Applicable Cylinder Series

Applicable Cylinder Series 1

Cylinder series		CDJP2		CDJ2	JCDM	CDM2	CDM3	CDG1	CDG3	JMDB	MDB-X1184	MDB1	CDA2	CDA2-X1184	CDS1	CDS2	CDUJ	CDU	CDQS	JCDQ	CDQ2				CDQ2-XB14	RDQ		CDQM	
Bore size		ø4	ø6, ø10, ø16	ø6, ø10, ø16	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø20 to ø63	ø80, ø100	ø20 to ø63	ø80, ø100	ø32 to ø100	ø40 to ø100	ø32 to ø125	ø40 to ø100	ø40 to ø100	ø125 to ø200	ø125 to ø160	ø6 to ø20	ø6 to ø32	ø12 to ø20	ø25	ø12 to ø100	ø12 to ø20	ø25	ø32 to ø100	ø125 to ø160	ø180 to ø200	ø16 to ø63	ø20, ø25	ø32 to ø50	ø12 to ø25	ø32 to ø100
Solid state auto switches	D-H7			■		■	■	■																							
	D-H7C			■		■	■	■																							
	D-H7BA			■		■	■	■																							
	D-H7NF			■		■	■	■																							
	D-H7□W			■		■	■	■																							
	D-G5/K5								■	■			■																		
	D-G5BA								■	■			■																		
	D-G59F								■	■			■																		
	D-G5NT					■	■	■	■	■			■																		
	D-G5□W/K59W								■	■			■																		
	D-G39/K39										■		■		■	■															
	D-G39A/K39A					■	■																								
	D-F7/J7			■																	■	■	■	■					■		■
	D-J79C			■																	■	■	■	■					■		■
	D-F79F			■																	■	■	■	■					■		■
	D-F7BA			■																	■	■	■	■					■		■
	D-F7BAV			■																	■	■	■	■					■		■
	D-F7□V			■																	■	■	■	■					■		■
	D-F7NT			■																	■	■	■	■					■		■
	D-F7□W(V)			■																	■	■	■	■					■		■
	D-F5/J5										■		■		■	■															
	D-F5BA										■		■		■	■															
	D-F5□W/J59W										■		■		■	■															
	D-F59F										■		■		■	■															
	D-F5NT										■		■		■	■															
	D-G39C/K39C												■																		
	D-M9	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□V	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□W	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□WV	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□E (Normally closed)	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□EV (Normally closed)	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□A	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■			■	■	■	■
	D-M9□AV	■	■	■	■	■	■	■		■	■	■	■	■	■	■			■	■	■	■	■	■	■			■	■	■	■
	D-Y5/Y6/Y7□/Y7□V										■	■	■		■	■															
	D-Y7BA										■	■	■		■	■															
	D-Y7□W/Y7□WV										■	■	■		■	■															
	D-P3DWA										■		■							■		■	■	■							
	D-P4DW										■		■																		■
	D-F9G/H (Normally closed)	■	■	■		■	■	■		■	■		■		■	■			■	■	■	■	■	■	■			■	■	■	■
	D-Y7G/H (Normally closed)										■		■		■	■															
	D-M9□J																											■			
	D-F7NJ																														
	D-F6□																														
	D-F8□																■		■	■											
Reed auto switches	D-C7/C8			■		■	■	■		■																					
	D-C73C/C80C			■		■	■	■		■																					
	D-B5/B6					■	■	■	■	■	■		■																		
	D-B59W					■	■	■	■	■	■		■																		
	D-A3/A4										■		■		■	■															
	D-A3□A/A44A					■	■																								
	D-A3□C/A44C												■																		
	D-A7/A8			■																	■	■	■	■					■		■
	D-A7□H/A80H			■																	■	■	■	■					■		■
	D-A73C/A80C			■																	■	■	■	■					■		■
	D-A79W			■																	■	■	■	■					■		■
	D-A5/A6										■		■		■	■															
	D-A59W										■		■		■	■															
	D-A9		■	■		■	■	■		■		■	■		■	■			■	■	■	■	■	■	■			■	■	■	■
	D-A9□V		■	■		■	■	■		■		■	■		■	■			■	■	■	■	■	■	■			■	■	■	■
	D-E7□A/E80A																									■	■				
	D-Z7/Z8										■	■	■		■	■															
	D-P7																														
	D-B3													■																	
Actuator page reference (●: Best Pneumatics No.)		●-1 P.21		●-1 P.41	●-1 P.153	●-1 P.167	●-1 P.269	●-1 P.287		●-1 P.363	●-1 P.377	●-1 P.387	●-1 P.433	●-1 P.435	●-1 P.465	●-1 P.524	●-1 P.527	●-1 P.565	●-1 P.593	●-1 P.619	●-1 P.687	●-1 P.753	●-1 P.763				●-1 P.763	●-1 P.981		●-1 P.1005	

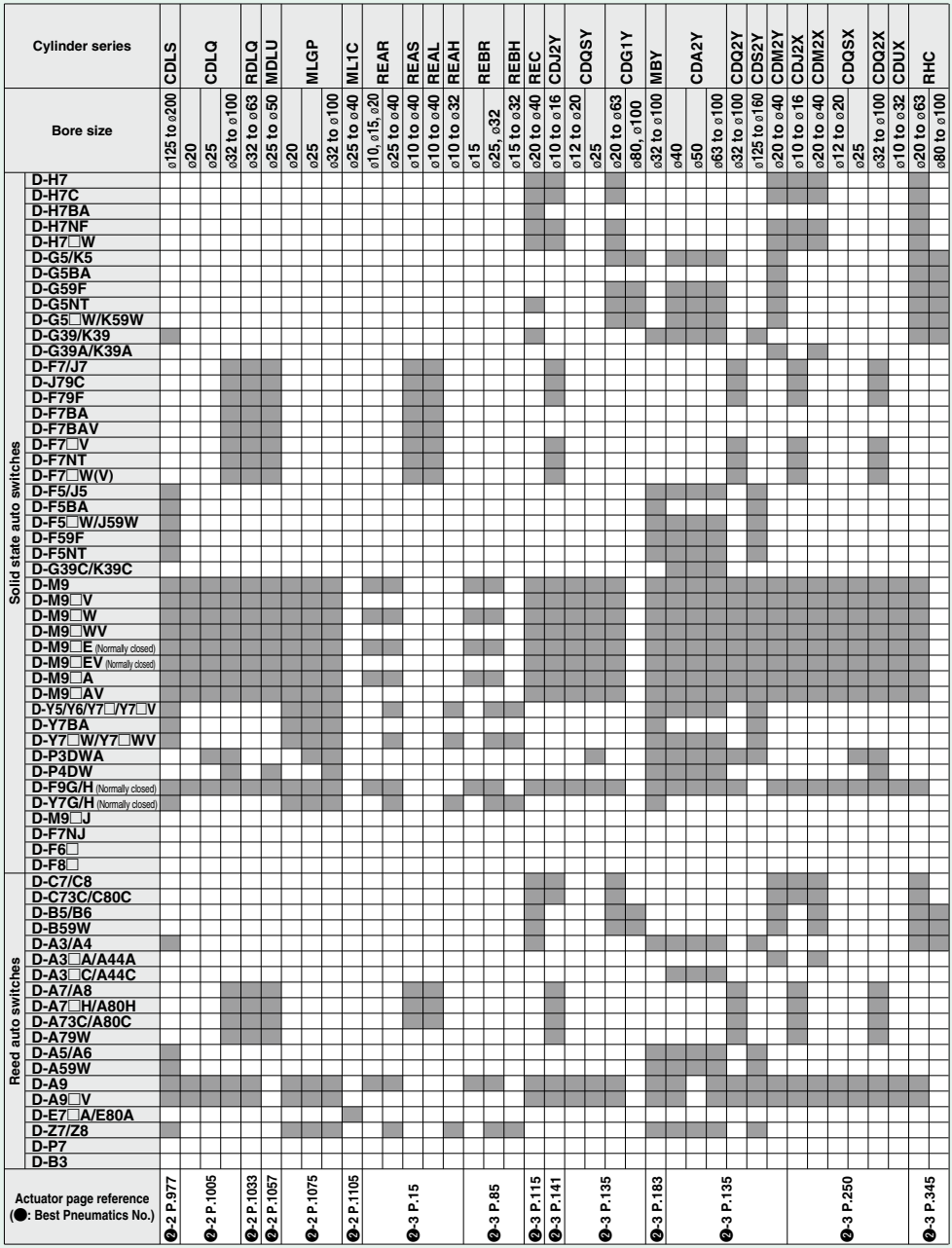
Cylinder series		CDQU	MDU	CDJ5-S	CDG5-S	HYDB	HYDQ	HYDC	HYDG	MY1B	MY1H	MY1B	MY1M	MY1C	MY1H	MY1HT	MY1□W	MY2	MY3	CY3R	CY1S	CY1L	CY1H	CY1F	CYP	MXH	MXS	MXQ□	MXQ	MXF	MXW	MXJ
Bore size		ø20 to ø40	ø25 to ø63	ø10, ø16	ø20 to ø100	ø20 to ø63	ø20 to ø63	ø32 to ø63	ø32 to ø63	ø25 to ø40	ø25 to ø40	ø10 to ø20	ø50	ø63 to ø100	ø16, ø20	ø25 to ø63	ø16, ø20	ø25 to ø63	ø10 to ø20	ø50, ø63	ø16, ø20	ø25 to ø63	ø16, ø25, ø40	ø16 to ø63	ø6 to ø20	ø25 to ø63	ø6 to ø40	ø6 to ø40	ø10 to ø32	ø10, ø15, ø25	ø15, ø32	ø6 to ø20	ø6 to ø25	ø6 to ø25	ø6 to ø25	ø8 to ø20	ø8 to ø25	ø4, ø6, ø8
Solid state auto switches	D-H7																																			
	D-H7C																																			
	D-H7BA			■		■																														
	D-H7NF																																			
	D-H7□W																																			
	D-G5/K5																																			
	D-G5BA				■	■																														
	D-G59F																																			
	D-G5NT																																			
	D-G5□W/K59W																																			
	D-G39/K39																																			
	D-G39A/K39A																																			
	D-F7/J7																					■														
	D-J79C																					■														
	D-F79F																					■														
	D-F7BA																					■														
	D-F7BAV																					■														
	D-F7□V																					■														
	D-F7NT																					■														
	D-F7□W(V)																					■														
	D-F5/J5																																			
	D-F5BA																																			
	D-F5□W/J59W																																			
	D-F59F																																			
	D-F5NT																																			
	D-G39C/K39C																																			
	D-M9	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	D-M9□V	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□W	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□WV	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□E (Normally closed)	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□EV (Normally closed)	■	■							■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□A	■	■	■						■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-M9□AV	■	■	■						■	■	■			■	■	■	■	■		■	■	■	■	■		■	■	■	■	■	■	■	■	■	■
	D-Y5/Y6/Y7□/Y7□V												■	■		■	■		■	■			■		■	■				■	■						
	D-Y7BA																		■																		
	D-Y7□W/Y7□WV												■	■		■	■		■	■			■		■	■				■	■						
	D-P3DWA		■																																	
	D-P4DW		■																																	
	D-F9G/H (Normally closed)		■							■	■	■			■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
	D-Y7G/H (Normally closed)												■	■		■	■		■	■			■		■	■				■	■						
	D-M9□J																																			
	D-F7NJ																																			
	D-F6□					■	■	■	■																													■
	D-F8□																																			
Reed auto switches	D-C7/C8																																			
	D-C73C/C80C																																			
	D-B5/B6																																			
	D-B59W																																			
	D-A3/A4																																			
	D-A3□A/A44A																																			
	D-A3□C/A44C																																			
	D-A7/A8																					■														
	D-A7□H/A80H																					■														
	D-A73C/A80C																																			
	D-A79W																																			
	D-A5/A6																																			
	D-A59W																																			
	D-A9	■	■							■	■	■			■	■	■	■	■		■	■			■		■	■	■	■	■	■	■	■	■	■
	D-A9□V	■	■							■	■	■			■	■	■	■	■		■	■			■		■	■	■	■	■	■	■	■	■	■
	D-E7□A/E80A																																			
	D-Z7/Z8												■	■		■	■		■	■			■		■	■				■	■						
	D-P7																																			
	D-B3																																			
Actuator page reference (●: Best Pneumatics No.)		●-1 P.1021	●-1 P.1033	●-1 P.1063		●-1 P.1084	●-1 P.1088	●-1 P.1097	●-1 P.1103	●-1 P.1183	●-1 P.1201				●-1 P.1225							●-1 P.1339	●-1 P.1367	●-1 P.1403		●-1 P.1459	●-1 P.1485	●-1 P.1511	●-1 P.1523	●-1 P.1541	●-1 P.1561	●-2 P.15	●-2 P.33	●-2 P.73	●-2 P.215	●-2 P.265	●-2 P.281	●-2 P.305

D-□

Applicable Cylinder Series

Applicable Cylinder Series 2

	Cylinder series	MXP	MXY	MTS	MGJ	JMGP	MGP-Z	MGP	MGPW	MGQ	MGG	MGC	MGF	MGZ	MGT	CX2	CDBXW□	CDPXW□	CXT	CXSJ	CXS	CDLJ2	CDLM2	CDLG1	CDL1	MLGC	CDNG	MDWB	MDNB	CDNA2	CDNS
	Bore size	ø6 to ø16	ø6, ø10, ø12, ø16	ø8 to ø40	ø6, ø10	ø12 to ø63	ø12 to ø20	ø25	ø32 to ø100	ø20	ø25	ø32 to ø100	ø20, ø25	ø32 to ø63	ø12 to ø100	ø20 to ø63	ø80 to ø100	ø20 to ø50	ø40, ø63, ø100	ø20 to ø80	ø63 to ø100	ø10, ø15, ø25	ø10	ø16 to ø32	ø10 to ø32	ø12 to ø25	ø32, ø40	ø6, ø10	ø6 to ø32	ø16	ø20 to ø40	ø20 to ø40	ø40	ø50	ø63 to ø100	ø125 to ø160	ø20 to ø40	ø20 to ø40	ø32 to ø100	ø32 to ø100	ø40 to ø100	ø125 to ø160
Solid state auto switches	D-H7										●	●														●	●				
	D-H7C										●	●														●	●				
	D-H7BA										●	●														●	●				
	D-H7NF										●	●														●	●				
	D-H7□W										●	●														●	●				
	D-G5/K5										●	●													●	●				●	
	D-G5BA										●	●													●	●				●	
	D-G59F										●	●													●	●				●	
	D-G5NT										●	●												●	●	●				●	
	D-G5□W/K59W										●	●													●	●				●	
	D-G39/K39																								●			●	●	●	●
	D-G39A/K39A																							●							
	D-F7/J7																●	●		●											
	D-J79C																●	●		●											
	D-F79F																●	●		●											
	D-F7BA																●	●		●											
	D-F7BAV																●	●		●											
	D-F7□V																●	●		●											
	D-F7NT																●	●		●											
	D-F7□W(V)																●	●		●											
	D-F5/J5																								●			●	●	●	●
	D-F5BA																								●			●	●	●	●
	D-F5□W/J59W																								●			●	●	●	●
	D-F59F																								●			●	●	●	●
	D-F5NT																								●			●	●	●	●
	D-G39C/K39C																								●					●	
	D-M9	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□V	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□W	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□WV	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□E (Normally closed)	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□EV (Normally closed)	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□A	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-M9□AV	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	D-Y5/Y6/Y7□/Y7□V							●	●	●	●	●	●	●	●	●					●				●		●	●	●	●	●
	D-Y7BA							●	●	●	●	●	●	●	●	●					●				●		●	●	●	●	●
	D-Y7□W/Y7□WV							●	●	●	●	●	●	●	●	●					●				●		●	●	●	●	●
	D-P3DWA						●	●	●		●	●	●	●	●										●		●	●	●	●	●
	D-P4DW							●	●		●	●	●			●									●		●	●	●	●	●
	D-F9G/H (Normally closed)	●	●	●			●	●	●		●	●	●			●			●	●	●		●	●	●		●	●	●	●	●
	D-Y7G/H (Normally closed)							●	●		●	●	●			●					●				●		●	●	●	●	●
	D-M9□J																														
	D-F7NJ																														
	D-F6□			●	●																										
	D-F8□																														
Reed auto switches	D-C7/C8										●	●													●	●	●				
	D-C73C/C80C										●	●													●	●	●				
	D-B5/B6										●	●													●	●	●				
	D-B59W										●	●													●	●	●				
	D-A3/A4																								●			●	●	●	●
	D-A3□A/A44A																							●							
	D-A3□C/A44C																								●					●	
	D-A7/A8															●		●		●											
	D-A7□H/A80H															●		●		●											
	D-A73C/A80C															●				●											
	D-A79W																														
	D-A5/A6																								●			●	●	●	●
	D-A59W																								●			●	●	●	●
	D-A9	●	●	●			●	●	●	●	●	●	●	●	●	●		●		●	●		●	●	●	●	●	●	●	●	●
	D-A9□V	●	●	●			●	●	●	●	●	●	●	●	●	●		●		●	●		●	●	●	●	●	●	●	●	●
	D-E7□A/E80A															●	●														
	D-Z7/Z8								●	●				●	●	●					●				●		●	●	●	●	●
	D-P7																														
	D-B3																														
	Actuator page reference (●: Best Pneumatics No.)	●-2 P.327	●-2 P.355	●-2 P.375	●-2 P.401	●-2 P.409	●-2 P.423	●-2 P.423	●-2 P.495	●-2 P.519	●-2 P.535	●-2 P.577	●-2 P.595	●-2 P.607	●-2 P.635	●-2 P.647	●-2 P.658		●-2 P.709	●-2 P.723	●-2 P.785	●-2 P.801	●-2 P.818	●-2 P.830		●-2 P.853	●-2 P.863	CAT.ES20-246	●-2 P.887	●-2 P.917	●-2 P.953	


Cylinder series
Bore size
CDLS
ø125 to ø200
CDLQ
ø20
ø25
ø32 to ø100
RDLQ
ø32 to ø63
MDLU
ø25 to ø50
MLGP
ø20
ø25
ø32 to ø100
ML1C
ø25 to ø40
REAR
ø10, ø15, ø20
ø25 to ø40
REAS
ø10 to ø40
REAL
ø10 to ø40
REAH
ø10 to ø32
REBR
ø15
ø25, ø32
REBH
ø15 to ø32
REC
ø20 to ø40
CDJ2Y
ø10 to ø16
CDQSY
ø12 to ø20
ø25
CDG1Y
ø20 to ø63
ø80, ø100
MBY
ø32 to ø100
CDA2Y
ø40
ø50
ø63 to ø100
CDQ2Y
ø32 to ø100
ø125 to ø160
CDS2Y
CDM2Y
ø20 to ø40
CDJ2X
ø10 to ø16
CDM2X
ø20 to ø40
CDQSX
ø12 to ø20
ø25
CDQ2X
ø32 to ø100
CDUX
ø10 to ø32
RHC
ø20 to ø63
ø80 to ø100
Solid state auto switches
D-H7
D-H7C
D-H7BA
D-H7NF
D-H7□W
D-G5/K5
D-G5BA
D-G59F
D-G5NT
D-G5□W/K59W
D-G39/K39
D-G39A/K39A
D-F7/J7
D-J79C
D-F79F
D-F7BA
D-F7BAV
D-F7□V
D-F7NT
D-F7□W(V)
D-F5/J5
D-F5BA
D-F5□W/J59W
D-F59F
D-F5NT
D-G39C/K39C
D-M9
D-M9□V
D-M9□W
D-M9□WV
D-M9□E (Normally closed)
D-M9□EV (Normally closed)
D-M9□A
D-M9□AV
D-Y5/Y6/Y7□/Y7□V
D-Y7BA
D-Y7□W/Y7□WV
D-P3DWA
D-P4DW
D-F9G/H (Normally closed)
D-Y7G/H (Normally closed)
D-M9□J
D-F7NJ
D-F6□
D-F8□
Reed auto switches
D-C7/C8
D-C73C/C80C
D-B5/B6
D-B59W
D-A3/A4
D-A3□A/A44A
D-A3□C/A44C
D-A7/A8
D-A7□H/A80H
D-A73C/A80C
D-A79W
D-A5/A6
D-A59W
D-A9
D-A9□V
D-E7□A/E80A
D-Z7/Z8
D-P7
D-B3
Actuator page reference
(●: Best Pneumatics No.)
●2-2 P.977
●2-2 P.1005
●2-2 P.1033
●2-2 P.1057
●2-2 P.1075
●2-2 P.1105
●2-3 P.15
●2-3 P.85
●2-3 P.115
●2-3 P.141
●2-3 P.135
●2-3 P.183
●2-3 P.135
●2-3 P.250
●2-3 P.345

D-□

Applicable Cylinder Series

Applicable Cylinder Series 3

	Cylinder series	RZQ	MK	MK2T	CKQG	CLKQG	CKQP	CLKQP	CKG1	CKP1	CLK2G	CLK2P	RSDQ	RSDG	RS2H	RSH	MIS/MIW	CEP1	CE1	CE2	ML2B	CVQ	CVQM	CDVJ5	CDVJ3	CDVM5	CDVM5K	CDVM3	CDVM3K	CDV3	CDV3K	CDVS1	CDVS1K	MVGQ
	Bore size	ø32 to ø63	ø12, ø16 ø20, ø25 ø32 to ø63	ø20 to ø63	ø50	ø50	ø50	ø50	ø40 to ø63	ø40 to ø63	ø40 to ø63	ø40 to ø63	ø12 ø16, ø20 ø32, ø40, ø50	ø40, ø50	ø50 to ø80	ø20, ø32	ø6, ø12, ø20, ø25, ø32	ø12, ø20	ø12, ø20 ø32 to ø63	ø40 to ø100	ø25 to ø40	ø32 to ø63	ø32 to ø63	ø10, ø16 ø10, ø16	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø40 to ø100	ø40 to ø63	ø40 to ø100	ø40 to ø63	ø12 to ø100
Solid state auto switches	D-H7													■										■	■	■	■	■	■					
	D-H7C													■										■	■	■	■	■	■					
	D-H7BA													■										■	■	■	■	■	■					
	D-H7NF													■										■	■	■	■	■	■					
	D-H7□W													■										■	■	■	■	■	■					
	D-G5/K5																			■										■	■	■	■	
	D-G5BA																			■										■	■	■	■	
	D-G59F																			■										■	■	■	■	
	D-G5NT																			■						■	■	■	■	■	■	■	■	
	D-G5□W/K59W																			■										■	■	■	■	
	D-G39/K39																													■	■	■	■	
	D-G39A/K39A																													■	■	■	■	
	D-F7/J7	■		■	■	■	■						■	■					■	■				■	■									
	D-J79C	■		■	■	■	■						■	■					■	■				■	■									
	D-F79F	■		■	■	■	■						■	■					■	■				■	■									
	D-F7BA	■		■	■	■	■						■	■					■	■														
	D-F7BAV	■		■	■	■	■						■	■					■	■														
	D-F7□V	■		■	■	■	■						■	■					■	■				■	■									
	D-F7NT	■		■	■	■	■						■	■					■	■				■	■									
	D-F7□W(V)	■		■	■	■	■						■	■					■	■				■	■									
	D-F5/J5																			■										■	■	■	■	
	D-F5BA																			■										■	■	■	■	
	D-F5□W/J59W																			■										■	■	■	■	
	D-F59F																			■										■	■	■	■	
	D-F5NT																			■										■	■	■	■	
	D-G39C/K39C																													■	■	■	■	
	D-M9	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□V	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□W	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□WV	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□E (Normally closed)	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□EV (Normally closed)	■	■	■	■	■			■		■		■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□A	■	■	■	■								■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-M9□AV	■	■	■	■								■	■	■	■	■		■	■		■		■	■	■	■	■	■	■	■	■	■	■
	D-Y5/Y6/Y7□/Y7□V															■				■	■									■	■	■	■	■
	D-Y7BA															■				■	■									■	■	■	■	■
	D-Y7□W/Y7□WV															■				■	■									■	■	■	■	■
	D-P3DWA			■		■	■		■		■			■	■			■																
	D-P4DW	■			■	■	■		■		■			■																				
	D-F9G/H (Normally closed)	■	■	■	■	■							■	■	■	■	■	■	■	■				■	■	■	■	■	■	■	■	■	■	■
	D-Y7G/H (Normally closed)															■				■	■									■	■	■	■	■
	D-M9□J																																	
	D-F7NJ																																	
	D-F6□																																	
	D-F8□																																	
Reed auto switches	D-C7/C8													■										■	■	■	■	■	■					
	D-C73C/C80C													■										■	■	■	■	■	■					
	D-B5/B6								■		■									■										■	■	■	■	
	D-B59W																			■						■	■	■	■	■	■	■	■	
	D-A3/A4																			■										■	■	■	■	
	D-A3□A/A44A																													■	■	■	■	
	D-A3□C/A44C																			■										■	■	■	■	
	D-A7/A8	■		■	■	■							■	■					■	■				■	■									
	D-A7□H/A80H	■		■	■	■							■	■					■	■				■	■									
	D-A73C/A80C	■		■	■	■							■	■					■	■				■	■									
	D-A79W	■		■	■	■							■	■					■	■				■	■									
	D-A5/A6																			■										■	■	■	■	
	D-A59W																			■										■	■	■	■	
	D-A9	■	■	■	■	■			■		■		■	■	■			■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■
	D-A9□V	■	■	■	■	■			■		■		■	■	■			■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■
	D-E7□A/E80A																													■	■	■	■	
	D-Z7/Z8															■					■	■								■	■	■	■	■
	D-P7						■	■		■		■																						
	D-B3																																	
	Actuator page reference (●: Best Pneumatics No.)	●-3 P.367	●-3 P.383	●-3 P.403	●-3 P.497				●-3 P.419		●-3 P.445		●-3 P.559	●-3 P.575	●-3 P.589	●-3 P.605	●-3 P.617	●-3 P.641	●-3 P.656	●-3 P.679	●-3 P.701	●-3 P.725	●-3 P.739	●-3 P.750	●-3 P.771					●-3 P.812		●-3 P.832		●-3 P.851

Auto Switch Variations

Auto Switch Variations 1

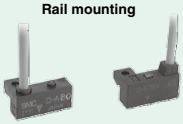
Function	Type	Auto switch mounting type	Electrical entry	Auto switch model	Page
General purpose auto switches	Solid state	Direct	Grommet	**D-M9N/M9P/M9B***	1591
				D-M9NV/M9PV/M9BV*	
				D-F8N/F8P/F8B	1592
				D-M9NE/M9PE/M9BE (Normally closed)*	1592-1
				D-M9NEV/M9PEV/M9BEV (Normally closed)*	
				D-F9G/F9H (Normally closed)*	1593
				D-Y59A/Y59B/Y7P**	1594
				D-Y69A/Y69B/Y7PV**	
				D-Y7G/Y7H (Normally closed)**	1595
		Band	Grommet	**D-H7A1/H7A2/H7B**	1597
				D-G59/G5P/K59	1598
			Connector	**D-H7C**	1599
			Terminal conduit	**D-G39/K39**	1600
				D-G39A/K39A	1601
		Rail	Grommet	**D-F79/F7P/J79**	1602
				D-F7NV/F7PV/F7BV	1603
			Connector	**D-J79C**	1604
		Tie-rod	Grommet	**D-F59/F5P/J59**	1605
			Terminal conduit	**D-G39C/K39C**	1606
	Reed	Direct	Grommet	**D-A90/A93/A96***	1652
				D-A90V/A93V/A96V*	
				D-Z73/Z76/Z80**	1663
				D-E73A/E76A/E80A	1664
		Band	Grommet	**D-C73/C76/C80**	1653
				D-B53/B54/B64	1654
			Connector	**D-C73C/C80C**	1655
			Terminal conduit	**D-A33/A34**	1656
				D-A33A/A34A	1657
			DIN terminal	**D-A44**	1656
				D-A44A	1657
		Rail	Grommet	**D-A72/A73/A80**	1658
				D-A72H/A73H/A76H/A80H	1659
			Connector	**D-A73C/A80C**	1660
		Tie-rod	Grommet	**D-A53/A54/A56/A64/A67**	1661
			Terminal conduit	**D-A33C/A34C**	1662
			DIN terminal	**D-A44C**	

* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1680, 1684, 1688 and 1696 to 1698 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1691 for details.

Direct mounting

Band mounting

Rail mounting



Tie-rod mounting

Auto Switch Variations

Auto Switch Variations 2

Function	Type	Auto switch mounting type	Electrical entry	Auto switch model	Page
2-color indicator	Solid state	Direct	Grommet	D-M9NW/M9PW/M9BW*	1607
				D-M9NWV/M9PWV/M9BWV*	
				D-Y7NW/Y7PW/Y7BW**	1608
				D-Y7NWV/Y7PWV/Y7BWV**	
		Band	Grommet	D-H7NW/H7PW/H7BW	1610
				D-G59W/G5PW/K59W	1611
		Rail	Grommet	D-F79W/F7PW/J79W	1612
				D-F7NWV/F7BWV	1613
		Tie-rod	Grommet	D-F59W/F5PW/J59W	1614
	Reed	Band	Grommet	D-B59W	1665
		Rail	Grommet	D-A79W	1666
		Tie-rod	Grommet	D-A59W	1667

* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1680, 1684, 1688 and 1696 to 1698 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1691 for details.

2-color indicator

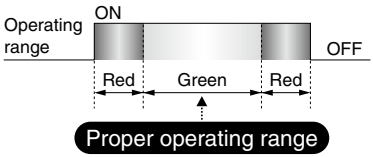
Easily identifiable, proper operating range

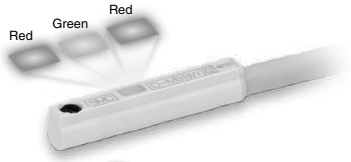
●Mounting positions can be set easily.

Proper operating ranges can be set while watching the lights.

●Displacement of the detecting position can be visually checked.

Trouble caused by incorrect detection can be prevented beforehand.





A green light lights up at the proper operating range.

Even if 2-color indicator solid state auto switches are fixed at the proper operating range (the green light lights up), the operation may become unstable depending on the installation environment or magnetic field disturbance. (Magnetic body, external magnetic field, proximal installation of cylinders with built-in magnet and actuators, temperature change, other factors for magnetic force fluctuation during operation, etc.)

Direct mounting

Band mounting

Rail mounting

Tie-rod mounting

Function	Type	Auto switch mounting type	Electrical entry	Auto switch model	Page
The diagnostic output signal can be detected in an unsteady detecting area.					
2-color indicator auto switch with diagnostic output	Solid state	Band	Grommet	D-H7NF	1615
				D-G59F	1616
		Rail	Grommet	D-F79F	1617
		Tie-rod	Grommet	D-F59F	1618
Water resistant (coolant) type					
Water resistant 2-color indicator auto switch	Solid state	Direct	Grommet	D-M9□A*	1619
				D-M9□AV*	
				D-Y7BA**	1620
		Band	Grommet	D-H7BA	1621
				D-G5BA	1622
		Rail	Grommet	D-F7BA	1623
				D-F7BAV	
		Tie-rod	Grommet	D-F5BA	1624
Hygienic type					
Hygienic	Solid state	Direct	Grommet	D-F6N/F6P/F6B	1625
With built-in OFF-delay timer (200 ms)					
Auto switch with timer	Solid state	Band	Grommet	D-G5NT	1626
		Rail	Grommet	D-F7NT	1627
		Tie-rod	Grommet	D-F5NT	1628
Can be used in an environment where magnetic field disturbances are generated.					
Magnetic field resistant auto switch	Solid state	Rail, Tie-rod, Direct	Grommet	D-P3DWASC/P3DWASE	1630
				D-P3DWA	1631
				D-P3DWSC/P3DWSE	1632
				D-P3DW	1633
		Rail	Grommet	D-P4DWSC/P4DWSE	1634
				D-P4DW	1635
	Reed	Rod	Grommet	D-P79WSE	1668
				D-P74	1669
Can be used in a high-temperature environment (Max. 150°C).					
Heat resistant auto switch	Solid state	Sensor unit: Rail Amplifier unit: DIN rail	Grommet	D-M9NJ/M9BJ	1636
				D-F7NJ	1637
	Reed	Band	Terminal conduit	D-B30/31/35	1671
			Grommet	D-B30J/31J/35J	
Simple workpiece recognition is possible.					
Trimmer auto switch	Solid state	Rail	Grommet	D-M9K/F7K/Y7K/RNK/RPK	1639
		Direct			

* These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1680, 1684, 1688 and 1696 to 1698 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1691 for details.

2-color indicator with diagnostic output

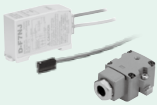
Water resistant 2-color indicator

Hygienic

With timer

Magnetic field resistant

Heat resistant



Trimmer auto switch

Sensor unit

Amplifier unit

D-□

Prior to Use
Auto Switches Common Specifications 1

Refer to the Auto Switch Precautions on pages 8 to 12 before using auto switches.

Auto Switches Common Specifications

Type	Reed auto switch	Solid state auto switch
Leakage current	None	3-wire: 100 μA or less, 2-wire: 0.8 mA or less
Operating time	1.2 ms	1ms or less *3)
Impact resistance	300 m/s²	1000 m/s² *4)
Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) (Between lead wire and case)	
Withstand voltage	1500 VAC for 1 minute *1) (Between lead wire and case)	1000 VAC for 1 minute (Between lead wire and case)
Ambient temperature	−10 to 60°C	
Enclosure	IEC60529 Standard IP67 *2)	

* 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min. (Between lead wire and the case)
* 2) The terminal conduit type (D-A3/A3□A/A3□C/G39/G39A/G39C/K39/K39A/K39C), DIN terminal type (D-A44/A44A/A44C) and heat resistant auto switch (D-F7NJ) conform to IEC60529 Standard IP63.
The trimmer type amplifier section (D-R□K) conforms to IP40.
* 3) Excluding the solid state auto switches with a timer (G5NT/F7NT/F5NT types) and magnetic field resistant 2-color indicator solid state auto switch (D-P3DW□/P4DW).
The operating time for D-J51 is 2 ms or less and for D-P3DW□/P4DW are 40 ms or less.
* 4) 980 m/s² for the trimmer type sensor section, 98 m/s² for the amplifier section.

Lead Wire

Lead wire length indication

(Example)

D-M9BW L

Auto switch model

Lead wire length

Symbol	Length	Tolerance	Connector specifications	Solid state	Reed
Nil	0.5 m	±15 mm		●	●
M	1 m	±30 mm		● *2)	● *2)
L	3 m	±90 mm		●	●
Z	5 m	±150 mm		●	● *3)
N *1)	None	–		●	●
SAPC	0.5 m	±15 mm	M8-3 pin Plug connector	○	–
MAPC	1 m	±30 mm		○	–
SBPC	0.5 m	±15 mm	M8-4 pin Plug connector	○	–
MBPC	1 m	±30 mm		○	–
SDPC	0.5 m	±15 mm	M12-4 pin A code (Normal key) Plug connector	○	–
MDPC	1 m	±30 mm		○	–
LDPC	3 m	±90 mm		○	–

●: Standard ○: Produced upon receipt of order (Standard)

* 1) Applicable to the connector type (D-□□C) only.
* 2) Applicable to the D-M9□ (V), D-M9□W (V), D-M9□A (V), and D-A93 only.
* 3) Applicable to the D-B53/B54, D-C73(C)/C80C, D-A93(V), D-A73(C)/A80C, D-A53/A54, D-Z73, and D-90/97/90A/93A only.
* 4) For reed auto switches M8 and M12 type with connector, please contact SMC.
* 5) The standard lead wire length of the trimmer auto switch is 3 m.
* 6) The standard lead wire length of the solid state auto switch with the timer except for the D-P3DW and D-M9□A (V)□, water-resistant 2-color display solid state auto switch, wide range detection auto switch, heat resistant 2-color display solid state auto switch, and strong magnetic field resistant 2-color display solid state auto switch is 3 m or 5 m. (Product with a lead wire length of 0.5 m is not available.)

Lead wires with a connector indication

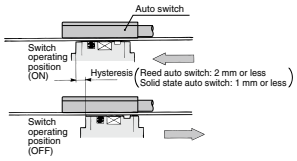
Part No. of Lead Wires with Connectors

(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

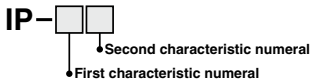
Prior to Use
Auto Switches Common Specifications 2

Refer to the Auto Switch Precautions on pages 8 to 12 before using auto switches.

Term	Meaning
Hysteresis	 A deviation amount between the ON position and OFF position caused by auto switch characteristics (difference in sensitivity between ON and OFF). When the switch is turned ON once and the switch (or piston) is moved in the opposite direction, a symptom occurs that the position where the switch turns OFF deviates to a position where it is further returned from the ON position. This deviation amount is called “hysteresis”. Note) Hysteresis may fluctuate due to the operating environment. Please contact SMC if hysteresis causes an operational problem.
Most sensitive position	A position (sensor layout position) where the sensitivity is highest on the detection surface of the auto switch enclosure. When the center of the magnet is aligned with this position, this becomes almost the center of the operating range and stable operation can be obtained.
Programmable Logic Controller (PLC)	One of elements making up the sequence control. The PLC is so designed that it receives signals, such as auto switch output and outputs them to other devices so as to perform the electrical control according to the preset program.
Operating temperature range	A temperature range, in which the auto switch can be used. If significant temperature change or freezing occurs even in this temperature range, this may cause the auto switch to malfunction.
Operating voltage	A voltage, at which the auto switch can be used. The operating voltage is indicated using generally used voltage (24 VDC or 100 VAC, etc.). For 2-wire type, the operating voltage has the same meaning as the power supply voltage or load voltage.
Operating current range	A range of the current value that can be flowed to the output of the auto switch. If the operating current is lower than this range, the auto switch does not operate correctly. Conversely, if the operating current is higher than this range, this may cause the auto switch to break.
Current consumption	This current value is necessary for the 3-wire type auto switch to operate the circuit through the power cable. For 2-wire type, as the current consumption is a part of the load current, it is not defined.
Insulation resistance	A resistance between the electric circuit and enclosure. Unless otherwise described particularly, 50 MΩ (Min) is used for auto switch.
Magnetic field resistant auto switch	An auto switch, for which measures against effects arising from external (welding) magnetic field generated in the spot welding process, etc. are taken. The solid state auto switch functions as it detects the frequency of the applied magnetic field. If the external magnetic field (AC) is applied, the last signal is retained not to be affected by the external magnetic field. This system can be used by the cylinder with normal magnetic force. The reed auto switch built-in a magnetic field shielded sensor with a low sensitivity to make the effect of the external magnetic field (DC or AC magnetic field) insusceptible. Therefore, a dedicated cylinder built-in the strong magnet needs to be selected and there is also an operable range (conditions).
Impact resistance value	A minimum acceleration that may cause the auto switch to malfunction or break when the standard impact is applied.
Water-resistant type auto switch	A model, long-term water resistance of which is improved by taking structural measures for the general (general purpose) product.
Withstand voltage	A tolerance dose when the voltage is applied to the portion between the electrical circuit and enclosure. The withstand voltage shows a strength level of the product against the voltage. If a voltage exceeding the withstand voltage is applied, this may cause the product to break. (The voltage described here is different from the power supply voltage necessary to operate the product.)
Proper mounting position	A dimension that shows the mounting position when the position is detected at the stroke end of the cylinder. As this position is set, the maximum sensitivity position is aligned with the center of the magnet. However, make the adjustment with the actual machine by considering the characteristic difference during actual setting. When an adjustment allowance is needed for the detection before the stroke, set a value with an adjustment allowance added to the proper mounting position.
Applicable load	A device that is assumed as a target load of the auto switch.
Operating time	A period of time until the auto switch output becomes stable after the magnetic force to operate the auto switch has been received.
Operating range	An auto switch operating range in response to the cylinder piston movement (ON length in response to the stroke). The operating range is determined by the magnetic force of the magnet (range, in which the magnetic force acts) and switch sensitivity. So, the operating range may vary as these conditions are changed by the ambient environment, etc. The operating range in the standard status (normal temperature, single cylinder, magnetic force, and sensitivity, etc.) is described in the catalog.

Prior to Use
Auto Switches Common Specifications 3

Refer to the Auto Switch Precautions on pages 8 to 12 before using auto switches.

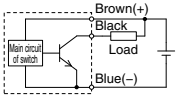
<table>
<tr><th>Term</th><th>Meaning</th></tr>
<tr><td>Minimum Stroke for Auto Switch Mounting</td><td>A minimum stroke value of the auto switch that can be mounted on the cylinder.
The minimum stroke is determined by the specification limit (auto switch operation or position setting ability, etc.) and physical limit (mechanical interference associated with the auto switch mounting).
Note that the catalog shows the value assuming that the position detection is performed at the stroke end and this value does not consider the adjustment allowance.
When an adjustment allowance is needed, such as detection before the stroke, a value is set that this adjustment allowance is added to the minimum stroke.</td></tr>
<tr><td>Internal voltage drop</td><td>A voltage that is applied to the portion between the COM and signal line when the auto switch is ON.
As only a value that the internal voltage drop is subtracted from the power supply voltage is applied to the input side of the PLC, the detection fault (incorrect input) may occur if this value is lower than the minimum operating voltage. So, take great care when selecting a device.</td></tr>
<tr><td>2-Color Indicator</td><td>As the end part of the auto switch operating range (boundary between ON and OFF) is an area where is susceptible to the external disturbance or stroke change during cylinder operation, this function is intended to quickly and properly make the setting at the center of the operating range where the stable operation can be obtained by changing the operation indication color of the auto switch.</td></tr>
<tr><td>Load</td><td>A device that is connected to the output of the auto switch so as to do any work is called “load”.
For example, the load is a relay or PLC, etc.
To check the operation of the auto switch, a device equivalent to the load (such as resistor, etc.) is connected.</td></tr>
<tr><td>Load current</td><td>A current that flows to the load when the ON-OFF output is ON.</td></tr>
<tr><td>Enclosure</td><td>A class of protection against solid or water entry of the electrical machinery and apparatus specified in IEC60529.
 

●First Characteristics:
Degrees of protection against solid foreign objects
<table><tr><td>0</td><td>Non-protected</td></tr><tr><td>1</td><td>Protected against solid foreign objects of 50 mm ø and greater</td></tr><tr><td>2</td><td>Protected against solid foreign objects of 12 mm ø and greater</td></tr><tr><td>3</td><td>Protected against solid foreign objects of 2.5 mm ø and greater</td></tr><tr><td>4</td><td>Protected against solid foreign objects of 1.0 mm ø and greater</td></tr><tr><td>5</td><td>Dust-protected</td></tr><tr><td>6</td><td>Dusttight</td></tr></table>●Second Characteristics:
Degrees of protection against water
<table><tr><td>0</td><td>Non-protected</td></tr><tr><td>1</td><td>Protected against vertically falling water drops</td></tr><tr><td>2</td><td>Protected against vertically falling water drops when enclosure tilted up to 15°</td></tr><tr><td>3</td><td>Protected against rainfall when enclosure tilted up to 60°</td></tr><tr><td>4</td><td>Protected against splashing water</td></tr><tr><td>5</td><td>Protected against water jets</td></tr><tr><td>6</td><td>Protected against powerful water jets</td></tr><tr><td>7</td><td>Protected against the effects of temporary immersion in water</td></tr><tr><td>8</td><td>Protected against the effects of continuous immersion in water</td></tr></table>Example) In the case of stipulated as IP65, we can know the degrees of protection is dusttight and water jet-proof on the grounds that the first characteristic numeral is 6 and the second characteristic numeral is 5 respectively, that gives it will not be adversely affected by direct water jets from any direction.</td></tr>
<tr><td>Solid state auto switch</td><td>A switch that detects the magnetic field by the MR element and incorporates the judgement circuit to turn ON or OFF the output regardless of the contact or non-contact of the mechanical contact like transistor (non-contact part).</td></tr>
<tr><td>Leak current</td><td>A current that flows to operate the internal circuit when the ON-OFF output is OFF. In particular, if this leak current exceeds the detection current in the 2-wire type auto switch or PLC, this may cause reset fault. So, take great care when selecting a device.</td></tr>
<tr><td>Reed auto switch</td><td>A switch that uses the reed switch to detect the magnetic field and turn ON or OFF the output by the contact or non-contact of the mechanical contact (contact part is provided like relay or limit switch).</td></tr>
<tr><td>Induction load</td><td>A load that has the coil. The connection target of the auto switch is a relay.</td></tr>
<tr><td>Recommended lead wire bending radius</td><td>A minimum bending radius (reference value) of the lead wire when the lead wire is secured and constructed (oscillation or rotation is not considered).
(As the temperature or current value conforms to the auto switch specifications, this lead wire bending radius differs from the value disclosed by the electric wire manufacturer.)</td></tr>
<tr><td>Electrical entry</td><td>A structure, in which the lead wire of the auto switch is taken out in the horizontal direction when the cylinder is laid out horizontally (cylinder rod is horizontal), is called “in-line entry”. A structure, in which the lead wire is taken out in a direction perpendicular to the cylinder axis center, is called “perpendicular entry”.</td></tr>
</table>

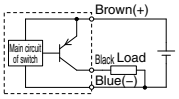
Prior to Use
Auto Switches/Internal Circuit

Solid State Auto Switches

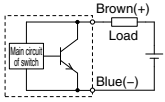
Solid state 3-wire, NPN



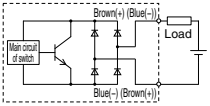
Solid state 3-wire, PNP



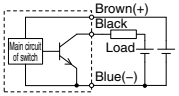
Solid state 2-wire

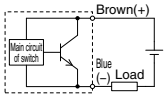


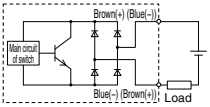
Solid state 2-wire, Non-polar type



(Power supply for switch and load are separate)

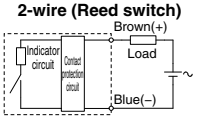


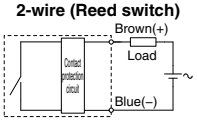


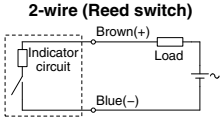


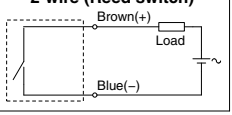
Reed Auto Switches

No.	①	②	③	④
Circuit diagram	2-wire (Reed switch)	2-wire (Reed switch)	2-wire (Reed switch)	2-wire (Reed switch)

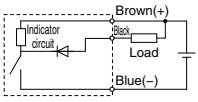


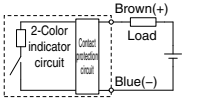


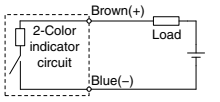




No.	⑤	⑥	⑦
Circuit diagram	3-wire (Reed switch, NPN)	2-wire (Reed switch)	2-wire (Reed switch)







Contact Protection Box/CD-P11, CD-P12

<Applicable switch models>

D-A7/A8, D-A7□H/A80H, D-A73C, A80C, D-C7/C8, D-C73C/C80C, D-E7□A, E80A, D-Z7/Z8, D-9/9□A, D-A9/A9□V, D-A79W

The auto switches above do not have a built-in contact protection circuit.

A contact protection box is not required for solid state auto switches due to their construction.

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 100/200 VAC.

Therefore, use a contact protection box with the switch for any of the above cases:

The contact life may be shortened (due to permanent energizing conditions.)

D-A72(H) must be used with the contact protection box regardless of load types and lead wire length since it is greatly affected by loads. (Where the load voltage is 110 VAC)

When the load voltage is increased by more than 10% to the rating of applicable auto switches (except D-A73C/A80C/C73C/C80C/90/97/A79W) above, use a contact protection box (CD-P11) to reduce the upper limit of the load current by 10% so that it can be set within the range of the load current range, 110 VAC.

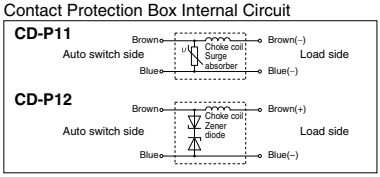
Even for the built-in contact protection circuit type (D-A34[A][C], DA44[A][C], D-A54/A64, D-A59W, D-B59W), **use the contact protection box when the wiring length to load is very long (over 30 m) and PLC (Programmable Logic Controller) with a large inrush current is used.**

Contact Protection Box Specifications

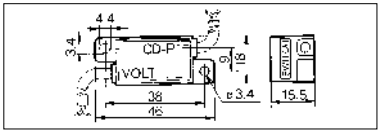
Part no.	CD-P11		CD-P12
Load voltage	100 VAC or less	200 VAC	24 VDC
Max. load current	25 mA	12.5 mA	50 mA

∗Lead wire length — Auto switch connection side 0.5 m
Load connection side 0.5 m

Contact Protection Box Internal Circuit

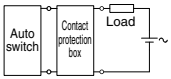


Contact Protection Box/Dimensions



Contact Protection Box 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 meter.

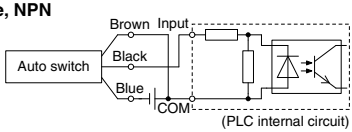


D-□

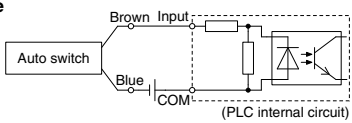
Prior to Use
Auto Switch Connection and Example

Sink Input Specifications

3-wire, NPN

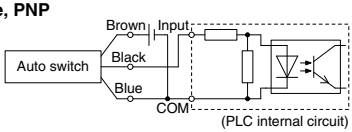


2-wire

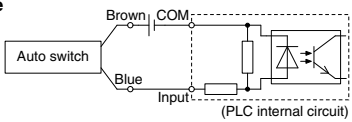


Source Input Specifications

3-wire, PNP



2-wire



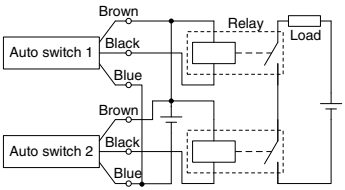
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

Example of AND (Series) and OR (Parallel) Connection

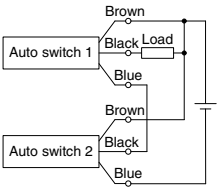
∗ When using solid state auto switches, ensure the application is set up so the signals for the first 50 ms are invalid. Depending on the operating environment, the product may not operate properly.

3-wire AND connection for NPN output

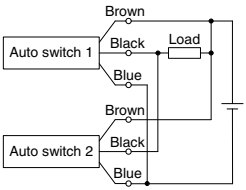
(Using relays)



(Performed with auto switches only)

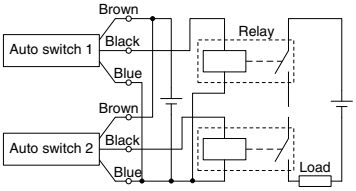


3-wire OR connection for NPN output

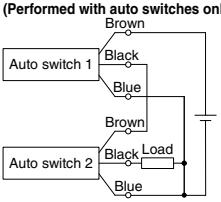


3-wire AND connection for PNP output

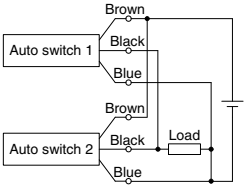
(Using relays)



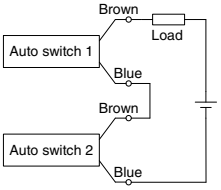
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection

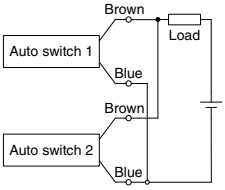


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state.
The indicator lights will light up when both of the auto switches are in the ON state.
Auto switches with load voltage less than 20V cannot be used.

Load voltage at ON = Power supply voltage – Residual voltage x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 V

Example: Power supply is 24 VDC
Internal voltage drop in auto switch is 4 V.

2-wire OR connection



(Solid state)
When two auto switches are connected in parallel, malfunction may occur because the load voltage will increase when in the OFF state.

(Reed)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

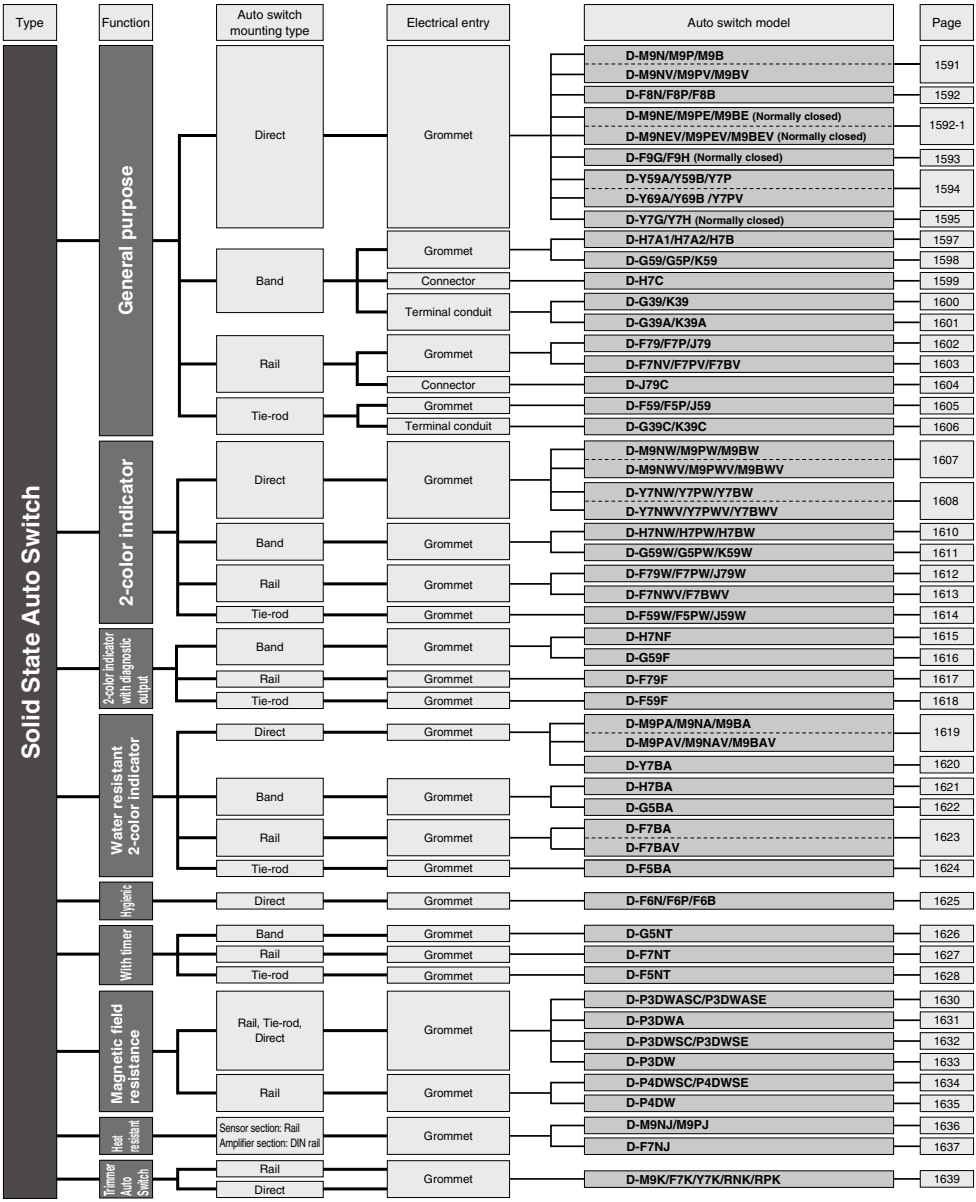
Load voltage at OFF = Leakage current x 2 pcs. x Load impedance
= 1 mA x 2 pcs. x 3 kΩ
= 6 V

Example: Load impedance is 3 kΩ.
Leakage current from auto switch is 1 mA.

Solid State Auto Switches

General Purpose Type, 2-color Indicator, 2-color Indicator with Diagnostic Output, Water Resistant 2-color Indicator, Hygienic Type, Timer Equipped Type, Magnetic Field Resistant Type, Heat Resistant Type, Trimmer Auto Switch

Solid State Auto Switch Variations



Solid State Auto Switch
Direct Mounting Type
D-M9N(V)/D-M9P(V)/D-M9B(V)

RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**

⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)						
Auto switch model	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 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	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking, RoHS					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

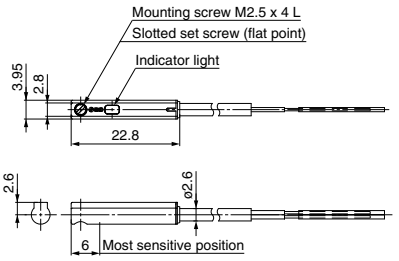
(g)

Auto switch model		D-M9N(V)	D-M9P(V)	D-M9B(V)
Lead wire length	0.5 m (**Nil**)	8		7
	1 m (**M**)	14		13
	3 m (**L**)	41		38
	5 m (**Z**)	68		63

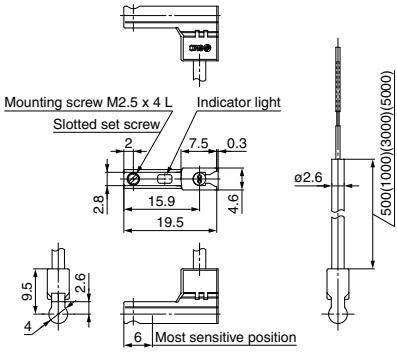
Dimensions

(mm)

D-M9□



D-M9□V



D-□

Solid State Auto Switch
Direct Mounting Type
D-F8N/D-F8P/D-F8B

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F8□ (With indicator light)			
Auto switch model	D-F8N	D-F8P	D-F8B
Electrical entry direction	Perpendicular	Perpendicular	Perpendicular
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, 24 VDC Relay, 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	2.5 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F8N	D-F8P	D-F8B
Sheath	Outside diameter [mm]	ø2.7		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.91		ø0.96
Conductor	Effective area [mm²]	0.15		0.18
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

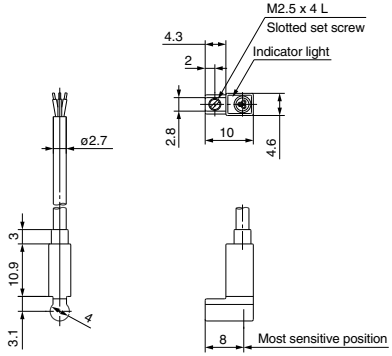
(g)

Auto switch model		D-F8N	D-F8P	D-F8B
Lead wire length	0.5 m (**Nil**)	7		
	3 m (**L**)	32		
	5 m (**Z**)	52		

Dimensions

(mm)

D-F8N/D-F8P/D-F8B



SMC

Normally Closed Solid State Auto Switch Direct Mounting Type
D-M9NE(V)/D-M9PE(V)/D-M9BE(V)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Output signal turns on when no magnetic force is detected.**
- **Can be used for the actuator adopted by the solid state auto switch D-M9 series (excluding special order products)**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□E, D-M9□EV (With indicator light)						
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV
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 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	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking, RoHS					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

⚠Caution

Precautions

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

Weight

(g)

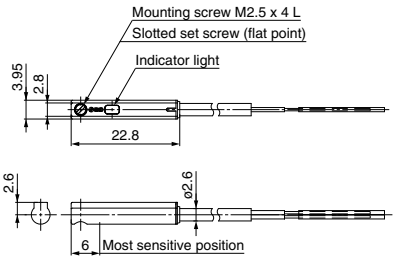
Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Lead wire length	0.5 m (**Nil**)	8		7
	1 m (**M**)*	14		13
	3 m (**L**)	41		38
	5 m (**Z**)*	68		63

* The 1 m and 5 m options are produced upon receipt of order.

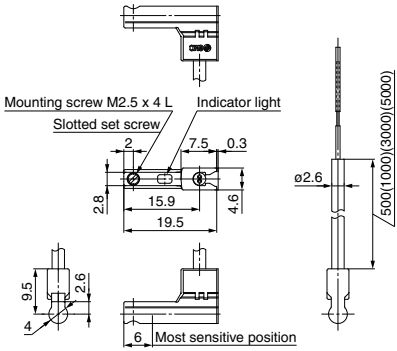
Dimensions

(mm)

D-M9□E



D-M9□EV



D-□

Normally Closed Solid State Auto Switch
Direct Mounting Type
D-F9G/D-F9H

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Output signal turns on when no magnetic force is detected.

⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F9G, D-F9H (With indicator light)		
Auto switch model	**D-F9G**	**D-F9H**
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, 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	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F9G**	**D-F9H**
Sheath	Outside diameter [mm]	ø2.7	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø0.91	
Conductor	Effective area [mm²]	0.15	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		17	

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

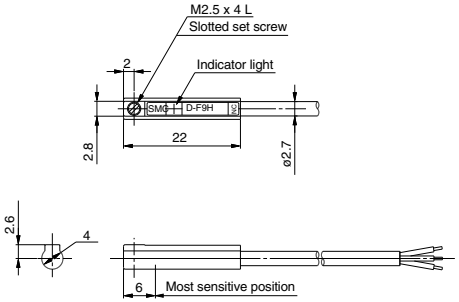
Weight

(g)

Auto switch model		**D-F9G**	**D-F9H**
Lead wire length	0.5 m (**Nil**)	7	
	3 m (**L**)	37	
	5 m (**Z**)	61	

Dimensions

(mm)



D-□

Solid State Auto Switch
Direct Mounting Type
D-Y59$^{A}_{B}$/D-Y69$^{A}_{B}$/D-Y7P(V)

RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Using flexible cable as standard spec.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y5□, D-Y6□, D-Y7P, D-Y7PV (With indicator light)						
Auto switch model	D-Y59A	D-Y69A	D-Y7P	D-Y7PV	D-Y59B	D-Y69B
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 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		2.5 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 at 24 VDC	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y□9A	D-Y7P□	D-Y□9B
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.0		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

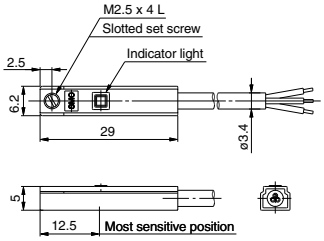
(g)

Auto switch model		D-Y59A	D-Y69A	D-Y7P(V)	D-Y59B	D-Y69B
Lead wire length	0.5 m (**Nil**)	10			9	
	3 m (**L**)	53			50	
	5 m (**Z**)	87			83	

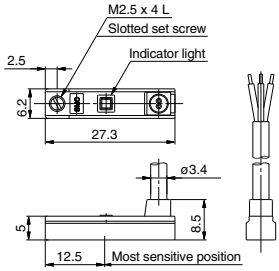
Dimensions

(mm)

D-Y59A/D-Y7P/D-Y59B



D-Y69A/D-Y7PV/D-Y69B



SMC

Normally Closed Solid State Auto Switch
Direct Mounting Type
D-Y7G/D-Y7H

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Output signal turns on when no magnetic force is detected.**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7G, D-Y7H (With indicator light)		
Auto switch model	**D-Y7G**	**D-Y7H**
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, 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	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking, RoHS	

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7G	D-Y7H
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø1.0	
Conductor	Effective area [mm²]	0.15	
	Strand diameter [mm]	ø0.05	
Minimum bending radius [mm] (Reference values)		21	

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

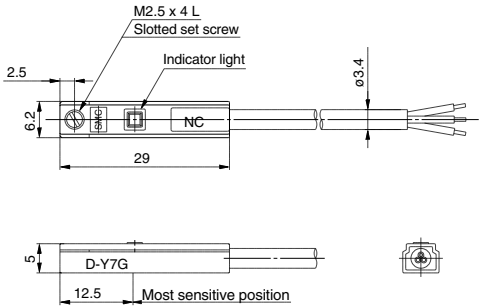
Weight

(g)

Auto switch model		D-Y7G	D-Y7H
Lead wire length	0.5 m (**Nil**)	10	
	3 m (**L**)	53	
	5 m (**Z**)	87	

Dimensions

(mm)



D-□

Solid State Auto Switch
Band Mounting Type
D-H7A1/D-H7A2/D-H7B

RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7□ (With indicator light)			
Auto switch model	**D-H7A1**	**D-H7A2**	**D-H7B**
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 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-H7A1	D-H7A2	D-H7B
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

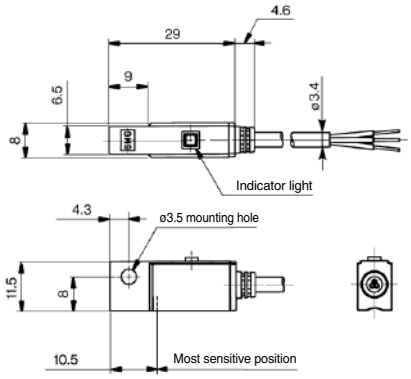
Weight

(g)

Auto switch model		D-H7A1	D-H7A2	D-H7B
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)



D-□

Solid State Auto Switch
Band Mounting Type
D-G59/D-G5P/D-K59

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5□, D-K59 (With indicator light)			
Auto switch model	**D-G59**	**D-G5P**	**D-K59**
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 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-G59	D-G5P	D-K59
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

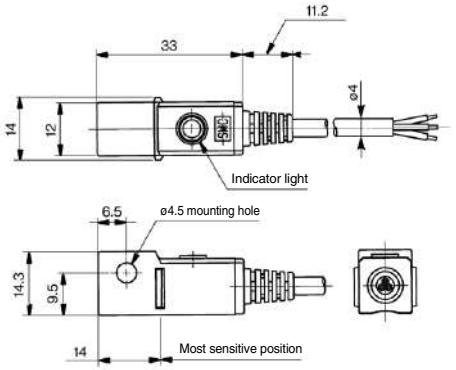
Weight

(g)

Auto switch model		D-G59	D-G5P	D-K59
Lead wire length	0.5 m (**Nil**)	20		18
	3 m (**L**)	78		68
	5 m (**Z**)	124		108

Dimensions

(mm)



Solid State Auto Switch
Band Mounting Type
D-H7C

Refer to SMC website for the details of the products conforming to the international standards.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to page 1679 for the details.

Lead wires with a connector indication

Part No. of Lead Wires with Connectors
(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7C (With indicator light)	
Auto switch model	**D-H7C**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with switches.

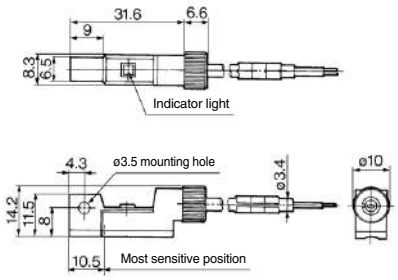
Weight

(g)

Auto switch model		**D-H7C**
Lead wire length	0.5 m (**Nil**)	15
	3 m (**L**)	54
	5 m (**Z**)	85

Dimensions

(mm)



D-□

Solid State Auto Switch
Band Mounting Type
D-G39/D-K39

Refer to SMC website for the details of the products conforming to the international standards.

Terminal conduit

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39, D-K39 (With indicator light)		
Auto switch model	**D-G39**	**D-K39**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking, RoHS	

Note) Refer to page 1584 for solid state auto switch common specifications.

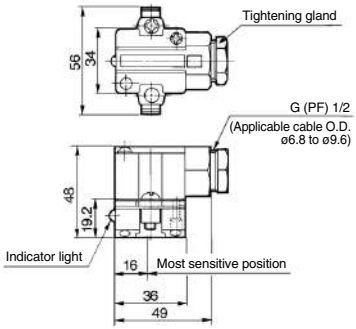
Weight

(g)

Auto switch model		D-G39	D-K39
Lead wire	None	116	

Dimensions

(mm)



Solid State Auto Switch
Band Mounting Type
D-G39A/D-K39A

Refer to SMC website for the details of the products conforming to the international standards.

Terminal conduit

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39A, D-K39A (With indicator light)		
Auto switch model	**D-G39A**	**D-K39A**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking, RoHS	

Note) Refer to page 1584 for solid state auto switch common specifications.

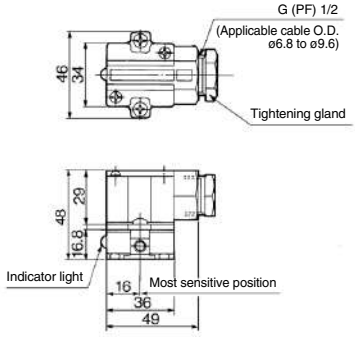
Weight

(g)

Auto switch model		D-G39A	D-K39A
Lead wire	None	110	

Dimensions

(mm)



D-□

Solid State Auto Switch
Rail Mounting Type
D-F79/D-F7P/D-J79

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□, D-J79 (With indicator light)			
Auto switch model	**D-F79**	**D-F7P**	**D-J79**
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 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F79**	**D-F7P**	**D-J79**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

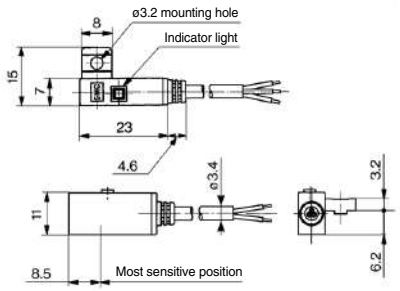
Weight

(g)

Auto switch model		**D-F79**	**D-F7P**	**D-J79**
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)



SMC

Solid State Auto Switch
Rail Mounting Type
D-F7NV/D-F7PV/D-F7BV

Refer to SMC website for the details of the products conforming to the international standards.

Grommet
Electrical entry: Perpendicular

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□V (With indicator light)			
Auto switch model	D-F7NV	D-F7PV	D-F7BV
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 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7NV	D-F7PV	D-F7BV
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

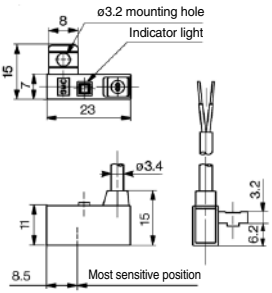
Weight

(g)

Auto switch model		D-F7NV	D-F7PV	D-F7BV
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)



D-□

Solid State Auto Switch
Rail Mounting Type
D-J79C

Refer to SMC website for the details of the products conforming to the international standards.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.

2. Refer to page 1679 for the details.

Lead wires with a connector indication

Part No. of Lead Wires with Connectors
(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

Auto Switch Specifications

PLC: Programmable Logic Controller

D-J79C (With indicator light)	
Auto switch model	**D-J79C**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with auto switches.

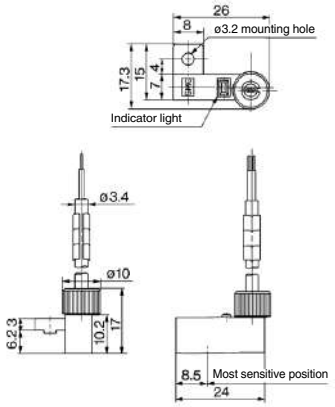
Weight

(g)

Auto switch model		D-J79C
Lead wire length	0.5 m (**Nil**)	13
	3 m (**L**)	52
	5 m (**Z**)	83

Dimensions

(mm)



Solid State Auto Switch
Tie-rod Mounting Type
D-F59/D-F5P/D-J59

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5□, D-J59 (With indicator light)			
Auto switch model	D-F59	D-F5P	D-J59
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 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 at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F59	D-F5P	D-J59
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

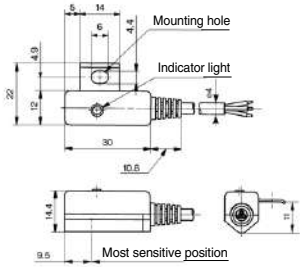
(g)

Auto switch model		D-F59	D-F5P	D-J59
Lead wire length	0.5 m (**Nil**)	23		21
	3 m (**L**)	81		71
	5 m (**Z**)	127		111

Dimensions

(mm)

D-F59/D-F5P/D-J59



D-□

Solid State Auto Switch
Tie-rod Mounting Type
D-G39C/D-K39C

Refer to SMC website for the details of the products conforming to the international standards.

Terminal conduit

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39C, D-K39C (With indicator light)		
Auto switch model	**D-G39C**	**D-K39C**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC Relay, PLC
Power 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Current leakage	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking, RoHS	

Note) Refer to page 1584 for solid state auto switch common specifications.

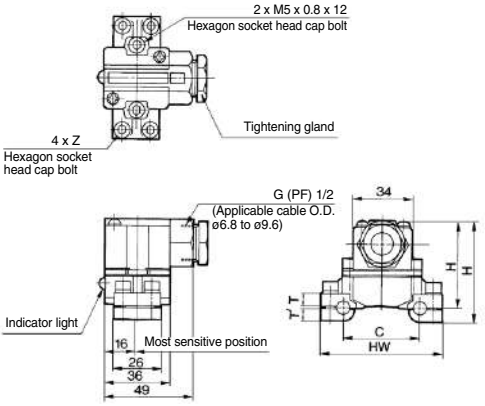
Weight

(g)

Auto switch model	Applicable bore size (mm)	Weight
D-G39C-4, K39C-4	**40**	162
D-G39C-5, K39C-5	**50**	166
D-G39C-6, K39C-6	**63**	184
D-G39C-8, K39C-8	**80**	210
D-G39C-10, K39C-10	**100**	232

Dimensions

(mm)



Dimensions

Auto switch model	Applicable bore size (mm)	C	HW	H	H´	T	T´	Z
D-G39C-4, D-K39C-4	**40**	44	69	57	49.5	7.5	6.5	M5 x 0.8 x 16
D-G39C-5, D-K39C-5	**50**	52	77	58	50.5	8.5	6.5	
D-G39C-6, D-K39C-6	**63**	64	91	60.5	52	10.5	7.5	M5 x 0.8 x 20
D-G39C-8, D-K39C-8	**80**	78	107	64	53.5	12.5	9.5	M5 x 0.8 x 25
D-G39C-10, D-K39C-10	**100**	92	121	67	56.5	15.5	9.5	

2-Color Indicator Solid State Auto Switch Direct Mounting Type
D-M9NW(V)/D-M9PW(V)/D-M9BW(V)

RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Using flexible cable as standard spec.**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto switch model	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, 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 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	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Sheath	Outside diameter [mm]	2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	0.05		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

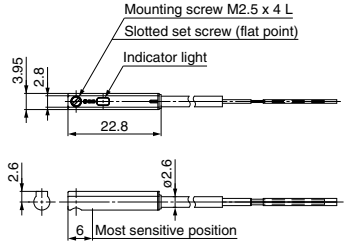
(g)

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
Lead wire length	0.5 m (**Nil**)	8		7
	1 m (**M**)	14		13
	3 m (**L**)	41		38
	5 m (**Z**)	68		63

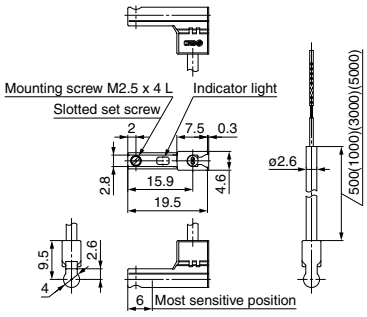
Dimensions

(mm)

D-M9□W



D-M9□WV



D-□

2-Color Indicator Solid State Auto Switch Direct Mounting Type
D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7□W, D-Y7□WV (With indicator light)						
Auto switch model	D-Y7NW	D-Y7NWV	D-Y7PW	D-Y7PWV	D-Y7BW	D-Y7BWV
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 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		2.5 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 at 24 VDC	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking, RoHS					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7NW□	D-Y7PW□	D-Y7BW□
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.0		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

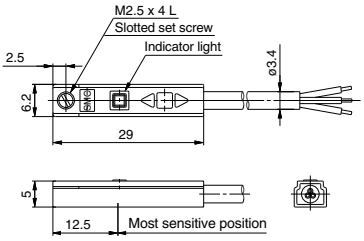
(g)

Auto switch model		D-Y7NW(V)	D-Y7PW(V)	D-Y7BW(V)
Lead wire length	0.5 m (**Nil**)	11		
	3 m (**L**)	54		
	5 m (**Z**)	88		

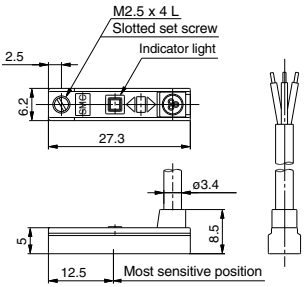
Dimensions

(mm)

D-Y7□W



D-Y7□WV



SMC

2-Color Indicator Solid State Auto Switch
Band Mounting Type
D-H7NW/D-H7PW/D-H7BW

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7□W (With indicator light)			
Auto switch model	D-H7NW	D-H7PW	D-H7BW
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 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 at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-H7NW	D-H7PW	D-H7BW
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

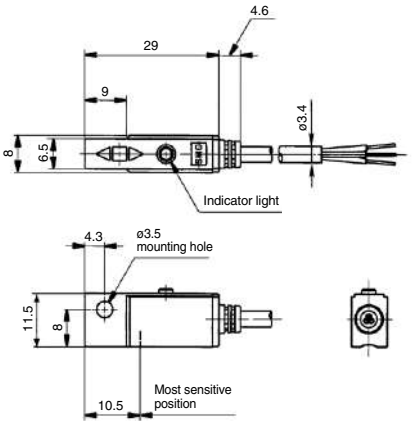
Weight

(g)

Auto switch model		D-H7NW	D-H7PW	D-H7BW
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)



SMC

2-Color Indicator Solid State Auto Switch Band Mounting Type
D-G59W/D-G5PW/D-K59W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5□W, D-K59W (With indicator light)			
Auto switch model	D-G59W	D-G5PW	D-K59W
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 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 at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-G59W	D-G5PW	D-K59W
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

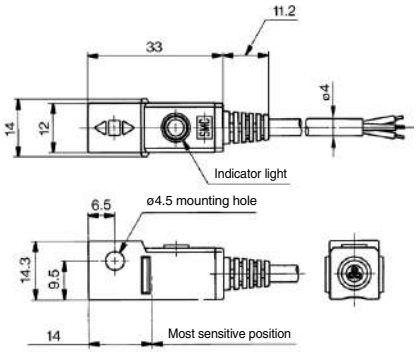
Weight

(g)

Auto switch model		D-G59W	D-G5PW	D-K59W
Lead wire length	0.5 m (**Nil**)	20		18
	3 m (**L**)	78		68
	5 m (**Z**)	124		108

Dimensions

(mm)



D-□

2-Color Indicator Solid State Auto Switch
Rail Mounting Type
D-F79W/D-F7PW/D-J79W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□W, D-J79W (With indicator light)			
Auto switch model	D-F79W	D-F7PW	D-J79W
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 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 at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F79W	D-F7PW	D-J79W
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		21		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

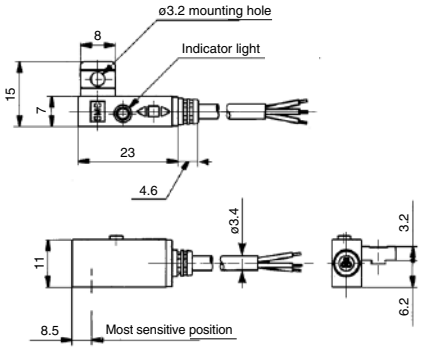
Weight

(g)

Auto switch model		D-F79W	D-F7PW	D-J79W
Lead wire length	0.5 m (**Nil**)	13		11
	3 m (**L**)	57		50
	5 m (**Z**)	92		81

Dimensions

(mm)



SMC

2-Color Indicator Solid State Auto Switch
Rail Mounting Type
D-F7NWV/D-F7BWV

Refer to SMC website for the details of the products conforming to the international standards.

Grommet
Electrical entry: Perpendicular

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7□WV (With indicator light)		
Auto switch model	D-F7NWV	D-F7BWV
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, 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	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F7NWV	D-F7BWV
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1	
Conductor	Effective area [mm²]	0.2	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

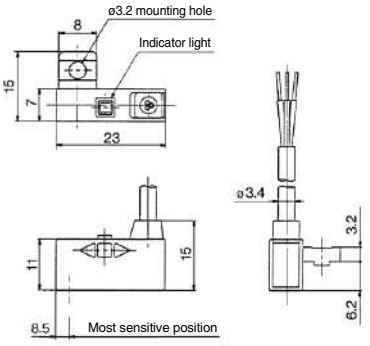
Weight

(g)

Auto switch model		D-F7NWV	D-F7BWV
Lead wire length	0.5 m (**Nil**)	13	11
	3 m (**L**)	57	50
	5 m (**Z**)	92	81

Dimensions

(mm)



D-□

2-Color Indicator Solid State Auto Switch
Tie-rod Mounting Type
D-F59W/D-F5PW/D-J59W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5□W, D-J59W (With indicator light)			
Auto switch model	D-F59W	D-F5PW	D-J59W
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 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 at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking, RoHS		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-F59W	D-F5PW	D-J59W
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3		
	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values)		24		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

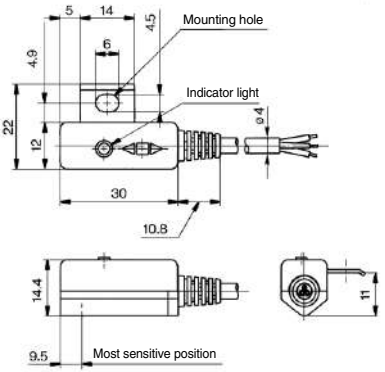
Weight

(g)

Auto switch model		D-F59W	D-F5PW	D-J59W
Lead wire length	0.5 m (**Nil**)	23		21
	3 m (**L**)	81		71
	5 m (**Z**)	127		111

Dimensions

(mm)



SMC

2-Color Indicator with Diagnostic Output Solid State Auto Switch: Band Mounting Type
D-H7NF

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7NF (With indicator light)	
Auto switch model	**D-H7NF**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at each output 5 mA)
Current leakage	100 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-H7NF**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø0.98
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

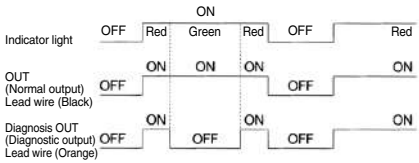
Weight

(g)

Auto switch model		**D-H7NF**
Lead wire length	0.5 m (**Nil**)	13
	3 m (**L**)	56
	5 m (**Z**)	90

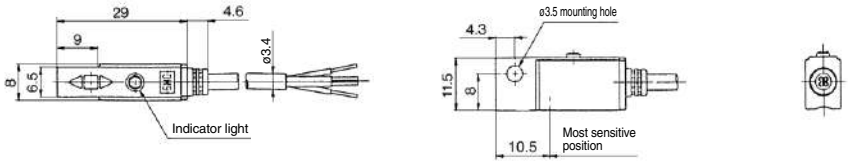
Diagnostic Output Operation

The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output becomes ON.



Dimensions

(mm)



D-□

2-Color Indicator with Diagnostic Output Solid State Auto Switch: Band Mounting Type

D-G59F

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G59F (With indicator light)	
Auto switch model	**D-G59F**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Current leakage	100 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G59F**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø1.29
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

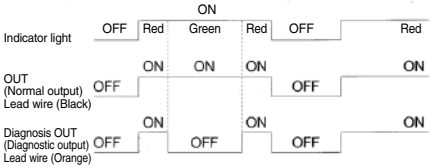
Weight

(g)

Auto switch model		**D-G59F**
Lead wire length	0.5 m (**Nil**)	20
	3 m (**L**)	74
	5 m (**Z**)	117

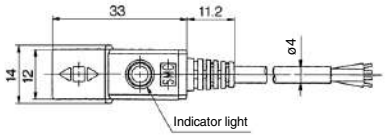
Diagnostic Output Operation

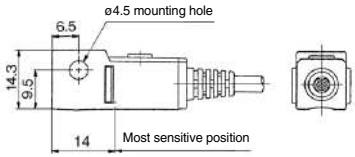
The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output becomes ON.



Dimensions

(mm)





SMC

2-Color Indicator with Diagnostic Output Solid State Auto Switch: Rail Mounting Type
D-F79F

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F79F (With indicator light)	
Auto switch model	**D-F79F**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, 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
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F79F**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø0.98
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

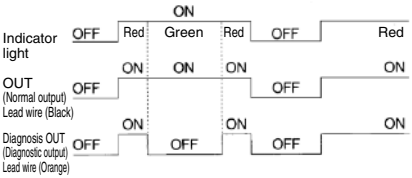
Weight

(g)

Auto switch model		**D-F79F**
Lead wire length	0.5 m (**Nil**)	13
	3 m (**L**)	56
	5 m (**Z**)	90

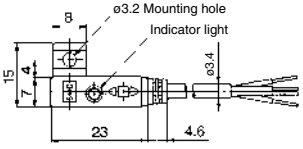
Diagnostic Output Operation

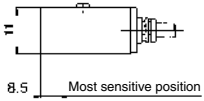
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.

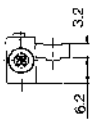


Dimensions

(mm)







D-□

2-Color Indicator with Diagnostic Output Solid State Auto Switch: Tie-rod Mounting Type

D-F59F

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Since the diagnostic output signal can be detected in the red display area, the difference of detecting position can be confirmed by the side of PLC (Programmable Logic Controller).

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F59F (With indicator light)	
Auto switch model	**D-F59F**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, 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
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μA or less at 28 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F59F**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)
	Outside diameter [mm]	ø1.29
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

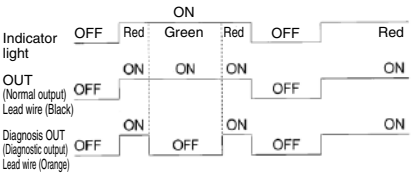
Weight

(g)

Auto switch model		**D-F59F**
Lead wire length	0.5 m (**Nil**)	22
	3 m (**L**)	77
	5 m (**Z**)	121

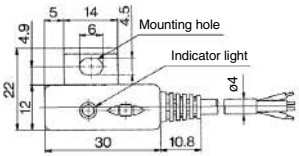
Diagnostic Output Operation

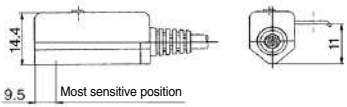
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)





Water Resistant 2-Color Indicator
Solid State Auto Switch: Direct Mounting Type
D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

Grommet

- **Water (coolant) resistant type**
- **2-wire load current is reduced (2.5 to 40 mA).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**
- **Using flexible cable as standard spec.**

⚠Caution

Precautions

Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.
Please consult with SMC if using coolant liquid other than water based solution.

Weight

(g)

Auto switch model		D-M9NA(V)	D-M9PA(V)	D-M9BA(V)
Lead wire length	0.5 m (**Nil**)	8	7	
	1 m (**M**)	14	13	
	3 m (**L**)	41	38	
	5 m (**Z**)	68	63	

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	**D-M9NA**	**D-M9NAV**	**D-M9PA**	**D-M9PAV**	**D-M9BA**	**D-M9BAV**
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 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	
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.					
Standard	CE marking (EMC directive/RoHS directive)					

Oilproof Flexible Heavy-duty Lead Wire Specifications

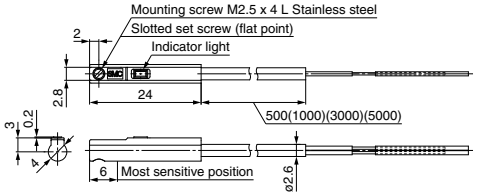
Auto switch model		D-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]	2.6					
Insulator	Number of cores	3 cores (Brown/Blue/Black)				2 cores (Brown/Blue)	
	Outside diameter [mm]	0.88					
Conductor	Effective area [mm²]	0.15					
	Strand diameter [mm]	0.05					
Minimum bending radius [mm]		17					

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

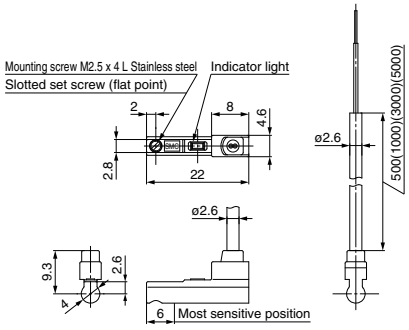
Dimensions

(mm)

D-M9□A



D-M9□AV



D-□

Water Resistant 2-Color Indicator
Solid State Auto Switch: Direct Mounting Type
D-Y7BA

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Water (coolant) resistant type**
- **Using flexible cable as standard spec.**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Please consult with SMC if using coolant liquid other than water based solution.
Detection characteristics (operating range) are the same as D-Y5□ and D-Y7□W, but the detection area length is different.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7BA (With indicator light)	
Auto switch model	**D-Y7BA**
Wiring type	2-wire
Applicable load	24 VDC Relay, PLC
Load voltage	24 VDC (10 to 28 VDC)
Load current	2.5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-Y7BA
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1
Conductor	Effective area [mm²]	0.15
	Strand diameter [mm]	ø0.05
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

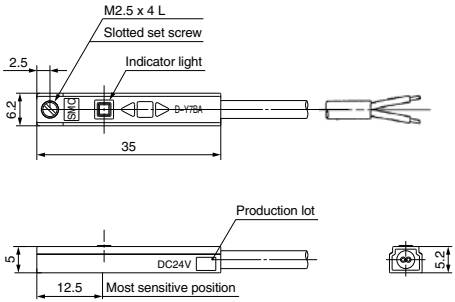
Weight

(g)

Auto switch model		D-Y7BA
Lead wire length	3 m (**L**)	54
	5 m (**Z**)	88

Dimensions

(mm)



SMC

Water Resistant 2-Color Indicator Solid State Auto Switch: Band Mounting Type

D-H7BA

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Water (coolant) resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Please consult with SMC if using coolant liquid other than water based solution.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-H7BA (With indicator light)	
Auto switch model	**D-H7BA**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-H7BA**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

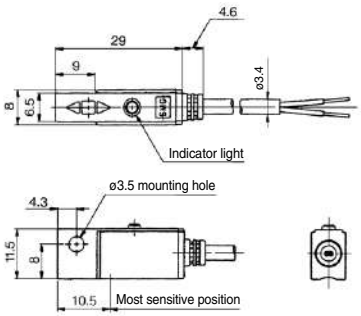
Weight

(g)

Auto switch model		**D-H7BA**
Lead wire length	3 m (**L**)	50
	5 m (**Z**)	81

Dimensions

(mm)



D-□

Water Resistant 2-Color Indicator Solid State Auto Switch: Band Mounting Type

D-G5BA

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Water (coolant) resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Please consult with SMC if using coolant liquid other than water based solution.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5BA (With indicator light)	
Auto switch model	**D-G5BA**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G5BA**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

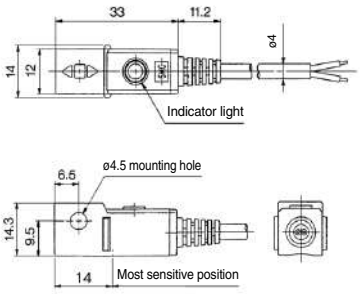
Weight

(g)

Auto switch model		**D-G5BA**
Lead wire length	3 m (**L**)	68
	5 m (**Z**)	108

Dimensions

(mm)



SMC

Water Resistant 2-Color Indicator Solid State Auto Switch: Rail Mounting Type
D-F7BA(V)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Water (coolant) resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Please consult with SMC if using coolant liquid other than water based solution.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7BA(V) (With indicator light)		
Auto switch model	**D-F7BA**	**D-F7BAV**
Electrical entry direction	In-line	Perpendicular
Wiring type	2-wire	
Output type	—	
Applicable load	24 VDC Relay, PLC	
Power supply voltage	—	
Current consumption	—	
Load voltage	24 VDC (10 to 28 VDC)	
Load current	5 to 40 mA	
Internal voltage drop	4 V or less	
Leakage current	0.8 mA or less at 24 VDC	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F7BA**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

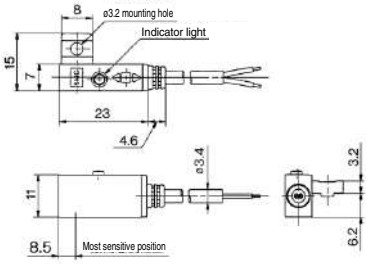
(g)

Auto switch model		**D-F7BA**	**D-F7BAV**
Lead wire length	3 m (**L**)	50	
	5 m (**Z**)	81	

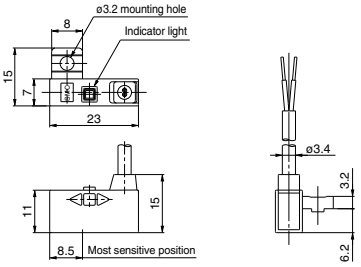
Dimensions

(mm)

D-F7BA



D-F7BAV



D-□

Water Resistant 2-Color Indicator
Solid State Auto Switch: Tie-rod Mounting Type
D-F5BA

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Water (coolant) resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Please consult with SMC if using coolant liquid other than water based solution.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5BA (With indicator light)	
Auto switch model	**D-F5BA**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F5BA**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

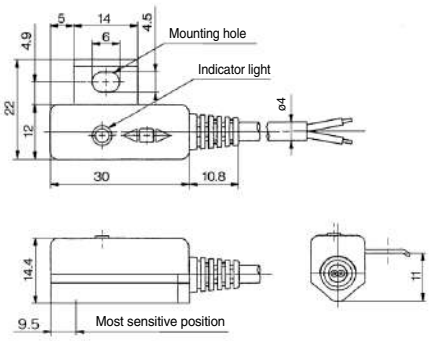
Weight

(g)

Auto switch model		**D-F5BA**
Lead wire length	3 m (**L**)	71
	5 m (**Z**)	111

Dimensions

(mm)



SMC

For Hygienic Design Cylinders
Solid State Auto Switch: Direct Mounting Type
D-F6N/D-F6P/D-F6B

CE RoHS

Grommet

- **2-wire load current is reduced (2.5 to 40 mA)**
- **Using flexible cable as standard spec.**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F6□ (With indicator light)			
Auto switch part no.	D-F6N	D-F6P	D-F6B
Electrical entry direction	In-line		
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, relay, and 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 at 10 mA (2V or less at 40 mA)		4 V or less
Leakage current	100 μA or less at 24 V DC		0.8 mA or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking, RoHS		

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-F6N□	D-F6P□	D-F6B□
Sheath	Outside diameter [mm]	ø2.6		
Insulator	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
	Outside diameter [mm]	ø0.88		
Conductor	Effective area [mm²]	0.15		
	Strand diameter [mm]	ø0.05		
Minimum bending radius [mm] (Reference values)		17		

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

⚠Caution

Precautions

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

Weight

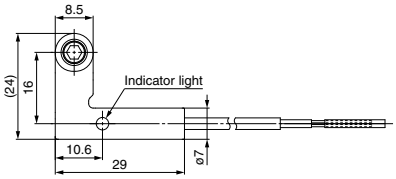
(g)

Auto switch model		D-F6N	D-F6P	D-F6B
Lead wire length	0.5 m (**Nil**)	20		19
	3 m (**L**)	53		50
	5 m (**Z**)	80		75

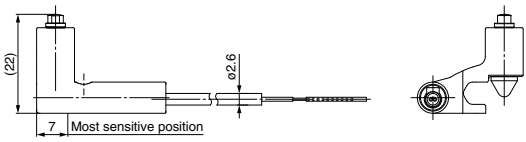
Dimensions

(mm)

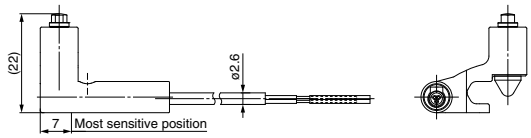
D-F6□



D-F6B



D-F6N/F6P



D-□

Solid State Auto Switch with Timer
Band Mounting Type
D-G5NT

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **With built-in OFF-delay timer (approx. 200 ms)**
- **Easy intermediate detection**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5NT (With indicator light)	
Auto switch model	**D-G5NT**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-G5NT**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

(g)

Auto switch model		**D-G5NT**
Lead wire length	3 m (**L**)	78
	5 m (**Z**)	124

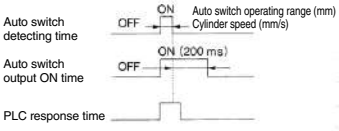
Timer Operation

Detection of intermediate positioning for high-speed cylinder

Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

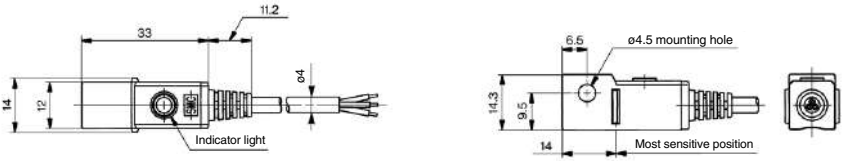
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



SMC

Solid State Auto Switch with Timer
Rail Mounting Type
D-F7NT

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **With built-in OFF-delay timer (approx. 200 ms)**
- **Easy intermediate detection**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7NT (With indicator light)	
Auto switch model	**D-F7NT**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F7NT**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Weight

(g)

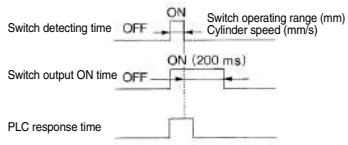
Auto switch model		**D-F7NT**
Lead wire length	3 m (**L**)	57
	5 m (**Z**)	92

Timer Operation

Detection of intermediate positioning for high-speed cylinder

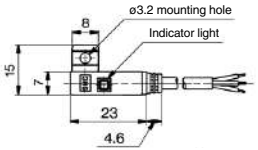
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

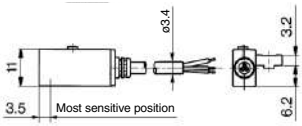
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)
Take PLC response time into consideration when using.



Dimensions

(mm)





D-□

Solid State Auto Switch with Timer
Tie-rod Mounting Type
D-F5NT

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **With built-in OFF-delay timer (approx. 200 ms)**
- **Easy intermediate detection**

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5NT (With indicator light)	
Auto switch model	**D-F5NT**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, 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
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-F5NT**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		24

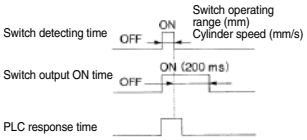
Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.

Timer Operation

Detection of intermediate positioning for high-speed cylinder

Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)
Take PLC response time into consideration when using.



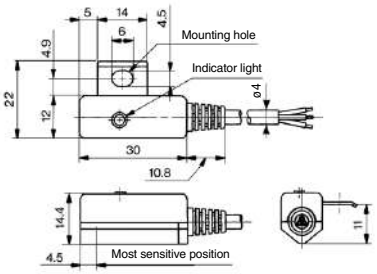
Weight

(g)

Auto switch model		**D-F5NT**
Lead wire length	3 m (**L**)	81
	5 m (**Z**)	127

Dimensions

(mm)



SMC

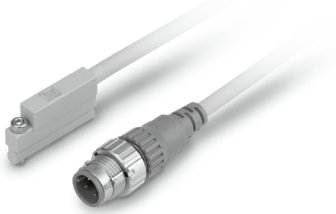
Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P3DWASC/D-P3DWASE

(Electrical Entry: Pre-wired connector)

Refer to SMC website for the details of the products conforming to the international standards.

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines.
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

(g)

Auto switch model		D-P3DWASC	D-P3DWASE
Lead wire length (m)	0.3	25	

Connector pin

Model	Connector pin and wiring			
	1	2	3	4
D-P3DWASC	—	—	OUT(∓)	OUT(±)
D-P3DWASE	OUT(±)	—	—	OUT(∓)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWASC/E (With indicator light)		
Auto switch model	D-P3DWASC	D-P3DWASE
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC	
Load current	6 to 40 mA	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.	
Standard	CE marking, UL (CSA), RoHS	

Oilproof Heavy-duty Lead Wire Specifications

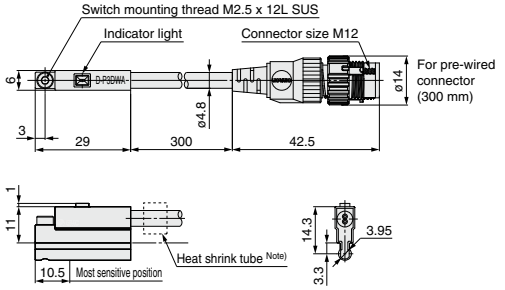
Auto switch model		D-P3DWASC	D-P3DWASE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

- Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
- Insulation resistance — 50 MΩ or more at 500 VDC Mega (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Dimensions

(mm)

Body



Note) A white color heat shrink tube is attached to the D-P3DWASE type only.

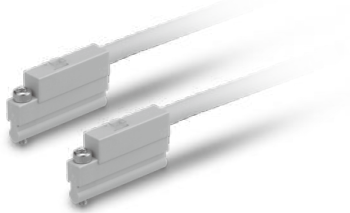
Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P3DWA

(Electrical Entry: Grommet)

Refer to SMC website for the details of the products conforming to the international standards.

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines.
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWA (With indicator light)	
Auto switch model	**D-P3DWA**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC
Load current	6 to 40 mA
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.
Standard	CE marking, UL (CSA), RoHS

Oilproof Heavy-duty Lead Wire Specifications

.Auto switch model		**D-P3DWA**
Sheath	Outside diameter [mm]	ø4.8
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.52
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		29

- Impact resistance — Switch: 1000 m/s²
- Insulation resistance — 50 MΩ or more at 500 VDC Mega (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

Weight

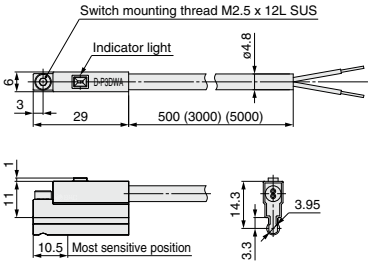
(g)

Auto switch model		**D-P3DWA**
Lead wire length	0.5 m (**Nil**)	22
	3 m (**L**)	104
	5 m (**Z**)	170

Dimensions

(mm)

Body

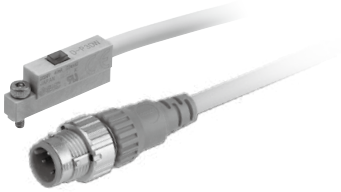


D-□

Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch
D-P3DWSC/D-P3DWSE
(Electrical Entry: Pre-wired connector)

Refer to SMC website for the details of the products conforming to the international standards.

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



⚠Caution

Precautions

For single-phase AC welding machines.
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DWSC/E (With indicator light)		
Auto switch model	D-P3DWSC	D-P3DWSE
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC	
Load current	6 to 40 mA or less	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking, UL (CSA), RoHS	

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P3DWSC	D-P3DWSE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

- Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
- Insulation resistance — 50 MΩ or more (500 VDC measured via megohmmeter) (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

(g)

Auto switch model		D-P3DWSC	D-P3DWSE
Lead wire length (m)	0.3	23	

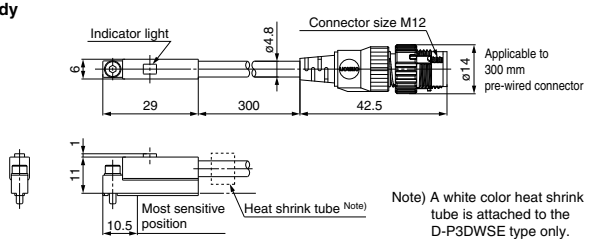
Connector pin

Model	Connector pin/Wiring			
	1	2	3	4
D-P3DWSC	—	—	OUT(∓)	OUT(±)
D-P3DWSE	OUT(±)	—	—	OUT(∓)

Dimensions

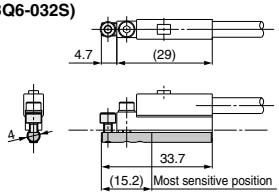
(mm)

Body

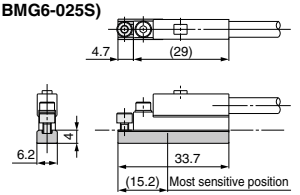


Note) A white color heat shrink tube is attached to the D-P3DWSE type only.

Auto switch mounting bracket (For round groove mounting: BQ6-032S)



Auto switch mounting bracket (For square groove mounting: BMG6-025S)



∗ When the auto switch is ordered on its own, the auto switch mounting bracket is not enclosed. In that case, please order it separately.

SMC

Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P3DW

(Electrical Entry: Grommet)

Refer to SMC website for the details of the products conforming to the international standards.

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

For single-phase AC welding machines.
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P3DW (With indicator light)	
Auto switch model	**D-P3DW**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC
Load current	6 to 40 mA or less
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking, UL (CSA), RoHS

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P3DW
Sheath	Outside diameter [mm]	ø4.8
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.52
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		29

- Impact resistance — Switch: 1000 m/s²
- Insulation resistance — 50 MΩ or more (500 VDC measured via megohmmeter) (between lead wire and case)
- Withstand voltage — 1000 VAC for 1 minute (between lead wire and case)
- Ambient temperature — –10 to 60°C
- Enclosure — IEC60529 standard IP67
- Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder/actuator or auto switch is 0 mm.
Please contact SMC when the AC welding current exceeds 16000 A.

Weight

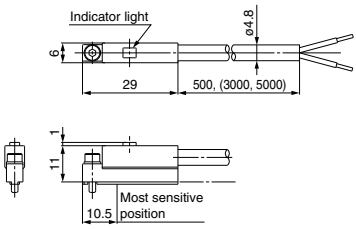
(g)

Auto switch model		D-P3DW
Lead wire length	0.5 m (**Nil**)	20
	3 m (**L**)	102
	5 m (**Z**)	168

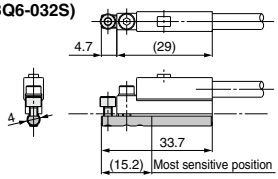
Dimensions

(mm)

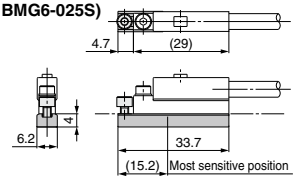
Body



Auto switch mounting bracket (For round groove mounting: BQ6-032S)



Auto switch mounting bracket (For square groove mounting: BMG6-025S)



∗ When the auto switch is ordered on its own, the auto switch mounting bracket is not enclosed. In that case, please order it separately.

D-□

Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

D-P4DWSC/D-P4DWSE/D-P4DW□DPC

(Electrical Entry: Pre-wired connector)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

For single-phase AC welding machines. Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Connector pin

Model	Connector pin/Wiring			
	1	2	3	4
D-P4DWSC	—	—	OUT(∓)	OUT(±)
D-P4DWSE	OUT(±)	—	—	OUT(∓)
D-P4DW□DPC	OUT(±)	—	—	OUT(∓)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P4DW□ (With indicator light)					
Auto switch model	D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWMDPC	D-P4DWLDPC
Applicable load	24 VDC relay, PLC				
Load voltage	24 VDC (20 to 28 VDC)				
Load current	6 to 40 mA or less				
Internal voltage drop	5 V or less				
Leakage current	1 mA or less at 24 VDC				
Operating time	40 ms or less				
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.				
Standard	CE marking (EMC directive/RoHS directive)				

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWMDPC	D-P4DWLDPC
Length [m]		0.3	0.3	0.5	1	3
Sheath	Outside diameter [mm]	ø6				
Insulator	Number of cores	2 cores				
	Outside diameter [mm]	ø2.3				
Conductor	Effective area [mm²]	0.5				
	Strand diameter [mm]	ø0.08				
Minimum bending radius [mm] (Reference values)		48				

● Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²

Note 1) Refer to page 1584 for solid state auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

● Polarity — Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder or switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

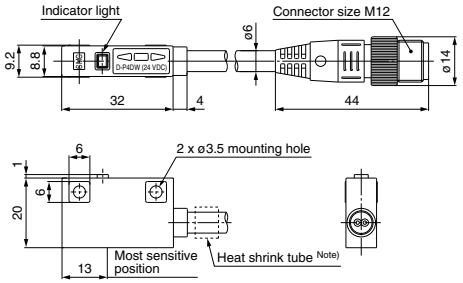
Weight

(g)

Auto switch model	D-P4DWSC	D-P4DWSE	D-P4DWSDPC	D-P4DWMDPC	D-P4DWLDPC
	35	35	52	68	161

Dimensions

(mm)



Note) Only for D-P4DWSE

Printed contents: SE 1-4

SMC

Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch
D-P4DW

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **It is possible to use in an environment which generates a magnetic field disturbance (AC magnetic field).**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

For single-phase AC welding machines. Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P4DW (With indicator light)	
Auto switch model	**D-P4DW**
Applicable load	24 VDC relay, PLC
Load voltage	24 VDC (20 to 28 VDC)
Load current	6 to 40 mA or less
Internal voltage drop	5 V or less
Leakage current	1 mA or less at 24 VDC
Operating time	40 ms or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking (EMC directive/RoHS directive)

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-P4DW**
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.92
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		36

Note 1) Refer to page 1584 for solid state auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
● Polarity: Non-polar

Magnetic Field Resistance

If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder or switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

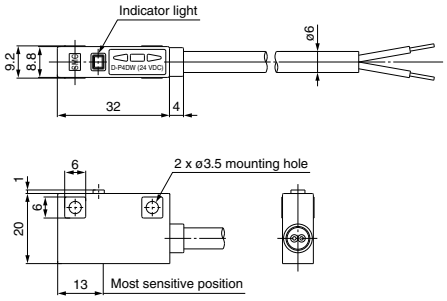
Weight

(g)

Auto switch model		**D-P4DW**
Lead wire length	3 m (**L**)	150
	5 m (**Z**)	244

Dimensions

(mm)



D-□

Heat Resistant 2-Color Indicator
Solid State Auto Switch: Direct Mounting Type
D-M9NJ/D-M9PJ

CE RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Improved heat resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

D-M9NJ

D-M9PJ

⚠Caution

Precautions

This auto switch can be mounted on the cylinder with heat resistant auto switch (-XB14) and is not applicable to the heat resistant cylinder (-XB6) since a magnet is not built in it.

Do not disconnect the cable between the sensor and amplifier by the customer.

Even when the sensor and amplifier are connected again, a contact resistance is produced, causing the auto switch to malfunction. Additionally, the sensor and amplifier are paired and they do not operate correctly in different combinations.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9NJ/D-M9PJ (With indicator light)		
Auto switch model	**D-M9NJ**	**D-M9PJ**
Output type	NPN	PNP
Power supply voltage	20 to 26 VDC	
Current consumption	25 mA or less	
Load voltage	28 VDC or less	—
Load current	40 mA or less	
Internal voltage drop	0.8 V or less	
Leakage current	100 μA at 24 VDC	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C	
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²	
Standard	CE marking, RoHS	

Oilproof Heavy-duty Lead Wire Specifications (Grommet)

Auto switch model		**D-M9NJ**	**D-M9PJ**
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	3 cores (Brown/Blue/Black)	
	Outside diameter [mm]	ø1.1	
Conductor	Effective area [mm²]	0.2	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

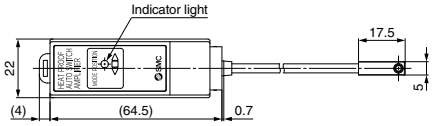
Weight

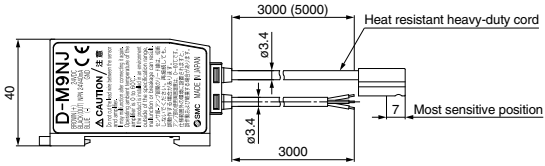
(g)

Auto switch model		**D-M9NJ**	**D-M9PJ**
Lead wire length	3 m (**L**)	160	
	5 m (**Z**)	200	

Dimensions

(mm)





SMC

Heat Resistant 2-Color Indicator Solid State Auto Switch: Rail Mounting Type
D-F7NJ

CE RoHS

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

- **Improved heat resistant type**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**

⚠Caution

Precautions

Auto switch which can be mounted on heat resistant, compact cylinder, CDQ2-XB14. For using for other cylinders, please confirm SMC.
D-F7NJ is not applicable for the heat resistant type (-XB6) since a magnet is not built in it.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7NJ (With indicator light)	
Auto switch model	**D-F7NJ**
Wiring type	3-wire
Output type	NPN
Applicable load	Relay, PLC
Power supply voltage	24 VDC (20 to 26 VDC)
Current consumption	25 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	0.8 V or less
Leakage current	100 μA at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²
Standard	CE marking, RoHS

Oilproof Heavy-duty Lead Wire Specifications (Grommet)

Auto switch model		**D-F7NJ**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

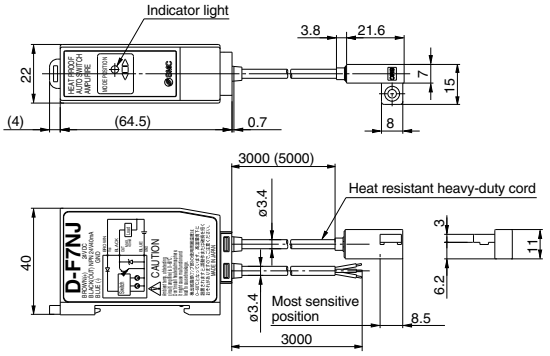
Weight

(g)

Auto switch model		**D-F7NJ**
Lead wire length	3 m (**L**)	170
	5 m (**Z**)	210

Dimensions

(mm)



D-□

Made to Order Specifications: Solid State Auto Switch

Refer to SMC website for the details of the products conforming to the international standards.

1 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−M9N S A PC

Solid state auto switch Standard part no.

∗ For the applicable auto switch model, refer to the table below.

Cable length

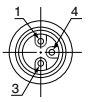
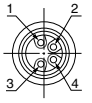
S	0.5 m
M	1.0 m

Connector model

A	M8-3 pin
B	M8-4 pin
D	M12-4 pin

Note) Type A is not selectable for the auto switch with diagnostic output.

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/s²		
Enclosure	Only with screw tightened IP67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC measured via megohmmeter		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

Applicable Auto Switch

For details on the D-P3DWA series magnetic field resistant auto switch, refer to page 1632. And for details on the D-P4DW series, refer to page 1634.

2-wire

Mounting	Function	Applicable model
Rail mounting type	—	J79, F7BV
	2-color indicator	J79W, F7BWV
	Water resistant	F7BA, F7BAV
Band mounting type	—	H7B
		K59
	2-color indicator	H7BW
		K59W
	Water resistant	H7BA
		G5BA
Tie-rod mounting type	—	J59
	2-color indicator	J59W
	Water resistant	F5BA
Direct mounting type	—	Y59B, Y69B
		M9B, M9BV
		F8B
	Normally closed	M9BE, M9BEV
	2-color indicator	Y7BW, Y7BWV
		M9BW, M9BWV
	Water resistant	Y7BA
		M9BA, M9BAV
	Hygienic	F6B
Rotary actuator	—	T791/2
		T991/2, T99V1/2

3-wire

Mounting	Function	Applicable model
Rail mounting type	—	F79, F7P, F7NV, F7PV
	2-color indicator	F79W, F7PW, F7NWV
	With timer	F7NT
Band mounting type	—	H7A1, H7A2
		G59, G5P
	2-color indicator	H7NW, H7PW
		G59W, G5PW
	With timer	G5NT
Tie-rod mounting type	—	F59, F5P
	2-color indicator	F59W, F5PW
	With timer	F5NT
Direct mounting type	—	Y59A, Y7P, Y69A, Y7PV
		M9N, M9P, M9NV, M9PV
		F8N, F8P
	Normally closed	Y7G, Y7H
		F9G, F9H
		M9NE, M9PE, M9NEV, M9PEV
	2-color indicator	Y7NW, Y7PW, Y7NWV, Y7PWV
		M9NW, M9PW, M9NWV, M9PWV
	Water resistant	M9NA, M9NAV, M9PA, M9PAV
	Hygienic	F6N, F6P
Rotary actuator	—	S791/2, S7P1/2
		S991/2, S9P1/2, S99V1/2

4-wire

Mounting	Function	Applicable model
Rail mounting type	Direct mounting type	F79F
Band mounting type		H7NF
		G59F
Tie-rod mounting type		F59F

Note) M8-3 pins are not selectable for the 4-wire auto switch.

Connector pin arrangement

Sensor type	Meaning of contact number			
	1 pin	2 pin	3 pin	4 pin
2-wire	OUT(+)	—	—	OUT(–)
3-wire	DC(+)	—	DC(–)	OUT
4-wire	DC(+)	Diagnostic output	DC(–)	OUT

Note1) For details on the D-P3DWASC and D-P3DWASE, refer to page 1630. And for details on the D-P4DWSC and D-P4DWSE, refer to page 1634.

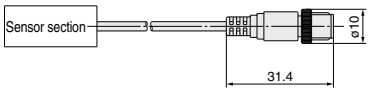
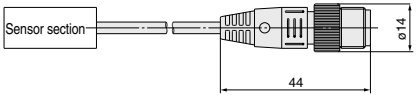
Note2) For details on the pin arrangement, refer to the pin arrangement in the connector specifications above.

M8-3 pin

M8-4 pin

M12-4 pin

Dimensions

Connector model	
M8-3 pin **4 pin**	
M12-4 pin	

Connection (Female side) Connector Cable

As the parts are not supplied from SMC, refer to the application examples listed in the below.
(For detail such as catalog availability, etc., please contact each manufacturer.)

Connector size	Number of pins	Manufacturer	Applicable series example
M8	3	Phoenix Contact	SAC-3P
		Corrence Corporation	M8-3D
	4		M8-4D
		OMROM Corporation	XS3
M12		Phoenix Contact	SAC-4P
		Corrence Corporation	VA-4D
		OMROM Corporation	XS2
		Azbil Corp.	PA5-4I
		HIROSE ELECTRIC CO., LTD.	HR24
		DDK Ltd.	CM01-8DP4S

Weight for Connector Type

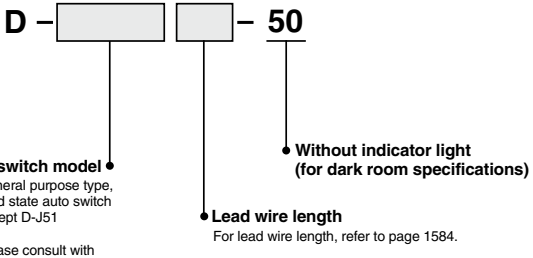
Part no.	Connector type	Weight
D-□□□APC	M8-3 pin	4 g
D-□□□BPC	M8-4 pin	4 g
D-□□□DPC	M12-4 pin	About 11 g

Made to Order Specifications: Solid State Auto Switch
-50: Without Indicator Light (Dark room) Specifications
-61: Oilproof Flexible Heavy-duty Cord Specifications

Symbol

2 Without Indicator Light (for dark room specifications) **-50**

Possible to use under the environment which hates a light.

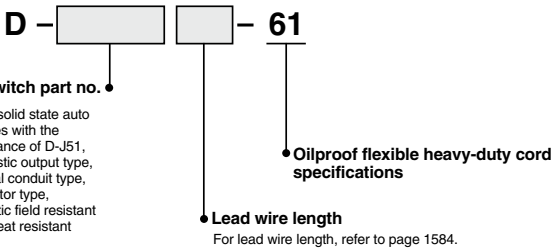


Dimensions and specifications are common as standard products with the exception of no indicator light.

Symbol

3 Oilproof Flexible Heavy-duty Cord Specifications **-61**

This is the product which uses a heavy-duty cord having flexible characteristics 5 times (SMC comparison) as strong as oilproof heavy-duty cord used in the standard products.

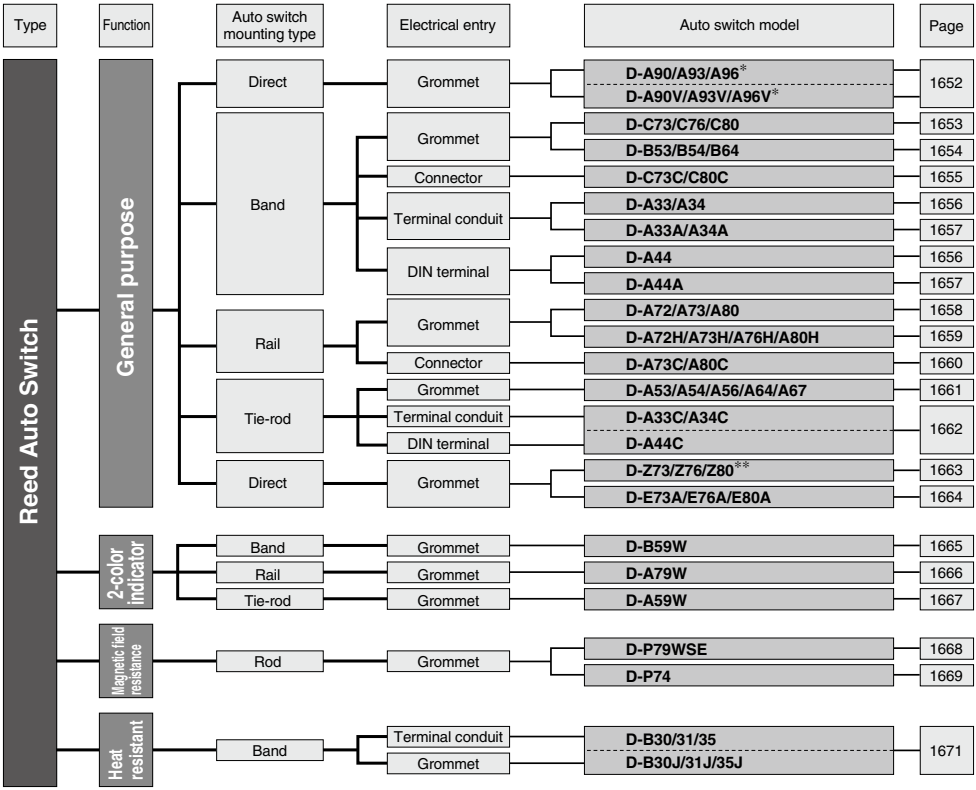


Specifications are the same as standard products with the exception of lead wire specifications.
Lead wire: For D-F8 type····· ø2.7, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
For other model nos.····· ø3.4, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

Dimensions are identical with D-F5 type, G5 type, J59 type, K59 type. Lead wire diameter is changed from ø4 to ø3.4. In other series products, it is common as standard product's specifications.

Reed Auto Switches
General Purpose Type, 2-Color Indicator

Reed Switch Variations



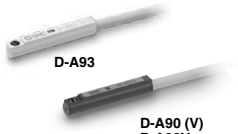
* Auto switches with an asterisk (*) can be mounted on a band (excluding D-A9□V), rail, tie-rod or square groove with an auto switch mounting bracket. Refer to pages 1680, 1684, 1688 and 1696 to 1698 for details.

** This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to page 1691.

Reed Auto Switch
Direct Mounting Type
D-A90(V)/D-A93(V)/D-A96(V) CE

Refer to SMC website for the details of the products conforming to the international standards.

Grommet



D-A93

D-A90 (V)
D-A93V
D-A96 (V)

⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A90, D-A90V (Without indicator light)			
Auto switch model	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
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		
D-A93, D-A93V, D-A96, D-A96V (With indicator light)			
Auto switch model	D-A93, D-A93V		D-A96, D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC(4)	100 VAC	4 to 8 VDC
Load current range and Maximum load current (3)	5 to 40 mA	5 to 20 mA	20 mA
Internal circuit*	③		⑤
Contact protection circuit	None		
Internal voltage drop	D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A93V: 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-A90(V)	D-A93(V)	D-A96(V)
Sheath	Outside diameter [mm]	ø2.7		
Insulator	Number of cores	2 cores (Brown/Blue)		3 cores (Brown/Blue/Black)
	Outside diameter [mm]	ø0.96		ø0.91
Conductor	Effective area [mm²]	0.18		0.15
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		17		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

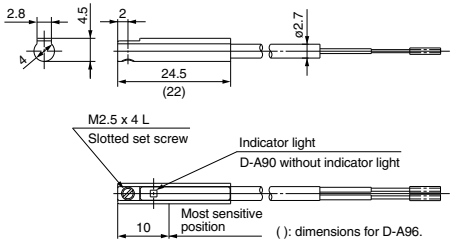
(g)

Model		D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length	0.5 m (Nil)	6	6	6	6	8	8
	1 m (M)	—	—	11	—	—	—
	3 m (L)	30	30	30	30	41	41
	5 m (Z)	—	—	47	47	—	—

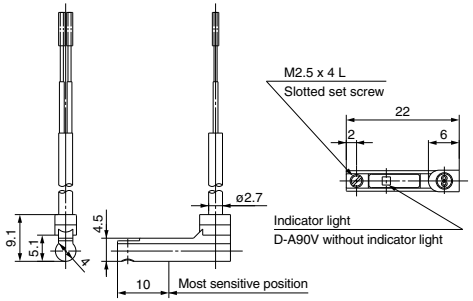
Dimensions

(mm)

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V



SMC

Reed Auto Switch
Band Mounting Type
D-C73/D-C76/D-C80

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-C7 (With indicator light)			
Auto switch model	D-C73		D-C76
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC(4)	100 VAC	4 to 8 VDC
Max. load current and range (3)	5 to 40 mA	5 to 20 mA	20 mA
Internal circuit*	③		⑤
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

D-C8 (Without indicator light)			
Auto switch model	D-C80		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V AC/DC or less	48 V AC/DC	100 V AC/DC
Max. load current	50 mA	40 mA	20 mA
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-C73	D-C76	D-C80
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

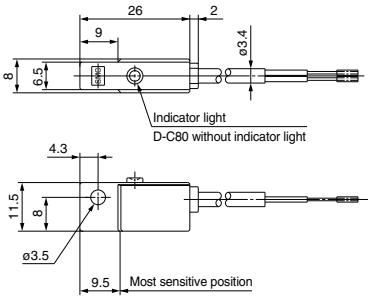
Weight

(g)

Auto switch model		D-C73	D-C76	D-C80
Lead wire length	0.5 m (**Nil**)	9	10	9
	3 m (**L**)	46	50	46
	5 m (**Z**)	76	—	—

Dimensions

(mm)



D-□

Reed Auto Switch
Band Mounting Type
D-B53/D-B54/D-B64

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-B5 (With indicator light)				
Auto switch model	**D-B53**	**D-B54**		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC[4]	24 VDC[4]	100 VAC	200 VAC
Load current range [3]	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			
D-B6 (Without indicator light)				
Auto switch model	**D-B64**			
Applicable load	Relay, PLC			
Load voltage	24 V $^{AC}_{DC}$ or less	100 VAC	200 VAC	
Max. load current	Max. 50 mA	Max. 25 mA	Max. 12.5 mA	
Internal circuit*	②			
Contact protection circuit	Built-in			
Internal resistance	25 Ω or less			
Standard	CE marking			

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-B53/B54/B64**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

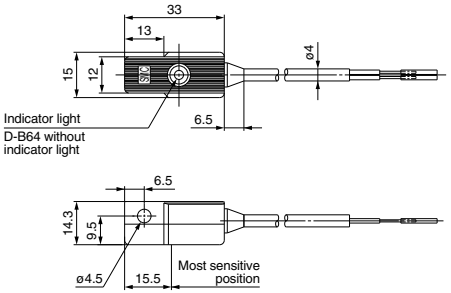
Weight

(g)

Auto switch model		**D-B53**	**D-B54**	**D-B64**
Lead wire length	0.5 m (**Nil**)	22	22	22
	3 m (**L**)	78	78	78
	5 m (**Z**)	126	126	—

Dimensions

(mm)



SMC

Reed Auto Switch
Band Mounting Type
D-C73C/D-C80C

Refer to SMC website for the details of the products conforming to the international standards.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. For details, refer to page 1679.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-C73C (With indicator light)	
Auto switch model	**D-C73C**
Applicable load	Relay, PLC
Load voltage	24 VDC [5]
Load current range [4]	5 to 40 mA
Internal circuit*	③
Contact protection circuit	None
Internal voltage drop	2.4 V or less
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking
D-C80C (Without indicator light)	
Auto switch model	**D-C80C**
Applicable load	Relay, PLC
Load voltage	24 V_{DC}^{AC} or less
Maximum load current	50 mA
Internal circuit*	④
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Lead wire with connector may be shipped with switch.
Note 4) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.
Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

(g)

Auto switch model		D-C73C	D-C80C
Lead wire length	0.5 m (**Nil**)	14	14
	3 m (**L**)	53	53
	5 m (**Z**)	83	83

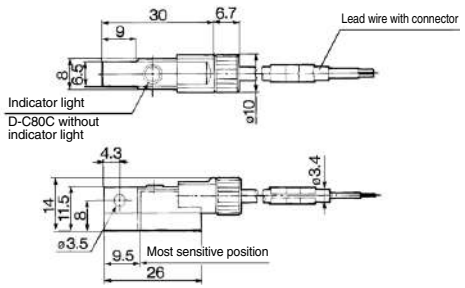
Lead wires with a connector indication

Part No. of Lead Wires with Connectors
(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

Dimensions

(mm)



D-□

Reed Auto Switch
Band Mounting Type
D-A33/D-A34/D-A44

Terminal conduit: D-A3
DIN terminal: D-A4

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

Refer to SMC website for the details of the products conforming to the international standards.

PLC: Programmable Logic Controller

D-A3 (With indicator light) Terminal conduit				
Auto switch model	D-A33	D-A34		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC (3)	24 VDC (3)	100 VAC	200 VAC
Load current range (2)	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A44 (With indicator light) DIN terminal			
Auto switch model	D-A44		
Applicable load	Relay, PLC		
Load voltage	24 VDC (3)	100 VAC	200 VAC
Load current range	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

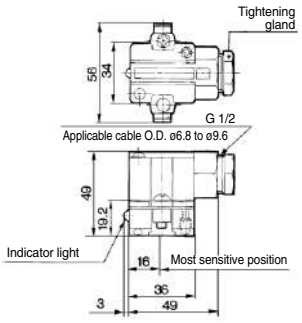
(g)

Auto switch model		D-A33	D-A34	D-A44
Lead wire	None	116	116	114

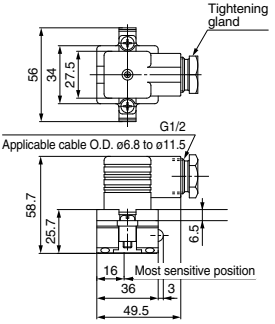
Dimensions

(mm)

D-A3



D-A44



SMC

Reed Auto Switch
Band Mounting Type
D-A33A/D-A34A/D-A44A

Terminal conduit: D-A3□A
DIN terminal: D-A44A

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

Refer to SMC website for the details of the products conforming to the international standards.

PLC: Programmable Logic Controller

D-A3□A (With indicator light) Terminal conduit				
Auto switch model	**D-A33A**	**D-A34A**		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC (3)	24 VDC (3)	100 VAC	200 VAC
Load current range (2)	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A44A (With indicator light) DIN terminal			
Auto switch part model	**D-A44A**		
Applicable load	Relay, PLC		
Load voltage	24 VDC (3)	100 VAC	200 VAC
Load current range	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

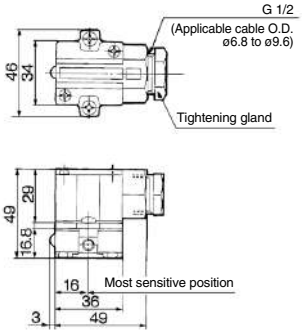
(g)

Auto switch model		D-A33A	D-A34A	D-A44A
Lead wire	None	112	112	110

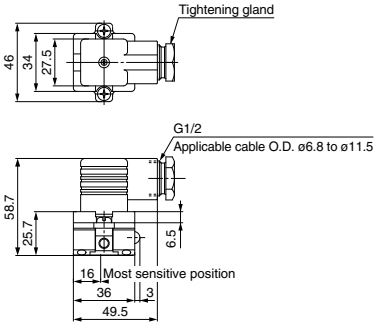
Dimensions

(mm)

D-A3□A



D-A44A



D-□

Reed Auto Switch
Rail Mounting Type
D-A72/D-A73/D-A80

Refer to SMC website for the details of the products conforming to the international standards.

Grommet
Electrical entry: Perpendicular

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A7 (With indicator light)			
Auto switch model	**D-A72**	**D-A73**	
Applicable load	Relay, PLC	Relay, PLC	
Load voltage	200 VAC	24 VDC (4)	100 VAC
Load current range (3)	5 to 10 mA	5 to 40 mA	5 to 20 mA
Internal circuit*	③		
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		
D-A8 (Without indicator light)			
Auto switch model	**D-A80**		
Applicable load	Relay, IC circuit, PLC		
Load voltage	24 V $^{AC}_{DC}$ or less	48 V $^{AC}_{DC}$	100 V $^{AC}_{DC}$
Maximum load current	50 mA	40 mA	20 mA
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A72**	**D-A73**	**D-A80**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)		
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

• Lead wire Oilproof vinyl cabtire cord: ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

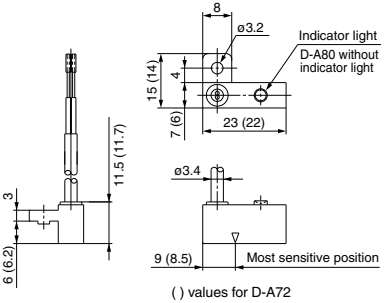
Weight

(g)

Auto switch model		**D-A72**	**D-A73**	**D-A80**
Lead wire length	0.5 m (**Nil**)	10	10	10
	3 m (**L**)	47	47	47
	5 m (**Z**)	—	77	—

Dimensions

(mm)



( ) values for D-A72

SMC

Reed Auto Switch
Rail Mounting Type
D-A7□H/D-A80H

Refer to SMC website for the details of the products conforming to the international standards.

Grommet
Electrical entry: In-line

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A7□H (With indicator light)				
Auto switch model	**D-A72H**	**D-A73H**		**D-A76H**
Applicable load	Relay, PLC	Relay, PLC		IC circuit
Load voltage	200 VAC	24 VDC (4)	100 VAC	4 to 8 VDC
Max. load current/Load current range (3)	5 to 10 mA	5 to 40 mA	5 to 20 mA	20 mA
Internal circuit*	③			⑤
Contact protection circuit	None			
Internal voltage drop	2.4 V or less			0.8 V or less
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A80H (Without indicator light)			
Auto switch model	**D-A80H**		
Applicable load	Relay, IC circuit, PLC		
Load voltage	24 V AC/DC or less	48 V AC/DC	100 V AC/DC
Maximum load current	50 mA	40 mA	20mA
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A72H/A73H**	**D-A76H**	**D-A80H**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

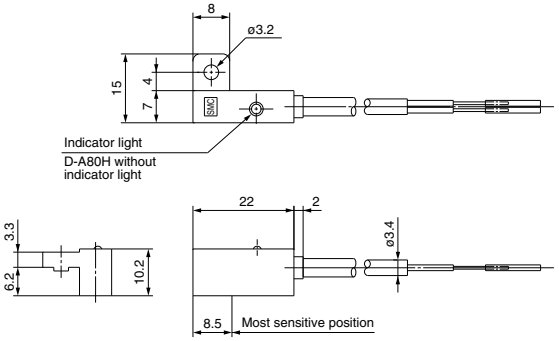
(g)

Auto switch model		**D-A72H**	**D-A73H**	**D-A76H**	**D-A80H**
Lead wire length	0.5 m (**Nil**)	10	10	11	10
	3 m (**L**)	47	47	52	47
	5 m (**Z**)	—	77	—	—

Dimensions

(mm)

D-A7□H, D-A80H



D-□

Reed Auto Switch
Rail Mounting Type
D-A73C/D-A80C

Refer to SMC website for the details of the products conforming to the international standards.

Connector

⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.

2. Refer to page 1679 for the details.

Lead wires with a connector indication

Part No. of Lead Wires with Connectors
(Applicable only for connector type)

Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-LC50	5 m

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A73C (With indicator light)	
Auto switch model	**D-A73C**
Applicable load	Relay, PLC
Load voltage	24 VDC (5)
Load current range (4)	5 to 40 mA
Internal circuit*	③
Contact protection circuit	None
Internal voltage drop	2.4 V or less
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking
D-A80C (Without indicator light)	
Auto switch model	**D-A80C**
Applicable load	Relay, IC circuit, PLC
Load voltage	24 V AC/DC
Maximum load current	50 mA
Internal circuit*	④
Contact protection circuit	None
Internal resistance	1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Lead wire with connector may be shipped with the auto switch.

Note 4) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

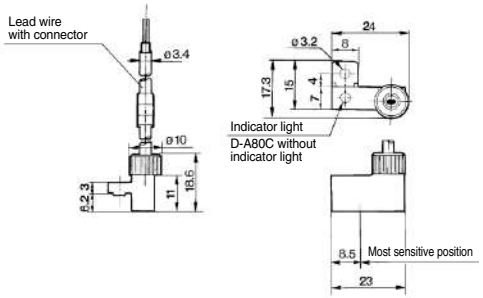
Weight

(g)

Auto switch model		D-A73C	D-A80C
Lead wire length	0.5 m (**Nil**)	12	12
	3 m (**L**)	54	54
	5 m (**Z**)	84	84

Dimensions

(mm)



SMC

Reed Auto Switch
Tie-rod Mounting Type
D-A5□/D-A6□

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A5 (With indicator light)					
Auto switch model	**D-A53**	**D-A54**			**D-A56**
Applicable load	PLC	Relay, PLC			IC circuit
Load voltage	24 VDC (4)	24 VDC (4)	100 VAC	200 VAC	4 to 8 VDC
Maximum load (3) current and range	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA	20 mA
Internal circuit*	③	①			⑤
Contact protection circuit	None	Built-in			None
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)			0.8 V or less
Indicator light	Red LED illuminates when turned ON.				
Standard	CE marking				

D-A6 (Without indicator light)				
Auto switch model	**D-A64**			**D-A67**
Applicable load	Relay, PLC			PLC/IC circuit
Load voltage	24 V $^{AC}_{DC}$ or less	100 VAC	200 VAC	Max. 24 VDC
Maximum load current	50 mA	25 mA	12.5 mA	30 mA
Internal circuit*	②			④
Contact protection circuit	Built-in			None
Internal resistance	25 Ω or less			1 Ω or less (Including lead wire length of 3 m)
Standard	CE marking			

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A53/A54**	**D-A56**	**D-A64/A67**
Sheath	Outside diameter [mm]	ø4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22		
Conductor	Effective area [mm²]	0.3	0.2	0.3
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		24		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

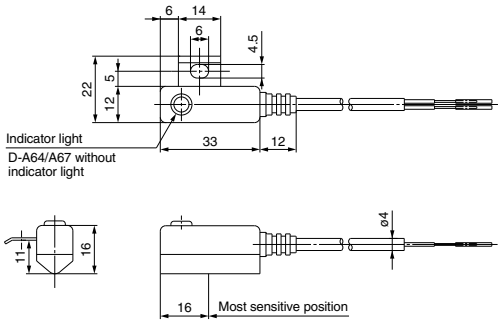
Weight

(g)

Auto switch model		**D-A53**	**D-A54**	**D-A56**	**D-A64**	**D-A67**
Lead wire length	0.5 m (**Nil**)	24		24	24	
	3 m (**L**)	80		80	80	
	5 m (**Z**)	125		—	—	

Dimensions

(mm)



D-□

Reed Auto Switch
Tie-rod Mounting Type
D-A33C/D-A34C/D-A44C

Refer to SMC website for the details of the products conforming to the international standards.

Terminal conduit:D-A3□C
DIN terminal: D-A44C

⚠Caution

Precautions

1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A3□C (With indicator light) Terminal conduit				
Auto switch model	D-A33C	D-A34C		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC (3)	24 VDC (3)	100 VAC	200 VAC
Load current range (2)	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	③	①		
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-A44C (With indicator light) DIN terminal			
Auto switch model	D-A44C		
Applicable load	Relay, PLC		
Load voltage	24 VDC (3)	100 VAC	200 VAC
Load current range (2)	5 to 50 mA	5 to 25 mA	5 to 12.5 mA
Internal circuit*	①		
Contact protection circuit	Built-in		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.
Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

(g)

Auto switch model	Applicable bore size(mm)	Weight
D-A33C-4, A34C-4	40	162
D-A33C-5, A34C-5	50	166
D-A33C-6, A34C-6	63	184
D-A33C-8, A34C-8	80	210
D-A33C-10, A34C-10	100	232

Auto switch model	Applicable bore size(mm)	Weight
D-A44C-4	40	160
D-A44C-5	50	164
D-A44C-6	63	182
D-A44C-8	80	208
D-A44C-10	100	230

Dimensions

(mm)

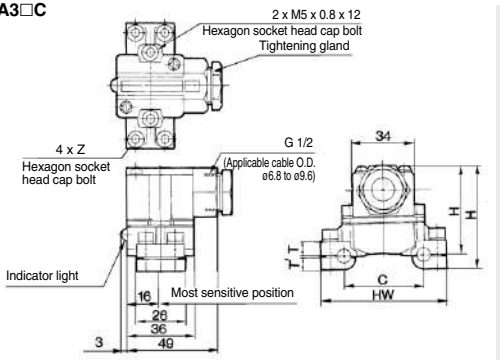
Auto switch model	Applicable bore size (mm)	C	HW	H	H'	T	T'	Z
D-A3□C-4, D-A44C-4	40	44	69	58 (67.5)	50.5 (60)	7.5	6.5	M5 x 0.8 x 16
D-A3□C-5, D-A44C-5	50	52	77	59 (68.5)	51.5 (61)	8.5	6.5	
D-A3□C-6, D-A44C-6	63	64	91	61.5 (71)	53 (62.5)	10.5	7.5	M5 x 0.8 x 20
D-A3□C-8, D-A44C-8	80	78	107	65 (74.5)	54.5 (64)	12.5	9.5	M5 x 0.8 x 25
D-A3□C-10, D-A44C-10	100	92	121	68 (77.5)	57.5 (67)	15.5	9.5	

* ( ): Denotes the values of D-A44C

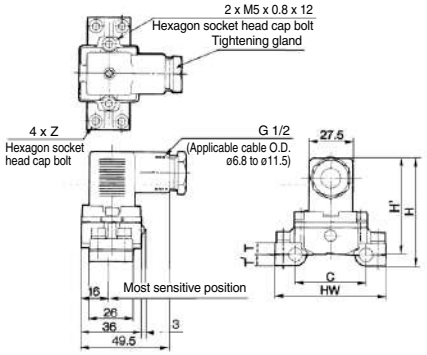
Dimensions

(mm)

D-A3□C



D-A44C



SMC

Reed Auto Switch
Direct Mounting Type
D-Z73/D-Z76/D-Z80

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-Z7 (With indicator light)			
Auto switch model	**D-Z73**		**D-Z76**
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC (4)	100 VAC	4 to 8 VDC
Max. load current and load current range (3)	5 to 40 mA	5 to 20 mA	20 mA
Internal circuit*	③		⑤
Contact protection circuit	None		
Internal voltage drop	2.4 V or less (Up to 20 mA)/3 V or less (Up to 40 mA)		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

D-Z8 (Without indicator light)			
Auto switch model	**D-Z80**		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V_{DC}^{AC} or less	48 V_{DC}^{AC}	100 V_{DC}^{AC}
Maximum load current	50 mA	40 mA	20 mA
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including 3 m lead wire)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-Z73**	**D-Z76**	**D-Z80**
Sheath	Outside diameter [mm]	ø2.7	ø3.4	ø2.7
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.18	0.2	0.18
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		17	21	17

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

Weight

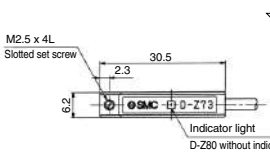
(g)

Auto switch model		**D-Z73**	**D-Z76**	**D-Z80**
Lead wire length	0.5 m (**Nil**)	7	10	7
	3 m (**L**)	31	55	31
	5 m (**Z**)	50	—	—

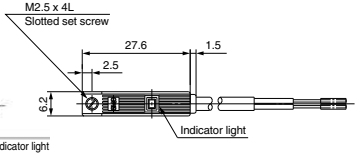
Dimensions

(mm)

D-Z73, Z80



D-Z76



D-□

Reed Auto Switch
Direct Mounting Type
D-E73A/D-E76A/D-E80A

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-E7□A (With indicator light)			
Auto switch model	**D-E73A**		**D-E76A**
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC (4)	100 VAC	4 to 8 VDC
Max. load current and load current range(3)	5 to 40 mA	5 to 20 mA	20 mA
Internal circuit*	③		⑤
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

D-E80A (Without indicator light)			
Auto switch model	**D-E80A**		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V AC/DC or less	48 V AC/DC	100 V AC/DC
Maximum load current	50 mA	40 mA	20 mA
Internal circuit*	④		
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-E73A**	**D-E76A**	**D-E80A**
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	2 cores (Brown/Blue)	3 cores (Brown/Blue/Black)	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		21		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.

Note 1) Refer to page 1584 for reed auto switch common specifications.

Note 2) Refer to page 1584 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 12.

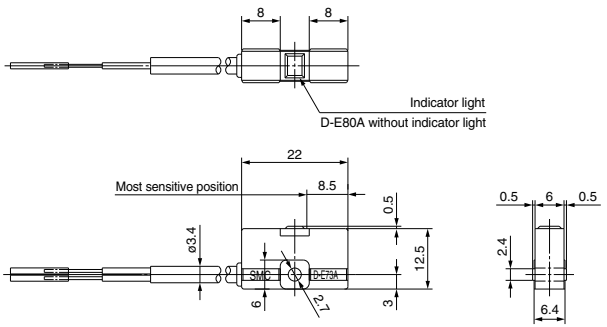
Weight

(g)

Auto switch model		**D-E73A**	**D-E76A**	**D-E80A**
Lead wire length	0.5 m (**Nil**)	10	11	10
	3 m (**L**)	47	55	47

Dimensions

(mm)



SMC

2-Color Indicator Reed Auto Switch
Band Mounting Type
D-B59W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-B59W (With indicator light)	
Auto switch model	**D-B59W**
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range(3)	5 to 40 mA
Internal circuit*	⑥
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-B59W**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

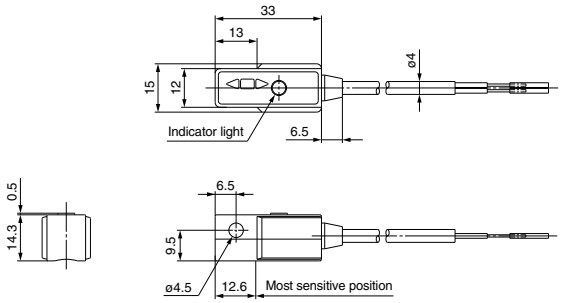
Weight

(g)

Auto switch model		**D-B59W**
Lead wire length	0.5 m (**Nil**)	20
	3 m (**L**)	76

Dimensions

(mm)



D-□

2-Color Indicator Reed Auto Switch
Rail Mounting Type
D-A79W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A79W (With indicator light)	
Auto switch model	**D-A79W**
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range (3)	5 to 40 mA
Internal circuit*	⑦
Contact protection circuit	None
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A79W**
Sheath	Outside diameter [mm]	ø3.4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		21

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

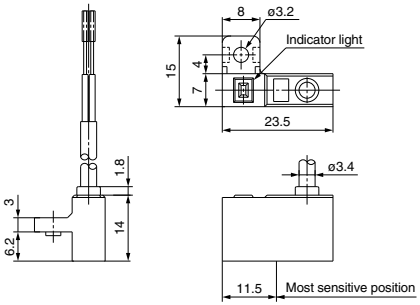
Weight

(g)

Auto switch model		**D-A79W**
Lead wire length	0.5 m (**Nil**)	11
	3 m (**L**)	53

Dimensions

(mm)



2-Color Indicator Reed Auto Switch Tie-rod Mounting Type
D-A59W

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A59W (With indicator light)	
Auto switch model	**D-A59W**
Applicable load	Relay, PLC
Load voltage	24 VDC
Load current range(3)	5 to 40 mA
Internal circuit*	⑥
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-A59W**
Sheath	Outside diameter [mm]	ø4
Insulator	Number of cores	2 cores (Brown/Blue)
	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm²]	0.3
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

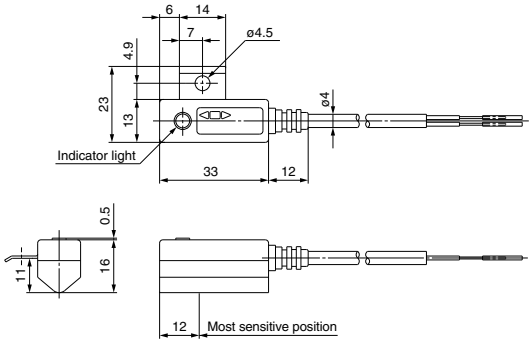
Weight

(g)

Auto switch model		**D-A59W**
Lead wire length	0.5 m (**Nil**)	25
	3 m (**L**)	80

Dimensions

(mm)



D-□

Magnetic Field Resistant 2-Color Indicator Reed Auto Switch

D-P79WSE

(Electrical Entry: Pre-wired connector)

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

The proper operating range can be determined by the color of the light.
(Red → Green ← Red)

⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

Auto Switch Specifications

PLC: Programmable Logic Controller

Auto switch model	D-P79WSE
Applicable load	PLC
Load voltage	24 VDC
Load current range	8 to 20 mA
Internal circuit*	⑥
Contact protection circuit	Built-in
Internal voltage drop	6 V or less
Indicator light	Operating range ..... Red LED illuminates. Proper operating range ..... Green LED illuminates.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P79WSE
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores
	Outside diameter [mm]	ø2.3
Conductor	Effective area [mm²]	0.5
	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		48

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.

Weight

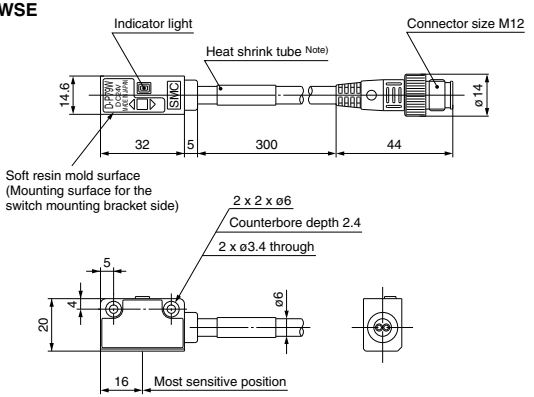
(g)

Auto switch model	D-P79WSE
	100

Dimensions

(mm)

D-P79WSE



Note) D-P79WSE = "SE 1 4-"

⚠Caution

Please be careful of the mounting direction.
The soft resin mold surface must be directed to the switch mounting bracket side.

SMC

Magnetic Field Resistant Reed Auto Switch
D-P74

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P74L/Z (With indicator light)		
Auto switch model	D-P74	
Electrical entry	Grommet	
Application	Relay, PLC	
Load voltage	24 VDC	100 VAC
Max. load voltage/Load current range	5 to 40 mA	5 to 20 mA
Internal circuit*	①	
Contact protection circuit	Built-in	
Internal voltage drop (internal resistance)	2.4 V or less	
Leakage current	0	
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P74
Sheath	Outside diameter [mm]	ø6.8
Insulator	Number of cores	2 cores (White/Black)
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.75
	Strand diameter [mm]	ø0.18
Lead wire minimum bending radius [mm] (Reference values)		48

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Refer to page 1584 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

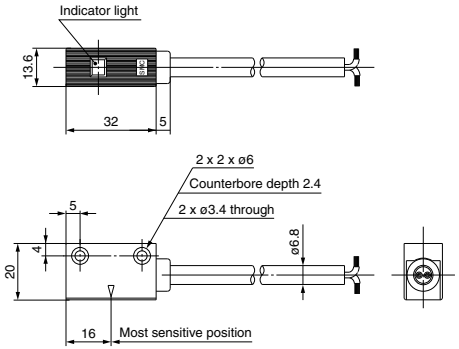
Weight

(g)

Auto switch model		D-P74
Lead wire length	0.5 m (**Nil**)	48
	3 m (**L**)	189
	5 m (**Z**)	320

Dimensions

(mm)



D-□

Magnetic Field Resistant Reed Auto Switch
D-P74-376

Refer to SMC website for the details of the products conforming to the international standards.

Grommet

⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P74-376 (With indicator light)	
Auto switch model	**D-P74-376**
Electrical entry	Grommet
Application	Relay, PLC
Load voltage	24 VDC
Max. load current/Load current range	5 to 20 mA
Internal circuit*	①
Contact protection circuit	Built-in
Internal voltage drop (internal resistance)	2 V or less
Leakage current	0
Operating time	1.2 ms
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		**D-P74**
Sheath	Outside diameter [mm]	ø6
Insulator	Number of cores	2 cores
	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.75
	Strand diameter [mm]	ø0.18
Lead wire minimum bending radius [mm] (Reference values)		48

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1587.
Note 1) Refer to page 1584 for reed auto switch common specifications.
Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

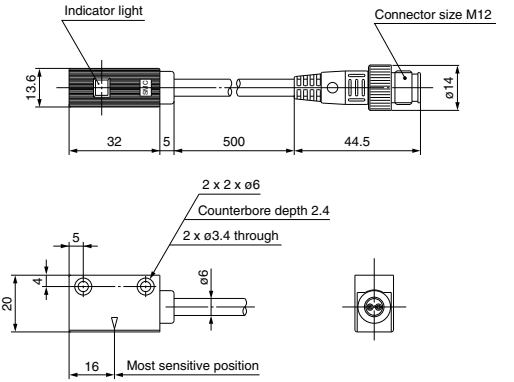
Weight

(g)

Auto switch model	**D-P74-376**
	60

Dimensions

(mm)



SMC

Heat Resistant Reed Auto Switch
D-B30(J)/31(J)/35(J)

Refer to SMC website for the details of the products conforming to the international standards.

Can be used outdoors or under high temperature (Max. 120°C). Wide operating range (double that of other SMC products) enables stable position detection.

High temperature environment such as places around ignited gas outlet or furnace

Outdoor plants and environment with high temperature and humidity

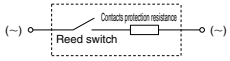
Environment for steam cleaning or high temperature sterilization

Applications requiring wide operating range such as clamping of elastic work pieces

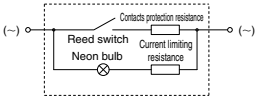
Use of metal case and heat resistant materials.
The construction prevents influence of external environment by sealing the auto switch internal parts to improve heat resistance.
The wide operating range allows easy position setting and reduces influence of the work piece position changes.

Auto Switch Internal Circuit

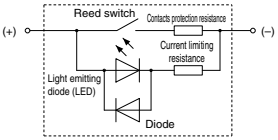
D-B30



D-B31



D-B35



Auto Switch Specifications

PLC: Programmable Logic Controller

Auto switch model	D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
Electrical entry	Terminal conduit	Grommet	Terminal conduit	Grommet	Terminal conduit	Grommet
Operating voltage	24 VDC / 100 VAC		100 VAC		24 VDC	
Operating current range	5 to 30 mADC / 5 to 20 mAAC		5 to 20 mAAC		5 to 30 mADC	
Internal voltage drop	2.5 V or less		2.5 V or less		2.0 V or less	
Indicator light	Without indicator light		Neon bulb lights up when OFF		Red LED lights up when OFF	
Applicable load	PLC (Programmable Logic Controller)					
Shock resistance	300 m/s^2					
Leakage current	0.1 mA or less		1 mA or less		1 mA or less	
Lead wire	—	0.5 m	—	0.5 m	—	0.5 m
Enclosure	Terminal conduit : IEC60529 IP64 Grommet : IEC60529 IP67					
Withstand voltage	1500 VAC for 1 minute (between case and terminals or lead wires)					
Insulation resistance	50 MΩ or larger between case (ground) and lead wires (terminals)					
Operating temperature range	–10°C to 120°C					
Standard	CE marking					

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-B30J	D-B31J	D-B35J
Sheath	Outside diameter [mm]	ø6		
Insulator	Number of cores	2 cores (Brown/Blue)		
	Outside diameter [mm]	ø2.3		
Conductor	Effective area [mm^2]	0.5		
	Strand diameter [mm]	ø0.08		
Lead wire minimum bending radius [mm] (Reference values)		48 (Room temperature)		

Weight

(g)

Auto switch model		D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
Lead wire length	None	190	—	190	—	190	—
	0.5 m (**Nil**)	—	250	—	250	—	250
	3 m (**L**)	—	268	—	268	—	268
	5 m (**Z**)	—	462	—	462	—	462

Lead wire length

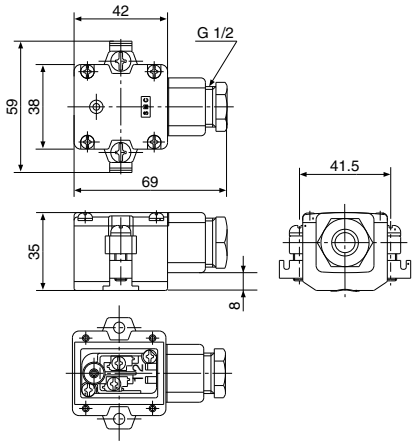
In case of the grommet type (J type), the lead wire length is 0.5 m.
(No lead wire is attached to the terminal conduit type.)
Manufacture of 3 m and 5 m types is also possible. Please consult SMC for these types.

D-□

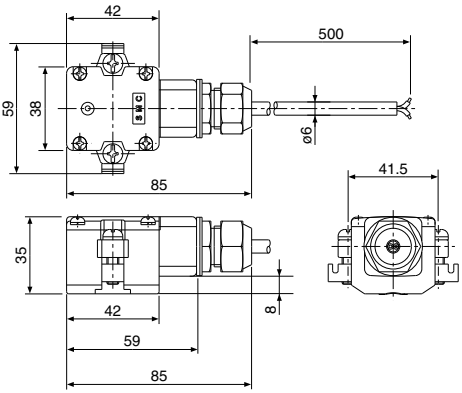
Dimensions

(mm)

Terminal conduit type D-B3□

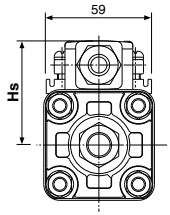


Terminal conduit type D-B3□J



∗ Recommended minimum bending radius for lead wire RT : 25 mm or more
120°C : 50 mm or more

Dimensions for Cylinder Mounting



Hs dimensions

(mm)

Bore size	Cylinder model	
	CDA2	**MDB**
40 mm	58.5	57.5
50 mm	64	63
63 mm	71	69.5
80 mm	79.5	78.5
100 mm	90	89

Mounting cylinder part no.

CDA2 B 50 – 200 – B31J S – X1184

- **CDA2** — Cylinder model

Symbol	Description
CDA2	CDA2 series (Bore size 40 to 100)
MDB	MDB series (Bore size 40 to 100)

- **B** — Mounting
- **50** — Cylinder bore size
- **200** — Cylinder stroke
- **B31J** — Auto switch type

Symbol	Description
Nil	Without auto switch
B30	D-B30
B30J	D-B30J
B31	D-B31
B31J	D-B31J
B35	D-B35
B35J	D-B35J

- **S** — Number of auto switches

Symbol	Description
Nil	2 pcs.
S	1 pc.

- **X1184** — With built-in special magnet

∗ Please consult SMC in case the switch is to be mounted on models other than applicable cylinders.

D-B3 Series
Specific Product Precautions

Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 8 to 12 for Auto Switch Precautions.

⚠Caution

1. Use the reed switch within the operating range.

Take precautions about the ambient temperature because using the reed switch beyond the operating range may affect its internal electronic parts and sealing construction, causing abnormalities to the service life of the contact, as well as operation and waterproof performance of the switch.

Also, the maximum temperature of the environment where the switch is used must be fully understood before operation is started because the temperature of the environment where the auto switch is installed may experience some changes after operation is started due to factors other than air temperature such as influence of radiation heat from the heat source, air circulation or heat conduction.

2. Take precautions about the environment where the auto switch is installed.

If conditions (water splashes, time, temperature) beyond the normal ranges can be applied to the auto switch, use the auto switch in an environment where it will not be directly exposed to water splashes at a high temperature by installing a cover to protect the entire auto switch, as long as it is possible. The grommet type auto switch has a construction that will protect its internal parts against water splashes at the normal temperature. However, if the conditions (water splashes, time, temperature) exceed the normal ranges, they may adversely affect the auto switch internal insulation performance.

Also, confirm the applicability of the auto switch in the environment because extreme heat cycles or a long-term high humidity may cause functional deterioration of the auto switch protection construction.

In principle, the terminal conduit type must be used in an environment with no exposure to humidity or water because at high temperatures, it may become impossible to achieve sufficient waterproof effect due to deformation of lead wire sealant depending on the heat resistance of the lead wire and cable clamp.

3. Visibility of an indicator light

Because the auto switch uses light emitting diodes and neon bulbs for display, continuous operation at a high temperature may cause changes in characteristics of the entire display circuit. Also, the transparency of the display window on the body may change depending on the characteristics of the resin.

Because of the above factors, lighting under high temperature may become dark, causing decline of visibility.

However, there could be no problem in output of the signal itself and its safety owing to adoption of the OFF-state lighting system.

4. Take precautions about leakage current.

According to the heat resistant characteristics of its parts, the auto switch adopts the OFF-state lighting system (the indicator light lights up when the reed switch contact is open and goes off when the reed switch contact is closed).

Since the current for indicator lighting is running when the auto switch is off, confirm the allowable leakage current of PLC etc. before selecting the model.

If the leakage current of the indicator light becomes a problem for the PLC operation, select a model without an indicator light.

5. Keep the lead wire length as short as possible.

If a long lead wire is used because of the conditions of the plant or equipment where the switch is installed, malfunction in the reed switch reset operation may occur due to premature damage to the contact surface caused by the inrush current resulting from the line flotation capacity and influence of the electric field created by the power line near the wiring.

Therefore, the maximum wiring length should be kept at 100 m or less.

Avoid wiring in proximity with the power line. Also, if the length of wiring in use is extremely long (30 m or longer), schedule replacement in periodical maintenance.

The basic guidelines for replacement are a total wiring length of 100 m between the load and the auto switch and 1 million cycles of operation (at 120°C , 100 VAC PLC load).

6. Install the auto switch at the center of the operating range.

The operation range of the auto switch is set at approximately double that of the standard type in consideration of the mounting error when the detection position is set. However, this range is subject to change with the temperature. Although the variation in the operating range differs with the cylinder on which the auto switch is mounted, a temperature change of 100°C will roughly result in the maximum of 20% reduction in the overall operation range.

(Approximately 2 mm variation at the position where the auto switch usually turns on)

Therefore, install the auto switch at the center of the operating range (stable range), while understanding the possible change in the operating range and considering the stability of the auto switch operation.

(Avoid installation of the auto switch at the boundary where the auto switch turns on or off.)

7. Selection of applicable cylinders

The auto switch should be mounted on special cylinders (-X1184 series) because it is operated by magnets using heat resistant material.

Consult SMC in advance for special applications in which current cylinder cannot be used because, depending on the operating environment, it is possible that special measures should be taken or even the cylinder cannot be adapted.

8. Maintenance

After the auto switch is installed under high temperature, apply additonal tightening peiodically to the auto switch mounting band.

The rubber lining of the auto switch mounting band may need some time to adapt to the environment because of temperature chages in the installation environment. Perform additoinal tightening at a tightening torque of 2 to 3 N·m while carefully applying equal torque to both lifting screws.

9. Product upgrades

The product is subject to change without prior notice due to upgrades.

Technical Data 2:
How to Mount and Move the Auto Switch

Mounting Bracket **Band Mounting Type**

<Applicable auto switch>

Solid state ····· D-M9N, M9P, M9B, M9NV, M9PV, M9BV, D-M9NW, M9PW, M9BW, M9NWV, M9PWV, M9BWV, D-M9NA, M9PA, M9BA, M9NAV, M9PAV, M9BAV

Reed ····· D-A90, A93, A96, A90V, A93V, A96V

How to Mount and Move the Auto Switch

Mounting the Auto Switch

1. Mount the auto switch mounting band around the auto switch setting position on the cylinder tube.
2. Place the switch holder in the opening of the auto switch mounting band (1).
3. Make the concave part of the switch bracket faced downward and set the switch bracket on the switch holder (2).
   Set the switch bracket so that both ends of the auto switch mounting band enter the portion between the ribs on both side surfaces of the switch bracket.
   For the D-M9□A (V) type auto switch, do not install the switch bracket on the indicator light.
4. Pass the auto switch mounting screw (M3) supplied with the auto switch mounting band from the through-hole side of the auto switch mounting band and engage it with the M3 female thread of the auto switch mounting band through the through-hole in the switch bracket.
5. Tighten the auto switch mounting screw with the specified tightening torque to secure the switch bracket and switch holder.

Tightening torque for auto switch mounting screw (N·m)

Cylinder series	Tightening torque
CDJ2,CDJ2X,CDJ5,CDLJ2,CDVJ5,CDVJ3	0.8 to 1.0
CDM2,CDM3,CDM2Y,CDM2X,CDLM2,CDVMJ5,CDVM3,CDG1,CDG3,CDG1Y, CDLG1,CDNG,MGG,MGC,MLGC,REC,RHC,RSDG,CDLG1,CHN,CHDM	0.6 to 0.7

6. Insert the auto switch into the auto switch mounting groove of the switch holder (2).
7. After checking the detection position, tighten the set screw (M2.5) supplied with the auto switch to secure the auto switch.
   At this time, the tightening torque for the set screw (M2.5) supplied with the auto switch must be 0.05 to 0.1 N·m.
   When tightening the set screw supplied with the auto switch, use a watchmaker's screw driver with a handle diameter of 5 to 6 mm.

Adjusting the Auto Switch Position

(1) To make the fine adjustment, loosen the set screw (M2.5) supplied with the auto switch and slide the auto switch inside the auto switch mouthing groove to adjust the position.

(2) To move the auto switch setting position largely, loosen the screw (M3) that secures the auto switch mounting band and slide the auto switch together with the switch holder on the cylinder tube to adjust the position.

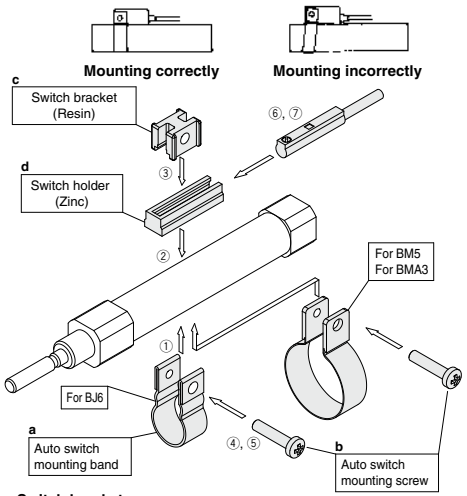
Auto Switch Mounting Bracket Part No. (Including a, b, c and d shown in the figure.)

Cylinder series	Bore size (mm)					
	6		10		16	
	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9A□(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)
CDJ2, CDJ2X CDJ2Y CDVJ3, 5	BJ6-006	BJ6-006S	BJ6-010	BJ6-010S	BJ6-016	BJ6-016S
CDBJ2, CDLJ2	—	—	—	—		
CDJ5	—	—	—	BJ6-010S	—	BJ6-016S

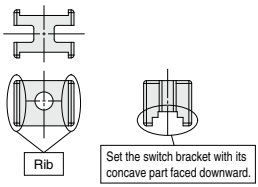
Note) The products other than those with "-Z" show the cylinders with the part number "-C".

⚠ Caution

1. Tighten screws with the proper tightening torque.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



<Switch bracket>



The switch brackets have different colors.
For BJ6-006: Transparent blue For BJ6-010/016/BM5-□□□/BMA3-□□□: Transparent
For BJ6-006S: Black For BJ6-010S/016S/BM5-□□□S/BMA3-□□□S: White

<Precautions on BM5 and BMA3>

When removing the screw connection part with the auto switch mounting screw after the auto switch mounting band has been assembled, be careful not to drop the switch bracket, switch holder, auto switch mounting screw, or auto switch mounting band.

Auto Switch Mounting Bracket Part No. (Including a, b, c and d shown in the figure.)

Cylinder series	Bore size (mm)											
	20		25		32		40		50		63	
	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)	D-M9□(V) D-M9□W(V) D-A9□(V)	D-M9□A(V)
CDM2 CDM3 CDM2X, CDM2Y CDLM2 CDVM3, CDVM5	BM5-020	BM5-020S	BM5-025	BM5-025S	BM5-032	BM5-032S	BM5-040	BM5-040S	—	—	—	—
CDG1 CDG3, CDG1Y MGG, RHC	BMA3-020	BMA3-020S	BMA3-025	BMA3-025S	BMA3-032	BMA3-032S	BMA3-040	BMA3-040S	BMA3-050	BMA3-050S	BMA3-063	BMA3-063S
MGC											—	—
CDLG1, CDNG									—	—	—	—
MLGC, REC									—	—	—	—
CKG1	—	—	—	—	—	—			BMA3-050	BMA3-050S	BMA3-063	BMA3-063S
CLK2GA	—	—	—	—	BMA3-032	BMA3-032S						
CLK2GB	—	—	—	—	—	—	—	—				
RSDG	—	—	—	—	—	—	BMA3-040	BMA3-040S			—	—

Note) The products other than those with "-Z" show the cylinders with the part number "-C". (Except MGC and MGG)

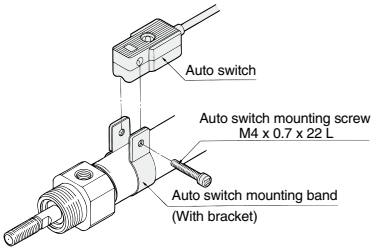
⚠ Caution

1. Tighten screws with the proper tightening torque.
2. Set the auto switch mounting band perpendicularly to cylinder tube.

Mounting correctly **Mounting incorrectly**

<Applicable auto switch>
Solid state ····· D-G59, D-G5P, D-K59, D-G5BA, D-G59W, D-G5PW, D-K59W, D-G59F, D-G5NT
Reed ····· D-B53, D-B54, D-B64, D-B59W

How to Mount and Move the Auto Switch



1. Put a mounting band on the cylinder tube and set it at the auto switch mounting position.
2. Put the mounting section of the auto switch between the band mounting holes, then adjust the position of mounting holes of switch to those of mounting band.
3. Lightly thread the auto switch mounting screw through the mounting hole into the thread part of band fitting.
4. After reconfirming the detection position, tighten the mounting screw to secure the auto switch while properly contacting the auto switch bottom part and the cylinder tube.
(The tightening torque of M4 screw should be about 1 to 1.2 N·m.)
5. Modification of the detection position should be made in the condition of 3.

Auto Switch Mounting Bracket Part No. (Including band and screw)

<table>
<tr><th rowspan="2">Cylinder series</th><th colspan="8">Applicable bore size (mm)</th></tr>
<tr><th>20</th><th>25</th><th>32</th><th>40</th><th>50</th><th>63</th><th>80</th><th>100</th></tr>
<tr><td>CDM3
CDM2
CDM2X, CDM2Y
CDLM2, CDVM3/5</td><td>BA2-020</td><td>BA2-025</td><td>BA2-032</td><td>BA2-040</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>CDA2
CDNA2</td><td>—</td><td>—</td><td>—</td><td>BH2-040</td><td>BA5-050</td><td>BAF-06</td><td>BAF-08</td><td>BAF-10</td></tr>
<tr><td>CDA2□H, CDA2Y
CDL1, CE2, CDV3, CDVS1</td><td>—</td><td>—</td><td>—</td><td rowspan="6">BA-04</td><td rowspan="2">BA-05</td><td rowspan="2">BA-06</td><td rowspan="2">BA-08</td><td rowspan="2">BA-10</td></tr>
<tr><td>CDG3
CDG1, CDG1Y
MGG, RHC</td><td rowspan="4">BA-01</td><td rowspan="4">BA-02</td><td rowspan="4">BA-32</td></tr>
<tr><td>MGC</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>CDLG1, CDNG</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>MLGC, REC</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>CKG1</td><td>—</td><td>—</td><td>—</td><td rowspan="3">BA-05</td><td rowspan="3">BA-06</td><td>—</td><td>—</td></tr>
<tr><td>CLK2GA</td><td>—</td><td>—</td><td>BA-32</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>CLK2GB</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td><td>—</td></tr>
<tr><td>CDG5□S</td><td>NBA-088S</td><td>NBA-106S</td><td>BGS1-032S</td><td>BAF-04S</td><td>BAF-05S</td><td>BAF-06S</td><td>BAF-08S</td><td>BAF-10S</td></tr>
</table>

[Mounting screws set made of stainless steel]
The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment. (Please order the auto switch mounting band separately, since it is not included.)
BBA3: For D-B5/B6/G5/K5
"D-G5BA" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When an auto switch is shipped independently, "BBA3" screws are attached.

Stainless Steel Mounting Screw Set

<table>
<tr><th rowspan="2">Part no.</th><th colspan="3">Description</th><th rowspan="2">Applicable auto switch mounting bracket part no.</th><th rowspan="2">Applicable auto switch</th></tr>
<tr><th>Part</th><th>Size</th><th>Qty.</th></tr>
<tr><td rowspan="5">BBA3</td><td rowspan="5">Auto switch mounting screw</td><td rowspan="5">M4 x 0.7 x 22L</td><td rowspan="5">1</td><td>BA-01, BA-02, BA-32, BA-04
BA-05, BA-06, BA-08, BA-10</td><td rowspan="5">D-B5, B6
D-G5, K5</td></tr>
<tr><td>BA2-020, BA2-025, BA2-032, BA2-040</td></tr>
<tr><td>BA5-050, BHN2-025, BSG1-032</td></tr>
<tr><td>BH2-040, BH2-050, BH2-080, BH2-100</td></tr>
<tr><td>BAF-32, BAF-04, BAF-05
BAF-06, BAF-08, BAF-10</td></tr>
</table>

D-□

How to Mount and Move the Auto Switch

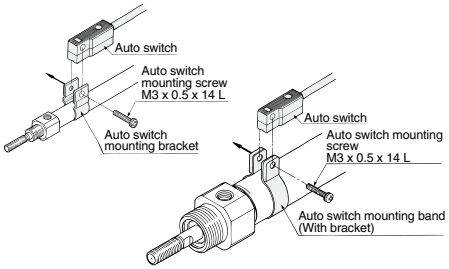
Mounting Bracket | **Band Mounting Type**

<Applicable auto switch>

Solid state ····· D-H7A1, D-H7A2, D-H7B, D-H7BA, D-H7C, D-H7NF, D-H7NW, D-H7PW, D-H7BW

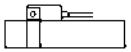
Reed ····· D-C73, D-C76, D-C80, D-C73C, D-C80C

How to Mount and Move the Auto Switch



⚠ Caution

1. Tighten screws with the proper tightening torque.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



Mounting correctly

Mounting incorrectly

1. **For CDJ2 series:** Put a mounting bracket on the cylinder tube.
   For CDM2 series: Put a mounting band on the cylinder tube and set it at the auto switch mounting position.
2. Put the mounting section of the auto switch between the band mounting holes, then adjust the position of mounting holes of switch to those of mounting band.
3. Lightly thread the auto switch mounting screw through the mounting hole into the thread part of band fitting.
4. After setting the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch while properly contacting the auto switch bottom part and the cylinder tube. (The tightening torque of M3 screw should be as below.)
   BJ2-□□□: 0.8 to 1.0 N·m
   BM2-□□□A: 0.6 to 0.7 N·m
   BMA2-□□□A: 0.6 to 0.7 N·m
5. Modification of the detection position should be made in the condition of 3.
6. After auto switch is mounted and fixed, attach a protective tube on the tip of an auto switch mounting screw. (For BJ2-□□□)

Auto Switch Mounting Bracket Part No. (Including band and screw)

Cylinder series	Applicable bore size (mm)								
	6	**10**	**16**	**20**	**25**	**32**	**40**	**50**	**63**
CDJ2, CDJ2X, CDJ2Y, CDVJ3/5	BJ2-006	BJ2-010	BJ2-016	—	—	—	—	—	—
CDBJ2, CDLJ2	—	—		—	—	—	—	—	—
CDM3 CDM2 CDM2X, CDM2Y CDLM2, CDVM3/5	—	—	—	Note) BM2-020A BM2-020	Note) BM2-025A BM2-025	Note) BM2-032A BM2-032	Note) BM2-040A BM2-040	—	—
CDG3 CDG1, CDG1Y MGG, RHC	—	—	—	Note) BMA2-020A BMA2-020	Note) BMA2-025A BMA2-025	Note) BMA2-032A BMA2-032	Note) BMA2-040A BMA2-040	Note) BMA2-050A BMA2-050	Note) BMA2-063A BMA2-063
MGC	—	—	—						—
CDLG1, CDNG	—	—	—					—	—
MLGC, REC	—	—	—					—	—
CKG1	—	—	—	—	—	—		Note) BMA2-050A BMA2-050	Note) BMA2-063A BMA2-063
CLK2GA	—	—	—	—	—	BMA2-032			
CLK2GB	—	—	—	—	—	—	—		
RSDG	—	—	—	—	—	—	BMA2-040		—
CDJ5□S	—	BJ2-010S	BJ2-016S	—	—	—	—	—	—

Note) The upper part numbers show the "-Z" products and the lower part numbers show other cylinders. (However, the MGC and MGG use the upper part numbers.)

[Mounting screws set made of stainless steel]

The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment. (Please order the auto switch mounting band separately, since it is not included.)

BBA4: For D-C7/C8/H7

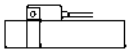
"D-H7BA" switch is set on the cylinder with the stainless steel screws above when shipped.
When only an auto switch is shipped independently, "BBA4" screws are attached.

Stainless Steel Mounting Screw Set

Part no.	Description			Applicable auto switch mounting bracket part no.	Applicable auto switch
	Part	Size	Qty.		
BBA4	Auto switch mounting screw	M3 x 0.5 x 14L	1	BJ2-006, BJ2-010, BJ2-016	D-C7, C8 D-H7
				BM2-020(A), BM2-025(A), BM2-032(A), BM2-040(A)	
				BMA2-020(A), BMA2-025(A), BMA2-032(A) BMA2-040(A), BMA2-050(A), BMA2-063(A)	
				BHN3-025A, BHN3-032A, BHN3-040A	

⚠ Caution

1. Tighten screws with the proper tightening torque.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



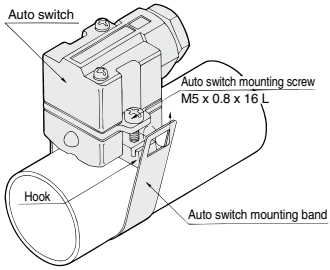
Mounting correctly

Mounting incorrectly

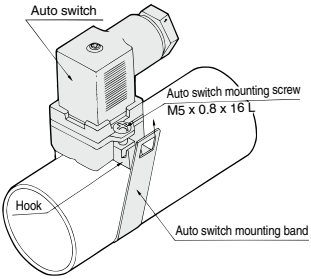
<Applicable auto switch>
Solid state ····· D-G39, D-K39
Reed ····· D-A33, D-A34, D-A44

How to Mount and Move the Auto Switch

D-A3□, D-G3/K3 type



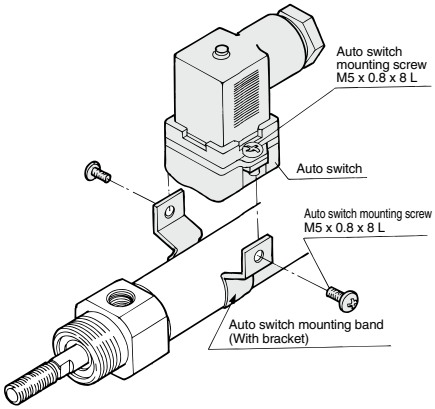
D-A44



1. Loosen the auto switch mounting screws at both sides to pull down the hook.
2. Put an auto switch mounting band on the cylinder tube and set it at the auto switch mounting position, and then hook the band.
3. Screw lightly the auto switch mounting screw.
4. Set the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (The tightening torque should be about 2 to 3 N·m.)
5. Modification of the detecting position should be made in the condition of 3.

<Applicable auto switch>
Solid state ····· D-G39A, D-K39A
Reed ····· D-A33A, D-A34A, D-A44A

How to Mount and Move the Auto Switch



1. Tighten completely the auto switch mounting screw on the auto switch body side.
2. Put a mounting band on the cylinder tube and set it at the auto switch mounting position. Put the mounting section of auto switch between the interval of mounting band, then adjust the position of mounting holes of switch to those of mounting band.
3. Lightly thread the auto switch mounting screw through the mounting hole into the thread part of band fitting.
4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (The tightening torque of M5 screw should be about 2 to 3 N·m.)
5. Modification of the detecting position should be made in the condition of 3.

Auto Switch Mounting Bracket Part No. (Including band and screw)

Cylinder series	Applicable bore size (mm)			
	20	25	32	40
CDM3 CDM2 CDLM2, CDM2X CDM2Y	BM3-020	BM3-025	BM3-032	BM3-040

Auto Switch Mounting Bracket Part No. (Band)

Cylinder series	Applicable bore size (mm)												
	20	25	32	40	50	63	80	100	125	140	160	180	200
MDB, MDBY MDWB, MDNB	—	—	BMB2 -032	BMB2 -040	BMB1 -050	BMB1 -063	BMB1 -080	BMB1 -100	BS1-125	—	—	—	—
CDA2-Z, CDA2 CDBA2, CDNA2	—	—	—	BDS-04M	BDS-05M				—	—	—	—	—
CDA2□H CDA2Y, CE2 CDV3, CDVS1	—	—	—	BD1 -04M	BD1 -05M	BD1 -06M	BD1 -08M	BD1 -10M	—	—	—	—	—
CDL1	—	—	—									—	—
CDS2, CDS2Y	—	—	—	—	—	—	—	—	BS1 -125	BS1 -140	BS1 -160	—	—
CDS1, CDLS	—	—	—	—	—	—	—	—				BS1-180	BS1-200
CDNS	—	—	—	—	—	—	—	—				—	—
RHC	BD1-01M	BD1-02M	BD1-02	BD1 -04M	BD1 -05M	BD1 -06M	BD1-08M	BD1-10M	—	—	—	—	—
CKG1	—	—	—				—	—	—	—	—	—	—
CLK2GA	—	—	—				—	—	—	—	—	—	—
CLK2GB	—	—	—	—			—	—	—	—	—	—	—

D-□

How to Mount and Move the Auto Switch

Mounting Bracket **Rail Mounting Type**

<Applicable auto switch>

Solid state ····· D-M9N(V), D-M9P(V), D-M9B(V), D-M9NW(V), D-M9PW(V), D-M9BW(V), D-M9NA(V), D-M9PA(V), D-M9BA(V)
Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch

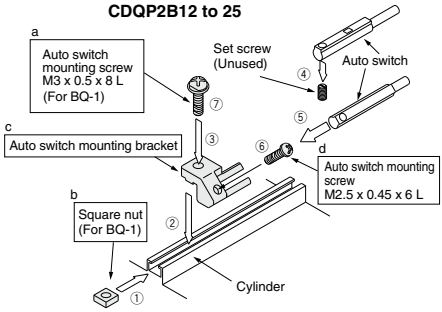
CDQP2B12 to 25

1. Insert the square nut for BQ-1 in the switch mounting rail and set it at the approximate auto switch mounting position.
2. Fit the convex part of the auto switch mounting bracket arm over the concave part of the rail, and slide the arm to the nut position.
3. Push the auto switch mounting screw (M3 for BQ-1) lightly into the square nut through the hole of the auto switch mounting arm.
4. Remove the set screw (M2.5) attached to the auto switch.
5. Insert the auto switch in the auto switch attachment part of the auto switch mounting bracket.
6. Secure the auto switch mounting screw (M2.5). (Tightening torque of M2.5 screw: 0.1 to 0.2 N·m)
7. Secure the auto switch mounting screw (3) after confirming the detecting position. (Tightening torque of M3 screw: 0.5 to 0.7 N·m)
8. Modify the detecting position while the auto switch is secured at the position of (3) in the figure.

CDQP2B32 to 100

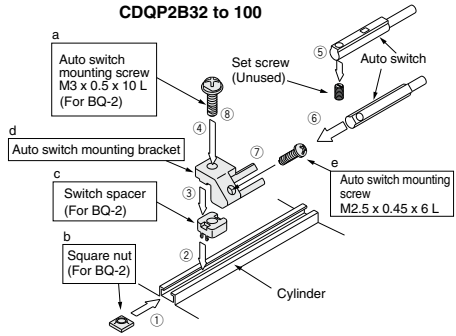
1. Insert the square nut for BQ-2 in the switch mounting rail and set it at the approximate auto switch mounting position.
2. Fit the protruding part of the switch mounting spacer over the concave part of the rail, and slide the spacer to the nut position.
3. Fit the convex part of the auto switch mounting bracket arm over the concave part of the switch spacer.
4. Turn the auto switch mounting screw (M3 for BQ-2) lightly into the square nut through the mounting holes of the auto switch mounting arm and switch spacer.
5. Remove the set screw (M2.5) attached to the auto switch.
6. Insert the auto switch in the auto switch attachment part of the auto switch mounting bracket.
7. Secure the auto switch mounting screw (M2.5). (Tightening torque of M2.5 screw: 0.1 to 0.2 N·m)
8. Secure the auto switch mounting screw (4) after confirming the detecting position. (Tightening torque of M3 screw: 0.5 to 0.7 N·m)
9. Modify the detecting position while the auto switch is secured at the position of (4) in the figure.

CDQP2B12 to 25



BQ-1 and BMU1-025 are a set of a and b shown above.
BQ2-012 is a set of c and d shown above.

CDQP2B32 to 100



BQ-2 is a set of a, b and c shown above.
BQ2-012 is a set of d and e shown above.

Auto Switch Mounting Bracket Part No. (Nut, screws, (spacer) and auto switch mounting bracket; two kinds of auto switch mounting brackets are used as a set.)

Cylinder series	Applicable bore size (mm)									
	12	16	20	25	32	40	50	63	80	100
CDQP2B	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012
CDBQ2, CDQ2X CDLQ, CDQM RDQ	—	—	—	—						
RDLQ, RZQ	—	—	—	—					—	—
MK2T	—	—	—	—				BQ-2 BQ2-012	—	—
CE1	BQ-1 BQ2-012	—	BQ-1 BQ2-012						—	—
CXT	—	—	—	—			—	—	—	—
CKQ, CLKQ	—	—	—	—	—	—	BQ-2 BQ2-012	—	—	—
MDU	—	—	—	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	—	—
MDLU	—	—	—					—	—	—

Note 1) Color or gloss differences in the metal surfaces have no effect on metal performance.
The special properties of the chromate (trivalent) applied to the main body of the auto switch mounting bracket for BQ2-012 result in differences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.
Note 2) When installing D-M9□A(V)L with BQ2-012 shown above, use BQ2-012S with stainless steel auto switch mounting screws (M2.5 x 0.45 x 6 L).
Note 3) D-A9□ type cannot be mounted on the MDU, MDLU series.

<Applicable auto switch>

Solid state D-F79, D-F7P, D-J79, D-F7NV, D-F7PV, D-F7BV, D-J79C, D-F79W, D-F7PW, D-J79W, D-F7NWV, D-F7BWV, D-F79F, D-F7BA, D-F7BAV, D-F7NT

Reed D-A72, D-A73, D-A80, D-A72H, D-A73H, D-A76H, D-A80H, D-A73C, D-A80C, D-A79W

1. Slide the auto switch mounting nut inserted into the mounting rail and set it at the auto switch mounting position.

2. Fit the convex part of auto switch mounting arm into the concave part of auto switch mounting rail. Then slide the switch over the nut.
(CDQ2 series: Fit the convex part of auto switch mounting arm through the auto switch spacer into the concave part of auto switch mounting rail.)

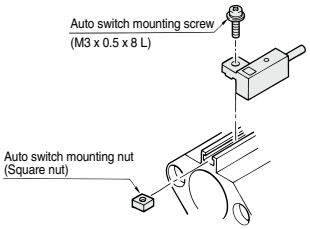
3. Push the auto switch mounting screw lightly into the mounting nut through the hole of auto switch mounting arm.

4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)

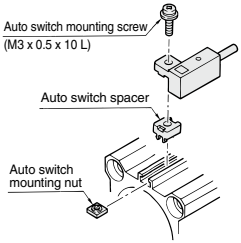
5. Modification of the detecting position should be made in the condition of 3.

How to Mount and Move the Auto Switch

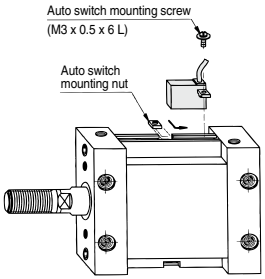
ø12 to ø25



ø32 to ø160



MDU/MDLU



Auto Switch Mounting Bracket Part No. (Including nut, screw, (spacer))

Cylinder series	Applicable bore size (mm)												
	12	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**	**140**	**160**
CDQP2B	BQ-1	BQ-1	BQ-1	BQ-1	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	—	—	—
CDBQ2, CDQ2X CDLQ, CDQM RDQ	—	—	—	—	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	—	—	—
RDLQ, RZQ	—	—	—	—					—	—	—	—	—
MK2T	—	—	—	—				BQ-2	—	—	—	—	—
CE1	BQ-1	—	BQ-1	—					—	—	—	—	—
CXT	—	—	—	—			—	—	—	—	—	—	—
MDU (Except Z)	—	—	—	BMU1-025	BMU1-025	BMU1-025	BMU1-025	BMU1-025	—	—	—	—	—
MDLU	—	—	—					—	—	—	—	—	—

[Mounting screws set made of stainless steel]

The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment. (Please order the auto switch spacer BQ-2, since it is not included.)

BBA2: For D-A7/A8/F7/J7

"D-F7BA" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When only an auto switch is shipped independently, "BBA2" screws are attached.

Stainless Steel Mounting Screw Set

Part no.	Description				Applicable auto switch mounting bracket part no.	Applicable auto switch
	No.	Part	Size	Qty.		
BBA2	1	Auto switch mounting screw	M3 x 0.5 x 6L	1	BMU1-025	D-A7, A8 D-F7, J7
			M3 x 0.5 x 8L	1	BQ-1	
			M3 x 0.5 x 10L	1	BQ-2	
	2	Auto switch mounting nut (Hexagon nut)	M3 x 0.5	1	BQ-1	
	3	Auto switch mounting nut (Convex shape)	M3 x 0.5	1	BQ-2	

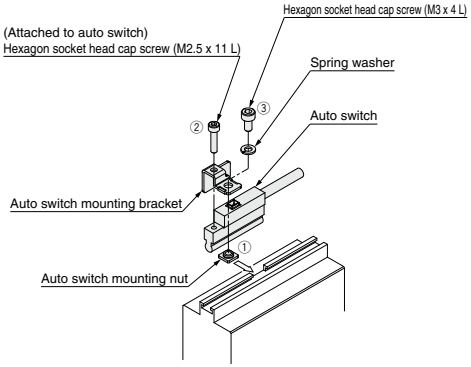
Note 1) A spacer for BQ-2 (black resin) is not included.
Note 2) When using D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) auto switches with BQ2-012, use stainless steel screws suitable for the auto switch mounting bracket applicable for each cylinder series.

How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Type

<Applicable auto switch>
Solid state ····· D-P3DWA

How to Mount and Move the Auto Switch



1. Insert the auto switch mounting nut into the groove on the auto switch mounting rail.
2. Remove the hexagon socket head cap screw (M2.5) that is attached to the auto switch. Mount the auto switch mounting bracket (pressed stainless steel bracket) on the auto switch and tighten the hexagon socket head cap screw (M2.5) you have removed 3 to 4 turns to temporarily mount the bracket.
3. Put the spring washer through the hexagon socket head cap screw (M3), and then put the screw through the hole in the flange of the auto switch mounting bracket (pressed stainless steel bracket). Screw it into the M3 tapped part of the auto switch mounting nut and tighten it 3 to 4 turns to temporarily mount the auto switch.
4. After checking the detection position, tighten each hexagon socket head cap screw firmly.
5. Modification of the detection position should be made in the condition of 3.

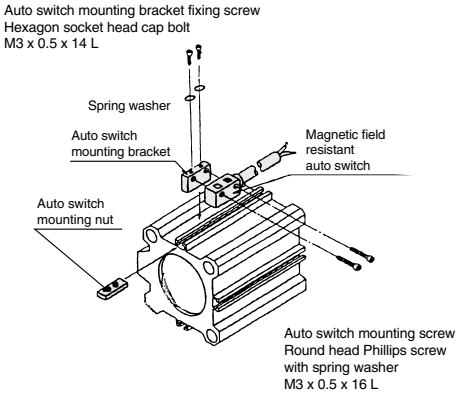
Auto Switch Mounting Bracket Part No. (Including Bracket, Bolt, Nut)

Cylinder series	Bore size (mm)				
	25	32	40	50	63
MDU	BMU4-040S				
MDLU	BMU4-040S				—

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch)
Note 2) The tightening torque for a hexagon socket head cap screw (M3) is 0.5 to 0.7 N·m.

<Applicable auto switch>
Solid state ····· D-P4DW

How to Mount and Move the Auto Switch



1. Mount the auto switch mounting bracket onto the auto switch mounting nut by tightening bracket fixing screw lightly through the mounting hole on the top of bracket.
2. Insert the auto switch mounting bracket assembly (bracket + nut) into the mounting groove and set it at the auto switch mounting position.
3. Push the auto switch mounting screw lightly into the auto switch through the auto switch mounting hole to secure.
4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch mounting bracket and the auto switch. (Tightening torque should be 0.5 to 0.7 N·m.)

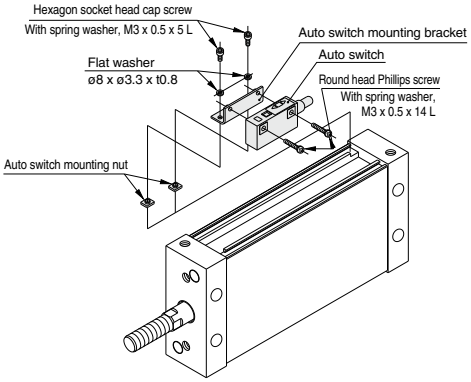
Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)				
	40	50	63	80	100
CDBQ2 CDQ2X CDLQ, CDQM	BQP1-050	BQP1-050	BQP1-050	BQP1-050	BQP1-050
MK2T				—	—
RZQ				—	—
CKQ, CLKQ	—		—	—	—

Note) Please consult SMC for mounting on the CDQ2 series.

<Applicable auto switch>
Solid state ····· D-P4DW

How to Mount and Move the Auto Switch



1. From the cutoff part of the rail on the cylinder body, insert the auto switch mounting nuts (2 pcs.) into the rail groove.
2. Slide the auto switch mounting nuts (2 pcs.) and set into the auto switch mounting position roughly. (25 mm or more should be left for the distance between 2 nuts.)
3. Insert the convex portion of the auto switch mounting bracket into the concave portion of a rail groove. Through-hole for the auto switch mounting bracket should be placed on the auto switch mounting nut.
4. Put a flat washer (ø8 x ø3.3) through a hexagon socket head screw (with spring washer, M3 x 0.5 x 5 L) and passing through the hole of an auto switch mounting bracket, then turning it lightly down to a mounting nut of auto switch. (2 locations)
5. Put a round head Phillips screw (with spring washer, M3 x 0.5 x 14 L) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
6. After reconfirming the detecting position, tighten the auto switch mounting screw to secure the auto switch mounting bracket and the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)

Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)		
	40	50	63
MDU	BMU2-040	BMU2-040	BMU2-040
MDLU			—

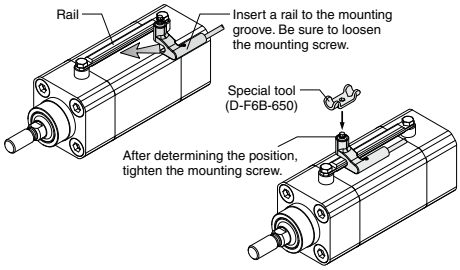
<Applicable auto switch>
Solid state ····· D-F6N, D-F6P, D-F6B

How to Mount the Auto Switch (For HYQ, HYC, HYG)

Proper tightening torque

When tightening auto switch mounting screws, use a special tool (D-F6B-650) or a torque wrench.

The tightening torque for the auto switch mounting screw (M3) is 0.8 to 1.4 N·m.



Use the tightening torque below when installing the auto switch mounting rail at maintenance.

Screw size	Tightening torque (N·m)
M4	1.1 to 1.9

Use the tightening torque below when mounting an auto switch body on the mounting rail.

Tightening torque (N·m)
0.8 to 1.4

How to Mount and Move the Auto Switch

Mounting Bracket — Tie-rod Mounting Type

<Applicable auto switch>

Solid state ····· D-M9N(V), D-M9P(V), D-M9B(V), D-M9NW(V), D-M9PW(V), D-M9BW(V), D-M9NA(V), D-M9PA(V), D-M9BA(V)

Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch

1. Fix it to the detecting position with a set screw by installing an auto switch mounting bracket in cylinder tie-rod and letting the bottom surface of an auto switch mounting bracket contact the cylinder tube firmly.

2. Fix it to the detecting position with a set screw (M4). (Use a hexagon wrench.)

3. Fit an auto switch into the auto switch mounting groove to set it roughly to the mounting position for an auto switch.

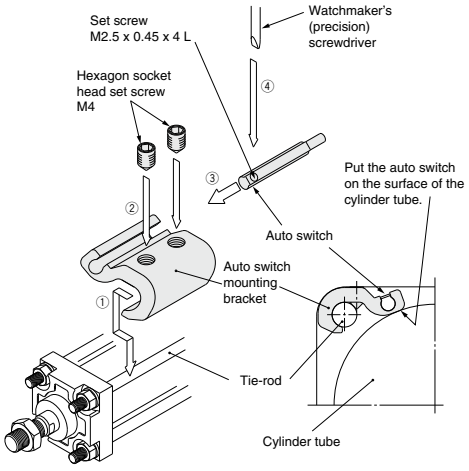
4. After confirming the detecting position, tighten up the mounting screw (M2.5) attached to an auto switch, and secure the auto switch.

5. When changing the detecting position, carry out in the state of 3.

Note 1) To protect auto switches, ensure that main body of an auto switch should be embedded into auto switch mounting groove with a depth of 15 mm or more.

Note 2) Set the tightening torque of a hexagon socket head set screw (M4) to be 1 to 1.2 N·m.

Note 3) When tightening an auto switch mounting screw (M2.5), use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, set the tightening torque to be 0.05 to 0.15 N·m. As a guide, turn 90° from the position where it comes to feel tight.



Auto Switch Mounting Bracket Part No. (Including Bracket, Set Screw)

Cylinder series	Applicable bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
MDB, MDBY MDWB, MDNB	BMB5 -032	BMB5 -032	BA7 -040	BA7 -040	BA7 -063	BA7 -063	BA7-080	—	—	—	—
CDA2 CDA2□H CDA2Y, CDNA2 CE2, CDV3, CDVS1	—	BA7 -040	BA7 -040	BA7 -063	BA7 -080	BA7 -080	—	—	—	—	—
CDL1	—									—	—
CDS1, CDLS	—	—	—	—	—	—	BS5 -125	BS5 -125	BS5 -160	BS5-180	BS5-200
CDS2, CDS2Y	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

Note 1) When using type D-M9□A(V)L, please order stainless steel screw set BBA1 separately (page 1689) , and use the stainless steel set screws, after selecting set screws of the appropriate length for the cylinder series—as shown in the table above.

Note 2) Color or gloss differences in the metal surfaces have no effect on metal performance. The special properties of the chromate applied to the main body of the auto switch mounting bracket for BA7-□, BMB5-□ and BS5-□ result in differences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.

Note 3) D-A9□ type cannot be mounted on ø50 of the CDA2□Q, CDA2□H, CDA2Y, CDL1, CE2, CDV3, and CDVS1 series.

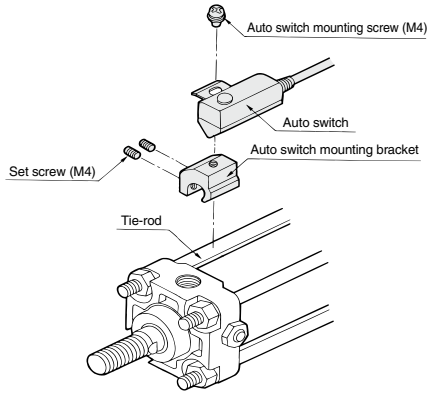
<Applicable auto switch>

Solid state ····· D-F59, D-F5P, D-J59, D-F5BA, D-F59W, D-F5PW, D-J59W, D-F59F, D-F5NT

Reed ····· D-A53, D-A54, D-A56, D-A64, D-A67, D-A59W

1. Fix the auto switch on the auto switch mounting bracket with the auto switch mounting screw (M4) and install the set screw.
2. Fit the auto switch mounting bracket into the cylinder tie-rod and then fix the auto switch at the detecting position with the hexagonal wrench. (Be sure to put the auto switch on the surface of cylinder tube.)
3. When changing the detecting position, loosen the set screw to move the auto switch and then re-fix the auto switch on the cylinder tube. (Tightening torque of M4 screw should be 0.6 to 0.8 N·m.)

How to Mount and Move the Auto Switch



Auto Switch Mounting Bracket Part No. (Including bracket, screw, set screw)

Cylinder series	Applicable bore size (mm)										
	32	**40**	**50**	**63**	**80**	**100**	**125**	**140**	**160**	**180**	**200**
MDB, MDBY MDWB, MDNB	BT-03	BT-03	BT-05	BT-05	BT-06	BT-06	BT-08	—	—	—	—
CDA2 CDA2□H CDA2Y CDNA2, CE2 CDV3, CDVS1	—	BT-04	BT-04	BT-06	BT-08	BT-08	—	—	—	—	—
CDL1	—						BT-12	BT-12	BT-16	—	—
CDS1, CDLS	—	—	—	—	—	—				BT-18A	BT-20
CDS2, CDS2Y	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

[Mounting screws set made of stainless steel]
The following set of mounting screws made of stainless steel is also available. Use it in accordance with the operating environment.
(Please order the auto switch mounting band separately, since it is not included.)
BBA1: For D-A5/A6/F5/J5
"D-F5BA" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When an auto switch is shipped independently, "BBA1" screws are attached.

Stainless Steel Mounting Screw Set

Part no.	Description				Applicable auto switch mounting bracket part no.	Applicable auto switch
	No.	Part	Size	Qty.		
BBA1	1	Auto switch mounting screw	M4 x 0.7 x 8L	1	BT-□□	D-A5, A6 D-F5, J5
	2	Set screw	M4 x 0.7 x 6L	2	BT-03, BT-04, BT-05 BT-06, BT-08, BT-12	D-A5, A6 D-F5, J5
					BA4-040, BA4-063, BA4-080 BMB4-032, BMB4-050	D-Z7, Z8 D-Y5, Y6, Y7
					BMB5-032 BA7-040, BA7-063, BA7-080	D-A9 D-M9
	3	Set screw	M4 x 0.7 x 8L	3	BT-16, BT-18A, BT-20	D-A5, A6 D-F5
					BS4-125, BS4-160 BS4-180, BS4-200	D-Z7, Z8 D-Y5, Y6, Y7
					BS5-125, BS5-160 BS5-180, BS5-200	D-A9 D-M9

Note 1) A spacer for BQ-2 (black resin) is not included.
Note 2) When using D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V) auto switches with BQ2-012, use stainless steel screws suitable for the auto switch mounting bracket applicable for each cylinder series.

D-□

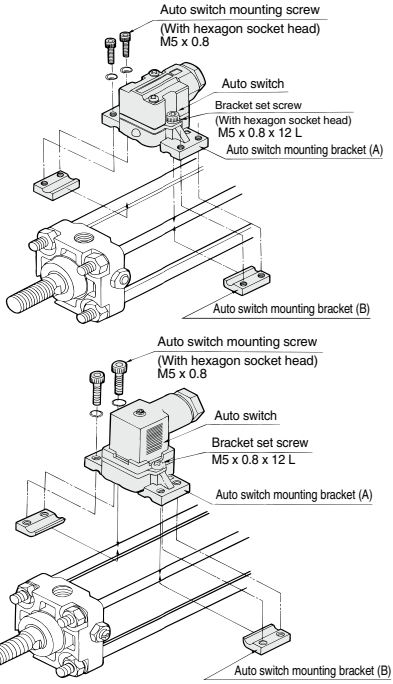
How to Mount and Move the Auto Switch

Mounting Bracket — Tie-rod Mounting Type

<Applicable auto switch>
Solid state ····· D-G39C, D-K39C
Reed ····· D-A33C, D-A34C, D-A44C

1. Fix the auto switch mounting bracket (A) on the auto switch with the set screw.
2. Fit the concave part of auto switch mounting bracket into tie-rod and set the auto switch at the mounting position.
3. Insert the auto switch mounting bracket (B) from the underneath and put lightly in the tie-rod with the mounting screw.
4. Set the whole body to the detecting position by sliding, tighten the mounting screw to secure the auto switch. (Tightening torque of M5 screw should be 2 to 3 N·m.)
5. Modification of the detecting position should be made in the condition of 3.

How to Mount and Move the Auto Switch



Auto Switch Mounting Bracket Part No. (Including bracket, screw)

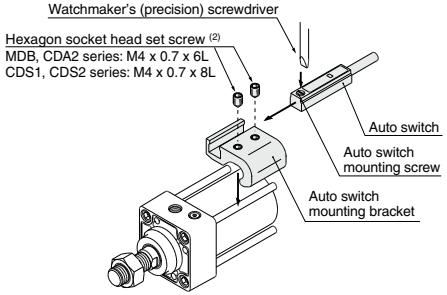
Cylinder series	Applicable bore size (mm)				
	40	**50**	**63**	**80**	**100**
CDA2, CDV3, CDVS1 CDL1, CE2, CNA2	BA3-040	BA3-050	BA3-063	BA3-080	BA3-100

<Applicable auto switch>

Solid state ····· D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), D-Y7PW(V), D-Y7BW(V), D-Y7BA

Reed ····· D-Z73, D-Z76, D-Z80

How to Mount and Move the Auto Switch



1. Fix it to the detecting position with a set screw by installing an auto switch mounting bracket in cylinder tie-rod and letting the bottom surface of an auto switch mounting bracket contact the cylinder tube firmly.
(Use hexagon wrench)

2. Fit an auto switch into the auto switch mounting groove to set it roughly to the auto switch mounting position for an auto switch.

3. After confirming the detecting position, tighten up the mounting screw attached to an auto switch, and secure the switch.

4. When changing the detecting position, carry out in the state of 2.

* To protect auto switches, ensure that main body of an auto switch should be embedded into auto switch mounting groove with a depth of 15 mm or more.

Note 1) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm.
Also, set the tightening torque to be 0.05 to 0.1 N·m.
As a guide, turn 90° from the position where it comes to feel tight. Set the tightening torque of a hexagon socket head set screw (M4 x 0.7) to be 1 to 1.2 N·m.

Auto Switch Mounting Bracket Part No. (Including Bracket, Set Screw)

Cylinder series	Applicable bore size (mm)										
	32	**40**	**50**	**63**	**80**	**100**	**125**	**140**	**160**	**180**	**200**
MDB, MDBY MDWB, MDNB	BMB4-032	BMB4-032	BMB4-050	BMB4-050	BA4-063	BA4-063	BA4-080	—	—	—	—
CDA2 CDA2□H CDA2Y CDNA2, CE2	—	BA4-040	BA4-040	BA4-063	BA4-080	BA4-080	—	—	—	—	—
CDL1	—						BS4-125	BS4-125	BS4-160		
CDS1, CDLS	—	—	—	—	—	—				BS4-180	BS4-200
CDS2, CDS2Y	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

Note 2) When using type D-Y7BA please order stainless steel screw set BBA1 separately (page 1689), and use the stainless steel set screws, after selecting set screws of the appropriate length for the cylinder series—as shown in the table above.

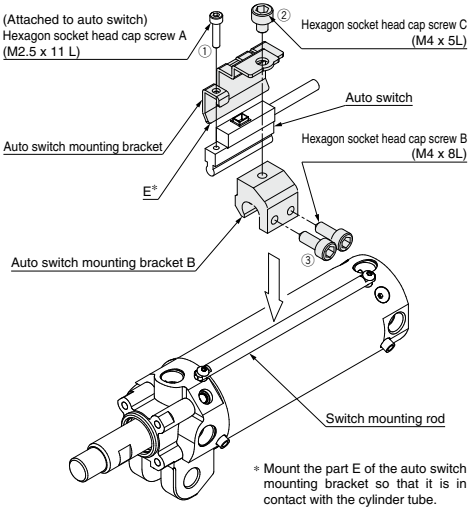
How to Mount and Move the Auto Switch

Mounting Bracket Tie-rod Mounting Type

<Applicable auto switch>
Solid state ····· D-P3DWA

Applicable cylinder/actuator		
Clamp cylinder	**CKG1**	**ø40 to ø63**
	CKGA	**ø80, ø100**
Clamp cylinder with lock	**CLK2G**	**ø40 to ø63**
Air cylinder	**CDA2Y**	**ø40, ø50**
	CDA2	
Air cylinder with lock	**CDNA2**	**ø40, ø50**

How to Mount and Move the Auto Switch



∗ Mount the part E of the auto switch mounting bracket so that it is in contact with the cylinder tube.

1. Remove the hexagon socket head cap screw A (M2.5) that is attached to the auto switch. Mount the auto switch mounting bracket (pressed stainless steel bracket) on the auto switch and tighten the hexagon socket head cap screw A (M2.5) you have removed 3 to 4 turns to temporarily mount the bracket.
2. Put the hexagon socket head cap screw C (M4) through the hole in the flange (partially circular arc shape) of the auto switch mounting bracket (pressed stainless steel bracket), screw it into the M4 tapped part on the top of the auto switch mounting bracket B (aluminum), and tighten it 3 to 4 turns to temporarily mount the bracket.
3. Screw the hexagon socket head cap screws B (M4) into two M4 tapped parts on the side of the auto switch mounting bracket B (aluminum) to the extent that the tips of the hexagon socket head cap screw B (M4) do not protrude to the inside of the U-shape of the auto switch mounting bracket B (aluminum).
4. Fit the U-shape part of the auto switch mounting bracket B (aluminum) that has been assembled in step 3 to the switch mounting rod of the cylinder, and then put the part E of the auto switch mounting bracket (pressed stainless steel bracket) in contact with the cylinder tube. After checking the detection position, tighten the hexagon socket head cap screws A, C, B in order. At this time, tighten the hexagon socket head cap screws B evenly.
5. Modification of the detection position should be made in the condition of 4.

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch)
Note 2) Tighten the hexagon socket head cap screws B and C (M4) with a tightening torque of 1 to 1.2 N·m.

Auto Switch Mounting Bracket Part No. for CK Series (Including bracket, screw)

Cylinder/Actuator series	Bore size (mm)				
	40	**50**	**63**	**80**	**100**
CKG1, CLK2G	BK7-040S			—	
CKGA	—			BK7-080S	

Auto Switch Mounting Bracket Part No. for CA Series (Including bracket, screw)

Cylinder/Actuator series	Bore size (mm)				
	40	**50**	**63**	**80**	**100**
CDA2Y **CDA2, CDNA2**	BK7-040S		—		

Mounting Bracket Tie-rod Mounting Type

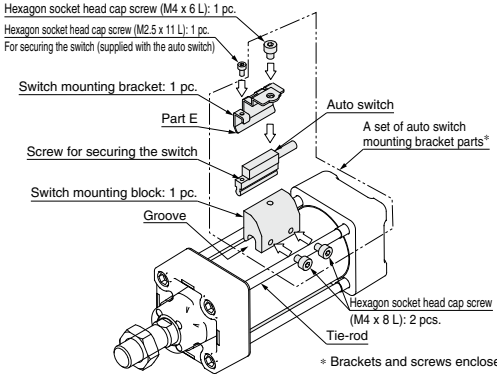
<Applicable auto switch>

Solid state ····· D-P3DWA

Applicable cylinder/actuator		
Air cylinder	MDB	ø32 to ø125
	MDBY	
	CDA2	ø63 to ø100
	CDA2Y	
	CDA2	
	CDS1	ø125 to ø200
	CDS2	ø125 to ø160
Air cylinder with lock	MDWB, MDNB	ø32 to ø100
	CDNA2	ø63 to ø100
	CDLS	ø125 to ø200
	CDNS	ø125 to ø160

How to Mount and Move the Auto Switch

ø32

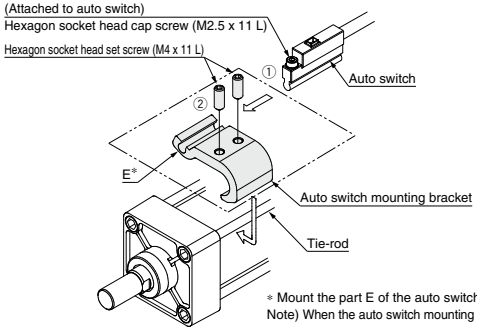


1. Secure the auto switch to the switch mounting bracket with the hexagon socket head cap screw Note 1) (M2.5 x 11 L) supplied with the auto switch.
2. Secure the parts assembled in step 1 to the switch mounting block with the hexagon socket head cap screw Note 2) (M4 x 6 L).
3. Insert the cylinder tie-rod into the groove on the switch mounting block that has been assembled in step 2 and perform the adjustment so that the part E of the switch mounting bracket is in contact with the cylinder tube.
4. After checking the switch detection position, secure the switch mounting block with the hexagon socket head cap screws Note 2) (M4 x 8 L).
   After securing the hexagon socket head cap screws, be sure to check that the part E of the switch mounting bracket is in contact with the cylinder tube.

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch.)
Note 2) The tightening torque for a hexagon socket head cap screw (M4) is 1 to 1.2 N·m.

∗ Brackets and screws enclosed by a dashed line are a set of auto switch mounting bracket parts.

ø40 to ø200



1. Insert the auto switch into the auto switch mounting groove on the auto switch mounting bracket and tighten the hexagon socket head cap screw (M2.5) attached to the auto switch.
2. Install the auto switch mounting bracket to the cylinder tie-rod so that the part E of the bracket is in contact with the cylinder tube.
3. After checking the detection position, tighten the hexagon socket head cap screws (M4).
   Tighten the hexagon socket head set screws evenly.
4. Modification of the detection position should be made in the condition of 2.

Note 1) The tightening torque for a hexagon socket head cap screw (M2.5) is 0.2 to 0.3 N·m. Hold the shorter side of a hexagon wrench, and turn it to tighten. (Too much tightening may break the switch)
Note 2) The tightening torque for a hexagon socket head set screw (M4) is 1 to 1.2 N·m.

∗ Mount the part E of the auto switch mounting bracket so that it is in contact with the cylinder tube.
Note) When the auto switch mounting bracket is ordered by its part number, it includes the bracket and screws in the dashed line.

Auto Switch Mounting Bracket Part No. for MB/CA/CS Series (Including bracket, screw)

Applicable cylinder	Applicable bore size										
	32	40	50	63	80	100	125	140	160	180	200
MDB	BA10-032S	BA10-040S	BA10-050S		BA10-063S		BA10-080S	—	—	—	—
MDWB, MDNB	BA10-032S	BA10-040S	BA10-050S		BA10-063S		—	—	—	—	—
CDA2, CDNA2	—	BK7-040S Note 1)		BA10-063S	BA10-080S		—	—	—	—	—
CDS1, CDLS	—	—	—	—	—	—	BS7-125S		BS7-160S	BS7-180S	BS7-200S
CDS2, CDNS	—	—	—	—	—	—	BS7-125S		BS7-160S	—	—

Note 1) For details about how to mount and move the BK7-040S for ø40 and ø50 of the CDA2/CDNA2 series, refer to the description for the CKG1 series.

∗ Differences in color and glossiness of the metal surface treatment do not affect the performance.
Due to the characteristics of the chromate treatment applied to the whole body of the auto switch mounting bracket, the color may be slightly different between manufacturing lots. However, this will not reduce the corrosion resistance.

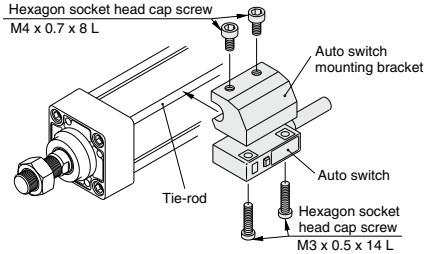
D-□

Mounting Bracket **Tie-rod Mounting Type**

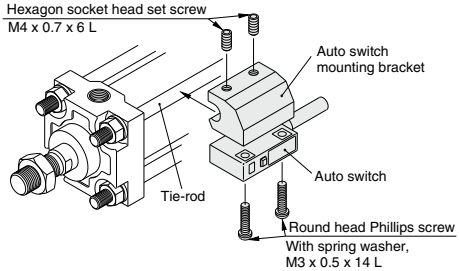
<Applicable auto switch>
Solid state ····· D-P4DW

How to Mount and Move the Auto Switch

MDB-Z, MDB, MDBB, MDBY, MDNB



CDA2-Z, CDA2, CDBA2, CDA2Y, CDNA2, CDL1 (ø40 to ø100)



1. (For MDB-Z, MDB, MDBY)
   Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 8 L) into the M4 tapped portion of auto switch mounting bracket. (2 locations). Use caution that the tip of the hexagon socket head cap screw should not stick out to the concave portion of auto switch mounting bracket.
   (For CDA2-Z, CDA2)
   Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 6 L) into the M4 tapped portion of auto switch mounting bracket. (2 locations). Use caution that the tip of the hexagon socket head set screw should not stick out to the concave portion of auto switch mounting bracket.
2. (For MDB-Z, MDB, MDBY)
   Put a hexagon socket head cap screw (M3 x 0.5 x 14 L) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
   (For CDA2-Z, CDA2)
   Put a hexagon socket head cap screw (with spring washer M3 x 0.5 x 14 L) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
3. Place the concave part of the auto switch mounting bracket into the cylinder tie-rod, and slide the auto switch mounting bracket in order to set roughly to the detecting position.
4. After reconfirming the detecting position, tighten the M3 mounting screw to secure the auto switch by making the bottom face of auto switch attached to the cylinder tube. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)
5. Tighten up M4 screw of auto switch mounting bracket to secure the auto switch mounting bracket. (Ensure that tightening torque of M4 screw should be set 1.0 to 1.2 N·m.)

Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)						
	32	40	50	63	80	100	125
MDB	BMB3T-040	BMB3T-040	BMB3T-050	BMB3T-050	BMB3T-080	BMB3T-080	BAP2T-080
MDBY, MDWB, MDNB							—
CDA2 CDA2Y, CDL1, CDNA2	—	BAP2-040	BAP2-040	BAP2-063	BAP2-080	BAP2-080	—

D-□

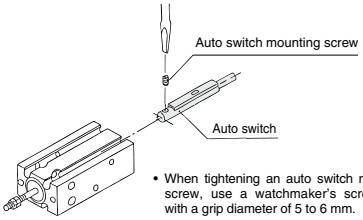
How to Mount and Move the Auto Switch

Mounting Bracket Direct Mounting Type

<Applicable auto switch>

Solid state ····· D-M9N(V), M9P(V), M9B(V), D-M9NW(V), M9PW(V), M9BW(V), D-M9NA(V), M9PA(V), M9BA(V)
Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch



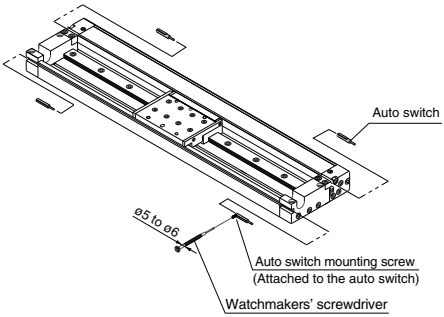
• When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm.

Auto Switch Mounting Screw Tightening Torque (N·m)

Auto switch model	Tightening torque
D-A9□(V) (Except D-A93)	0.10 to 0.20
D-M9□(V) D-M9□W(V) D-M9□A(V) D-A93	0.05 to 0.15

MY2 Series

When mounting auto switches, insert them into the cylinder's switch groove from the direction shown in the drawing. After setting in the mounting position, use a flat head watchmaker's screwdriver to tighten the provided set screw.

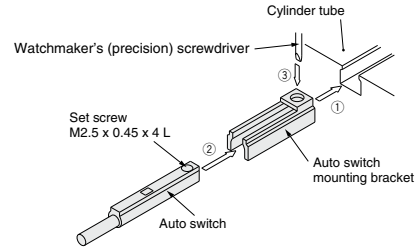


(Note) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. The tightening torque should be about 0.05 to 0.1 N·m.

<Applicable auto switch>

Solid state ····· D-M9N(V), M9P(V), M9B(V), D-M9NW(V), M9PW(V), M9BW(V), D-M9NA(V), M9PA(V), M9BA(V)
Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch



1. Insert the auto switch mounting bracket into the auto switch mounting groove to set it roughly to the auto switch mounting position.
2. Insert the auto switch into the attachment part of the auto switch mounting bracket.
3. After confirming the detecting position, secure the auto switch by tightening the set screw (M2.5) attached to the auto switch.
4. When changing the detecting position, carry out in the state of 2.

Note 1) When tightening a set screw (M2.5), use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also set the tightening torque to be 0.1 to 0.15 N·m. As a guide, turn 90° from the position where it comes to feel tight.

Auto Switch Mounting Bracket Part No.

Cylinder series	Applicable bore size (mm)									
	12	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**
MY1B	—	—	—	—	—	—	—	BMG2-012	BMG2-012	BMG2-012
MY1M, MY1MW	—	—	—	BMG2-012	BMG2-012	BMG2-012	BMG2-012		—	—
MY1C, MY1CW	—	—	—						—	—
CY3R	—	—	—	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	—	—
REAR	—	—	—				—	—	—	—
REBR	—	—	—			—	—	—	—	—
MGPS	—	—	—	—	—	—		—		—
MGP, MGPA MGQ, MVGQ	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012
MGP□-□A	—									
MLGP	—	—								
MGF	—	—	—	—	—		—		—	
MGT	—	—	—	—	—	—	—		BMG2-012	
RSH	—	—	BMG2-012	—	BMG2-012	—	—	—	—	—
RS1H	—	—	—	—	—	—	BMG2-012	BMG2-012	BMG2-012	—

Note 2) Color or gloss differences in the metal surfaces have no effect on metal performance.
The special properties of the chromate applied to the main body of the auto switch mounting bracket for BMG2-012 result in differ-ences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.

Note 3) The D-A9□(V) type cannot be mounted on the product series shown below.
MY1B, MY1M, MY1C, MY1MW and MY1CW series with ø 25 or more.
MGF, RSH and RS1H series

Note 4) The D-M9□(W)V type cannot be mounted on the product series shown below.
MY1B series with ø50, MY1□W series with ø16 and ø20,
CY3R, REAR and REBR series

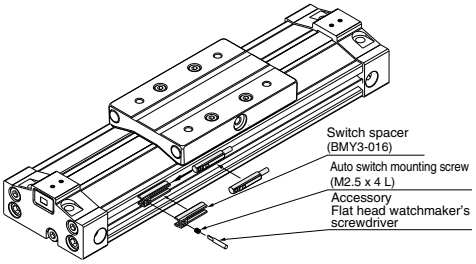
<Applicable auto switch>

Solid state ····· D-M9N(V), M9P(V), M9B(V), D-M9NW(V), M9PW(V), M9BW(V), D-M9NA(V), M9PA(V), M9BA(V)
Solid state ····· D-A90(V), A93(V), A96(V)

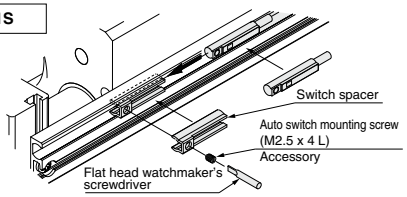
How to Mount and Move the Auto Switch

When attaching an auto switch, first take a switch spacer between your fingers and press it into a switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach if necessary. Next, insert an auto switch into the groove and slide it until it is positioned under the switch spacer.
After establishing the mounting position, use a watchmakers flat head screwdriver to tighten the switch mounting screw which is included.

Note) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, tighten with a torque of about 0.05 to 0.1 N·m As a guide, it should be turned about 90° past the point at which tightening can be felt.



CY1S



Switch Spacer No.

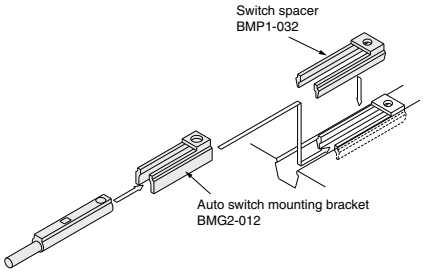
Cylinder series	Applicable bore size (mm)				
	6	10	16	20	25
MY1B	—	—	—	—	BMY3-016
MY1H	—	—	—	—	
MY3A, MY3B	—	—	BMY3-016	BMY3-016	
MY3M	—	—		—	
CY1S	BMY3-016	BMY3-016		BMY3-016	
MGZ, MGZR	—	—	—		

Cylinder series	Applicable bore size (mm)			
	32	40	50	63
MY1B	BMY3-016	BMY3-016	—	—
MY1H			—	—
MY3A, MY3B			BMY3-016	BMY3-016
MY3M	—		—	
CY1S	BMY3-016		—	—
MGZ, MGZR		—	—	—

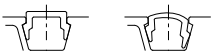
<Applicable auto switch>

Solid state ····· D-M9N(V), M9P(V), M9B(V), D-M9NW(V), M9PW(V), M9BW(V), D-M9NA(V), M9PA(V), M9BA(V)
Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch



1. After picking up a switch spacer between your fingers, push it in the cylinder tube groove.
2. Confirm that it is set in the correct mounting orientation.



3. Insert an auto switch into the groove of the auto switch mounting bracket.
4. While keeping the condition in (3) above, insert the auto switch mounting bracket into the auto switch mounting groove of the cylinder to set it roughly to the auto switch mounting position.
5. After confirming the detecting position, secure the auto switch by tightening the auto switch mounting screw (M2.5).

Note 1) When tightening an auto switch mounting screw (M2.5), use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm.
Also, set the tightening torque to be 0.1 to 0.15 N·m. As a guide, turn 90° from the position where it comes to feel tight.

Auto Switch Mounting Bracket Part No.

(Switch spacer and auto switch mounting bracket; two kinds of auto switch mounting brackets are used as a set.)

Cylinder series	Applicable bore size (mm)		
	32	40	50
MDB1	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012
MGZ, MGZR	—		

Cylinder series	Applicable bore size (mm)			
	63	80	100	125
MDB1	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012
MGZ, MGZR			—	—

Note 2) Color or gloss differences in the metal surfaces have no effect on metal performance.
The special properties of the chromate applied to the main body of the auto switch mounting bracket for BMG2-012 result in differ-ences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.

D-□

How to Mount and Move the Auto Switch

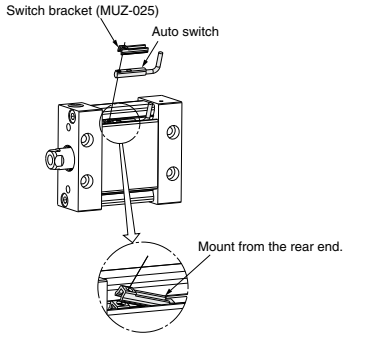
Mounting Bracket Direct Mounting Type

<Applicable auto switch>

Solid state ····· D-M9N(V), M9P(V), M9B(V), D-M9NW(V), M9PW(V), M9BW(V), D-M9NA(V), M9PA(V), M9BA(V)
Reed ····· D-A90(V), A93(V), A96(V)

How to Mount and Move the Auto Switch

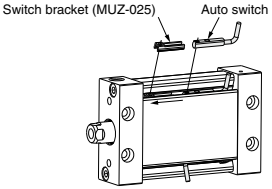
A 20 strokes or less



∗ It is recommended to mount the switch bracket from the rear end.

1. First, insert the auto switch inside the switch groove.
2. Next, push the switch bracket from a position above the auto switch into the groove.
3. After setting the mounting position, use a flat blade screwdriver to tighten the mounting screw supplied with the auto switch so as to secure the auto switch.

B 25 strokes or more



1. First, push the switch bracket into the switch groove.
2. Next, after the auto switch has been inserted into the groove, slide it sideways to overlap it with the switch bracket.
   ∗ Insert the auto switch so that its top end slides into a portion under the switch bracket.
3. After setting the mounting position, use a flat blade screwdriver to tighten the mounting screw supplied with the auto switch so as to secure the auto switch.

Note 1) Even for 25 strokes or more, the auto switch can be mounted in the same manner as described in A.
Note 2) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, set the tightening torque to be 0.05 to 0.1 N·m. As a guide, turn 90° from the position where it comes to feel tight.

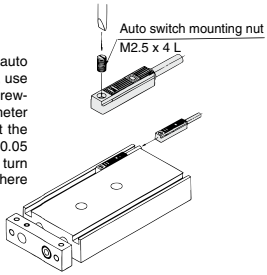
Switch Bracket No.

Cylinder series	Applicable bore size (mm)				
	25	32	40	50	63
MU	MUZ-025				

<Applicable auto switch>

Solid state ····· D-Y59$^{A}_{B}$, Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), Y7PW(V), Y7BW(V), D-Y7BA
Reed ····· D-Z73, Z76, Z80

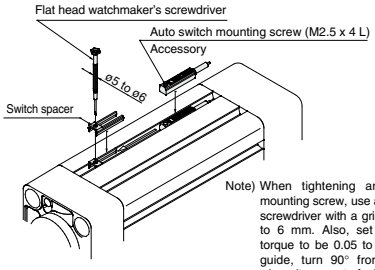
How to Mount and Move the Auto Switch



Note) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, set the tightening torque to be 0.05 to 0.1 N·m. As a guide, turn 90° from the position where it comes to feel tight.

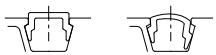
1. Insert the auto switch into the mounting groove and set it at the auto switch mounting position.
2. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch.
3. Modification of the detecting position should be made in the condition of 1.

How to Mount and Move the Auto Switch



Note) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, set the tightening torque to be 0.05 to 0.1 N·m. As a guide, turn 90° from the position where it comes to feel tight.

When attaching an auto switch, first take a switch spacer between your fingers and press it into a switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach if necessary. Next, insert an auto switch into the groove and slide it until it is positioned under the switch spacer. After establishing the mounting position, use a watchmakers flat head screwdriver to tighten the auto switch mounting screw which is included.



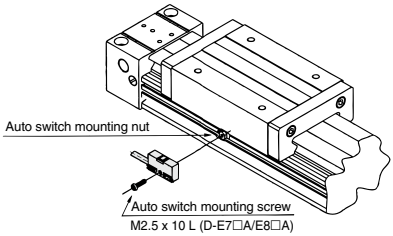
Correct **Incorrect**

Switch Spacer No.

Cylinder series	Applicable bore size (mm)					
	32	40	50	63	80	100
MDB1	BMP1-032					

<Applicable auto switch>
Reed ····· D-E73A, E76A, E80A

How to Mount and Move the Auto Switch



1. Insert the auto switch mounting nut into the auto switch mounting groove and then set the auto switch at the mounting position by sliding.
2. Put the convex part of auto switch into the auto switch mounting groove and slide it over the nut.
3. Push the auto switch mounting screw lightly into the switch mounting nut through the auto switch mounting hole.
4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M2.5 screw should be 0.1 to 0.2 N·m.)

Auto Switch Mounting Bracket Part No. (Including nut, screw)

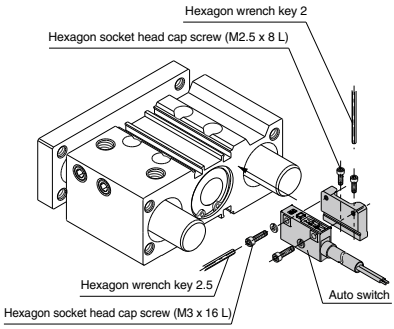
Cylinder series		Applicable bore size (mm)		
		25	**32**	**40**
ML1	M2.5 x 10 L	BMY1-025	BMY1-025	BMY1-025

How to Mount and Move the Auto Switch

Mounting Bracket Direct Mounting Type

<Applicable auto switch>
Solid state ····· D-P4DW

How to Mount and Move the Auto Switch



1. Insert the hexagon socket head cap screw (M2.5 x 0.45 x 8 L) down lightly to the M2.5 tapped portion of the lower part of auto switch mounting bracket's concave part. (2 locations) Use caution to avoid the tip of a screw from sticking out of the auto switch mounting bracket's bottom surface.
2. Install a spring washer in the hexagon socket head cap bolt (M3 x 0.5 x 16 L), then put it through the part of through-holes (2 locations) of an auto switch.
3. As for auto switch mounting bracket, slightly thread the hexagon socket head cap screw w into M3 tapped portion. (2 locations)
4. Fit the auto switch mounting bracket into the auto switch mounting groove on the cylinder body, and then slide it to the detection position roughly.
5. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch.

Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)					
	32	40	50	63	80	100
MLGP	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040
MGT	—	—	—			

⚠ Caution

Auto Switch Mounting Tool

• When tightening hexagon socket head cap screw of an auto switch, use a hexagon wrench key 2 and 2.5, depending on the case.

Tightening Torque

• As a guide, set approximately 0.3 to 0.5 N·m for M2.5, 0.5 to 0.7 N·m for M3 respectively.

<Applicable auto switch>

Solid state ····· D-F79, D-F7P, D-J79, D-F7NV
D-F7PV, D-F7BV, D-J79C
D-F79W, D-F7PW, D-J79W
D-F7NWV, D-F7BWV
D-F79F, D-F7BA, D-F7BAV
D-F7NT

Reed ····· D-A72, D-A73, D-A80, D-A72H
D-A73H, D-A76H, D-A80H
D-A73C, D-A80C, D-A79W

How to Mount and Move the Auto Switch

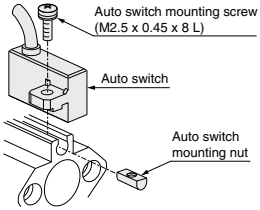
ø12 to ø25

1. Insert the nut into the auto switch mounting slot on the cylinder tube, and place it in the roughly estimated setting position.
2. Engage the ridge on the auto switch mounting arm with the recess in the cylinder tube rail, and slide it to the position of the nut.
3. Gently screw the auto switch mounting screw into the thread of the auto switch mounting nut through the mounting hole on the auto switch mounting arm.
4. Confirm where the mounting position is, and tighten the auto switch mounting screw to fix the auto switch. The tightening torque of the M2.5 screw must be 0.25 to 0.35 N·m.
5. The detection position can be changed under the conditions in step 3.

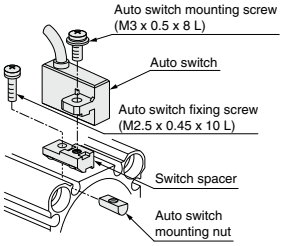
ø32 to ø160

1. Insert the nut into the auto switch mounting slot on the cylinder tube, and place it in the roughly estimated setting position.
2. With the lower tapered part of the auto switch spacer facing the outside of the cylinder tube, line up the M2.5 through hole with the M2.5 female thread of the auto switch mounting nut.
3. Gently screw the auto switch mounting nut fixing screw (M2.5) into the thread of the auto switch mounting nut through the mounting hole.
4. Engage the ridge on the auto switch mounting arm with the recess in the auto switch spacer.
5. Tighten the auto switch mounting screw (M3) to fix the auto switch. The tightening torque of the M3 screw must be 0.35 to 0.45 N·m.
6. Confirm where the mounting position is, and tighten the auto switch fixing screw (M2.5) to fix the auto switch mounting nut. The tightening torque of the M2.5 screw must be 0.25 to 0.35 N·m.
7. The detection position can be changed under the conditions in step 5.

ø12 to ø25



ø32 to ø160



Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)												
	12	16	20	25	32	40	50	63	80	100	125	140	160
CDQ2 CDQ2Y	BQ4-012	BQ4-012	BQ4-012	BQ4-012	BQ5-032	BQ5-032	BQ5-032	BQ5-032	BQ5-032	BQ5-032	BQ5-032	BQ5-032	BQ5-032
MK	—	—	BQ4-012	BQ4-012	BQ5-032	BQ5-032	BQ5-032	BQ5-032	—	—	—	—	—
RSDQ	—	BQ4-012	BQ4-012	—	BQ5-032	BQ5-032	BQ5-032	—	—	—	—	—	—