smc-pneumatics.nl	info@smc-pneumatics.nl
Norway	☎ +47 67129020	www.smc-norge.no	post@smc-norge.no
Poland	☎ +48 225485085	www.smc.pl	office@smc.pl
Portugal	☎ +351 226108922	www.smces.es	post@smc.smces.es
Romania	☎ +40 213205111	www.smcromania.ro	smcromania@smcromania.ro
Russia	☎ +812 1185445	www.smc-pneumatik.ru	marketing@smc-pneumatik.ru
Slovakia	☎ +421 244456725	www.smc.sk	office@smc.sk
Slovenia	☎ +386 73885249	www.smc.si	office@smc.si
Spain	☎ +34 945184100	www.smces.es	post@smc.smces.es
Sweden	☎ +46 (0)86031200	www.smc.nu	post@smc-pneumatics.se
Switzerland	☎ +41 (0)523963131	www.smc.ch	info@smc.ch
Turkey	☎ +90 (0)2122211512	www.entek.com.tr	smc-entek@entek.com.tr
UK	☎ +44 (0)8001382930	www.smc-pneumatics.co.uk	sales@smc-pneumatics.co.uk

European Marketing Centre ☎ +34 945184100
SMC CORPORATION ☎ +81 0335022740

www.smceu.com
www.smcworld.com

SMC CORPORATION Akihabara UDX 15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN Phone: 03-5207-8249 FAX: 03-5298-5362

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