Applicable Cylinder Series

Applicable Cylinder Series 1

	Cylinder series	CDJP2	CDJ2	JCDM	CDM2-Z	CDM2	CDM3	CDG1-Z1	CDG1	CDG3	JMDB	MDB	MDB-X1184	MDB1	CDA2	CDA2-X1184	CDS1	CDS2	CDUJ	CDU	CDQS	JCDQ	CDQ2	CDQ2-XB14	RDQ	CDQM	CDQU
	Bore size	ø4	ø6, ø10, ø16	ø6, ø10, ø16	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø20 to ø63	ø20 to ø63	ø20 to ø63	ø32 to ø100	ø32 to ø125	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 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	ø20 to ø40
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-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	P.39	P.67	P.185	P.203	P.231	P.333	P.351	P.373	P.451	P.467	P.477	P.523	P.525	P.555	P.614	P.617	P.655	P.697	P.723	P.791	P.857	P.873	P.873	P.1035	P.1059	P.1075				

	Cylinder series	MDU	CDJ5-S	CDG5-S	HYDB	HYDQ	HYDC	HYDG	MXH	MXS	MXQ□	MXQ	MXF	MXW	MXJ	MXP	MXY	MTS	MGJ	MGP-Z		MGP		MGPK	MGPW	MGQ	MGG	MGC	CXT	MGF	MGZ	MGT
	Bore size	ø25 to ø63	ø10, ø16	ø20 to ø100	ø20 to ø63	ø80, ø100	ø20 to ø63	ø32 to ø63	ø6 to ø20	ø6 to ø25	ø6 to ø25	ø6 to ø25	ø8 to ø20	ø8 to ø25	ø4, ø6, ø8	ø12, ø16	ø6 to ø16	ø6, ø10, ø12, ø16	ø8 to ø40	ø6, ø10	ø12 to ø20	ø25	ø32 to ø100	ø20	ø25	ø32 to ø100	ø16, ø32	ø20, ø25	ø32 to ø63	ø12 to ø100	ø20 to ø63	ø80 to ø100	ø20 to ø50	ø12 to ø25	ø32, ø40	ø40, ø63, ø100	ø20 to ø80	ø63 to ø100	MGT
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-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	P.1087	P.1117		P.1148	P.1152	P.1161	P.1167	P.21	P.59	P.99	P.299	P.349	P.367	P.393	P.415	P.443	P.471	P.493	P.519	P.527		P.527		P.603	P.621	P.647	P.665	P.707	P.725	P.739	P.751	P.779			

Applicable Cylinder Series

Applicable Cylinder Series 2

	Cylinder series	JMGP	CXSJ	CXS	CX2	CDBXW□	CDPXW□	MY1B	MY1M	MY1C	MY1H	MY1HT	MY1□W	MY2	MY3	CY3R	CY1S	CY1L	CY1H	CY1F	CYP	REAR	REAS	REAL	REAH	REBR	REBH	REC	CDJ2Y	CDM2Y
	Bore size	ø12 to ø63	ø6, ø10	ø6 to ø32	ø10, ø15, ø25	ø10	ø16 to ø32	ø10 to ø32	ø10 to ø20	ø25 to ø40	ø50	ø63 to ø100	ø16, ø20	ø25 to ø63	ø16, ø20	ø25 to ø63	ø10 to ø20	ø25 to ø40	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	ø10, ø15, ø20	ø25 to ø40	ø10 to ø40	ø10 to ø40	ø10 to ø32	ø15	ø25, ø32	ø15 to ø32	ø20 to ø40	ø10 to ø16	ø20 to ø40
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-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	P.791	P.807	P.869	P.880	P.933							P.1055	P.1083	P.1119	P.1173	P.1199	P.1225	P.1237	P.1255	P.1275	P.23				P.95		P.125	P.145	

Cylinder series		CDG1Y		MBY	CDA2Y			CDS2Y	CDQSY		CDQ2Y	CDJ2X	CDM2X	CDQSX		CDQ2X	CDUX	RHC		RZQ	MK			MK2T	CKG1	CKP1	CLK2G	CLK2P	CKQG	CLKQG	CKQP	CLKQP	RSDQ			RSDG	RS2H	RSH	MIS/MIW	CDNG	MDWB	CDNA2
Bore size		ø20 to ø63	ø80, ø100	ø32 to ø100	ø40	ø50	ø63 to ø100	ø125 to ø160	ø12 to ø20	ø25	ø32 to ø100	ø10 to ø16	ø20 to ø40	ø12 to ø20	ø25	ø32 to ø100	ø10 to ø32	ø20 to ø63	ø80 to ø100	ø32 to ø63	ø12, ø16	ø20, ø25	ø32 to ø63	ø20 to ø63	ø40 to ø63	ø40 to ø63	ø40 to ø63	ø40 to ø63	ø50	ø50	ø50	ø50	ø12	ø16, ø20	ø32, ø40, ø50	ø40, ø50	ø50 to ø80	ø20, ø32	ø8, ø12, ø20, ø25, ø32	ø20 to ø40	ø32 to ø100	ø40 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-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		P.145		P.196	P.145						P.263							P.359		P.381	P.397			P.419	P.435		P.461		P.515				P.601			P.622	P.637	P.653	P.665	P.689	P.713	P.757

Applicable Cylinder Series

Applicable Cylinder Series 3

	Cylinder series	CDNS	CDLS	CDLQ			RDLQ	MDLU	MLGP			ML1C	CDLJ2	CDLM2	CDLG1	MLGC	CDL1			CEP1	CE1		CE2	ML2B	CVQ	CVQM	CDVJ5	CDVJ3	CDVM5	CDVM5K	CDVM3	CDVM3K	CDV3	CDV3K	CDVS1	CDVS1K	MVGQ
	Bore size	ø125 to ø160	ø125 to ø200	ø20	ø25	ø32 to ø100	ø32 to ø63	ø25 to ø50	ø20	ø25	ø32 to ø100	ø25 to ø40	ø16	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø40	ø50	ø63 to ø100	ø125 to ø160	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	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-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	P.795	P.819	P.847			P.875	P.899	P.917			P.949	P.963	P.975	P.992	P.1009	P.1019			P.1049	P.1064		P.1087	P.1105	P.1129	P.1143	P.1154	P.1164	P.1175					P.1216		P.1238		P.1253

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***	1304
				D-M9NV/M9PV/M9BV*	
				D-M9N-5/M9P-5/M9B-5	1305
				D-F8N/F8P/F8B	1307
				D-M9NE/M9PE/M9BE (Normally closed)*	1308
				D-M9NEV/M9PEV/M9BEV (Normally closed)*	
				D-Y59A/Y59B/Y7P**	1309
				D-Y69A/Y69B/Y7PV**	
				D-Y7G/Y7H (Normally closed)**	1310
		Band	Grommet	**D-H7A1/H7A2/H7B**	1311
				D-G59/G5P/K59	1312
			Connector	**D-H7C**	1313
			Terminal conduit	**D-G39/K39**	1314
				D-G39A/K39A	1315
		Rail	Grommet	**D-F79/F7P/J79**	1316
				D-F7NV/F7PV/F7BV	1317
			Connector	**D-J79C**	1318
		Tie-rod	Grommet	**D-F59/F5P/J59**	1319
			Terminal conduit	**D-G39C/K39C**	1320
	Reed	Direct	Grommet	**D-A90/A93/A96***	1362
				D-A90V/A93V/A96V*	
				D-Z73/Z76/Z80**	1373
				D-E73A/E76A/E80A	1374
		Band	Grommet	**D-C73/C76/C80**	1363
				D-B53/B54/B64	1364
			Connector	**D-C73C/C80C**	1365
			Terminal conduit	**D-A33/A34**	1366
				D-A33A/A34A	1367
			DIN terminal	**D-A44**	1366
				D-A44A	1367
		Rail	Grommet	**D-A72/A73/A80**	1368
				D-A72H/A73H/A76H/A80H	1369
			Connector	**D-A73C/A80C**	1370
		Tie-rod	Grommet	**D-A53/A54/A56/A64/A67**	1371
			Terminal conduit	**D-A33C/A34C**	1372
			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 1386, 1390, 1394 and 1401 to 1403 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1397 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*	1321
				D-M9NWV/M9PWV/M9BWV*	
				D-Y7NW/Y7PW/Y7BW**	1322
				D-Y7NWV/Y7PWV/Y7BWV**	
		Band	Grommet	D-H7NW/H7PW/H7BW	1323
				D-G59W/G5PW/K59W	1324
		Rail	Grommet	D-F79W/F7PW/J79W	1325
				D-F7NWV/F7BWV	1326
		Tie-rod	Grommet	D-F59W/F5PW/J59W	1327
	Reed	Band	Grommet	D-B59W	1375
		Rail	Grommet	D-A79W	1376
		Tie-rod	Grommet	D-A59W	1377

* 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 1386, 1390, 1394 and 1401 to 1403 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1397 for details.

2-color indicator

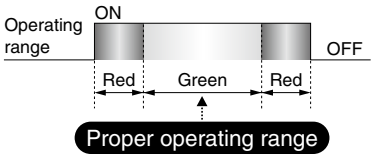
Easily identifiable, proper operating range

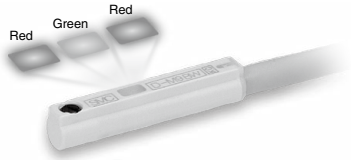
●Mounting positions can be set easily.

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	1328
				D-G59F	1329
		Rail	Grommet	D-F79F	1330
		Tie-rod	Grommet	D-F59F	1331
Water resistant (coolant) type					
Water resistant 2-color indicator auto switch	Solid state	Direct	Grommet	D-M9□A* D-M9□AV*	1332
				D-Y7BA**	1333
		Band	Grommet	D-H7BA	1334
				D-G5BA	1335
		Rail	Grommet	D-F7BA D-F7BAV	1336
		Tie-rod	Grommet	D-F5BA	1337
Hygienic type					
Hygienic	Solid state	Direct	Grommet	D-F6N/F6P/F6B	1338
With built-in OFF-delay timer (200 ms)					
Auto switch with timer	Solid state	Band	Grommet	D-G5NT	1339
		Rail	Grommet	D-F7NT	1340
		Tie-rod	Grommet	D-F5NT	1341
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	1342
				D-P3DWA	1343
		Rail	Grommet	D-P4DWSC/P4DWSE/P4DW□DPC	1344
				D-P4DW	1345
	Reed	Rod	Grommet	D-P79WSE	1378
				D-P74	1379
Can be used in a high-temperature environment.					
Heat resistant auto switch	Solid state	Sensor unit: Rail Amplifier unit: DIN rail	Grommet	D-M9NJ/M9PJ	1346
				D-F7NJ	1347
	Reed	Band	Terminal conduit Grommet	D-B30/31/35 D-B30J/31J/35J	1385
Simple workpiece recognition is possible.					
Trimmer auto switch	Solid state	Rail Direct	Grommet	D-M9K/F7K/Y7K/RNK/RPK	1349
The stroke position is output with an analog signal.					
Actuator position sensor	Solid state	Direct Tie-rod	Tie-rod	D-MP	1389

* 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 1386, 1390, 1394 and 1401 to 1403 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1397 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

Prior to Use
Auto Switches Common Specifications 1

Refer to the Auto Switch Precautions on pages 14 to 18 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	1 ms 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 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) are IEC60529 Standard IP63 compliant.
The trimmer type amplifier section (D-R□K) is compliant with IP40.
The enclosure IP rating does not include the switch lead wire end.
For switches with a connector, the enclosure IP requirements are satisfied when the connector is connected.
∗3 Excludes solid state auto switches with a timer (G5NT/F7NT/F5NT types) and the magnetic field resistant 2-color indicator solid state auto switch (D-P3DW□/P4DW)
The operating time for the D-P3DW□/P4DW is 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		○ ∗7	–

●: 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 a timer (with the exception of the D-P3DWA and D-M9□A(V)□), water-resistant 2-color indicator solid state auto switch, heat-resistant 2-color indicator solid state auto switch, and strong magnetic field resistant 2-color indicator solid state auto switch is 3 m or 5 m. (Product with a lead wire length of 0.5 m is not available.)
∗7 Applicable to the D-P5DW only

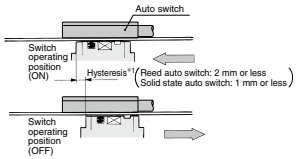
Lead wires with a connector indication

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 14 to 18 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 causes the switch's OFF position to deviate to a position where it is further returned from the ON position. This deviation amount is called "hysteresis." *1 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 on the detection surface of the auto switch enclosure is highest. When the center of the magnet is aligned with this position, it is basically at the center of the operating range and stable operation can be obtained.
Programmable Logic Controller (PLC)	One of the elements that makes up the sequence control. The PLC is designed so that it can receive signals, such as the auto switch output signal, and output them to other devices in order to perform the electrical control according to the preset program.
Operating temperature	A temperature range in which the auto switch can be used. If significant temperature change or freezing occurs even within this temperature range, it 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 voltages (24 VDC, 100 VAC, etc.). For the 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 may not operate correctly. Conversely, if the operating current is higher than this range, the auto switch may break.
Current consumption	This current value is necessary for the 3-wire type auto switch to operate the circuit through the power cable. For the 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 specified, 50 MΩ (Min) is used for auto switches.
Magnetic field resistant auto switch	An auto switch with protection against the effects of external (welding) magnetic fields generated in the spot welding process, etc. The solid state auto switch is able to function as it detects the frequency of the applied magnetic field. If an external magnetic field (AC) is applied, the last signal is retained and the product remains unaffected by the external magnetic field. This system can be used with cylinders with normal magnetic force. The reed auto switch features a built-in magnetic field shielded sensor with low sensitivity that reduces the effects of external magnetic fields (DC or AC magnetic fields). Therefore, a dedicated cylinder with a strong built-in magnet needs to be selected, and the operable range (conditions) need to be considered.
Impact resistance value	A minimum acceleration that may cause the auto switch to malfunction or break when the standard impact is applied.
Water-resistant auto switch	In contrast with the general (general purpose) product, structural measures have been taken in order to provide this model with long-term water resistance.
Withstand voltage	A tolerated dose of voltage that can be applied to the portion between the electrical circuit and enclosure. The withstand voltage shows the strength level of the product against the voltage. If a voltage exceeding the withstand voltage is applied, it 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. When this position is set, the maximum sensitivity position is aligned with the center of the magnet. However, make the necessary adjustments to the actual machine by considering the characteristic differences of the 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 can change according to the ambient environment, etc. The operating range in the standard status (normal temperature, single cylinder, magnetic force, sensitivity, etc.) is described in the catalog.

Prior to Use
Auto Switches Common Specifications 3

Refer to the Auto Switch Precautions on pages 14 to 18 before using auto switches.

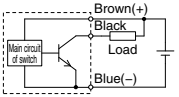
<table>
<tr><th>Term</th><th>Meaning</th></tr>
<tr><td>Minimum stroke for auto switch mounting</td><td>A minimum stroke value of the auto switch that can be mounted on the cylinder.
The minimum stroke is determined by the specification limit (auto switch operation, position setting ability, etc.) and 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 that this value does not consider the adjustment allowance.
When an adjustment allowance is needed, such as for detection before the stroke, set the value so 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 the value of the power supply voltage subtracted by the internal voltage drop is applied to the input side of the PLC, a 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 that is susceptible to external disturbances or stroke changes during cylinder operation, this function is intended to quickly and properly make the setting at the center of the operating range where 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 in order to do any work is called a “load.”
For example, the load may be a relay, PLC, etc.
To check the operation of the auto switch, a device equivalent to a load (such as a resistor, etc.) must be 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 the entry of water or solids for electrical machinery and apparatus as specified in the IEC60529 Standard.
IP–□□
●Second characteristic numeral
●First characteristic numeral

●First Characteristic:
Degree 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>Dust-tight</td></tr></table>
●Second Characteristic:
Degree 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 is tilted 15°</td></tr><tr><td>3</td><td>Protected against rainfall when enclosure is 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 products stipulated as IP65, we can know the degree of protection is dust-tight and water jetproof on the grounds that the first characteristic numeral is 6 and the second characteristic numeral is 5. Therefore, we can assume 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 uses an MR element to detect magnetic fields and possesses an internal judgement circuit that is able to output an ON/OFF signal like a transistor regardless of mechanical contact or non-contact (such as when there is no point of contact).</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 the leak current exceeds the detection current in the 2-wire type auto switch or PLC, it may cause a reset failure. So, take great care when selecting a device.</td></tr>
<tr><td>Reed auto switch</td><td>A switch that uses a reed switch to detect magnetic fields and output an ON/OFF signal when there is mechanical contact or non-contact (when there is a point of contact, such as with a relay or limit switch).</td></tr>
<tr><td>Induction load</td><td>A load that has a 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 and 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 an “in-line entry.” A structure in which the lead wire is taken out in a direction perpendicular to the cylinder axis center is called a “perpendicular entry.”</td></tr>
</table>

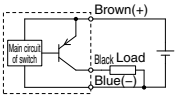
Prior to Use
Auto Switches/Internal Circuits

Solid State Auto Switches

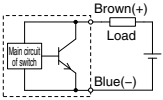
Solid state 3-wire, NPN



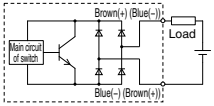
Solid state 3-wire, PNP



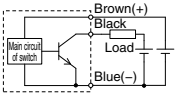
Solid state 2-wire

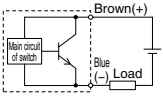


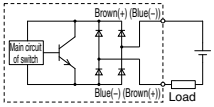
Solid state 2-wire, Non-polar type



(Power supply for switch and load are separate)

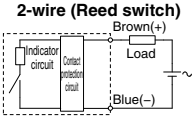


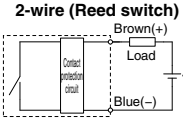


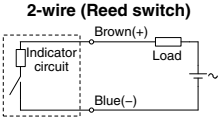


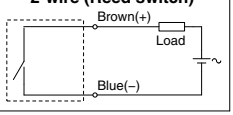
Reed Auto Switches

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

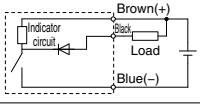


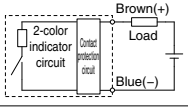


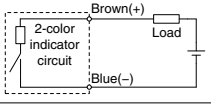




No.	⑤	⑥	⑦
Circuit diagram	3-wire (Reed switch, NPN)	2-wire (Reed switch)	2-wire (Reed switch)







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 the load is 5 m or more

3. Where the load voltage is 100/200 VAC

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% of the rating of the applicable auto switches (Exceptions: 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.

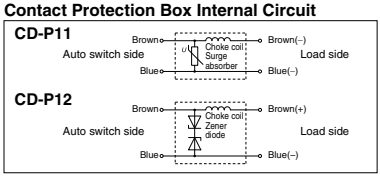
Even for the built-in contact protection circuit type (D-A34[A][C], D-A44[A][C], D-A54/A64, D-A59W, D-B59W), **use the contact protection box when the wiring length to the load is very long (30 m or more) and when a PLC (Programmable Logic Controller) with a large inrush current is used.**

Contact Protection Box Specifications

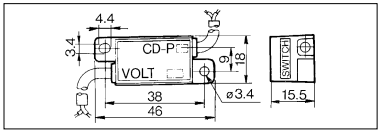
Part no.	CD-P11		CD-P12
Load voltage	100 VAC or less	200 VAC	24 VDC
Max. load current	25 mA	12.5 mA	50 mA

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

Contact Protection Box Internal Circuit

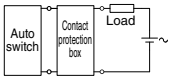


Contact Protection Box/Dimensions



Contact Protection Box Connection

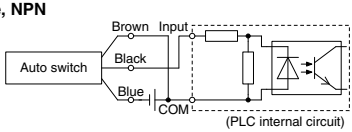
To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 meter.



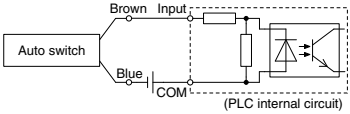
Prior to Use
Auto Switch Connections and Examples

Sink Input Specifications

3-wire, NPN

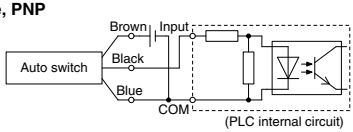


2-wire

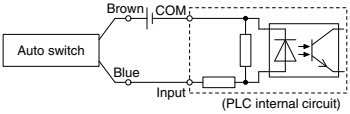


Source Input Specifications

3-wire, PNP



2-wire



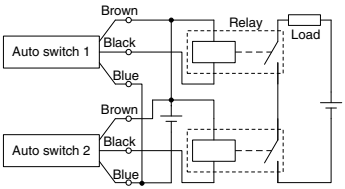
Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

Examples of AND (Series) and OR (Parallel) Connections

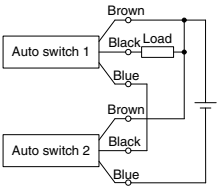
* When using solid state auto switches, ensure the application is set up so the signals for the first 50 ms are invalid. Depending on the operating environment, the product may not operate properly.

3-wire AND connection for NPN output

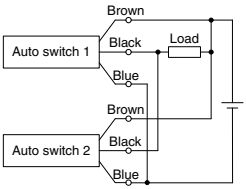
(Using relays)



(Performed with auto switches only)

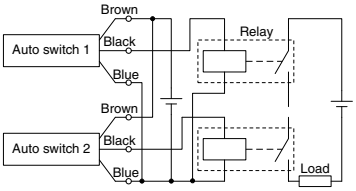


3-wire OR connection for NPN output

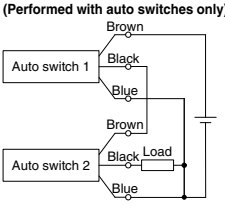


3-wire AND connection for PNP output

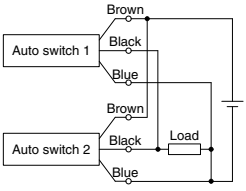
(Using relays)



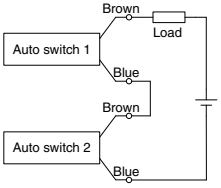
(Performed with auto switches only)



3-wire OR connection for PNP output



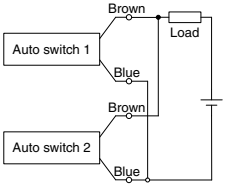
2-wire AND connection



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 a load voltage less than 20 V cannot be used. Please contact SMC if using AND connection for a heat-resistant solid state auto switch or a trimmer switch.

Example) Load voltage at ON
Power supply voltage: 24 VDC
Internal voltage drop: 4 V
Load voltage at ON = Power supply voltage – Auto switch internal voltage drop x 2 pcs.
= 24 V – 4 V x 2 pcs.
= 16 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.

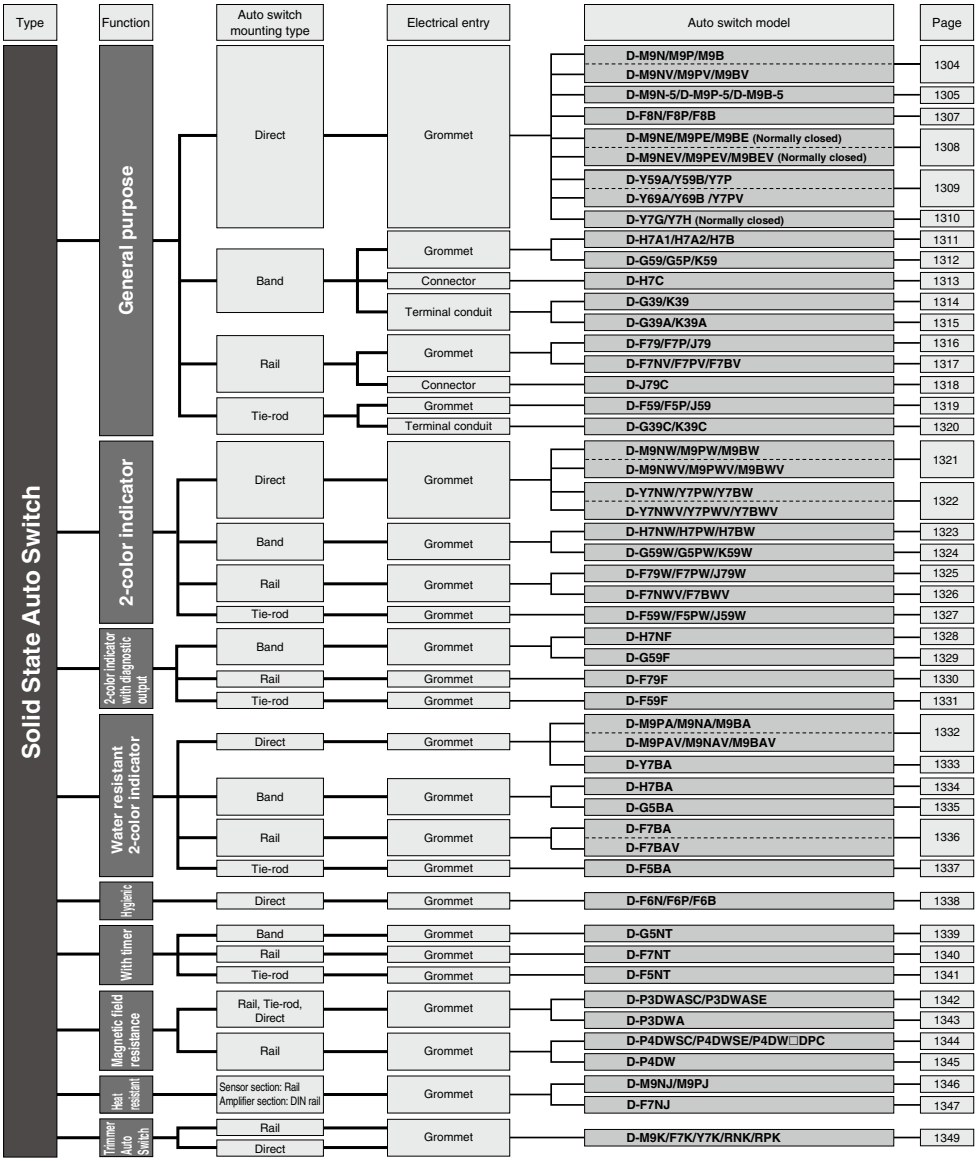
(Reed)
Because there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.

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

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)

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.**

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/UKCA marking					

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 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

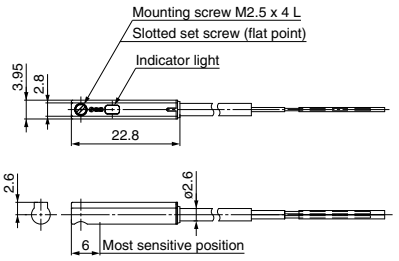
(g)

Auto switch model		D-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

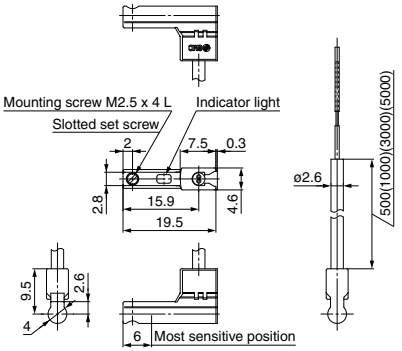
Dimensions

(mm)

D-M9□



D-M9□V



SMC

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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

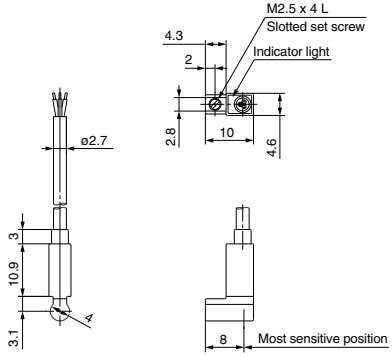
(g)

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



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)**

⚠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□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/UKCA marking					

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

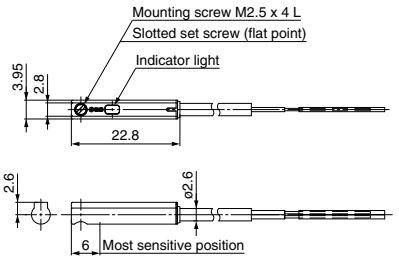
Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)
Lead wire length	0.5 m (**Nil**)	8		7
	1 m (**M**)*	14		13
	3 m (**L**)	41		38
	5 m (**Z**)*	68		63

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

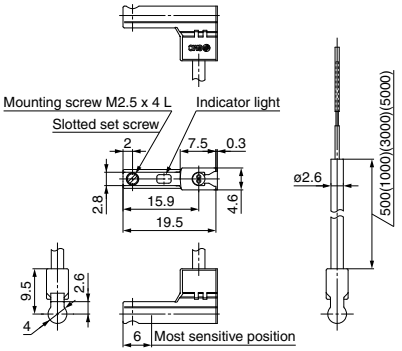
Dimensions

(mm)

D-M9□E



D-M9□EV



SMC

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

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/UKCA marking					

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

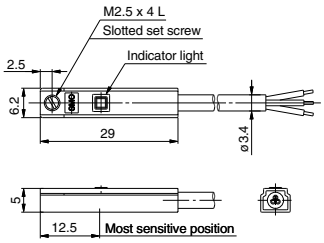
(g)

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	

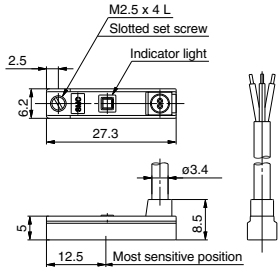
Dimensions

(mm)

D-Y59A/D-Y7P/D-Y59B



D-Y69A/D-Y7PV/D-Y69B



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/UKCA marking	

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

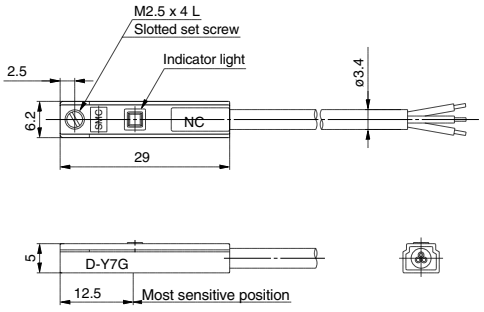
Weight

(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)



SMC

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

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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

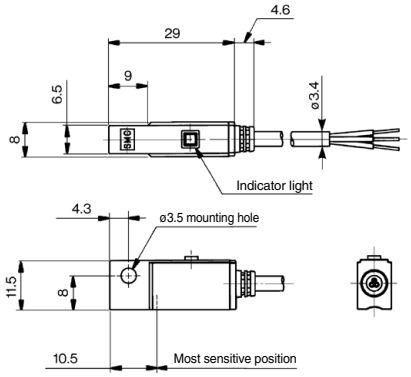
Weight

(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)



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

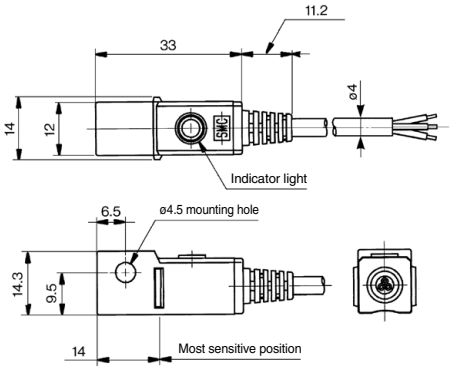
Weight

(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

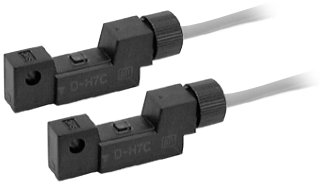
(mm)



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 1385 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/UKCA marking

Note 1) Refer to page 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with switches.

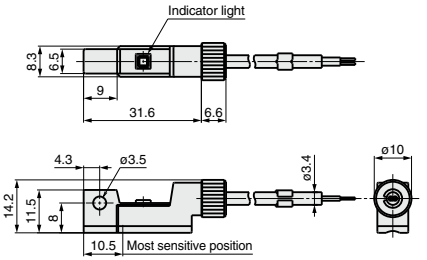
Weight

(g)

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

Dimensions

(mm)



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/UKCA marking	

Note) Refer to page 1298 for solid state auto switch common specifications.

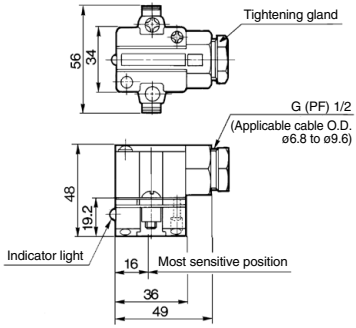
Weight

(g)

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

Dimensions

(mm)



SMC

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/UKCA marking	

Note) Refer to page 1298 for solid state auto switch common specifications.

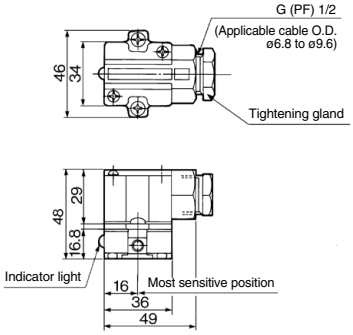
Weight

(g)

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

Dimensions

(mm)



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

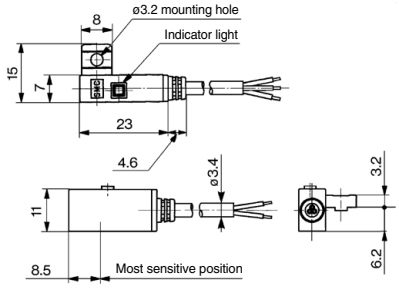
Weight

(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)

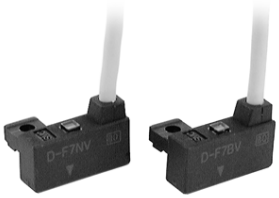


SMC

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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

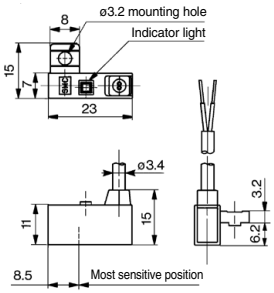
Weight

(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

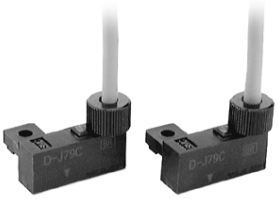
(mm)



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 1385 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/UKCA marking

Note 1) Refer to page 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with auto switches.

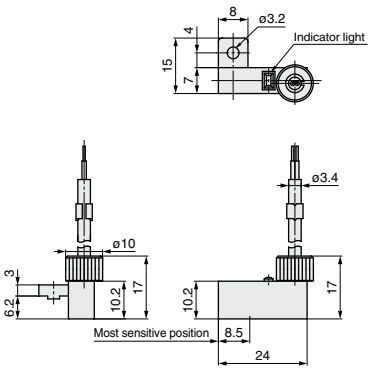
Weight

(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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

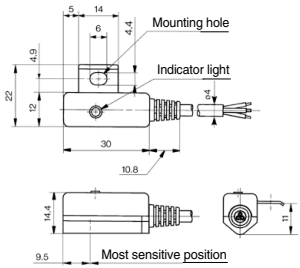
(g)

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



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/UKCA marking	

Note) Refer to page 1298 for solid state auto switch common specifications.

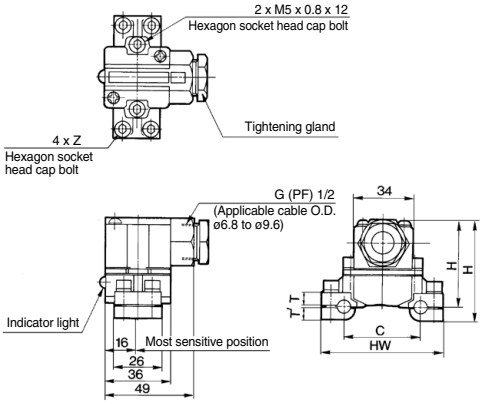
Weight

(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)

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/UKCA marking					

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

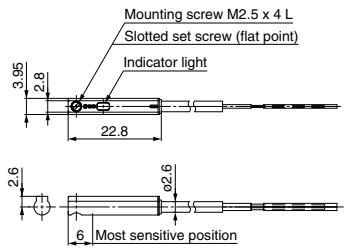
(g)

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

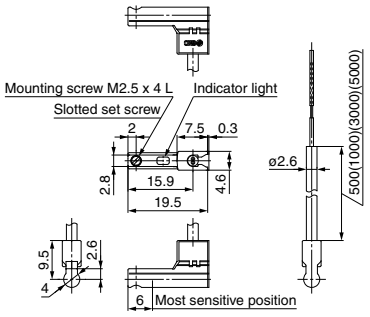
Dimensions

(mm)

D-M9□W



D-M9□WV

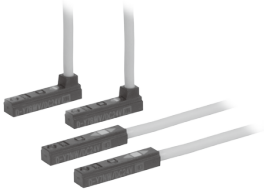


2-Color Indicator Solid State Auto Switch
Direct Mounting Type
D-Y7NW(V)/D-Y7PW(V)/D-Y7BW(V)

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/UKCA marking					

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

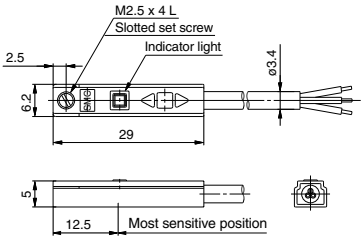
(g)

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		

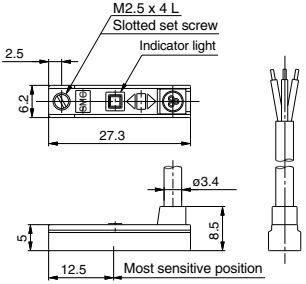
Dimensions

(mm)

D-Y7□W



D-Y7□WV



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

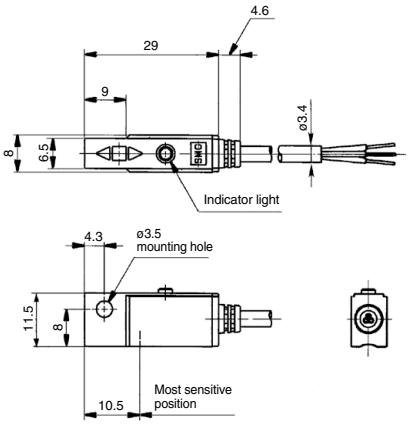
Weight

(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)



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

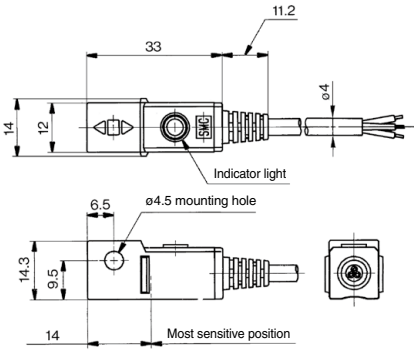
Weight

(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)



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

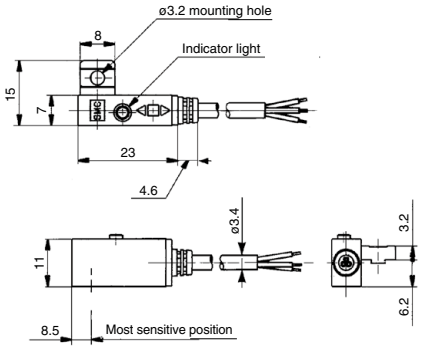
Weight

(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)

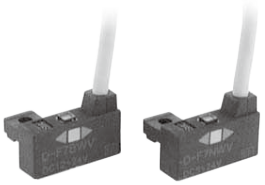


2-Color Indicator Solid State Auto Switch
Rail Mounting Type
D-F7NWV/D-F7BWV

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/UKCA marking	

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

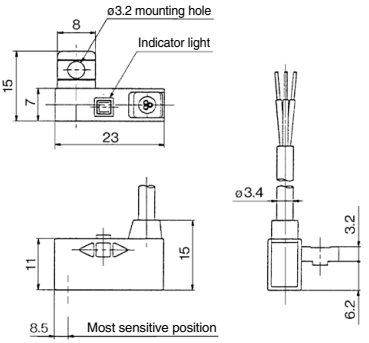
Weight

(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)



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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

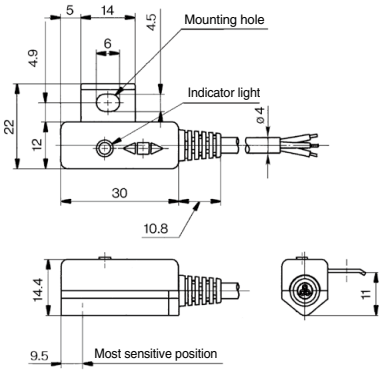
Weight

(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)



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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

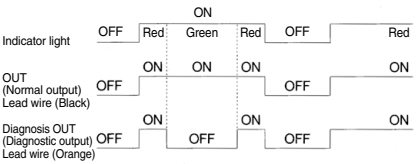
Weight

(g)

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

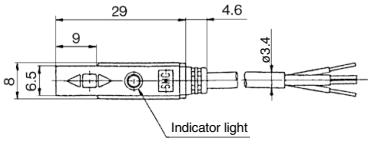
Diagnostic Output Operation

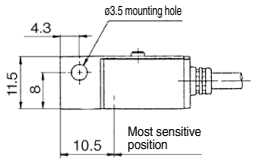
The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output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



Dimensions

(mm)





SMC

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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

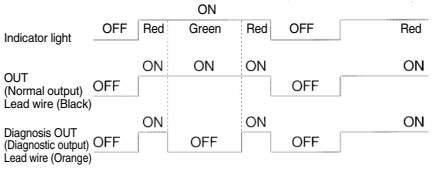
Weight

(g)

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

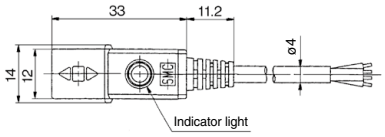
Diagnostic Output Operation

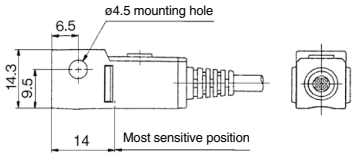
The diagnostic output signal is output within the red display area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output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



Dimensions

(mm)





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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

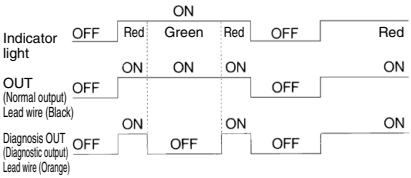
Weight

(g)

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

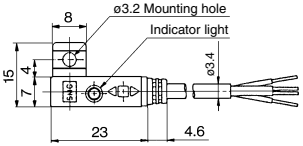
Diagnostic Output Operation

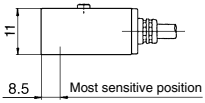
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.

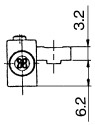


Dimensions

(mm)







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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

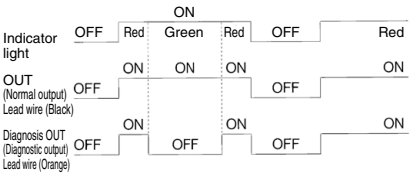
Weight

(g)

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

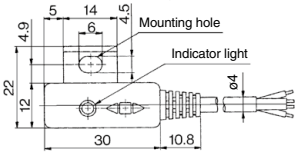
Diagnostic Output Operation

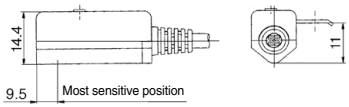
The diagnostic output signal is output within the red display area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)

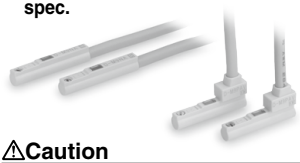




Water Resistant 2-Color Indicator
Solid State Auto Switch: Direct Mounting Type
D-M9NA(V)/D-M9PA(V)/D-M9BA(V)

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/UKCA marking					

Oilproof Flexible Heavy-duty Lead Wire Specifications

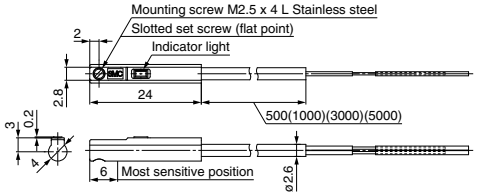
Auto switch model		D-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]	2.6					
Insulator	Number of cores	3 cores (Brown/Blue/Black)				2 cores (Brown/Blue)	
	Outside diameter [mm]	0.88					
Conductor	Effective area [mm²]	0.15					
	Strand diameter [mm]	0.05					
Minimum bending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

Note 1) Refer to page 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

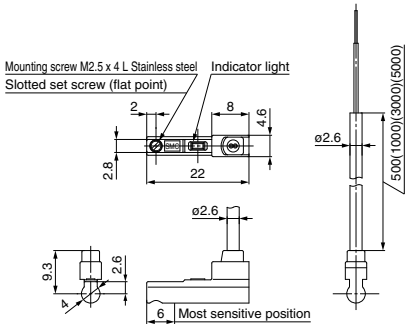
Dimensions

(mm)

D-M9□A



D-M9□AV



SMC

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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

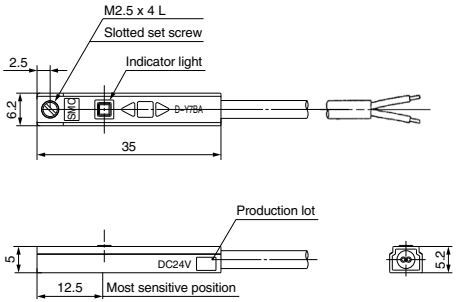
Weight

(g)

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

Dimensions

(mm)



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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

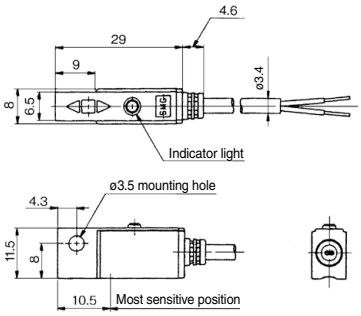
Weight

(g)

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

Dimensions

(mm)



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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

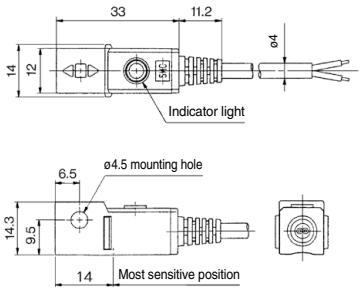
Weight

(g)

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

Dimensions

(mm)



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/UKCA marking	

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

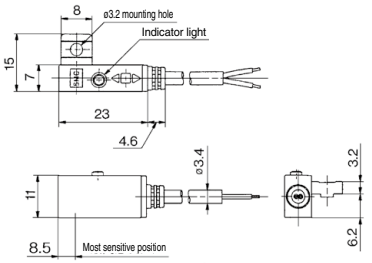
(g)

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

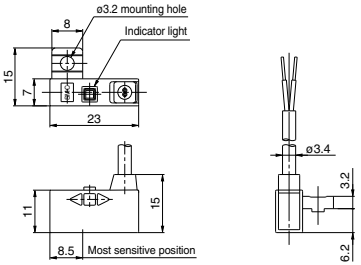
Dimensions

(mm)

D-F7BA



D-F7BAV



SMC

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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

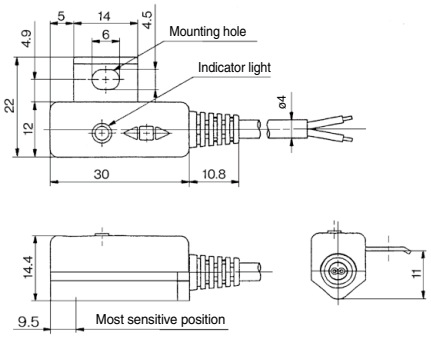
Weight

(g)

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

Dimensions

(mm)



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

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-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/UKCA marking		

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

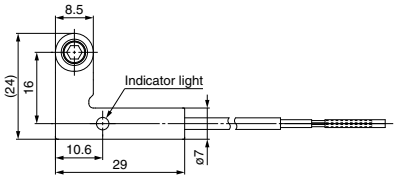
(g)

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

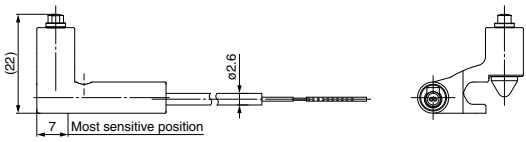
Dimensions

(mm)

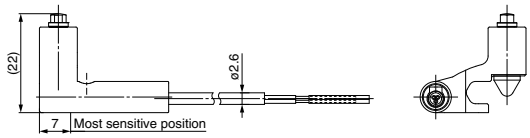
D-F6□



D-F6B



D-F6N/F6P



SMC

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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

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

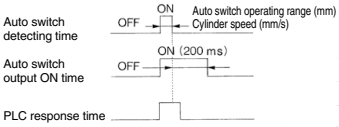
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

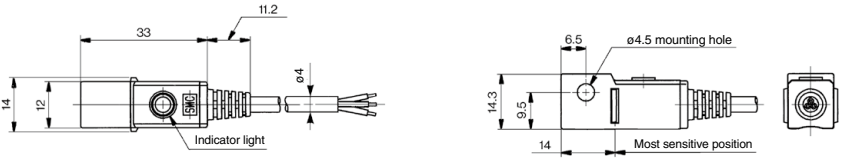
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

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

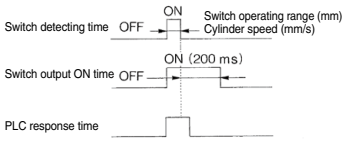
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

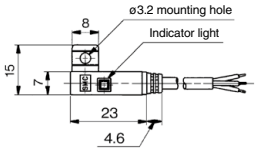
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

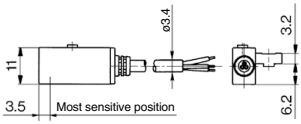
Take PLC response time into consideration when using.



Dimensions

(mm)





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/UKCA marking

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

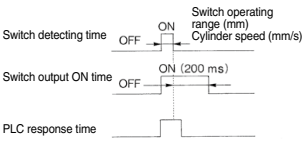
Note 1) Refer to page 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 for lead wire lengths.

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.



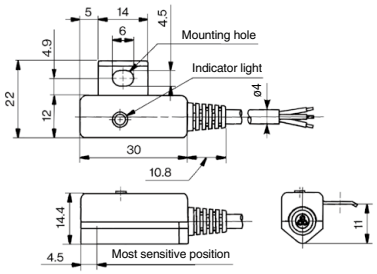
Weight

(g)

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

Dimensions

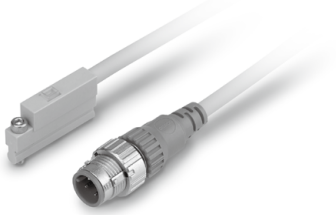
(mm)



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/UKCA marking, UL (CSA)	

Oilproof Heavy-duty Lead Wire Specifications

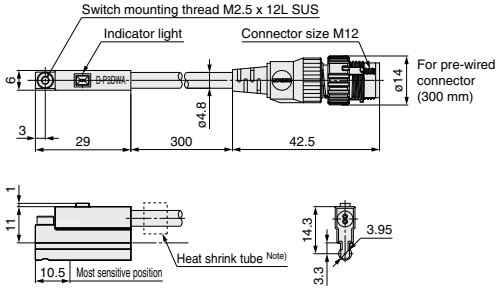
Auto switch model		D-P3DWASC	D-P3DWASE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

- 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.

SMC

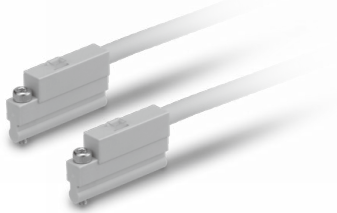
Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

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/UKCA marking, UL (CSA)

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

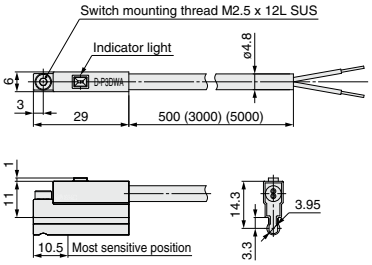
(g)

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

Dimensions

(mm)

Body



Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

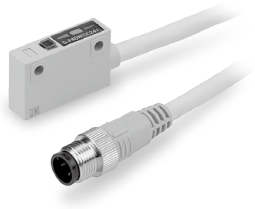
D-P4DWSC/D-P4DWSE/D-P4DW□DPC

(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/UKCA marking				

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 1298 for solid state auto switch common specifications.

Note 2) Refer to page 1298 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.

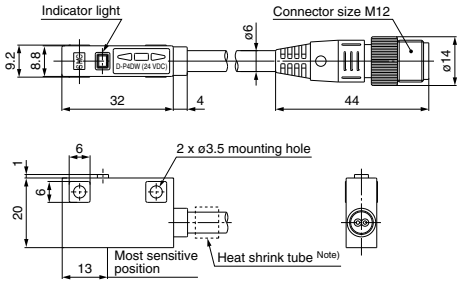
Weight

(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/UKCA marking

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 1298 for solid state auto switch common specifications.
Note 2) Refer to page 1298 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.

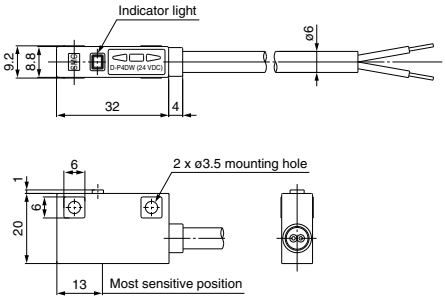
Weight

(g)

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

Dimensions

(mm)



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

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/s^2 Amplifier section: 300 m/s^2	
Standard	CE/UKCA marking	

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 [mm^2]	0.2	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		21	

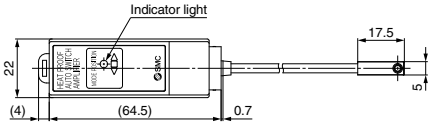
Weight

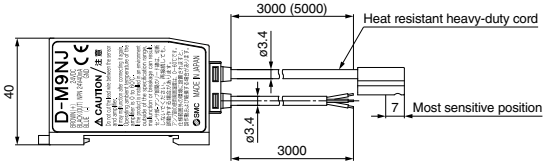
(g)

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

Dimensions

(mm)





SMC

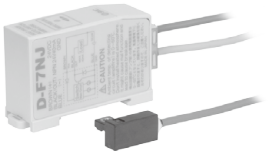
Heat Resistant 2-Color Indicator Solid State Auto Switch: Rail Mounting Type

D-F7NJ

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/UKCA marking

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

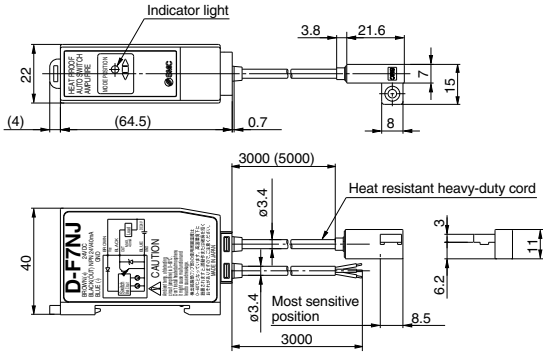
Weight

(g)

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

Dimensions

(mm)



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 (IEC61076-2)**
- **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

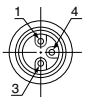
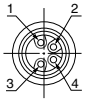
S	0.5 m
M	1.0 m

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	IEC61076-2-104		IEC61076-2-101
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 1342. And for details on the D-P4DW series, refer to page 1344.

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 1342. And for details on the D-P4DWSC and D-P4DWSE, refer to page 1344.

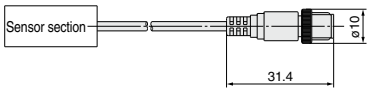
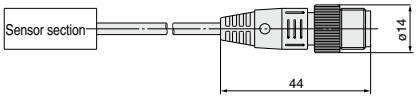
Note2) For details on the pin arrangement, refer to the pin arrangement in the connector specifications above.

M8-3 pin

M8-4 pin

M12-4 pin

Dimensions

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

Connection (Socket 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	OMRON Corporation	XS3□
		PHOENIX CONTACT GmbH & Co. KG	SAC-3P□
		Correns Corporation	M8-3D□
		TE Connectivity Ltd.	T40
		Hans Turck GmbH & Co. KG	PKG3M□
	4	OMRON Corporation	XS3□
		PHOENIX CONTACT GmbH & Co. KG	SAC-4P□
		Correns Corporation	M8-3D□
		TE Connectivity Ltd.	T40
		Hans Turck GmbH & Co. KG	PKG4M□
M12		OMRON Corporation	XS2□, XS5□
		PHOENIX CONTACT GmbH & Co. KG	SAC-4P□
		Correns Corporation	VA-4D□
		TE Connectivity Ltd.	T41
		Hans Turck GmbH & Co. KG	RKC4.4□
		Azbil Corporation	PA5-4I
		DDK Ltd.	CM02B

Weight for Connector Type

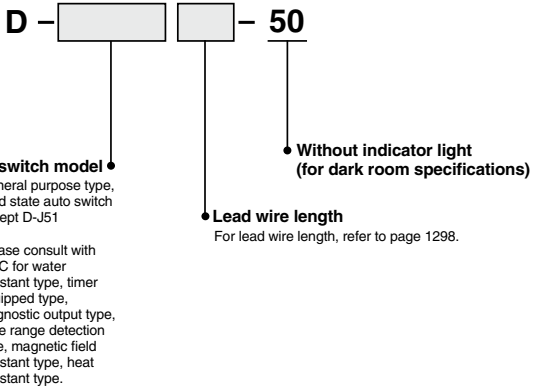
Part no.	Connector type	Weight
D-□□□APC	M8-3 pin	4 g
D-□□□BPC	M8-4 pin	4 g
D-□□□DPC	M12-4 pin	About 11 g

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.

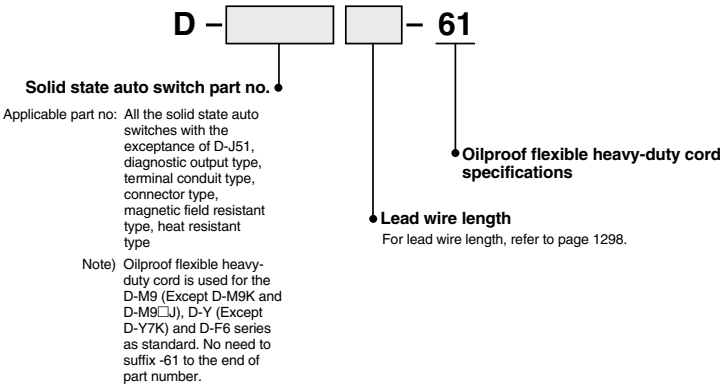


Dimensions and specifications are common as standard products with the exception of no indicator light.

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.

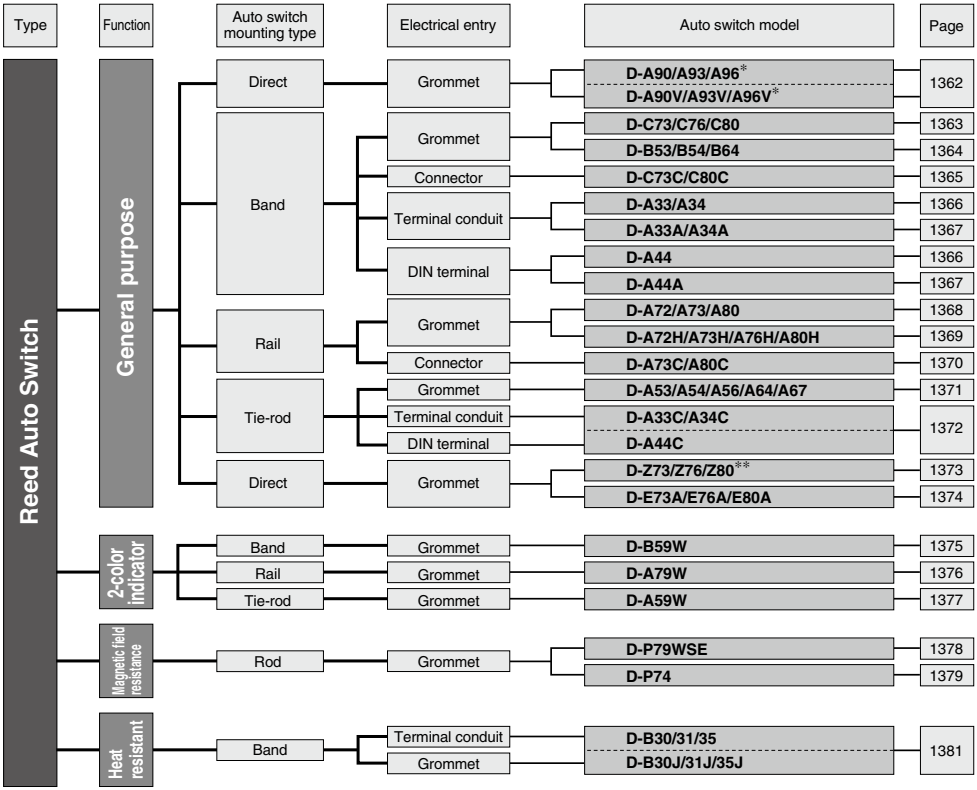


Specifications are the same as standard products with the exception of lead wire specifications.
Lead wire: For D-F8 type····· ø2.7, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
For other model nos.····· ø3.4, 0.15 mm², 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

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



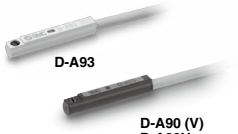
* Auto switches with an asterisk (*) can be mounted on a band (excluding D-A9□V), rail, tie-rod or square groove with an auto switch mounting bracket. Refer to pages 1386, 1390, 1394 and 1401 to 1403 for details.

** This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to page 1397.

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

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

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator.
3. 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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

Weight

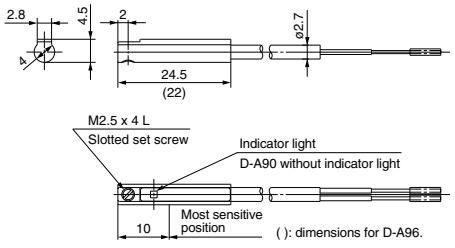
(g)

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	—	—

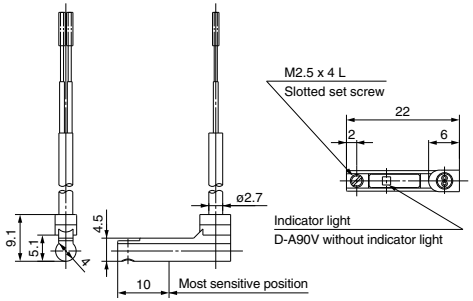
Dimensions

(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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

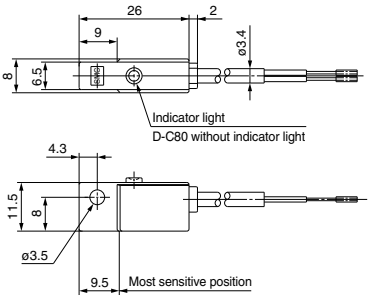
Weight

(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)



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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

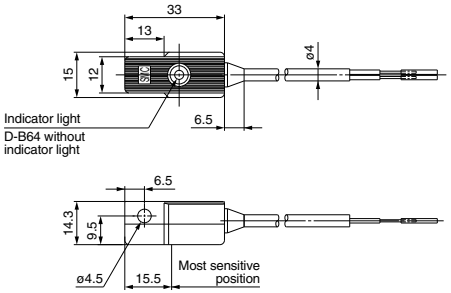
Weight

(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. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
3. For details, refer to page 1385.

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/UKCA marking

D-C80C (Without indicator light)	
Auto switch model	**D-C80C**
Applicable load	Relay, PLC
Load voltage	24 V^{AC}_{DC} 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/UKCA marking

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

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

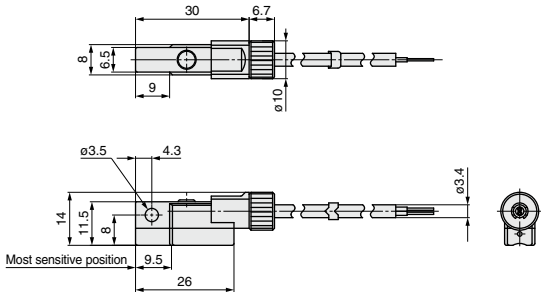
Lead wires with a connector indication

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)



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

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

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

⚠Caution

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
3. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

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/UKCA 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/UKCA marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.

Note 1) Refer to page 1298 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 18.

Weight

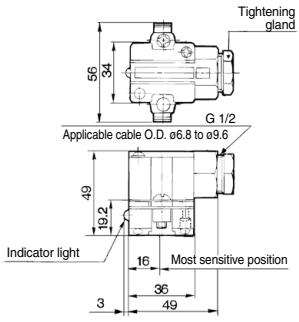
(g)

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

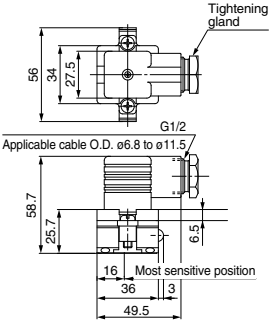
Dimensions

(mm)

D-A3



D-A44



SMC

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

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

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

⚠Caution

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
3. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Specifications

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/UKCA 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/UKCA marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.
Note 1) Refer to page 1298 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 18.

Weight

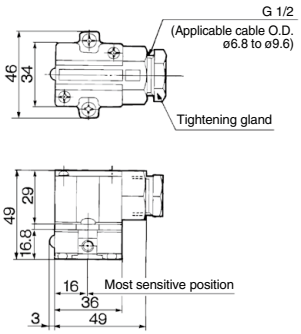
(g)

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

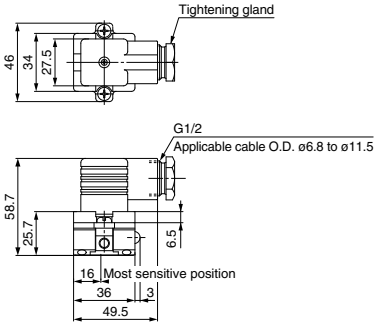
Dimensions

(mm)

D-A3□A



D-A44A



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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.
Note 2) Refer to page 1298 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 18.

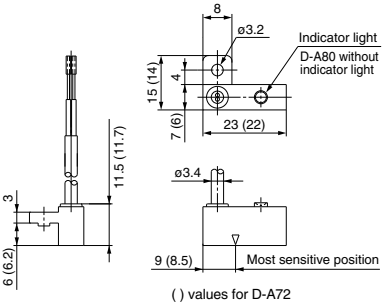
Weight

(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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

Weight

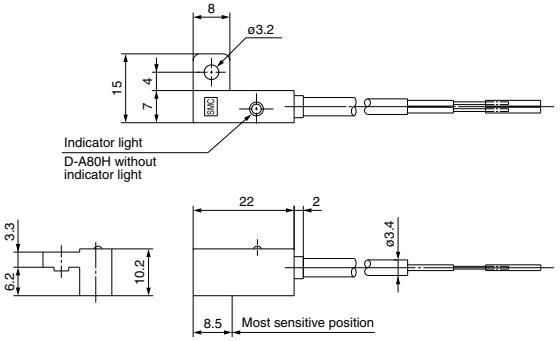
(g)

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



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. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
3. Refer to page 1385 for the details.

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/UKCA 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/UKCA marking

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

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

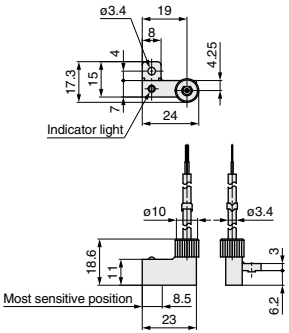
Lead wires with a connector indication

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)



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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

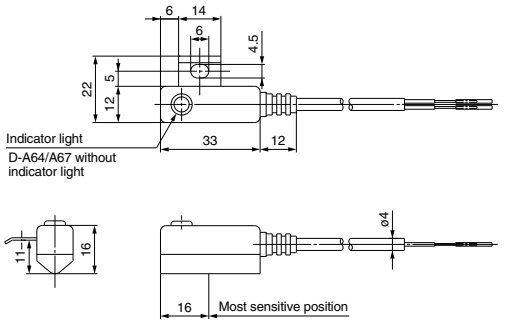
Weight

(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)



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. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
3. 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/UKCA 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/UKCA marking		

* Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.
Note 1) Refer to page 1298 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 18.

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)

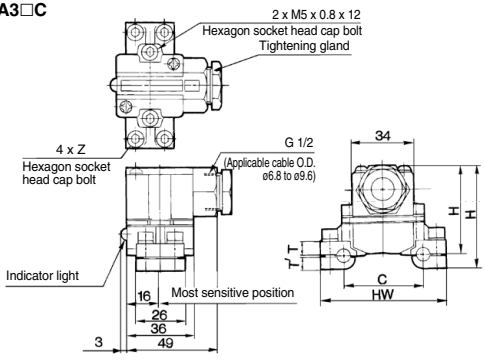
Auto switch model	Applicable bore size (mm)	C	HW	H	H'	T	T'	Z
D-A3□C-4, D-A44C-4	40	44	69	58 (67.5)	50.5 (60)	7.5	6.5	M5 x 0.8 x 16
D-A3□C-5, D-A44C-5	50	52	77	59 (68.5)	51.5 (61)	8.5	6.5	
D-A3□C-6, D-A44C-6	63	64	91	61.5 (71)	53 (62.5)	10.5	7.5	M5 x 0.8 x 20
D-A3□C-8, D-A44C-8	80	78	107	65 (74.5)	54.5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

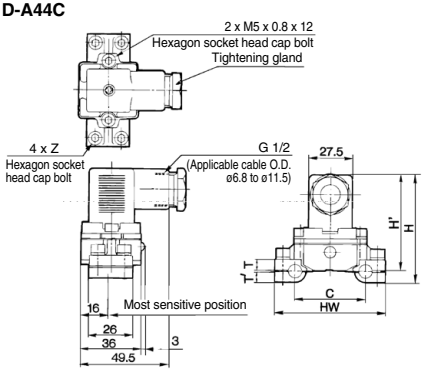
Dimensions

(mm)

D-A3□C



D-A44C

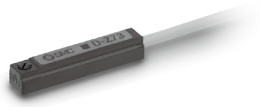


SMC

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



⚠Caution

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator.
3. 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-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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

Weight

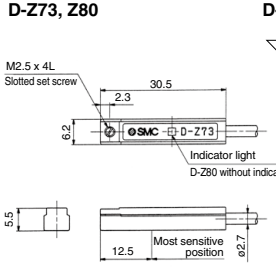
(g)

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	—	—

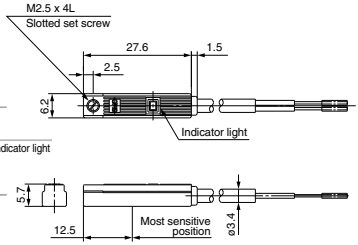
Dimensions

(mm)

D-Z73, Z80



D-Z76



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

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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/UKCA 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 1301.

Note 1) Refer to page 1298 for reed auto switch common specifications.

Note 2) Refer to page 1298 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 18.

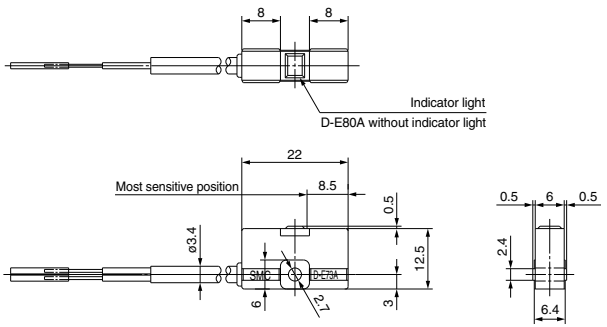
Weight

(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)

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.
Note 2) Refer to page 1298 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.

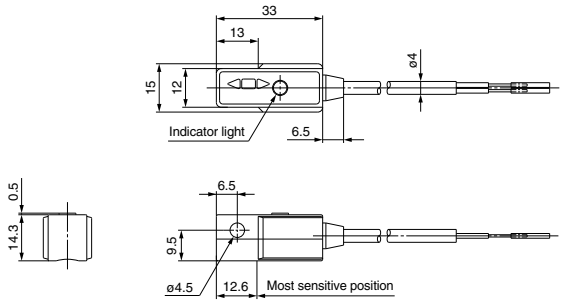
Weight

(g)

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

Dimensions

(mm)



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)

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.
Note 2) Refer to page 1298 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.

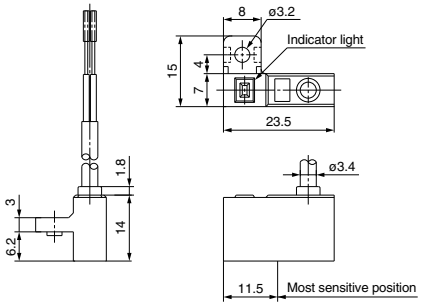
Weight

(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)

⚠Caution

Precautions

Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

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/UKCA 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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.
Note 2) Refer to page 1298 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.

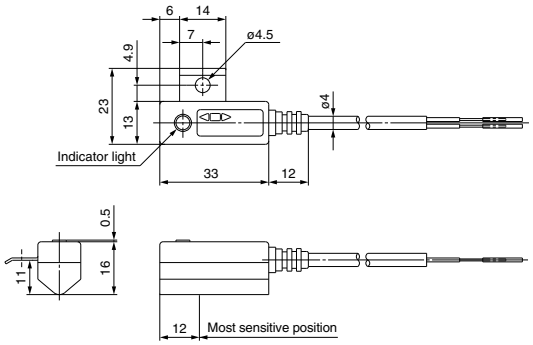
Weight

(g)

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

Dimensions

(mm)



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

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

2. 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/UKCA 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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.

Weight

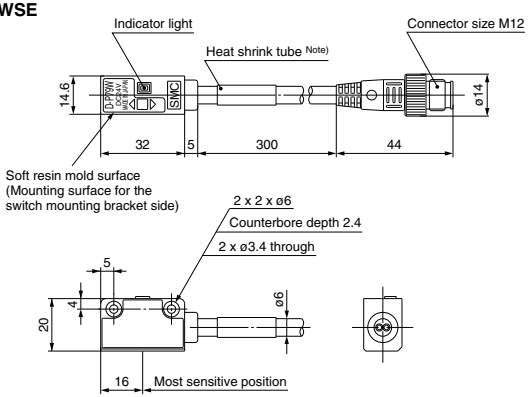
(g)

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

⚠Caution

Precautions

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. Cylinder with a strong integrated magnet must be used.

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/UKCA marking	

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 1301.
Note 1) Refer to page 1298 for reed auto switch common specifications.
Note 2) Refer to page 1298 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.

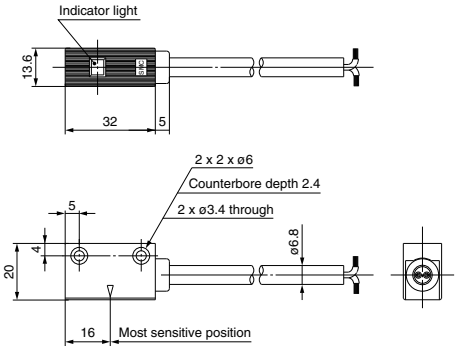
Weight

(g)

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

Dimensions

(mm)



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

1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
2. 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/UKCA 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 1301.
Note 1) Refer to page 1298 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.

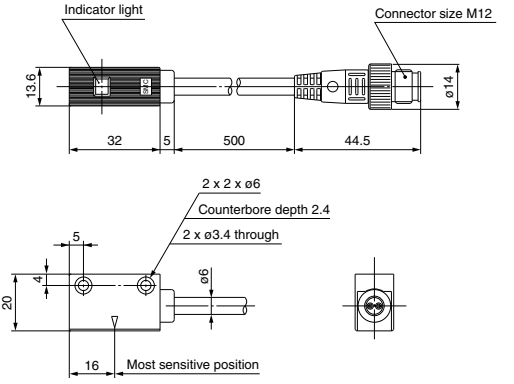
Weight

(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.

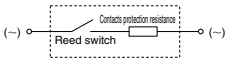
⚠Caution

Precautions

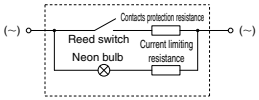
Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.

Auto Switch Internal Circuit

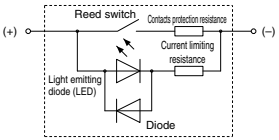
D-B30



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/UKCA 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

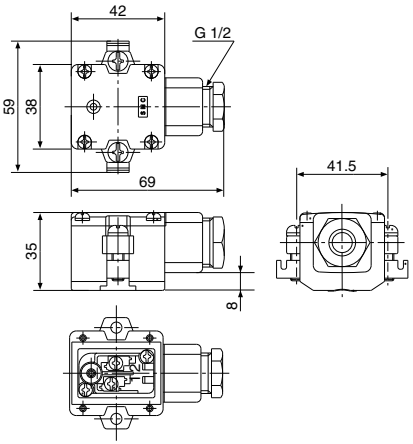
Lead wire length

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.

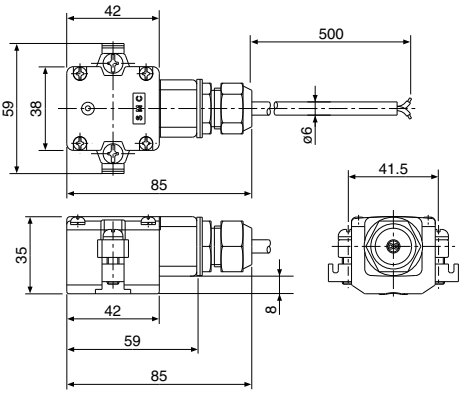
Dimensions

(mm)

Terminal conduit type D-B3□

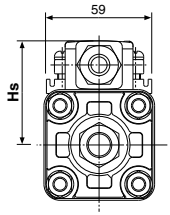


Terminal conduit type D-B3□J



∗ 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**

- **With built-in special magnet**
- **Cylinder stroke**
- **Number of auto switches**

Symbol	Description
Nil	2 pcs.
S	1 pc.

- **Cylinder bore size**
- **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

- **Mounting**
- **Cylinder model**

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

∗ 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 page 8 for safety instructions and pages 14 to 18 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.