Auto Switch Guide

Applicable Cylinder Series 1

	Cylinder series	CDJP2		CDJ2		CDM2	CDM3	CDG1		CDG3		MDB	MDB-X1184	MDB1	CDA2	CDA2-X1184	CDS1	CDS2	CDUJ	CDU	CDQS	CDQ2			CDQ2-XB14	RDQ		CDQM		CQU	MDU-Z	CDJ5-S	CDG5-S	HYDB		HYDQ
	Bore size	ø4	ø6, ø10, ø16	ø6	ø10, ø16	ø20 to ø40	ø20 to ø40	ø20 to ø63	ø80, ø100	ø20, ø63	ø80, 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 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	ø25 to ø63	ø10, ø16	ø20 to ø100	ø20 to ø63	ø80, ø100	ø20 to ø63
Solid state auto switches	D-H7			■	■	■		■																												
	D-H7C			■	■	■		■																												
	D-H7BAL			■	■	■		■																								■		■		
	D-H7NF			■	■	■		■																												
	D-H7□W			■	■	■		■																												
	D-G5/K5							■							■																					
	D-G5BAL							■							■																				■		
	D-G59F							■							■																					
	D-G5NTL					■		■	■						■																					
	D-G5□W/K59W								■						■																					
	D-G39/K39											■			■		■	■																		
	D-G39A/K39A					■																														
	D-F7/J7				■																		■	■	■			■		■						
	D-J79C				■																		■	■	■			■		■						
	D-F79F				■																		■	■	■			■		■						
	D-F7BAL				■																		■	■	■			■		■						
	D-F7BAVL				■																		■	■	■			■		■						
	D-F7□V				■																		■	■	■			■		■						
	D-F7NTL				■																		■	■	■			■		■						
	D-F7□W (V)				■																		■	■	■			■		■						
	D-F5/J5											■			■		■	■																		
	D-F5BAL											■			■		■	■																		
	D-F5□W/J59W											■			■		■	■																		
	D-F59F											■			■		■	■																		
	D-F5NTL											■			■		■	■																		
	D-G39C/K39C														■																					
	D-M9	■	■	■	■	■		■				■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■	■				
	D-M9□V	■	■									■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■	■				
	D-M9□W	■	■	■	■	■		■				■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■	■				
	D-M9□WV	■	■									■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■	■				
	D-M9□AL	■	■									■		■	■		■	■	■	■	■	■	■	■	■			■	■	■	■	■	■				
	D-M9□AVL	■	■									■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■	■				
	D-Y5/Y6/Y7□/Y7□V											■		■	■		■	■						■	■											
	D-Y7BAL											■		■	■		■	■						■	■											
	D-Y7□W/Y7□WV											■		■	■		■	■						■	■											
	D-M5																																			
	D-M5□W																																			
	D-M5□TL																																			
	D-P3DW□											■			■							■		■												
	D-P4DWL											■												■							■					
	D-F9G/H	■	■	■	■	■		■				■		■	■		■	■		■	■	■	■	■	■			■	■	■	■	■					
	D-Y7G/H											■		■	■		■	■						■	■											
	D-G5NBL					■		■							■																					
	D-F7NJL																									■										
	D-F6□																																			■
	D-F8□																		■																	
Reed auto switches	D-C7/C8			■	■	■		■																												
	D-C73C/C80C			■	■	■		■																												
	D-B5/B6					■		■	■						■																					
	D-B59W					■		■	■						■																					
	D-A3/A4											■			■		■	■																		
	D-A3□A/A44A					■																														
	D-A3□C/A44C														■																					
	D-A7/A8				■																		■	■	■			■		■						
	D-A7□H/A80H				■																		■	■	■			■		■						
	D-A73C/A80C				■																		■	■	■			■		■						
	D-A79W				■																		■	■	■			■		■						
	D-A5/A6											■			■		■	■																		
	D-A59W											■			■		■	■																		
	D-A9		■	■	■	■		■				■		■	■		■	■		■	■	■	■	■	■			■	■	■		■	■				
	D-A9□V		■									■		■	■		■	■		■	■	■	■	■	■			■	■	■		■	■				
	D-E7□A/E80A																																			
	D-Z7/Z8											■		■	■		■	■						■	■											
	D-P7																																			
	D-B3												■			■																				
	Actuator page reference (●: Best Pneumatics)	②P.21		②P.39		②P.125		②P.219				②P.285	②P.1515	②P.329	②P.353	②P.1516	②P.409	②P.447	②P.463	②P.479	②P.547	②P.599			②P.1410	②P.771		②P.791				②P.833		②P.854		②P.858

Applicable Cylinder Series 1

	Cylinder series	HYDC	HYDG	MY1B-Z	MY1B			MY1M		MY1C		MY1H		MY1HT	MY1□W		MY2	MY3	CY3R		CDY1S/CY1L	CY1H	CY1F	CYP	MXH	MXU	MXS	MXQ/MXQR	MXF	MXW	MXJ	MXP	MXY	MTS	MGJ	MGP	
	Bore size	ø32 to ø63	ø32 to ø63	ø25 to ø32	ø10 to ø20	ø25 to ø40, ø63 to ø100	ø50	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	ø10 to ø32	ø10, ø15, ø25	ø15, ø32	ø6 to ø20	ø6 to ø16	ø6 to ø25	ø6 to ø25	ø8 to ø20	ø8 to ø25	ø4, ø6, ø8	ø6 to ø16	ø6, ø10, ø12, ø16	ø8 to ø40	ø6, ø10	ø12 to ø20	ø25	ø32 to ø100
Solid state auto switches	D-H7																																			
	D-H7C																																			
	D-H7BAL																																			
	D-H7NF																																			
	D-H7□W																																			
	D-G5/K5																																			
	D-G5BAL																																			
	D-G59F																																			
	D-G5NTL																																			
	D-G5□W/K59W																																			
	D-G39/K39																																			
	D-G39A/K39A																																			
	D-F7/J7																				■															
	D-J79C																				■															
	D-F79F																				■															
	D-F7BAL																				■															
	D-F7BAVL																				■															
	D-F7□V																				■															
	D-F7NTL																				■															
	D-F7□W (V)																				■															
	D-F5/J5																																			
	D-F5BAL																																			
	D-F5□W/J59W																																			
	D-F59F																																			
	D-F5NTL																																			
	D-G39C/K39C																																			
	D-M9			■	■			■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■	■	■	■
	D-M9□V			■	■			■	■	■	■	■	■		■	■	■						■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-M9□W			■	■			■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-M9□WV			■	■			■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-M9□AL			■	■	■		■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-M9□AVL			■	■	■		■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■							■		■	■	■
	D-Y5/Y6/Y7□/Y7□V					■	■		■		■		■	■		■				■		■		■												■	■	■
	D-Y7BAL															■																				■	■	■
	D-Y7□W/Y7□WV					■	■		■		■		■	■		■				■		■		■												■	■	■
	D-M5																																					
	D-M5□W																																					
	D-M5□TL																																					
	D-P3DW□																																				■	■
	D-P4DWL																																					■
	D-F9G/H			■	■			■	■	■	■	■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-Y7G/H					■	■		■		■		■	■		■				■		■		■												■	■	■
	D-G5NBL																																					
	D-F7NJL																																					
	D-F6□	■	■																																			
	D-F8□																															■		■	■			
Reed auto switches	D-C7/C8																																					
	D-C73C/C80C																																					
	D-B5/B6																																					
	D-B59W																																					
	D-A3/A4																																					
	D-A3□A/A44A																																					
	D-A3□C/A44C																																					
	D-A7/A8																				■																	
	D-A7□H/A80H																				■																	
	D-A73C/A80C																				■																	
	D-A79W																																					
	D-A5/A6																																					
	D-A59W																																					
	D-A9			■	■			■		■		■	■		■	■	■	■	■	■			■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-A9□V			■	■			■		■		■	■		■	■	■						■		■	■	■	■	■	■	■	■	■	■		■	■	■
	D-E7□A/E80A																																					
	D-Z7/Z8					■	■		■		■		■	■		■				■		■		■												■	■	■
	D-P7																																					
	D-B3																																					
	Actuator page reference (●: Best Pneumatics)	❷P.867	❷P.873		❷P.943										❷P.1057		❷P.1085	❷P.1121	❷P.1178		❷P.1189	❷P.1213	❷P.1229	❷P.1249	❸P.15	❸P.35	❸P.49	❸P.87	❸P.133	❸P.147	❸P.169	❸P.189	❸P.213	❸P.229	❸P.255	❸P.263	

Applicable Cylinder Series 2

	Cylinder series	MGQ	MGG		MGC	MGF	MGZ	MGT	CX2	CDBXW□		CDPXW□	CXT		CXSJ	CXS	CDLJ2	CDLM2	CDLG1	CDL1		MLGC	CDNG	MDNB	CDNA2	CDNS	CDLS	CDLQ			RDLQ	MDLU	MLGP			ML1C	REAR	
	Bore size	ø12 to ø100	ø20 to ø63	ø80 to ø100	ø20 to ø50	ø40, ø63, ø100	ø20 to ø80	ø63 to ø100	ø10, ø15, ø25	ø10	ø16 to ø32	ø10 to ø32	ø12 to ø25	ø32, ø40	ø6, ø10	ø6 to ø32	ø16	ø20 to ø40	ø20 to ø40	ø40 to ø100	ø125 to ø160	ø20 to ø40	ø20 to ø40	ø32 to ø100	ø40 to ø100	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	ø10, ø15, ø20	ø25 to ø40
Solid state auto switches	D-H7		■		■												■	■	■			■	■														
	D-H7C		■		■												■	■	■			■	■														
	D-H7BAL		■		■												■	■	■			■	■														
	D-H7NF		■		■												■	■	■			■	■														
	D-H7□W		■		■												■	■	■			■	■														
	D-G5/K5		■	■	■															■		■			■												
	D-G5BAL		■	■	■															■		■			■												
	D-G59F		■	■	■															■		■			■												
	D-G5NTL		■	■	■													■	■	■		■	■		■												
	D-G5□W/K59W		■	■	■															■		■			■												
	D-G39/K39																			■	■			■	■	■	■										
	D-G39A/K39A																	■																			
	D-F7/J7								■		■	■		■																	■	■	■				
	D-J79C								■		■	■		■																	■	■	■				
	D-F79F								■		■	■		■																	■	■	■				
	D-F7BAL								■		■	■		■																	■	■	■				
	D-F7BAVL								■		■	■		■																	■	■	■				
	D-F7□V								■		■	■		■																	■	■	■				
	D-F7NTL								■		■	■		■																	■	■	■				
	D-F7□W (V)								■		■	■		■																	■	■	■				
	D-F5/J5																			■	■			■	■	■	■										
	D-F5BAL																			■	■			■	■	■	■										
	D-F5□W/J59W																			■	■			■	■	■	■										
	D-F59F																			■	■			■	■	■	■										
	D-F5NTL																			■	■			■	■	■	■										
	D-G39C/K39C																			■					■												
	D-M9	■	■		■	■	■	■					■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■
	D-M9□V	■				■	■	■					■	■	■					■	■		■	■	■	■	■	■	■	■	■	■	■	■			
	D-M9□W	■	■		■	■	■	■					■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■
	D-M9□WV	■				■	■	■					■	■	■					■	■			■	■	■	■	■	■	■	■	■	■	■			
	D-M9□AL	■				■	■	■					■	■	■					■	■			■	■	■	■	■	■	■	■	■	■	■		■	■
	D-M9□AVL	■				■	■	■					■	■	■					■	■			■	■	■	■	■	■	■	■	■	■	■			
	D-Y5/Y6/Y7□/Y7□V	■				■	■	■								■				■	■			■	■	■	■						■	■			■
	D-Y7BAL					■	■	■												■	■			■	■	■	■						■	■			
	D-Y7□W/Y7□WV	■				■	■	■								■				■	■			■	■	■	■						■	■			■
	D-M5																																		■		
	D-M5□W																																		■		
	D-M5□TL																																		■		
	D-P3DW□																							■	■				■	■			■	■			
	D-P4DWL							■												■				■	■				■		■		■				
	D-F9G/H	■	■		■	■	■	■					■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■
	D-Y7G/H	■			■	■	■	■								■				■	■			■	■	■	■						■	■			■
	D-G5NBL		■	■	■													■	■			■	■														
	D-F7NJL																																				
	D-F6□																																				
	D-F8□																																				
Reed auto switches	D-C7/C8	■		■													■	■	■			■	■														
	D-C73C/C80C	■		■													■	■	■			■	■														
	D-B5/B6	■	■	■														■	■	■		■	■														
	D-B59W	■	■	■														■	■	■		■	■														
	D-A3/A4																			■	■			■	■	■	■										
	D-A3□A/A44A																	■																			
	D-A3□C/A44C																			■					■												
	D-A7/A8								■		■	■		■																	■	■	■				
	D-A7□H/A80H								■		■	■		■																	■	■	■				
	D-A73C/A80C								■		■	■		■																	■	■	■				
	D-A79W																														■	■	■				
	D-A5/A6																			■	■			■	■	■	■										
	D-A59W																			■	■			■	■	■	■										
	D-A9	■	■		■		■	■					■	■	■		■	■	■	■	■	■	■	■	■	■	■				■	■	■	■		■	■
	D-A9□V	■					■	■					■	■	■					■	■			■	■	■	■				■	■	■	■			
	D-E7□A/E80A								■	■																									■		
	D-Z7/Z8	■				■	■	■					■	■	■					■	■			■	■	■	■						■	■			■
	D-P7																																				
	D-B3																																				
	Actuator page reference (●: Best Pneumatics)	③P.337	③P.353		③P.391	③P.409	③P.421	③P.449	③P.461	③P.473			③P.521			③P.535	③P.593					③P.657	③P.669	③P.693	③P.723	③P.757	③P.781	③P.809			③P.839	③P.863	③P.881			③P.909	③P.925	

Applicable Cylinder Series 2

	Cylinder series	REAS	REAL	REAH	REBR		REBH	REC	CDQSY		CDQ2Y	CDM2Y	CDG1Y		CDA2Y	CDS2Y	CDJ2X	CDUX	CDQSX		CDQ2X	CDM2X	RHC		RZQ	MK2-Z	MK/MK2	MK2T	CKQG	CLKQG	CKQP	CLKQP	CKG1	CKP1	CLK2G	CLK2P
	Bore size	ø10 to ø40	ø10 to ø40	ø10 to ø32	ø15	ø25, ø32	ø15 to ø32	ø20 to ø40	ø12 to ø20	ø25	ø32 to ø100	ø20 to ø40	ø20 to ø63	ø80, ø100	ø40 to ø100	ø125 to ø160	ø10 to ø16	ø10 to ø32	ø12 to ø20	ø25	ø32 to ø100	ø20 to ø40	ø20 to ø63	ø80 to ø100	ø32 to ø63	ø12 to ø63	ø20 to ø63	ø12, ø16, ø32 to ø63	ø20 to ø63	ø50	ø50	ø50	ø40 to ø63	ø40 to ø63	ø40 to ø63	ø40 to ø63
Solid state auto switches	D-H7							■				■	■				■					■	■													
	D-H7C							■				■	■				■					■	■													
	D-H7BAL							■															■													
	D-H7NF							■				■	■				■					■	■													
	D-H7□W							■				■	■				■					■	■													
	D-G5/K5											■	■	■	■								■	■												
	D-G5BAL											■											■	■												
	D-G59F											■	■	■	■								■	■												
	D-G5NTL							■				■	■	■	■								■	■												
	D-G5□W/K59W											■	■	■	■								■	■												
	D-G39/K39							■							■	■							■	■												
	D-G39A/K39A											■										■														
	D-F7/J7	■	■								■						■				■				■	■		■	■	■						
	D-J79C	■	■								■						■				■				■	■	■	■	■	■						
	D-F79F	■	■								■						■				■				■	■	■	■	■	■						
	D-F7BAL	■	■																						■	■	■	■	■	■						
	D-F7BAVL	■	■																						■	■	■	■	■	■						
	D-F7□V	■	■								■						■				■				■	■	■	■	■	■						
	D-F7NTL	■	■								■						■				■				■	■	■	■	■	■						
	D-F7□W (V)	■	■								■						■				■				■	■	■	■	■	■						
	D-F5/J5														■	■																				
	D-F5BAL														■	■																				
	D-F5□W/J59W														■	■																				
	D-F59F														■	■																				
	D-F5NTL														■	■																				
	D-G39C/K39C														■																					
	D-M9				■	■		■	■	■	■	■	■		■	■	■	■	■	■	■	■	■		■	■		■	■	■			■		■	
	D-M9□V								■	■	■				■	■	■	■	■	■	■				■	■		■	■	■						
	D-M9□W				■	■		■	■	■	■	■	■		■	■	■	■	■	■	■	■	■		■	■		■	■	■			■		■	
	D-M9□WV								■	■	■				■	■		■	■	■	■				■	■		■	■	■						
	D-M9□AL				■	■			■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■		■	■	■						
	D-M9□AVL								■	■	■	■	■	■	■	■	■	■	■	■	■	■			■	■		■	■							
	D-Y5/Y6/Y7□/Y7□V			■		■	■								■	■																				
	D-Y7BAL														■																					
	D-Y7□W/Y7□WV			■		■	■								■	■																				
	D-M5																																			
	D-M5□W																																			
	D-M5□TL																																			
	D-P3DW□									■	■				■					■	■				■				■	■			■		■	
	D-P4DWL										■				■						■				■		■		■	■			■		■	
	D-F9G/H				■	■		■	■	■	■	■	■		■	■	■	■	■	■	■	■	■		■		■	■	■	■						
	D-Y7G/H			■		■	■									■																				
	D-G5NBL											■	■	■									■	■												
	D-F7NJL																																			
	D-F6□																																			
	D-F8□																																			
Reed auto switches	D-C7/C8							■				■	■				■					■	■													
	D-C73C/C80C							■				■	■				■					■	■													
	D-B5/B6							■				■	■	■								■	■	■												
	D-B59W							■				■	■	■								■	■	■												
	D-A3/A4							■							■	■							■	■												
	D-A3□A/A44A											■										■														
	D-A3□C/A44C														■																					
	D-A7/A8	■	■								■						■				■				■	■	■		■			■				
	D-A7□H/A80H	■	■								■						■				■				■	■	■		■			■				
	D-A73C/A80C	■	■								■						■				■				■	■	■		■			■				
	D-A79W										■						■				■				■	■	■		■			■				
	D-A5/A6														■	■																				
	D-A59W														■	■																				
	D-A9				■	■		■	■	■	■	■	■		■	■	■	■	■	■	■	■	■		■	■	■	■	■				■		■	
	D-A9□V								■	■	■				■	■		■	■	■	■				■	■	■	■	■							
	D-E7□A/E80A																																			
	D-Z7/Z8			■		■	■								■	■																				
	D-P7																															■	■		■	
	D-B3																																			
	Actuator page reference (●: Best Pneumatics)	❸P.925						❸P.1023	❸P.1047								❸P.1111							❸P.1195	❸P.1217		❸P.1233		❸P.1265				❸P.1317		❸P.1344	

Auto Switch Guide

Applicable Cylinder Series 3

	Cylinder series	RSDQ			RSDG	RSH	MIS/MIW	CEP1	CE1		CE2	ML2B	CVQ	CVQM	CDVJ5	CDVJ3	CDVM5	CDVM5K	CDVM3	CDVM3K	CDV3	CDV3K	CDVS1	CDVS1K	MVGQ
	Bore size	ø12	ø16, ø20	ø32, ø40, ø50	ø40, ø50	ø20 to ø80	ø8, ø12, ø20, ø25, ø32	ø12, ø20	ø12, ø20	ø32 to ø63	ø40 to ø100	ø25 to ø40	ø32 to ø63	ø32 to ø63	ø10, ø16	ø10, ø16	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø20 to ø40	ø40 to ø100	ø40 to ø63	ø40 to ø100	ø40 to ø63	ø12 to ø100
Solid state auto switches	D-H7				■										■	■	■	■	■	■					
	D-H7C				■										■	■	■	■	■	■					
	D-H7BAL				■																				
	D-H7NF				■										■	■	■	■	■	■					
	D-H7□W				■										■	■	■	■	■	■					
	D-G5/K5										■										■	■	■	■	
	D-G5BAL										■														
	D-G59F										■										■	■	■	■	
	D-G5NTL										■						■	■	■	■	■	■	■	■	
	D-G5□W/K59W										■										■	■	■	■	
	D-G39/K39										■										■	■	■	■	
	D-G39A/K39A																								
	D-F7/J7		■						■	■					■	■									
	D-J79C		■						■	■					■	■									
	D-F79F		■						■	■					■	■									
	D-F7BAL		■						■	■															
	D-F7BAVL		■						■	■															
	D-F7□V		■						■	■					■	■									
	D-F7NTL		■						■	■					■	■									
	D-F7□W (V)		■						■	■					■	■									
	D-F5/J5										■										■	■	■	■	
	D-F5BAL										■														
	D-F5□W/J59W										■										■	■	■	■	
	D-F59F										■										■	■	■	■	
	D-F5NTL										■										■	■	■	■	
	D-G39C/K39C																								
	D-M9	■	■	■	■	■	■	■		■	■		■	■			■	■	■	■	■	■	■	■	■
	D-M9□V	■	■	■		■	■	■		■	■		■	■							■	■	■	■	■
	D-M9□W	■	■	■	■	■	■	■		■	■		■	■							■	■	■	■	■
	D-M9□WV	■	■	■		■	■	■		■	■		■	■							■	■	■	■	■
	D-M9□AL	■	■	■				■		■	■		■	■							■	■	■	■	■
	D-M9□AVL	■	■	■				■		■	■		■	■							■	■	■	■	■
	D-Y5/Y6/Y7□/Y7□V					■					■	■									■	■	■	■	■
	D-Y7BAL					■					■														
	D-Y7□W/Y7□WV					■					■	■									■	■	■	■	■
	D-M5																								
	D-M5□W																								
	D-M5□TL																								
	D-P3DW□																								
	D-P4DWL																								
	D-F9G/H	■	■	■	■	■		■		■	■				■	■	■	■	■	■	■	■	■	■	■
	D-Y7G/H					■					■	■									■	■	■	■	■
	D-G5NBL																■	■	■	■					
	D-F7NJL																								
	D-F6□																								
	D-F8□																								
Reed auto switches	D-C7/C8				■										■	■	■	■	■	■					
	D-C73C/C80C				■										■	■	■	■	■	■					
	D-B5/B6										■						■	■	■	■	■	■	■	■	
	D-B59W										■						■	■	■	■	■	■	■	■	
	D-A3/A4										■										■	■	■	■	
	D-A3□A/A44A																								
	D-A3□C/A44C										■										■	■	■	■	
	D-A7/A8		■	■					■	■					■	■									
	D-A7□H/A80H		■	■					■	■					■	■									
	D-A73C/A80C		■	■					■	■					■	■									
	D-A79W		■	■					■	■					■	■									
	D-A5/A6										■										■	■	■	■	
	D-A59W										■										■	■	■	■	
	D-A9	■	■	■	■			■		■	■		■	■	■	■	■	■	■	■	■	■	■	■	■
	D-A9□V	■	■	■				■		■	■		■	■							■	■	■	■	■
	D-E7□A/E80A																								
	D-Z7/Z8					■					■	■									■	■	■	■	■
	D-P7																								
	D-B3																								
	Actuator page reference (●: Best Pneumatics)	❸P.1371			❸P.1387	❸P.1401	❸P.1415	❸P.1437			❸P.1483	❸P.1505	❸P.1527		❸P.1542		❸P.1563				❸P.1604		❸P.1624		❸P.1643

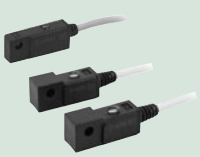
Applicable Cylinder Series 3/Auto Switch Variations 1

Auto Switch Variations 1

Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
General purpose auto switches	Solid state	Band	Grommet	D-H7A1/H7A2/H7B	1278
				D-G59/G5P/K59	1279
			Connector	D-H7C	1280
			Terminal conduit	D-G39/K39	1281
				D-G39A/K39A	1282
		Rail	Grommet	D-F79/F7P/J79	1283
				D-F7NV/F7PV/F7BV	1284
			Connector	D-J79C	1285
		Tie-rod	Grommet	D-F59/F5P/J59/J51	1286
			Terminal conduit	D-G39C/K39C	1287
		Direct	Grommet	D-M9N/M9P/M9B*	1288
				D-M9NV/M9PV/M9BV*	
				D-F8N/F8P/F8B	1289
				D-F9G/F9H*(Normally closed)	1290
				D-Y59A/Y59B/Y7P**	1291
				D-Y69A/Y69B/Y7PV**	
				D-Y7G/Y7H**(Normally closed)	1292
				D-M5N/M5P/M5B	1293
	Reed	Band	Grommet	D-C73/C76/C80	1332
				D-B53/B54/B64	1333
			Connector	D-C73C/C80C	1334
			Terminal conduit	D-A33/A34	1335
				D-A33A/A34A	1336
			DIN terminal	D-A44	1335
				D-A44A	1336
		Rail	Grommet	D-A72/A73/A80	1337
				D-A72H/A73H/A76H/A80H	1338
			Connector	D-A73C/A80C	1339
		Tie-rod	Grommet	D-A53/A54/A56/A64/A67	1340
			Terminal conduit	D-A33C/A34C	1341
			DIN terminal	D-A44C	
		Direct	Grommet	D-A90/A93/A96*	1342
				D-A90V/A93V/A96V*	
				D-Z73/Z76/Z80**	1343
				D-E73A/E76A/E80A	1344

* These auto switches can be mounted with a band (except D-A9□V and M9□V), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1356, 1360, 1364, 1368 and 1369 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1367 for details.

Band mounting



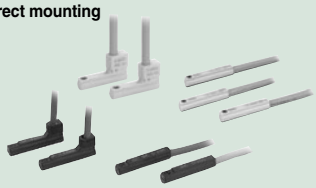
Rail mounting



Tie-rod mounting



Direct mounting



Auto Switch Variations 2

Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
2-color indication	Solid state	Band	Grommet	D-H7NW/H7PW/H7BW	1294
				D-G59W/G5PW/K59W	1295
		Rail	Grommet	D-F79W/F7PW/J79W	1296
				D-F7NWV/F7BWV	1297
		Tie-rod	Grommet	D-F59W/F5PW/J59W	1298
		Direct	Grommet	D-M9NW/M9PW/M9BW*	1299
				D-M9NWV/M9PWV/M9BWV*	
				D-Y7NW/Y7PW/Y7BW**	1300
				D-Y7NWV/Y7PWV/Y7BWV**	
				D-M5NW/M5PW/M5BW	1301
	Reed	Band	Grommet	D-B59W	1345
		Rail	Grommet	D-A79W	1346
		Tie-rod	Grommet	D-A59W	1347

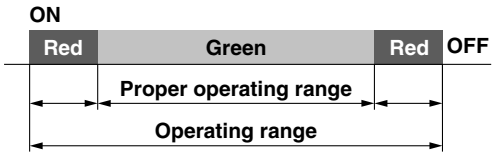
* These auto switches can be mounted with a band (except D-M9□WV and M9□AVL), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1356, 1360, 1364, 1368 and 1369 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1367 for details.

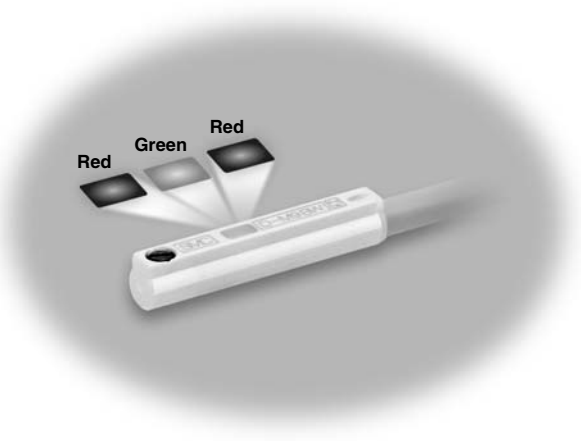
2-color indication

Easily identifiable, proper operating range

●Mounting positions can be set easily.
Proper operating range 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.





Even if 2-color indication solid state auto switches are fixed at a 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.)

Band mounting



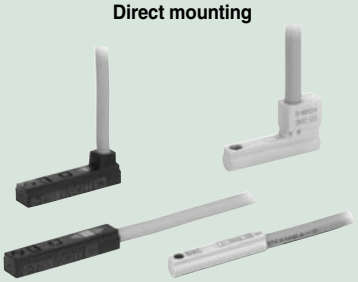
Rail mounting



Tie-rod mounting



Direct mounting



Auto Switch Variations 2

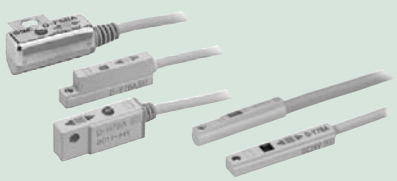
Function	Type	Auto switch mounting style	Electrical entry	Auto switch model	Page
The diagnostic output signal can be detected in an unsteady detecting area.					
2-color indication auto switch with diagnostic output	Solid state	Band	Grommet	D-H7NF	1302
				D-G59F	1303
		Rail	Grommet	D-F79F	1304
		Tie-rod	Grommet	D-F59F	1305
Water resistant (coolant) type					
Water resistant 2-color indication auto switch	Solid state	Band	Grommet	D-H7BAL	1306
				D-G5BAL	1307
		Rail	Grommet	D-F7BAL D-F7BAVL	1308
		Tie-rod	Grommet	D-F5BAL	1309
		Direct	Grommet	D-M9□A* D-M9□AV*	1310
				D-Y7BAL**	1311
Hygienic type					
Hygienic	Solid state	Direct	Grommet	D-F6N/F6P/F6B	1312
With built-in OFF-delay timer (200 ms)					
Auto switch with timer	Solid state	Band	Grommet	D-G5NTL	1313
		Rail	Grommet	D-F7NTL	1314
		Tie-rod	Grommet	D-F5NTL	1315
		Direct	Grommet	D-M5NTL/M5PTL	1316
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-P3DWSC/P3DWSE	1317-1
				D-P3DW	1317-2
		Rail	Grommet	D-P4DWSC/P4DWSE	1317-3
				D-P4DWL	1318
	Reed	Rod	Grommet	D-P79WSE	1348
				D-P74	1349
Can be used in a high-temperature environment (Max. 150°C).					
Heat resistant auto switch	Solid state	Sensor unit: Rail Amplifier unit: DIN rail	Grommet	D-F7NJL	1319
	Reed	Band	Terminal conduit	D-B30/31/35	1351
			Grommet	D-B30J/31J/35J	
Wide range detection type					
Wide range detection auto switch	Solid state	Band	Grommet	D-G5NBL	1320
Simple workpiece recognition is possible.					
Trimmer auto switch	Solid state	Rail	Grommet	D-F7K/Y7K (D-RNK/RPK is required.)	1321
		Direct			

* These auto switches can be mounted with a band (except D-M9□WV and M9□AVL), a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1356, 1360, 1364, 1368 and 1369 for details.
** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer to page 1367 for details.

2-color indication type with diagnostic output



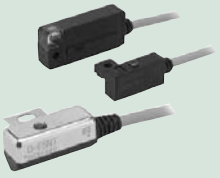
Water resistant 2-color indication type



Hygienic



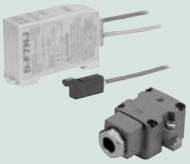
With timer



Magnetic field resistant



Heat resistant



Wide range detection



Trimmer auto switch

Sensor unit



Amplifier unit



Prior to Use
Auto Switches Common Specifications 1

⚠Specific Product Precautions

Refer to the Auto Switch Precautions on pages 8 to 11 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 at 500 VDC Mega (Between lead wire and case)	
Withstand voltage	1500 VAC for 1 minute (1) (Between lead wire and case)	1000 VAC for 1 minute (Between lead wire and case)
Ambient temperature	–10 to 60°C	
Enclosure	IEC60529 Standard IP67 (2)	

∗ 1) Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min. (Between lead wire and the case)
∗ 2) The terminal conduit type (D-A3/A3□A/A3□C/G39/G39A/G39C/K39/K39A/K39C), DIN terminal type (D-A44/A44A/A44C) and heat resistant auto switch (D-F7NJL) conform to IEC60529 Standard IP63. The trimmer type amplifier section (D-R□K) conforms to IP40.
∗ 3) Excluding the solid state auto switches with a timer (D-M5□TL/G5NTL/F7NTL/F5NTL types) and **magnetic field resistant 2-color indication solid state auto switch (D-P3DW□/P4DWL)**. The operating time for D-J51 is 2 ms or less and for D-P3DW□/P4DWL 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

Lead wire length

Nil	0.5 m
M	1 m
L	3 m
Z	5 m
N∗	None

∗ Applicable for the connector type (D-□□C) only.

Note 1) Lead wire length Z: 5 m
Applicable auto switches
Reed auto switch: D-B53/B54, D-C73(C)/C80C, D-A73(C)(H)/A80C, D-A53/A54, D-Z73, D-90/97/90A/93A
Solid state auto switch: Manufactured upon receipt of order as standard.
Note 2) The standard lead wire length for trimmer auto switches is 3 m.
Note 3) The standard lead wire length for solid state auto switches with a timer, water resistant 2-color indication solid state auto switches, wide range detection type solid state auto switches, heat resistant 2-color indication solid state auto switches and magnetic field resistant 2-color indication solid state switches is 3 m and 5 m (except D-P3DW, D-M9□A(V)□). (0.5 m is not available.)
Note 4) 1 m (M): D-M9□(W)(V) only
Note 5) Lead wire length tolerance

Lead wire length	Tolerance
0.5 m	±15 mm
1 m	±30 mm
3 m	±90 mm
5 m	±150 mm

Solid state auto switch oil resistant flexible cabtire cord indication

Add a -61 at the end of the part number for the solid state auto switch flexible cord except D-Y59□, D-Y69□, D-Y7□, D-M9□/M9□V, and D-M9□W/M9□WV.

(Example)

D-F7PL-61

Flexible specification

(D-Y59, D-Y69, D-Y7 and D-M9 series use flexible lead wire as standard.)

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

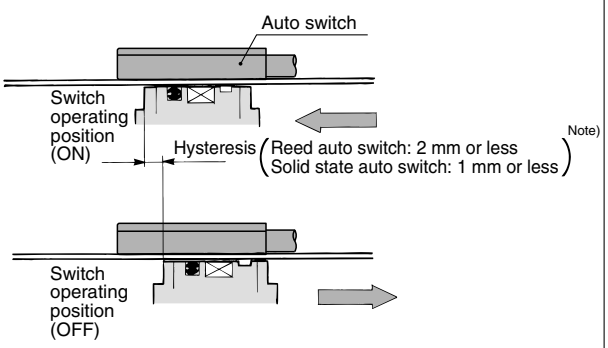
Prior to Use
Auto Switches Common Specifications 2

⚠Specific Product Precautions

Refer to the Auto Switch Precautions on pages 8 to 11 before using auto switches.

Auto Switch Hysteresis

Hysteresis is the distance between the position at which piston movement operates an auto switch to the position at which reverse movement turns the switch off. This hysteresis is included in part of the operating range (one side).



Note) Hysteresis may fluctuate due to the operating environment. Please contact SMC if hysteresis causes an operational problem.

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, and D-A79W type
The auto switches above do not have a built-in contact protection circuit. A contact protection box is not required for solid state auto switches due to their construction.

① **Where the operation load is an inductive load.**
② **Where the wiring length to load is greater than 5 m.**
③ **Where the load voltage is 100/200 VAC.**
Therefore, use a contact protection box with the switch for any of the above cases:
The contact life may be shortened (due to permanent energizing conditions.)
D-A72(H) must be used with the contact protection box regardless of load types and lead wire length since it is greatly affected by loads.
(Where the load voltage is 110 VAC)
When the load voltage is increased by more than 10% to the rating of applicable auto switches (except D-A73C/A80C/C73C/C80C/90/97/A79W) above, use a contact protection box (CD-P11) to reduce the upper limit of the load current by 10% so that it can be set within the range of the load current range, 110 VAC.

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

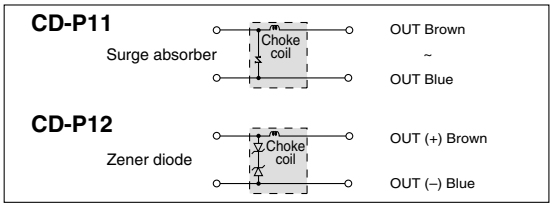
Contact Protection Box Specifications

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

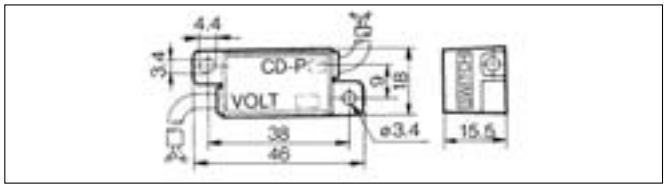


∗ Lead wire length — Auto switch connection side 0.5 m
Load connection side 0.5 m

Contact Protection Box Internal Circuit



Contact Protection Box/Dimensions



Contact Protection Box Connection

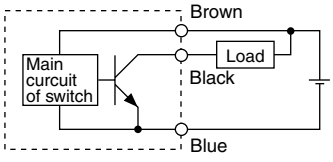
To connect a switch unit to a contact protection box, connect the lead wire from the side of the contact protection box marked SWITCH to the lead wire coming out of the switch unit. Keep the switch as close as possible to the contact protection box, with a lead wire length of no more than 1 meter.

D-□

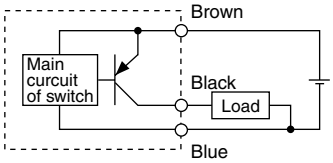
Prior to Use
Auto Switches Connection and Example

Basic Wiring

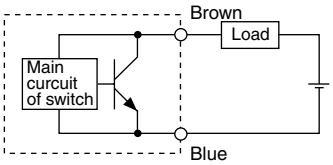
Solid state 3-wire, NPN



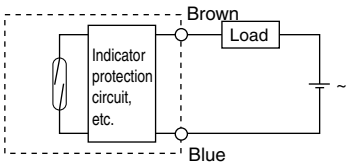
Solid state 3-wire, PNP



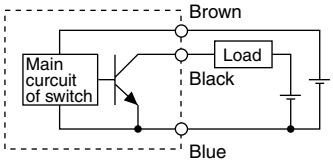
2-wire (Solid state)

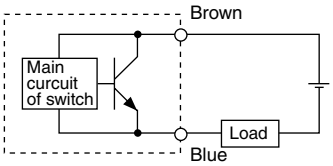


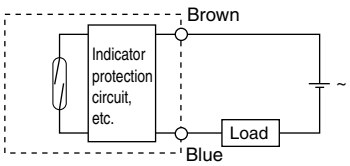
2-wire (Reed switch)



(Power supply for switch and load are separate)



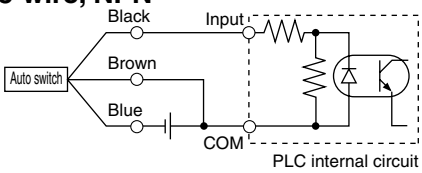




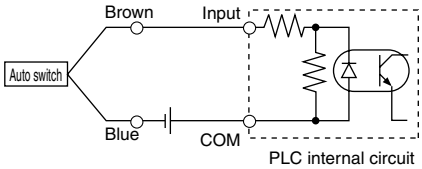
Example of Connection with PLC (Programmable Logic Controller)

• Sink input specifications

3-wire, NPN

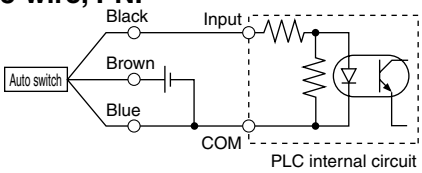


2-wire

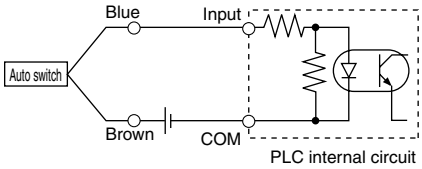


• Source input specifications

3-wire, PNP



2-wire

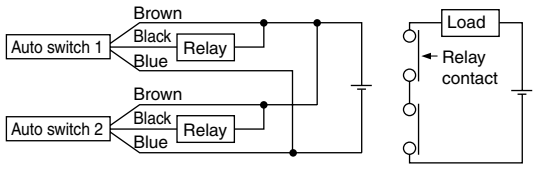


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

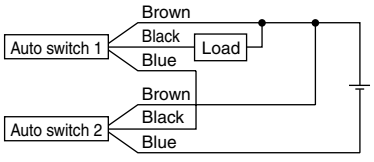
Example of AND (Series) and OR (Parallel) Connection

• 3-wire

AND connection for NPN output (Using relays)

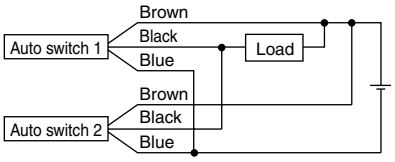


AND connection for NPN output (Performed with auto switches only)



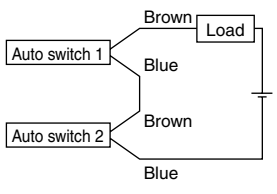
The indicator lights will light up when both auto switches are turned ON.

OR connection for NPN output



• 2-wire

2-wire with 2-switch AND connection

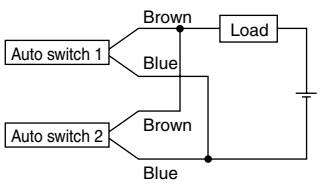


When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state.
The indicator lights will light up when both of the auto switches are in the ON state.

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

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

2-wire with 2-switch OR connection



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

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

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

(Reed auto switch)
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.

Auto Switch Guide

Solid State Auto Switches — P.1277

General Purpose Type Band, Rail, Tie-rod, Direct Mounting — P.1278

2-Color Indication Type Band, Rail, Tie-rod, Direct Mounting — P.1294

2-Color Indication Type with Diagnostic Output Band, Rail, Tie-rod Mounting — P.1302

Water Resistant 2-Color Indication Type Band, Rail, Tie-rod, Direct Mounting — P.1306

Hygienic Direct Mounting — P.1312

With Timer Band, Rail, Tie-rod, Direct Mounting — P.1313

Magnetic Field Resistant 2-Color Indication Type Rail, Tie-rod, Direct Mounting — P.1317

Heat Resistant 2-Color Indication Type Rail Mounting — P.1319

Wide Range Detection Type Band Mounting — P.1320

Trimmer Auto Switch Rail, Direct Mounting — P.1321

Made to Order Specifications — P.1328

Reed Auto Switches — P.1331

General Purpose Type Band, Rail, Tie-rod, Direct Mounting — P.1332

2-Color Indication Type Band, Rail, Tie-rod Mounting — P.1345

Magnetic Field Resistant 2-Color Indication Type Rod Mounting — P.1348

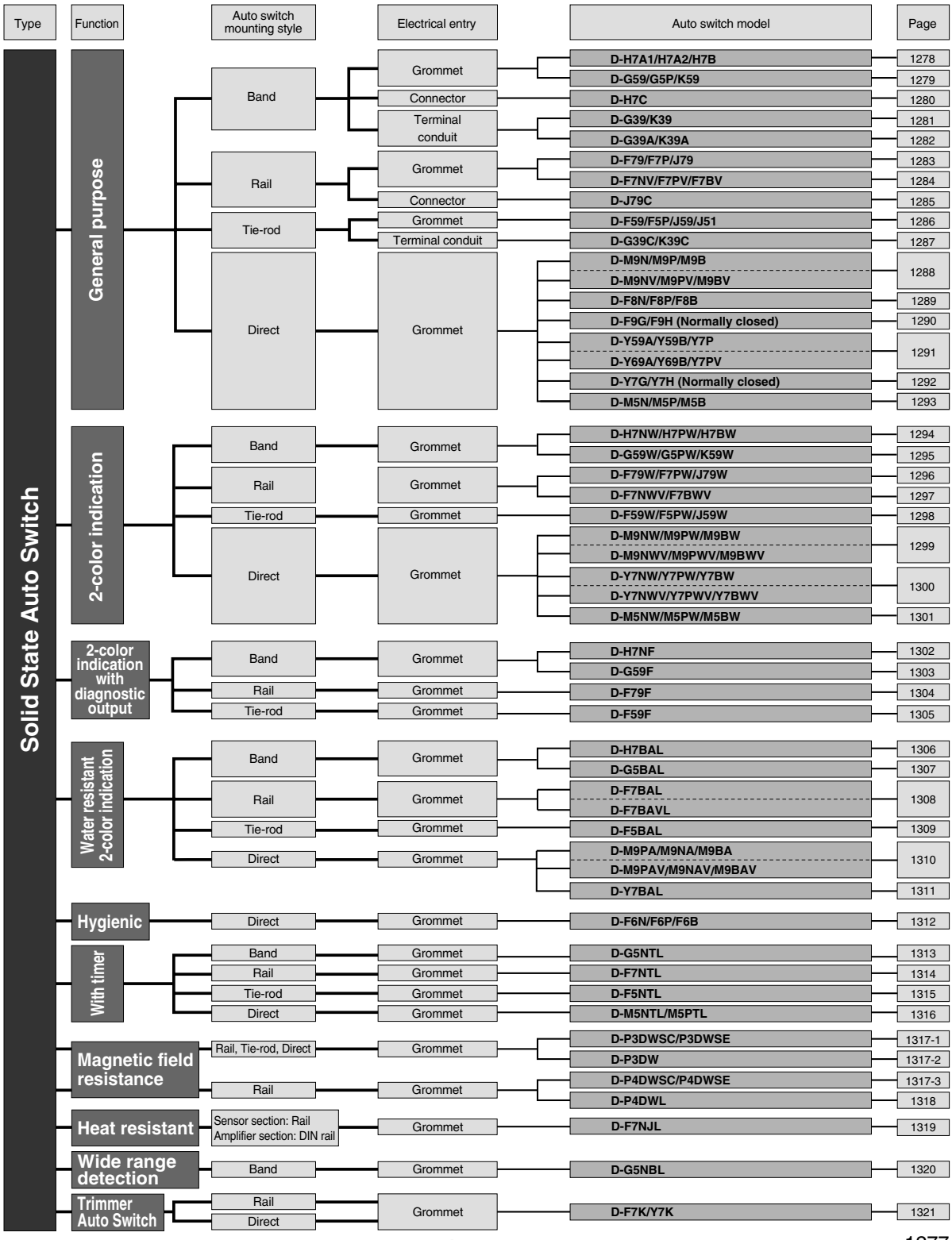
Heat Resistant Band Mounting — P.1351

• **Data** P.1355

D-□

Solid State Auto Switches

General Purpose Type, 2-Color Indication Type, 2-Color Indication Type with Diagnostic Output, Water Resistant 2-Color Indication Type, Hygienic Type, Timer Equipped Type, Magnetic Field Resistant Type, Heat Resistant Type, Wide Range Detection Type, Trimmer Auto Switch



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

CE

Grommet



Auto Switch Specifications

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

PLC: Programmable Logic Controller

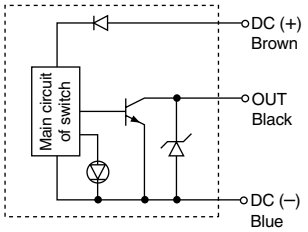
D-H7□ (With indicator light)			
Auto switch model	D-H7A1	D-H7A2	D-H7B
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

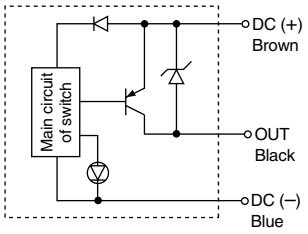
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

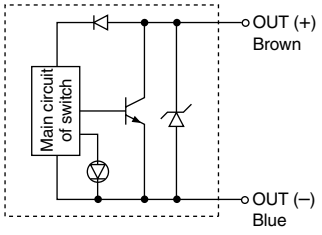
D-H7A1



D-H7A2



D-H7B



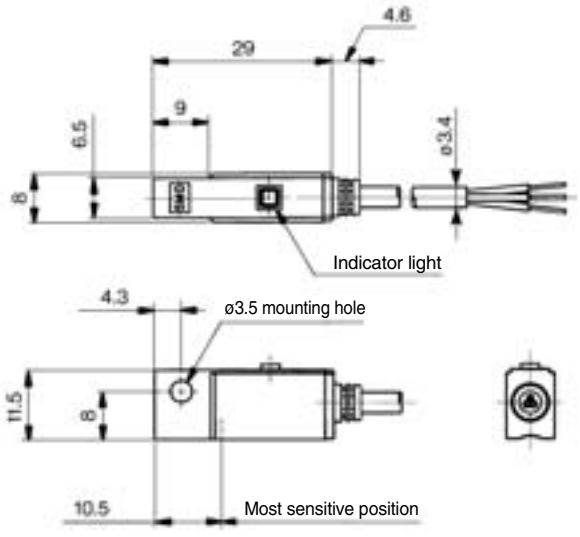
Mass

(g)

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

Dimensions

(mm)



SMC

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

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

D-G5□, D-K59 (With indicator light)			
Auto switch model	D-G59	D-G5P	D-K59
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

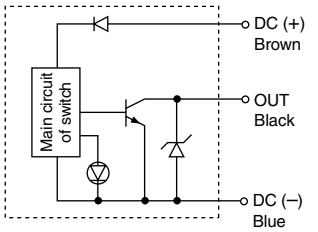
• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

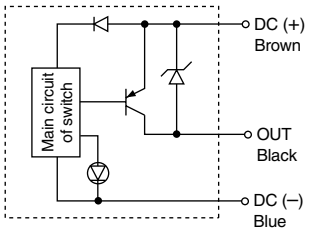
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

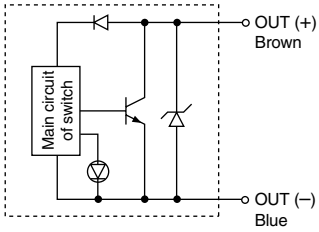
D-G59



D-G5P



D-K59



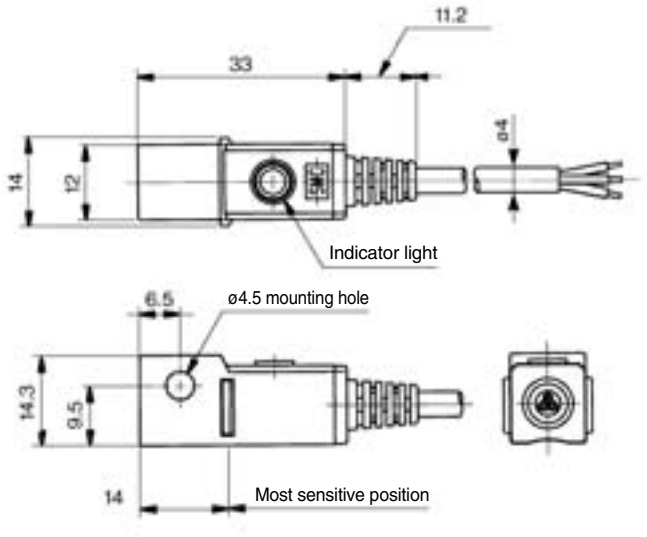
Mass

(g)

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

Dimensions

(mm)



D-□

Solid State Auto Switch
Band Mounting Style
D-H7C

CE

Connector



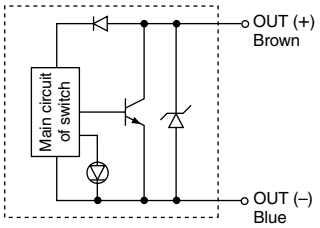
⚠Caution

Precautions

1. Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
2. Refer to page 1355 for the details.

Auto Switch Internal Circuit

D-H7C



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.
Note 3) Lead wires with a connector may be shipped with switches.

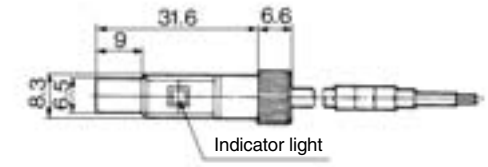
Mass

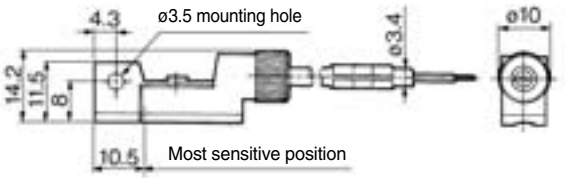
(g)

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

Dimensions

(mm)





SMC

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

CE

Terminal conduit



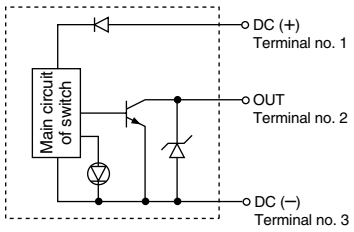
⚠Caution

Precautions

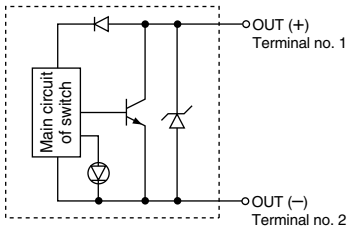
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-G39



D-K39



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-G39, D-K39 (With indicator light)		
Auto switch model	**D-G39**	**D-K39**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)	—
Current consumption	10 mA or less	—
Load voltage	28 VDC or less	24 VDC (10 to 28 VDC)
Load current	40 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

Note) Refer to page 1272 for solid state auto switch common specifications.

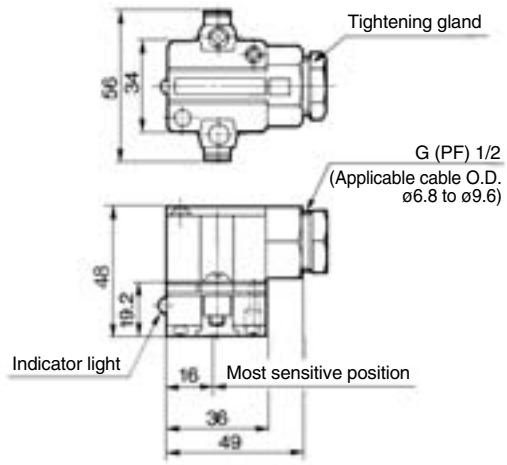
Mass

(g)

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

Dimensions

(mm)



D-□

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

CE

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

Terminal conduit



⚠Caution

Precautions

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

Auto Switch Specifications

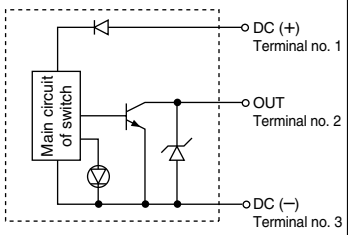
PLC: Programmable Logic Controller

D-G39A, D-K39A (With indicator light)		
Auto switch model	**D-G39A**	**D-K39A**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)	—
Current consumption	10 mA or less	—
Load voltage	28 VDC or less	24 VDC (10 to 28 VDC)
Load current	40 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

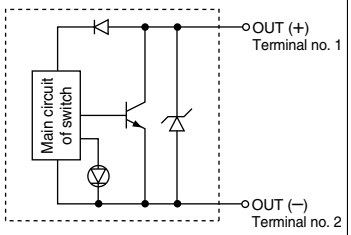
Note) Refer to page 1272 for solid state auto switch common specifications.

Auto Switch Internal Circuit

D-G39A



D-K39A



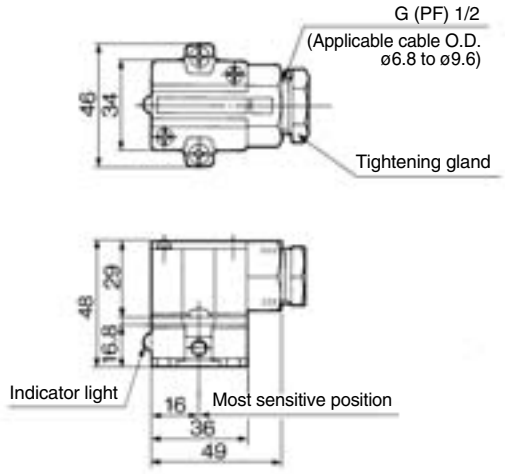
Mass

(g)

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

Dimensions

(mm)



SMC

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

CE

Grommet



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F7□, D-J79 (With indicator light)			
Auto switch model	D-F79	D-F7P	D-J79
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

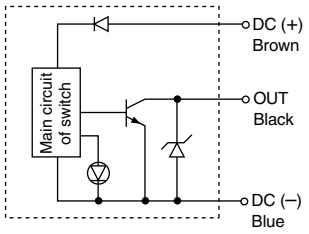
• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

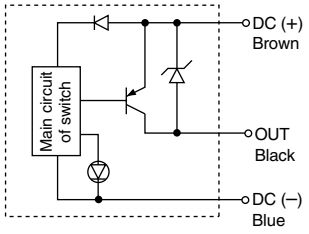
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

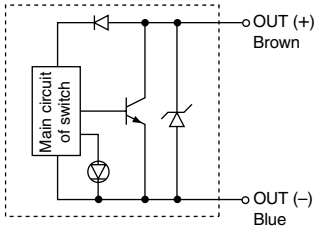
D-F79



D-F7P



D-J79



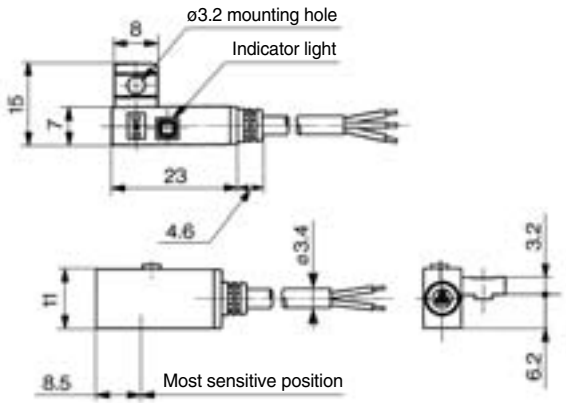
Mass

(g)

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

Dimensions

(mm)



D-□

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

Grommet
Electrical entry: Perpendicular



Auto Switch Specifications

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

PLC: Programmable Logic Controller

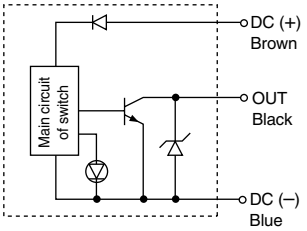
D-F7□V (With indicator light)			
Auto switch model	**D-F7NV**	**D-F7PV**	**D-F7BV**
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

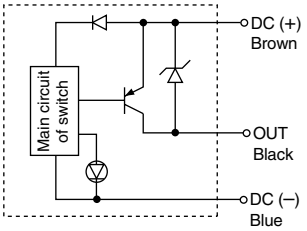
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

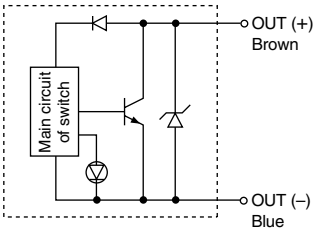
D-F7NV



D-F7PV



D-F7BV



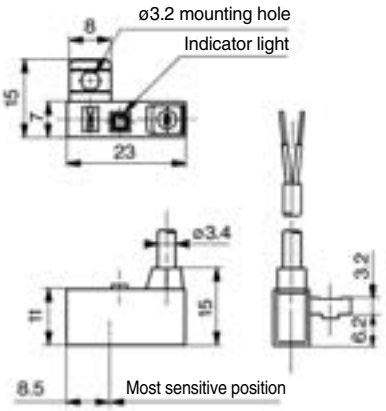
Mass

(g)

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

Dimensions

(mm)



SMC

Solid State Auto Switch
Rail Mounting Style
D-J79C

CE

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 1355 for the details.

Auto Switch Specifications

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m

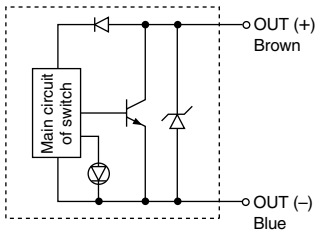
Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Note 3) Lead wires with a connector may be shipped with auto switches.

Auto Switch Internal Circuit

D-J79C



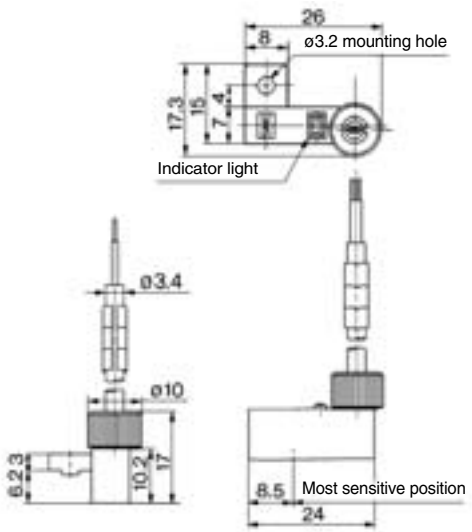
Mass

(g)

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

Dimensions

(mm)



D-□

Solid State Auto Switch
Tie-rod Mounting Style
D-F59/D-F5P/D-J59/D-J51

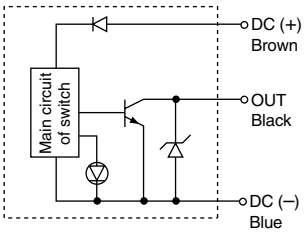
Refer to SMC website for the details of the products conforming to the international standards. (Except D-J51)

Grommet

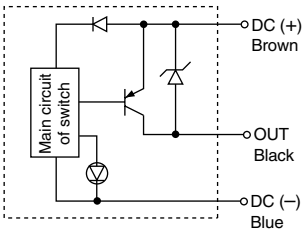


Auto Switch Internal Circuit

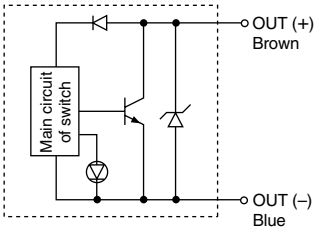
D-F59



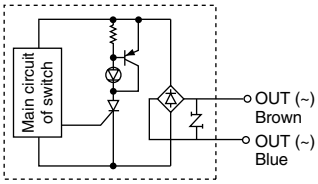
D-F5P



D-J59



D-J51



Auto Switch Specifications

PLC: Programmable Logic Controller

D-F5□, D-J5□ (With indicator light)				
Auto switch model	D-F59	D-F5P	D-J59	D-J51
Wiring type	3-wire		2-wire	
Output type	NPN	PNP	—	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC	AC 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)	80 to 260 VAC
Load current	40 mA or less	80 mA or less	5 to 40 mA	5 to 80 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	14 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC	1 mA or less at 100 VAC 1.5 mA or less at 200 VAC
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			—

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

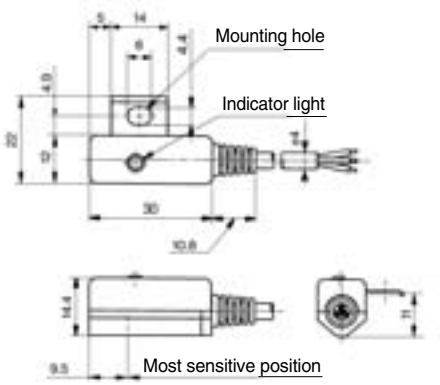
(g)

Auto switch model		D-F59	D-F5P	D-J59	D-J51
Lead wire length (m)	0.5	23	23	21	21
	3	81	81	71	71
	5	127	127	111	111

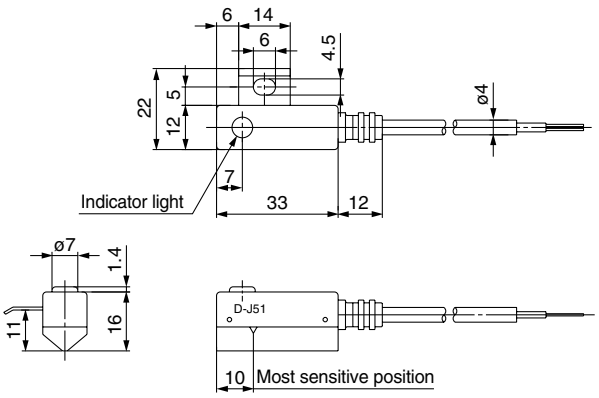
Dimensions

(mm)

D-F59/D-F5P/D-J59



D-J51



SMC

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

CE

Terminal conduit



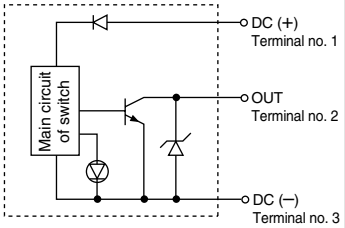
⚠Caution

Precautions

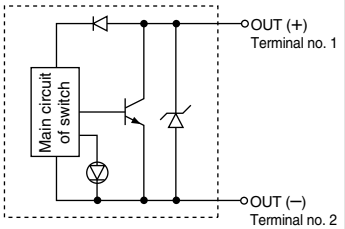
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-G39C



D-K39C



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-G39C, D-K39C (With indicator light)		
Auto switch model	**D-G39C**	**D-K39C**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC Relay, PLC
Power voltage	5, 12, 24 VDC (4.5 to 28 VDC)	—
Current consumption	10 mA or less	—
Load voltage	28 VDC or less	24 VDC (10 to 28 VDC)
Load current	40 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA of load current)	4 V or less
Current leakage	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

Note) Refer to page 1272 for solid state auto switch common specifications.

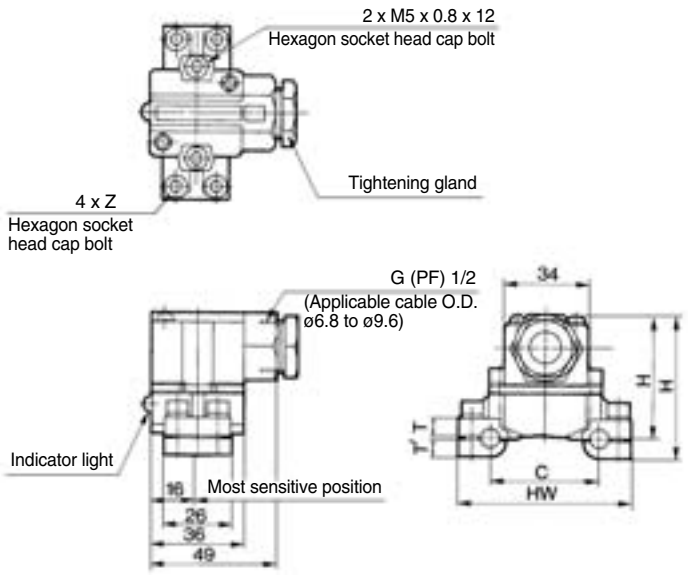
Mass

(g)

Auto switch model		D-G39C	D-K39C
Applicable bore size (mm)	**40**	162	162
	50	166	166
	63	184	184
	80	210	210
	100	232	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	

D-□

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

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Flexibility is 1.5 times greater than the conventional model (SMC comparison).**
- **Using flexible cable as standard spec.**



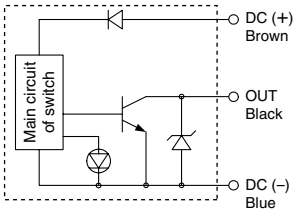
⚠Caution

Precautions

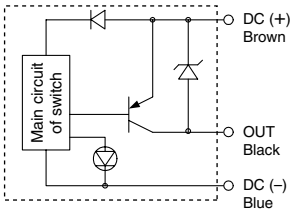
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

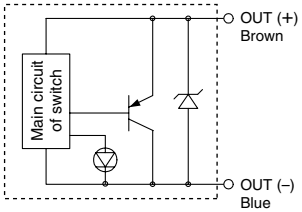
D-M9N, D-M9NV



D-M9P, D-M9PV



D-M9B, D-M9BV



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-M9□, D-M9□V (With indicator light)						
Auto switch model	D-M9N	D-M9NV	D-M9P	D-M9PV	D-M9B	D-M9BV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Red LED illuminates when turned ON.					
Standard	CE marking					

- Lead wires — Oilproof flexible heavy-duty vinyl cord: ø2.7 x 3.2 ellipse, 0.15 mm², 2 cores (D-M9B(V)), 3 cores (D-M9N(V), D-M9P(V))

Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

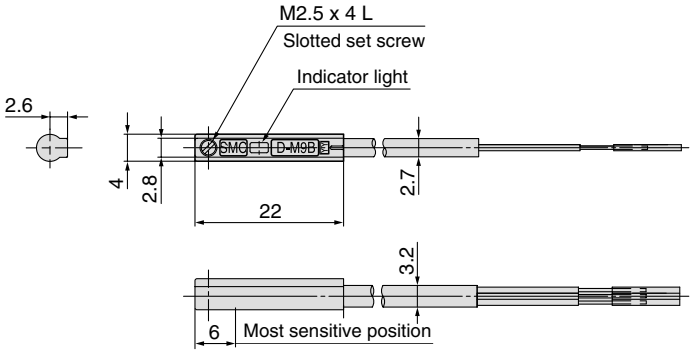
(g)

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

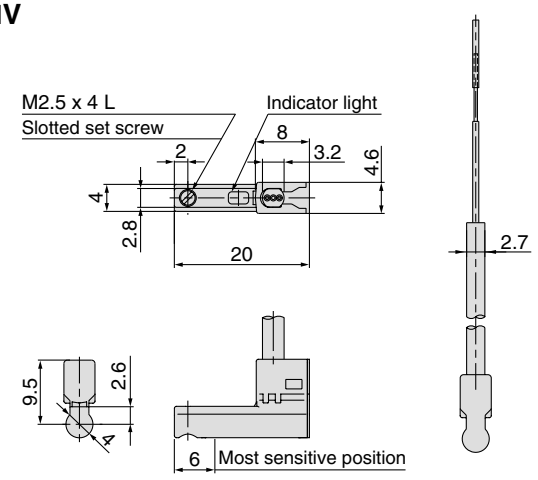
Dimensions

(mm)

D-M9□



D-M9□V



SMC

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

CE

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

Grommet



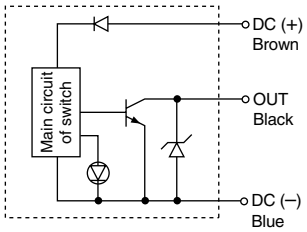
⚠Caution

Precautions

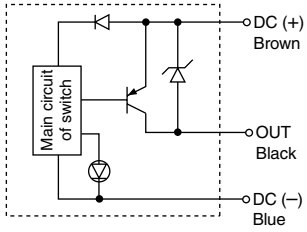
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

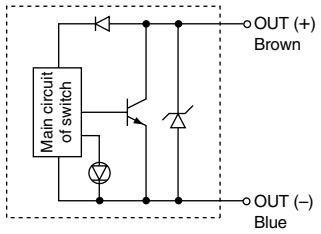
D-F8N



D-F8P



D-F8B



Auto Switch Specifications

PLC: Programmable Logic Controller

D-F8□ (With indicator light)			
Auto switch model	**D-F8N**	**D-F8P**	**D-F8B**
Electrical entry direction	Perpendicular	Perpendicular	Perpendicular
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, 24 VDC Relay, PLC		24 VDC relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	2.5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø2.7
D-F8N, D-F8P 0.15 mm² x 3 cores (Brown, Black, Blue)
D-F8B 0.18 mm² x 2 cores (Brown, Blue)

Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

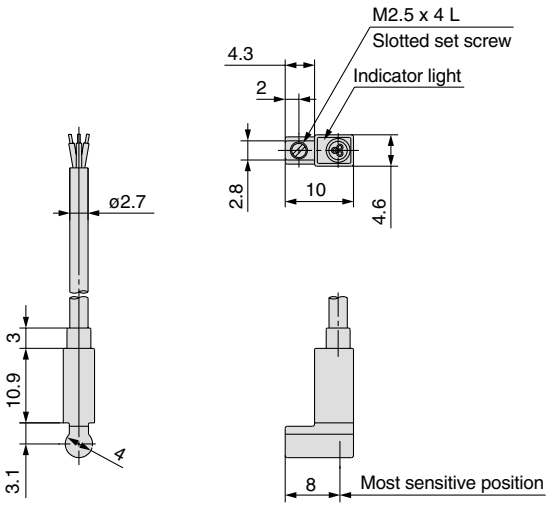
(g)

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

Dimensions

(mm)

D-F8N/D-F8P/D-F8B



D-□

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

CE

Grommet

Output signal turns on when no magnetic force is detected.



⚠Caution

Precautions

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

Auto Switch Specifications

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

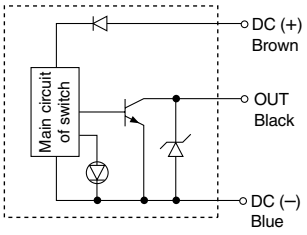
PLC: Programmable Logic Controller

D-F9G, D-F9H (With indicator light)		
Auto switch model	**D-F9G**	**D-F9H**
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, Relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)	
Current consumption	10 mA or less	
Load voltage	28 VDC or less	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking	

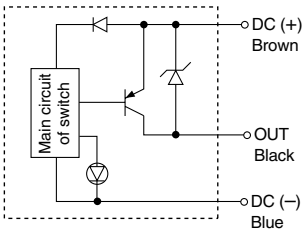
• Lead wires — Oilproof heavy-duty vinyl cord, ø2.7, 0.15 mm², 3 cores (Brown, Black, Blue) 0.5 m
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

D-F9G



D-F9H



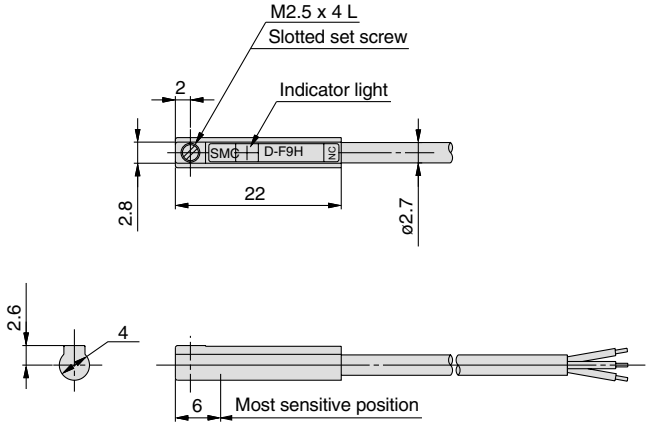
Mass

(g)

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

Dimensions

(mm)



SMC

Solid State Auto Switch
Direct Mounting Style
D-Y59A/B/D-Y69A/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 marking					

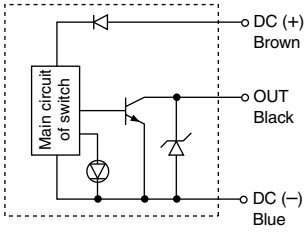
• Lead wires — Oilproof flexible heavy-duty vinyl cord, ø3.4, 0.15 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

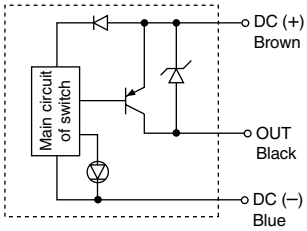
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

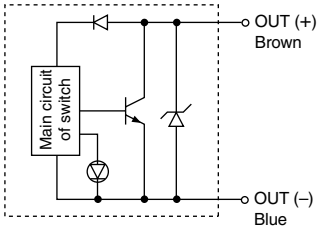
D-Y59A, D-Y69A



D-Y7P, D-Y7PV



D-Y59B, D-Y69B



Mass

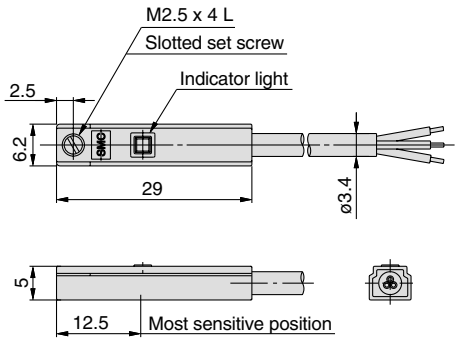
(g)

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

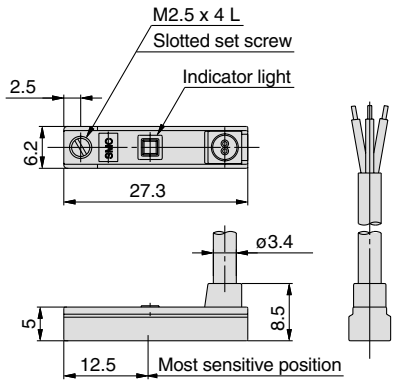
Dimensions

(mm)

D-Y59A/D-Y7P/D-Y59B



D-Y69A/D-Y7PV/D-Y69B



D-□

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

CE

Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

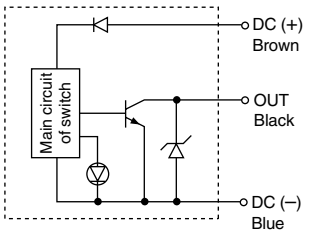
D-Y7G, D-Y7H (With indicator light)		
Auto switch model	**D-Y7G**	**D-Y7H**
Wiring type	3-wire	
Output type	NPN	PNP
Applicable load	IC circuit, Relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)	
Current consumption	10 mA or less	
Load voltage	28 VDC or less	—
Load current	40 mA or less	80 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less
Leakage current	100 μA or less at 24 VDC	
Indicator light	Red LED illuminates when detecting nothing.	
Standard	CE marking	

• Lead wires — Oilproof flexible heavy-duty vinyl cord, ø3.4, 0.15 mm², 3 cores (Brown, Black, Blue), 0.5 m

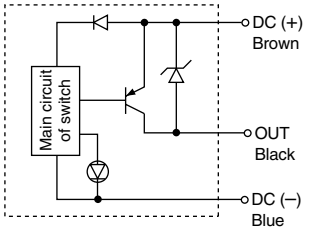
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

D-Y7G



D-Y7H



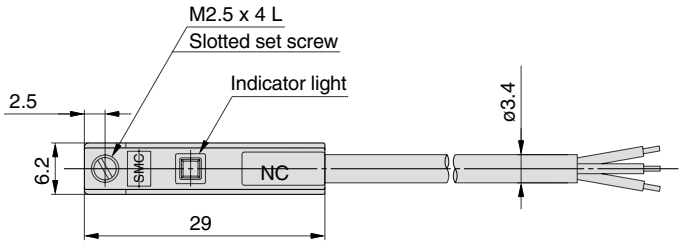
Mass

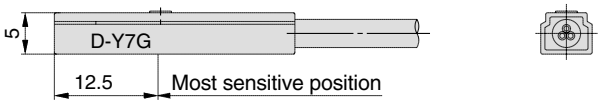
(g)

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

Dimensions

(mm)





SMC

Solid State Auto Switch
Direct Mounting Style
D-M5N/D-M5P/D-M5B

CE

Grommet



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-M5□ (With indicator light)			
Auto switch model	D-M5N	D-M5P	D-M5B
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

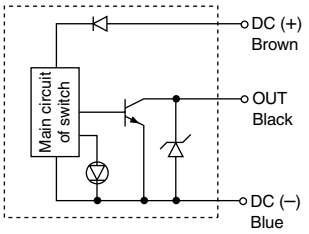
• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

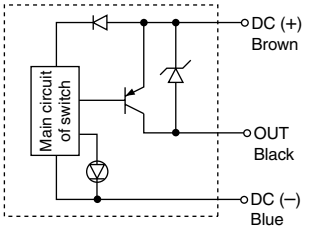
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

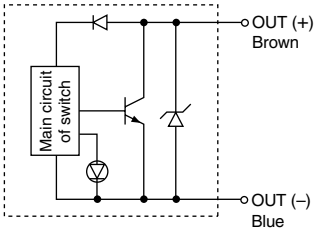
D-M5N



D-M5P



D-M5B



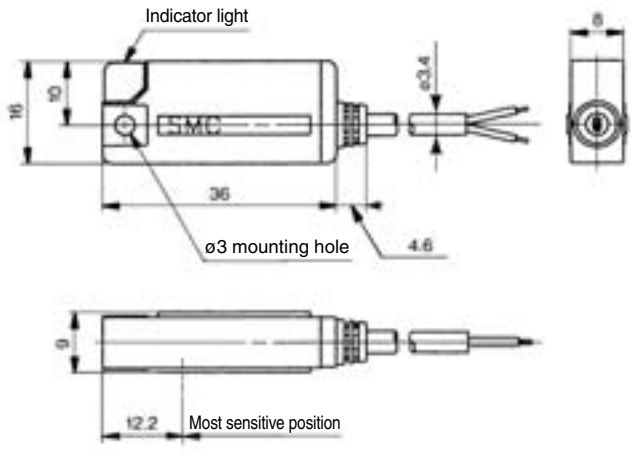
Mass

(g)

Auto switch model		D-M5N	D-M5P	D-M5B
Lead wire length (m)	0.5	16	16	14
	3	60	60	53
	5	95	95	84

Dimensions

(mm)



D-□

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

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

Grommet

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



Auto Switch Specifications

PLC: Programmable Logic Controller

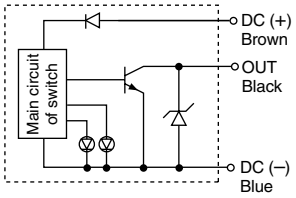
D-H7□W (With indicator light)			
Auto switch model	**D-H7NW**	**D-H7PW**	**D-H7BW**
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

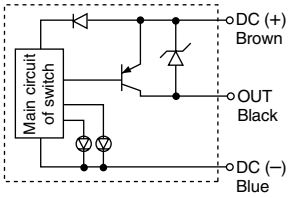
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

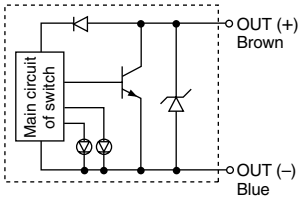
D-H7NW



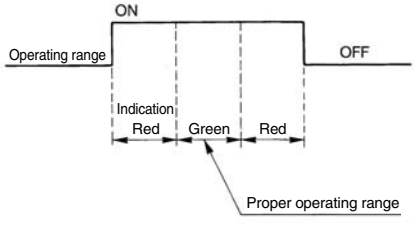
D-H7PW



D-H7BW



Indicator light/Display method



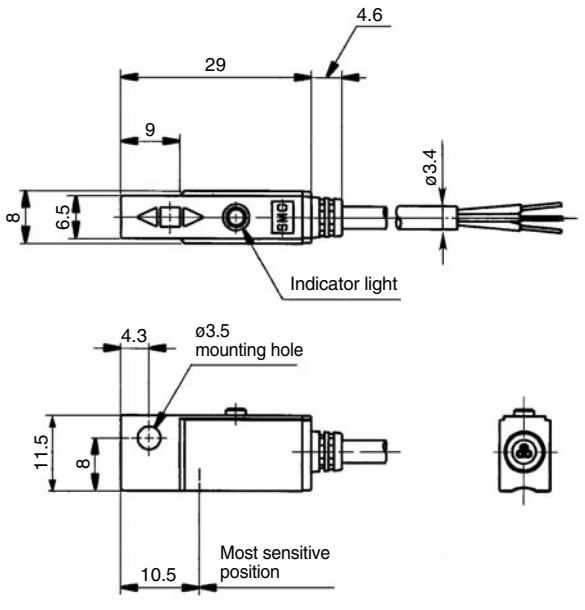
Mass

(g)

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

Dimensions

(mm)



2-Color Indication Type Solid State Auto Switch Band Mounting Style

D-G59W/D-G5PW/D-K59W

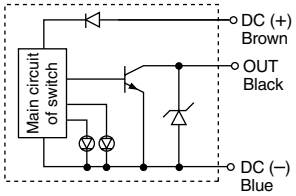
Grommet

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

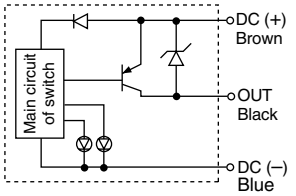


Auto Switch Internal Circuit

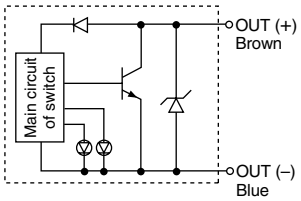
D-G59W



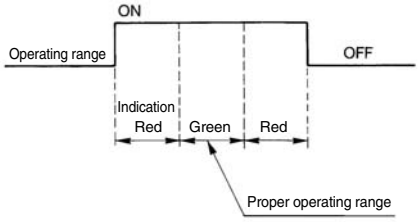
D-G5PW



D-K59W



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-G5□W, D-K59W (With indicator light)			
Auto switch model	**D-G59W**	**D-G5PW**	**D-K59W**
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

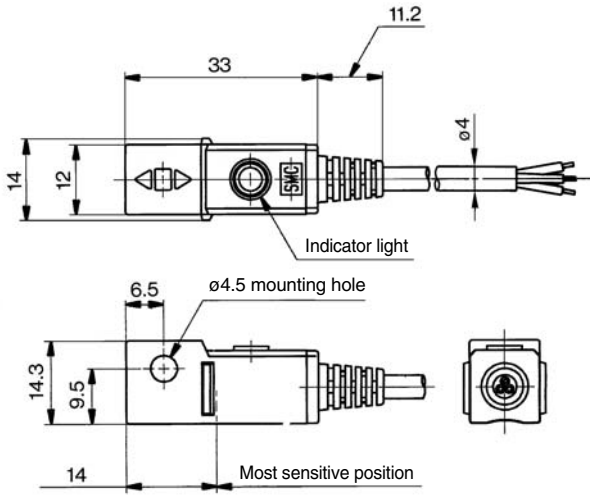
Mass

(g)

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

Dimensions

(mm)



D-□

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

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

Grommet

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



Auto Switch Specifications

PLC: Programmable Logic Controller

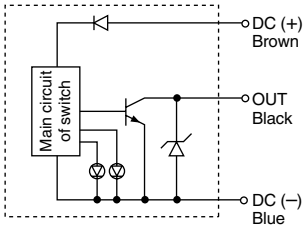
D-F7□W, D-J79W (With indicator light)			
Auto switch model	**D-F79W**	**D-F7PW**	**D-J79W**
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

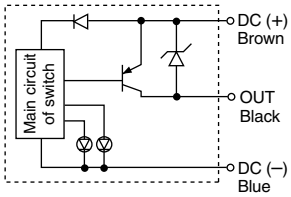
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

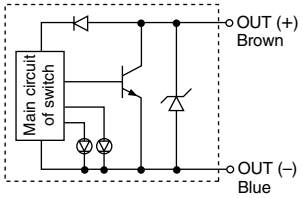
D-F79W



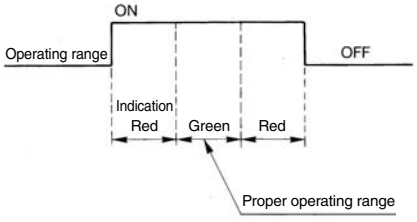
D-F7PW



D-J79W



Indicator light/Display method



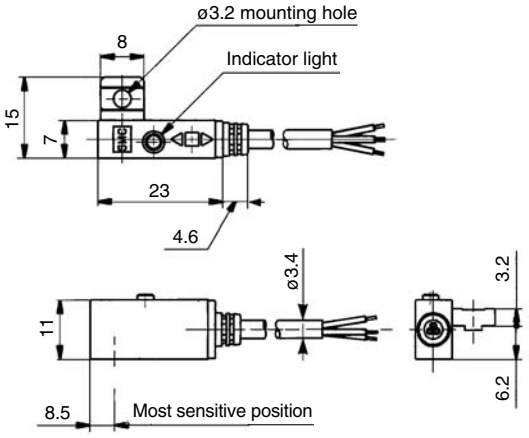
Mass

(g)

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

Dimensions

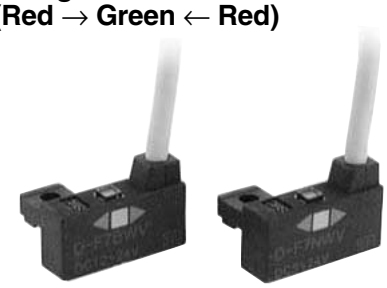
(mm)



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

Grommet
Electrical entry: Perpendicular

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

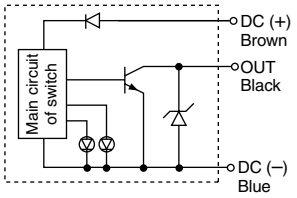
D-F7□WV (With indicator light)		
Auto switch model	**D-F7NWV**	**D-F7BWV**
Wiring type	3-wire	2-wire
Output type	NPN	—
Applicable load	IC circuit, Relay, PLC	24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)	—
Current consumption	10 mA or less	—
Load voltage	28 VDC or less	24 VDC (10 to 28 VDC)
Load current	40 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	4 V or less
Leakage current	100 μA or less at 24 VDC	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

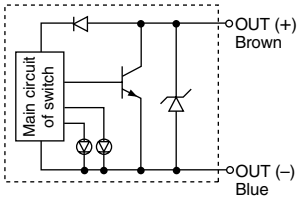
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Auto Switch Internal Circuit

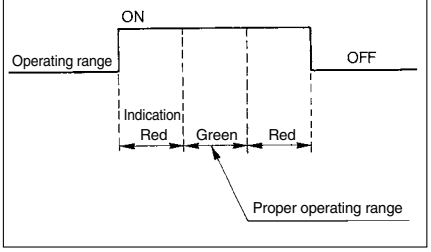
D-F7NWV



D-F7BWV



Indicator light/Display method



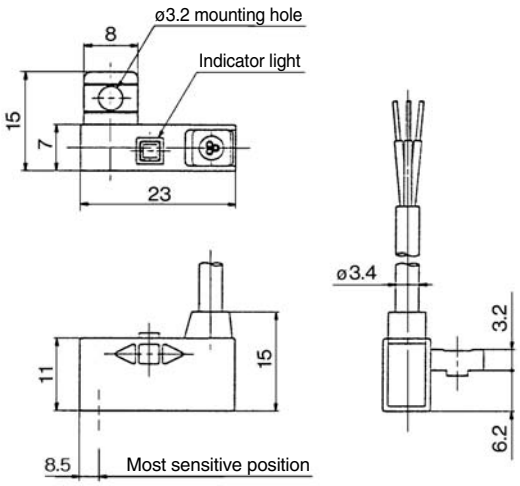
Mass

(g)

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

Dimensions

(mm)



D-□

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

CE

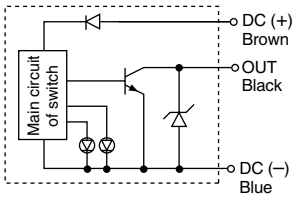
Grommet

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

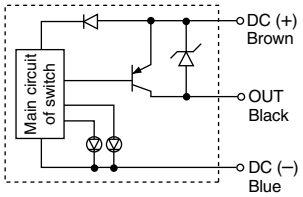


Auto Switch Internal Circuit

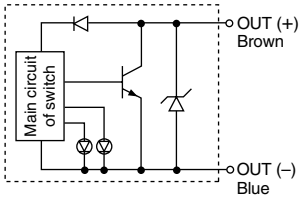
D-F59W



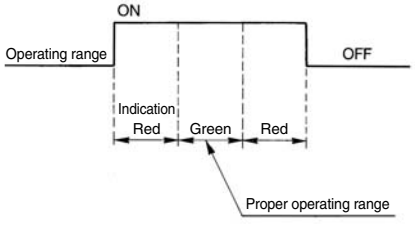
D-F5PW



D-J59W



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F5□W, D-J59W (With indicator light)			
Auto switch model	**D-F59W**	**D-F5PW**	**D-J59W**
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

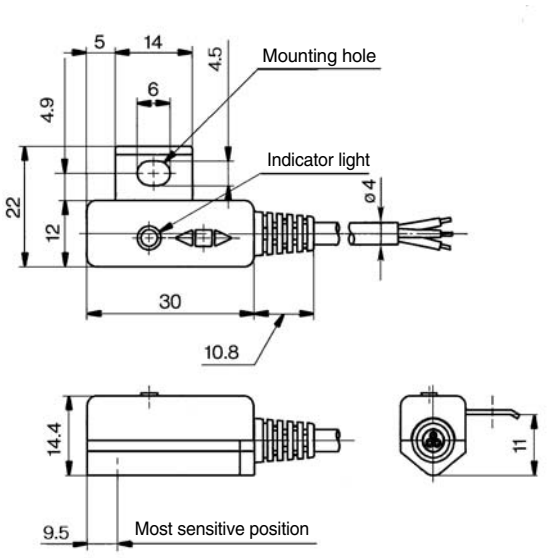
Mass

(g)

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

Dimensions

(mm)



SMC

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

RoHS

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

Grommet

- **2-wire load current is reduced (2.5 to 40 mA).**
- **Flexibility is 1.5 times greater than the conventional model (SMC comparison).**
- **Using flexible cable as standard spec.**
- **The proper operating range can be determined by the color of the light. (Red → Green ← Red)**



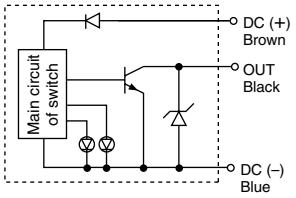
⚠Caution

Precautions

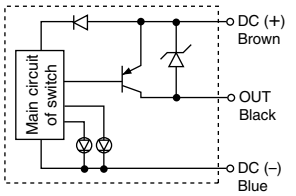
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

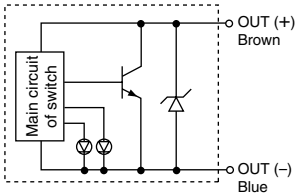
D-M9NW, D-M9NWV



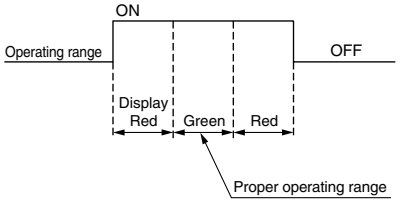
D-M9PW, D-M9PWV



D-M9BW, D-M9BWV



Indicator light / Display method



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□W, D-M9□WV (With indicator light)						
Auto switch model	D-M9NW	D-M9NWV	D-M9PW	D-M9PWV	D-M9BW	D-M9BWV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking					

● Lead wires — Oilproof flexible heavy-duty vinyl cord: ø2.7 x 3.2 ellipse, 0.15 mm², 2 cores (D-M9BW(V)), 3 cores (D-M9NW(V), D-M9PW(V))

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

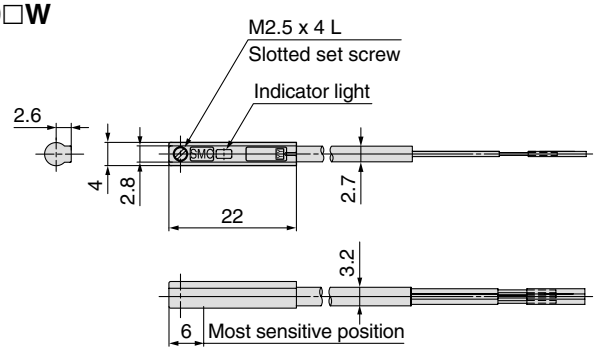
(g)

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

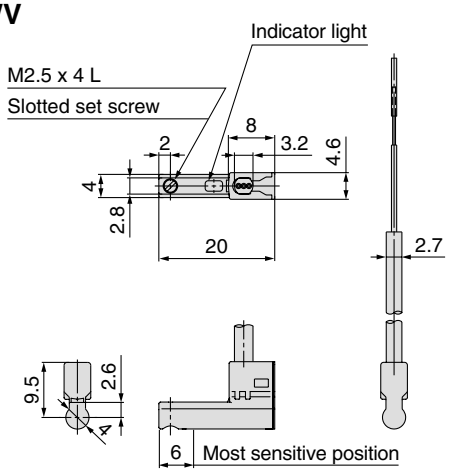
Dimensions

(mm)

D-M9□W



D-M9□WV

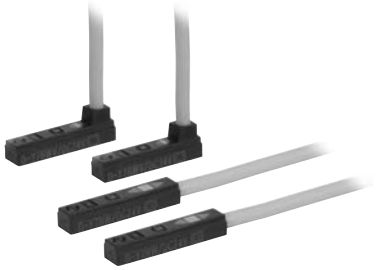


D-□

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

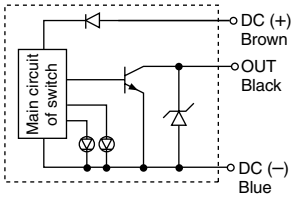
Grommet

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

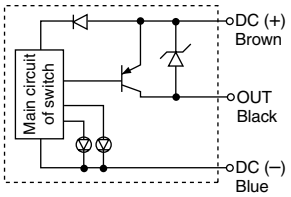


Auto Switch Internal Circuit

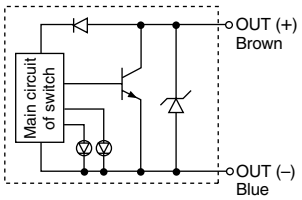
D-Y7NW, Y7NWV



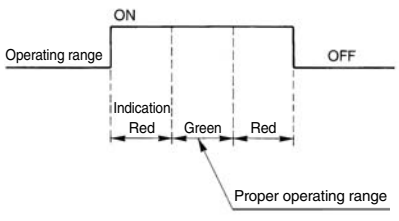
D-Y7PW, Y7PWV



D-Y7BW, Y7BWV



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-Y7□W, D-Y7□WV (With indicator light)						
Auto switch model	D-Y7NW	D-Y7NWV	D-Y7PW	D-Y7PWV	D-Y7BW	D-Y7BWV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less		80 mA or less		2.5 to 40 mA	
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)		0.8 V or less		4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less at 24 VDC	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking					

• Lead wires — Oilproof flexible heavy-duty vinyl cord, ø3.4, 0.15 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

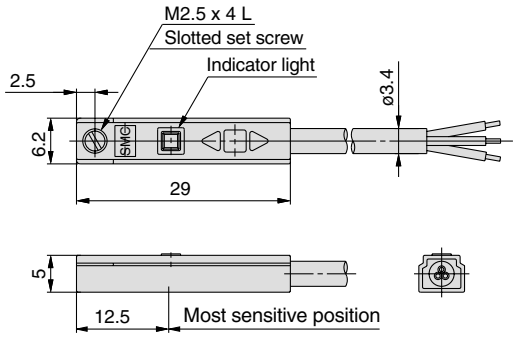
(g)

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

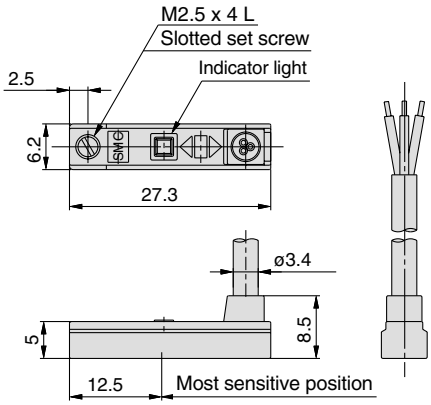
Dimensions

(mm)

D-Y7□W



D-Y7□WV



2-Color Indication Type Solid State Auto Switch Direct Mounting Style

D-M5NW/D-M5PW/D-M5BW

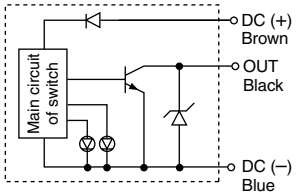
Grommet

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

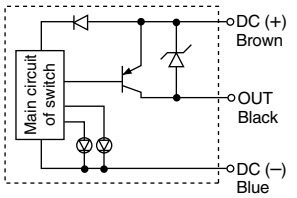


Auto Switch Internal Circuit

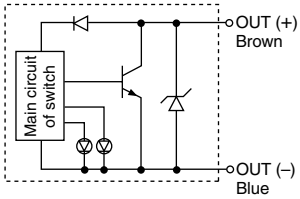
D-M5NW



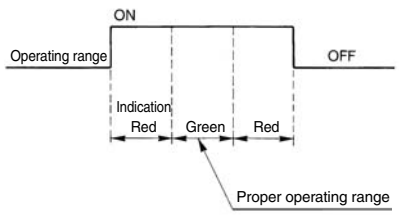
D-M5PW



D-M5BW



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-M5□W (With indicator light)			
Auto switch model	D-M5NW	D-M5PW	D-M5BW
Wiring type	3-wire		2-wire
Output type	NPN	PNP	—
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		—
Current consumption	10 mA or less		—
Load voltage	28 VDC or less	—	24 VDC (10 to 28 VDC)
Load current	40 mA or less	80 mA or less	5 to 40 mA
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 2 cores (Brown, Blue) 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

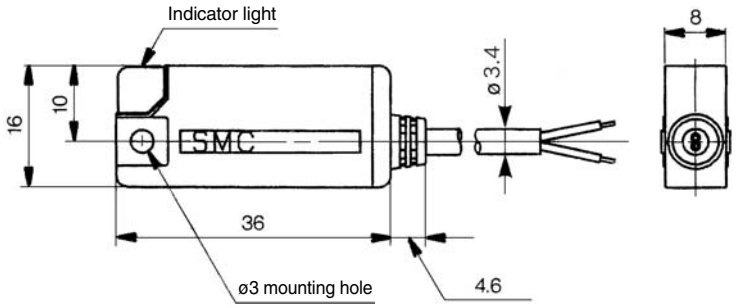
Mass

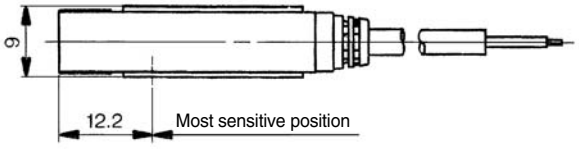
(g)

Auto switch model		D-M5NW	D-M5PW	D-M5BW
Lead wire length (m)	0.5	16	16	14
	3	60	60	53
	5	95	95	84

Dimensions

(mm)





D-□

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

D-H7NF

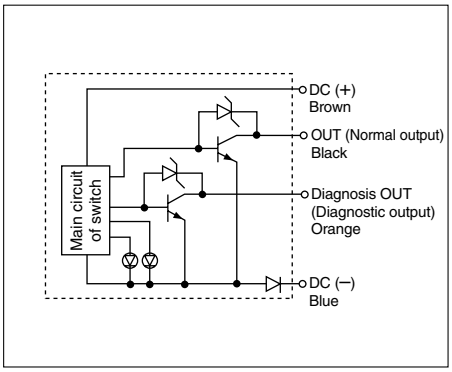
CE

Grommet

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



Auto Switch Internal Circuit



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm^2, 4 cores (Brown, Black, Orange, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

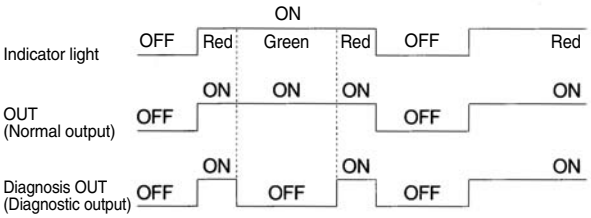
Mass

(g)

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

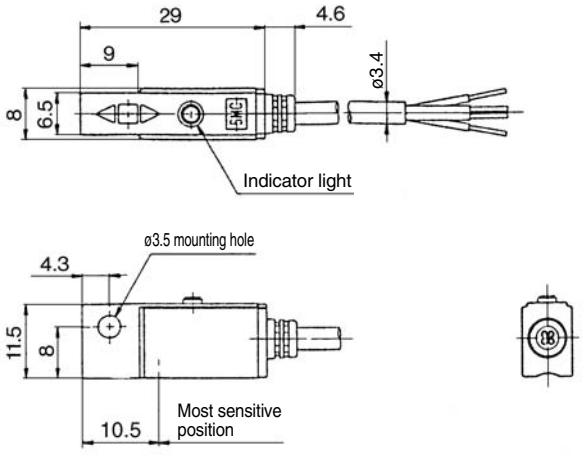
Diagnostic Output Operation

The diagnostic output signal is output within unsteady detecting 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 Indication Type with Diagnostic Output Solid State Auto Switch: Band Mounting Style

D-G59F

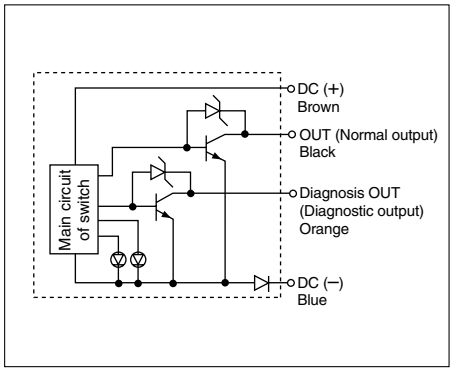
CE

Grommet

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



Auto Switch Internal Circuit



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

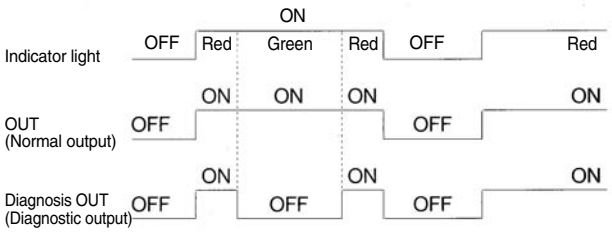
Mass

(g)

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

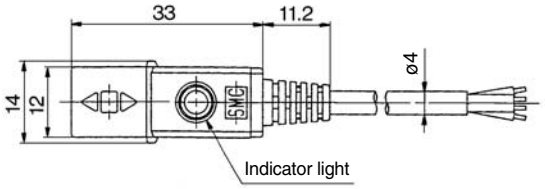
Diagnostic Output Operation

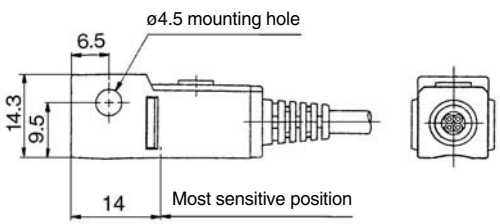
The diagnostic output signal is output within unsteady detecting area (where indicator light is Red), and the diagnostic output becomes OFF when the detecting position remains within the proper operating range (where indicator is Green). When the detecting position is not adjusted, the diagnostic output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



Dimensions

(mm)





D-□

2-Color Indication Type with Diagnostic Output Solid State Auto Switch: Rail Mounting Style

D-F79F

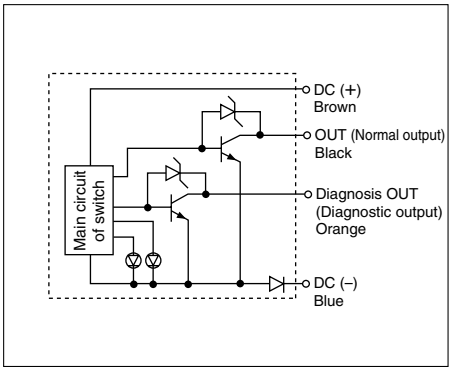
CE

Grommet

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



Auto Switch Internal Circuit



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F79F (With indicator light)	
Auto switch model	**D-F79F**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

● Lead wires — Oilproof heavy-duty vinyl cord: ø3.4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

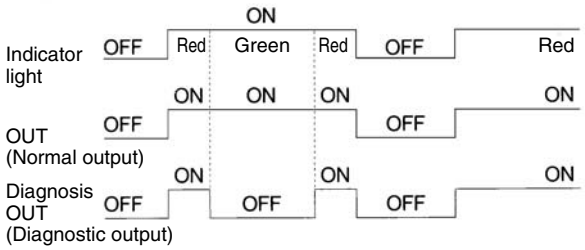
Mass

(g)

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

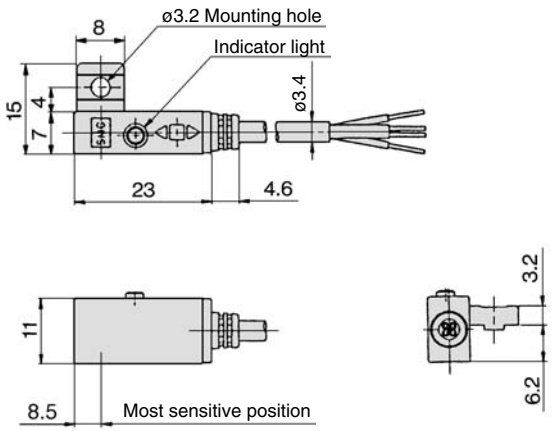
Diagnostic Output Operation

The diagnostic output signal is output within an unsteady detecting 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)



SMC

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

D-F59F

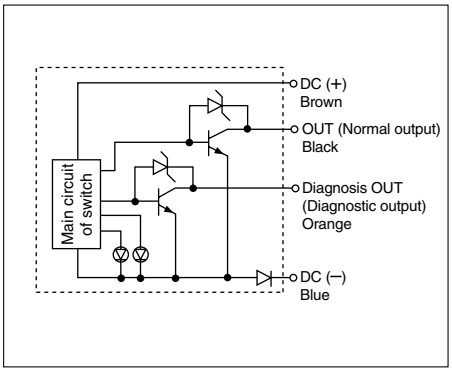
CE

Grommet

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



Auto Switch Internal Circuit



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F59F (With indicator light)	
Auto switch model	**D-F59F**
Wiring type	4-wire
Output type	NPN
Diagnostic output	Normal operation
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	50 mA or less at the total amount of normal output and diagnostic output
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)
Leakage current	100 μA or less at 28 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.2 mm², 4 cores (Brown, Black, Orange, Blue), 0.5 m
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

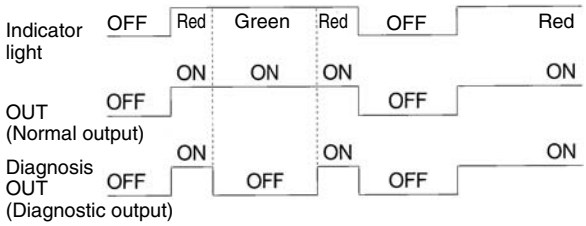
Mass

(g)

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

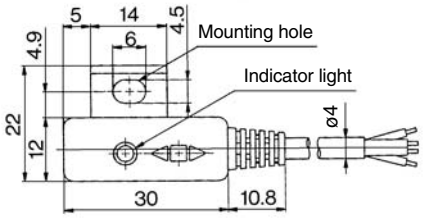
Diagnostic Output Operation

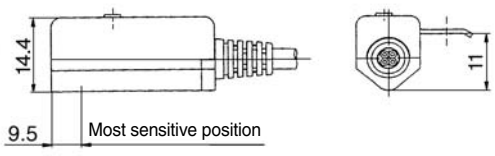
The diagnostic output signal is output within an unsteady detecting area (where indicator light is Red), and it is not output within the proper operating range (where indicator light is Green). When the auto switch detecting position is not adjusted, the diagnostic output becomes activated.



Dimensions

(mm)





D-□

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

D-H7BAL

CE

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

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

PLC: Programmable Logic Controller

D-H7BAL (With indicator light)	
Auto switch model	**D-H7BAL**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

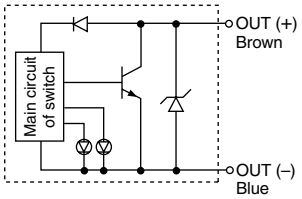
• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

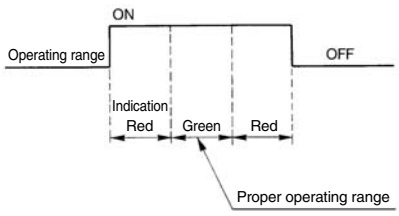
(g)

Auto switch model		**D-H7BA**
Lead wire length (m)	0.5	—
	3	50
	5	81

Auto Switch Internal Circuit

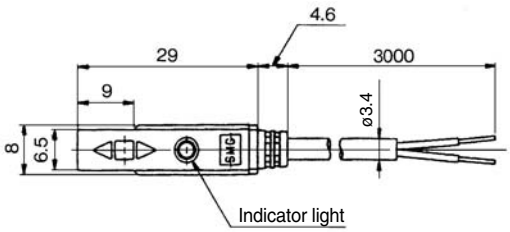


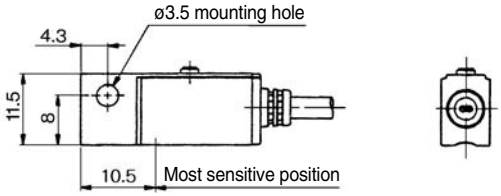
Indicator light/Display method



Dimensions

(mm)





SMC

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

D-G5BAL

CE

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

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

PLC: Programmable Logic Controller

D-G5BAL (With indicator light)	
Auto switch model	**D-G5BAL**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

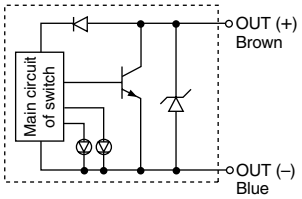
• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

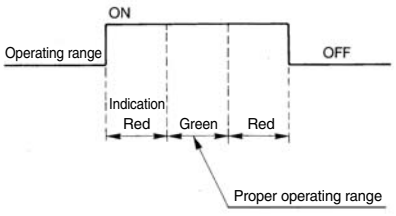
(g)

Auto switch model		**D-G5BA**
Lead wire length (m)	0.5	—
	3	68
	5	108

Auto Switch Internal Circuit

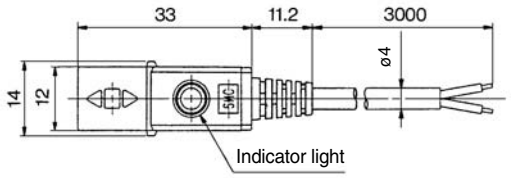


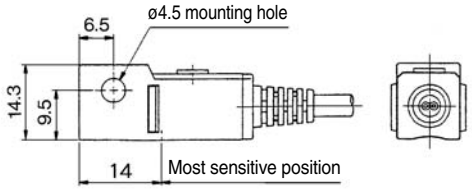
Indicator light/Display method



Dimensions

(mm)





D-□

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

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)L (With indicator light)		
Auto switch model	**D-F7BAL**	**D-F7BAVL**
Electrical entry direction	In-line	Perpendicular
Wiring type	2-wire	
Output type	—	
Applicable load	24 VDC Relay, PLC	
Power supply voltage	—	
Current consumption	—	
Load voltage	24 VDC (10 to 28 VDC)	
Load current	5 to 40 mA	
Internal voltage drop	4 V or less	
Leakage current	0.8 mA or less at 24 VDC	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking	

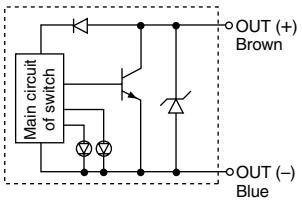
• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

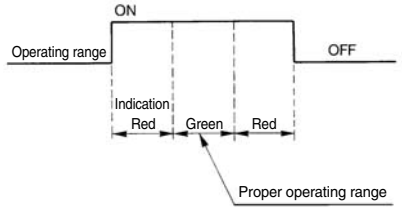
(g)

Auto switch model		D-F7BA	D-F7BAV
Lead wire length (m)	0.5	—	—
	3	50	50
	5	81	81

Auto Switch Internal Circuit



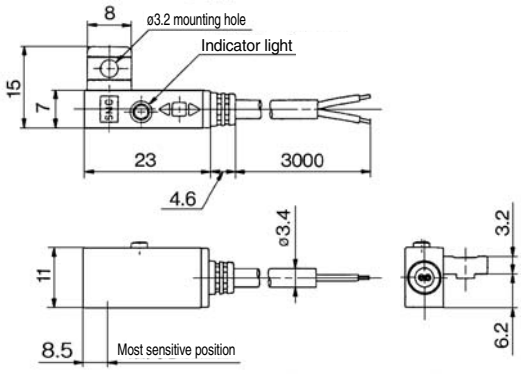
Indicator light/Display method



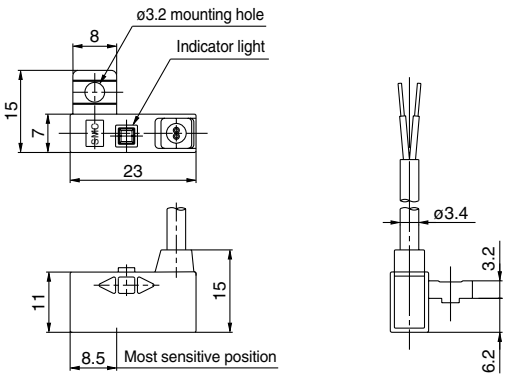
Dimensions

(mm)

D-F7BAL



D-F7BAVL



Water Resistant 2-Color Indication Type Solid State Auto Switch: Tie-rod Mounting Style

D-F5BAL

CE

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

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

PLC: Programmable Logic Controller

D-F5BAL (With indicator light)	
Auto switch model	**D-F5BAL**
Wiring type	2-wire
Output type	—
Applicable load	24 VDC Relay, PLC
Power supply voltage	—
Current consumption	—
Load voltage	24 VDC (10 to 28 VDC)
Load current	5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

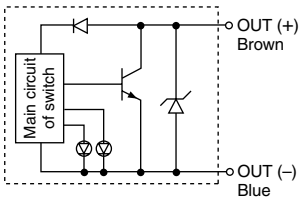
• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

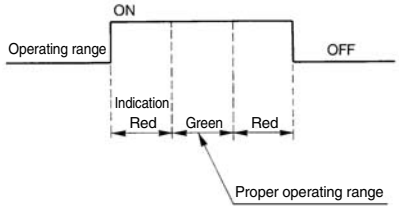
(g)

Auto switch model		D-F5BA
Lead wire length (m)	0.5	—
	3	71
	5	111

Auto Switch Internal Circuit

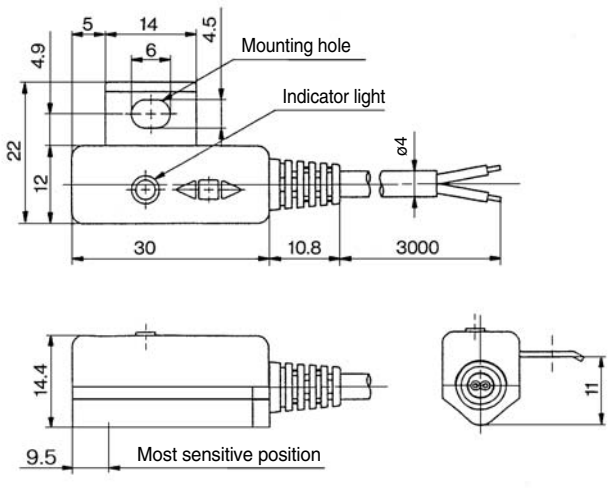


Indicator light/Display method



Dimensions

(mm)



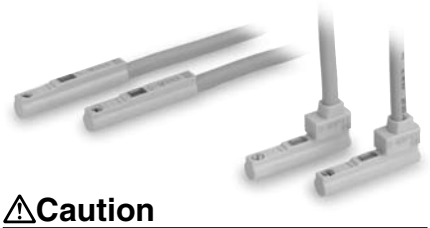
D-□

Water Resistant 2-Color Indication Type Solid State Auto Switch: Direct Mounting Style

D-M9NA(V)/D-M9PA(V)/D-M9BA(V) CE RoHS

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.



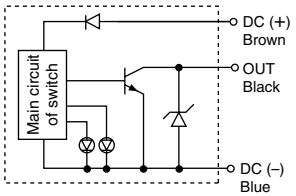
⚠Caution

Precautions

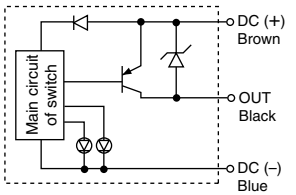
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

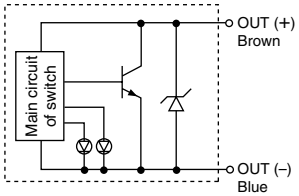
D-M9NA, D-M9NAV



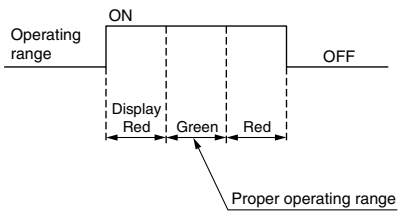
D-M9PA, D-M9PAV



D-M9BA, D-M9BAV



Indicator light/Display method



Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M9□AV (With indicator light)						
Auto switch model	D-M9NA	D-M9NAV	D-M9PA	D-M9PAV	D-M9BA	D-M9BAV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type	3-wire				2-wire	
Output type	NPN		PNP		—	
Applicable load	IC circuit, Relay, PLC				24 VDC relay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)				—	
Current consumption	10 mA or less				—	
Load voltage	28 VDC or less		—		24 VDC (10 to 28 VDC)	
Load current	40 mA or less				2.5 to 40 mA	
Internal voltage drop	0.8 V or less at 10 mA (2 V or less at 40 mA)				4 V or less	
Leakage current	100 μA or less at 24 VDC				0.8 mA or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.					
Standard	CE marking					

● Lead wires — Oilproof flexible heavy-duty vinyl cord: ø2.7 x 3.2 ellipse, 0.15 mm², 2 cores (D-M9BA(V)), 3 cores (D-M9NA(V), D-M9PA(V))

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

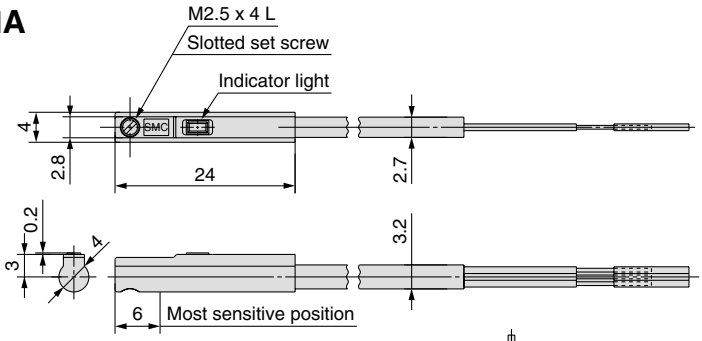
(g)

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

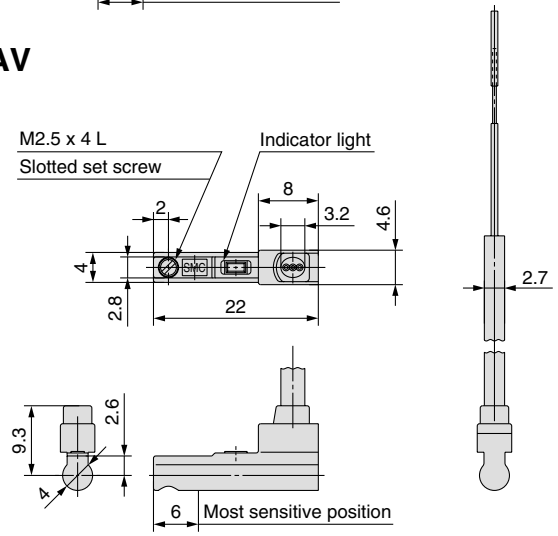
Dimensions

(mm)

D-M9□A



D-M9□AV



Water Resistant 2-Color Indication Type Solid State Auto Switch: Direct Mounting Style
D-Y7BAL

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)**

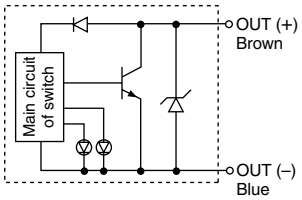


⚠Caution

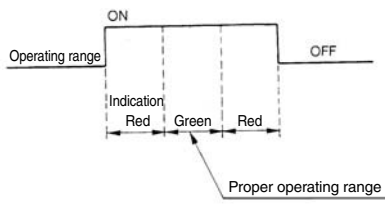
Precautions

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 Internal Circuit



Indicator light/Display method



Auto Switch Specifications

PLC: Programmable Logic Controller

D-Y7BAL (With indicator light)	
Auto switch model	**D-Y7BAL**
Wiring type	2-wire
Applicable load	24 VDC Relay, PLC
Load voltage	24 VDC (10 to 28 VDC)
Load current	2.5 to 40 mA
Internal voltage drop	4 V or less
Leakage current	0.8 mA or less at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof flexible heavy-duty vinyl cord, ø3.4, 0.15 mm², 2 cores (Brown, Blue), 3 m (Standard)
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

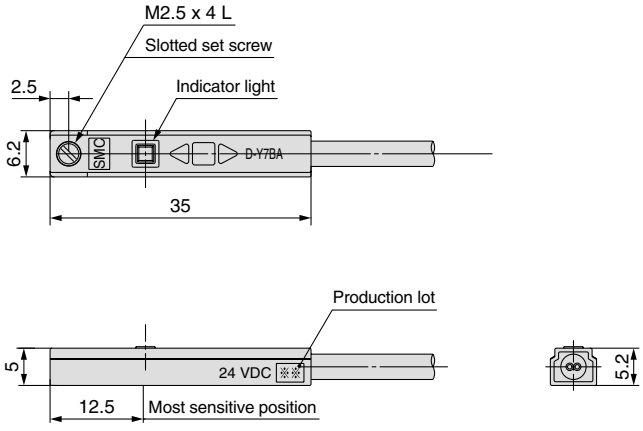
Mass

(g)

Auto switch model		D-Y7BA
Lead wire length (m)	0.5	—
	3	54
	5	88

Dimensions

(mm)



D-□

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

CE

Grommet

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



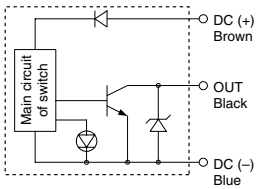
⚠Caution

Precautions

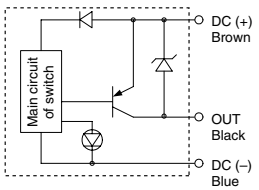
Fix the auto switch with the existing screw installed on the auto switch body.
The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

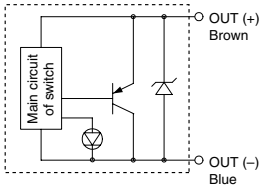
D-F6N



D-F6P



D-F6B



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 (2 V or less at 40 mA)		4 V or less
Leakage current	100 μA or less at 24 VDC		0.8 mA or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord: ø2.7 x 3.2 ellipse, 0.15 mm^2, 2 cores (D-F6B), 3 cores (D-F6N, D-F6P)

Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Weight

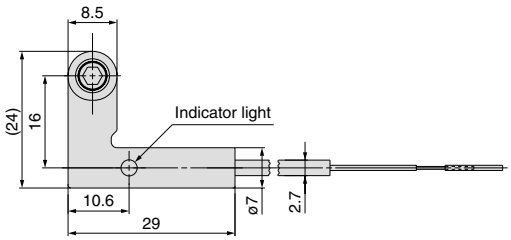
(g)

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

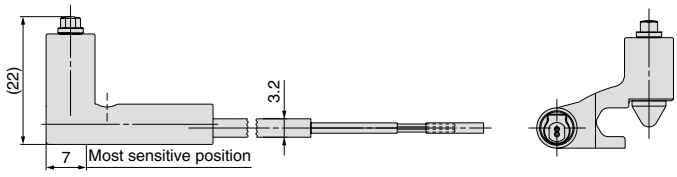
Dimensions

(mm)

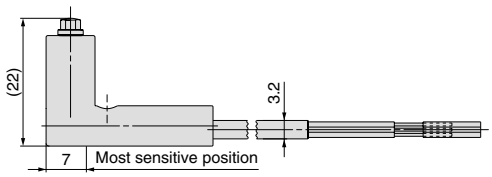
D-F6□



D-F6B



D-F6N/F6P



SMC

Solid State Auto Switch with Timer
Band Mounting Style
D-G5NTL

CE

Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-G5NTL (With indicator light)	
Auto switch model	**D-G5NTL**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 1272 for solid state auto switch common specifications.

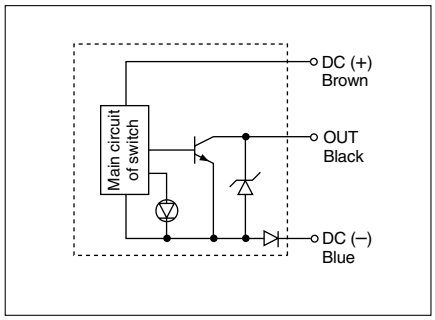
Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

Auto switch model		D-G5NT
Lead wire length (m)	0.5	—
	3	78
	5	124

Auto Switch Internal Circuit



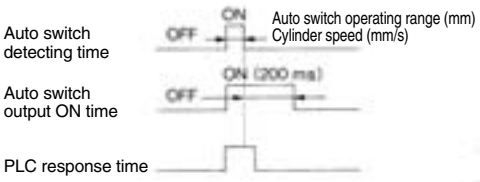
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

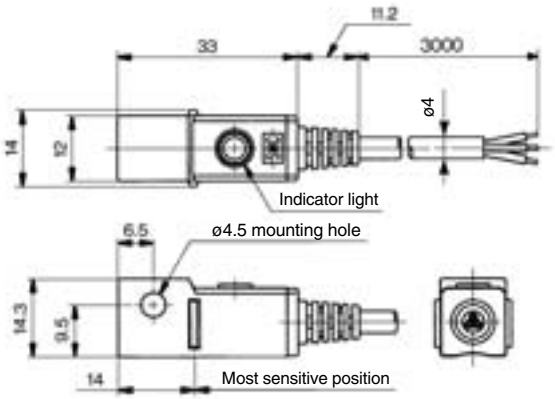
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



D-□

Solid State Auto Switch with Timer
Rail Mounting Style
D-F7NTL

CE

Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F7NTL (With indicator light)	
Auto switch model	**D-F7NTL**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

Auto switch model		**D-F7NT**
Lead wire length (m)	0.5	—
	3	57
	5	92

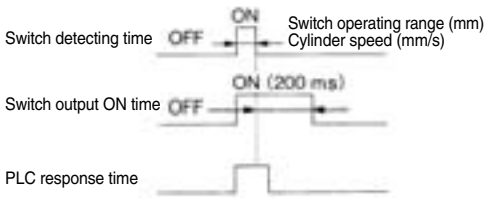
Timer Operation

Detection of intermediate positioning for high-speed cylinder

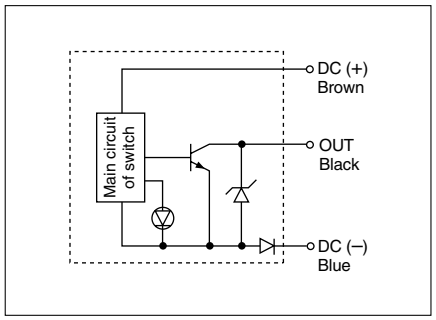
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

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.

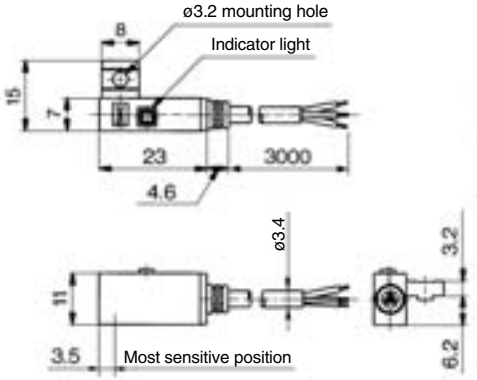


Auto Switch Internal Circuit



Dimensions

(mm)



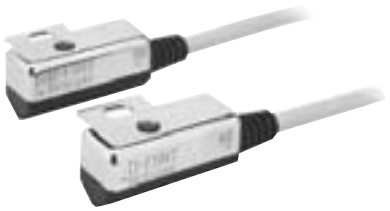
SMC

Solid State Auto Switch with Timer
Tie-rod Mounting Style
D-F5NTL

CE

Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F5NTL (With indicator light)	
Auto switch model	**D-F5NTL**
Wiring type	3-wire
Output type	NPN
Output operation	Off-delay
Operating time	1 ms or less
Off-delay time	200 ± 50 ms
Applicable load	IC circuit, Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)
Current consumption	10 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)
Leakage current	100 μA or less at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 1272 for solid state auto switch common specifications.

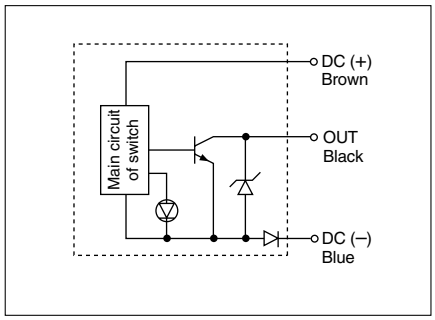
Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

Auto switch model		D-F5NT
Lead wire length (m)	0.5	—
	3	81
	5	127

Auto Switch Internal Circuit



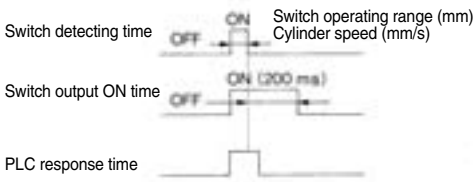
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

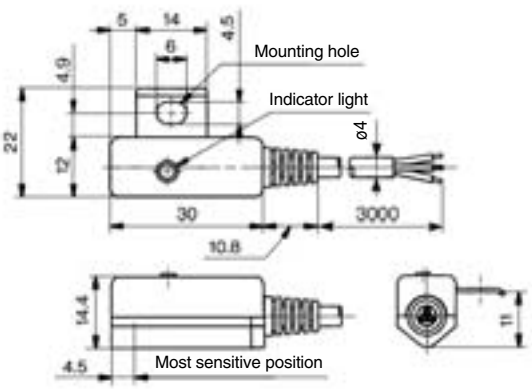
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.



Dimensions

(mm)



D-□

Solid State Auto Switch with Timer
Direct Mounting Style
D-M5NTL/D-M5PTL

CE

Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-M5□TL (With indicator light)		
Auto switch model	**D-M5NTL**	**D-M5PTL**
Wiring type	3-wire	
Output type	NPN	PNP
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	12 mA or less
Load voltage	28 VDC or less	—
Load current	80 mA or less	
Internal voltage drop	2 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 turned ON.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 3 m (Standard)

Note 1) Refer to page 1272 for solid state auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

Auto switch model		D-M5NT	D-M5PT
Lead wire length (m)	0.5	—	—
	3	60	60
	5	95	95

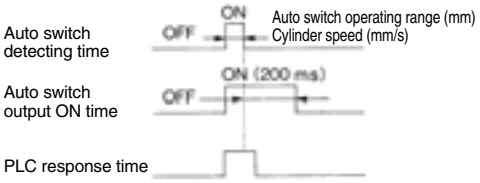
Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

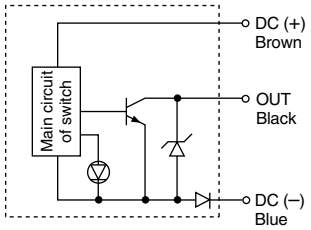
Ex.) Cylinder speed — 1000 mm/sec.
PLC response time — 0.1 sec.
Detecting point dispersion — Within 100 mm (= 1000 mm/sec. x 0.1 sec.)

Take PLC response time into consideration when using.

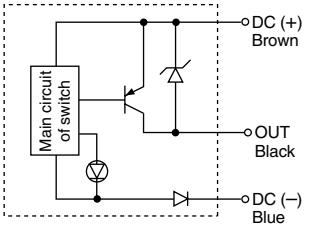


Auto Switch Internal Circuit

D-M5NTL

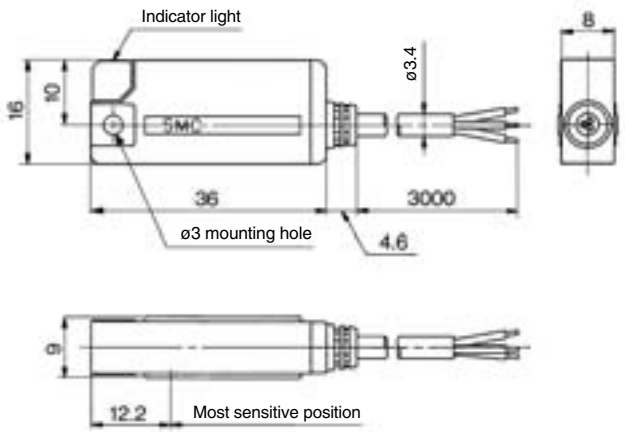


D-M5PTL



Dimensions

(mm)



SMC

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P4DWSC/D-P4DWSE

(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 optimum operating position can be determined by the color of the light. (Red → Green ← Red)**



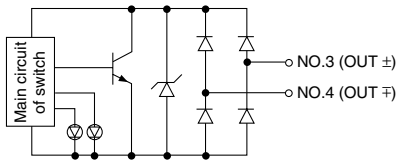
⚠Caution

Precautions

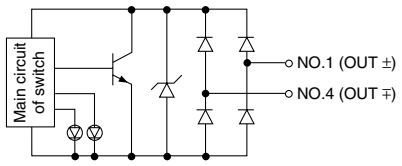
For single-phase AC welding machines.
Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Auto Switch Internal Circuit

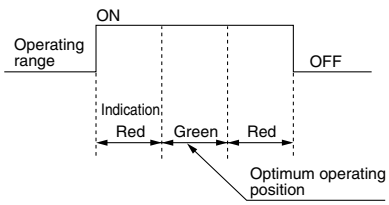
D-P4DWSC

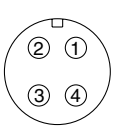


D-P4DWSE



Indicator light/Display method





Connector pin

Auto Switch Specifications

PLC: Programmable Logic Controller

D-P4DWS□ (With indicator light)		
Auto switch model	**D-P4DWSC**	**D-P4DWSE**
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 position ····· Red LED illuminates. Optimum operating position ····· Green LED illuminates.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, ø6, 0.5 mm², 2 cores, 300 mm
• Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

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.

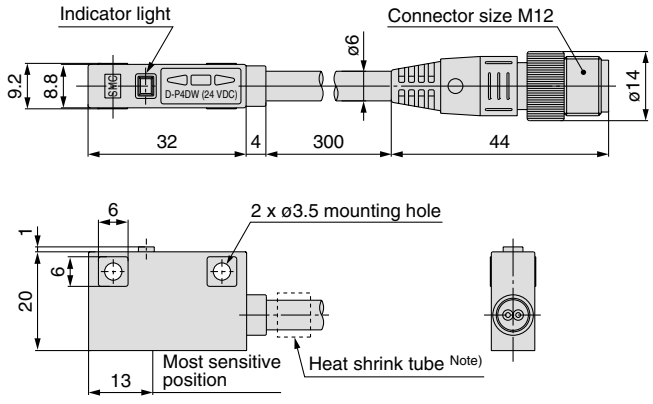
Mass

(g)

Auto switch model	D-P4DWSC	D-P4DWSE
	35	35

Dimensions

(mm)



Note) D-P4DWSC = "SC 3-4", D-P4DWSE = "SE 1-4"

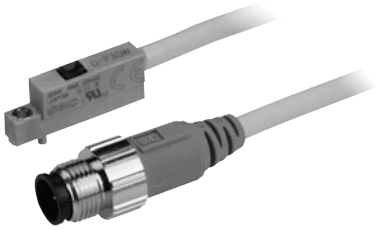
D-□

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DWSC/D-P3DWSE

(Electrical Entry: Pre-wired connector)

- **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)**



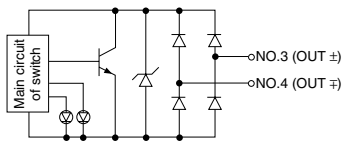
⚠Caution

Precautions

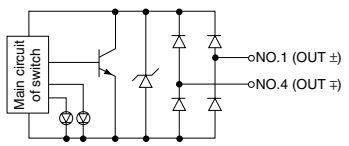
For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Internal Circuit

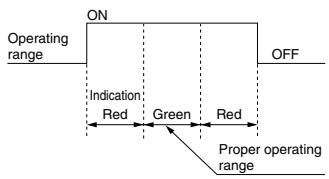
D-P3DWSC

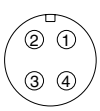


D-P3DWSE



Indicator light/Display method





Connector pin

Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

- Lead wire — Oilproof heavy-duty vinyl cable, ø4.8, 0.5 mm², 2 cores
- 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

Magnetic Field Resistance

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

Weight

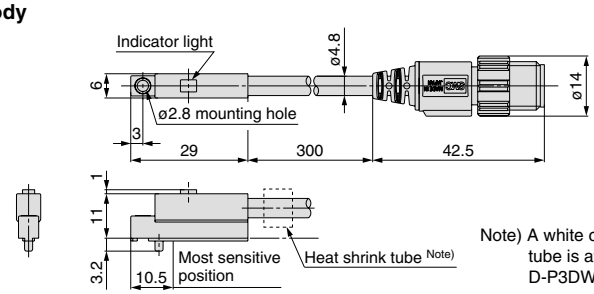
(g)

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

Dimensions

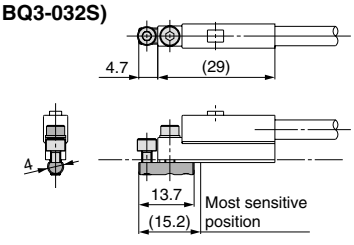
(mm)

Body

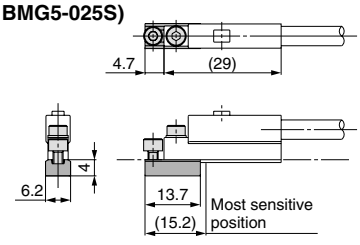


Note) A white color heat shrink tube is attached to the D-P3DWSE type only.

Auto switch mounting bracket (For round groove mounting: BQ3-032S)



Auto switch mounting bracket (For square groove mounting: BMG5-025S)



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

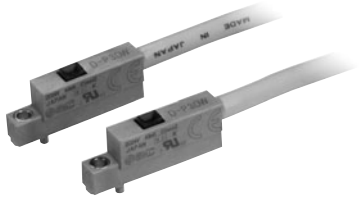
D-□

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DW/L/Z

(Electrical Entry: 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)**



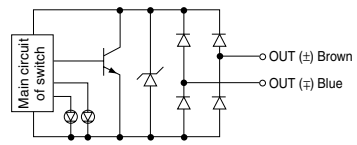
⚠Caution

Precautions

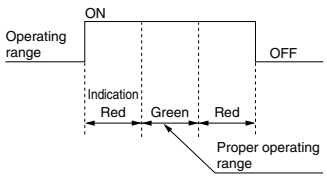
For single-phase AC welding machines
If it is used for current inverter welders (including rectifying type) and condenser type welders, the magnetic field resistance is reduced. Please contact SMC regarding the performance.

Auto Switch Internal Circuit

D-P3DW/L/Z



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

- Lead wire — Oilproof heavy-duty vinyl cable, ø4.8, 0.5 mm², 2 cores,
  D-P3DW: 0.5 m, D-P3DWL: 3 m, D-P3DWZ: 5 m
- 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

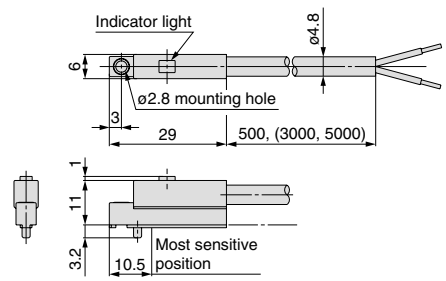
(g)

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

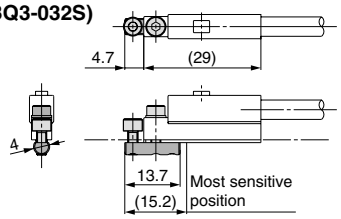
Dimensions

(mm)

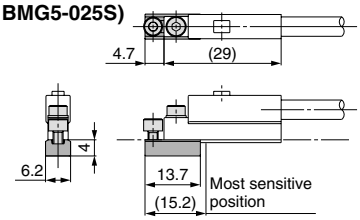
Body



Auto switch mounting bracket (For round groove mounting: BQ3-032S)



Auto switch mounting bracket (For square groove mounting: BMG5-025S)



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

SMC

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DWASC/D-P3DWASE

(Electrical Entry: Pre-wired connector)

- **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.

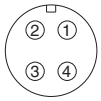
Magnetic Field Resistance

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

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

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Cord Specifications

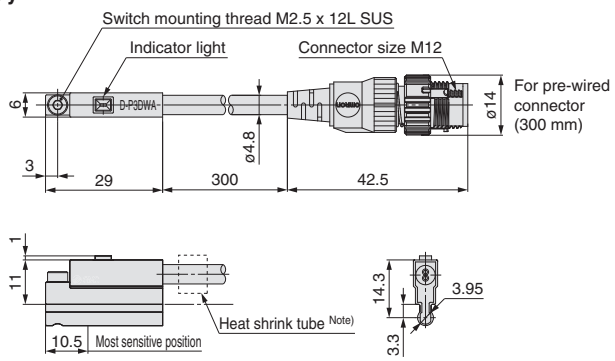
Auto switch models		**D-P3DWASC**	**D-P3DWASE**
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²]	0.5	
	Strand diameter [mm]	ø0.08	
Minimum bending radius [mm] (Reference values)		29	

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

Dimensions

(mm)

Body



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

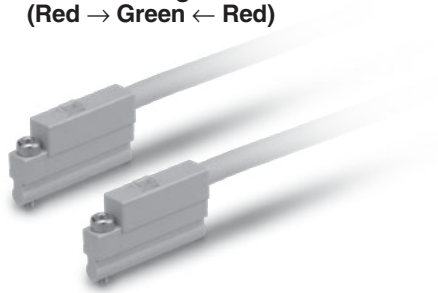
Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P3DWA

(Electrical Entry: Grommet)

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

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



⚠Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Cord Specifications

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

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

Magnetic Field Resistance

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

Weight

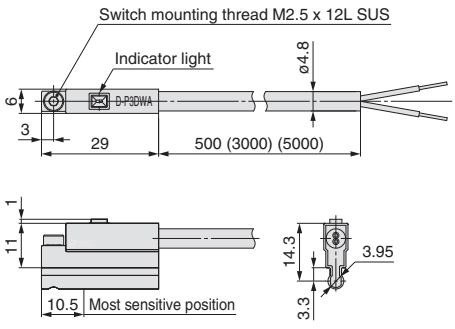
(g)

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

Dimensions

(mm)

Body



D-□

SMC

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch

D-P4DWSC/D-P4DWSE

(Electrical Entry: Pre-wired connector)

CE

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)**



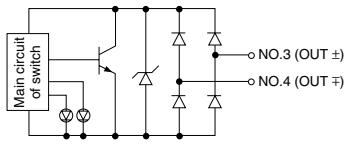
⚠Caution

Precautions

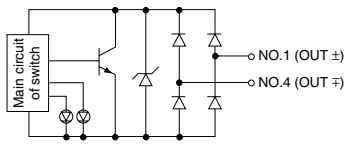
For single-phase AC welding machines.
Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Auto Switch Internal Circuit

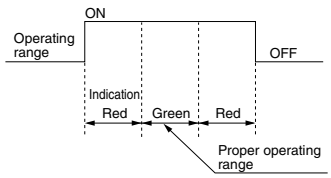
D-P4DWSC

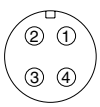


D-P4DWSE



Indicator light/Display method





Connector pin

Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-P4DWS□ (With indicator light)		
Auto switch model	**D-P4DWSC**	**D-P4DWSE**
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC (20 to 28 VDC)	
Load current	6 to 40 mA or less	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, ø6, 0.5 mm², 2 cores, 300 mm
• Impact resistance — Switch: 1000 m/s², Connector: 300 m/s²
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

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.

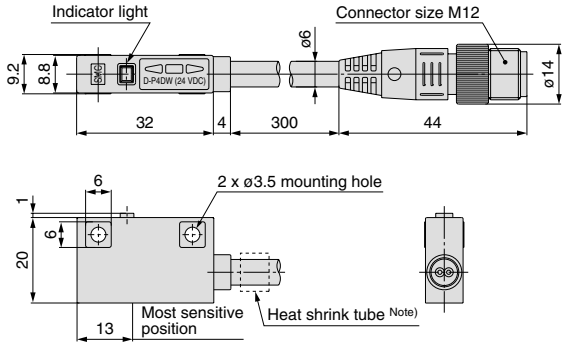
Weight

(g)

Auto switch model	D-P4DWSC	D-P4DWSE
	35	35

Dimensions

(mm)



Note) Only for D-P4DWSE

Printed contents: SE 1-4

D-□

Magnetic Field Resistant 2-Color Indication Type Solid State Auto Switch
D-P4DWL/Z

CE

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)**



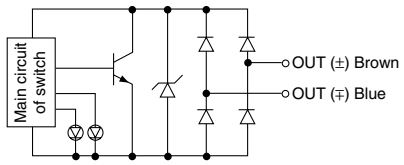
⚠Caution

Precautions

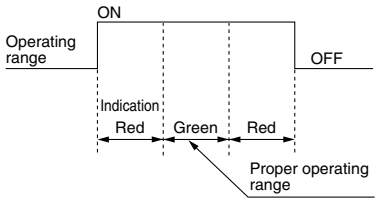
For single-phase AC welding machines.
Not applicable for DC inverter welding machines (including rectifying type) and or condenser type welding.

Auto Switch Internal Circuit

D-P4DWL/Z



Indicator light/Display method



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-P4DWL/Z (With indicator light)		
Auto switch model	D-P4DWL	D-P4DWZ
Applicable load	24 VDC relay, PLC	
Load voltage	24 VDC (20 to 28 VDC)	
Load current	6 to 40 mA or less	
Internal voltage drop	5 V or less	
Leakage current	1 mA or less at 24 VDC	
Operating time	40 ms or less	
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.	
Standard	CE marking	

• Lead wires — Oilproof heavy-duty vinyl cord, ø6, 0.5 mm², 2 cores (Brown, Blue), D-P4DWL: 3 m, D-P4DWZ: 5 m

Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

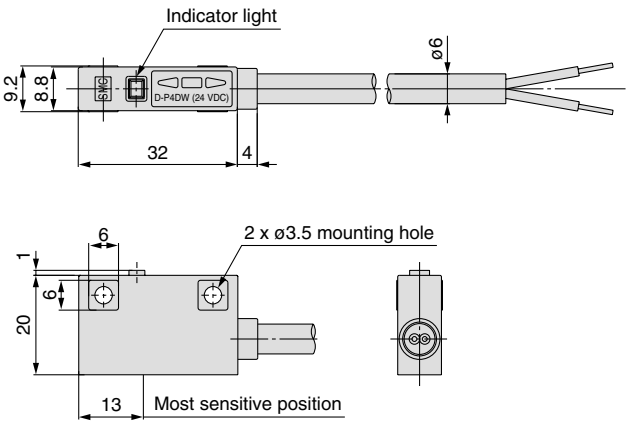
Auto switch model		D-P4DW
Lead wire length (m)	0.5	—
	3	150
	5	244

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.

Dimensions

(mm)



SMC

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

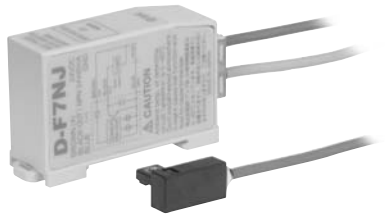
D-F7NJL

CE

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)**

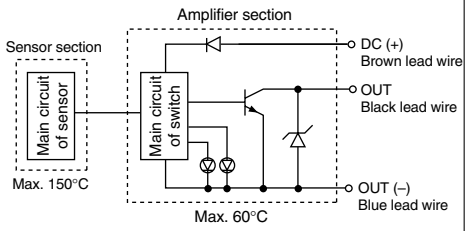


⚠Caution

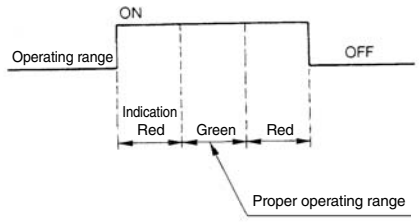
Precautions

Auto switch which can be mounted on heat resistant, compact cylinder, CDQ2-XB14. For using for other cylinders, please confirm SMC.
D-F7NJL is not applicable for the heat resistant type (-XB6) since a magnet is not built in it.

Auto Switch Internal Circuit



Indicator light/Display method



Auto Switch Specifications

PLC: Programmable Logic Controller

D-F7NJL (With indicator light)	
Auto switch model	**D-F7NJL**
Wiring type	3-wire
Output type	NPN
Applicable load	Relay, PLC
Power supply voltage	24 VDC (20 to 26 VDC)
Current consumption	25 mA or less
Load voltage	28 VDC or less
Load current	40 mA or less
Internal voltage drop	0.8 V or less
Leakage current	100 μA at 24 VDC
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²
Standard	CE marking

• Lead wires — Between sensor and amplifier: Heat resistant heavy-duty cord, ø3.4, 3 m
Grommet on amplifier: Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 3 m

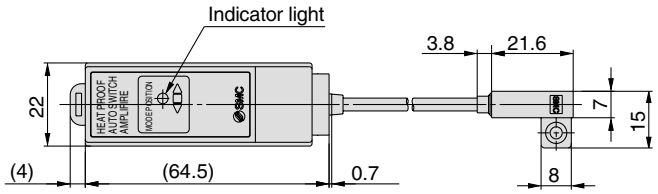
Mass

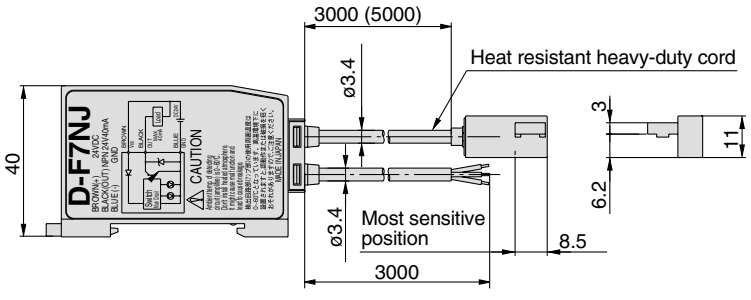
(g)

Auto switch model		D-F7NJ
Lead wire length (m)	0.5	—
	3	170
	5	210

Dimensions

(mm)



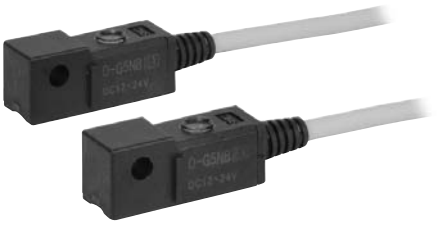


D-□

Wide Range Detection Type
Solid State Auto Switch: Band Mounting Style
D-G5NBL

Grommet

- **Wide range detection type**
- **Easy intermediate detection**



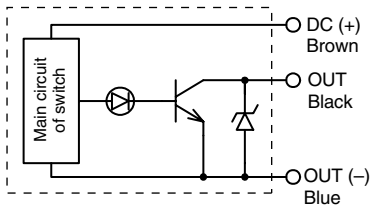
⚠Caution

Precautions

The operating range is common for all cylinder series, but it may vary depending on bore sizes.

Auto Switch Internal Circuit

D-G5NBL



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-G5NBL (With indicator light)	
Auto switch model	**D-G5NBL**
Wiring type	3-wire
Output type	NPN
Applicable load	Relay, PLC
Power supply voltage	12, 24 VDC (10 to 28 VDC)
Current consumption	12 mA or less
Load voltage	10 to 28 VDC or less
Load current	40 mA or less
Internal voltage drop	0.4 V or less
Leakage current	100 μA at 24 VDC
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 3 cores (Brown, Black, Blue), 3 m
Note 1) Refer to page 1272 for solid state auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.

Mass

(g)

Auto switch model		**D-G5NB**
Lead wire length (m)	0.5	—
	3	79
	5	125

Applicable Cylinders

Cylinder series	Bore size (mm)
CDM2, CDBM2, CDVM3, CDVM5, CDLM2, CDLG1, MLGC	20, 25, 32, 40
CDG1	20, 25, 32, 40, 50, 63, 80, 100
CDA2, CDBA2, CDV3, CDVS1, CDL1	40, 50, 63, 80, 100
MGC, MGG	20, 25, 32, 40, 50

Operating Range

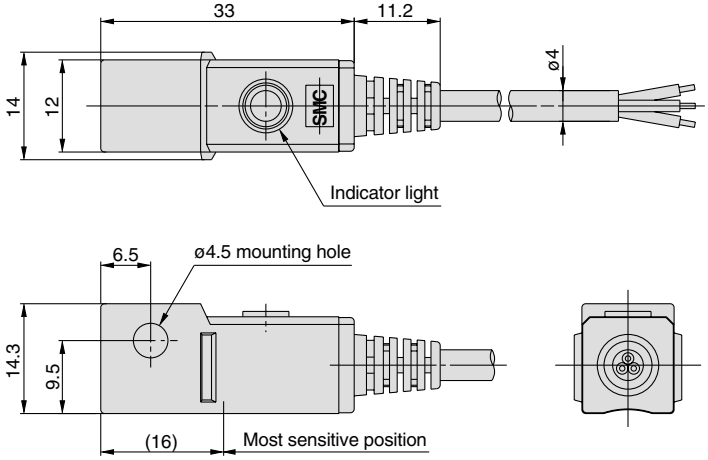
Cylinder series	Bore size (mm)							
	20	**25**	**32**	**40**	**50**	**63**	**80**	**100**
Mountable models	35	40	40	45	45	45	45	50

Note) The operating range above indicates average values at room temperature including hysteresis (assuming approximately ±30% dispersion).
∗ Refer to page 405 for CDA2 and CDBA2.

Dimensions

(mm)

D-G5NB

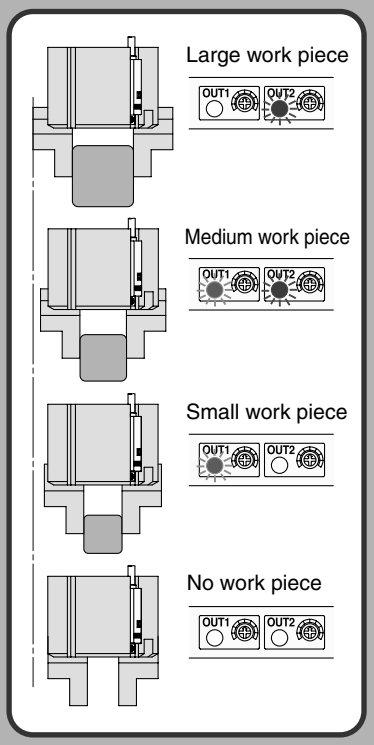


SMC

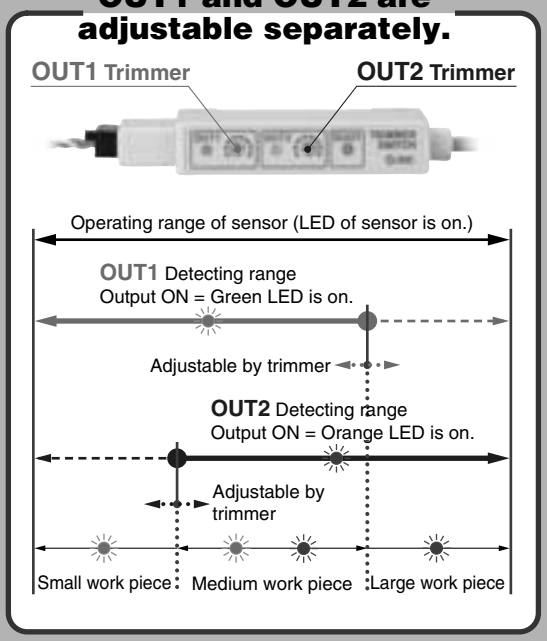
Trimmer Auto Switch

Series D-□7K/D-R□K





OUT1 and OUT2 are adjustable separately.



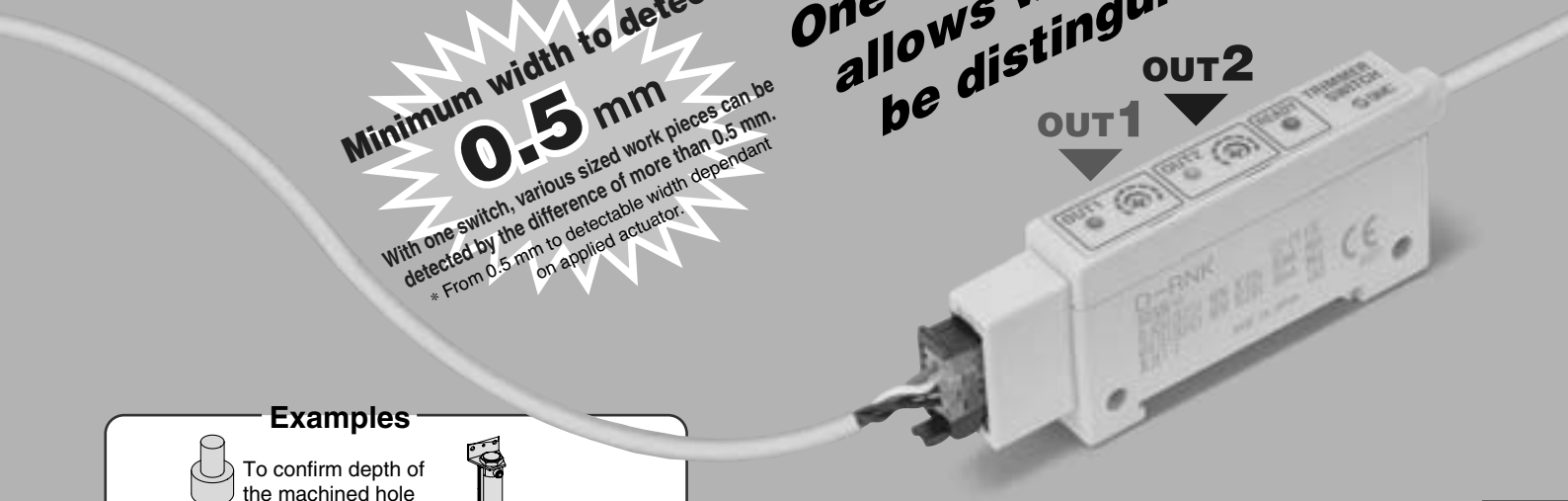
One auto switch allows work pieces to be distinguished easily.

Minimum width to detect

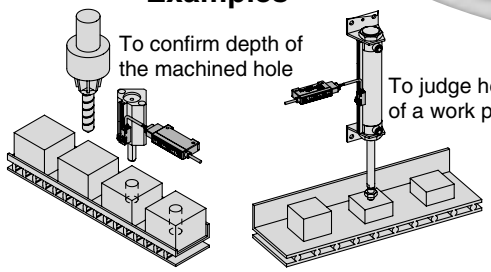
0.5 mm

With one switch, various sized work pieces can be detected by the difference of more than 0.5 mm.

* From 0.5 mm to detectable width dependant on applied actuator.



Examples



- **Can be mounted on a standard actuator.**
  Direct mounting / Rail mounting
- **Two mounting types** **(Amplifier unit)**
  DIN rail mounting / Direct mounting
- **Joining of connector**
  Sensor and amplifier can be connected without restriction.
- **IP67** **(Sensor unit)**
  IP40 for amplifier

D-□

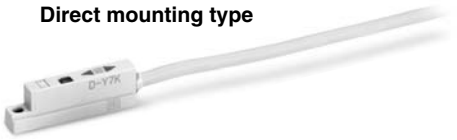
Trimmer Auto Switch

Series D-□7K/D-R□K

CE

Sensor unit

Direct mounting type



Rail mounting type



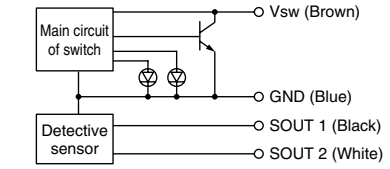
Amplifier unit



Internal Circuit

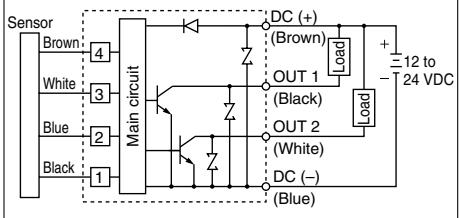
Sensor Unit

D-□7K

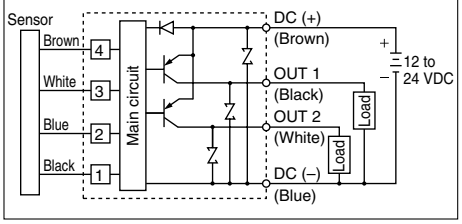


Amplifier Unit

D-RNK



D-RPK



Specifications

Sensor Unit

Model	D-F7K	D-Y7K
Mounting	Rail mounting	Direct mounting
Applicable amplifier unit	D-RNK, D-RPK	
Indicator light	Operating position: Red light is ON. Proper operating range: Green light is ON.	
Electrical entry	Grommet	
Lead wire	Oilproof heavy-duty vinyl cord ø3.5 0.14 mm² 4 cores 3 m With one e-con connector Note)	
Impact resistance	980 m/s²	
Insulation resistance	50 MΩ or more (500 VDC Mega) between lead wire and case	
Withstand voltage	1000 VAC for 1 min. (between lead wire and case)	
Ambient temperature	–10 to 60°C	
Enclosure	IP67	
Mass	58 g (with connector)	
Standard	CE marking	

Note) The e-con connector is not attached to the lead wire. They will be supplied loose in the same shipment.

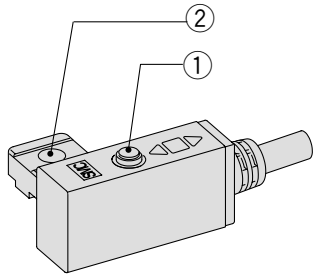
Amplifier Unit (with Sensor Unit)

PLC: Programmable Logic Controller

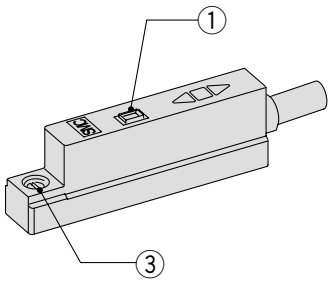
Model		D-RNK	D-RPK
Applicable sensor unit		D-F7K, D-Y7K	
Application		For relay and PLC	
Power supply voltage		12 to 24 VDC	
Current consumption		40 mA or less	
Output specification		NPN open collector 2 outputs	PNP open collector 2 outputs
Load voltage		28 VDC or less	—
Load current		80 mA or less/1 output	
Internal voltage drop		1.5 V or less	
Leakage current		100 μA or less/1 output	
Response time		1 ms or less	
Indicator light		READY: Red LED illuminates when the piston position detected. (When the sensor is connected). OUT 1: Green LED illuminates when turned ON. OUT 2: Orange LED illuminates when turned ON.	
Electrical entry	**Connection to sensor**	e-con connector	
	Power supply/ output cable	Grommet	
Lead wire		Oilproof heavy-duty vinyl cord ø3.5 0.14 mm² 4 cores 3 m	
Impact resistance		98 m/s²	
Insulation resistance		50 MΩ or more (500 VDC Mega) between lead wire and case	
Withstand voltage		1000 VAC for 1 min. (between lead wire and case)	
Ambient temperature		–10 to 60°C	
Enclosure		IP40	
Mass		70 g	
Standard		CE marking	

Descriptions

Sensor unit

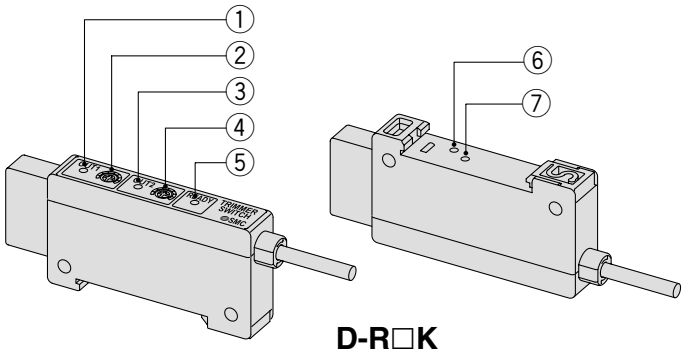


D-F7K



D-Y7K

Amplifier unit



D-R□K

Sensor Unit

1	Indicator light	Red light turns ON when sensor detects the magnet field. Green light is ON during the proper operating range to detect the magnetic field (including most sensitive position).
2	ø3.2 mounting hole	Fixes the sensor to the actuator.
3	M2.5 x 4L slotted set screw	

Amplifier Unit

1	Output (OUT1) indication: Green	Illuminates when OUT1 outputs.
2	OUT1 adjusting trimmer	Adjusts the output range of OUT1 when sensor unit detects the magnetic field.
3	Output (OUT2) indication: Orange	Illuminates when OUT2 outputs.
4	OUT2 adjusting trimmer	Adjusts the output range of OUT2 when sensor unit detects the magnetic field.
5	Confirmation of detection at sensor unit (READY): Red	Illuminates when sensor unit is detecting the magnetic field. While its lighting, output ranges of OUT1 and OUT2 are adjustable.
6	Offset adjusting trimmer (ADJ)	Adjusts the sensor unit at the time of connection. Once adjusts, no need to re-adjust as long as the sensor unit is not replaced. Adjustment must be undertaken while the sensor unit is removed from the actuator. Refer to the operation manual for details.
7	Confirmation of offset adjustment (OFFSET): Red	Illuminates when offset adjustment is completed.

Refer to the operation manual for how to adjust/set.

Applicable Actuators and Operation Range (Angle)

The operating ranges are provided as guidelines including the hysteresis and are not guaranteed value. Please consult with SMC for alternative actuators other than those shown below.

Sensor Unit D-Y7K

Air Gripper (mm or °)

Model		Bore size										
		10	**12**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**
Parallel gripper	**MHZ2**	4.0	—	5.0	7.0	7.0	8.0	8.5	—	—	—	—
Parallel gripper	**MHZL2**	6.0	—	7.0	10.0	11.0	—	—	—	—	—	—
Wide opening	**MHL2**	7.0	—	8.0	8.5	10.5	11.0	12.5	—	—	—	—
Parallel gripper	**MHS2 (2 finger)**	—	—	—	—	—	6.5	7.0	7.5	8.5	—	—
Parallel gripper	**MHS3 (3 finger) MHS (L) 3**	—	—	—	—	—	6.5	7.0	7.5	8.0	—	—
Parallel gripper	**MHS4 (4 finger)**	—	—	—	—	—	6.5	7.0	7.5	8.5	—	—
Angular gripper	**MHC2**	30° to −10°	—	30° to −10°	30° to −10°	22.5° to −10°	—	—	—	—	—	—
180° opening/closing	**MHW2**	—	—	—	88° to −5°	54° to −6°	58° to −5°	41° to −5°	30° to −4°	—	—	—

Note) The operating range for grippers is measured when both ends are open.

Air Cylinder

Compact guide cylinder	**MGP**	—	3.5	5.0	4.5	4.5	5.5	5.5	5.5	5.5	5.5	6.0
Double power non-rotating cylinder	**MGZ**	—	—	—	—	—	—	5.5	6.5	6.5	—	—
Air cylinder	**CA2**	—	—	—	—	—	—	4.0	4.0	6.0	6.0	6.0

Sensor Unit D-F7K

Air Cylinder (mm)

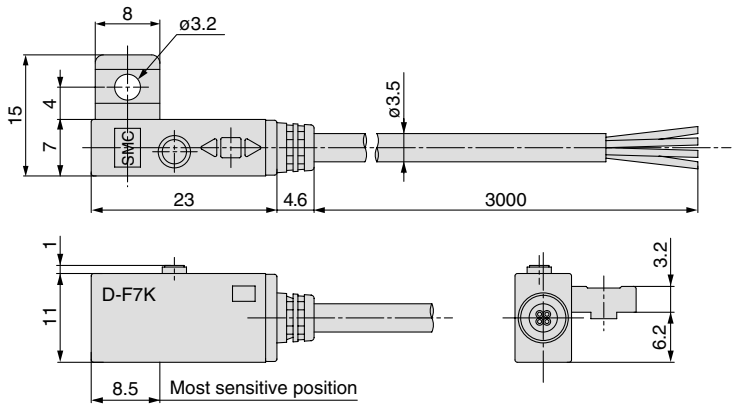
Model		Bore size													
		10	**12**	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**	**140**	**160**
Air cylinder	**CJ2**	4.0	—	4.5	—	—	—	—	—	—	—	—	—	—	—
Air cylinder	**CM2**	—	—	—	3.5	3.5	3.5	3.5	—	—	—	—	—	—	—
Compact cylinder	**CQ2**	4.5	4.5	5.5	5.5	5.0	5.5	5.5	5.5	6.0	5.5	6.0	7.5	7.5	7.5
Compact cylinder guide rod type	**CQM**	—	—	—	—	—	5.5	5.5	5.5	—	—	—	—	—	—
Plate cylinder	**MU**	—	—	—	—	5.5	6.5	6.5	6.5	6.5	—	—	—	—	—
3 position cylinder	**RZQ**	—	—	—	—	—	6.0	6.5	7.0	7.5	—	—	—	—	—
Rotary clamp cylinder	**MK/MK2**	—	—	—	5.0	5.0	6.5	6.0	6.0	6.5	—	—	—	—	—

Dimensions

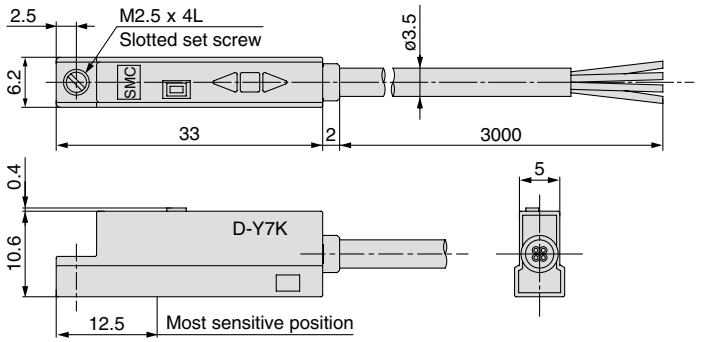
(mm)

Sensor unit

D-F7K

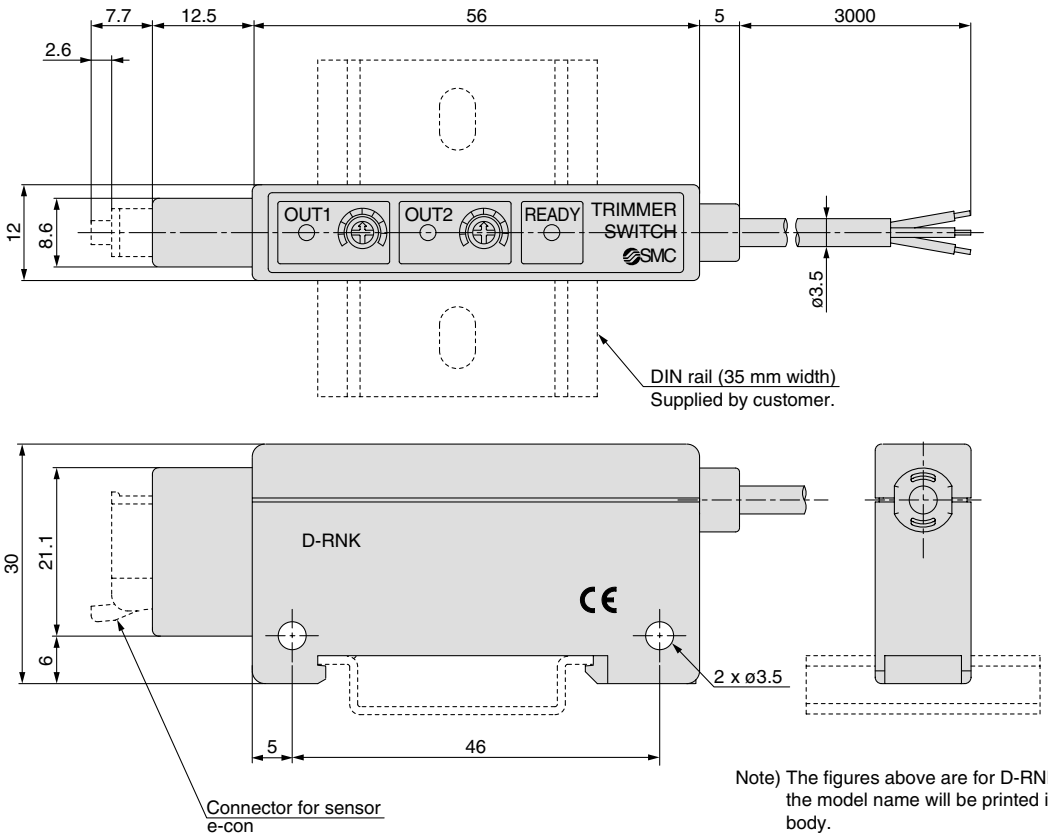


D-Y7K



Amplifier unit

D-R□K



Note) The figures above are for D-RNK. For D-RPK, the model name will be printed instead on the body.

Trimmer Auto Switch Specific Product Precautions 1

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 8 to 11 for the Auto Switch Common Precautions.

Design and Selection

⚠ Warning

1. Confirm the specifications.

Read the specifications carefully and use this product appropriately. The product may be damaged or malfunction if it is used outside the range of specifications of current load, voltage, temperature or impact.

2. Cautions for use in an interlock circuit.

When an auto switch is used for an interlock signal requiring high reliability, devise a double interlock system to avoid trouble by providing a mechanical protection function, or by also using another switch (sensor) together with the trimmer auto switch. Also perform periodic maintenance and confirm proper operation.

⚠ Caution

1. Take precautions when multiple cylinders are used close together.

When more than 2 trimmer auto switch cylinders are used in close proximity, maintain a minimum actuator interval of 40 mm or more. (When the allowable interval is indicated for each cylinder series, use the specified values.) Magnetic field interference may cause the trimmer auto switches to malfunction.

2. Keep the wiring as short as possible.

Use a wire 3 m or shorter between the sensor and amplifier. Although wire length of power supply/output cable should not affect switch function, use a wire 100 m or shorter.

3. Take precautions for the internal voltage drop of the switch.

Auto switches may not operate properly depending on the connected equipment.

4. Take measures for rotational stoppage of the piston rod.

Take measures for rotational stoppage of the piston rod when designing by guide, etc. Or use non-rotating type SMC products. The operation may be unstable.

Mounting and Adjustment

⚠ Caution

1. Do not drop or bump.

Do not drop, bump or apply excessive impacts (980 m/s^2 or more for sensor unit and 98 m/s^2 or more for amplifier unit) while handling.
Although the trimmer auto switch body may not be damaged, the inside of the trimmer auto switch could be damaged and cause a malfunction.

Wiring

⚠ Caution

1. Avoid repeatedly bending or stretching lead wires.

Broken lead wires will result from applying bending stress or stretching forces to the lead wires.

2. Be sure to connect the connector for sensor to the amplifier before power is applied.

3. Do not allow short circuit of loads.

Output is automatically stopped when the protection circuit is working, as the output unit registers any excess current flow, if loads are short circuited. Should this occur, shut off the power supply, remove the cause of this excess current flow and switch on the power again. Take special care to avoid reverse wiring between the power supply line (brown) and the output line (black, white).

4. Avoid incorrect wiring.

If the connections are reversed (power supply line + and power supply line –), the trimmer auto switches will be protected by a protection circuit. However, if the power supply line (–) is connected to the black, white wire, the trimmer auto switches will be damaged.

Operating Environment

⚠ Warning

1. Never use in an atmosphere with explosive gases.

The structure of trimmer auto switches is not designed to prevent explosion. Never use in an atmosphere with an explosive gas since this may cause a serious explosion.

⚠ Caution

1. Do not use in an area where a magnetic field is generated.

Trimmer auto switches will malfunction or magnets inside actuators will become demagnetized.

2. Do not use in an environment where the trimmer auto switch will be continually exposed to water.

Although the sensor units of trimmer auto switches satisfy the IEC standard IP67 structure, do not use trimmer auto switches in applications where continually exposed to water splash or spray. Poor insulation or swelling of the potting resin inside trimmer auto switches may cause malfunction.
(Amplifier part D-RNK and RPK: IP40)

3. Do not use in an environment with oil or chemicals.

Please consult with SMC if trimmer auto switches will be used in an environment with coolant, cleaning solvent, various oils or chemicals. If trimmer auto switches are used under these conditions for even a short time, they may be adversely affected by improper insulation, malfunction due to swelling of the potting resin, or hardening of the lead wires.

4. Take measures against freezing when operating at 5°C or less.

Trimmer Auto Switch Specific Product Precautions 2

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 8 to 11 for the Auto Switch Common Precautions.

Maintenance

⚠ Warning

1. Perform the following maintenance periodically in order to prevent possible danger due to unexpected trimmer auto switch malfunction.

1) Secure and tighten trimmer auto switch mounting screws.
If screws become loose or the mounting position is dislocated, retighten them after readjusting the mounting position.
2) Confirm that there is no damage to lead wires.
To prevent faulty insulation, replace trimmer auto switches or repair lead wires, etc., if damage is discovered.

Other

⚠ Caution

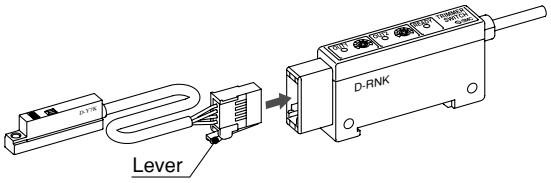
1. Please consult with SMC concerning water resistance, elasticity of lead wires, and usage at welding sites, etc.

Wiring

⚠ Caution

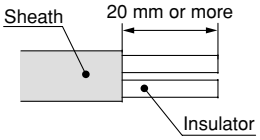
1. Connection and removal of connector

- Hold the lever and connector body with two fingers and insert the connector straight into the pin until it is locked with a click sound.
- To remove the connector, pull it out straight while pressing the lever with one finger.



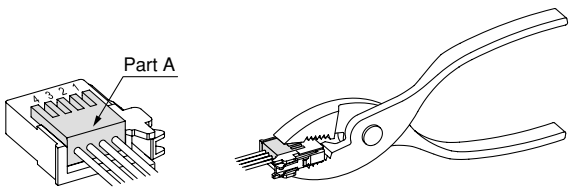
2. Connection of sensor connector

- Cut the sensor lead wire as illustrated to the right.
- Referring to the table below, insert each lead wire of the cable at the position marked with a number corresponding to the color of the lead wire.



Connector no.	Wire core color
1	Black (SOUT1)
2	Blue (GND)
3	White (SOUT2)
4	Brown (Vsw)

- Confirm that the numbers on the connector match the colors of the lead wires and that they are inserted to the bottom. Press part A by hand for temporary fixing.
- Press in the central part of Part A vertically with a tool such as pliers.
- A sensor connector cannot be taken apart for reuse once it is crimped. If the lead wire arrangement is incorrect or if the wire insertion fails, use a new sensor connector.



- Use a sensor conector, ZS-28-CA-3 (1 pc.) or e-con connectors as shown below.

Manufacturer	Part no.
Sumitomo 3M Limited	37104-3122-000FL
Tyco Electronics AMP K.K.	1473562-4
OMRON Corporation	XN2A-1430

- For detailed information about e-con connectors, please consult with the manufacturers of the respective connectors.

Trimmer Auto Switch Specific Product Precautions 3

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 8 to 11 for the Auto Switch Common Precautions.

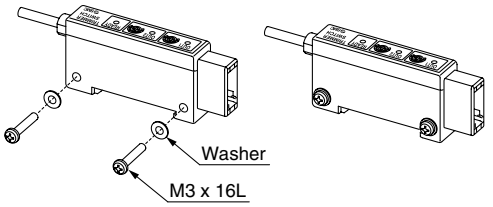
Mounting of Amplifier Unit

⚠ Caution

- Use mounting screws (M3 x 16L) or DIN rail (35 mm width). (DIN rail part no.: ISA-2-1 to 7)
- Adjust offset before mounting of the amplifier unit.

1. Mounting with screws

- Tighten two M3 x 16L mounting screws at a tightening torque of 0.5 to 0.7 N·m.
- Mounting surface should be flat and even. A bumpy or uneven mounting surface can result in damage to the case.



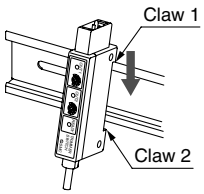
2. Mounting and removal to DIN rail

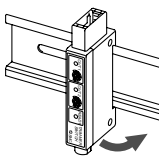
Mounting

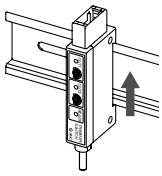
- Hook the claw 1 of the amplifier body to the upper part of DIN rail, press down and push horizontally until the claw 2 is locked with a click sound.

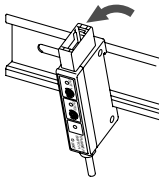
Removal

- To remove from the DIN rail, push the amplifier body upward and then pull it horizontally to release from the claw 1 side.









- In the case of mounting to the DIN rail, SMC recommends the following end plates: as detailed in the table on the right. Consult each manufacturer for the handling and details of end plate.

Manufacturer	Part no.
OMRON Corporation	PFP-M
IDEC Corporation	BNL6

3. Refer to each applicable actuator's catalog for the mounting of sensor unit.

Made to Order Specifications: Solid State Auto Switch

CE

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

1 With Pre-wired Connector

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



How to Order

D−M9N S A PC

Solid state auto switch Standard part no.

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

Cable length

S	0.5 m
M	1.0 m
L	3.0 m

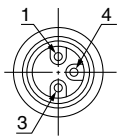
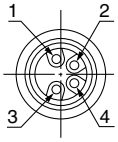
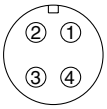
Note) L is available for the D-P4DW type only.

Connector model

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

Note) Type D is available for the D-P4DW type only.

Connector Specifications

Connector model	M8-3 pin	M8-4 pin	M12-4 pin
Pin arrangement			
Conformed standard	JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402		
Impact resistance	300 m/s^2		
Enclosure	IP-67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC Mega		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

Applicable Auto Switch

Mounting	Function	Electrical entry	Applicable model	Lead wire length (m)		
				0.5	1.0	3.0
Rail mounting style	—	Grommet (In-line)	**F79, F7P, J79**	●	●	—
		Grommet (Perpendicular)	**F7NV, F7PV, F7BV**	●	●	—
	2-color indication	Grommet (In-line)	**F79W, F7PW, J79W**	●	●	—
		Grommet (Perpendicular)	**F7NWV, F7BWV**	●	●	—
	With diagnostic output	Grommet (In-line)	**F79F**	●	●	—
	Water resistant		**F7BA**	●	●	—
		Grommet (Perpendicular)	**F7BAV**	●	●	—
	With timer	Grommet (In-line)	**F7NT**	●	●	—
	Magnetic field resistant		**P4DW**	●	●	●
Band mounting style	—		**H7A1, H7A2, H7B**	●	●	—
			G59, G5P, K59	●	●	—
	2-color indication		**H7NW, H7PW, H7BW**	●	●	—
			G59W, G5PW, K59W	●	●	—
	Diagnostic output		**H7NF, G59F**	●	●	—
	Water resistant		**H7BA, G5BA**	●	●	—
	With timer		**G5NT**	●	●	—
	Wide detection		**G5NB**	●	●	—
Tie-rod mounting style	—		**F59, F5P, J59**	●	●	—
	2-color indication		**F59W, F5PW, J59W**	●	●	—
	Diagnostic output		**F59F**	●	●	—
	Water resistant		**F5BA**	●	●	—
	With timer		**F5NT**	●	●	—

Mounting	Function	Electrical entry	Applicable model	Lead wire length (m)		
				0.5	1.0	3.0
Direct mounting style	—	Grommet (In-line)	**Y59A, Y7P, Y59B**	●	●	—
		Grommet (Perpendicular)	**Y69A, Y7PV, Y69B**	●	●	—
		Grommet (In-line)	**M9N, M9P, M9B**	●	●	—
		Grommet (Perpendicular)	**M9NV, M9PV, M9BV**	●	●	—
			F8N, F8P, F8B	●	●	—
		Grommet (In-line)	**F6N, F6P, F6B**	●	●	—
	Normally closed	Grommet (In-line)	**Y7G, Y7H**	●	●	—
			F9G, F9H	●	●	—
	2-color indication	Grommet (In-line)	**Y7NW, Y7PW, Y7BW**	●	●	—
		Grommet (Perpendicular)	**Y7NWV, Y7PWV, Y7BWV**	●	●	—
		Grommet (In-line)	**M9NW, M9PW, M9BW**	●	●	—
		Grommet (Perpendicular)	**M9NWV, M9PWV, M9BWV**	●	●	—
	Water resistant	Grommet (In-line)	**Y7BA**	●	●	—
			M9NA, M9PA, M9BA	●	●	—
		Grommet (Perpendicular)	**M9NAV, M9PAV, M9BAV**	●	●	—
Rotary actuator	—	Grommet (In-line)	**S791/2, S7P1/2, T791/2**	●	●	—
			S991/2, S9P1/2, T991/2	●	●	—
		Grommet (Perpendicular)	**S99V1/2, T99V1/2**	●	●	—



M8-3 pin



M8-4 pin

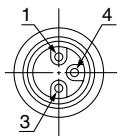
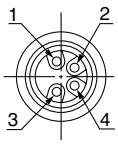
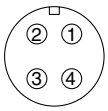


M12-4 pin

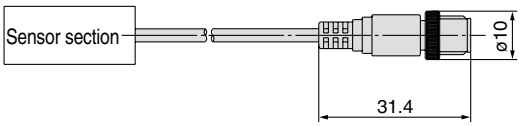
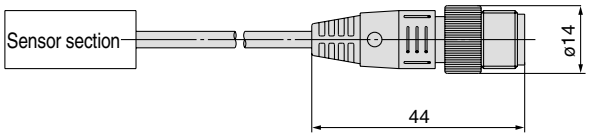
Connector Pin Arrangement

Sensor type	Color distinction of lead wire				Meaning of contact number			
	1 pin	2 pin	3 pin	4 pin	1 pin	2 pin	3 pin	4 pin
DC 2-wire type	Brown	—	—	Blue	OUT (+)	—	—	OUT (–)
DC 2-wire, Non-polar type	—	—	Brown	Blue	—	—	OUT (±)	OUT (∓)
DC 3-wire type	Brown	—	Blue	Black	DC (+)	—	DC (–)	OUT
DC 4-wire type	Brown	Orange	Blue	Black	DC (+)	Diagnostic output	DC (–)	OUT

Connector Specifications

Connector model	M8-3 pin	M8-4 pin	M12-4 pin
Pin arrangement			
Conformed standard	JIS C 4524, JIS C 4525, IEC 947-5-2, NECA 0402		
Impact resistance	300 m/s^2		
Enclosure	IP67 (IEC60529 standard)		
Insulation resistance	100 MΩ or more at 500 VDC Mega		
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less		

Dimensions

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

Mass for Connector Type

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

Connection (Female side) Connector Cable

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

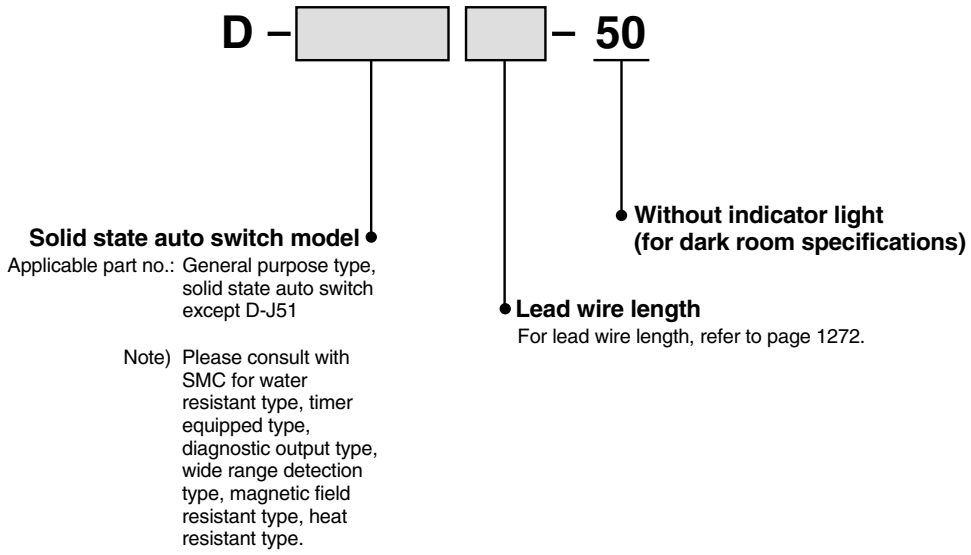
Connector size	Number of pins	Manufacturer	Applicable series example
M8	3	Phoenix Contact	SAC-3P
		Corrence Corporation	M8-3D
	4		M8-4D
		OMROM Corporation	XS3
M12		Phoenix Contact	SAC-4P
		Corrence Corporation	VA-4D
		OMROM Corporation	XS2
		Yamatake Corporation	PA5-4I
		Hirose Electric Co., Ltd.	HR24
		DKK Ltd.	CM01-8DP4S

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

Symbol

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

Possible to use under the environment which hates a light.

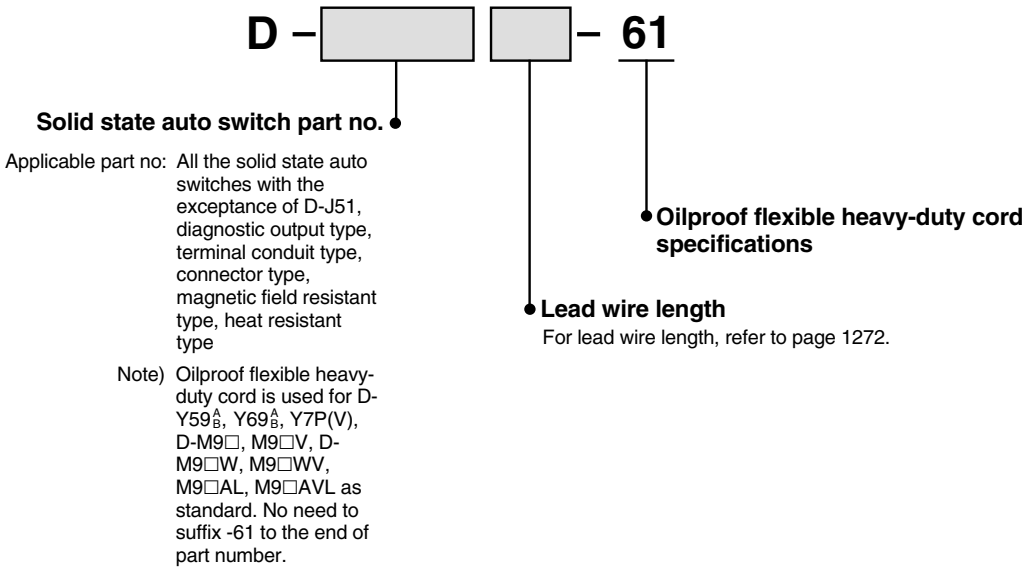


Dimensions and specifications are common as standard products with the exception of no indicator light.

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.



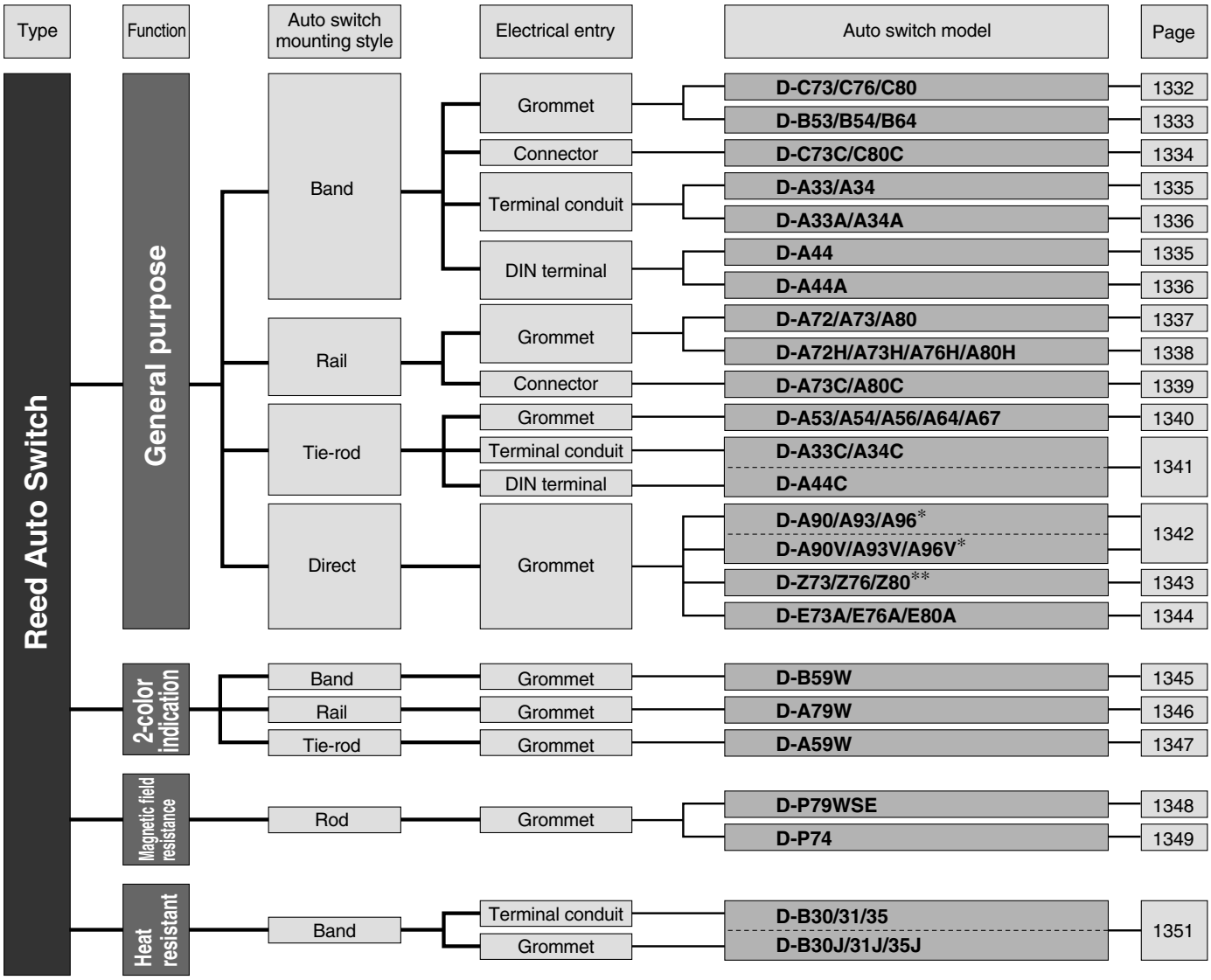
Specifications are the same as standard products with the exception of lead wire specifications.
Lead wire: For D-F8 type····· ø2.7, 0.15 mm^2, 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)
For other model nos.····· ø3.4, 0.15 mm^2, 3 cores (Brown, Blue, Black), 2 cores (Brown, Blue)

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 Indication Type

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 1356, 1360, 1364, 1368 and 1369 for details.

∗∗ This auto switch can be mounted by tie-rod with using auto switch mounting bracket. For details, refer to page 1367.

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

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

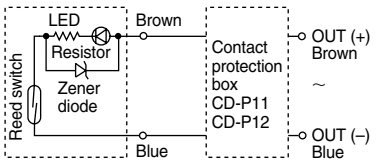
D-C7 (With indicator light)			
Auto switch model	D-C73		D-C76
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Max. load current and range (3)	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	2.4 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		
D-C8 (Without indicator light)			
Auto switch model	D-C80		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V AC/DC or less	48 V AC/DC	100 V AC/DC
Max. load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5 m

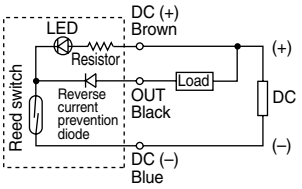
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

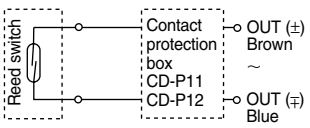
D-C73



D-C76



D-C80



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

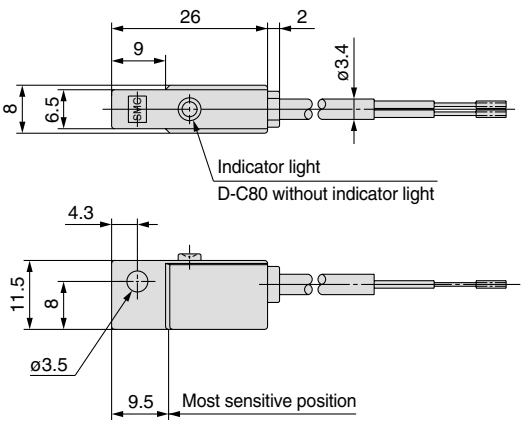
Mass

(g)

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

Dimensions

(mm)



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

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

D-B5 (With indicator light)				
Auto switch model	**D-B53**	**D-B54**		
Applicable load	PLC	Relay, PLC		
Load voltage	24 VDC	24 VDC	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
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

D-B6 (Without indicator light)			
Auto switch model	**D-B64**		
Applicable load	Relay, PLC		
Load voltage	24 V^{AC}_{DC} or less	100 VAC	200 VAC
Max. load current	Max. 50 mA	Max. 25 mA	Max. 12.5 mA
Contact protection circuit	Built-in		
Internal resistance	25 Ω or less		
Standard	CE marking		

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), 0.5 m

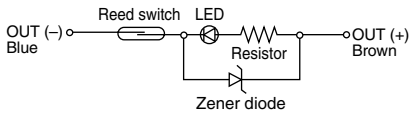
Note 1) Refer to page 1272 for reed auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

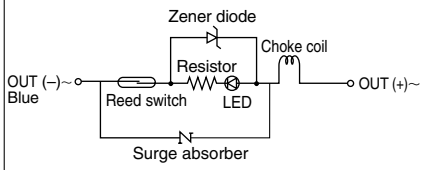
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

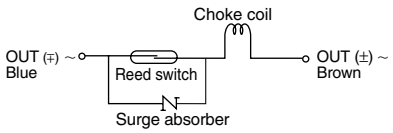
D-B53



D-B54



D-B64



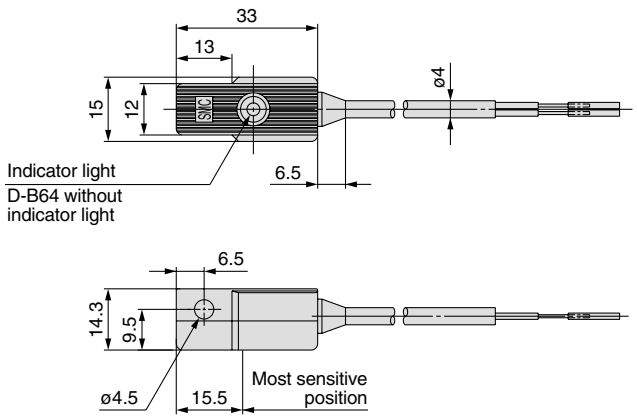
Mass

(g)

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

Dimensions

(mm)



D-□

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

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

Connector



⚠Caution

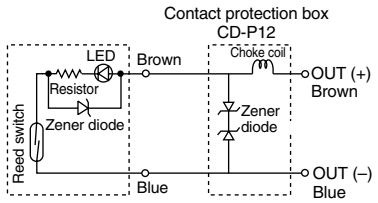
Precautions

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

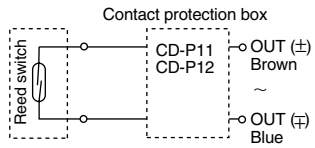
2. For details, refer to page 1355.

Auto Switch Internal Circuit

D-C73C



D-C80C



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

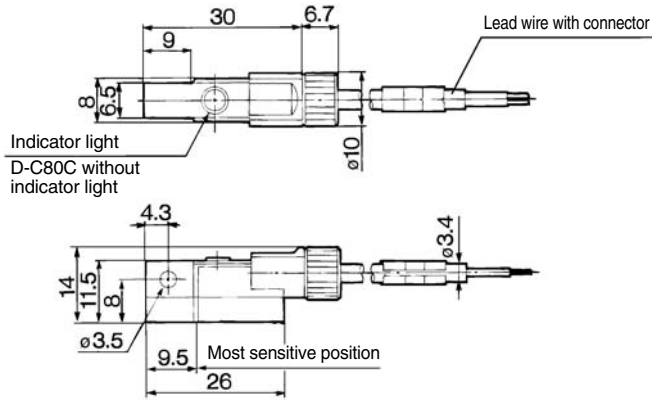
Mass

(g)

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

Dimensions

(mm)



SMC

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

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



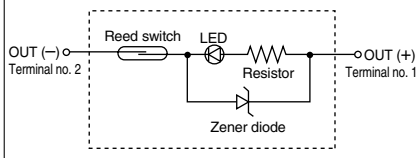
⚠Caution

Precautions

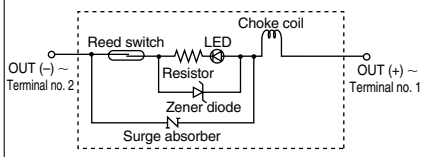
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-A33



D-A34, D-A44



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

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

Note 1) Refer to page 1272 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.

Mass

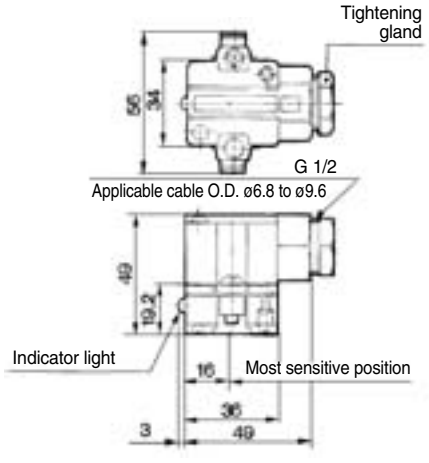
(g)

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

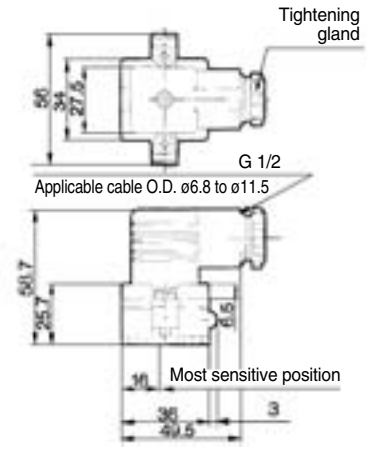
Dimensions

(mm)

D-A3



D-A44



D-□

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

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



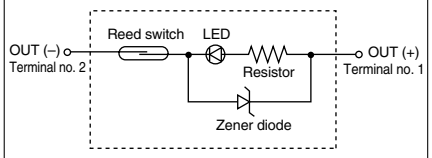
⚠Caution

Precautions

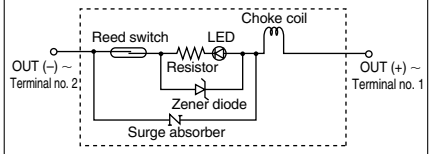
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-A33A



D-A34A, D-A44A



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

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

Note 1) Refer to page 1272 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.

Mass

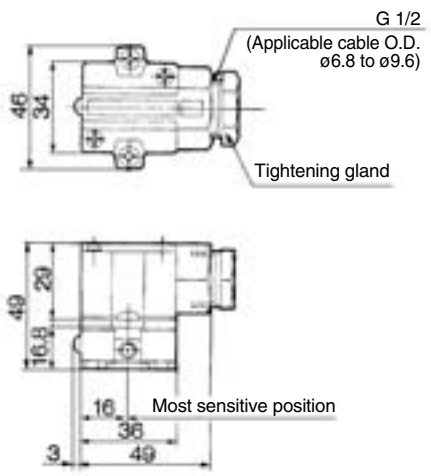
(g)

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

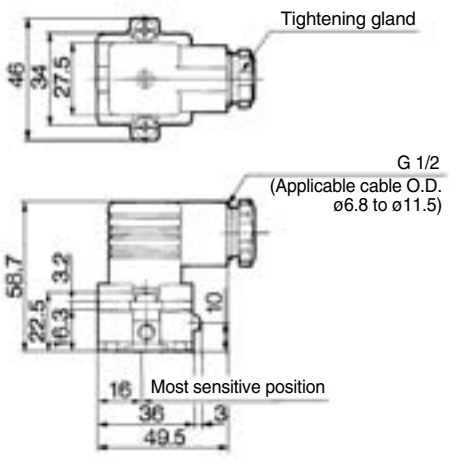
Dimensions

(mm)

D-A3□A



D-A44



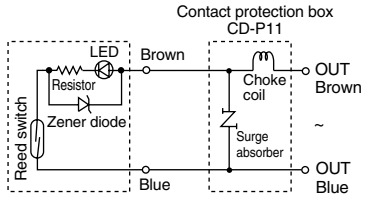
Reed Auto Switch
Rail Mounting Style
D-A72/D-A73/D-A80

Grommet
Electrical entry: Perpendicular

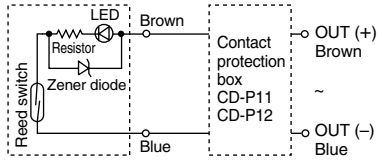


Auto Switch Internal Circuit

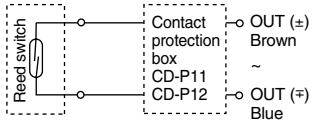
D-A72



D-A73



D-A80



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC or 200 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. **Especially in the case of D-A72, be sure to use the contact protection box.** (Refer to page 1273 for contact protection box.)

Auto Switch Specifications

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

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

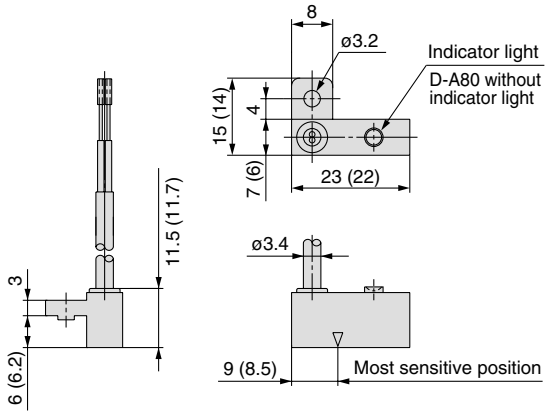
Mass

(g)

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

Dimensions

(mm)



( ) values for D-A72

D-□

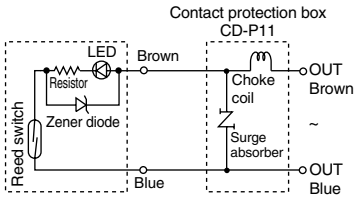
Reed Auto Switch
Rail Mounting Style
D-A7□H/D-A80H

Grommet
Electrical entry: In-line

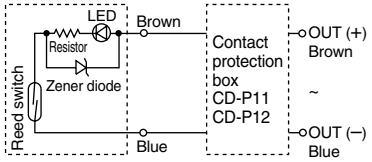


Auto Switch Internal Circuit

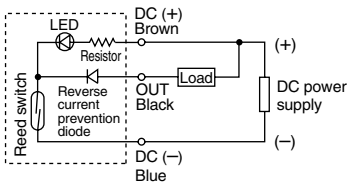
D-A72H



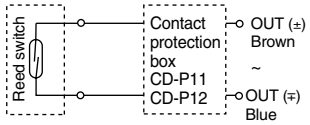
D-A73H



D-A76H



D-A80H



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is more than 5 m.
Note 3) Load voltage is 100 VAC or 200 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. **Especially in the case of D-A72H, be sure to use the contact protection box.** (Refer to page 1273 for contact protection box.)

Auto Switch Specifications

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

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	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
Contact protection circuit	None			
Internal voltage drop	2.4 V or less			0.8 V or less
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

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

• Lead wires — Oilproof heavy-duty vinyl cord, 0.2 mm², 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5 m

Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

Mass

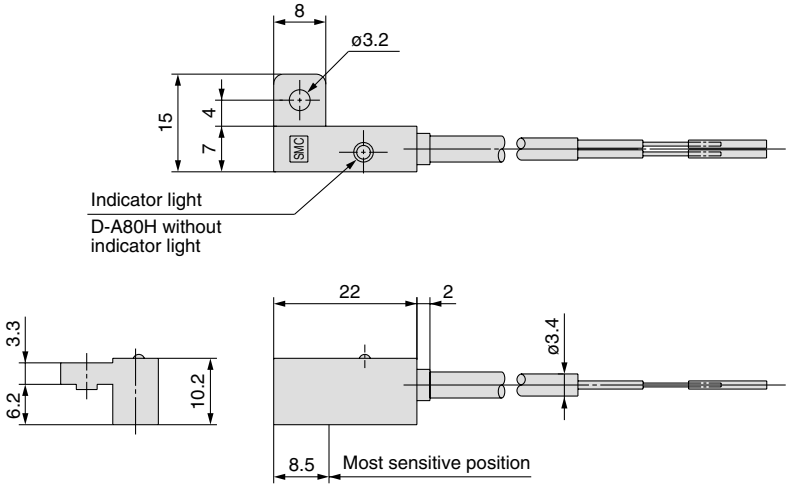
(g)

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

Dimensions

(mm)

D-A7□H, D-A80H



SMC

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

CE

Connector



⚠Caution

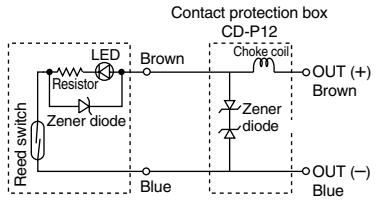
Precautions

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

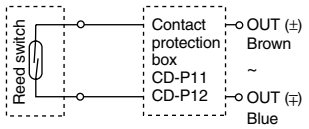
2. Refer to page 1355 for the details.

Auto Switch Internal Circuit

D-A73C



D-A80C



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

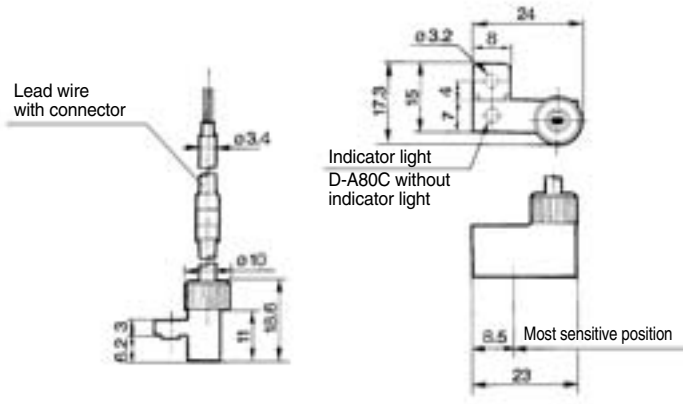
Mass

(g)

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

Dimensions

(mm)



D-□

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

CE

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

D-A5 (With indicator light)					
Auto switch model	**D-A53**	**D-A54**			**D-A56**
Applicable load	PLC	Relay, PLC			IC circuit
Load voltage	24 VDC	24 VDC	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
Contact protection circuit	None	Built-in			None
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)			0.8 V or less
Indicator light	Red LED illuminates when turned ON.				
Standard	CE marking				

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), or 0.2 mm², 3 cores (Brown, Black, Blue), 0.5 m

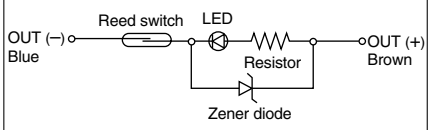
Note 1) Refer to page 1272 for reed auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

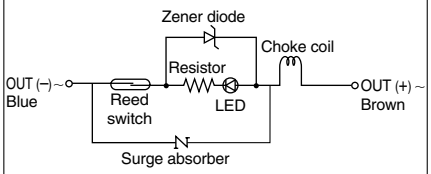
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

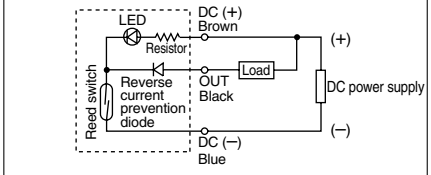
D-A53



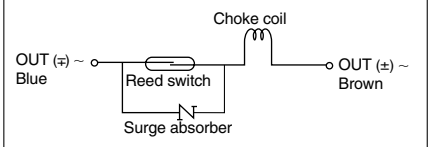
D-A54



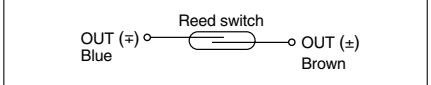
D-A56



D-A64



D-A67



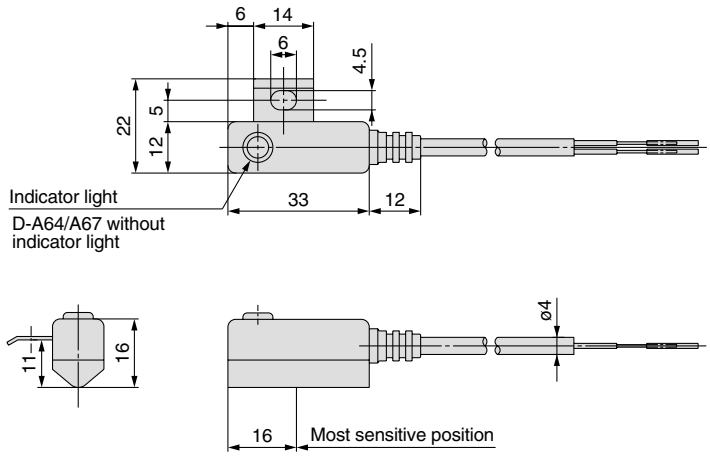
Mass

(g)

Auto switch model		D-A53	D-A54	D-A56	D-A64	D-A67
Lead wire length (m)	0.5	24		24	24	
	3	48		48	48	
	5	96		—	—	

Dimensions

(mm)



SMC

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

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



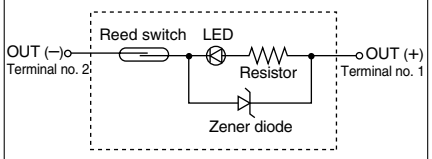
⚠Caution

Precautions

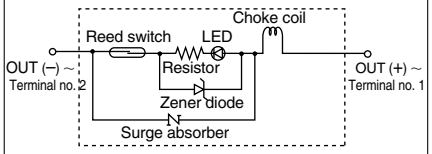
1. Use cable whose O.D. is within the size in the figure to maintain water resistant performance.
2. After wiring, confirm that tightening gland and all screws are tightened.

Auto Switch Internal Circuit

D-A33C



D-A34C, D-A44C



Auto Switch Specifications

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

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	24 VDC	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
Contact protection circuit	None	Built-in		
Internal voltage drop	2.4 V or less	2.4 V or less (to 20 mA)/3.5 V or less (to 50 mA)		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE marking			

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

Note 1) Refer to page 1272 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.

Mass

(g)

Auto switch model		D-A33C	D-A34C	D-A44C
Applicable bore size (mm)	40	162	162	160
	50	166	166	164
	63	184	184	182
	80	210	210	208
	100	232	232	230

Dimensions

(mm)

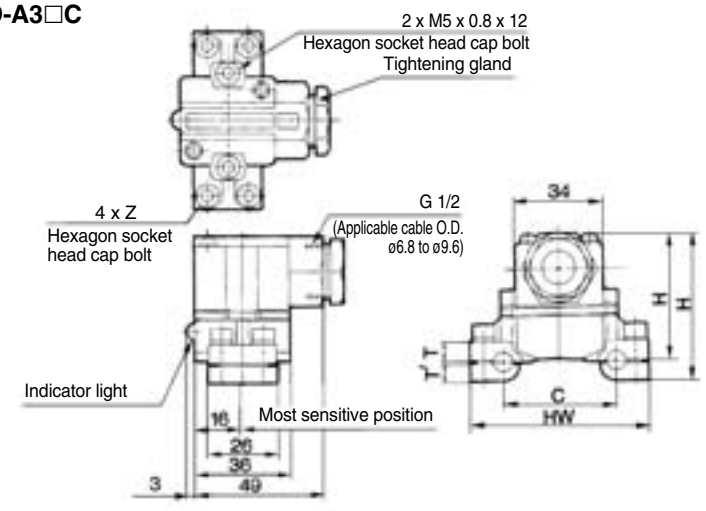
Auto switch model	Applicable bore size (mm)	C	HW	H	H'	T	T'	Z
D-A3□C-4, D-A44C-4	40	44	69	58 (67.5)	50.5 (60)	7.5	6.5	M5 x 0.8 x 16
D-A3□C-5, D-A44C-5	50	52	77	59 (68.5)	51.5 (61)	8.5	6.5	
D-A3□C-6, D-A44C-6	63	64	91	61.5 (71)	53 (62.5)	10.5	7.5	M5 x 0.8 x 20
D-A3□C-8, D-A44C-8	80	78	107	65 (74.5)	54.5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

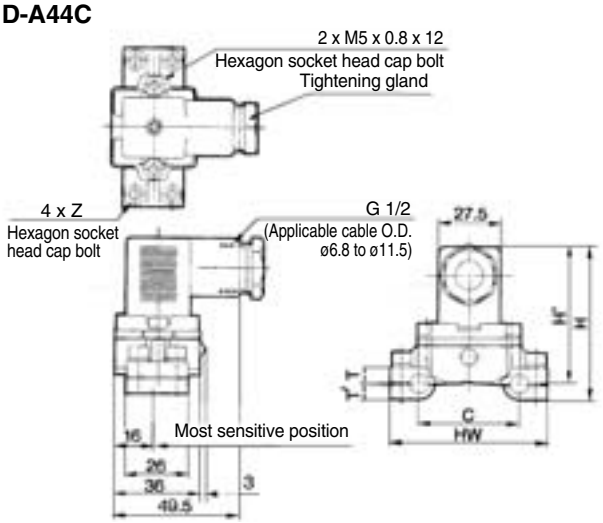
Dimensions

(mm)

D-A3□C



D-A44C



D-□

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

Grommet



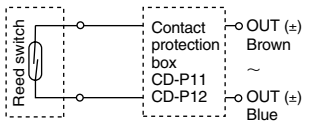
⚠Caution

Precautions

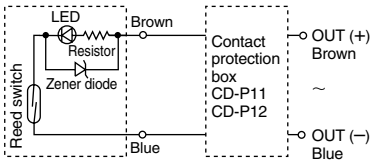
Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Internal Circuit

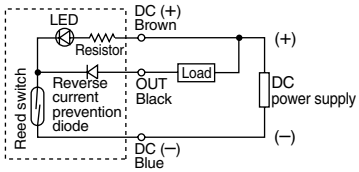
D-A90, A90V



D-A93, A93V



D-A96, A96V



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

Auto Switch Specifications

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

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
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including lead wire length of 3 m)		
Standard	CE marking		

D-A93, D-A93V, D-A96, D-A96V (With indicator light)			
Auto switch model	D-A93, D-A93V		D-A96, D-A96V
Applicable load	Relay, PLC		IC circuit
Load voltage	24 VDC	100 VAC	4 to 8 VDC
Load current range and Maximum load current (3)	5 to 40 mA	5 to 20 mA	20 mA
Contact protection circuit	None		
Internal voltage drop	D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A93V: 2.7 V or less		0.8 V or less
Indicator light	Red LED illuminates when turned ON.		
Standard	CE marking		

• Lead wires
D-A90(V)/D-A93(V)—Oilproof heavy-duty vinyl cord, ø2.7, 0.18 mm² x 2 cores (Brown, Blue), 0.5 m
D-A96(V)—Oilproof heavy-duty vinyl cord, ø2.7, 0.15 mm² x 3 cores (Brown, Black, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

Mass

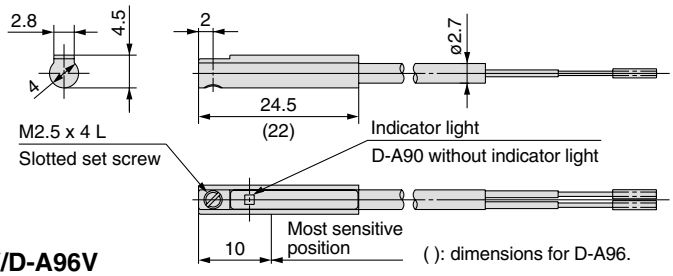
(g)

Model		D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length (m)	0.5	6	6	6	6	8	8
	3	30	30	30	30	41	41

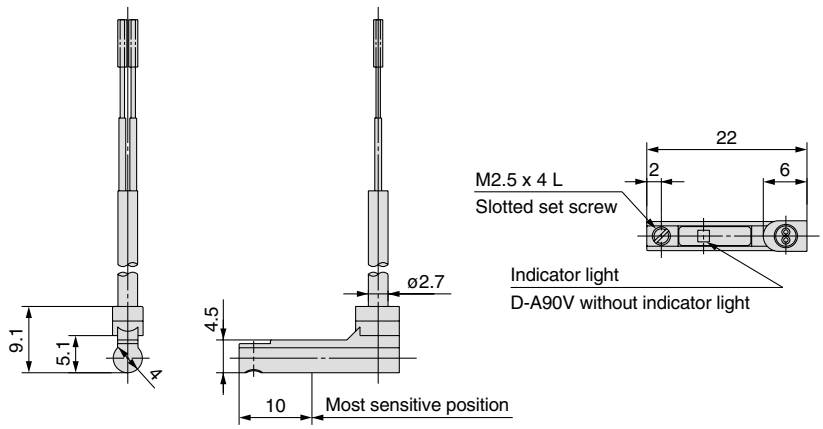
Dimensions

(mm)

D-A90/D-A93/D-A96



D-A90V/D-A93V/D-A96V



SMC

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

CE

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

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

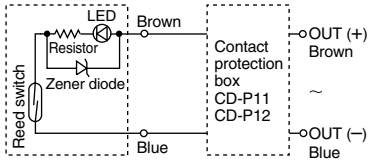
D-Z8 (Without indicator light)			
Auto switch model	**D-Z80**		
Applicable load	Relay, PLC, IC circuit		
Load voltage	24 V^{AC}_{DC} or less	48 V^{AC}_{DC}	100 V^{AC}_{DC}
Maximum load current	50 mA	40 mA	20 mA
Contact protection circuit	None		
Internal resistance	1 Ω or less (Including 3 m lead wire)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

• Lead wires
D-Z73/D-Z80—Oilproof heavy-duty vinyl cord, ø2.7, 0.18 mm², 2 cores (Brown, Blue), 0.5 m
D-Z76—Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 3 cores (Brown, Black, Blue), 0.5 m

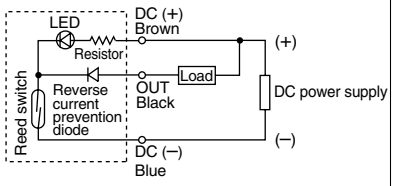
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

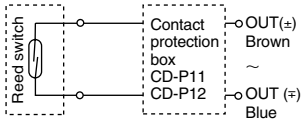
D-Z73



D-Z76



D-Z80



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

Mass

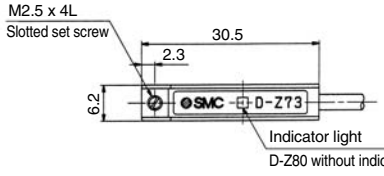
(g)

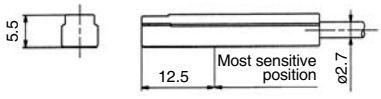
Auto switch model		D-Z73	D-Z76	D-Z80
Lead wire length (m)	0.5	7	10	7
	3	31	55	31
	5	50	—	—

Dimensions

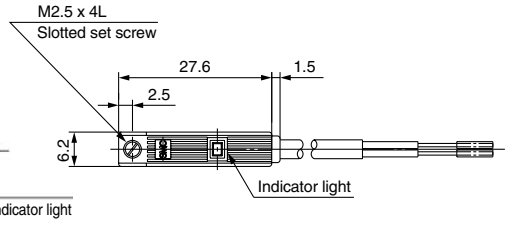
(mm)

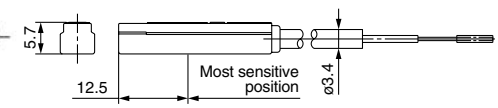
D-Z73, Z80





D-Z76



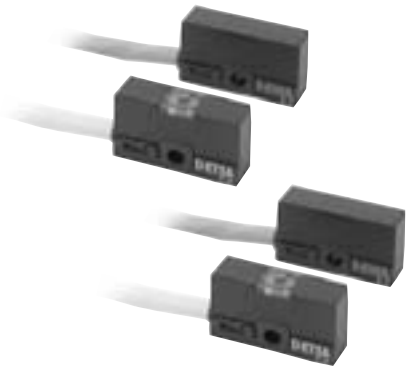


D-□

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

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

Grommet



Auto Switch Specifications

PLC: Programmable Logic Controller

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

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

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 3 cores (Brown, Black, Blue), 0.5 m

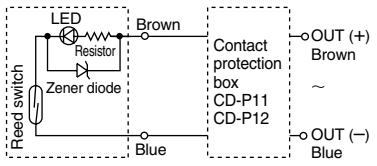
Note 1) Refer to page 1272 for reed auto switch common specifications.

Note 2) Refer to page 1272 for lead wire lengths.

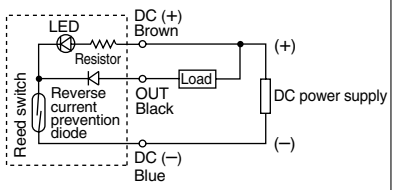
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Auto Switch Internal Circuit

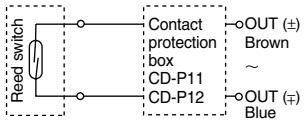
D-E73A



D-E76A



D-E80A



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Note 3) Load voltage is 100 VAC.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

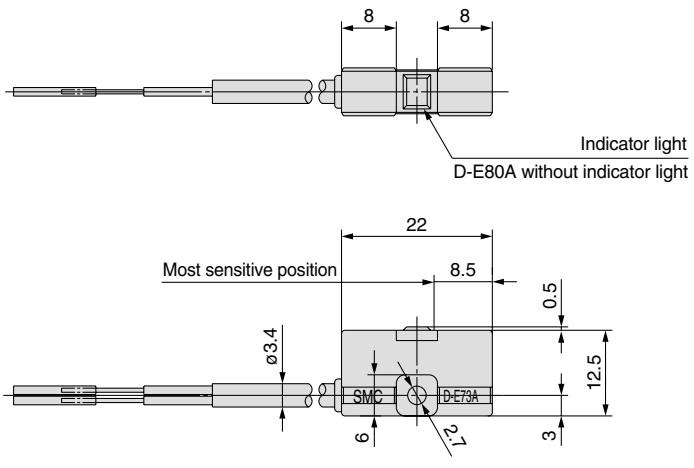
Mass

(g)

Auto switch model		D-E73A	D-E76A	D-E80A
Lead wire length (m)	0.5	10	11	10
	3	47	55	47
	5	—	—	—

Dimensions

(mm)



SMC

2-Color Indication Type Reed Auto Switch
Band Mounting Style
D-B59W

CE

Grommet

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



Auto Switch Specifications

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

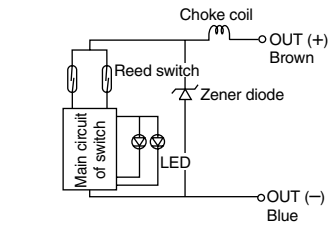
PLC: Programmable Logic Controller

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
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

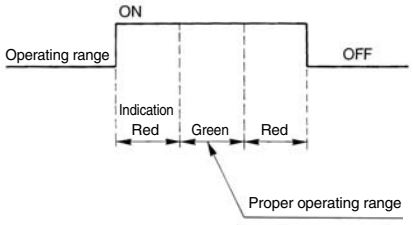
• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility 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.

Auto Switch Internal Circuit

D-B59W



Indicator light/Display method



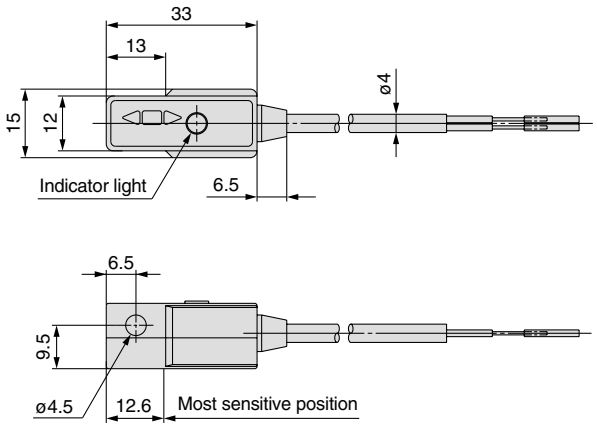
Mass

(g)

Auto switch model		D-B59W
Lead wire length (m)	0.5	20
	3	76
	5	—

Dimensions

(mm)



D-□

2-Color Indication Type Reed Auto Switch Rail Mounting Style
D-A79W

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

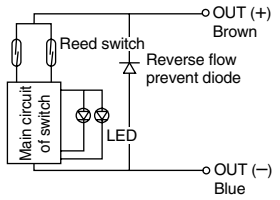
Grommet

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

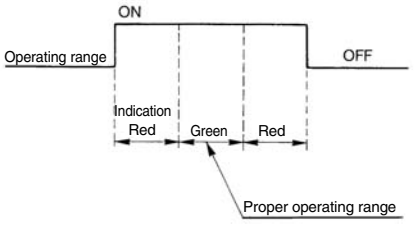


Auto Switch Internal Circuit

D-A79W



Indicator light/Display method



Note 1) Operating load is an induction load.
Note 2) Wiring to the load is 5 m or longer.
Use the contact protection box in any of the above listed situations. The contact point life may decrease. (Refer to page 1273 for contact protection box.)

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
Contact protection circuit	None
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof heavy-duty vinyl cord, ø3.4, 0.2 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 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.

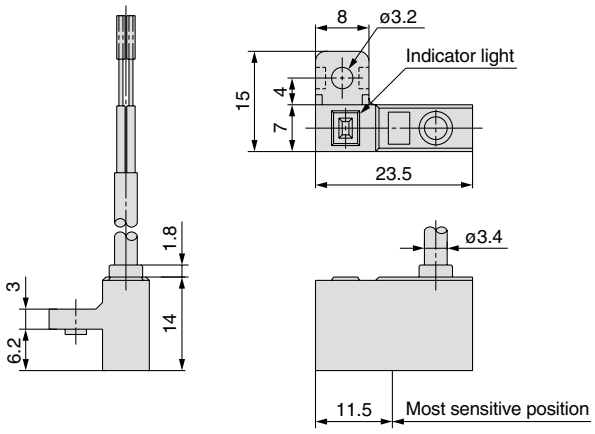
Mass

(g)

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

Dimensions

(mm)



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

Grommet

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



Auto Switch Specifications

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

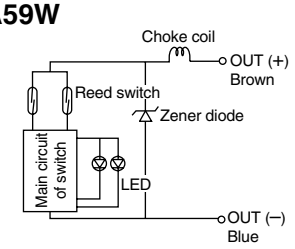
PLC: Programmable Logic Controller

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
Contact protection circuit	Built-in
Internal voltage drop	4 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

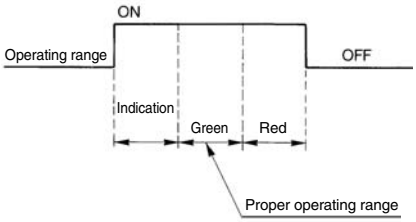
• Lead wires — Oilproof heavy-duty vinyl cord, ø4, 0.3 mm², 2 cores (Brown, Blue), 0.5 m
Note 1) Refer to page 1272 for reed auto switch common specifications.
Note 2) Refer to page 1272 for lead wire lengths.
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility 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.

Auto Switch Internal Circuit

D-A59W



Indicator light/Display method



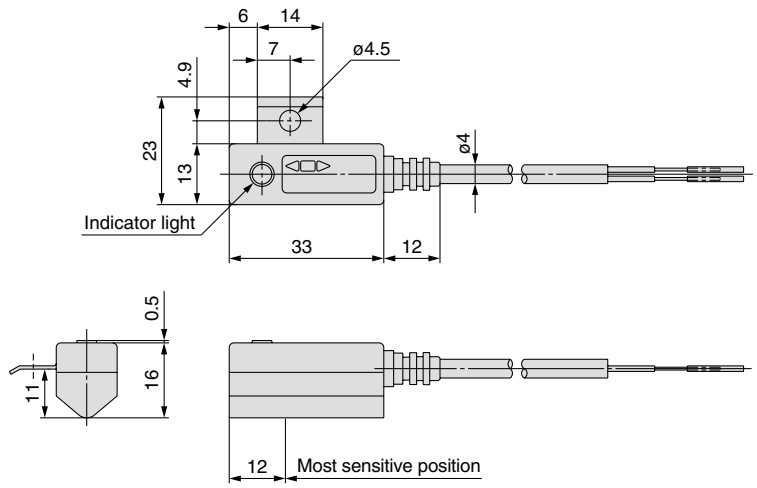
Mass

(g)

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

Dimensions

(mm)



D-□

Magnetic Field Resistant 2-Color Indication Type Reed Auto Switch

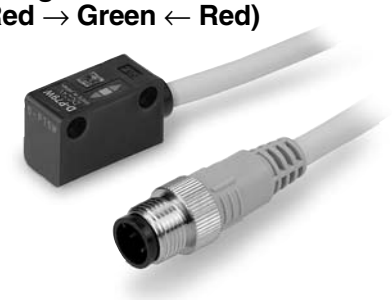
D-P79WSE

(Electrical Entry: Pre-wired connector)

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

Grommet

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



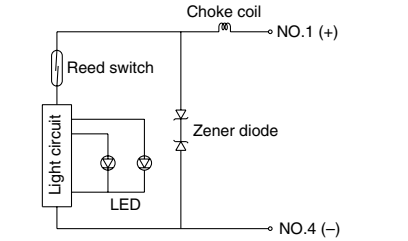
⚠Caution

Precautions

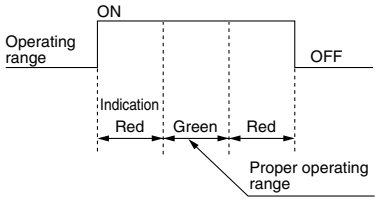
Cylinder with a strong integrated magnet must be used.

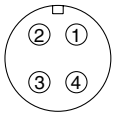
Auto Switch Internal Circuit

D-P79WSE



Indicator light/Display method





Connector pin

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
Contact protection circuit	Yes
Internal voltage drop	6 V or less
Indicator light	Operating range ····· Red LED illuminates. Proper operating range ····· Green LED illuminates.
Standard	CE marking

• Lead wires — Oilproof, fire resistant heavy-duty vinyl cord, ø6, 0.75 mm², 2 cores, 300 mm
Note 1) Refer to page 1272 for reed auto switch common specifications.

Mass

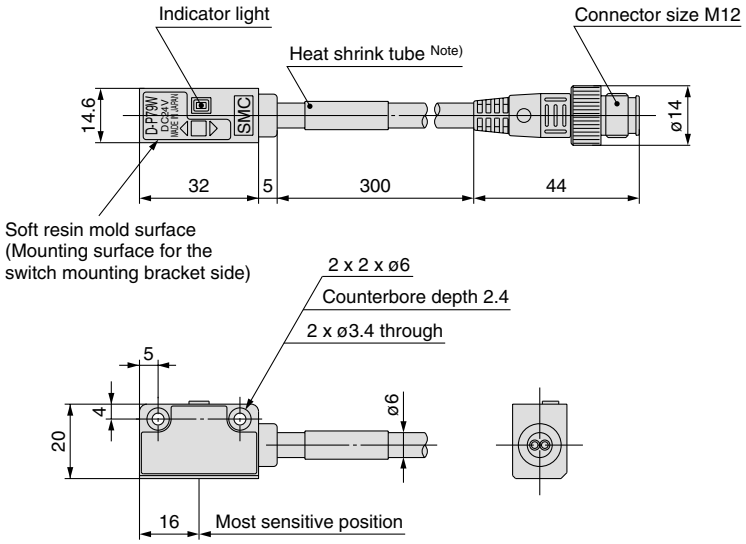
(g)

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.

Magnetic Field Resistant Reed Auto Switch
D-P74L/D-P74Z

CE

Grommet



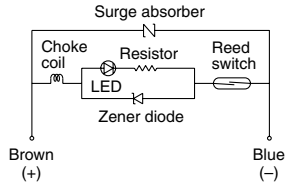
⚠Caution

Precautions

Cylinder with a strong integrated magnet must be used.

Auto Switch Internal Circuit

D-P74L, P74Z



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-P74L/Z (With indicator light)		
Auto switch model	**D-P74L**	**D-P74Z**
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
Contact protection circuit	Built-in	
Internal voltage drop (internal resistance)	2.4 V or less	
Leakage current	0	
Indicator light	Red LED illuminates when turned ON.	
Standard	CE marking	

• Lead wires — Oilproof, fire resistant heavy-duty vinyl cord, ø6.8, 0.75 mm², 2 cores (Brown, Blue), D-P74L: 3 m, D-P74Z: 5 m

Note 1) Refer to page 1272 for reed auto switch common specifications.

Note 2) Refer to page 1272 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.

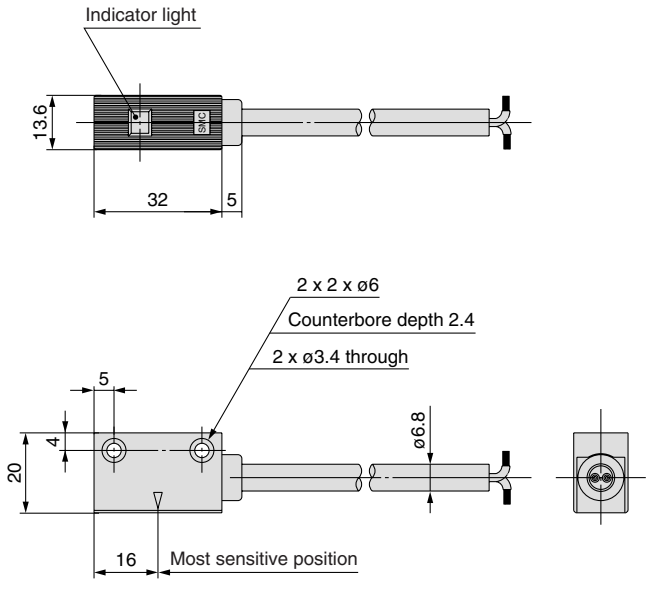
Mass

(g)

Auto switch model		D-P74
Lead wire length (m)	3	189
	5	320

Dimensions

(mm)



Magnetic Field Resistant Reed Auto Switch
D-P74-376

CE

Grommet



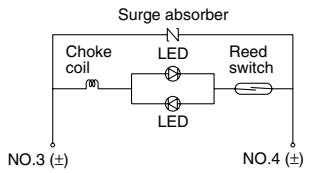
⚠Caution

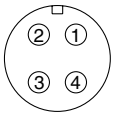
Precautions

Cylinder with a strong integrated magnet must be used.

Auto Switch Internal Circuit

D-P74-376





Connector pin

Auto Switch Specifications

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

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
Contact protection circuit	Built-in
Internal voltage drop (internal resistance)	2 V or less
Leakage current	0
Operating time	1.2 ms
Indicator light	Red LED illuminates when turned ON.
Standard	CE marking

• Lead wires — Oilproof, fire resistant heavy-duty vinyl cord, ø6, 0.5 mm², 2 cores, 0.5 m

Note 1) Refer to page 1272 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.

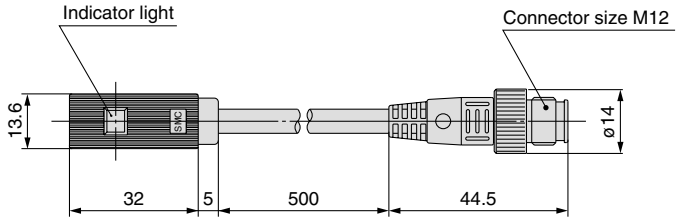
Mass

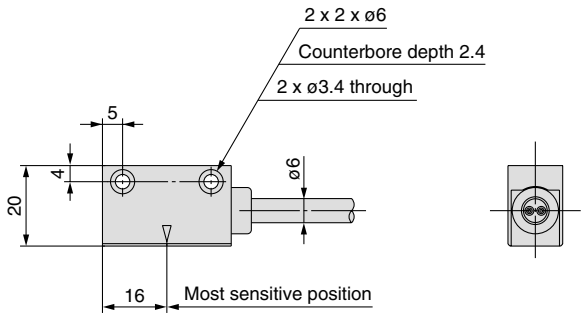
(g)

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

Dimensions

(mm)

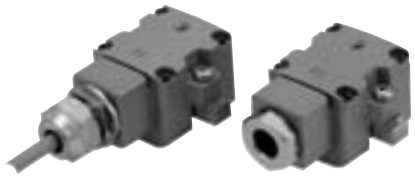




SMC

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

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



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

Outdoor plants and environment with high temperature and humidity

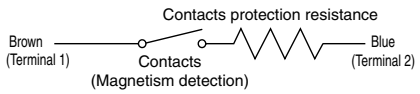
Environment for steam cleaning or high temperature sterilization

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

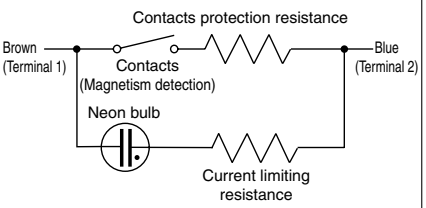
Use of metal case and heat resistant materials.
The construction prevents influence of external environment by sealing the auto switch internal parts to improve heat resistance.
The wide operating range allows easy position setting and reduces influence of the work piece position changes.

Auto Switch Internal Circuit

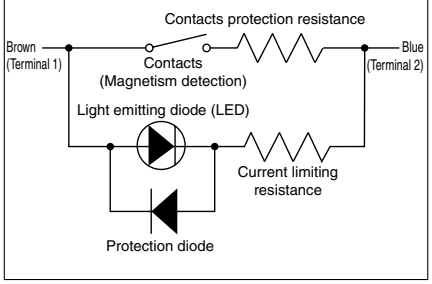
D-B30



D-B31



D-B35



Auto Switch Specifications

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

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[Note 1)]	—	0.5 m[Note 1)]	—	0.5 m[Note 1)]
Enclosure	Terminal conduit : IEC60529 IP64 Grommet : IEC60529 IP67					
Withstand voltage	1500 VAC for 1 minute (between case and terminals or lead wires)					
Insulation resistance	50 MΩ or larger between case (ground) and lead wires (terminals)					
Operating temperature range	–10°C to 120°C					
Standard	CE marking					

Note 1) Lead wire specifications: Outside diameter 6 mm; Fluororubber sheath; HBO-FTCF; 0.5 mm^2 x 2

Mass

(g)

Auto switch model		D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
Lead wire length (m)	0.5	190	250	190	250	190	250
	3	—	368	—	368	—	368
	5	—	462	—	462	—	462

Lead wire length

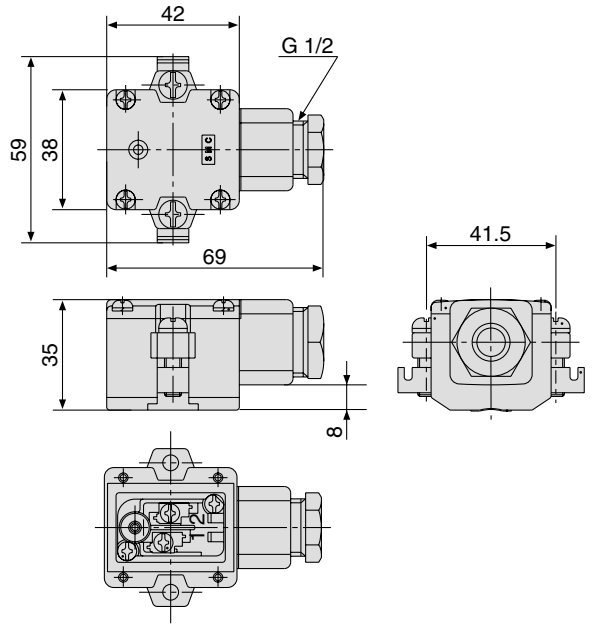
In case of the grommet type (J type), the lead wire length is 0.5 m.
(No lead wire is attached to the terminal conduit type.)
Manufacture of 3 m and 5 m types is also possible. Please consult SMC for these types.

D-□

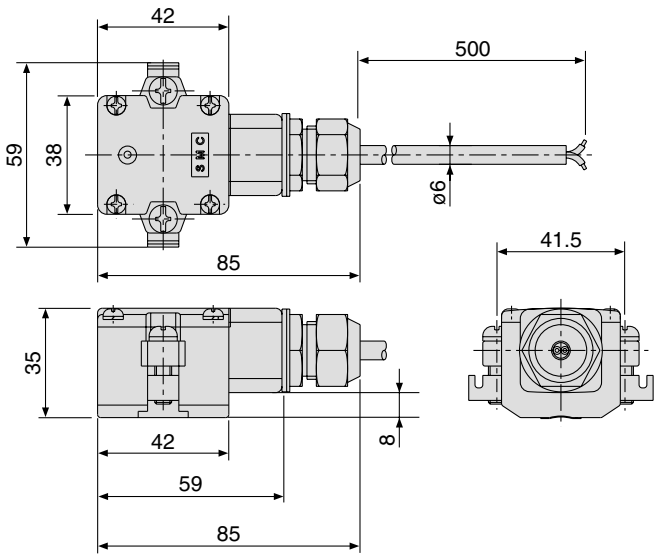
Dimensions

(mm)

Terminal conduit type D-B3□

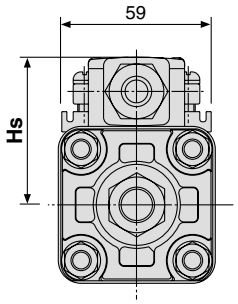


Terminal conduit type D-B3□J



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

Dimensions for Cylinder Mounting



Hs dimensions

(mm)

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

Mounting cylinder part no.

CDA2 B 50 – 200 – B31J S – X1184

- **CDA2** → **Cylinder model**

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

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

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

- **S** → **Number of auto switches**

Symbol	Description
Nil	2 pcs.
S	1 pc.

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

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

Series D-B3
Specific Product Precautions

Be sure to read before handling.
Refer to front matters 54 and 55 for Safety Instructions and pages 8 to 11 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 indication 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 , 100VAC 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 (Series -X1184) because it is operated by magnets using heat resistant material.

Consult SMC in advance for special applications in which conventional 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 3m·N while carefully applying equal torque to both lifting screws.

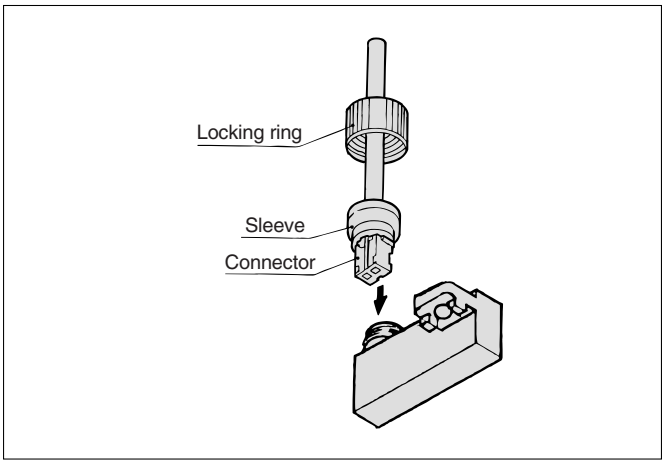
9. Product upgrades

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

Technical Data 1: Plug-in Connector Assembly/ How to Use DIN Terminal

Plug-in Connector Assembly

D-A73C/A80C, D-J79C
D-C73C/C80C, D-H7C



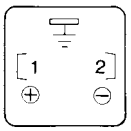
With the convex port of the connector, insert the connector into the auto switch into the sleeve. Screw the locking ring onto the switch.
(Do not tighten with pliers.)

How to Use DIN Terminal: D-A44/A44A/A44C

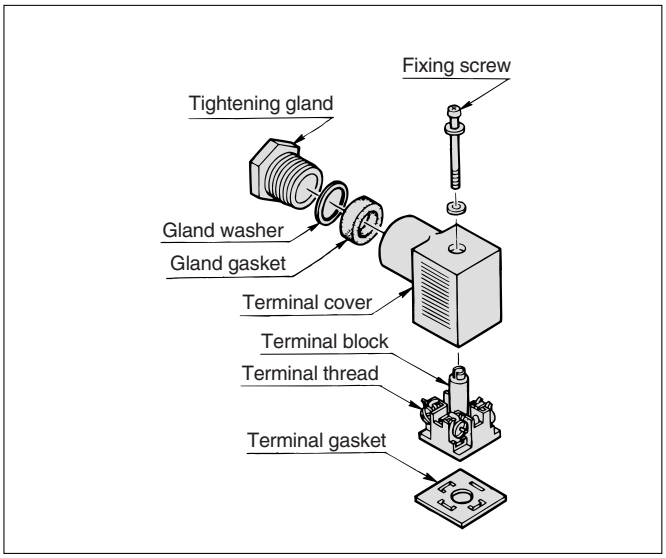
Connection procedure

1. Loosen the set screw and pull out the connector from the pin plug.
2. Be sure to remove the set screw first and then insert a screwdriver into a recessed groove under the terminal block to separate the terminal cover from the terminal block.
3. Follow the procedures and connect wires securely to specified terminals.
4. In standard cases, crimp-style terminals are used to connect wires. Please select proper crimp-style terminals so that the wire can be properly connected to terminal fittings.

How to connect



AC:
Connect to terminal no. 1 and no. 2
DC:
Connect (+) to no. 1 terminal and (–) to no. 2 terminal.



How to change position of electrical entry

After separating the terminal block from the terminal cover, change the position of the terminal cover to any desired direction (4 directions at every 90°) to change the position of electrical entry.

Caution

When plugging a connector in the pin plug or pulling it out, hold a connector perpendicularly as much as possible, not to slant it.

Applicable cable (Heavy-duty cord)

Applicable to cable O.D. of ø6.8 to ø11.5.

Applicable crimp-style terminal

1.25Y-3L, 1.25-3.5S, 1.25-4M

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

Mounting Bracket — Band Mounting Style

<Applicable auto switch>
Solid state ····· D-M9N, D-M9P, D-M9B
D-M9NW, D-M9PW, D-M9BW
Reed ····· D-A90, A93, A96

How to Mount and Move the Auto Switch

Mounting the Auto Switch

1. Attach the switch bracket to the switch holder.
   (Fit the convex part of the switch bracket over the concave part of the holder.)
2. Mount the auto switch mounting band to the cylinder tube.
3. Set the switch holder between the reinforcing plates of the band which is already attached to the cylinder.
4. Insert the auto switch mounting screw in the hole of the reinforcing plate through the switch holder, and thread it into the other plate. Tighten the screw temporarily.
5. Remove the set screw attached to the auto switch.
6. Attach the switch spacer to the auto switch.
7. Insert the auto switch with a switch spacer from the back of the switch holder and set it at the specified position.
   (Insert the auto switch with an angle of approximately 10 to 15°. See figure 1.)
8. To secure the auto switch, tighten the switch mounting screw with the specified torque (0.8 N·m to 1.0 N·m).

Adjusting the Switch Position

1. Unloosen the auto switch mounting screw 3 turns to adjust the auto switch set position.
2. Tighten the screw as described above (8) after adjustment.

Dismounting Auto Switch

1. Remove the auto switch mounting screw from the switch holder.
2. Move the auto switch back towards the position where it stops at the lead wire side.
3. Hold up the lead wire side of the auto switch at the angle of around 45°.
4. Maintain the angle, and pull back the auto switch obliquely at the same angle.

Note 1) Be careful not to pull or strain the lead wires.
Be careful not to apply excess tensile force (over 10 N) to the auto switches.
Adjust the auto switch position after sufficiently loosening its screw. For the band mounting type BJ3-1, loosen the screw three rotations or more.

Note 2) Be sure to use the switch spacer and switch bracket for the band mounting type.
Use together with the conventional auto switch mounting bands (brackets) BJ2-□□□, BM2-□□□ or BMA2-□□□.
Confirm that a switch spacer is mounted to the end of the auto switch before fastening the auto switch. If the switch bracket is not mounted, the auto switch may move after installation.

⚠ Caution

1. Tighten the screw under the specified torque when mounting auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.

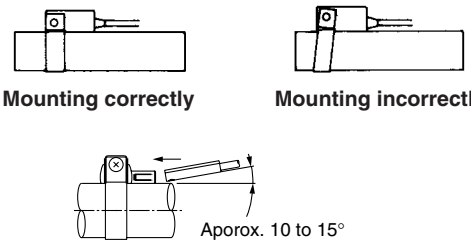
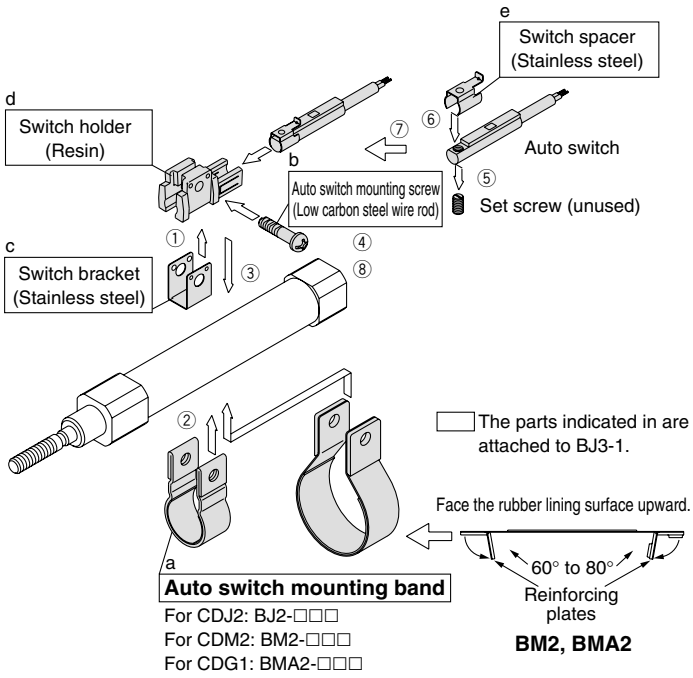


Figure 1. Switch insert angle



BJ2-□□□, BM2-□□□ and BMA2-□□□ are a set of a and b shown above. BJ3-1 is a set of c, d and e shown above.

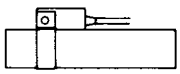
Auto Switch Mounting Bracket Part No. (Including bands and screws, two kinds of auto switch mounting brackets are used as a set.)

Cylinder series	Applicable bore size (mm)								
	6	10	16	20	25	32	40	50	63
CDJ2	BJ2-006 BJ3-1	BJ2-010 BJ3-1	BJ2-016 BJ3-1	—	—	—	—	—	—
CDVJ3/5, CDJ2X	—			—	—	—	—	—	—
CDBJ2, CDLJ2	—	—		—	—	—	—	—	—
CDM2, CDBM2 CDM2X, CDM2Y CDLM2, CDVM3/5	—	—	—	BM2-020 BJ3-1	BM2-025 BJ3-1	BM2-032 BJ3-1	BM2-040 BJ3-1	—	—
CDG1, CDBG1 CDG1Y, MGG RHC	—	—	—	BMA2-020 BJ3-1	BMA2-025 BJ3-1	BMA2-032 BJ3-1	BMA2-040 BJ3-1	BMA2-050 BJ3-1	BMA2-063 BJ3-1
MGC	—	—	—						—
CDLG1, CDNG	—	—	—					—	—
MLGC, REC	—	—	—					—	—
CKG1	—	—	—	—	—	—		BMA2-050 BJ3-1	BMA2-063 BJ3-1
CLK2GA	—	—	—	—	—	BMA2-032 BJ3-1			
CLK2GB	—	—	—	—	—	—	—		
RSDG	—	—	—	—	—	—	BMA2-040 BJ3-1		—

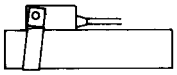
How to Mount and Move the Auto Switch

⚠ Caution

1. Tighten the screw under the specified torque when mounting auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



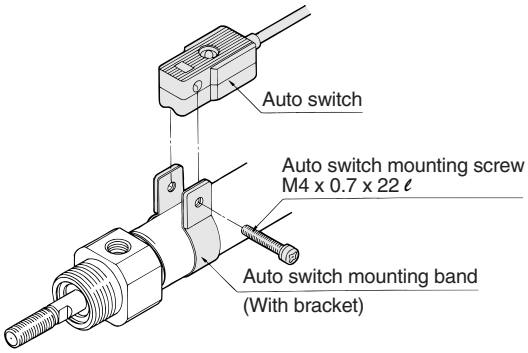
Mounting correctly



Mounting incorrectly

<Applicable auto switch>
Solid state ····· D-G59, D-G5P, D-K59, D-G5BAL, D-G59W, D-G5PW, D-K59W, D-G59F, D-G5NTL, D-G5NBL
Reed ····· D-B53, D-B54, D-B64, D-B59W

How to Mount and Move the Auto Switch



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

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

Cylinder series	Applicable bore size (mm)							
	20	**25**	**32**	**40**	**50**	**63**	**80**	**100**
CDM2, CDBM2 CDM2X, CDM2Y CDLM2, CDVM3/5	BA2-020	BA2-025	BA2-032	BA2-040	—	—	—	—
CDA2, CDBA2	—	—	—	BH2-040	BA5-050	BAF-06	BAF-08	BAF-10
CDA2□Q, CDA2□H, CDA2Y CDLA, CDL1, CDNA, CE2 CDV3, CDVS1	—	—	—	BA-04	BA-05	BA-06	BA-08	BA-10
CDG1, CDBG1, CDG1Y MGG, RHC	BA-01	BA-02	BA-32					
MGC						—	—	—
CDLG1, CDNG					—	—	—	—
MLGC, REC					—	—	—	—
CKG1	—	—	—		BA-05	BA-06	—	—
CLK2GA	—	—	BA-32				—	—
CLK2GB	—	—	—	—			—	—
CDG5□S	NBA-088S	NBA-106S	BGS1-032S	BAF-04S	BAF-05S	BAF-06S	BAF-08S	BAF-10S

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

BBA3: For D-B5/B6/G5/K5

"D-G5BAL" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When an auto switch is shipped independently, "BBA3" screws are attached.

Stainless Steel Mounting Screw Set

Part no.	Description			Applicable auto switch mounting bracket part no.	Applicable auto switch
	Part	Size	Qty.		
BBA3	Auto switch mounting screw	M4 x 0.7 x 22L	1	BA-01, BA-02, BA-32, BA-04 BA-05, BA-06, BA-08, BA-10	D-B5, B6 D-G5, K5
				BA2-020, BA2-025, BA2-032, BA2-040	
				BA5-050, BHN2-025, BSG1-032	
				BH2-040, BH2-050, BH2-080, BH2-100	
				BAF-32, BAF-04, BAF-05 BAF-06, BAF-08, BAF-10	

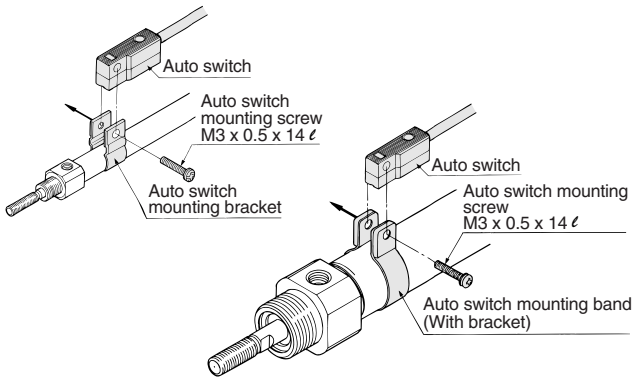
D-□

How to Mount and Move the Auto Switch

Mounting Bracket Band Mounting Style

<Applicable auto switch>
Solid state ····· D-H7A1, D-H7A2, D-H7B, D-H7BAL, D-H7C, D-H7NF, D-H7NW, D-H7PW, D-H7BW
Reed ····· D-C73, D-C76, D-C80, D-C73C, D-C80C

How to Mount and Move the Auto Switch



⚠ Caution

1. Tighten the screw under the specified torque when mounting auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



Mounting correctly **Mounting incorrectly**

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

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

Cylinder series	Applicable bore size (mm)								
	6	10	16	20	25	32	40	50	63
CDJ2	BJ2-006	BJ2-010	BJ2-016	—	—	—	—	—	—
CDVJ3/5, CDJ2X	—			—	—	—	—	—	—
CDBJ2, CDLJ2	—	—		—	—	—	—	—	—
CDM2, CDBM2 CDM2X, CDM2Y CDLM2, CDVM3/5	—	—	—	BM2-020	BM2-025	BM2-032	BM2-040	—	—
CDG1, CDBG1 CDG1Y, MGG, RHC	—	—	—	BMA2-020	BMA2-025	BMA2-032	BMA2-040	BMA2-050	BMA2-063
MGC	—	—	—						—
CDLG1, CDNG	—	—	—					—	—
MLGC, REC	—	—	—					—	—
CKG1	—	—	—	—	—	—	BMA2-040	BMA2-050	BMA2-063
CLK2GA	—	—	—	—	—	BMA2-032			
CLK2GB	—	—	—	—	—	—	—		
RSDG	—	—	—	—	—	—	BMA2-040		—
CDJ5□S	—	BJ2-010S	BJ2-016S	—	—	—	—	—	—

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

BBA4: For D-C7/C8/H7

"D-H7BAL" switch is set on the cylinder with the stainless steel screws above when shipped.
When only an auto switch is shipped independently, "BBA4" screws are attached.

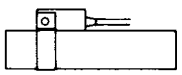
Stainless Steel Mounting Screw Set

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

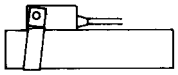
How to Mount and Move the Auto Switch

⚠ Caution

1. Tighten the screw under the specified torque when mounting auto switch.
2. Set the auto switch mounting band perpendicularly to cylinder tube.



Mounting correctly

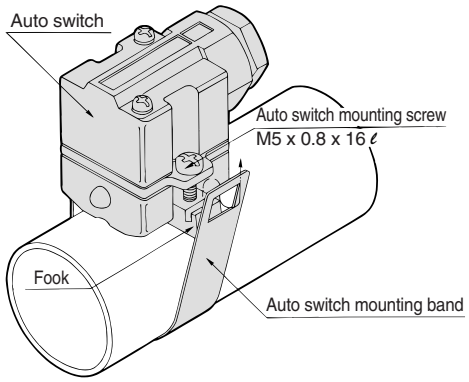


Mounting incorrectly

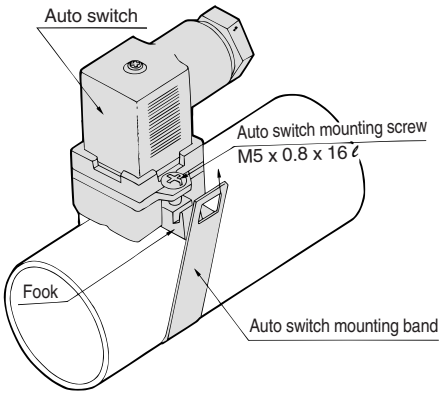
<Applicable auto switch>
Solid state ····· D-G39, D-K39
Reed ····· D-A33, D-A34, D-A44

How to Mount and Move the Auto Switch

D-A3□, D-G3/K3 type



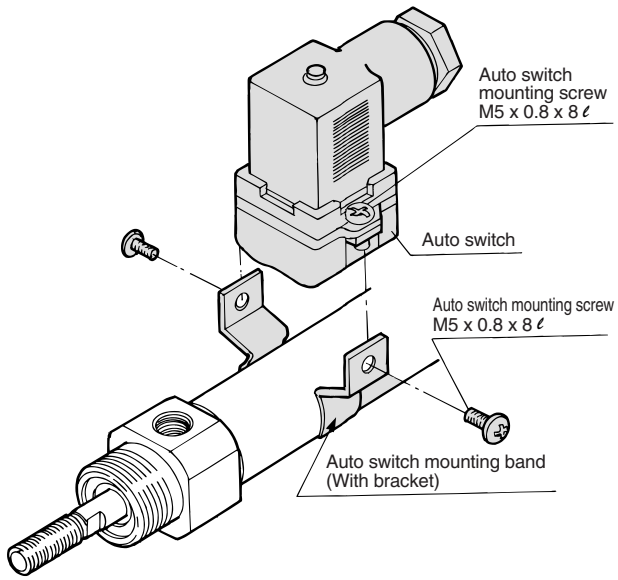
D-A44



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

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

How to Mount and Move the Auto Switch



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

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

Cylinder series	Applicable bore size (mm)			
	20	25	32	40
CDM2, CDBM2 CDLM2, CDM2X CDM2Y	BM3-020	BM3-025	BM3-032	BM3-040

Auto Switch Mounting Bracket Part No. (Band)

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

D-□

How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Style

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

How to Mount and Move the Auto Switch

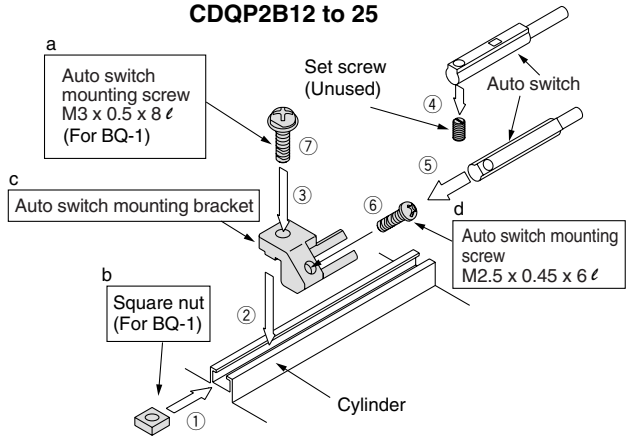
CDQP2B12 to 25

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

CDQP2B32 to 100

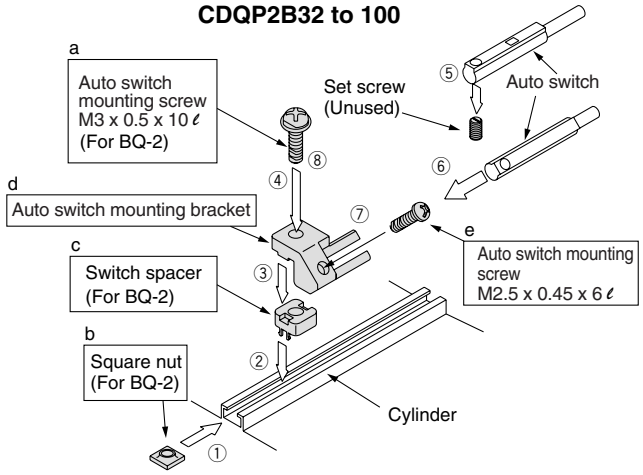
1. Insert the square nut for BQ-2 in the switch mounting rail and set it at the approximate auto switch mounting position.
2. Fit the protruding part of the switch mounting spacer over the concave part of the rail, and slide the spacer to the nut position.
3. Fit the convex part of the auto switch mounting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

CDQP2B12 to 25



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

CDQP2B32 to 100



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

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

Cylinder series	Applicable bore size (mm)									
	12	16	20	25	32	40	50	63	80	100
CDQP2B	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-1 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012	BQ-2 BQ2-012
CDQ2X, CDQ2Y CDLQ, CDQM RDQ	—	—	—	—						
RDLQ, RZQ	—	—	—	—					—	—
RSDQ	—	—	BQ-1 BQ2-012	BQ-1 BQ2-012				—	—	—
MK, MK2	—	—						BQ-2 BQ2-012	—	—
CE1	BQ-1 BQ2-012	—		—					—	—
CXT	—	—	—	—			—	—	—	—
CKQ, CLKQ	—	—	—	—	—		BQ-2 BQ2-012	—	—	—
MDU	—	—	—	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	BMU1-025 BQ2-012	—	—
MDLU	—	—	—					—	—	—

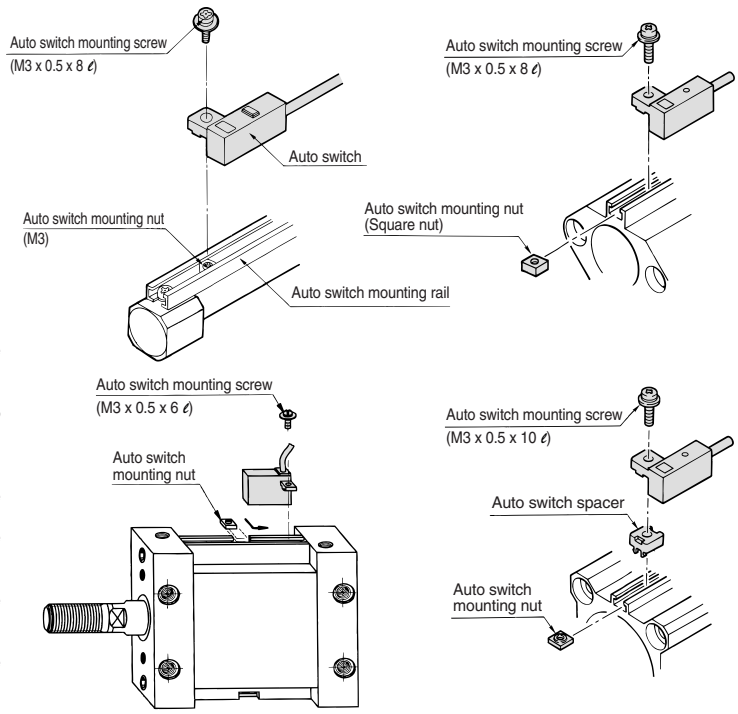
Note 1) Color or gloss differences in the metal surfaces have no effect on metal performance.
The special properties of the chromate (trivalent) applied to the main body of the auto switch mounting bracket for BQ2-012 result in differences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.
Note 2) When installing D-M9□A(V)L with BQ2-012 shown above, use BQ2-012S with stainless steel auto switch mounting screws (M2.5 x 0.45 x 6ℓ).

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-F79, D-F7P, D-J79, D-F7NV, D-F7PV, D-F7BV, D-J79C, D-F79W, D-F7PW, D-J79W, D-F7NWV, D-F7BWV, D-F79F, D-F7BAL, D-F7BAVL, D-F7NTL
Reed ····· D-A72, D-A73, D-A80, D-A72H, D-A73H, D-A76H, D-A80H, D-A73C, D-A80C, D-A79W

1. Slide the auto switch mounting nut inserted into the mounting rail and set it at the auto switch mounting position.
2. Fit the convex part of auto switch mounting arm into the concave part of auto switch mounting rail. Then slide the switch over the nut.
(Series CDQ2: Fit the convex part of auto switch mounting arm through the auto switch spacer into the concave part of auto switch mounting rail.)
3. Push the auto switch mounting screw lightly into the mounting nut through the hole of auto switch mounting arm.
4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)
5. Modification of the detecting position should be made in the condition of 3.

How to Mount and Move the Auto Switch



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

Cylinder series	Applicable bore size (mm)												
	12	16	20	25	32	40	50	63	80	100	125	140	160
CDQ2 (Except Z), CDQP2B	BQ-1	BQ-1	BQ-1	BQ-1	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	—	—	—
CDQ2 (Large bore size: Except Z)	—	—	—	—	—	—	—	—	—	—	BQ-2	BQ-2	BQ-2
CDQ2X, CDQ2Y CDLQ, CDQM RDQ	—	—	—	—	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	BQ-2	—	—	—
RDLQ, RZQ	—	—	—	—					—	—	—	—	—
RSDQ	—	—	BQ-1	BQ-1				—	—	—	—	—	—
MK (Except Z), MK2	—	—						BQ-2	—	—	—	—	—
CE1	BQ-1	—		—					—	—	—	—	—
CXT	—	—	—	—			—	—	—	—	—	—	—
MDU (Except Z)	—	—	—	BMU1-025	BMU1-025	BMU1-025	BMU1-025	BMU1-025	—	—	—	—	—
MDLU	—	—	—					—	—	—	—	—	—

[Mounting screws set made of stainless steel]
The set of stainless steel mounting screws (with nuts) described below is available and can be used depending on the operating environment. (Please order the auto switch spacer, since it is not included.)
BBA2: For D-A7/A8/F7/J7
"D-F7BAL" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When only an auto switch is shipped independently, "BBA2" screws are attached.

Stainless Steel Mounting Screw Set

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

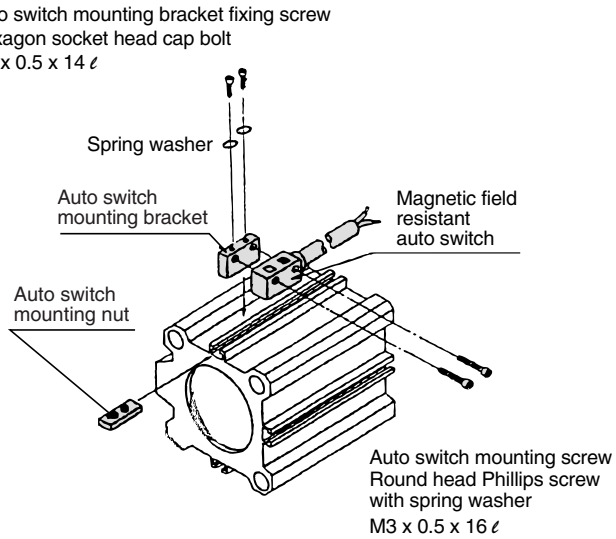
Note 1) A spacer for BQ-2 (black resin) is not included.
Note 2) When using D-A9□(V)/M9□(V)/M9□W(V)/M9□A(V)L auto switches with BQ2-012, use stainless steel screws suitable for the auto switch mounting bracket applicable for each cylinder series.

How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Style

<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch



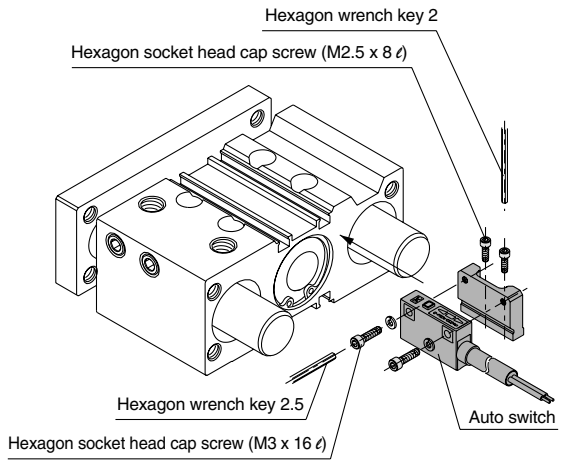
1. Mount the auto switch mounting bracket onto the auto switch mounting nut by tightening bracket fixing screw lightly through the mounting hole on the top of bracket.
2. Insert the auto switch mounting bracket assembly (bracket + nut) into the mounting groove and set it at the auto switch mounting position.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

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

Cylinder series	Applicable bore size (mm)				
	40	50	63	80	100
CDQ2, CDBQ2 CDQ2X, CDQ2Y CDLQ, CDQM	BQP1-050	BQP1-050	BQP1-050	BQP1-050	BQP1-050
MK, MK2				—	—
RZQ				—	—
CKQ, CLKQ	—		—	—	—

<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch



1. Insert the hexagon socket head cap screw (M2.5 x 0.45 x 8 ℓ) down lightly to the M2.5 tapped portion of the lower part of auto switch mounting bracket's concave part. (2 locations) Use caution to avoid the tip of a screw from sticking out of the auto switch mounting bracket's bottom surface.
2. Install a spring washer in the hexagon socket head cap bolt (M3 x 0.5 x 16 ℓ), then put it through the part of through-holes (2 locations) of an auto switch.
3. As for auto switch mounting bracket, slightly thread the hexagon socket head cap screw w into M3 tapped portion. (2 locations)
4. Fit the auto switch mounting bracket into the auto switch mounting groove on the cylinder body, and then slide it to the detection position roughly.
5. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch.

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

Cylinder series	Applicable bore size (mm)					
	32	40	50	63	80	100
MGP, MLGP	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040
MGT	—	—	—			

⚠ Caution

Auto Switch Mounting Tool

- When tightening hexagon socket head cap screw of an auto switch, use a hexagon wrench key 2 and 2.5, depending on the case.

Tightening Torque

- As a guide, set approximately 0.3 to 0.5 N·m for M2.5, 0.5 to 0.7 N·m for M3 respectively.

How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Style

<Applicable auto switch>
Solid state ····· D-P3DW□

Direct Mounting to the Round Groove

Applicable cylinder/actuator		Auto Switch Mounting Bracket Part No.
Compact cylinder	**CDQS ø25**	BQ3-032S
	CDQ2 ø32 to ø100	
Compact cylinder with lock	**CDLQ ø25 to ø100**	
Pin clamp cylinder	**CKQG ø50**	
Pin clamp cylinder with lock	**CLKQG ø50**	

Note) When the auto switch is mounted onto the CDBQ2 end lock type, please contact SMC.

How to Mount and Move the Auto Switch

1. Insert the protrusion on the bottom of the auto switch into the mating part of the auto switch mounting bracket and fix the auto switch and the auto switch mounting bracket temporarily by tightening the hexagon socket head cap screw (M2.5 x 9 L) 1 to 2 turns.

2. Insert the temporarily tightened mounting bracket into the mating groove of the cylinder/actuator, and slide the auto switch onto the cylinder/actuator through the groove.

3. Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screw (M2.5 x 6 L, M2.5 x 9 L).*

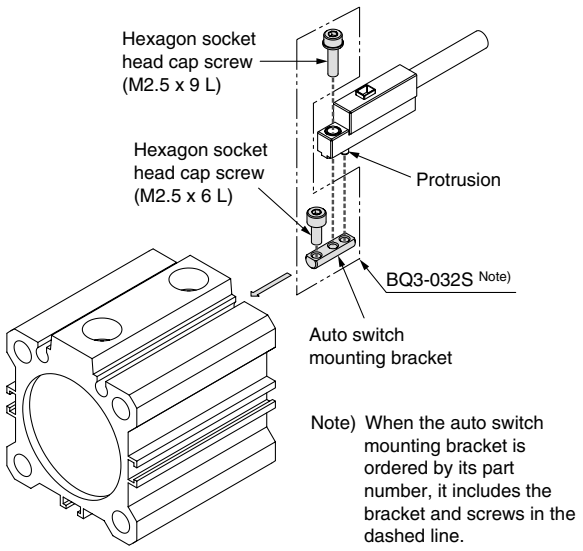
4. If the detecting position is changed, go back to step 2.

* The hexagon socket head cap screw (M2.5 x 6 L) is used to fix the mounting bracket and cylinder/actuator.
This enables the replacement of the auto switch without adjusting the auto switch position.

Note 1) Ensure that the auto switch is covered with the mating groove to protect the auto switch.

Note 2) The torque for tightening the hexagon socket head cap screw (M2.5 x 6 L, M2.5 x 9 L) is 0.2 to 0.3 N·m.

Note 3) Tighten the hexagon socket head cap screws evenly.



Note) When the auto switch mounting bracket is ordered by its part number, it includes the bracket and screws in the dashed line.

Caution for the Cylinder/Actuator Mounting

* When mounting the D-P3DW onto a cylinder/actuator with ø32 to ø50, to avoid mutual interference, use a fitting with width across flats 12 mm or less for ø32 and ø40, and use a fitting with width across flats 14 mm or less for ø50. Also, if the corner of the fitting interferes with the housing of the auto switch, adjust the tightening of the fitting to eliminate the interference. In the case of interference with an elbow type fitting, direct the port of the fitting away from the auto switch. Such interference must be avoided especially when a speed controller and speed exhaust controller with a fitting are selected.
* In the CDQSø25 and CDLQø25, the auto switch will interfere with the fitting if mounted onto the face with the port, so it needs to be mounted on a different face.

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-P3DW□

Direct Mounting to the Square Groove

Applicable cylinder/actuator		Auto Switch Mounting Bracket Part No.
Compact guide cylinder	**MGP ø25 to ø100**	BMG5-025S
	MGPS ø50, ø80	
Compact guide cylinder with lock	**MLGP ø25 to ø100**	

Note) For the MGP end lock type, as the auto switch cannot be mounted onto the lock mechanism face, mount it to the groove on the bottom of the lock mechanism face.

How to Mount and Move the Auto Switch

1. Insert the protrusion on the bottom of the auto switch into the mating part of the auto switch mounting bracket and fix the auto switch and the auto switch mounting bracket temporarily by tightening the hexagon socket head cap screw (M2.5 x 9 L) 1 to 2 turns.

2. Insert the temporarily tightened mounting bracket into the mating groove of the cylinder/actuator, and slide the auto switch onto the cyinder/actuator through the groove.

3. Check the detecting position of the auto switch and fix the auto switch firmly with the hexagon socket head cap screw (M2.5 x 6 L, M2.5 x 9 L).*

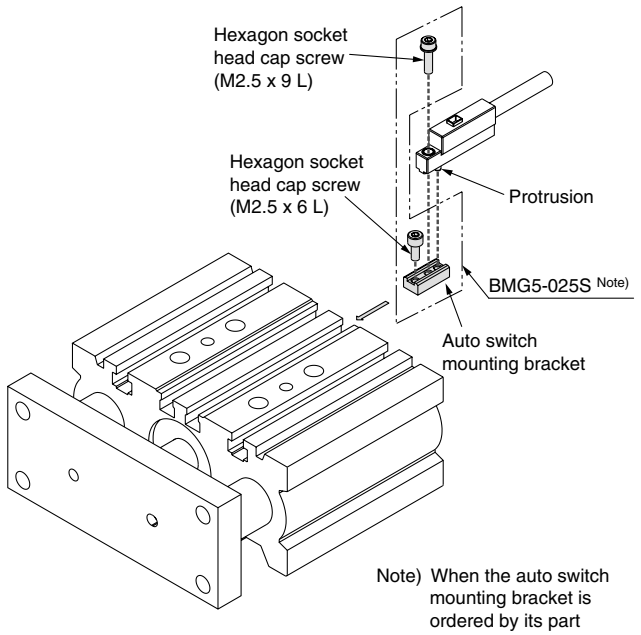
4. If the detecting position is changed, go back to step 2.

* The hexagon socket head cap screw (M2.5 x 6 L) is used to fix the mounting bracket and cylinder/actuator.
This enables the replacement of the auto switch without adjusting the auto switch position.

Note 1) Ensure that the auto switch is covered with the mating groove to protect the auto switch.

Note 2) The torque for tightening the hexagon socket head cap screw (M2.5 x 6 L, M2.5 x 9 L) is 0.2 to 0.3 N·m.

Note 3) Tighten the hexagon socket head cap screws evenly.



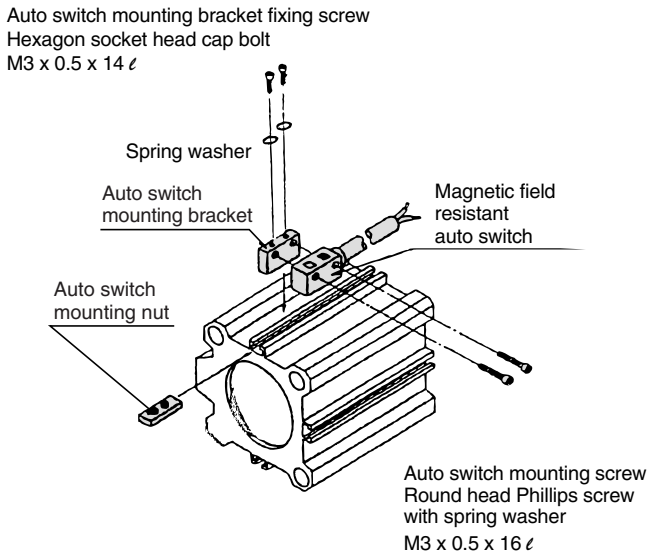
Note) When the auto switch mounting bracket is ordered by its part number, it includes the bracket and screws in the dashed line.

How to Mount and Move the Auto Switch

Mounting Bracket Rail Mounting Style

<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch



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

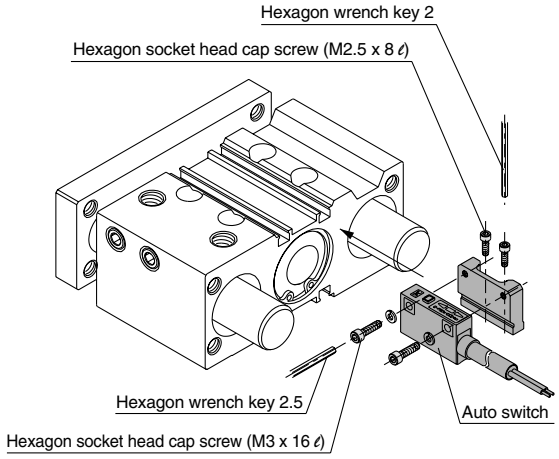
Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)				
	40	50	63	80	100
CDBQ2 CDQ2X, CDQ2Y CDLQ, CDQM	BQP1-050	BQP1-050	BQP1-050	BQP1-050	BQP1-050
MK, MK2				—	—
RZQ				—	—
CKQ, CLKQ	—		—	—	—

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

<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch



1. Insert the hexagon socket head cap screw (M2.5 x 0.45 x 8 ℓ) down lightly to the M2.5 tapped portion of the lower part of auto switch mounting bracket's concave part. (2 locations) Use caution to avoid the tip of a screw from sticking out of the auto switch mounting bracket's bottom surface.
2. Install a spring washer in the hexagon socket head cap bolt (M3 x 0.5 x 16 ℓ), then put it through the part of through-holes (2 locations) of an auto switch.
3. As for auto switch mounting bracket, slightly thread the hexagon socket head cap screw w into M3 tapped portion. (2 locations)
4. Fit the auto switch mounting bracket into the auto switch mounting groove on the cylinder body, and then slide it to the detection position roughly.
5. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch.

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

Cylinder series	Applicable bore size (mm)					
	32	40	50	63	80	100
MGP, MLGP	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040	BMG1-040
MGT	—	—	—			

⚠ Caution

Auto Switch Mounting Tool

- When tightening hexagon socket head cap screw of an auto switch, use a hexagon wrench key 2 and 2.5, depending on the case.

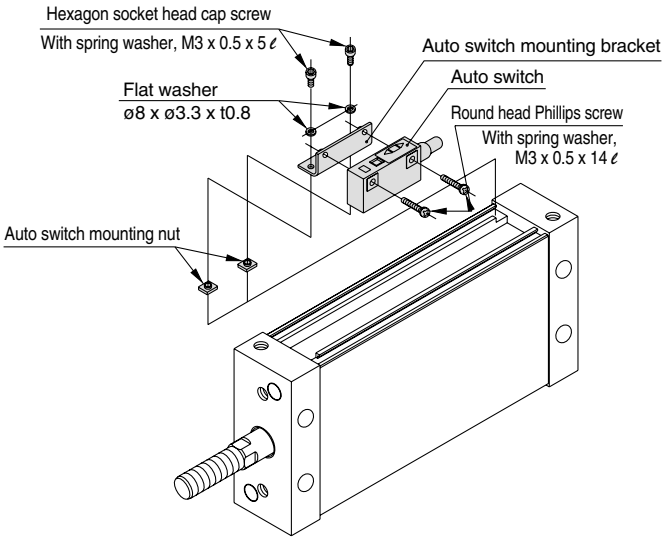
Tightening Torque

- As a guide, set approximately 0.3 to 0.5 N·m for M2.5, 0.5 to 0.7 N·m for M3 respectively.

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch



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

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

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

How to Mount and Move the Auto Switch

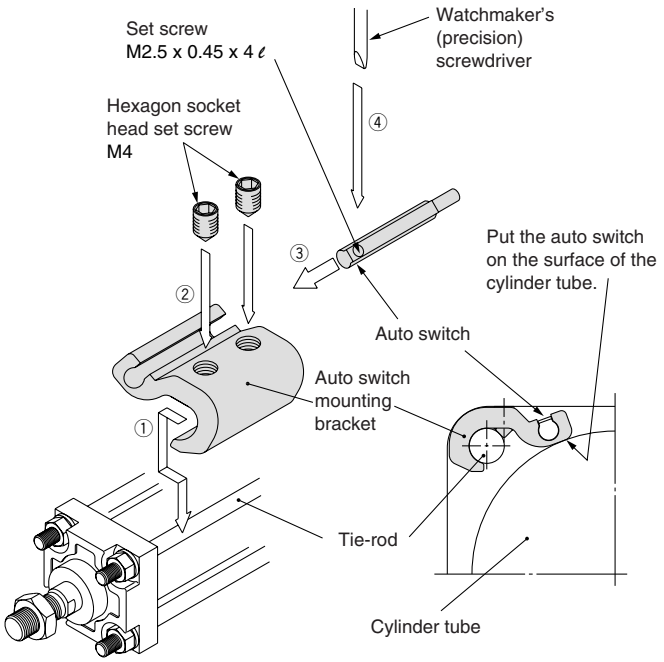
Mounting Bracket Tie-rod Mounting Style

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

How to Mount and Move the Auto Switch

1. Fix it to the detecting position with a set screw by installing an auto switch mounting bracket in cylinder tie-rod and letting the bottom surface of an auto switch mounting bracket contact the cylinder tube firmly.
2. Fix it to the detecting position with a set screw (M4). (Use a hexagon wrench.)
3. Fit an auto switch into the auto switch mounting groove to set it roughly to the mounting position for an auto switch.
4. After confirming the detecting position, tighten up the mounting screw (M2.5) attached to an auto switch, and secure the auto switch.
5. When changing the detecting position, carry out in the state of 3.

Note 1) To protect auto switches, ensure that main body of an auto switch should be embedded into auto switch mounting groove with a depth of 15 mm or more.
Note 2) Set the tightening torque of a hexagon socket head set screw (M4) to be 1 to 1.2 N·m.
Note 3) When tightening an auto switch mounting screw (M2.5), use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. Also, set the tightening torque to be 0.05 to 0.15 N·m. As a guide, turn 90° from the position where it comes to feel tight.



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

Cylinder series	Applicable bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
MDB	BMB5 -032	BMB5 -032	BA7 -040	BA7 -040	BA7 -063	BA7 -063	BA7-080	—	—	—	—
MDBB, MDNB							—	—	—	—	—
CDA2, CDBA2 CDA2□Q CDA2□H CDA2Y, CDLA CDNA, CE2	—	BA7 -040	BA7 -040	BA7 -063	BA7 -080	BA7 -080	—	—	—	—	—
CDL1	—						BS5 -125	BS5 -125	BS5 -160	—	—
CDS1, CDLS	—	—	—	—	—	—				BS5-180	BS5-200
CDS2	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

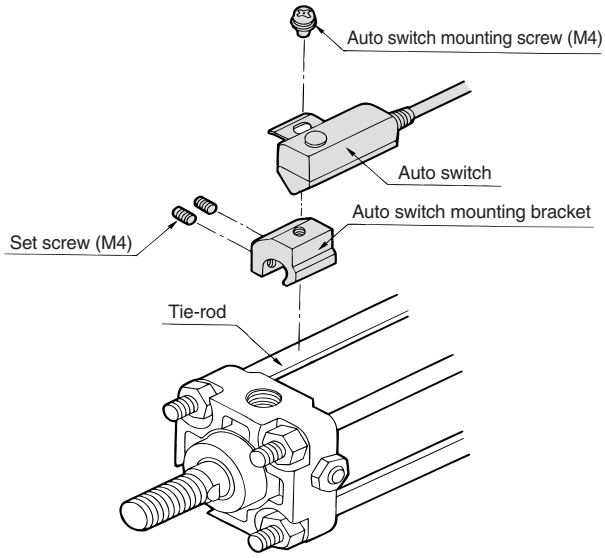
Note 1) When using type D-M9□A(V)L, please order stainless steel screw set BBA1 separately (page 1365) , and use the stainless steel set screws, after selecting set screws of the appropriate length for the cylinder series—as shown in the table above.
Note 2) Color or gloss differences in the metal surfaces have no effect on metal performance.
The special properties of the chromate (trivalent) applied to the main body of the auto switch mounting bracket for BA7-□, BMB5-□ and BS5-□ result in differences in coloration depending on the production lot, but these have no adverse impact on corrosion resistance.

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-F59, D-F5P,
D-J59, D-J51, D-F5BAL,
D-F59W, D-F5PW, D-J59W,
D-F59F, D-F5NTL
Reed ····· D-A53, D-A54, D-A56, D-A64,
D-A67, D-A59W

1. Fix the auto switch on the auto switch mounting bracket with the auto switch mounting screw (M4) and install the set screw.
2. Fit the auto switch mounting bracket into the cylinder tie-rod and then fix the auto switch at the detecting position with the hexagonal wrench. (Be sure to put the auto switch on the surface of cylinder tube.)
3. When changing the detecting position, loosen the set screw to move the auto switch and then re-fix the auto switch on the cylinder tube. (Tightening torque of M4 screw should be 1 to 1.2 N·m.)

How to Mount and Move the Auto Switch



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

Cylinder series	Applicable bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
MDB	BT-03	BT-03	BT-05	BT-05	BT-06	BT-06	BT-08	—	—	—	—
MDBB, MDNB							—	—	—	—	—
CDA2, CDBA2 **CDA2□Q** **CDA2□H** **CDA2Y, CDLA** **CDNA, CE2** **CDV3, CDVS1**	—	BT-04	BT-04	BT-06	BT-08	BT-08	—	—	—	—	—
CDL1	—						BT-12	BT-12	BT-16	—	—
CDS1, CDLS	—	—	—	—	—	—				BT-18A	BT-20
CDS2	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

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

BBA1: For D-A5/A6/F5/J5

"D-F5BAL" auto switch is set on the cylinder with the stainless steel screws above when shipped.
When an auto switch is shipped independently, "BBA1" screws are attached.

Stainless Steel Mounting Screw Set

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

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

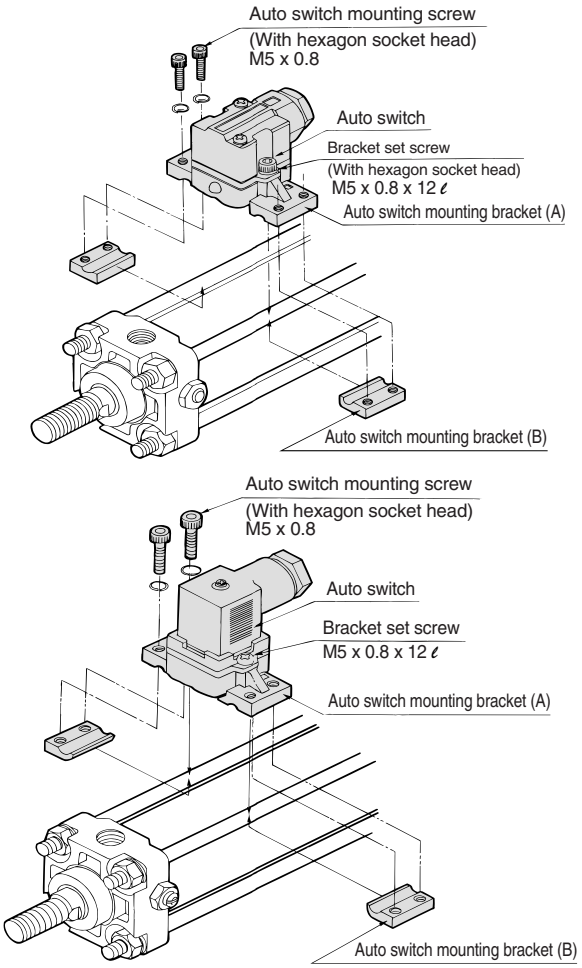
How to Mount and Move the Auto Switch

Mounting Bracket Tie-rod Mounting Style

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

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

How to Mount and Move the Auto Switch



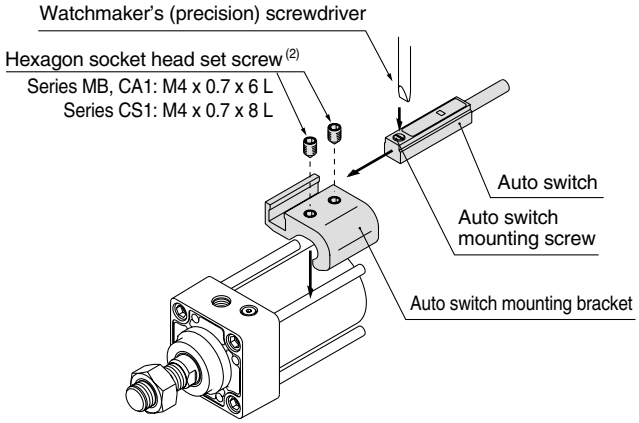
Auto Switch Mounting Bracket Part No. (Including bracket, screw)

Cylinder series	Applicable bore size (mm)				
	40	**50**	**63**	**80**	**100**
CDA2, CDBA2 CDV3, CDVS1, CDL1, CE2, CNA	BA3-040	BA3-050	BA3-063	BA3-080	BA3-100

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), D-Y7PW(V), D-Y7BW(V), D-Y7BAL
Reed ····· D-Z73, D-Z76, D-Z80

How to Mount and Move the Auto Switch



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

1. Fix it to the detecting position with a set screw by installing an auto switch mounting bracket in cylinder tie-rod and letting the bottom surface of an auto switch mounting bracket contact the cylinder tube firmly. (Use hexagon wrench)
2. Fit an auto switch into the auto switch mounting groove to set it roughly to the auto switch mounting position for an auto switch.
3. After confirming the detecting position, tighten up the mounting screw attached to an auto switch, and secure the switch.
4. When changing the detecting position, carry out in the state of 2.

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

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

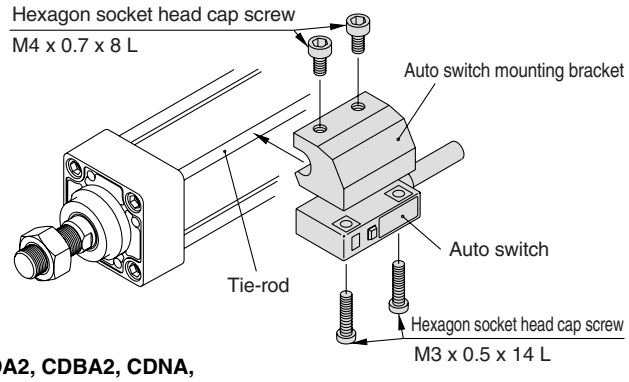
Cylinder series	Applicable bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
MDB	BMB4-032	BMB4-032	BMB4-050	BMB4-050	BA4-063	BA4-063	BA4-080	—	—	—	—
MDBB, MDNB							—	—	—	—	—
CDA2, CDBA2 CDA2□Q CDA2□H CDA2Y, CDLA CDNA, CE2	—	BA4-040	BA4-040	BA4-063	BA4-080	BA4-080	—	—	—	—	—
CDL1	—						BS4-125	BS4-125	BS4-160	—	—
CDS1, CDLS	—	—	—	—	—	—				BS4-180	BS4-200
CDS2	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

Note 2) When using type D-Y7BAL please order stainless steel screw set BBA1 separately (page 1365), and use the stainless steel set screws, after selecting set screws of the appropriate length for the cylinder series—as shown in the table above.

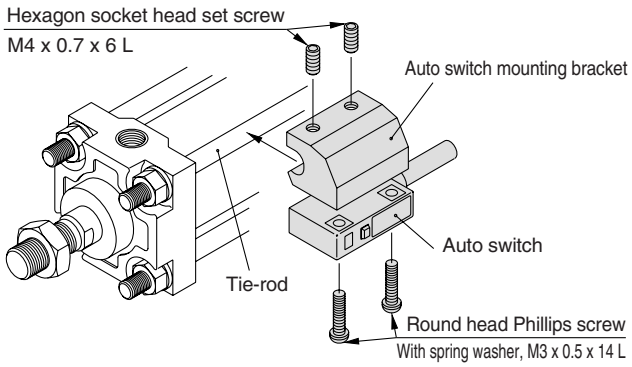
<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch

MDB, MDBB, MDNB



CDA2, CDBA2, CDNA, CDLA, CDL1 (ø40 to ø100)



1. (For MDB)
Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 8 ℓ) into the M4 tapped portion of auto switch mounting bracket. (2 locations) Use caution that the tip of the hexagon socket head cap screw should not stick out to the concave portion of auto switch mounting bracket.
(For CDA1)
Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 6 ℓ) into the M4 tapped portion of auto switch mounting bracket. (2 locations) Use caution that the tip of the hexagon socket head set screw should not stick out to the concave portion of auto switch mounting bracket.
2. (For MDB)
Put a hexagon socket head cap screw (M3 x 0.5 x 14 ℓ) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
(For CDA2)
Put a hexagon socket head cap screw (with spring washer M3 x 0.5 x 14 ℓ) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
3. Place the concave part of the auto switch mounting bracket into the cylinder tie-rod, and slide the auto switch mounting bracket in order to set roughly to the detecting position.
4. After reconfirming the detecting position, tighten the M3 mounting screw to secure the auto switch by making the bottom face of auto switch attached to the cylinder tube. (Tightening torque of M3 screw should be 0.5 to 0.7 N·m.)
5. Tighten up M4 screw of auto switch mounting bracket to secure the auto switch mounting bracket. (Ensure that tightening torque of M4 screw should be set 1.0 to 1.2 N·m.)

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

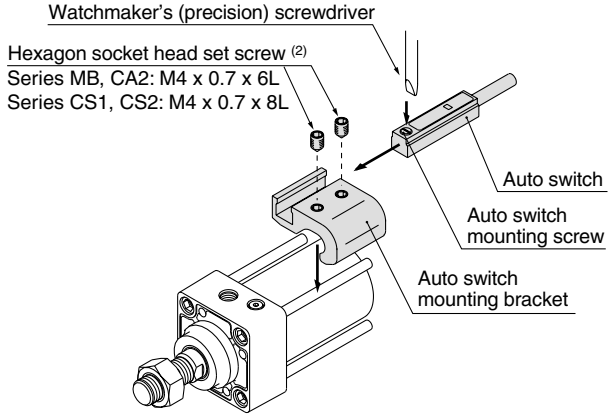
Cylinder series	Applicable bore size (mm)					
	32	40	50	63	80	100
MDB, MDBB, MDNB	BMB3T-040	BMB3T-040	BMB3T-050	BMB3T-050	BMB3T-080	BMB3T-080
CDA2, CDBA2 CDLA, CDL1, CDNA	—	BAP2-040	BAP2-040	BAP2-063	BAP2-080	BAP2-080

D-□

How to Mount and Move the Auto Switch

<Applicable auto switch>
Solid state ····· D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), D-Y7PW(V), D-Y7BW(V), D-Y7BAL
Reed ····· D-Z73, D-Z76, D-Z80

How to Mount and Move the Auto Switch



1. Fix it to the detecting position with a set screw by installing an auto switch mounting bracket in cylinder tie-rod and letting the bottom surface of an auto switch mounting bracket contact the cylinder tube firmly. (Use hexagon wrench)
2. Fit an auto switch into the auto switch mounting groove to set it roughly to the auto switch mounting position for an auto switch.
3. After confirming the detecting position, tighten up the mounting screw attached to an auto switch, and secure the switch.
4. When changing the detecting position, carry out in the state of 2.

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

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

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

Cylinder series	Applicable bore size (mm)										
	32	40	50	63	80	100	125	140	160	180	200
MDB	BMB4-032	BMB4-032	BMB4-050	BMB4-050	BA4-063	BA4-063	BA4-080	—	—	—	—
MDBB, MDNB							—	—	—	—	—
CDA2, CDBA2 CDA2□Q CDA2□H CDA2Y, CDLA CDNA, CE2	—	BA4-040	BA4-040	BA4-063	BA4-080	BA4-080	—	—	—	—	—
CDL1	—						BS4-125	BS4-125	BS4-160	—	—
CDS1, CDLS	—	—	—	—	—	—				BS4-180	BS4-200
CDS2	—	—	—	—	—	—				—	—
CDNS	—	—	—	—	—	—				—	—

Note 2) When using type D-Y7BAL please order stainless steel screw set BBA1 separately (page 1365), and use the stainless steel set screws, after selecting set screws of the appropriate length for the cylinder series—as shown in the table above.

How to Mount and Move the Auto Switch

Mounting Bracket Tie-rod Mounting Type

<Applicable auto switch>
Solid state ····· D-P3DW□

Applicable cylinder/actuator		
Clamp cylinder	**CKG1**	**ø40 to ø63**
Clamp cylinder with lock	**CLK2G**	**ø40 to ø63**
Air cylinder	**MDB**	**ø32 to ø63**
	CDA2	**ø40, ø50**
Air cylinder with lock	**MDNB**	**ø32 to ø63**
	CDNA	**ø40, ø50**

How to Mount and Move the Auto Switch

1. Insert the protrusion on the bottom of the auto switch into the mating part of the mounting bracket and fix the auto switch by tightening the hexagon socket head cap screw (M2.5 x 9 L).

2. Install the mounting bracket on which the auto switch is mounted to the switch mounting rod, and move it to find the detecting position while keeping firm contact between the bottom of the auto switch mounting bracket and the cylinder tube.

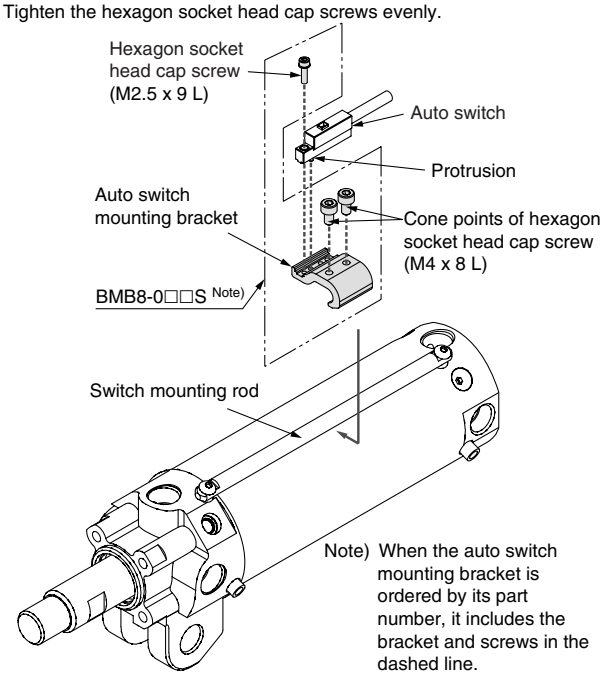
3. After checking the detecting position, fix the auto switch mounting bracket to the detecting position with the cone points of hexagon socket head cap screw (M4 x 8 L).

4. If the detecting position is changed, go back to step 2.

Note 1) When tightening the cone points of hexagon socket head cap screw (M4 x 8 L), keep the tightening torque within 1 to 1.2 N·m.

Note 2) The torque for tightening the hexagon socket head cap screw (M2.5 x 9 L) is 0.2 to 0.3 N·m.

Note 3) Tighten the hexagon socket head cap screws evenly.



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

Series	Bore size (mm)		
	40	**50**	**63**
CKG1 CLK2G	BMB8-050S		

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

Series	Bore size (mm)				
	40	**50**	**63**	**80**	**100**
CDA2 CDNA	BMB8-050S		BA7T-063S	BA7T-080S	

<Applicable auto switch>
Solid state ····· D-P3DW□

Applicable cylinder/actuator		
Air cylinder	**MDB**	**ø80 to ø125**
	CDA2	**ø63 to ø100**
Air cylinder with lock	**MDNB**	**ø80 to ø100**
	CDNA	**ø63 to ø100**

How to Mount and Move the Auto Switch

1. Install the auto switch mounting bracket 2 to the tie-rod, and fix it to the approximate mounting position with the cone points of hexagon socket head cap screw (M4 x 8 L) while keeping firm contact between the bottom of the auto switch mounting bracket 2 and the cylinder tube.

2. Insert the protrusion on the bottom of the auto switch into the mating part of the auto switch mounting bracket 1 and fix the auto switch and the auto switch mounting bracket 1 temporarily by tightening the hexagon socket head cap screw (M2.5 x 9 L) 1 to 2 turns.

3. Insert the temporarily tightened mounting bracket 1 to the mating groove of the mounting bracket 2, and fix the auto switch by tightening the hexagon socket head cap screw (M2.5 x 6 L and M2.5 x 9 L) after checking the detecting position.

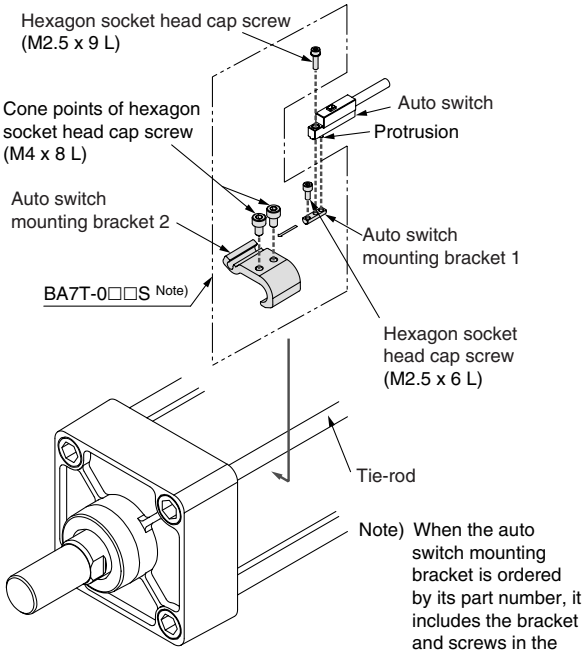
4. If the detecting position is changed, go back to step 1 or 3.

Note 1) Ensure that the auto switch is covered with the mating groove by a minimum of 15 mm to protect the auto switch.

Note 2) When tightening the cone points of hexagon socket head cap screw (M4 x 8 L), keep the tightening torque within 1 to 1.2 N·m.

Note 3) The torque for tightening the hexagon socket head cap screw (M2.5 x 6 L, M2.5 x 9 L) is 0.2 to 0.3 N·m.

Note 4) Tighten the hexagon socket head cap screws evenly.



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

Series	Bore size (mm)						
	32	**40**	**50**	**63**	**80**	**100**	**125**
MDB MDNB (32 to 100)	BMB8-032S		BMB8-050S		BA7T-063S		BA7T-080S

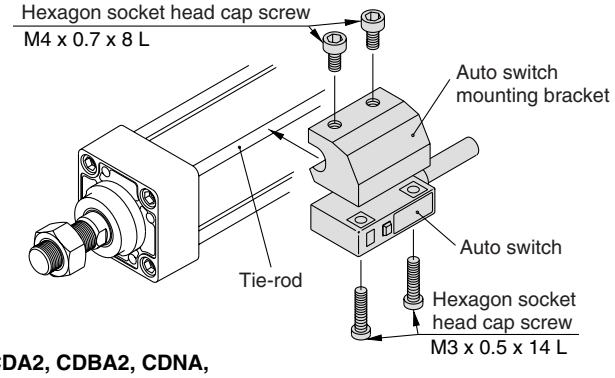
* Differences in color and glossiness of the metal surface treatment do not affect the performance. Due to the characteristics of the chromate treatment (trivalent) applied to the whole body of the auto switch mounting bracket, the color may be slightly different between manufacturing lots. However,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

How to Mount and Move the Auto Switch

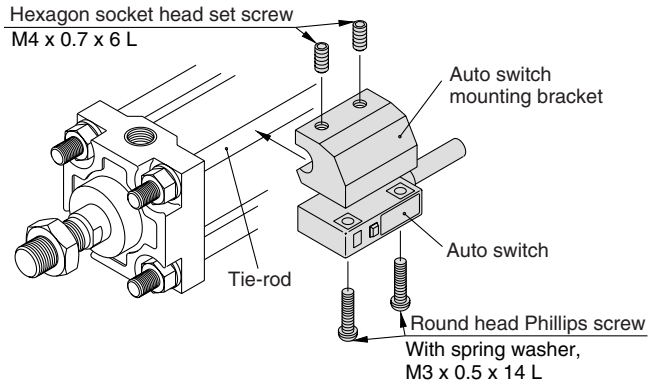
<Applicable auto switch>
Solid state ····· D-P4DWL

How to Mount and Move the Auto Switch

MDB, MDBB, MDNB



CDA2, CDBA2, CDNA,
CDLA, CDL1 (ø40 to ø100)



1. (For MDB)
Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 8 ℓ) into the M4 tapped portion of auto switch mounting bracket. (2 locations) Use caution that the tip of the hexagon socket head cap screw should not stick out to the concave portion of auto switch mounting bracket.
(For CDA2)
Slightly screw the hexagon socket head cap screw (M4 x 0.7 x 6 ℓ) into the M4 tapped portion of auto switch mounting bracket. (2 locations) Use caution that the tip of the hexagon socket head set screw should not stick out to the concave portion of auto switch mounting bracket.

2. (For MDB)
Put a hexagon socket head cap screw (M3 x 0.5 x 14 ℓ) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.
(For CDA2)
Put a hexagon socket head cap screw (with spring washer M3 x 0.5 x 14 ℓ) through the auto switch's through-hole (2 locations), and then push it down into the M3 tapped part on the auto switch mounting bracket while turning it lightly.

3. Place the concave part of the auto switch mounting bracket into the cylinder tie-rod, and slide the auto switch mounting bracket in order to set roughly to the detecting position.

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

5. Tighten up M4 screw of auto switch mounting bracket to secure the auto switch mounting bracket. (Ensure that tightening torque of M4 screw should be set 1.0 to 1.2 N·m.)

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

Cylinder series	Applicable bore size (mm)					
	32	**40**	**50**	**63**	**80**	**100**
MDB, MDBB, MDNB	BMB3T-040	BMB3T-040	BMB3T-050	BMB3T-050	BMB3T-080	BMB3T-080
CDA2, CDBA2 CDLA, CDL1, CDNA	—	BAP2-040	BAP2-040	BAP2-063	BAP2-080	BAP2-080

How to Mount and Move the Auto Switch

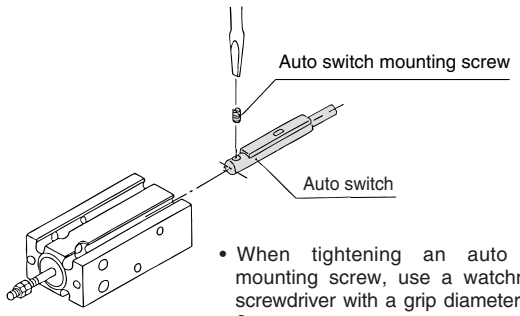
Mounting Bracket Direct Mounting Style

<Applicable auto switch>

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

Reed ····· D-A90(V), D-A93(V), D-A96(V)

How to Mount and Move the Auto Switch



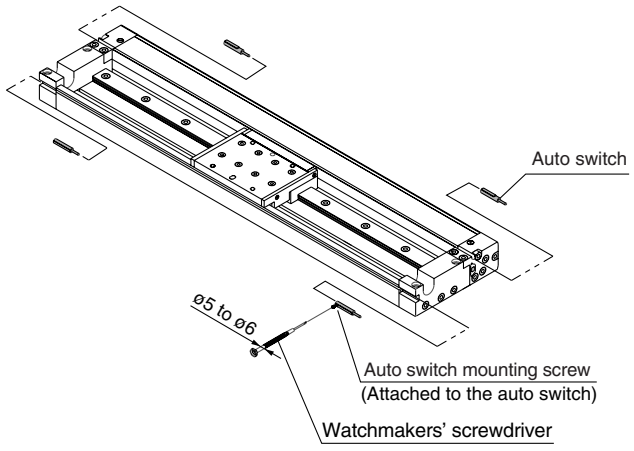
• When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm.

Auto Switch Mounting Screw Tightening Torque (N·m)

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

Series MY2

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



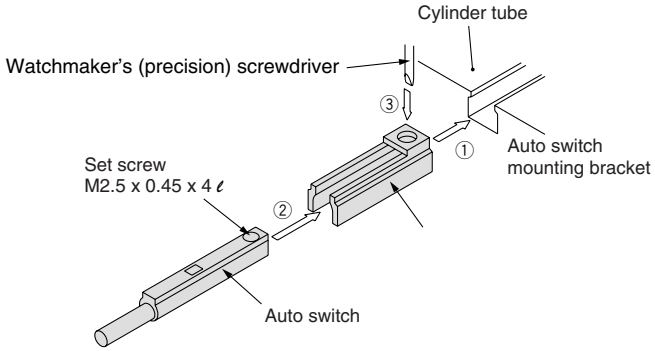
(Note) When tightening an auto switch mounting screw, use a watchmaker's screwdriver with a grip diameter of 5 to 6 mm. The tightening torque should be about 0.05 to 0.1 N·m.

<Applicable auto switch>

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

Reed ····· D-A90(V), D-A93(V), D-A96(V)

How to Mount and Move the Auto Switch



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

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

Auto Switch Mounting Bracket Part No.

Cylinder series	Applicable bore size (mm)									
	12	**16**	**20**	**25**	**32**	**40**	**50**	**63**	**80**	**100**
MY1B	—	—	—	BMG2-012	BMG2-012	—	BMG2-012	BMG2-012	BMG2-012	BMG2-012
MY1M, MY1MW	—	—	—	—		—			—	—
MY1C, MY1CW	—	—	—	BMG2-012		—			—	—
MY1H	—	—	—			BMG2-012	—	—	—	—
CY3R	—	—	—				BMG2-012	BMG2-012	—	—
REAR	—	—	—				—	—	—	—
REBR	—	—	—			—	—	—	—	—
MGPS	—	—	—	—	—	—	BMG2-012	—	BMG2-012	—
MGP, MGPA MGQ, MVGQ	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012		BMG2-012		BMG2-012
MGP□-□A	—									
MLGP	—	—								
MGF	—	—	—	—	—		—		—	
MGT	—	—	—	—	—	—	—		BMG2-012	
RSH	—	—	BMG2-012	—	BMG2-012	—	—	—	—	—
RS1H	—	—	—	—	—	—	BMG2-012	BMG2-012	BMG2-012	—

Cylinder series	Applicable bore size (mm)				
	125	**140**	**160**	**180**	**200**
CDQ2 (Large bore)	BMG2-012	BMG2-012	BMG2-012	BMG2-012	BMG2-012

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

How to Mount and Move the Auto Switch

<Applicable auto switch>

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

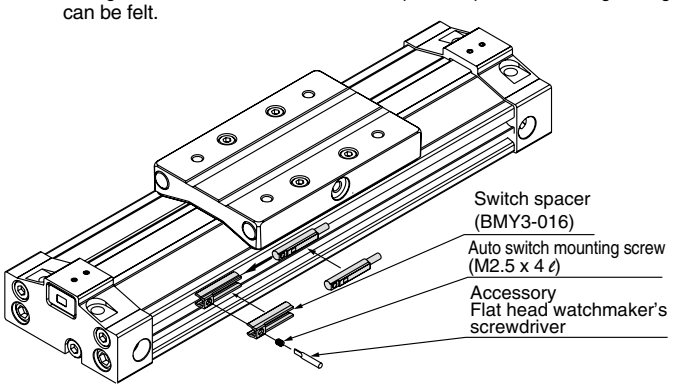
Reed ····· D-A90(V), D-A93(V), D-A96(V)

How to Mount and Move the Auto Switch

When attaching an auto switch, first take a switch spacer between your fingers and press it into a switch mounting groove. When doing this, confirm that it is set in the correct mounting orientation, or reattach if necessary. Next, insert an auto switch into the groove and slide it until it is positioned under the switch spacer.

After establishing the mounting position, use a watchmakers flat head screwdriver to tighten the switch mounting screw which is included.

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



Switch Spacer No.

Cylinder series	Applicable bore size (mm)		
	16	**20**	**25**
MY3A, MY3B, MY3M	BMY3-016	—	BMY3-016
MGZ, MGZR	—	BMY3-016	BMY3-016

Cylinder series	Applicable bore size (mm)		
	32	**40**	**63**
MY3A, MY3B, MY3M	—	BMY3-016	BMY3-016
MGZ, MGZR	BMY3-016	—	—

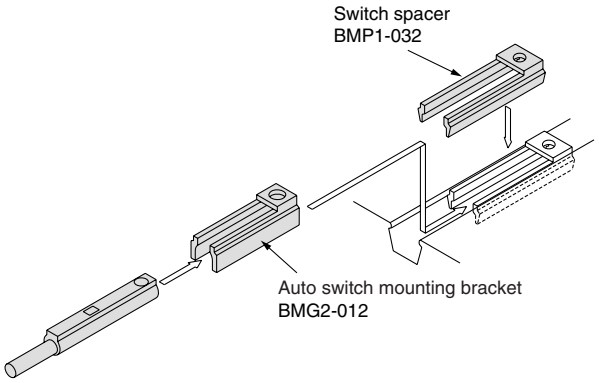
Note) D-M9□A(V)L type cannot be mounted on MY3□.

<Applicable auto switch>

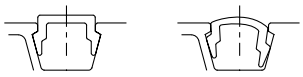
Solid state ····· D-M9N(V), D-M9P(V), D-M9B(V), D-M9NW(V), D-M9PW(V), D-M9BW(V), D-M9NA(V)L, D-M9PA(V)L, D-M9BA(V)L

Reed ····· D-A90(V), D-A93(V), D-A96(V)

How to Mount and Move the Auto Switch



1. After picking up a switch spacer between your fingers, push it in the cylinder tube groove.
2. Confirm that it is set in the correct mounting orientation.



3. Insert an auto switch into the groove of the auto switch mounting bracket.
4. While keeping the condition in (3) above, insert the auto switch mounting bracket into the auto switch mounting groove of the cylinder to set it roughly to the auto switch mounting position.
5. After confirming the detecting position, secure the auto switch by tightening the auto switch mounting screw (M2.5).

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

Auto Switch Mounting Bracket Part No.

(Switch spacer and auto switch mounting bracket; two kinds of auto switch mounting brackets are used as a set.)

Cylinder series	Applicable bore size (mm)				
	20	**25**	**32**	**40**	**50**
MDB1	—	—	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012
MGZ, MGZR	—	—	—		

Cylinder series	Applicable bore size (mm)			
	63	**80**	**100**	**125**
MDB1	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012	BMP1-032 BMG2-012
MGZ, MGZR			—	—

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

How to Mount and Move the Auto Switch

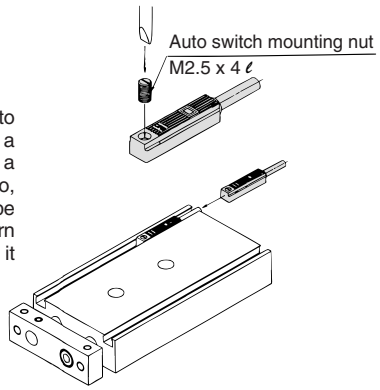
Mounting Bracket Direct Mounting Style

<Applicable auto switch>

Solid state ····· D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), D-Y7PW(V), D-Y7BW(V), D-Y7BAL

Reed ····· D-Z73, D-Z76, D-Z80

How to Mount and Move the Auto Switch



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

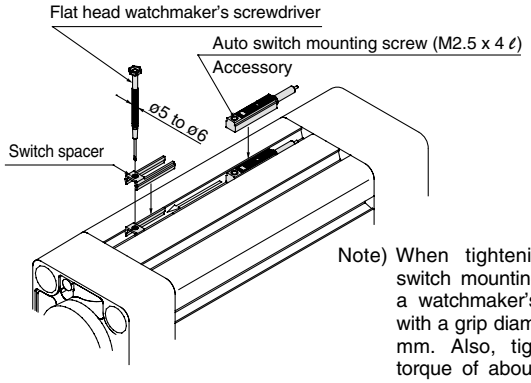
1. Insert the auto switch into the mounting groove and set it at the auto switch mounting position.
2. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch.
3. Modification of the detecting position should be made in the condition of 1.

<Applicable auto switch>

Solid state ····· D-Y59$^{A}_{B}$, D-Y69$^{A}_{B}$, D-Y7P(V), D-Y7NW(V), D-Y7PW(V), D-Y7BW(V), D-Y7BAL

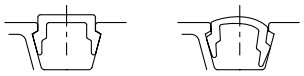
Reed ····· D-Z73, D-Z76, D-Z80

How to Mount and Move the Auto Switch



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

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



Correct **Incorrect**

Switch Spacer No.

Cylinder series	Applicable bore size (mm)					
	32	**40**	**50**	**63**	**80**	**100**
MDB1	BMP1-032					

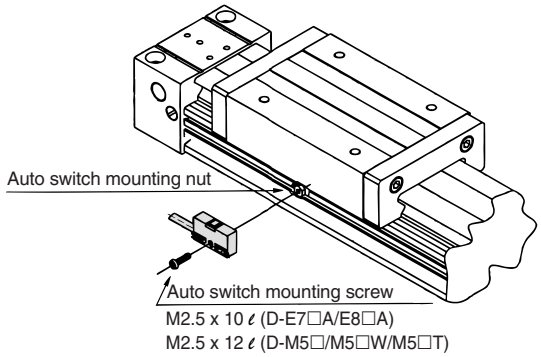
How to Mount and Move the Auto Switch

<Applicable auto switch>

Solid state ····· D-M5N, D-M5P, D-M5B, D-M5NW, D-M5PW, D-M5BW, D-M5NTL, D-M5PTL

Reed ····· D-E73A, D-E76A, D-E80A

How to Mount and Move the Auto Switch



1. Insert the auto switch mounting nut into the auto switch mounting groove and then set the auto switch at the mounting position by sliding.
2. Put the convex part of auto switch into the auto switch mounting groove and slide it over the nut.
3. Push the auto switch mounting screw lightly into the switch mounting nut through the auto switch mounting hole.
4. After reconfirming the detecting position, tighten the mounting screw to secure the auto switch. (Tightening torque of M2.5 screw should be 0.1 to 0.2 N·m.)

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

Cylinder series		Applicable bore size (mm)		
		25	**32**	**40**
ML1	M2.5 x 12ℓ	BMY2-025	BMY2-025	BMY2-025
	M2.5 x 10ℓ	BMY1-025	BMY1-025	BMY1-025

<Applicable auto switch>

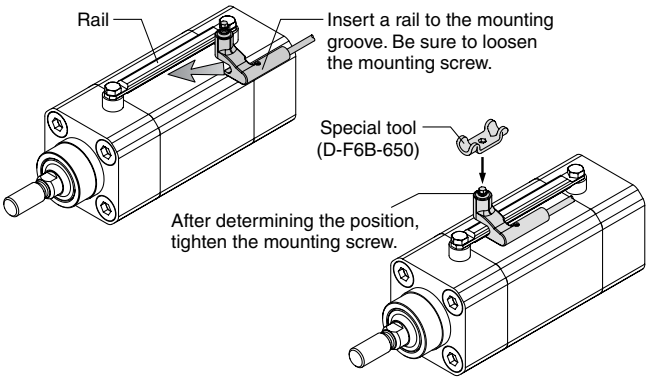
Solid state ····· D-F6N, D-F6P, D-F6B

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

Proper tightening torque

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

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



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

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

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

Tightening torque (N·m)
0.8 to 1.4