Applicable Cylinder Series

Applicable Cylinder Series 1

	Cylinder series	2	CDJP2	CDJ2	JCDM	CDM2-Z	CDM2	CDM3	CDC1.74	7-1500	500	5	500	300	JMDB	MDB	ø40 to ø100 MDB-X1184	MDB1	CDA2	CDA2-X1184	CDS1	CDS2	CDM	CDN	CDOS		JCDQ			CD02			CDQ2-XB14	0	2	MOCO		CDQU
	Bore size	94	ø6, ø10, ø16	ø6, ø10, ø16 CDJ2	020 to 040 JCDM	o20 to o40 CDM2-Z	ø20 to ø40 CDM2	ø20 to ø40	ø20 to ø63	ø80, ø100	ø20 to ø63	ø80, ø100	ø20 to ø63	∞80, ∞100	ø32 to ø100	ø32 to ø125 MDB	ø40 to ø100	ø32 to ø125 MDB1	ø40 to ø100	ø40 to ø100 CDA2-X1184	ø125 to ø200 CDS1	ø125 to ø160 CDS2	ø6 to ∞20	ø6 to ∞32	ø12 to ø20	025	ø12 to ø100	ø12 to ø20	025	ø32 to ø100 CDQ2	ø125 to ø160	ø180 to ø200	ø16 to ø63	ø20, ø25	ø32 to ø50	ø12 to ø25	ø32 to ø100	ø20 to ø40 CDQU
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BEST AUTOMATION Applicable Cylinder Series

	Cylinder series	MDU	CDJ5-S	CDG5-S		904	HYDQ	HYDC	HYDG	MXH	MXS	□MXO□	MXQ	MXF	MXW	MX				MTS	MGJ		MGP-Z		MGP		MGPK	WG CW	A L DIN	MGQ	O O O	55	MGC	LX	3	MGF	MGZ	MGT
	Bore size	ø25 to ø63	ø10, ø16	ø20 to ø100	∞20 to ∞63	∞80, ∞100	∞20 to ∞63	ø32 to ø63	ø32 to ø63	ø6 to ø20	ø6 to ø25	ø6 to ø25	ø6 to ø25	ø8 to ø20	ø8 to ø25	04, 06, 08	ø12, ø16	ø6 to ø16	ø6, ø10, ø12, ø16	ø8 to ø40	o€, ∞10	ø12 to ø20	025	@32 to @100 @20	o25	ø32 to ø100	ø16, ø32	ø20, ø25	ø32 to ø63	ø12 to ø100 MGQ	ø20 to ø63	ø80 to ø100	ø20 to ø50 MGC	ø12 to ø25	ø32, ø40	ø40, ø63, ø100 MGF	Ø20 to Ø80 MGZ	ø63 to ø100 MGT
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Act	tuator page reference BEST AUTOMATION No.)	6 P.1087	1	P.:	3	6 P.1148	6 P.1152	O P.1161	Ø P.1167	0 P.21	@ P.59	P.99	@ P.299	Ø P.349	O P.367	₽ P.393	P.415	@ P.443	@ P.471	D P.493	@ P.519		© P.527		@ P.527		@ P.603		1.021	Ø P.647	222 0	C00.1	O P.707	D 725	3	@ P.739	P.751	D P.779



Applicable Cylinder Series

Applicable Cylinder Series 2

	Cylinder series	JMGP	CXS	cxs	CX2	1	CDBXW	CDPXW□		MY1B			MY1M		MY1C		E E	MY1HT	MY		MYZ	MY3	СУЗК	CY1S	CY1L	CY1H	CYTE	CYP	REAR	DEAC	REAL	REAH	0	Y E E	REBH	REC	CDJ2Y
	Bore size	ø12 to ø63	ø6, ø10	2	'n	ø10	ø16 to ø32		ø10 to ø20	∞25 to ∞40	050	∞63 to ∞100	016, 020	\neg	63	_	$\overline{}$	ø50, ø63	ø16, ø20	ø25 to ø63	Ø16, Ø25, Ø40	ø16 to ø63 MY3 ø6 to ø20	3	\neg	∞6 to ∞40	ø10 to ø32 CY1H	S		010, 015, 020	010 to 040 BEAS	a10 to a40 REAL	010 to 032 REAH		ø25, ø32	ø15 to ø32 REBH	ø20 to ø40 REC	ø10 to ø16 CDJ2Y
	D-H7									\exists	\neg	\exists	\top	\top	т					\top	T					\exists	T	\blacksquare	\top	T	Т						
	D-H7C											\perp		\perp							\perp						\perp		\perp	\perp							
L	D-H7BA																																				L
	D-H7NF																																				
Γ	D-H7□W	П								П		П	Т	Т	Т	П				П	П					П	П	Т	Т		Т	Π	Π				
Γ	D-G5/K5	П				П				П		П	Т	Т	Т	П				П	П					П	П	Т	Т		Т	Π	П				
Γ	D-G5BA			Г						\neg	П	П	Т	T	Т	Т					Т					П	Т	Т	Т	Т	Т	Т	П		П		
Γ	D-G59F	П	П	П		П				\neg	Т	П	Т	Т		Т			\neg	\neg	Т					Т	Т	Т	Т	Т		Т	П				Г
ı	D-G5NT		П	Г						\neg	П	П	Т	T		Т					Т					Т	Т	Т	Т	Т		Т	П		П		Г
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Ì	D-G39A/K39A		Г	Т						\neg	T	\neg	\top	T		\top			\neg	\neg	T				\neg	\neg	T	\neg	\top	Т		Т	Т		П		Г
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Γ	D-J79C		П	Г						\neg	П	Т	Т	T		Т					Т					Т	Т	Т	Т	Т		П	П		П		
Γ	D-F79F		П	Г						\neg	П	Т	Т	T		Т					Т					Т	Т	Т	Т	Т		П	П		П		П
Γ	D-F7BA		П	Г						\neg	П	Т	Т	T		Т					Т					Т	Т	Т	Т	Т		П	П		П		Г
Γ	D-F7BAV													J	Τ						J						J		J								Г
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	D-F7□W(V)		Г	Т		П				\neg	T	\neg	\top	T		Т			\neg	\neg	T					\neg	T	T	\top	Т		П	Т				П
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Ì	D-M9□WV			Т														П	\neg		7		\Box		\neg			\neg	\top	Т		Т	Т		П		П
	D-M9□E(Normally closed)																	П			7				\neg							Т			П		П
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	D-Y7BA			Г						\neg	Т	\neg	Т	\top	Т			П	\neg		T		П		T	\neg	T	\neg	Т	Т		Т			П		Г
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	D-P3DWA			Г						\neg	Т	\neg	Т	\top	Т			П	\neg	\neg	T		П		T	\neg	T	\neg	Т	Т		П			П		Г
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Γ	D-Y7G/H(Normally closed)		П	П									П			г			\neg		Т				П		П		П	Т	Т		П				Г
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BEST AUTOMATION Applicable Cylinder Series

	Cylinder series	7,70	Y LEOCO	MBY		CDA2Y	į	CDS2Y	79007	ישמי	CDQ2Y	CDJ2X	CDMZX	CDQSX	CDQ2X	CDUX	010	ے د	RZQ	;	¥	AKST	CKG1	CKP1	CLK2G	CLK2P	CKQG	CLKQG	CKOP	CLKGP	0000	2	RSDG	RS2H	RSH	MIS/MIW	DNG	/IDWB	DNA2
		ø20 to ø63 🔍	_	ø32 to ø100 ₪			o ø 100	ø125 to ø160 (o ø20				620 to 640 (_	to ø100	ø10 to ø32 (ø80 to ø100 ¹	က	Т	\neg	032 to 063	40 to 663		-	to ø63					212	20		_	ø20, ø32 F	08,012,020,025,032 MIS/MIW	o20 to o40 CDNG	ø32 to ø100 MDWB	ø40 to ø100 CDNA2
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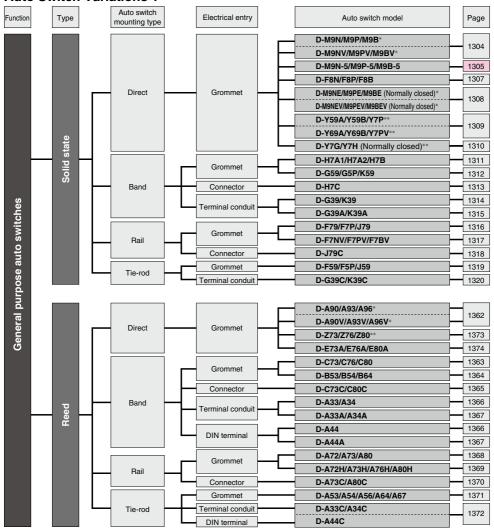
Applicable Cylinder Series

Applicable Cylinder Series 3

	Cylinder series	CDNS	CDLS		CDLQ		RDLQ	MDLU		MLGP			CDLJ2	CDLM2	CDLG1	MLGC		Ę	1		CEP1	Ē	-	CE2	ML2B	CVQ	CVQM	SEVICO		CDVM5	CDVM5K	CDVM3	CDVM3K	CDV3	СDV3К	CDVS1	CDVS1K	MVGQ
	Bore size	0125 to 0160 CDNS	0125 to 0200 CDLS	ø20	ø25	ø32 to ø100	ø32 to ø63	ø25 to ø50 MDLU	ø 20	ø25	ø32 to ø100	to ø40	ø16	ø20 to ø40	ø20 to ø40 CDLG1	ø20 to ø40 MLGC	∞40	ø50	ø63 to ø100	ø125 to ø160	o12, o20	∞12, ∞20	ø32 to ø63	ø40 to ø100 CE2	ø25 to ø40 ML2B	ø32 to ø63 CVQ	ø32 to ø63 CVQM	ø10, ø16	ø10, ø16	ø20 to ø40	ø20 to ø40 CDVM5K	ø20 to ø40	020 to 040 CDVM3K	ø40 to ø100	ø40 to ø63 CDV3K	ø40 to ø100 CDVS1	ø40 to ø63 CDVS1K	@12 to @100 MVGQ
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Auto Switch Variations

Auto Switch Variations 1

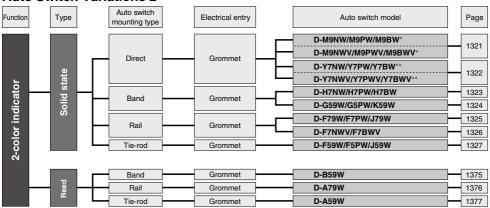


- * These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1386, 1390, 1394 and 1401 to 1403 for details.
- ** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer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



Auto Switch Variations

Auto Switch Variations 2

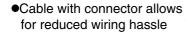


- * These auto switches can be mounted with a band, a rail, a tie-rod or a square groove when auto switch mounting brackets are used. Refer to pages 1386, 1390, 1394 and 1401 to 1403 for details.
- ** These auto switches can be mounted with a tie-rod when auto switch mounting brackets are used. Refer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

2-color indicator Easily identifiable, proper operating range •Mounting positions can be set easily. Proper operating ranges can be set while watching the lights. Green Red Displacement of the detecting position can be visually checked. Trouble caused by incorrect detection can be prevented beforehand. Operating range A green light lights up Red Green Red at the proper operating range. Proper operating range Even if 2-color indicator solid state auto switches are fixed at the proper operating range (the green light lights up), the operation may become unstable depending on the installation environment or magnetic field disturbance. (Magnetic body, external magnetic field, proximal installation of cylinders with built-in magnet and actuators, temperature change, other factors for magnetic force fluctuation during operation, etc.)

With Pre-wired Connector Type

Less wiring work



•M8 and M12 connectors available



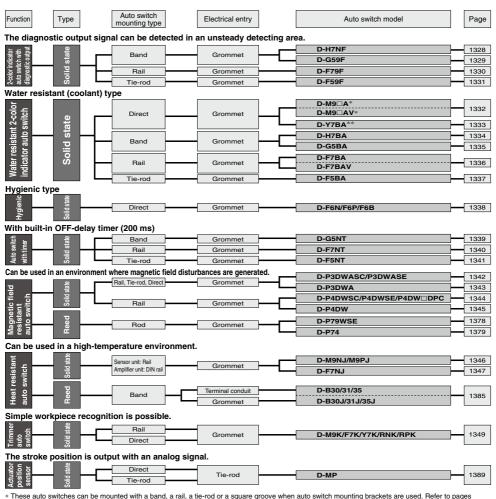
Related Products

Fieldbus System/Wireless System EX600/EX600-W/EXW1 Series

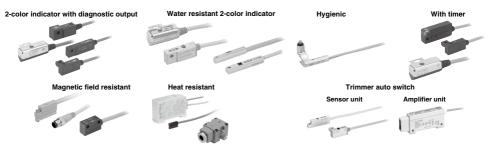
 Wired/wireless signal transmission to the host system via M8/M12 connector connection



BEST AUTOMATION Auto Switch Variations



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



Prior to UseAuto Switches Common Specifications 1

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

Auto Switches Common Specifications

Type	Reed auto switch	Solid state auto switch										
Leakage current	None	3-wire: 100 μA or less, 2-wire: 0.8 mA or less										
Operating time	1.2 ms	1 ms or less *3										
Impact resistance	300 m/s ²	1000 m/s ² *4										
Insulation resistance	50 $\mbox{M}\Omega$ or more (500 VDC measured via measured via	egohmmeter) (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	o 60°C										
Enclosure	IEC60529 Sta	IEC60529 Standard IP67 *2										

- *1 Electrical entry: Connector type (A73C/A80C/C73C/C80C): 1000 VAC/min. (Between lead wire and case)
- *2 The terminal conduit type (D-A3/A3□A/A3□C/G39/G39A/G39C/K39/K39A/K39C), DIN terminal type (D-A44/A44A/A44C), and heat-resistant auto switch (D-F7NJ) are IEC60529 Standard IP63 compliant.

The trimmer type amplifier section (D-R□K) is compliant with IP40.

The enclosure IP rating does not include the switch lead wire end.

For switches with a connector, the enclosure IP requirements are satisfied when the connector is connected

- *3 Excludes solid state auto switches with a timer (G5NT/F7NT/F5NT types) and the magnetic field resistant 2-color indicator solid state auto switch (D-P3DW□/P4DW)
 - The operating time for the D-P3DW□/P4DW is 40 ms or less.

Lead wire length

*4 980 m/s2 for the trimmer type sensor section, 98 m/s2 for the amplifier section

Lead Wire

Lead wire length indication

(Example)

D-M9BW L

Auto switch model

Symbol Length Tolerance Connector specifications Solid state Reed 0.5 m +15 mm 1 m ±30 mm 3 m +90 mm 5 m ±150 mm N *1 None SAPC 0.5 m ±15 mm MAPC O *4 1 m ±30 mm M8-3 pin LAPC 3 m +90 mm Plug connector ZAPC ×8 O *4 5 m ±150 mm SBPC 0.5 m ±15 mm MBPC 1 m ±30 mm M8-4 pin LBPC 3 m ±90 mm Plug connector O *8 **ZRPC** 5 m ±150 mm **SDPC** 0.5 m ±15 mm MDPC 1 m ±30 mm M12-4 pin A code (Normal key) 0 *4 ±90 mm Plug connector 3 m 3 m ±90 mm 5 m ±150 mm ZDPC O *8

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

- ●: Standard ○: Produced upon receipt of order (Standard) -: Special order
- *1 Applicable to the connector type (D-□□C) only
- *2 Applicable to the D-M9 \square (V), D-M9 \square W(V), D-M9 \square A(V), and D-A9 \square (V) only
- *3 Applicable to the D-B53/B54, D-C73(C)/C80C, D-A9□(V), D-A73(C)/A80C, D-A53/A54, D-Z73, and D-90/97/90A/93A only
- *4 Applicable to the D-A9□(V) only
- *5 The standard lead wire length of the trimmer auto switch is 3 m.
- *6 The standard lead wire length of the solid state auto switch with a timer (with the exception of the D-P3DWA and D-M9□A(V)□), water-resistant 2-color indicator solid state auto switch, heat-resistant 2-color indicator solid state auto switch, and strong magnetic field resistant 2-color indicator solid state auto switch is 3 m or 5 m. (Product with a lead wire length of 0.5 m is not available).
- *7 Applicable to the D-P5DW only
- *8 Applicable to the D-M9\(\times(V)\), and D-M9\(\times(V)\) only



Prior to UseAuto Switches Common Specifications 2

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

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



Prior to UseAuto Switches Common Specifications 3

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

Term	Meaning
Minimum stroke for auto switch mounting	A minimum stroke value of the auto switch that can be mounted on the cylinder. The minimum stroke is determined by the specification limit (auto switch operation, position setting ability, etc.) and physical limit (mechanical interference associated with the auto switch mounting). Note that the catalog shows the value assuming that the position detection is performed at the stroke end and that this value does not consider the adjustment allowance.
	When an adjustment allowance is needed, such as for detection before the stroke, set the value so that this adjustment allowance is added to the minimum stroke.
Internal voltage drop	A voltage that is applied to the portion between the COM and signal line when the auto switch is ON. As only the value of the power supply voltage subtracted by the internal voltage drop is applied to the input side of the PLC, a detection fault (incorrect input) may occur if this value is lower than the minimum operating voltage. So, take great care when selecting a device.
2-color indicator	As the end part of the auto switch operating range (boundary between ON and OFF) is an area that is susceptible to external disturbances or stroke changes during cylinder operation, this function is intended to quickly and properly make the setting at the center of the operating range where stable operation can be obtained by changing the operation indication color of the auto switch.
Load	A device that is connected to the output of the auto switch in order to do any work is called a "load." For example, the load may be a relay, PLC, etc. To check the operation of the auto switch, a device equivalent to a load (such as a resistor, etc.) must be connected.
Load current	A current that flows to the load when the ON-OFF output is ON.
Enclosure	A class of protection against the entry of water or solids for electrical machinery and apparatus as specified in the IEC60529 Standard.
	Second characteristic numeral First Characteristic: Degree of protection against solid foreign objects Non-protected Protected against solid foreign objects of 50 mm ø and greater
Solid state auto switch	A switch that uses an MR element to detect magnetic fields and possesses an internal judgement circuit that is able to output an ON/OFF signal like a transistor regardless of mechanical contact or non-contact (such as when there is no point of contact).
Leak current	A current that flows to operate the internal circuit when the ON-OFF output is OFF. In particular, if the leak current exceeds the detection current in the 2-wire type auto switch or PLC, it may cause a reset failure. So, take great care when selecting a device.
Reed auto switch	A switch that uses a reed switch to detect magnetic fields and output an ON/OFF signal when there is mechanical contact or non-contact (when there is a point of contact, such as with a relay or limit switch).
Induction load	A load that has a coil. The connection target of the auto switch is a relay.
Recommended lead wire bending radius	A minimum bending radius (reference value) of the lead wire when the lead wire is secured and constructed (oscillation or rotation is not considered). (As the temperature and current value conforms to the auto switch specifications, this lead wire bending radius differs from the value disclosed by the electric wire manufacturer.)
Electrical entry	A structure in which the lead wire of the auto switch is taken out in the horizontal direction when the cylinder is laid out horizontally (cylinder rod is horizontall) is called an "in-line entry." A structure in which the lead wire is taken out in a direction perpendicular to the cylinder axis center is called a "perpendicular entry."
1000	

Prior to Use Auto Switches/Internal Circuits

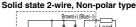
Solid State Auto Switches

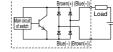
Solid state 3-wire, NPN



Solid state 3-wire, PNP Brown(+) Black Load Blue(-)



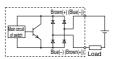




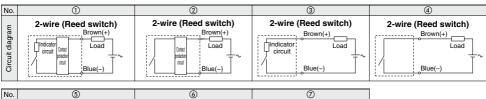
(Power supply for switch and load are separate)







Reed Auto Switches



No.	(5)	6	⑦
Circuit diagram	3-wire (Reed switch, NPN) Brown(+) Grout But Blue(-)	2-wire (Reed switch) Brown(+) 2-color Otal Load Circuit Policinal Blue(-)	2-wire (Reed switch) Brown(+) 2-color indicator circuit Blue(-)

Contact Protection Box/CD-P11, CD-P12

<Applicable switch models>

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

The auto switches above do not have a built-in contact protection circuit. A contact protection box is not required for solid state auto switches due

to their construction.

- 1. Where the operation load is an inductive load
- 2. Where the wiring length to the load is 5 m or more
- 3. Where the load voltage is 100/200 VAC

Use a contact protection box with the switch for any of the above cases.

The contact life may be shortened (due to permanent energizing conditions). D-A72(H) must be used with the contact protection box regardless of load types and lead wire length since it is greatly affected by loads. (Where the load voltage is 110 VAC)

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

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

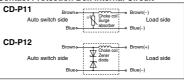
-41--- Day Ou - -161--41---

Contact Pro	otection E	sox Spec	nications	
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	-

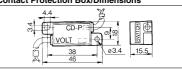


⁻ Auto switch connection side 0.5 m Lead wire length -Load connection side

Contact Protection Box Internal Circuit



Contact Protection Box/Dimensions



Contact Protection Box Connection

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

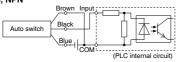




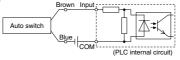
Prior to Use Auto Switch Connections and Examples

Sink Input Specifications

3-wire, NPN

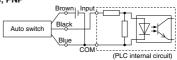


2-wire

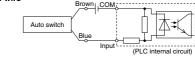


Source Input Specifications

3-wire, PNP



2-wire

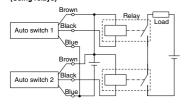


Connect according to the applicable PLC input specifications, as the connection method will vary depending on the PLC input specifications.

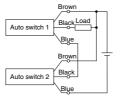
Examples of AND (Series) and OR (Parallel) Connections

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

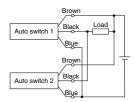
3-wire AND connection for NPN output (Using relays)



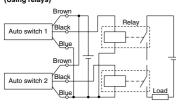
(Performed with auto switches only)



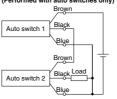
3-wire OR connection for NPN output



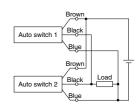
3-wire AND connection for PNP output (Using relays)



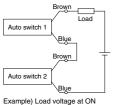
(Performed with auto switches only)



3-wire OR connection for PNP output



2-wire AND connection



Power supply voltage: 24 VDC

When two auto switches are connected in series, a load may malfunction because the load voltage will decline when in the ON state.

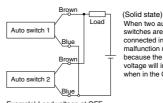
The indicator lights will light up when both of the auto switches are in the ON state. Auto switches with a load voltage less than 20 V cannot be used. Please contact SMC if using AND connection for a heat-resistant solid state auto

Internal voltage drop: 4 V Load voltage at ON = Power supply voltage

Auto switch internal voltage drop x 2 pcs. = 24 V - 4 V x 2 pcs.

= 16 V

2-wire OR connection



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

Example) Load voltage at OFF Leakage current: 1 mA

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

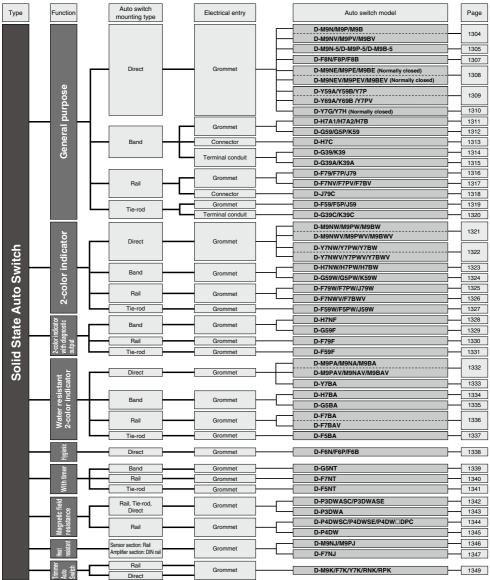
Recause there is no current leakage, the load voltage will not increase when turned OFF. However, depending on the number of auto switches in the ON state, the indicator lights may sometimes grow dim or not light up, due to the dispersion and reduction of the current flowing to the auto switches.



Solid State Auto Switches

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

Solid State Auto Switch Variations



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





Grommet

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



∆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-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-w	rire		2-v	vire						
Output type	N	PN	PI	NP		-						
Applicable load		IC circuit, F	Relay, PLC		24 VDC r	elay, PLC						
Power supply voltage	5	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 le	ess at 10 mA	(2 V or less	at 40 mA)	4 V o	r less						
Leakage current		100 μA or les		0.8 mA	or less							
Indicator light	Red LED illuminates when turned ON.											
Standard	Standard CE/UKCA marking											

Oilproof Heavy-duty Lead Wire Specifications

Auto swi	itch model	D-M9N(V) D-M9P(V) D-M9		D-M9B(V)	
Sheath	Outside diameter [mm]	2.6			
	Number of cores	3 cores (Brow	3 cores (Brown/Blue/Black) 2		
Insulator	Outside diameter [mm]	0.88			
0	Effective area [mm²]		0.15		
Conductor	Strand diameter [mm]	0.05			
Minimum bending radiu	s [mm] (Reference values)		17		

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

Note 2) Refer to page 1298 for lead wire lengths.

Weight

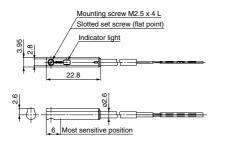
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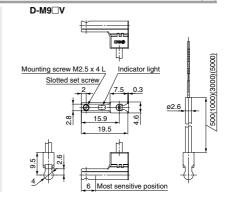
(mm)

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

Dimensions

D-M9□





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





Auto Switch Specifications

Refer to SMC website for the details of the products conforming to the international standards. PLC: Programmable Logic Controller

Grommet

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.

		1 20.110	grammable Logic Controlle	
D-F8□ (With in	ndicator light)			
Auto switch model	D-F8N D-F8P		D-F8B	
Electrical entry direction	Perpendicular	Perpendicular	Perpendicular	
Wiring type	3-w	rire	2-wire	
Output type	NPN	PNP	_	
Applicable load	IC circuit, 24 VI	DC Relay, PLC	24 VDC relay, PLC	
Power supply voltage	5, 12, 24 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 les	0.8 mA or less at 24 VDC		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

Auto swi	tch model	D-F8N	D-F8P	D-F8B
Sheath	Outside diameter [mm]	ø2.7		
Insulator	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brown		2 cores (Brown/Blue)
insulator	Outside diameter [mm]	m] Ø0.91 Ø0		ø0.96
Conductor	Effective area [mm²]	0.15 0.18		0.18
Conductor	Strand diameter [mm]	ø0.08		
Minimum bending radius [mm] (Reference values) 17				

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

Weight

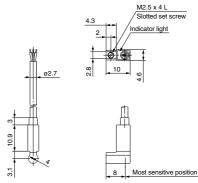
(g)

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

Dimensions

(mm)

D-F8N/D-F8P/D-F8B



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



Grommet

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



∕\Caution

Precautions

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

Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-M9□E, D-M9□EV (With indicator light)						
Auto switch model	D-M9NE	D-M9NEV	D-M9PE	D-M9PEV	D-M9BE	D-M9BEV
Electrical entry direction	In-line	Perpendicular	In-line	Perpendicular	In-line	Perpendicular
Wiring type		3-w	rire		2-v	vire
Output type	N	PN	PI	NΡ		_
Applicable load		IC circuit, F	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 le	0.8 V or less at 10 mA (2 V or less at 40 mA) 4 V or less			r less	
Leakage current	100 μA or less at 24 VDC 0.8 mA or less			or less		
Indicator light	Red LED illuminates when turned ON.					
Standard			CE/UKC/	A marking		

Oilproof Heavy-duty Lead Wire Specifications

Auto sw	itch model	D-M9NE(V) D-M9PE(V) D-M9BB			
Sheath	Outside diameter [mm]	2.6			
la sudata a	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brown/			
Insulator	Outside diameter [mm]	0.88			
Conductor	Effective area [mm²]		0.15		
Conductor	Strand diameter [mm]	0.05			
Minimum bending radiu	s [mm] (Reference values)		17		

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

Note 2) Refer to page 1298 for lead wire lengths.

Weight

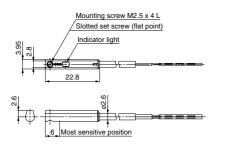
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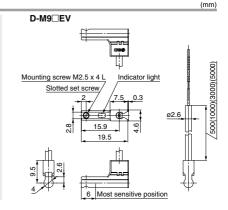
Auto switch model		D-M9NE(V)	D-M9PE(V)	D-M9BE(V)		
	0.5 m (Nil)	8		8		7
Lead wire length	1 m (M)*	14 41		13		
Lead wire length	3 m (L)			41		38
	5 m (Z)*	68		63		

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

Dimensions

D-M9□E





SMC

Solid State Auto Switch Direct Mounting Type D-Y59⁸/D-Y69⁸/D-Y7P(V)





Grommet

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-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-v	vire		2-v	vire
Output type	NI	PN	PI	NΡ		_
Applicable load		IC circuit, F	Relay, PLC		24 VDC r	elay, 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 o (0.8 V at 10 mA lo	or less	less 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 VD			ss at 24 VDC		
Indicator light	Red LED illuminates when turned ON.					
Standard			CE/UKC/	A marking		

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

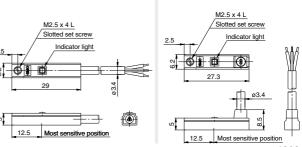
Auto swit	Auto switch model		D-Y69A	D-Y7P(V)		D-Y59B	D-Y69B
	0.5 m (Nil)	10		10 9		9	
Lead wire length	3 m (L)		53		50		
	5 m (Z)	87		87		8	3

Dimensions

D-Y59A/D-Y7P/D-Y59B

(mm)

D-Y69A/D-Y7PV/D-Y69B



ØSMC

1309

Normally Closed Solid State Auto Switch Direct Mounting Type

D-Y7G/D-Y7H





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-v	vire				
Output type	NPN	PNP				
Applicable load	IC circuit, I	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				
internal voltage drop	(0.8 V or less at 10 mA load current)	0.8 V OI less				
Leakage current	100 μA or less at 24 VDC					
Indicator light	Red LED illuminates when detecting nothing.					
Standard	CE/UKCA marking					

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto sw	itch model	D-Y7G	D-Y7H
Sheath	Outside diameter [mm]	ø3.4	
Number of co		3 cores (Brow	n/Blue/Black)
Insulator	Outside diameter [mm]	ø1.0	
Conductor	Effective area [mm²]	tive area [mm²] 0.15	
Conductor	Strand diameter [mm]	ø0.05	
Minimum bending radius [mm] (Reference values)		2	1

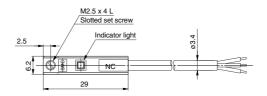
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

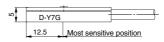
Weight

(g)

Auto swit	tch model	D-Y7G	D-Y7H
	0.5 m (Nil)	1	0
Lead wire length	3 m (L)	5	3
	5 m (Z)	8	7

Dimensions









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





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 indic			
Auto switch model	D-H7A1	D-H7A2	D-H7B
Wiring type	3-v	vire	2-wire
Output type	NPN	PNP	_
Applicable load	IC circuit, F	Relay, PLC	24 VDC Relay, PLC
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		_
Current consumption	10 mA	_	
Load voltage	28 VDC or less	ı	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 LE	ed ON.	
Standard	CE/UKCA marking		

Oilproof Heavy-duty Lead Wire Specifications

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

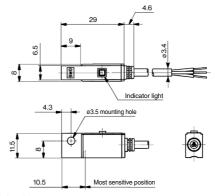
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

Auto switch model		D-H7A1	D-H7A2	D-H7B
	0.5 m (Nil)	1	3	11
Lead wire length	3 m (L)	5	7	50
	5 m (Z)	9	2	81

Dimensions



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



Grommet



Auto Switch Specifications

Refer to SMC website for the details of the products conforming to the international standards. PLC: Programmable Logic Controller

1 EO.1 Togrammable Eogic Controlle					
D-G5□, D-K59 (With indicator light)					
Auto switch model	D-G59	D-G5P	D-K59		
Wiring type	3-w	vire	2-wire		
Output type	NPN	PNP	_		
Applicable load	IC circuit, F	Relay, PLC	24 VDC Relay, PLC		
Power supply voltage	5, 12, 24 VDC (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 turn		ned ON.		
Standard	CE/UKCA marking				

Oilproof Heavy-duty Lead Wire Specifications

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

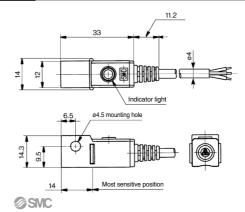
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

Auto swit	Auto switch model		D-G5P	D-K59
	0.5 m (Nil)	2	0	18
Lead wire length	3 m (L)	78		68
	5 m (Z)	12	24	108

Dimensions



Solid State Auto Switch Band Mounting Type **D-H7C**





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

Connector



∆Caution

Precautions

- Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
- 2. Refer to page 1385 for the details.

Lead wires with a connector indication

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

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

Auto Switch Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

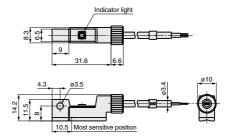
Note 3) Lead wires with a connector may be shipped with switches.

Weight

(g)

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

Dimensions





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





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

Terminal conduit



∆Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39, D-K39 (Wi	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 V					
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					

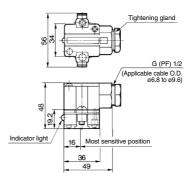
Note) Refer to page 1298 for solid state auto switch common specifications.

Weight

(g)

Auto switch model		D-G39	D-K39
Lead wire	None	11	16

Dimensions



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



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

Terminal conduit



∆Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

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

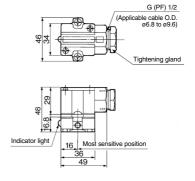
Note) Refer to page 1298 for solid state auto switch common specifications.

Weight

(g)

Auto switch model		D-G39A	D-K39A
Lead wire	None	11	10

Dimensions





Solid State Auto Switch Rail Mounting Type

D-F79/D-F7P/D-J79 (€ 片



Grommet



Auto Switch Specifications

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

	PLC: Programmable Logic Controlle				
D-F7□, D-J79 (Wit	D-F7□, D-J79 (With indicator light)				
Auto switch model	D-F79	D-F7P	D-J79		
Wiring type	3-w	vire	2-wire		
Output type	NPN	PNP	_		
Applicable load	IC circuit, F	Relay, PLC	24 VDC Relay, PLC		
Power supply voltage	5, 12, 24 VDC (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				
Indicator light	Red LED illuminates when turned ON.				
Standard	CE/UKCA marking				

Oilproof Heavy-duty Lead Wire Specifications

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

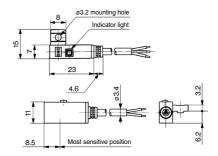
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

Auto swit	Auto switch model		D-F7P	D-J79
	0.5 m (Nil)	1	3	11
Lead wire length 3 m (L)		5	7	50
	5 m (Z)	9	2	81

Dimensions



Solid State Auto Switch Rail Mounting Type 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

		i Eo. i rogic	arrimable Logic Cortaoner		
D-F7□V (With ind	D-F7□V (With indicator light)				
Auto switch model	D-F7NV	D-F7PV	D-F7BV		
Wiring type	3-w	vire	2-wire		
Output type	NPN	PNP	_		
Applicable load	IC circuit, F	Relay, PLC	24 VDC Relay, PLC		
Power supply voltage	5, 12, 24 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 les	0.8 mA or less at 24 VDC			
Indicator light	Red LED illuminates when turned ON.				

Oilproof Heavy-duty Lead Wire Specifications

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

CE/UKCA marking

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

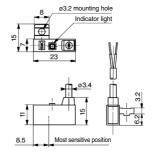
Weight

Standard

(g)

Auto swit	Auto switch model		D-F7PV	D-F7BV
	0.5 m (Nil)	1	3	11
Lead wire length	3 m (L)	5	7	50
	5 m (Z)	9	2	81

Dimensions





Solid State Auto Switch Rail Mounting Type **D-J79C**



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

Connector



∆Caution

Precautions

- Confirm that the connector is appropriately tightened. If tightened insufficiently, the waterproof performance will deteriorate.
- 2. Refer to page 1385 for the details.

Lead wires with a connector indication

Part No. of Lead Wires with Connectors

(Applicable of ity for confidential type)		
Model	Lead wire length	
D-LC05	0.5 m	
D-LC30	3 m	
D-LC50	5 m	

Auto Switch Specifications

PLC: Programmable Logic Controller

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

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

Note 2) Refer to page 1298 for lead wire lengths.

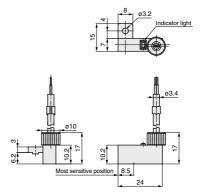
Note 3) Lead wires with a connector may be shipped with auto switches.

Weight

(g)

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

Dimensions



Solid State Auto Switch Tie-rod Mounting Type



Grommet



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F5□, D-J59 (With indicator light)				
Auto switch model	D-F59 D-F5P		D-J59	
Wiring type	3-v	vire	2-wire	
Output type	NPN	PNP	_	
Applicable load	IC circuit, F	Relay, PLC	24 VDC Relay, PLC	
Power supply voltage	5, 12, 24 VDC	4.5 to 28 VDC)	_	
Current consumption	10 mA or less		_	
Load voltage	28 VDC or less	_	24 VDC (10 to 28 VDC)	
Load current	40 mA or less	80 mA or less	5 to 40 mA	
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA load current)	0.8 V or less	4 V or less	
Leakage current	100 μA or less at 24 VDC		0.8 mA or less at 24 VDC	
Indicator light	Red LED illuminates when turned ON.			
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

Weight

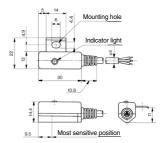
(g)

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

Dimensions

(mm)

D-F59/D-F5P/D-J59





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



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

Terminal conduit



∆Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-G39C, D-K39C (With indicator light)					
Auto switch model	D-G39C	D-K39C			
Wiring type	3-wire	2-wire			
Output type	NPN	I			
Applicable load	ad IC circuit, Relay, PLC 24 VDC Relay, PLC				
Power voltage	Power voltage 5, 12, 24 VDC (4.5 to 28 VDC)				
Current consumption	10 mA or less	Ι			
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 2				
Indicator light	Red LED illuminates when turned ON.				
Standard	CE/UKCA	A marking			

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

Weight

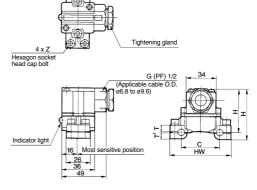
(g)

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

2 x M5 x 0.8 x 12 Hexagon socket head cap bolt

Dimensions

(mm)



Dimensions

			Н	H′	•	•	
40	44	69	57	49.5	7.5	6.5	M5 x 0.8 x 16
50	52	77	58	50.5	8.5	6.5	IVIS X U.8 X 16
63	64	91	60.5	52	10.5	7.5	M5 x 0.8 x 20
80	78	107	64	53.5	12.5	9.5	M5 x 0.8 x 25
100	92	121	67	56.5	15.5	9.5	IVIS X U.8 X 25
	40 50 63 80	50 52 63 64 80 78	40 44 69 50 52 77 63 64 91 80 78 107	40 44 69 57 50 52 77 58 63 64 91 60.5 80 78 107 64	40 44 69 57 49.5 50 52 77 58 50.5 63 64 91 60.5 52 80 78 107 64 53.5	40 44 69 57 49.5 7.5 50 52 77 58 50.5 8.5 63 64 91 60.5 52 10.5 80 78 107 64 53.5 12.5	40 44 69 57 49.5 7.5 6.5 50 52 77 58 50.5 8.5 6.5 63 64 91 60.5 52 10.5 7.5 80 78 107 64 53.5 12.5 9.5

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



Grommet

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



. Caution

Precautions

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

Auto Switch Specifications

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

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-v	vire		2-1	vire	
Output type	N	PN	PI	NP	-	_	
Applicable load		IC circuit, Relay, PLC			24 VDC r	elay, PLC	
Power supply voltage		5, 12, 24 VDC (4.5 to 28 V)			_		
Current consumption	10 mA or less			_			
Load voltage	28 VD0	C 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 I	ess at 10 mA	(2 V or less	at 40 mA)	4 V c	r less	
Leakage current	100 μA or less at 24 VDC			0.8 mA	or less		
Indicator light	Operating range ········ Red LED illuminates.						
indicator light	Proper operating range ········ Green LED illuminates.						
Standard			CE/UKC/	A marking			

Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto swi	tch model	D-M9NW(V) D-M9PW(V)		D-M9BW(V)
Sheath	Outside diameter [mm]			
la sudata a	Number of cores	3 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
Insulator	Outside diameter [mm]			
0	Effective area [mm²]			
Conductor	Strand diameter [mm]		0.05	
Minimum bending radius [mm] (Reference values)		17		

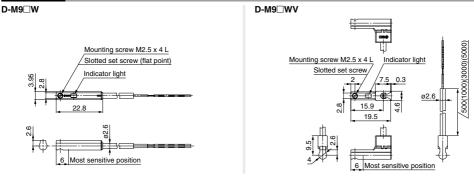
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

	-	(g)

Auto switch model		D-M9NW(V)	D-M9PW(V)	D-M9BW(V)
	0.5 m (Nil)	8		7
Lead wire length	1 m (M)		14	
Lead wife leftgill	3 m (L)	4	1	38
5 m (Z)		68		63

Dimensions (mm)



ØSMC

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



Grommet

- The proper operating range can be determined by the color of the light. $(Red \rightarrow Green \leftarrow Red)$
- 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

				1 20.1 rog	arriiriabio Ec	gio controlici	
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-w	/ire		2-1	vire	
Output type	NI	PN	PI	NP	-	_	
Applicable load		IC circuit, Relay, PLC				elay, 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	(0.8 V	or less or less ad current)	0.8 V or less		4 V or less		
Leakage current	100 μA or less at 24 VDC			0.8 mA or le	ss at 24 VDC		
Indicator light		Operating range Red LED illuminates. Proper operating range Green LED illuminates.				S.	
Standard			CE/UKC	A marking			

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

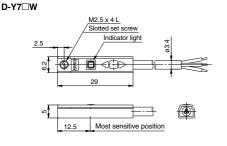
Weight

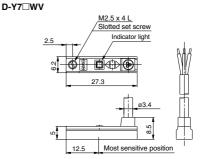
(g)

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

Dimensions (mm)

ØSMC





2-Color Indicator Solid State Auto Switch Band Mounting Type

D-H7NW/D-H7PW/D-H7BW



Refer to SMC website for the details of

Grommet

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



Auto Switch Specifications

PLC: Programmable Logic Controller

the products conforming to the

international standards.

D-H7□W (With	D-H7□W (With indicator light)					
Auto switch model	D-H7NW	D-H7PW	D-H7BW			
Wiring type	3-v	vire	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	28 VDC or less —				
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)		4 V or less			
Leakage current	100 μA or less at 24 VDC 0.8 mA or less at 24 VDC					
Indicator light	Operating range ········· Red LED illuminates. Proper operating range ······· Green LED illuminates.					
Standard		CE/UKCA marking				

Oilproof Heavy-duty Lead Wire Specifications

Auto swi	itch model	D-H7NW D-H7PW D-H7BN		D-H7BW
Sheath	Outside diameter [mm]	ø3.4		
Insulator	Number of cores	3 cores (Brown/Blue/Black) 2 cores (Brown/Blue/Black)		2 cores (Brown/Blue)
insulator	Outside diameter [mm]	ø1.1		
Conductor	Effective area [mm²]	0.2		
Conductor	Strand diameter [mm]	ø0.08		
Minimum bending radiu	s [mm] (Reference values)	21		

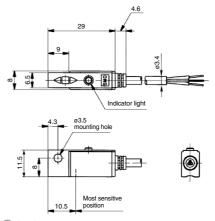
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

Auto swit	ch model	D-H7NW	D-H7PW	D-H7BW
	0.5 m (Nil)	1	3	11
Lead wire length	3 m (L)	57		50
	5 m (Z)	9	2	81

Dimensions





2-Color Indicator Solid State Auto Switch Band Mounting Type

D-G59W/D-G5PW/D-K59W



Grommet

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



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-w	vire .	2-wire		
Output type	NPN	PNP	_		
Applicable load	IC circuit, F	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	28 VDC or less —			
Load current	40 mA or less	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		4 V or less		
Leakage current	100 μA or less at 24 VDC 0.8 mA or less at 24 VDC				
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.				
Standard		CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

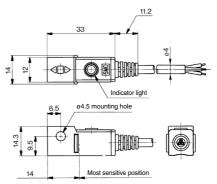
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

Auto swit	ch model	D-G59W	D-G5PW	D-K59W
	0.5 m (Nil)	2	0	18
Lead wire length	3 m (L)	78		68
	5 m (Z)	12	24	108

Dimensions



2-Color Indicator Solid State Auto Switch Rail Mounting Type

D-F79W/D-F7PW/D-J79W



Grommet

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



Auto Switch Specifications

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

PLC: Programmable Logic Controller

D-F7□W, D-J79W (With indicator light)					
Auto switch model	D-F79W D-F7PW		D-J79W		
Wiring type	3-w	vire .	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	_			
Load voltage	28 VDC or less	_	24 VDC (10 to 28 VDC)		
Load current	40 mA or less	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		4 V or less		
Leakage current	100 μA or less at 24 VDC 0.8 mA or less at 24 VDC				
Indicator light	Operating range ········· Red LED illuminates. Proper operating range ······· Green LED illuminates.				
Standard		CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

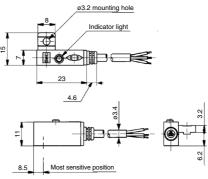
Weight

(g)

Auto swit	ch model	D-F79W	D-F7PW	D-J79W
	0.5 m (Nil)	1	3	11
Lead wire length	3 m (L)	57		50
	5 m (Z)	9	2	81

Dimensions

SMC



2-Color Indicator Solid State Auto Switch Rail Mounting Type

D-F7NWV/D-F7BWV



Grommet Electrical entry: Perpendicular

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



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

Oilproof Heavy-duty Lead Wire Specifications

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

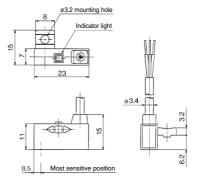
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

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

Dimensions





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





Grommet

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



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-v	2-wire					
Output type	NPN	PNP	_				
Applicable load	IC circuit, Relay, PLC		24 VDC Relay, PLC				
Power supply voltage	5, 12, 24 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 le	0.8 mA or less at 24 VDC					
Indicator light	Operating range ········ Red LED illuminates. Proper operating range ······· Green LED illuminates.						
Standard	CE/UKCA marking						

Oilproof Heavy-duty Lead Wire Specifications

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

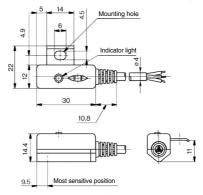
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

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

Dimensions





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

D-H7NF



Grommet

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



Auto Switch Specifications

Refer to SMC website for the details of the products conforming to the international standards. PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

(g)

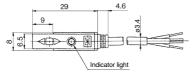
Auto swit	tch model	D-H7NF
	0.5 m (Nil)	13
Lead wire length	3 m (L)	56
	5 m (Z)	90

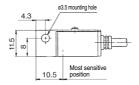
Diagnostic Output Operation

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

			ON			
Indicator light	OFF	Red	Green	Red	OFF	Red
OUT (Normal output) Lead wire (Black)	OFF	ON	ON	ON	OFF	ON
Diagnosis OUT (Diagnostic output) Lead wire (Orange	OFF)	ON	OFF	ON	OFF	ON

Dimensions







2-Color Indicator with Diagnostic Output Solid State Auto Switch: Band Mounting Type D-G59F

Auto Switch Specifications

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

PLC: Programmable Logic Controller

Grommet

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



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

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

(g)

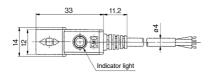
Auto swit	ch model	D-G59F
	0.5 m (Nil)	20
Lead wire length	3 m (L)	74
	5 m (Z)	117

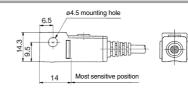
Diagnostic Output Operation

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

aı ıv				ON			
is ic	Indicator light	OFF	Red	Green	Red	OFF	Red
n	OUT		ON	ON	ON		ON
is is	OUT (Normal output) Lead wire (Black)	OFF			L	OFF	
ıs ıg	Diagnosia OLIT		ON		ON		ON
e		OFF		OFF		OFF	

Dimensions







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

D-F79F



Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

Chiproci ricary daty Edda triic Opcomoditorio			
Auto switch model		D-F79F	
Sheath	Outside diameter [mm]	ø3.4	
Insulator	Number of cores	4 cores (Brown/Blue/Black/Orange)	
insulator	Outside diameter [mm]	ø0.98	
Conductor	Effective area [mm²]	0.2	
Conductor	Strand diameter [mm]	ø0.08	
Minimum bending radiu	s [mm] (Reference values)	21	

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

Weight

(g)

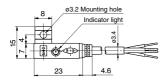
Auto switch model		D-F79F
	0.5 m (Nil)	13
Lead wire length	3 m (L)	56
	5 m (Z)	90

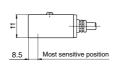
Diagnostic Output Operation

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

		ON			
Indicator OFF	Red	Green	Red	OFF	Red
•	ON	ON	ON		ON
OUT (Normal output) OFF Lead wire (Black)				OFF	ON
Diagnosis OUT (Diagnostic output) Lead wire (Orange)	ON	OFF	ON	OFF	ON

Dimensions







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

D-F59F

€ CA



Grommet

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



Auto Switch Specifications

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

PLC: Programmable Logic Controller

1 EO. 1 Togrammable Eogle Control				
D-F59F (With indicator light)				
Auto switch model	D-F59F			
Wiring type	4-wire			
Output type	NPN			
Diagnostic output	Normal operation			
Applicable load	IC circuit, Relay, PLC			
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)			
Current consumption	10 mA or less			
Load voltage	28 VDC or less			
Load current	50 mA or less at the total amount of normal output and diagnostic output			
Internal voltage drop	1.5 V or less (0.8 V or less at 5 mA)			
Leakage current	100 μA or less at 28 VDC			
Indicator light	Operating range ········· Red LED illuminates. Proper operating range ······· Green LED illuminates.			
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

(g)

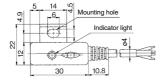
Auto switch model		D-F59F
	0.5 m (Nil)	22
Lead wire length	3 m (L)	77
	5 m (Z)	121

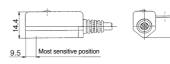
Diagnostic Output Operation

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

			ON			
Indicator light	OFF	Red	Green	Red	OFF	Red
ŭ		ON	ON	ON		ON
OUT (Normal output) Lead wire (Black	OFF_			L	OFF	
Diagnosis OUT (Diagnostic output)	OFF	ON	OFF	ON	OFF	ON
Lead wire (Orange						_

Dimensions







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

Please consult with SMC if using coolant

liquid other than water based solution.

Weight

(g)

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-M9□A, D-M	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-v	vire		2-wire		
Output type	N	PN	PI	NΡ	-	_	
Applicable load	IC circuit, Relay, PLC				24 VDC r	elay, PLC	
Power supply voltage	5, 12, 24 VDC (4.5 to 28			V) —		_	
Current consumption		10 mA	or less		_		
Load voltage	28 VD0	C 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 o			r less			
Leakage current	100 μA or less at 24 VDC 0.8 mA or less			or less			
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.					s.	
Standard	CE/UKCA marking						

Oilproof Flexible Heavy-duty Lead Wire Specifications

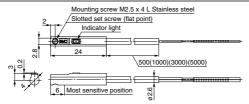
Auto switch model		D-M9NA□	D-M9NAV□	D-M9PA□	D-M9PAV□	D-M9BA□	D-M9BAV□
Sheath	Outside diameter [mm]		2.6				
la sulata a	Number of cores	3 c	ores (Brow	n/Blue/Bla	ck)	2 cores (B	rown/Blue)
Insulator	Outside diameter [mm]			0.8	38		
Effective area [mm²]				0.	15		
Conductor	Strand diameter [mm]			0.0	05		
Minimum bending radius [mm]				1	7		

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

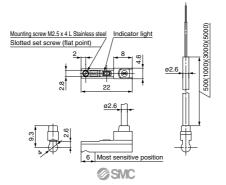
Note 2) Refer to page 1298 for lead wire lengths.

Dimensions (mm)

D-M9□A



D-M9□AV



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

Auto Switch Specifications Grommet

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

•	water (coolant) resistant type
•	Using flexible cable as
	standard spec.

- The proper operating range can be determined by the color of the light.
 - $(\mathsf{Red} \to \mathsf{Green} \leftarrow \mathsf{Red})$



⚠ 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.

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

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

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

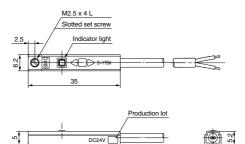
Weight

(g)

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

Dimensions

(mm)



Most sensitive position



12.5

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

D-H7BA

Refer to SMC website for the details of the products conforming to the

international standards.

····· Red LED illuminates.

Proper operating range Green LED illuminates.

CE/UKCA marking

Grommet

- Water (coolant) resistant type The proper operating range
- can be determined by the color of the light. $(Red \rightarrow Green \leftarrow Red)$



.↑Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller D-H7BA (With indicator light) Auto switch model D-H7BA Wiring type 2-wire Output type Applicable load 24 VDC Relay, PLC Power supply voltage Current consumption Load voltage 24 VDC (10 to 28 VDC) Load current 5 to 40 mA Internal voltage drop 4 V or less Leakage current 0.8 mA or less at 24 VDC

Operating range

Oilproof Heavy-duty Lead Wire Specifications

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

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

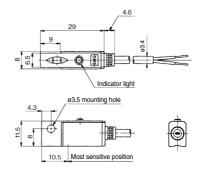
Indicator light

Standard

Weight (g)

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

Dimensions



Water Resistant 2-Color Indicator Solid State Auto Switch: Band Mounting Type D-G5BA (C C ROHS)

Auto Switch Specifications

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.

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

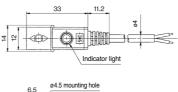
Note 2) Refer to page 1298 for lead wire lengths.

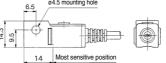
Weight

(g)

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

Dimensions







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

Auto Switch Specifications

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

PLC: Programmable Logic Controller

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.

PLC: Programmable Logic Controlle				
D-F7BA(V) (With indicator light)				
Auto switch model	D-F7BA	D-F7BAV		
Electrical entry direction	In-line	Perpendicular		
Wiring type	2-v	vire		
Output type	-	-		
Applicable load	24 VDC F	elay, PLC		
Power supply voltage				
Current consumption				
Load voltage				
Load current	5 to 4	0 mA		
Internal voltage drop	4 V o	r less		
Leakage current	0.8 mA or les	ss at 24 VDC		
Indicator light	Operating range Re Proper operating range	d LED illuminates Green LED illuminates.		
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

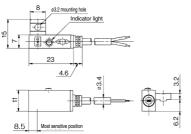
Weight

(g)

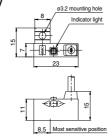
	Auto switch model		D-F7BA	D-F7BAV
	Lead wire length	3 m (L)	50	
Lead wire is	Lead wife length	5 m (Z)	8	1

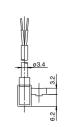
Dimensions (mm)

D-F7BA



D-F7BAV





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

D-F5BA

Grommet

 Water (coolant) resistant type The proper operating range can be determined by the color of the light. $(Red \rightarrow Green \leftarrow Red)$



.⚠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

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

Oilproof Heavy-duty Lead Wire Specifications

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

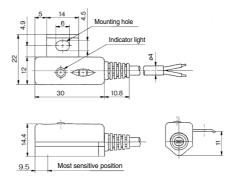
Note 1) Refer to page 1298 for solid state auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

Weight

(g)

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

Dimensions



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

Grommet

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



∆Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-F6 (With inc	F6□ (With indicator light)				
Auto switch part no.	D-F6N	D-F6P	D-F6B		
Electrical entry direction		In-line			
Wiring type	3-1	wire	2-wire		
Output type	NPN	PNP	_		
Applicable load	IC circuit, re	elay, and PLC	24 VDC relay, PLC		
Power supply voltage	5, 12, 24 VDC (4.5 to 28 V)		_		
Current consumption	10 mA	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 m/	4 V or less			
Leakage current	100 μA or les	0.8 mA or less			
Indicator light	Red L	ed ON.			
Standard					

Oilproof Flexible Heavy-duty Lead Wire Specifications

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

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

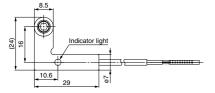
Weight

(g)

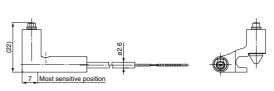
Auto switch model		D-F6N	D-F6P	D-F6B
	0.5 m (Nil)	20		19
Lead wire length	3 m (L)	5	3	50
	5 m (Z)	8	0	75

<u>Dimensions</u> (mm)

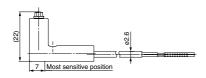
D-F6□



D-F6B



D-F6N/F6P







Solid State Auto Switch with Timer Band Mounting Type

D-G5NT



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-G5NT (With indicator light)			
Auto switch model	D-G5NT		
Wiring type	3-wire		
Output type	NPN		
Output operation	Off-delay		
Operating time	1 ms or less		
Off-delay time	200 ± 50 ms		
Applicable load IC circuit, Relay, PLC			
Power supply voltage 5, 12, 24 VDC (4.5 to 28 VDC)			
Current consumption 10 mA or less			
Load voltage	28 VDC or less		
Load current	40 mA or less		
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)		
Leakage current	100 μA or less at 24 VDC		
Indicator light	Red LED illuminates when turned ON.		
Standard CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

(g)

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

Timer Operation

Detection of intermediate positioning for high-speed cylinder

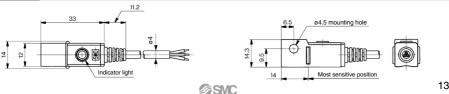
Detecting point dispersion occurs due to response time of PLC (sequencer); e.g. scanning.

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

Take PLC response time into consideration when using.

Auto switch operating range (mm) Auto switch Cylinder speed (mm/s) detecting time ON (200 ms) Auto switch output ON time PLC response time

Dimensions (mm)



1339

Solid State Auto Switch with Timer Rail Mounting Type

D-F7NT



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-F7NT (With indicator light)			
Auto switch model	D-F7NT		
Wiring type	3-wire		
Output type	NPN		
Output operation	Off-delay		
Operating time	1 ms or less		
Off-delay time	200 ± 50 ms		
Applicable load IC circuit, Relay, PLC			
Power supply voltage	5, 12, 24 VDC (4.5 to 28 VDC)		
Current consumption	10 mA or less		
Load voltage	28 VDC or less		
Load current	40 mA or less		
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)		
Leakage current	100 μA or less at 24 VDC		
Indicator light	Red LED illuminates when turned ON.		
Standard CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

Weight

(g)

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

Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

Switch detecting time OFF Switch output ON time OFF Detecting point dispersion - Within

Switch operating range (mm)

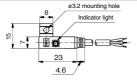
— Cylinder speed (mm/s) ON (200 ms)

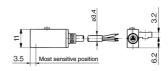
100 mm (= 1000 mm/sec. x 0.1 sec.) Take PLC response time into consideration when using.

Ex.) Cylinder speed - 1000 mm/sec. PLC response time — 0.1 sec.

PLC response time

Dimensions





Solid State Auto Switch with Timer Tie-rod Mounting Type

D-F5NT

(€ 5k



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-F5NT (With indicator light)			
Auto switch model	D-F5NT		
Wiring type	3-wire		
Output type	NPN		
Output operation	Off-delay		
Operating time	1 ms or less		
Off-delay time	200 ± 50 ms		
Applicable load IC circuit, Relay, PLC			
Power supply voltage	voltage 5, 12, 24 VDC (4.5 to 28 VDC)		
Current consumption	10 mA or less		
Load voltage	28 VDC or less		
Load current	40 mA or less		
Internal voltage drop	1.5 V or less (0.8 V or less at 10 mA)		
Leakage current	100 μA or less at 24 VDC		
Indicator light	Red LED illuminates when turned ON.		
Standard CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

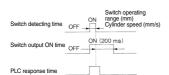
Note 2) Refer to page 1298 for lead wire lengths.

Timer Operation

Detection of intermediate positioning for high-speed cylinder

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

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



Weight

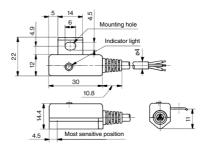
Auto switch model		D-F5NT
	0 (1)	0.4

Auto switch model D-F5N I Lead wire length 3 m (L) 81 5 m (Z) 127

Dimensions

(mm)

(g)



Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch D-P3DWASC/D-P3DWASE (€ ĽK

(Electrical Entry: Pre-wired connector)

Auto Switch Specifications

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

PLC: Programmable Logic Controller

1 13 1 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
D-P3DWASC/E (With indicator light)				
Auto switch model	D-P3DWASC	D-P3DWASE		
Applicable load	24 VDC relay, PLC			
Load voltage	24 VDC			
Load current	6 to 40 mA			
Internal voltage drop	5 V or less			
Leakage current	1 mA or less at 24 VDC			
Operating time	40 ms or less			
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.			
Standard	CE/UKCA marking UL (CSA)			

Oilproof Heavy-duty Lead Wire Specifications

Auto switch model		D-P3DWASC	D-P3DWASE
Sheath	Outside diameter [mm]	ø4.8	
Insulator	Number of cores	2 cores	
insulator	Outside diameter [mm]	ø1.52	
Conductor	Effective area [mm²] 0.5		5
Conductor	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

• 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. $(Red \rightarrow Green \leftarrow Red)$

∆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

Auto switch model		D-P3DWASC	D-P3DWASE
Lead wire length (m)	0.3	2	5

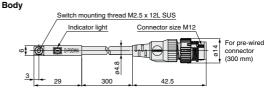


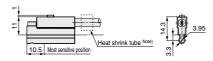
Connector pin

Model	Cor	nector pin and wiring				
iviodei	1	2	3	4		
D-P3DWASC	_	_	OUT(∓)	OUT(±)		
D-P3DWASE	OUT(±)	-		OUT(∓)		

Dimensions

(mm)





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



Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch

Auto Switch Specifications

D-P3DWA
(Electrical Entry: Grommet)

CECA CALUS

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

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

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

- Impact resistance Switch: 1000 m/s²
- Insulation resistance 50 M Ω 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

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

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

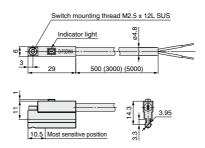
reignt (g)

Auto swi	D-P3DWA	
	0.5 m (Nil)	22
Lead wire length	3 m (L)	104
.29	5 m (Z)	170

Dimensions

(mm)

Body





Magnetic Field Resistant 2-Color Indicator Solid State Auto Switch (C C D-P4DWSC/D-P4DWSE/D-P4DW□DPC



(Electrical Entry: Pre-wired connector)

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. $(Red \rightarrow Green \leftarrow Red)$



∆Caution

Precautions

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



Connector pin

Model	Connector pin/Wiring				
Wodel	1	2	3	4	
D-P4DWSC	_	_	OUT(∓)	OUT(±)	
D-P4DWSE	OUT(±)	_	_	OUT(∓)	
D-P4DW□DPC	_	-	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-P4DW□ (With indi	D-P4DW□ (With indicator light)						
Auto switch model	D-P4DWSC	D-P4DWSC D-P4DWSE D-P4DWSDPC D-P4DWMDPC D-P4DWLDPC					
Applicable load		24	VDC relay, P	LC			
Load voltage		24 V	DC (20 to 28	VDC)			
Load current	6 to 40 mA or less						
Internal voltage drop	5 V or less						
Leakage current	1 mA or less at 24 VDC						
Operating time	40 ms or less						
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.						
Standard		CE	/UKCA mark	ing			

Oilproof Heavy-duty Lead Wire Specifications

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

- Impact resistance Switch: 1000 m/s², Connector: 300 m/s² Note 1) Refer to page 1298 for solid state auto switch common specifications.
- Note 2) Refer to page 1298 for lead wire lengths.
- Polarity Non-polar

Magnetic Field Resistance

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

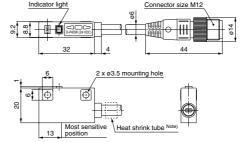
Weight

(g)

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

Dimensions

(mm)



Note) Only for D-P4DWSE Printed contents: SE 1-4



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

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

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

Note 2) Refer to page 1298 for lead wire lengths.

Polarity: Non-polar

Auto Switch Specifications

environment which generates a magnetic field disturbance (AC magnetic field). The proper operating range can be determined by the color of the light. $(Red \rightarrow Green \leftarrow Red)$

∧Caution

Precautions

Grommet

• It is possible to use in an

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

Magnetic Field Resistance

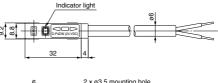
If the current of the AC welding machine is 16000 A or lower, the auto switch can be used, even if the distance between the welding conductor (gun cable) and the cylinder or switch is 0 mm. Please contact SMC when the AC welding current exceeds 16000 A.

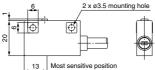
Weight

(g)

Auto swit	ch model	D-P4DW
Lood wire length	3 m (L)	150
Lead wire length	5 m (Z)	244

Dimensions







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

D-M9NJ/D-M9PJ





Grommet

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



<u> ⚠</u>Caution

Precautions

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

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

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

Auto Switch Specifications

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

	PLC	: Programmable Logic Controller			
D-M9NJ/D-M9PJ (With indicator light)					
Auto switch model	D-M9NJ D-M9PJ				
Output type	NPN	PNP			
Power supply voltage	20 to 2	6 VDC			
Current consumption	25 mA	or less			
Load voltage	28 VDC or less	_			
Load current	40 mA or less				
Internal voltage drop	0.8 V or less				
Leakage current	100 μA at 24 VDC				
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.				
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C				
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²				
Standard	CE/UKCA marking				

Oilproof Heavy-duty Lead Wire Specifications (Grommet)

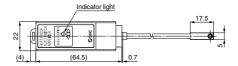
Auto switch model		D-M9NJ	D-M9PJ
Sheath	Outside diameter [mm]	diameter [mm] ø3.4	
Number of core		3 cores (Brow	n/Blue/Black)
Insulator	Outside diameter [mm]	ø1	.1
Conductor	Effective area [mm²]	0.	2
Conductor	Strand diameter [mm]	m] Ø0.08	
Minimum bending radius [mm] (Reference values)		2	1

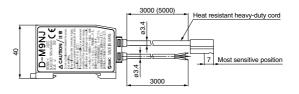
Weight

(g)

Auto switch model		D-M9NJ D-M9PJ	
Lood wire length	3 m (L)	160	
Lead wire length	5 m (Z)	20	00

Dimensions





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

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. D-F7NJ is not applicable for the heat resistant type (-XB6) since a magnet is not built in it.

Auto Switch Specifications

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

PLC: Programmable Logic Controller

	1 Eo. 1 Togrammable Eogle Controller			
D-F7NJ (With indicator light)				
Auto switch model	D-F7NJ			
Wiring type	3-wire			
Output type	NPN			
Applicable load	Relay, PLC			
Power supply voltage	24 VDC (20 to 26 VDC)			
Current consumption	25 mA or less			
Load voltage	28 VDC or less			
Load current	40 mA or less			
Internal voltage drop	0.8 V or less			
Leakage current	100 μA at 24 VDC			
Indicator light	Operating range Red LED illuminates. Proper operating range Green LED illuminates.			
Ambient temperature	Sensor section: 0 to 150°C Amplifier section: 0 to 60°C			
Impact resistance	Sensor section: 1000 m/s² Amplifier section: 300 m/s²			
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications (Grommet)

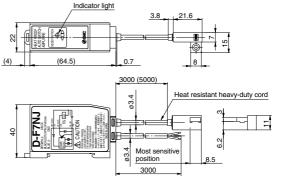
Auto switch model		D-F7NJ
Sheath Outside diameter [mm]		ø3.4
Inculator	Number of cores	3 cores (Brown/Blue/Black)
Insulator	Outside diameter [mm]	ø1.1
Conductor	Effective area [mm²]	0.2
Conductor	Strand diameter [mm]	ø0.08
Minimum bending radius [mm] (Reference values)		21

Weight

Dimensions

(mm)

(g)





With Pre-wired Connector Solid State Auto Switch (Made to Order Specifications)

(€ 5k

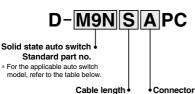
Refer to SMC website for the details of the products conforming to the international standards.

With Pre-wired Connector

- . Eliminates the harnessing work by cable with connector specifications
- Adopts global standardized connector (IEC61076-2)
- IP67 construction



How to Order



Cable length •

S	0.5 m		
M	1.0 m		
L	3.0 m		
Z	5.0 m		

Connector model

Α	M8-3 pin
В	M8-4 pin
D	M12-4 pin

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

Connector Specifications

Connector model	M8-3 pin	M8-4 pin	M12-4 pin	
Pin arrangement	1 4	3 4	② ① ③ ④	
Conformed standard	IEC61076-2-104		IEC61076-2-101	
Impact resistance	300 m/s ²			
Enclosure	Only with screw tightened IP67 (IEC60529 standard)			
Insulation resistance	100 MΩ or more at 500 VDC measured via megohmmeter			
Withstand voltage	1500 VAC 1 minute (between contacts), Leak current 1 mA or less			

Applicable Auto Switch

For details on the D-P3DWA series magnetic field resistant auto switch, refer to page 1342. And for details on the D-P4DW series, refer to page 1344.

2-wire

Mounting	Function	Applicable model	
Rail	_	J79. F7BV	
mounting	2-color indicator	J79W, F7BWV	
type	Water resistant	F7BA, F7BAV	
		H7B	
	_	K59	
Band	2-color	H7BW	
mounting type	indicator	K59W	
1,700	Water	Н7ВА	
	resistant	G5BA	
Tie-rod	_	J59	
mounting	2-color indicator	J59W	
type	Water resistant	F5BA	
	_	Y59B, Y69B	
		M9B, M9BV	
		F8B	
	Normally closed	M9BE, M9BEV	
Direct	2-color	Y7BW, Y7BWV	
mounting type	indicator	M9BW, M9BWV	
31.		Y7BA	
	Water resistant	M9BA, M9BAV	
	.coolant	М7ВА	
	Hygienic	F6B	
Rotary		T791/2	
actuator	_	T991/2, T99V1/2	

3-wire

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

4-wire

Mo	ounting	Function	Applicable model
	Rail ounting type		F79F
	Band Direct ounting mounting	H7NF	
	type	type	G59F
mo	ie-rod ounting type		F59F

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

Connector pin arrangement

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

Note1) For details on the D-P3DWASC and D-P3DWASE, refer to page 1342. And for details on the D-P4DWSC and D-P4DWSE, refer to page 1344.

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



With Pre-wired Connector

Dimensions

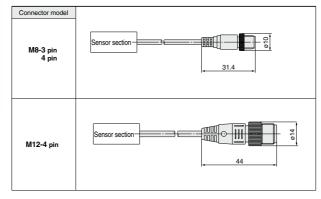




M8-4 pin



M12-4 pin



Connection (Socket side) Connector Cable

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

Connector size	Number of pins	Manufacturer	Applicable series example
		OMRON Corporation	XS3□
		PHOENIX CONTACT GmbH & Co. KG	SAC-3P□
	3	Correns Corporation	M8-3D□
		TE Connectivity Ltd.	T40
M8		Hans Turck GmbH & Co. KG	PKG3M□
IVIO		OMRON Corporation	XS3□
	. 4	PHOENIX CONTACT GmbH & Co. KG	SAC-4P□
		Correns Corporation	M8-3D□
		TE Connectivity Ltd.	T40
		Hans Turck GmbH & Co. KG	PKG4M□
		OMRON Corporation	XS2□, XS5□
	4	PHOENIX CONTACT GmbH & Co. KG	SAC-4P□
		Correns Corporation	VA-4D□
M12		TE Connectivity Ltd.	T41
		Hans Turck GmbH & Co. KG	RKC4.4□
		Azbil Corporation	PA5-4I
		DDK Ltd.	CM02B

Weight for Connector Type

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

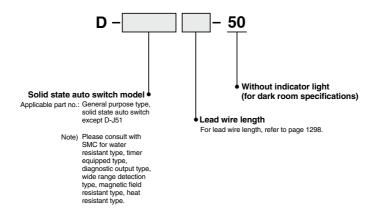


Made to Order Specifications: Solid State Auto Switch -50: Without Indicator Light (Dark room) Specifications -61: Oilproof Flexible Heavy-duty Cord Specifications

2 Without Indicator Light (for dark room specifications)

-50

Possible to use under the environment which hates a light.

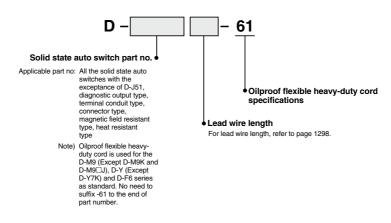


Dimensions and specifications are common as standard products with the exception of no indicator light.

3 Oilproof Flexible Heavy-duty Cord Specifications

Symbol -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.



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.



Solid State Auto Switch Made to Order -551: UL/CSA Certified

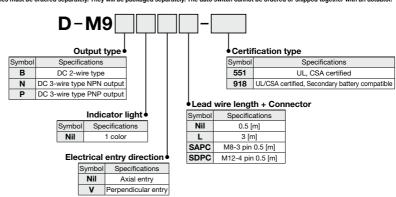
4 UL/CSA Certified -551, 918

UL, CSA certified

UL, CSA certified + Compatible with material restrictions for secondary battery manufacture

How to Order

⚠Caution Auto switches must be ordered separately. They will be packaged separately. The auto switch cannot be ordered or shipped together with an actuator.



How to Identify Certified Products





The dimensions and specifications are the same as those of the standard (general purpose) D-M9□ auto switch.

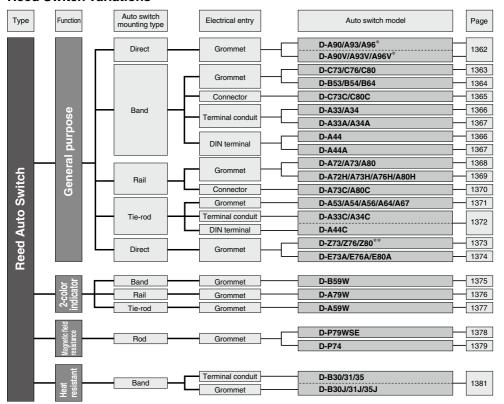




Reed Auto Switches

General Purpose Type, 2-Color Indicator

Reed Switch Variations



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

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

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

Auto Switch Specifications Grommet





.↑Caution

Precautions

- 1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
- 2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator
- 3. Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

PLC: Programmable Logic Controlle					
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 or less	48 V AC or less	100 V AC or less		
Maximum load current	50 mA	40 mA	20 mA		
Internal circuit*		4			
Contact protection circuit	None				
Internal resistance	1 Ω or less (Including lead wire length of 3 m)				
Standard	CE/UKCA marking				
D-A93, D-A93	V, D-A96, D-A96V	(With indicator ligi	nt)		
Auto switch model	D-A93,	D-A93V	D-A96, D-A96V		
Applicable load	Relay	, PLC	IC circuit		
Load voltage	24 VDC ⁽⁴⁾	100 VAC	4 to 8 VDC		
Load current range and Maximum load current (3)	5 to 40 mA	5 to 20 mA	20 mA		
Internal circuit*	3 5				
Contact protection circuit	None				

Red LED illuminates when turned ON

CE/UKCA marking

Oilproof Heavy-duty Lead Wire Specifications

D-A93V: 2.7 V or less

	Auto switch model		D-A90(V)	D-A93(V)	D-A96(V)	
	Sheath	Outside diameter [mm]	ø2.7			
	Insulator	Number of cores	2 cores (E	Brown/Blue)	3 cores (Brown/Blue/Black)	
	insulator	Outside diameter [mm]	ø0.96		ø0.91	
	Effective area [mm		0.	.18	0.15	
	Conductor	Strand diameter [mm]	ø0.08			
Lead	Lead wire minimum bending radius [mm] (Reference values)			17		

D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA)

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

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

Note 2) Refer to page 1298 for lead wire lengths. Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

Internal voltage drop

Indicator light

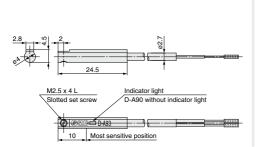
Standard

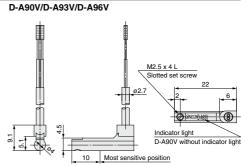
(g)

0.8 V or less

Model		D-A90	D-A90V	D-A93	D-A93V	D-A96	D-A96V
Lead wire length	0.5 m (NiI)	6	6	6	6	8	8
	1 m (M)	_	_	11	_	_	_
	3 m (L)	30	30	30	30	41	41
	5 m (7)	_		47	47	_	_

Dimensions D-A90/D-A93/D-A96





With Pre-wired Connector Reed Auto Switch (Made to Order Specifications) D-A90(V)/D-A93(V)/D-A96(V) ← UK

Grommet

∆Caution

Precautions

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

How to Order D-A90 S A PC Reed auto switch part no. Δ90 Cable length Connector model A93 A93V **S** 0.5 m A M8-3 pin 1.0 m D M12-4 pin A96 A96V L 3.0 m 5.0 m

Connector specifications

bonnector specifications				
Connector model	M8-3 pin	M12-4 pin		
Pin arrangement	3	② ① ③ ④		
Conformed standard	IEC61076-2-104	IEC61076-2-101		
Impact resistance	300 m/s ²			
Enclosure	Only with screw tightened IP67 (IEC60529 standard)			
Insulation resistance	100 $M\Omega$ or more at 500 VDC measured via megohmmeter			
Withstand voltage	1500 VAC 1 minute (between cor	ntacts), Leak current 1 mA or less		

Connector pin arrangement

Sensor	Meaning of contact number				
type	1 pin	2 pin	3 pin	4 pin	
2-wire type	OUT (+)	_	_	OUT (-)	
3-wire type	DC (+)	_	DC (-)	OUT	

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

Additional weight by connector type

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

Auto Switch Specifications

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

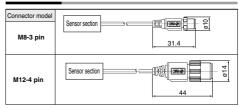
	PLC: Programmable Logic Controller					
D-A90, D-A90	D-A90, D-A90V (Without indicator light)					
Auto switch model	D-A90, D-A90V					
Applicable load	IC circuit, Relay, PL	С				
Load voltage	24 VDC or less					
Maximum load current	50 mA					
Internal circuit*	4					
Contact protection circuit	None					
Internal resistance	1 Ω or less					
Standard	CE/UKCA marking					
D-A93, D-A93V, D-A96, D-A96V (With indicator light)						
Auto switch model	D-A93, D-A93V	D-A96, D-A96V				
Applicable load	Relay, PLC	IC circuit				
Load voltage	24 VDC ⁽⁴⁾	4 to 8 VDC				
Load current range and Maximum load current (3)	3) 5 to 40 mA 20 mA					
Internal circuit*	3 5					
Contact protection circuit	ct protection circuit None					
Internal voltage drop	D-A93: 2.4 V or less (up to 20 mA)/3 V or less (up to 40 mA) D-A93V: 2.7 V or less	0.8 V or less				
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					

Refer to the D-A9□ type for specifications other than those listed in the table above. • Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301. Note 1) Refer to page 1298 for reed auto switch common specifications. Note 2) Refer to page 1298 for lead wire lengths.

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

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Dimensions



Connection (Socket side) Connector Cable

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

Connector size	Number of pins	Manufacturer	Applicable series example
		OMROM Corporation	XS3□
		PHOENIX CONTACT GmbH & Co. KG	SAC-3P□
M8	3	Correns Corporation	M8-3D□
		TE Connectivity Ltd.	T40
		Hans Turck GmbH & Co. KG	PKG3M□
	4	OMROM Corporation	XS2□, XS5□
		PHOENIX CONTACT GmbH & Co. KG	SAC-4P□
		Correns Corporation	VA-4D□
M12		TE Connectivity Ltd.	T41
		Hans Turck GmbH & Co. KG	RKC4.4□
		Azbil Corporation	PA5-4I
		DDK Ltd.	CM02B



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



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

Grommet



^Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

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

Oilproof Heavy-duty Lead Wire Specifications

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

^{*} Refer to the applicable internal circuit diagram (numbers 1 to 2) on page 1301.

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

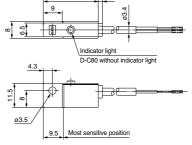
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

(g)

Auto swit	ch model	D-C73	D-C76	D-C80
	0.5 m (Nil)	9	10	9
Lead wire length	3 m (L)	46	50	46
	5 m (7)	76		

Dimensions



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

Note 2) Refer to page 1298 for lead wire lengths.

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



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

Grommet



△Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-B5 (With indicator light)						
Auto switch model	D-B53		D-B54			
Applicable load	PLC	Relay, PLC				
Load voltage	24 VDC(4)	24 VDC(4)	100 VAC	200 VAC		
Load current range (3)	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA		
Internal circuit*	3		1			
Contact protection circuit	None	Built-in				
Internal voltage drop	2.4 V or less 2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)					
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					
D-B6 (Without indica	tor light)					
Auto switch model		D-B	64			
Applicable load		Relay,	PLC			
Load voltage	24 V _{DC} or less	100 V	AC	200 VAC		
Max. load current	Max. 50 mA	Max. 25	mA M	ax. 12.5 mA		
Internal circuit*	2					
Contact protection circuit	Built-in					
Internal resistance	25Ω or less					
Standard		CE/UKCA	marking			

Oilproof Heavy-duty Lead Wire Specifications

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

^{*} Refer to the applicable internal circuit diagram (numbers $\ensuremath{\mathbb{1}}$ to $\ensuremath{\mathbb{7}}$) on page 1301.

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

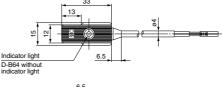
Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

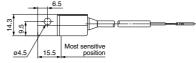
Weight

(g)

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

Dimensions







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

Note 2) Refer to page 1298 for lead wire lengths.

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



50 mA

(4)

None

1 Ω or less (Including lead wire length of 3 m)

CE/UKCA marking



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

Connector



∧Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller D-C73C (With indicator light) Auto switch model **D-C73C** Applicable load Relay, PLC Load voltage 24 VDC (5) Load current range (4) 5 to 40 mA Internal circuit* (3) Contact protection circuit None Internal voltage drop 2.4 V or less Indicator light Red LED illuminates when turned ON Standard CE/UKCA marking D-C80C (Without indicator light) Auto switch model D-C80C Applicable load Relay, PLC Load voltage 24 V_{DC} or less Maximum load current

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

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

Note 2) Refer to page 1298 for lead wire lengths.

Contact protection circuit

Internal resistance

Standard

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

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

Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

(g)

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

Lead wires with a connector indication

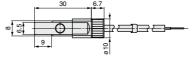
Part No. of Lead Wires with Connectors

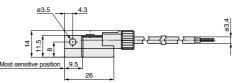
(Applicable only for connector type)

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

Dimensions

(mm)





1365

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



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

PLC: Programmable Logic Controller

Terminal conduit: D-A3 DIN terminal: <u>D-A4</u>



∆Caution

Precautions

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

Auto Switch Specifications

D-A3 (With indicator light) Terminal conduit Auto switch model D-A33 D-A34 Applicable load PLC Relay, PLC Load voltage 24 VDC (3) 24 VDC (3) 100 VAC 200 VAC Load current range (2) 5 to 50 mA 5 to 50 mA 5 to 25 mA 5 to 12.5 mA Internal circuit®

internal circuit						
Contact protection circuit	None Built-in					
Internal voltage drop	2.4 V or less 2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)					
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					
D-A44 (With indic	/ith indicator light) DIN terminal					
Auto switch model	D-A44					
Applicable load	Relay, PLC					
Load voltage	24 VDC (3)		100 VAC	200 VAC		
Load current range	5 to 50 mA		5 to 25 mA	5 to 12.5 mA		
Internal circuit*			1			
Contact protection circuit			Built-in			
Internal voltage drop	2.4 V or I	ess (U	Jp to 20 mA)/3.5 V or less	s (Up to 50 mA)		
Indicator light	Red LED illuminates when turned ON.					
Standard			CE/UKCA marking			
Defeate the coefficient of the second classical discussion (coefficient of the coefficient of the coefficien						

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

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

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

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

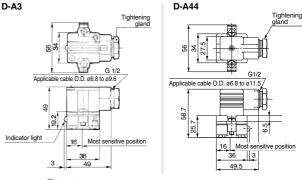
Weight

(g)

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

Dimensions

(mm



Reed Auto Switch Band Mounting Type

D-A33A/D-A34A/D-A44A (€ 2

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



△Caution

Precautions

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

Auto Switch Specifications

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

PLC: Programmable Logic Controller

PLC: Programmable Logic Controller						
D-A3□A (With indic	ator light) Te	ermina	I cond	uit		
Auto switch model	D-A33A	D-A34A				
Applicable load	PLC	Relay, PLC				
Load voltage	24 VDC (3)	24 VDC (3) 100 VAC 200 VAC				
Load current range (2)	5 to 50 mA	5 to 5	50 mA	5 to 25 m	ıΑ	5 to 12.5 mA
Internal circuit*	3			1		
Contact protection circuit	None	Built-in				
Internal voltage drop	2.4 V or less	or less 2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)				
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					
D-A44A (With indica	tor light) DII	N term	inal			
Auto switch part model			D-A	14A		
Applicable load			Relay,	PLC		
Load voltage	24 VDC (3	3)	100 \	/AC		200 VAC
Load current range	5 to 50 m/	A	5 to 25	5 mA	5	to 12.5 mA
Internal circuit*			1)		
Contact protection circuit	Built-in					
Internal voltage drop	2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA)					
Indicator light	Re	ed LED il	luminates	when turne	d ON	I.
Standard		С	E/UKCA	marking		

^{*} Refer to the applicable internal circuit diagram (numbers ① to ②) on page 1301. Note 1) Refer to page 1298 for reed auto switch common specifications.

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

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

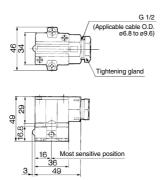
Weight

(g)

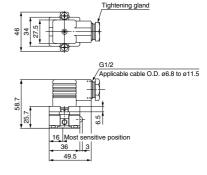
Auto switch model		D-A33A	D-A34A	D-A44A
Lead wire	None	112	112	110

<u>Dimensions</u> (mm)

D-A3□A



D-A44A



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



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

Grommet Electrical entry: Perpendicular



∧Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller D-A7 (With indicator light) D-A73 Auto switch model D-A72 Applicable load Relay, PLC Relay, PLC Load voltage 200 VAC 24 VDC (4 100 VAC Load current range (3 5 to 10 mA 5 to 40 mA 5 to 20 mA Internal circuit Contact protection circuit None Internal voltage drop 2.4 V or less Indicator light Red LED illuminates when turned ON. Standard CE/UKCA marking D-A8 (Without indicator light) D-A80 Auto switch model Applicable load Relay, IC circuit, PLC Load voltage 24 V DC or less 48 V 80 100 V AC Maximum load current 50 mA 40 mA 20 mA Internal circuit* (A) Contact protection circuit None Internal resistance 1 Ω or less (Including lead wire length of 3 m)

Oilproof Heavy-duty Lead Wire Specifications

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

CE/UKCA marking

- Lead wire Oilproof vinyl cabtire cord: ø3.4, 0.2 mm2, 2 cores (Brown, Blue), 0.5 m
- * Refer to the applicable internal circuit diagram (numbers 1 to 2) on page 1301. Note 1) Refer to page 1298 for reed auto switch common specifications.

- Note 2) Refer to page 1298 for lead wire lengths.

 Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or
- Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

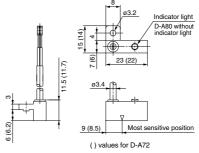
Weight

Standard

(g)

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

Dimensions





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

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

Auto Switch Specifications

Grommet B ABELL (MCH. C. P. . I. . P. L.) Electrical entry: In-line



Precautions

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

PLC: Programmable Logic Controller

D-A7 H (With indicator light)						
Auto switch model	D-A72H	D-A73H		D-A76H		
Applicable load	Relay, PLC	Relay, PLC		IC circuit		
Load voltage	200 VAC	24 VDC (4)	24 VDC (4) 100 VAC			
Max. load current/Load current range(3)	5 to 10 mA	5 to 40 mA	5 to 20 mA	20 mA		
Internal circuit*	3			(5)		
Contact protection circuit	None					
Internal voltage drop	2.4 V or less		0.8 V or less			
Indicator light	Red LED illuminates when turned ON.					
Standard	CE/UKCA marking					
D-A80H (Without indicator light)						
Auto switch model	D-A80H					
Applicable load	Relay, IC circuit, PLC					
Load voltage	24 V AC or le	ss 48	V AC DC	100 V AC		
Maximum load current	50 mA	40	40 mA			
Internal circuit*	4					
Contact protection circuit	None					
Internal resistance	1 Ω or less (Including lead wire length of 3 m)					
Standard	CE/UKCA marking					

Oilproof Heavy-duty Lead Wire Specifications

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

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

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

Note 2) Refer to page 1298 for lead wire lengths.

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

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

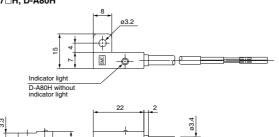
Auto switch model		D-A72H	D-A73H	D-A76H	D-A80H
	0.5 m (NiI)	10	10	11	10
Lead wire length	3 m (L)	47	47	52	47
_	5 m (7)		77		

Dimensions

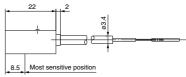
(mm)

(g)

D-A7 H, D-A80H







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



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

Connector



▲Caution

Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

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

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

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

Note 2) Refer to page 1298 for lead wire lengths.

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

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

Note 5) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Lead wires with a connector indication

Part No. of Lead Wires with Connectors

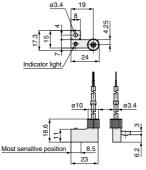
(Applicable only	for connector type)
Model	Lead wire length
D-LC05	0.5 m
D-LC30	3 m
D-I C50	5 m

Weight

(g)

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

Dimensions



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



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

Grommet



Precautions

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

Auto Switch Specifications

PLC: Programmable Logic Controller

D-A5 (With indicator light)								
Auto switch model	D-A53		D-A54					
Applicable load	PLC		IC circuit					
Load voltage	24 VDC (4)	24 VDC (4)	4 to 8 VDC					
Maximum load (3)	5 to 50 mA	5 to 50 mA	5 to 25 mA	5 to 12.5 mA	20 mA			
current and range	0 10 00 11#1	0 10 00 1131	0 10 20 1121	0 10 12:01:01	201131			
Internal circuit*	3		1)		(5)			
Contact protection circuit	None		Built-in		None			
Internal voltage drop	2.4 V or less	s 2.4 V or less (Up to 20 mA)/3.5 V or less (Up to 50 mA) 0.8 V or less						
Indicator light	Red LED illuminates when turned ON.							
Standard		CE/UKCA marking						

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

Oilproof Heavy-duty Lead Wire Specifications

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

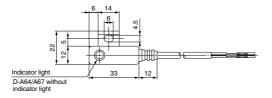
^{*} Refer to the applicable internal circuit diagram (numbers 1 to 2) on page 1301.

Weight

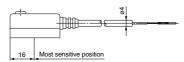
(g)

Auto switch model		D-A53	D-A54	D-A56	D-A64	D-A67
	0.5 m (NiI)	24		24 24		ļ
Lead wire length	3 m (L)	80		80	80)
	5 m (Z)	12	25	_	_	

Dimensions









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

Note 2) Refer to page 1298 for lead wire lengths.

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

not be possible where the output sight an esses that 20 min. I however, there is no problem in terms or contact output, when an output sight acceeds 1 mil or more.

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Prescautions on page 18.

Reed Auto Switch Tie-rod Mounting Type

D-A33C/D-A34C/D-A44C (€

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



∧Caution

Precautions

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

Auto Switch Specifications

the products conforming to the international standards

			PLC: Program	nmabl	e Logic Controller
D-A3 C (With indica	ator light) Te	erminal con	duit		
Auto switch model	D-A33C		D-A34	С	
Applicable load	PLC		Relay, Pl	LC	
Load voltage	24 VDC (3)	24 VDC (3)	100 VA	С	200 VAC
Load current range (2)	5 to 50 mA	5 to 50 mA	5 to 25 r	nΑ	5 to 12.5 mA
Internal circuit*	3		1		
Contact protection circuit	None		Built-ir	1	
Internal voltage drop	2.4 V or less	2.4 V or less (Up	to 20 mA)/3.5	V or I	ess (Up to 50 mA)
Indicator light	R	ed LED illumina	tes when turn	ed Ol	N.
Standard		CE/UK	A marking		
D-A44C (With indica	tor light) DII	V terminal			
Auto switch model		D-A	44C		
Applicable load			y, PLC		
Load voltage	24 VDC (3	100	VAC		200 VAC
Load current range (2)	5 to 50 m/	A 5 to	25 mA	4)	to 12.5 mA
Internal circuit*			1		
Contact protection circuit		Built-in			
Internal voltage drop	2.4 V or les	ss (Up to 20 mA)/3.5 V or les	ss (U	o to 50 mA)
Indicator light	F	led LED illumina	tes when turn	ed Ol	N.
Standard		CE/UK(A marking		

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

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

Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no

inglit will be possible where the chupbut sight at less that it is the interest in the problem in terms of contact output, when an output signal exceeds 1 mA or more.

Note 3) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

Auto switch model	Applicable bore size(mm)	Weight	Auto switch model	Applicable bore size(mm)	Weight
D-A33C-4, A34C-4	40	162	D-A44C-4	40	160
D-A33C-5, A34C-5	50	166	D-A44C-5	50	164
D-A33C-6, A34C-6	63	184	D-A44C-6	63	182
D-A33C-8, A34C-8	80	210	D-A44C-8	80	208
D-A33C-10, A34C-10	100	232	D-A44C-10	100	230

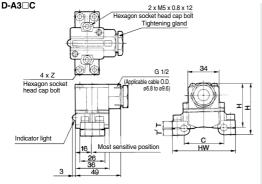
Dimensions

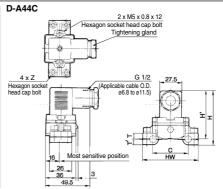
(mm)

(g)

Auto switch model	Applicable bore size (mm)	С	HW	Н	H'	Т	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	IVIS X U.O X 16
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	IVID X U.8 X 25

* (): Denotes the values of D-A44C **Dimensions**





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

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

Grommet



∧Caution

Precautions

- 1. Do not drop or bump the auto switch while handling it as it may result in the auto switch breaking.
- 2. Do not remove the protective cover attached to the product body until the product is ready to be mounted on the actuator
- 3. Fix the auto switch with the existing screw installed on the auto switch body. The auto switch may be damaged if a screw other than the one supplied is used.

Auto Switch Specifications

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

D-Z8 (Without indicator light) Auto switch model D-Z80 Applicable load Relay, PLC, IC circuit 24 V AC or less 48 V_{DC} 100 V_{DC} Load voltage Maximum load current 50 mA 40 mA 20 mA Internal circuit (4) Contact protection circuit None

Oilproof Heavy-duty Lead Wire Specifications

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

1 Ω or less (Including 3 m lead wire)

CE/UKCA marking

Note 2) Refer to page 1298 for lead wire lengths.

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

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weight

Internal resistance

Standard

(g)

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

Dimensions (mm) D-Z73, Z80 D-Z76 M2.5 x 4L M2 5 x 4I 27.6 Slotted set scre 2.5 Ø SMC -⊕ D-Z73 **⊘**■ Indicator light Indicator light D-Z80 without indicator light Most sensitive Most sensitive position 12.5

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

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

Reed Auto Switch Direct Mounting Type

D-E73A/D-E76A/D-E80A (€

Grommet



Precautions

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

Auto Switch Specifications

the products conforming to the international standards.

PLC: Programmable Logic Controller

D-E7□A (With indicator light)				
Auto switch model	D-E	D-E73A D-E76A		
Applicable load	Relay	, PLC	IC circuit	
Load voltage	24 VDC (4)	100 VAC	4 to 8 VDC	
Max. load current and load current range(3)	5 to 40 mA	5 to 20 mA	20 mA	
Internal circuit*		3)	(5)	
Contact protection circuit		None		
Internal voltage drop	2.4 V	2.4 V or less 0.8 V o		
Indicator light	Red LED illuminates when turned ON.			
Standard	CE/UKCA marking			
D-E80A (Without indicator light)				
Auto switch model	D-E80A			
Applicable load	Relay, PLC, IC circuit			
Load voltage	24 V AC or less 48 V AC 100 V AC		100 V _{DC}	
Maximum load current	50 mA 40 mA		20 mA	
Internal circuit*	4			
Contact protection circuit	None			
Internal resistance	1 Ω or less (Including lead wire length of 3 m)			
Standard	CE/UKCA marking			

Oilproof Heavy-duty Lead Wire Specifications

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

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

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

Note 2) Refer to page 1298 for lead wire lengths.

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

Note 4) The auto switches can operate at 12 VDC, but consider the internal voltage drop of the auto switch described in Reed Auto Switch Precautions on page 18.

Weiaht

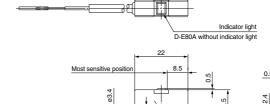
(g)

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

Dimensions

(mm)

0.5



2-Color Indicator Reed Auto Switch **Band Mounting Type**

D-B59W

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	
Internal circuit*	6	
Contact protection circuit	Built-in	
Internal voltage drop	4 V or less	
Indicator light	Operating range ········ Red LED illuminates. Proper operating range ······ Green LED illuminates.	
Standard	CE/UKCA marking	

Grommet

The proper operating range can be determined by the color of

 $(Red \rightarrow Green \leftarrow Red)$



∧Caution

Precautions

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

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

Note 2) Refer to page 1298 for lead wire lengths.

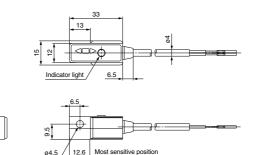
Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Weight

(g)

Auto switch model		D-B59W
Landovina lanath	0.5 m (NiI)	20
Lead wire length	3 m (L)	76

Dimensions



2-Color Indicator Reed Auto Switch **Rail Mounting Type**

D-A79W

Auto Switch Specifications

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

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

Oilproof Heavy-duty Lead Wire Specifications

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

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

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

Note 2) Refer to page 1298 for lead wire lengths.

Note 3) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the

indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more

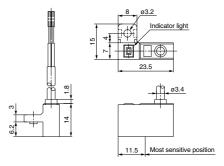
Weight

(g)

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

Dimensions

(mm)



Grommet

The proper operating range can be determined by the color of the light.

 $(Red \rightarrow Green \leftarrow Red)$



∧Caution

Precautions

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

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

D-A59W

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	
Internal circuit*	6	
Contact protection circuit	Built-in	
Internal voltage drop	4 V or less	
Indicator light	Operating range ········· Red LED illuminates. Proper operating range ······· Green LED illuminates.	
Standard	CE/UKCA marking	

Grommet

the light. $(Red \rightarrow Green \leftarrow Red)$



The proper operating range can be determined by the color of

∧Caution

Precautions

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

Oilproof Heavy-duty Lead Wire Specifications

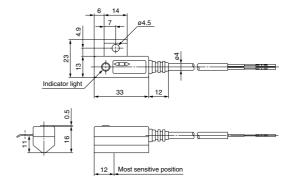
Auto switch model		D-A59W
Sheath	Outside diameter [mm]	ø4
Inculator	Number of cores	2 cores (Brown/Blue)
Insulator	Outside diameter [mm]	ø1.22
Conductor	Effective area [mm ²]	0.3
Conductor	Strand diameter [mm]	ø0.08
Lead wire minimum bending radius [mm] (Reference values)		24

Weight

(g)

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

Dimensions



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

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

Note 2) Refer to page 1298 for lead wire lengths.

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

Magnetic Field Resistant 2-Color Indicator Reed Auto Switch

D-P79WSE

(€ CK

(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.

 $(Red \rightarrow Green \leftarrow Red)$



△Caution

Precautions 1. Do not drop or bump the auto switch while

- handling it as it may result in the auto switch breaking.

 2 Cylinder with a strong integrated magnet.
- Cylinder with a strong integrated magnet must be used.

Auto Switch Specifications

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

Oilproof Heavy-duty Lead Wire Specifications

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

^{*} Refer to the applicable internal circuit diagram (numbers ① to ②) on page 1301. Note 1) Refer to page 1298 for reed auto switch common specifications.

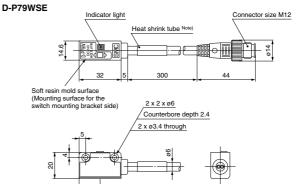
Weight

(g)

Auto switch model	D-P79WSE
Auto switch model	100

Dimensions

(mm)



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

Please be careful of the mounting direction.

16

The soft resin mold surface must be directed to the switch mounting bracket side.

Most sensitive position

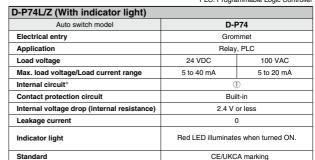


Magnetic Field Resistant Reed Auto Switch D-P74

Auto Switch Specifications

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

PLC: Programmable Logic Controller



Oilproof Heavy-duty Lead Wire Specifications

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

- * Refer to the applicable internal circuit diagram (numbers ① to ⑦) on page 1301.
- Note 1) Refer to page 1298 for reed auto switch common specifications

Indicator light

Note 2) Refer to page 1298 for lead wire lengths.

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

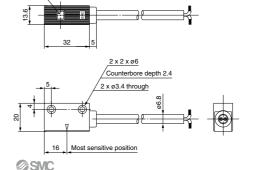
Weight

(g)

Auto switch model		D-P74	
	0.5 m (Nil)	48	
Lead wire length	3 m (L)	189	
	5 m (7)	320	

Dimensions

(mm)



Grommet



∆Caution

Precautions

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

Auto Switch Specifications

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

PLC: Programmable Logic Controller



Grommet

△Caution

Precautions

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

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

Oilproof Heavy-duty Lead Wire Specifications

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

^{*} Refer to the applicable internal circuit diagram (numbers \boxdot to \boxdot) on page 1301.

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

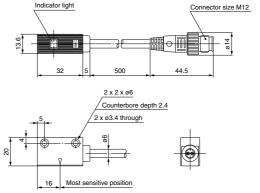
Note 2) Under 5 mA, the strength of the indicator light is poor. In some cases, visibility of the indicator light will not be possible where the output signal is less than 2.5 mA. However, there is no problem in terms of contact output, when an output signal exceeds 1 mA or more.

Weight

(g)

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

Dimensions



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

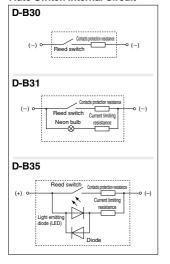
The wide operating range allows easy position setting and reduces influence of the work piece position changes

<u> ⚠</u>Caution

Precautions

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

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

				1 LO.110	grammable Lo	gic Controller
Auto switch model	D-B30	D-B30J	D-B31	D-B31J	D-B35	D-B35J
	Terminal		Terminal		Terminal	
Electrical entry	conduit	Grommet	conduit	Grommet	conduit	Grommet
Operating voltage	24 VDC /	100 VAC	100	VAC	24 \	/DC
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 inc	licator light	Neon bulb light	s 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	0.1 mA or less 1 mA or less 1 mA or less				or less
Lead wire	_	0.5 m	_	0.5 m	_	0.5 m
Enclosure		Terr	minal conduit	: IEC60529 I	P64	
Liiciosure	Grommet : IEC60529 IP67					
Withstand voltage	1500 VAC for 1 minute (between case and terminals or lead wires)					
Insulation resistance	50 MΩ or larger between case (ground) and lead wires (terminals)					
Operating temperature range	-10°C to 120°C					
Standard		CE/UKCA marking				

Oilproof Heavy-duty Lead Wire Specifications

Olipiool fleavy-duty Lead wife Specifications						
Auto switch model		D-B30J	D-B30J D-B31J D-B35			
Sheath	Outside diameter [mm]	ø6				
Insulator	Number of cores	2 cores (Brown/Blue)				
insulator	Outside diameter [mm]	ø2.3				
Conductor	Conductor Effective area [mm²]		0.5			
Conductor	Strand diameter [mm]	ø0.08				
Lead wire minimum bending radius [mm] (Reference values)		48 (Room temperature)				

Weight

(g)

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

Lead wire length

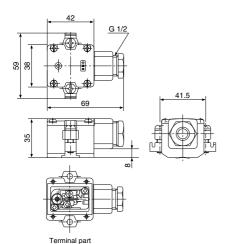
In case of the grommet type (J type), the lead wire length is 0.5 m.

(No lead wire is attached to the terminal conduit type.)

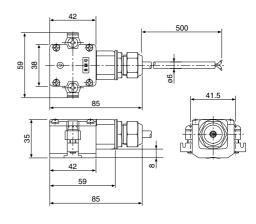
3 m and 5 m types are available as a special order.

Dimensions (mm)

Terminal conduit type D-B3□

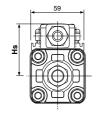


Terminal conduit type D-B3□J



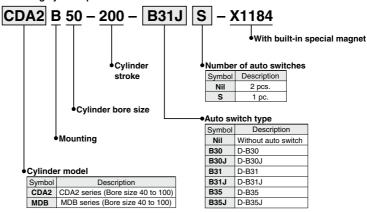
* Recommended minimum bending radius for lead wire RT $\,\,$: 25 mm or more $\,\,$ 120°C : 50 mm or more

Dimensions for Cylinder Mounting



Hs dimensions		(mm)			
D	Cylinder model				
Bore size	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.





*D-B3 Series*Specific Product Precautions

Be sure to read this before handling the products.

Refer to page 8 for safety instructions and pages 14 to 18 for auto switch precautions.

↑ Caution

1. Use the reed switch within the operating range

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

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

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

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

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

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

3. Visibility of an indicator light

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

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

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

4. Take precautions about leakage current.

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

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

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

5. Keep the lead wire length as short as possi-

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 $120\,^{\circ}\text{C}$, 100 VAC PLC load).

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

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

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

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

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

7. Selection of applicable cylinders

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

8. Maintenance

After the auto switch is installed under high temperature, apply additional 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 additional tightening at a tightening torque of 2 to 3 N·m while carefully applying equal torque to both lifting screws.

9. Product upgrades

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

