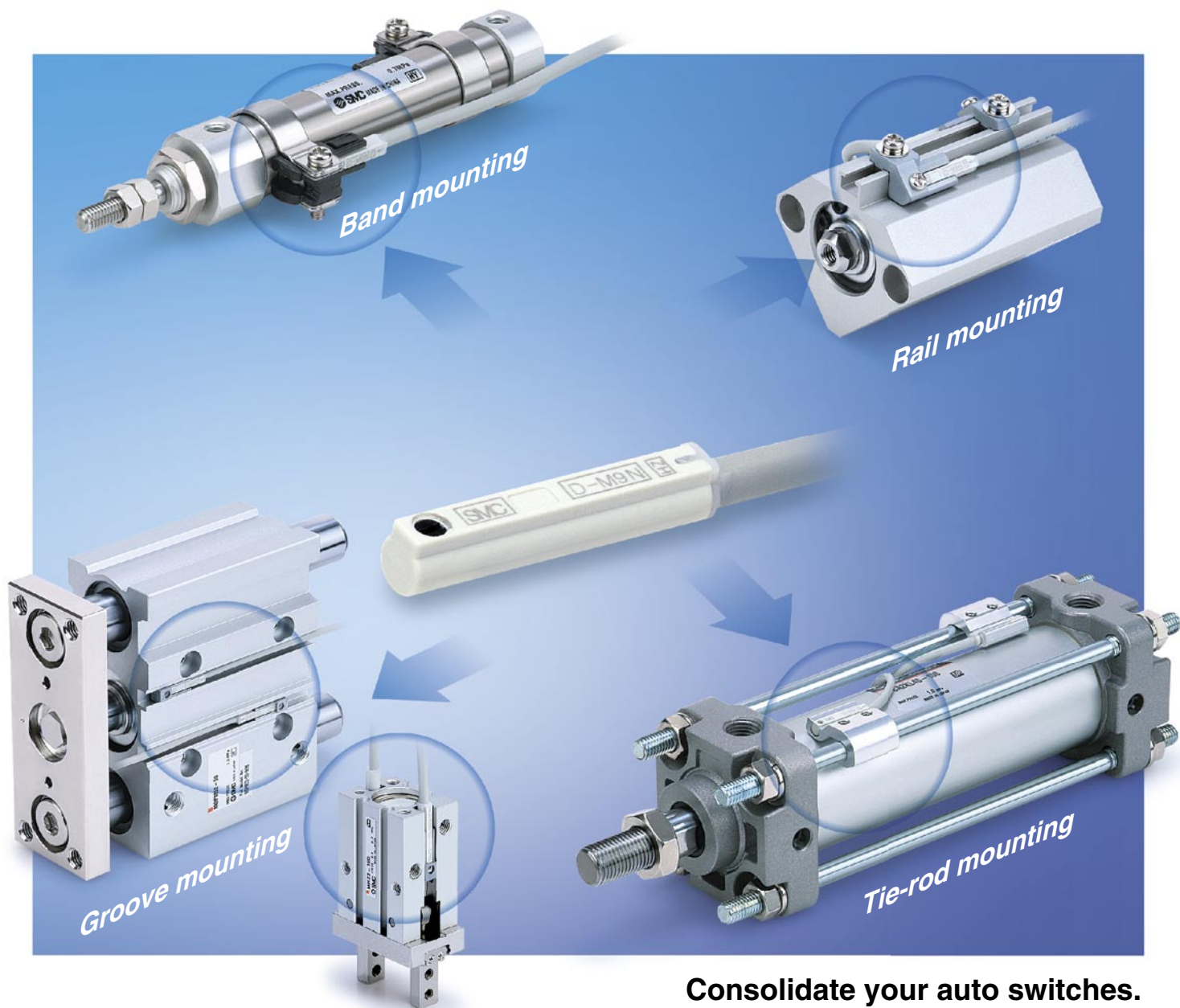


# Auto Switch Guide



**Consolidate your auto switches.  
Simplify your onsite inventory control.**

# Auto Switch Guide

Select an auto switch model according to the series and the mounting style.

Series *	Size	Mounting Style						Auto Switch Mounting Style Notes	Page No.
		Direct (Round Groove)	Direct (Rectangular Groove)	Direct (for rotary actuators)	Rail	Tie rod	Band		
C55	20 to 63							Direct (Round Groove)	.4
C 6	32, 40							Band	.8
C85	8 to 25							Band	.8
C 5	32 to 250							Tie rod	.7
CA2	40 to 100							Tie rod	.7
CE1	12 to 25							Rail	.6
	32 to 63							Direct (Round Groove)	.4
CG1	20 to 100							Band	.8
CG5..S	20 to 100							Band (use D G5BAL) Water resistant	.8
CJ2	6, 10, 16							Band	.8
CJP2	4, 6, 10, 16							Direct (Round Groove)	.4
CJ5..S	10, 16							Band (use D H BAL) W ater resistant	.8
CL1	40 to 160							Tie rod	.7
CLG1	20 to 40							Band	.8
CLJ2	16							Band	.8
CLM2	20 to 40							Band	.8
CLQ	20 to 100							Direct (Round Groove)	.4
CLS	125 to 200							Tie rod for cylinder unit	.7
	125 to 250							Direct (Round Groove) for loc unit	.4
CM2	20 to 40							Band	.8
CNA	40 to 100							Tie rod	.7
CNG	20 to 40							Band	.8
CNS	125, 140, 160							Tie rod	.7
CP 5	32 to 100							Direct (Rectangular Groove)	.5
CQ2	12 to 25							Rail	.6
	32 to 100							Direct (Round Groove)	.4
	125 to 200							Direct (Rectangular Groove)	.5
CQM	12 to 50							Direct (Round Groove)	.4
CQS	12 to 25							Direct (Round Groove)	.4
CRA1	30							Rail (for rotary actuators)	.10
	50 to 100							Direct (for rotary actuators)	.10
CRB1	50 to 100							Direct (for rotary actuators)	.10
CRB2	10 to 40							Direct (for rotary actuators)	.10
CRBU	10 to 40							Direct (for rotary actuators)	.10
CRJ	0.5, 1							Direct (Round Groove)	.4
CRQ2	10 to 40							Direct (Round Groove)	.4
CS1	125 to 200							Tie rod	.7
CU	6 to 32							Direct (Round Groove)	.4
CUJ	6 to 10							Direct (Round Groove, use D F8 type)	.4
CXS	6 to 32							Direct (Rectangular Groove)	.5
CXSJ	6 to 32							Direct (Round Groove)	.4
CXT	12 to 40							Direct (Round Groove)	.4
CXW	10 to 32							Rail	.6
CY1F	10, 15, 25							Direct (Round Groove)	.4
CY1H/HT	10 to 32							Direct (Rectangular Groove)	.5
CY1L	6 to 40							Rail	.6
CY1S	6 to 40							Rail	.6
CY3R	6 to 20							Direct (Round Groove)	.4
	25 to 63							Direct (Rectangular Groove)	.5
E MY2	16, 25							Direct (Round Groove)	.4
MB	32 to 125							Tie rod	.7
MB1	32 to 100							Direct (Rectangular Groove)	.5
MDHR2	10 to 30							Direct (use solid state switch)	.4
MDHR3	10, 15							Direct (use solid state switch)	.4
MGC	20 to 50							Band	.8
MGF	40, 63, 100							Direct (Rectangular Groove)	.5
MGG	20 to 100							Band	.8
MGJ	6, 10							Direct (Round Groove, use D F8 type)	.4
MGP	12 to 100							Direct (Rectangular Groove)	.5
MGT	63, 80, 100							Cylinder unit: Direct (Rectangular Groove)	.5
	63, 80, 100							Table unit: Direct (Round Groove)	.4
MGZ(R)	20, 25, 32							Direct (Round Groove)	.4
	40 to 80							Direct (Rectangular Groove)	.5

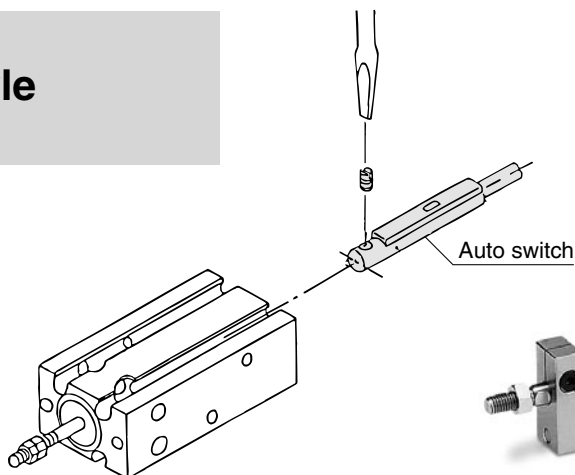
Series *	Size							Auto Switch Mounting Style Notes	Page No.
		Direct (Round Groove)	Direct (Rectangular Groove)	Direct (for rotary actuators)	Rail	Tie rod	Band		
MHC2	10 to 25							Direct (use solid state switch)	.5
	6							Direct (use solid state switch)	.4
MHF2	8 to 20							Direct (use solid state switch)	.4
MHK2	12 to 25							Direct (use solid state switch)	.4
MHL2	10 to 40							Direct (use solid state switch)	.5
MHS	16 to 25							Direct (use solid state switch)	.4
	32 to 125							Direct (use solid state switch)	.5
MHT2	32 to 63							Direct (Round Groove)	.4
MHW2	20 to 50							Direct (use solid state switch)	.5
MHY2	10 to 25							Direct (use solid state switch)	.4
MHZ2	10 to 40							Direct (use solid state switch)	.4
	6							Direct (use solid state switch)	.5
MHZJ2	6 to 25							Direct (use solid state switch)	.4
MHZL2	16 to 25							Direct (use solid state switch)	.4
	10							Direct (use solid state switch)	.5
MIW/MIS	8 to 32							Direct (Round Groove)	.4
MK	12, 16, 32 to 63							Direct (Round Groove)	.4
	20, 25							Rail	.6
MK2	32 to 63							Direct (Round Groove)	.4
	20, 25							Rail	.6
MLGP	20 to 100							Direct (Rectangular Groove)	.5
MLU	25 to 50							Rail	.6
MNB	32 to 100							Tie rod	.7
MRHQ	10 to 25							Rotation unit Direct (In line type)	.4
	10 to 25							Gripper unit Direct (Perpendicular type)	.4
MRQ	32, 40							Rail	.6
MSQ	1 to 7							Direct (use solid state switch)	.4
	10 to 200							Direct (Round Groove)	.4
MSU	1 to 20							Direct (for rotary actuators)	.10
MSZ	10 to 50							Direct (Round Groove)	.4
MTS	8 to 40							Direct (Round Groove)	.4
MU	25 to 63							Rail	.6
MXF	8 to 20							Direct (Round Groove)	.4
MXH	6 to 20							Direct (Round Groove)	.4
MXJ	4.5, 6, 8							Direct (Round Groove)	.4
MXP	6 to 16							Direct (Round Groove)	.4
MXQ	6 to 25							Direct (Round Groove)	.4
MXS	6 to 25							Direct (Round Groove)	.4
MXU	6 to 16							Direct (Round Groove)	.4
MXW	8 to 25							Direct (Round Groove)	.4
MXY	6 to 12							Direct (Round Groove)	.4
MY1□□	10, 16, 20							Direct (Round Groove)	.4
	25 to 100							Direct (Rectangular Groove)	.5
MY2	16, 25, 40							Direct (Round Groove)	.4
MY3A/3B/3M	16 to 63							Direct (Round Groove)	.4
REAH/HT	10 to 32							Direct (Rectangular Groove)	.5
REAL	10 to 40							Rail	.6
REAR	10, 15, 20							Direct (Round Groove)	.4
	25, 32, 40							Direct (Rectangular Groove)	.5
REAS	10 to 40							Rail	.6
REBH/HT	15, 25, 32							Direct (Rectangular Groove)	.5
REBR	15							Direct (Round Groove)	.4
	25, 32							Direct (Rectangular Groove)	.5
REC	20 to 40							Band	.8
RHC	20 to 100							Band	.8
RLQ	32 to 63							Direct (Round Groove)	.4
RQ	20 to 100							Direct (Round Groove)	.4
RSA	50, 63, 80							Direct (Rectangular Groove)	.5
RSG	40, 50							Band	.8
RSH/RS1H	20 to 80							Direct (use solid state switch)	.5
RSQ	12, 32 to 50							Direct (Round Groove)	.4
	16, 20							Rail	.6
RZQ	32 to 63							Direct (Round Groove)	.4
SGC	-							Direct (use solid state switch)	.4

\* The basic cylinder series is shown here. To use auto switches the magnetic version must be specified, unless a magnet for auto switches is standard. Eg. for CQ2 cylinders CDQ2 must be specified. See individual catalogue sections for details.

# Direct mounting style Round groove



D-M9□



## Applicable Auto Switch/Direct mounting

Applicable Series	Reed switch type		Solid state switch type		Description
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
C55 CJP2 CE1 (ø32-63) CLQ CLS CQ2 (ø32-100) CQM CQS CRJ * CRQ2 CU CXSJ CXT CY1F CY3R (ø6-20) E-MY2 MDHR2 MDHR3 MGT MGZ(R) (ø20-32) ** MHC2 (ø6) MHF2 * MHK2 * MHS (ø16-25) * MHT2 MHY2 * MHZ2 (ø6,16-40) * MHZJ2 * MHZL2 (ø16-25) *	D-A93L	D-M9PL	D-M9NL	D-M9PWL	• Lead wire length = 3 m, refer to page 11 for other lengths.
MIW/MIS * MK (ø12, 16, 32-63) MK2 (ø32-63) MRHQ MSQ (1~7) * MSQ (10-200) MSZ MTS MXF MXH MXJ MXP MXQ MXS MXU MXW MXY MY1□ (ø10-20) MY2 MY3 ** REAR (ø10-20) REBR (ø15) RLQ RQ, RSQ (ø12,32-50) RZQ SGC *	—	D-M9PSAPC	D-M9NSAPC	D-M9PWSAPC	Auto switch with pre-wired connector (M8-3pin).  • Lead wire length = 0.5 m, refer to page 14 for other lengths.

• Since there are other applicable auto switches than those listed, refer to pages 11 to 14 or SMC's Best Pneumatics catalogue for details.

(\*) Only solid state switches can be used.

(\*\*) Bracket BMY3-016 is also required.



D-F8□

Short body type

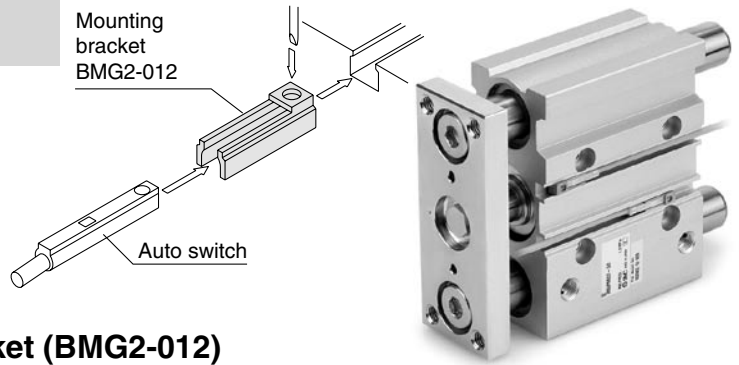


## Applicable Auto Switch/Short Body Type/Direct mounting


Applicable Series	Solid state switch type				Description
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
CUJ MGJ CRJ * MSQ (1~7) *	D-F8BL	D-F8PL	D-F8NL	—	• Lead wire length = 3 m, refer to page 11 for other lengths.

(\*) Also applicable to these models for short strokes.

# Direct mounting style Rectangular groove



## Applicable Auto Switch + Mounting Bracket (BMG2-012)

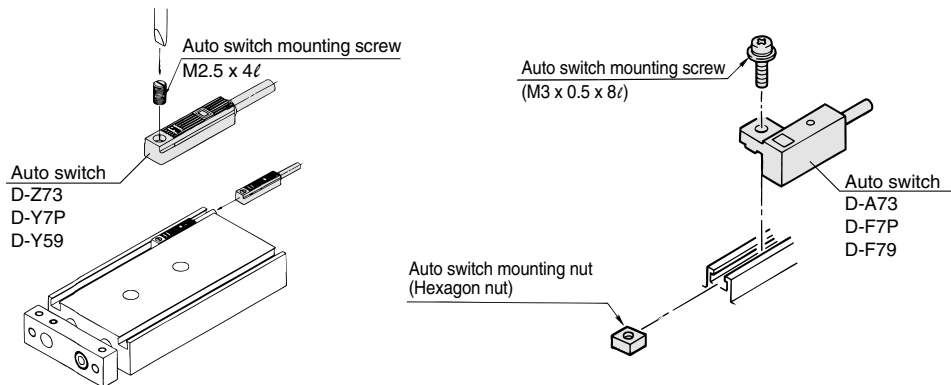
Applicable Series	Reed switch type	Solid state switch type			Description	
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)		
CP95 ** MB1 ** CQ2 (ø125-200) CY3R (ø25-63) MGF * MGP MGT MGZ(R) (ø40-80) ** MHC2 (ø10-25) * MHL2 * MHS (ø32-125) *	MHW2 * MHZ2 (ø10) * MHZL2 (ø10) * MLGP MY1□ (ø25-100) *** REAR (ø25-40) REBR (ø25, 32) RSA * RSQ (ø12, 32-63) RSH/RS1H *	D-A93L + BMG2-012	D-M9PL + BMG2-012	D-M9NL + BMG2-012	D-M9PWL + BMG2-012	• Lead wire length = 3 m, refer to page 11 for other lengths.
			D-M9PSAPC + BMG2-012	D-M9NSAPC + BMG2-012	D-M9PWSAPC + BMG2-012	Auto switch with pre-wired connector (M8-3pin).  • Lead wire length = 0.5 m, refer to page 14 for other lengths.

• Since there are other applicable auto switches than those listed, refer to pages 11 to 14 or SMC's Best Pneumatics catalogue for details.

(\*) Only solid state switches can be used.

(\*\*) Bracket BMP1-032 is also required.

(\*\*\*) Solid state switches must be used for all MY1 types and bore sizes. MY1B (ø40), MY1M (ø25, ø40), MY1C (ø40) and MY1HT (ø50, ø63) use different switches, see separate table below.



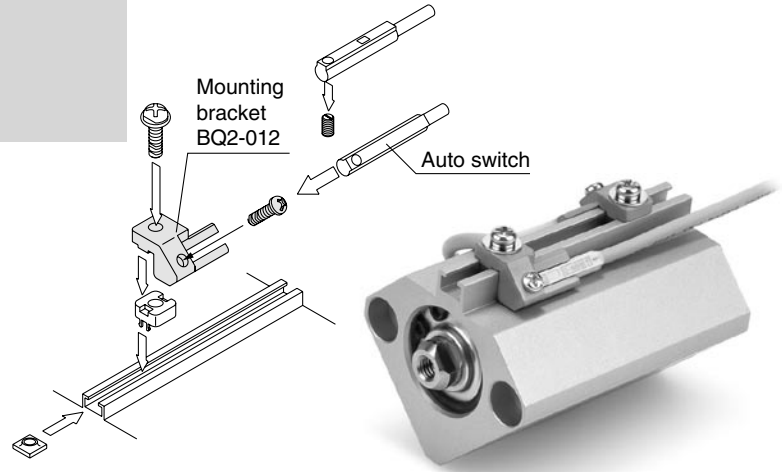
## Applicable Auto Switch (MY1B, bore sizes ø25 to ø100 and MY1HT bore sizes ø50, ø63) (CXs bore sizes ø6 to ø32 and CXSW bore sizes ø6 to ø32)

Applicable Series	Reed switch type	Solid state switch type			Description
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
MY1B (ø40) CXS MY1M (ø25, ø40) CXSW MY1C (ø40) MY1HT	D-Z73L	D-Y7PL	D-Y59AL	D-Y7PWL	With lead wire length = 3 m Consult SMC for other lengths.
	—	D-Y7PSAPC	D-Y59ASAPC	D-Y7PWSAPC	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.
CXW	D-A73HL	D-F7PL	D-F79L	D-F7PWL	With lead wire length = 3 m Consult SMC for other lengths.
	—	D-F7PSAPC	D-F79SAPC	D-F7PWSAPC	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.


# Rail mounting style



D-M9□



## Applicable Auto Switch + Mounting Bracket (BQ2-012)

	Reed switch type		Solid state switch type			Description
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)		
CE1 (ø12 to 25) ** CJ2 (ø10, 16) CQ2 (ø12 to 25) MK (ø20, 25) MK2 (ø20, 25) MU * MLU * MRQ RSQ (ø16, 20)	D-A93L + BQ2-012 ***	D-M9PL + BQ2-012 ***	D-M9NL + BQ2-012 ***	D-M9PWL + BQ2-012 ***	• Lead wire length = 3 m, refer to page 11 for other lengths.	
	—	D-M9PSAPC + BQ2-012 ***	D-M9NSAPC + BQ2-012 ***	D-M9PWSAPC + BQ2-012 ***	Auto switch with pre-wired connector (M8-3pin).  • Lead wire length = 0.5 m, refer to page 14 for other lengths.	

• Since there are other applicable auto switches than those listed, refer to SMC's Best Pneumatics catalogue for details.

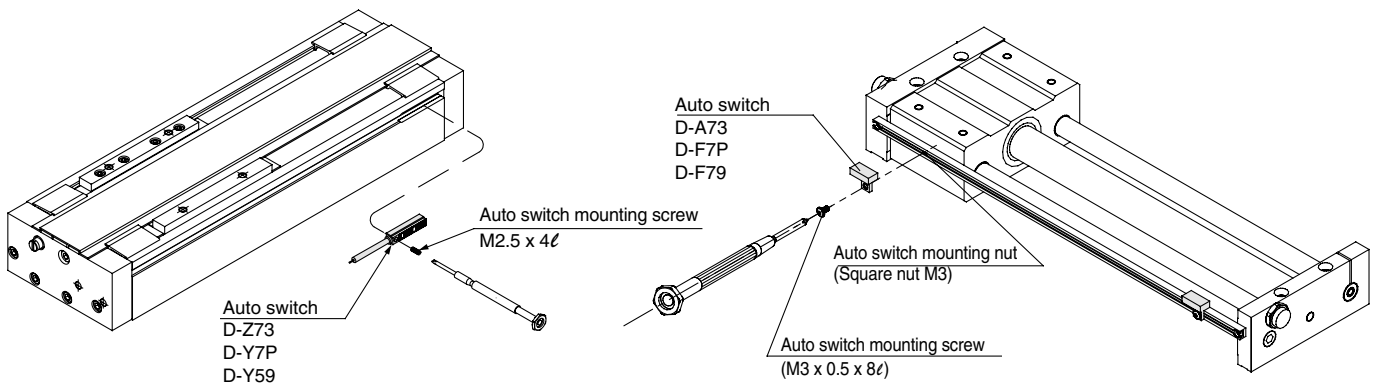
(\*) Only solid state switches can be used.

(\*\*) ø12 - Only solid state switches can be used.

(\*\*\*) CE1, CQ2, MK, MK2, RSQ use BQ-1 and BQ2-012 as a set.

MU, MLU use BMU2-025 and BQ2-012 as a set.

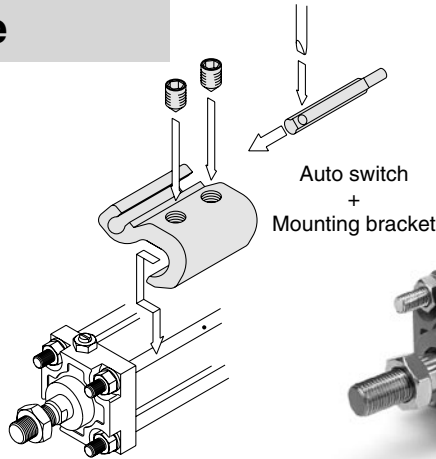
MRQ use BQ-2 and BQ2-012 as a set.




## Applicable Auto Switch (CY1, REA, bore size ø6 to ø100)

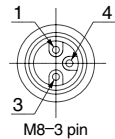
Applicable Series	Reed switch type		Solid state switch type		Description
	24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
CY1H CY1HT REAH REAHT	D-Z73L	D-Y7PL	D-Y59AL	D-Y7PWL	With lead wire length = 3 m Consult SMC for other lengths.
	—	D-Y7PSAPC	D-Y59ASAPC	D-Y7PWSAPC	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.
CY1S CY1L REAL REAS	D-A73HL	D-F7PL	D-F79L	D-F7PWL	With lead wire length = 3 m Consult SMC for other lengths.
	—	D-F7PSAPC	D-F79SAPC	D-F7PWSAPC	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.

# Tie-rod mounting style



## Applicable Auto Switch + Mounting bracket

Applicable Series	Bore size (mm)	Reed switch type		Solid state switch type		Auto switch with pre-wired connector
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
C95 ** MB (ø32 to 125) MNB (ø32 to 100)	32, 40	D-A93L + BMB5-032	D-M9PL + BMB5-032	D-M9NL + BMB5-032	D-M9PWL + BMB5-032	 24 VDC 3-wire (PNP): <b>D-M9PSAPC</b>  24 VDC 3-wire (NPN): <b>D-M9NSAPC</b>  24 VDC Diagnostic indication (2-colour indication) 3-wire (PNP): <b>D-M9PWSAPC</b>
	50, 63	D-A93L + BA7-040	D-M9PL + BA7-040	D-M9NL + BA7-040	D-M9PWL + BA7-040	
	80, 100	D-A93L + BA7-063	D-M9PL + BA7-063	D-M9NL + BA7-063	D-M9PWL + BA7-063	
	125	D-A93L + BA7-080	D-M9PL + BA7-080	D-M9NL + BA7-080	D-M9PWL + BA7-080	
	160, 200	D-A93L + BS5-160	D-M9PL + BS5-160	D-M9NL + BS5-160	D-M9PWL + BS5-160	
CA2 * CNA * CL1 *	40, 50	D-A93L + BA7-040	D-M9PL + BA7-040	D-M9NL + BA7-040	D-M9PWL + BA7-040	
	63	D-A93L + BA7-063	D-M9PL + BA7-063	D-M9NL + BA7-063	D-M9PWL + BA7-063	
	80, 100	D-A93L + BA7-080	D-M9PL + BA7-080	D-M9NL + BA7-080	D-M9PWL + BA7-080	
CS1 CLS *** CNS (ø125 to 160) CL1 (ø125 to 160)	125, 140	D-A93L + BS5-125	D-M9PL + BS5-125	D-M9NL + BS5-125	D-M9PWL + BS5-125	
	160	D-A93L + BS5-160	D-M9PL + BS5-160	D-M9NL + BS5-160	D-M9PWL + BS5-160	
	180	D-A93L + BS5-180	D-M9PL + BS5-180	D-M9NL + BS5-180	D-M9PWL + BS5-180	
	200	D-A93L + BS5-200	D-M9PL + BS5-200	D-M9NL + BS5-200	D-M9PWL + BS5-200	



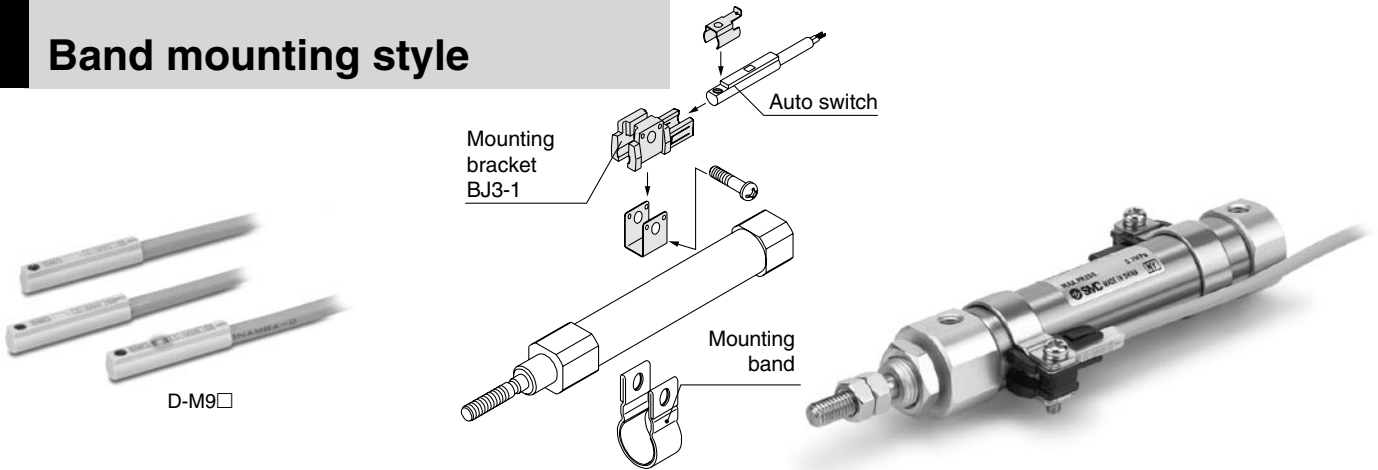
• Lead wire length = 0.5 m, refer to page 14 for other lengths.

- Lead wire length = 3 m, refer to page 11 for other lengths.
- Since there are other applicable auto switches than those listed, refer to pages 11 to 14 or SMC's Best Pneumatics catalogue for details.
- (\*) Only solid state switches can be used on ø50 cylinders.
- (\*\*) See separate table for C95 with 250mm bore size.
- (\*\*\*) Autoswitches cannot be fitted to CLS ø250 cylinder part.


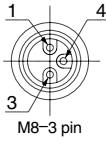
## Applicable Auto Switch + Mounting bracket (C95, bore size ø250mm)

Applicable Series	Bore size (mm)	Reed switch type		Solid state switch type		Description
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
C95	250	D-A54L + BT-20	D-F5PL + BT-20	D-F59L + BT-20	D-F5PWL + BT-20	With lead wire length = 3 m Consult SMC for other lengths.
		—	D-F5PSAPC + BT-20	D-F59SAPC + BT-20	D-F5PWSAPC + BT-20	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.

# Band mounting style



## Applicable Auto Switch + Mounting Bracket (BJ3-1) + Mounting band

Applicable Series	Bore size (mm)	Reed switch type		Solid state switch type		Auto switch with pre-wired connector
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
C85 (ø8 to 16) * CJ2 (ø6, 10, 16) CLJ2 (ø16)	6	D-A93L + BJ3-1 + BJ2-006	D-M9PL + BJ3-1 + BJ2-006	D-M9NL + BJ3-1 + BJ2-006	D-M9PWL + BJ3-1 + BJ2-006	 24 VDC 3-wire (PNP): <b>D-M9PSAPC</b>  24 VDC 3-wire (NPN): <b>D-M9NSAPC</b>  24 VDC Diagnostic indication (2-colour indication) 3-wire (PNP): <b>D-M9PWSAPC</b>
	8	—	D-M9PL + BJ3-1 + BJ2-008	D-M9NL + BJ3-1 + BJ2-008	D-M9PWL + BJ3-1 + BJ2-008	
	10	D-A93L + BJ3-1 + BJ2-010	D-M9PL + BJ3-1 + BJ2-010	D-M9NL + BJ3-1 + BJ2-010	D-M9PWL + BJ3-1 + BJ2-010	
	12	—	D-M9PL + BJ3-1 + BJ2-012	D-M9NL + BJ3-1 + BJ2-012	D-M9PWL + BJ3-1 + BJ2-012	
	16	D-A93L + BJ3-1 + BJ2-016	D-M9PL + BJ3-1 + BJ2-016	D-M9NL + BJ3-1 + BJ2-016	D-M9PWL + BJ3-1 + BJ2-016	
C85 (ø20, 25) * C76 (ø32, 40) CM2 CLM2	20	D-A93L + BJ3-1 + BM2-020	D-M9PL + BJ3-1 + BM2-020	D-M9NL + BJ3-1 + BM2-020	D-M9PWL + BJ3-1 + BM2-020	 24 VDC Diagnostic indication (2-colour indication) 3-wire (PNP): <b>D-M9PWSAPC</b>
	25	D-A93L + BJ3-1 + BM2-025	D-M9PL + BJ3-1 + BM2-025	D-M9NL + BJ3-1 + BM2-025	D-M9PWL + BJ3-1 + BM2-025	
	32	D-A93L + BJ3-1 + BM2-032	D-M9PL + BJ3-1 + BM2-032	D-M9NL + BJ3-1 + BM2-032	D-M9PWL + BJ3-1 + BM2-032	
	40	D-A93L + BJ3-1 + BM2-040	D-M9PL + BJ3-1 + BM2-040	D-M9NL + BJ3-1 + BM2-040	D-M9PWL + BJ3-1 + BM2-040	
CG1 ** CLG1 (ø20 to 40) CNG (ø20 to 40) MGC (ø20 to 50) MGG REC (ø20 to 40) RHC ** RSG (ø40, 50)	20	D-A93L + BJ3-1 + BMA2-020	D-M9PL + BJ3-1 + BMA2-020	D-M9NL + BJ3-1 + BMA2-020	D-M9PWL + BJ3-1 + BMA2-020	• Lead wire length = 0.5 m, refer to page 14 for other lengths.
	25	D-A93L + BJ3-1 + BMA2-025	D-M9PL + BJ3-1 + BMA2-025	D-M9NL + BJ3-1 + BMA2-025	D-M9PWL + BJ3-1 + BMA2-025	
	32	D-A93L + BJ3-1 + BMA2-032	D-M9PL + BJ3-1 + BMA2-032	D-M9NL + BJ3-1 + BMA2-032	D-M9PWL + BJ3-1 + BMA2-032	
	40	D-A93L + BJ3-1 + BMA2-040	D-M9PL + BJ3-1 + BMA2-040	D-M9NL + BJ3-1 + BMA2-040	D-M9PWL + BJ3-1 + BMA2-040	
	50	D-A93L + BJ3-1 + BMA2-050	D-M9PL + BJ3-1 + BMA2-050	D-M9NL + BJ3-1 + BMA2-050	D-M9PWL + BJ3-1 + BMA2-050	
	63	D-A93L + BJ3-1 + BMA2-063	D-M9PL + BJ3-1 + BMA2-063	D-M9NL + BJ3-1 + BMA2-063	D-M9PWL + BJ3-1 + BMA2-063	

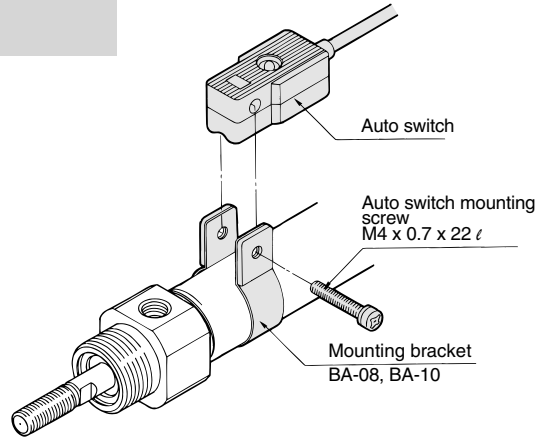
- Lead wire length = 3 m, refer to page 11 for other lengths.
- Since there are other applicable auto switches than those listed, refer to pages 11 to 14 or SMC's Best Pneumatics catalogue for details.
- (\*) ø8 to ø12, solid state switches only can be used.
- (\*\*) See separate table for CG1 and RHC with 80 and 100mm bore size.

### Stainless Steel Cylinder:

Water resistant 2-colour indication type. Solid state switch, 2-wire, 24VDC	Series CJ5-S			Series CG5-S								
	Auto switch model	Mounting bracket no.		Auto switch model	Mounting bracket no.							
		ø10	ø16		ø20	ø25	ø32	ø40	ø50	ø63	ø80	ø100
D-H7BAL	BJ2-010S	BJ2-016S	D-G5BAL	NBA-088S	NBA-106S	BGS1-032S	BAF-04S	BAF-05S	BAF-06S	BAF-08S	BAF-10S	



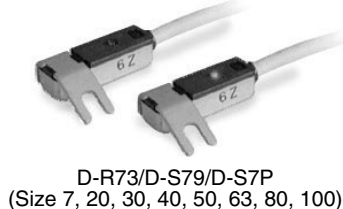
## Band mounting style





### Applicable Auto Switch + Mounting Bracket (CG1, RHC, bore size $\varnothing 80$ , $\varnothing 100$ )

Applicable Series	Bore size (mm)	Reed switch type	Solid state switch type			Description
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
CG1 RHC	80	D-B54L + BA-08	D-G5PL + BA-08	D-G59L + BA-08	D-G5PWL + BA-08	With lead wire length = 3 m Consult SMC for other lengths.
		—	D-G5PSAPC + BA-08	D-G59SAPC + BA-08	D-G5PWSAPC + BA-08	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.
	100	D-B54L + BA-10	D-G5PL + BA-10	D-G59L + BA-10	D-G5PWL + BA-10	With lead wire length = 3 m Consult SMC for other lengths.
		—	D-G5PSAPC + BA-10	D-G59SAPC + BA-10	D-G5PWSAPC + BA-10	With pre-wired connector (M8-3pin). Lead wire length = 0.5m Consult SMC for other lengths.

## Direct mounting style For rotary actuators (CRB2, CRBU2, CRB1, MSU)





### Applicable Auto Switch/ Rotary actuators (CRB2, CRBU2, CRB1, MSU)

Applicable Series	Size	Reed switch type	Solid state switch type		Description
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	
CRB2 CRBU2 CRB1 MSU	1 3 10 15	D-93AL	D-S9P1L + D-S9P2L	D-S991L + D-S992L	• Lead wire length = 3 m, consult SMC for other lengths.
		—	D-S9P1SAPC* + D-S9P2SAPC	D-S991SAPC* + D-S992SAPC	Auto switch with pre-wired connector (M8-3pin). • Lead wire length = 0.5 m, consult SMC for other lengths. 
	7 20 30 40 50 63 80 100	D-R731L* + D-R732L	D-S7P1L* + D-S7P2L	D-S791L* + D-S792L	• Lead wire length = 3 m, consult SMC for other lengths.
		—	D-S7P1SAPC* + D-S7P2SAPC	D-S791SAPC* + D-S792SAPC	Auto switch with pre-wired connector (M8-3pin). • Lead wire length = 0.5 m, consult SMC for other lengths. 

\* Note, left handed and right handed switches are needed so order one off each part number.

• Since there are other applicable auto switches than those listed, refer to pages 11 to 14 or SMC's Best Pneumatics catalogue for details.

### Applicable Auto Switch/ Rotary actuators (CRA1)

Applicable Series	Size	Reed switch type	Solid state switch type			Description
		24 VDC 2-wire	24 VDC 3-wire (PNP)	24 VDC 3-wire (NPN)	24 VDC (2-colour indication) 3-wire (PNP)	
CRA1	30	D-A73L	D-F7PL	D-F79L	D-F7PWL	• Lead wire length = 3 m, consult SMC for other lengths.
		—	D-F7PSAPC	D-F79SAPC	D-F7PWSAPC	Auto switch with pre-wired connector (M8-3pin). • Lead wire length = 0.5 m, consult SMC for other lengths. 
	50 63 80 100	D-A53L	D-F5PL	D-F59L	D-F5PWL	• Lead wire length = 3 m, consult SMC for other lengths.
		—	D-F5PSAPC	D-F59SAPC	D-F5PWSAPC	Auto switch with pre-wired connector (M8-3pin). • Lead wire length = 0.5 m, consult SMC for other lengths. 

• Since there are other applicable auto switches than listed, refer to SMC's Pneumatics catalogue for details.

### Applicable Auto Switch/ Rotary actuators (CRJ, CRQ2, MSQ, MSZ)

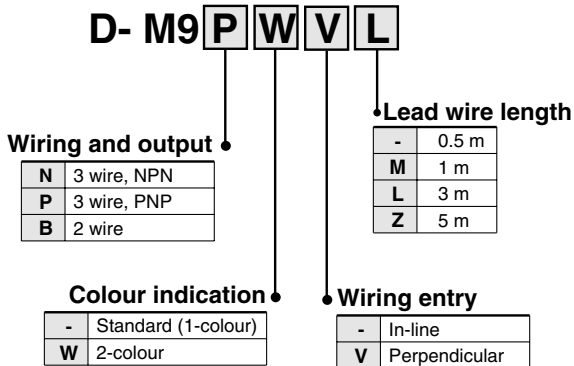
• Refer to section "Direct mounting style/Round groove" on page 4.

# Auto Switch Specifications

## Auto Switch Common Specifications

Type	Reed switch	Solid state switch
Leakage current	None	3-wire: 100 $\mu$ A or less 2-wire: 0.8 mA or less
Operating time	1.2 ms	1 ms or less
Impact resistance	300 m/s <sup>2</sup>	1000 m/s <sup>2</sup>
Insulation resistance	50 M $\Omega$ or more at 500 Mega VDC (between lead wire and case)	
Withstand voltage	1000 VAC for 1 minute (between lead wire and case)	1000 VAC for 1 minute (between lead wire and case)
Ambient temperature	-10 to 60°C	
Enclosure	IEC529 standard IP67, JIS C 0920 waterproof construction	
Standard	Conforming to CE Standards	

## How to Order



Note 1) Applicable auto switch with 5 m lead wire "Z"  
Solid state switch: Manufactured upon receipt of order as standard.  
Note 2) For 1 m(M), available with D-M9□W(V) only.

## Contact Protection Boxes: CD-P11, CD-P12

### <Applicable switch model>

D-A9/A9□V

The auto switches above do not have a built-in contact protection circuit. Therefore, please use a contact protection box with the switch for any of the following cases:

- ① Where the operation load is an inductive load.
- ② Where the wiring length to load is greater than 5 m.
- ③ Where the load voltage is 100 VAC.

The contact life may be shortened. (Due to permanent energising conditions.)

### Specifications

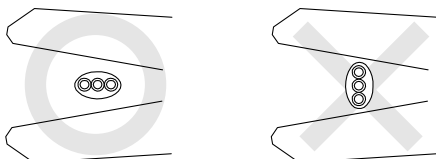
Part no.	CD-P11		CD-P12
Load voltage	100 VAC	200 VAC	24 VDC
Maximum load current	25 mA	12.5 mA	50 mA

\* Lead wire length — Switch connection side 0.5 m  
Load connection side 0.5 m



## Applicable Wire Stripper

When the cable sheath is stripped, confirm the stripping direction. The insulator may be split or damaged depending on the direction. (D-M9□(V) only)

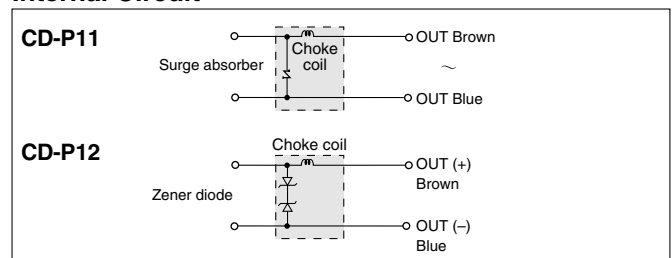


### Recommended Tool

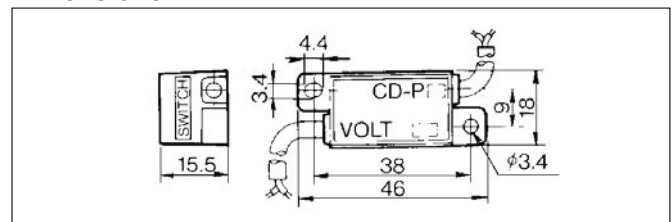
Model name	Model no.
Wire stripper	D-M9N-SWY

\* Stripper for a round cable ( $\phi$ 2.0) can be used for a 2-wire type cable.

### Internal Circuit



### Dimensions



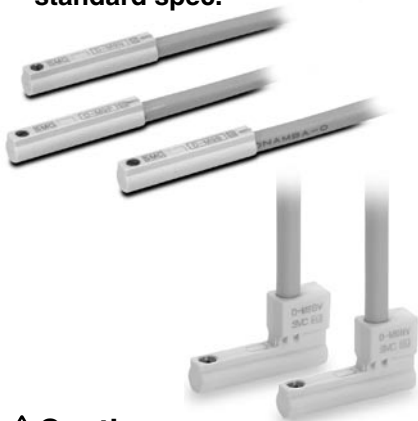
### Connection

To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 metre.

# Solid State Switch: Direct Mounting Style D-M9N(V)/D-M9P(V)/D-M9B(V) (C) (E)

## Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- Lead free
- UL certified (style 2844) lead cable is used.
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard spec.



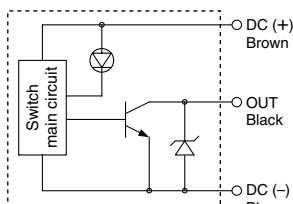
## Caution

### Operating Precautions

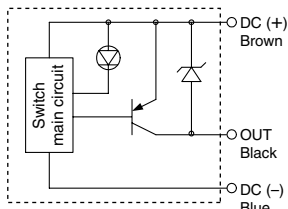
Fix the switch with the existing screw installed on the switch body. The switch may be damaged if a screw other than the one supplied, is used.

## Auto Switch Internal Circuit

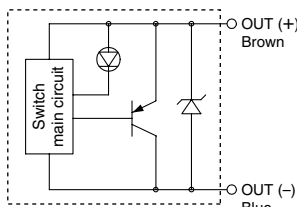
### D-M9N(V)



### D-M9P(V)



### D-M9B(V)



## Auto Switch Specifications

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 direction	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.					
Standard	Conforming to CE Standards					

### Lead wires

Oilproof heavy-duty vinyl cable:  $\phi 2.7 \times 3.2$  ellipse

D-M9B(V) 0.15 mm<sup>2</sup> x 2 cores

D-M9N(V), D-M9P(V) 0.15 mm<sup>2</sup> x 3 cores

Note 1) Refer to page 14 for details of solid state switch with pre-wired connector.

Note 2) Refer to page 11 for solid state switch common specifications and for lead wire lengths.

## Weight

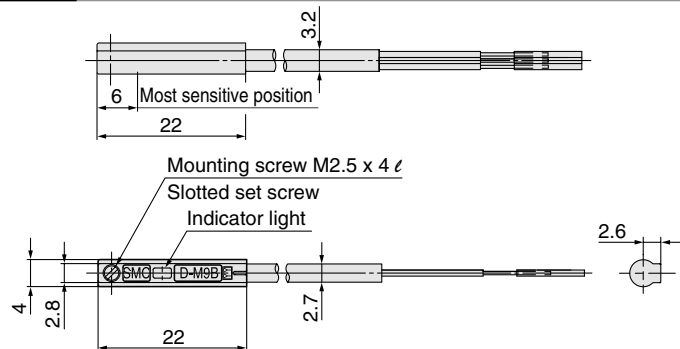
Unit: g

Auto switch part no.	D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length (m)	0.5	8	7
	3	41	38
	5	68	63

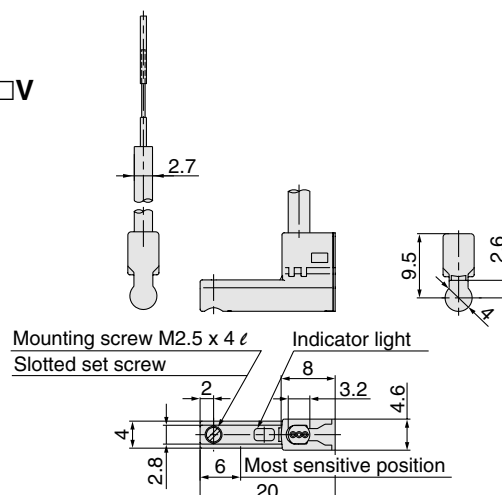
## Dimensions

Unit: mm

### D-M9□



### D-M9□V



# 2-Colour Indication Solid State Switch: Direct Mounting Style

## D-M9NW(V)/D-M9PW(V)/D-M9BW(V)

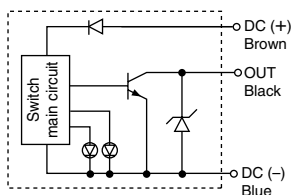
### Grommet

- 2-wire load current is reduced (2.5 to 40 mA).
- RoHS compliant
- UL certified (style 2844) lead cable is used.
- Flexibility is 1.5 times greater than the conventional model (SMC comparison).
- Using flexible cable as standard spec.
- The optimum operating position can be determined by the colour of the light. (Red → Green → Red)

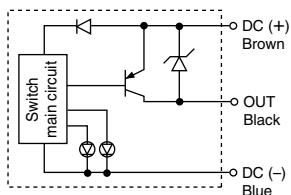


### Auto Switch Internal Circuit

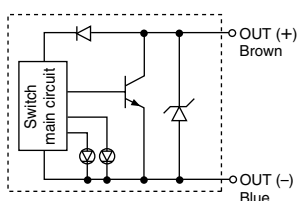
#### D-M9NW(V)



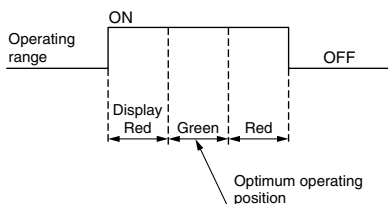
#### D-M9PW(V)



#### D-M9BW(V)



### Indicator light / Display method



### Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W/D-M9□WV (With indicator light)						
Auto switch part no.	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV
Electrical entry direction	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				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Internal voltage drop	Operating position ..... Red LED illuminates. Optimum operating position ..... Green LED illuminates.					
Standard	Conforming to CE Standards					

#### ● Lead wires

Oilproof heavy-duty vinyl cable:  $\phi 2.7 \times 3.2$  ellipse

D-M9BW(V) 0.15 mm<sup>2</sup> x 2 cores

D-M9NW(V), D-M9PW(V) 0.15 mm<sup>2</sup> x 3 cores

Note 1) Refer to page 14 for details of solid state switch with pre-wired connector.

Note 2) Refer to page 11 for solid state switch common specifications and for lead wire lengths.

### Weight

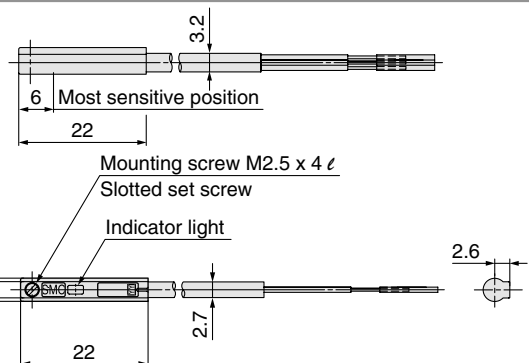
Unit: g

Auto switch part no.	D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Lead wire length (m)	0.5	8	7
	1	14	13
	3	41	38
	5	68	63

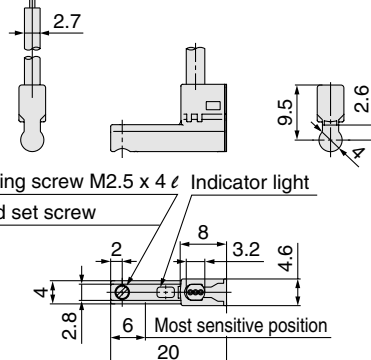
### Dimensions

Unit: mm

#### D-M9□W



#### D-M9□WV



# Solid State Switch With Pre-wired Connector



## With Pre-wired Connector

- Eliminates the harnessing work by cable with connector specifications
- Adopts global standardized connector (IEC947-5-2)
- IP67 construction



## How to Order

**D- M9 P W V S A PC**

### Wiring and output

<b>N</b>	3 wire, NPN
<b>P</b>	3 wire, PNP
<b>B</b>	2 wire

### Colour indication

-	Standard (1-colour)
<b>W</b>	2-colour

### Wiring entry

-	In-line
<b>V</b>	Perpendicular

### Connector model

<b>A</b>	M8—3 pin
<b>B</b>	M8—4 pin
<b>D</b>	M12—4 pin

### Cable length

<b>S</b>	0.5 m
<b>M</b>	1.0 m

## Connector Specifications

Connector model	M8—3 pin	M8—4 pin	M12—4 pin
Pin arrangement			
Conformed standard	JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402		
Impact resistance	300 m/s <sup>2</sup>		
Enclosure	IP-67 (IEC529 standard)		
Insulation resistance	100 MΩ or more at 500 M VDC		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

## Connector Pin Arrangement

Sensor type	Colour distinction of lead wire				Meaning of contact number			
	1 pin	2 pin	3 pin	4 pin	1 pin	2 pin	3 pin	4 pin
DC 2-wire type	Brown	—	—	Blue	OUT (+)	—	—	OUT (-)
DC 3-wire type	Brown	—	Blue	Black	DC (+)	—	DC (-)	OUT

## Weight

Unit: g

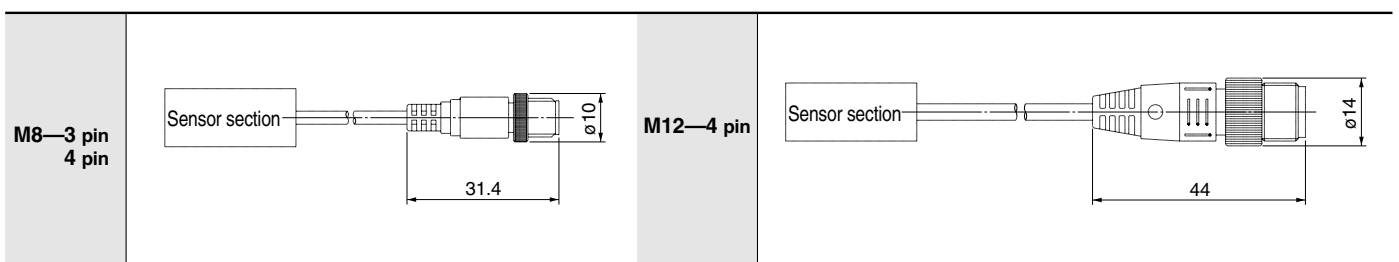
### M8 connector type:

Auto switch part no.	Lead wire length (m)	D-M9N□APC	D-M9B□APC	D-M9N□BPC	D-M9B□BPC
		D-M9P□APC		D-M9P□BPC	
0.5	0.5	11	11	11	11
	1	18	18	18	18

### M12 connector type:

Auto switch part no.	Lead wire length (m)	D-M9N□DPC	D-M9B□DPC
		D-M9P□DPC	
0.5	0.5	19	18
	1	26	25

## Dimensions



# Other Available Switches

Since there are other applicable auto switches than those listed, refer to SMC's Best Pneumatics catalogue for details.

## Trimmer Auto Switch

One auto switch allows work pieces to be distinguished easily.

## With timer (with OFF delay timer)

Can detect an intermediate position of a high-speed cylinder.

## Resistant to strong magnetic fields

For use in environments where AC current is 16,000A or more.

## Without indicator

For light free environments.

## Operating range: wide-area detection type

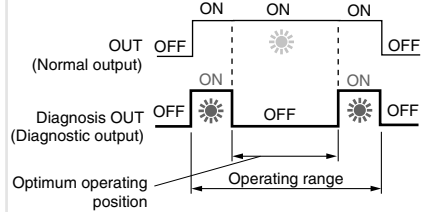
Operating range:  
35 to 50 mm

## Water, oil resistant

For water, coolant splash environments.

## With diagnostic output

Displacement of the detecting position is detected at the PLC side.



## Heat resistant

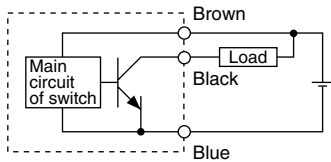
For use in environments of 150°C, 130°C, 120°C.

# Before Operation

Auto Switch Connection and Example

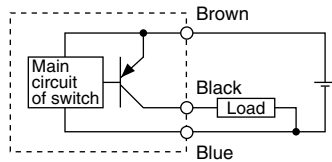
## Basic Wiring

### Solid state 3-wire, NPN

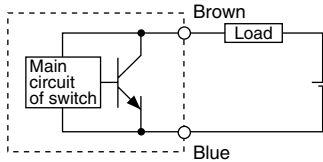


(Power supply for switch and load are separate)

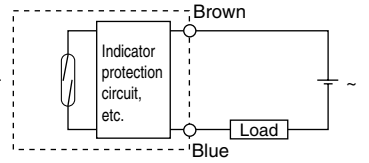
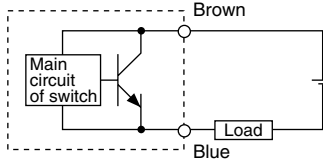
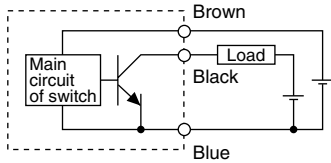
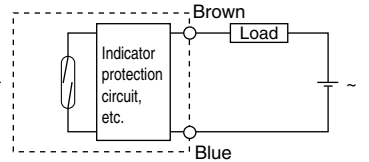
### Solid state 3-wire, PNP



### Solid state 2-wire



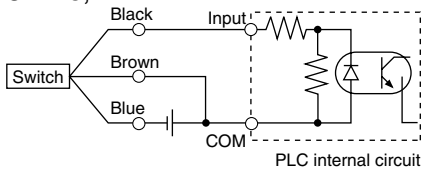
### Reed switch 2-wire



## Example of Connection with PLC (Programmable Logic Controller)

### • Sink input specifications

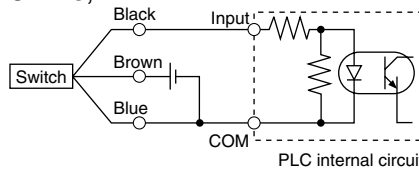
#### 3-wire, NPN



PLC internal circuit

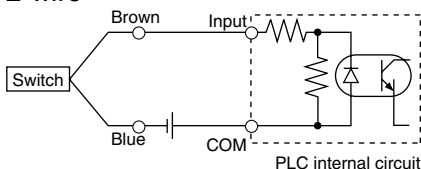
### • Source input specifications

#### 3-wire, PNP



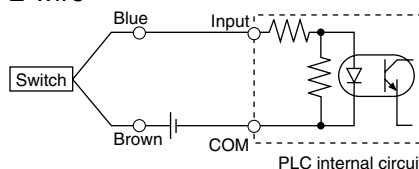
PLC internal circuit

#### 2-wire



PLC internal circuit

#### 2-wire



PLC internal circuit

Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.