

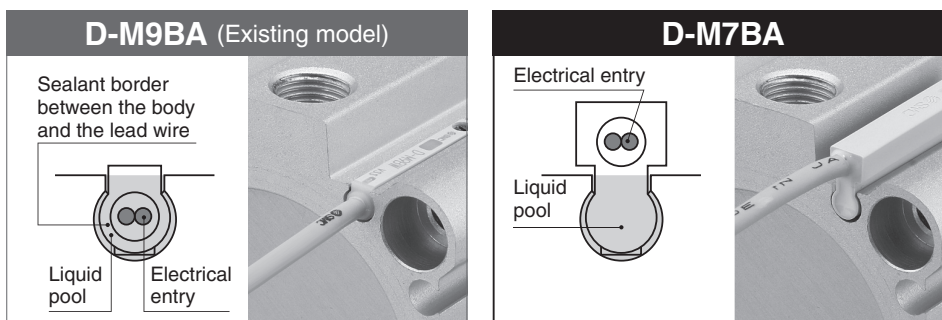
Water Resistant 2-Colour Indicator Solid State Auto Switch/ Direct Mounting Type



Improved water (coolant) resistance

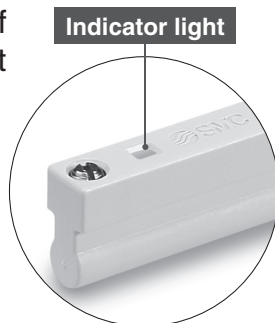
- Features a liquid pool-free electrical entry construction (The electrical entry is located on the top of the switch body.)

* Prevents the entry of liquid from the sealant border between the body and the lead wire and from the lead wire



- Blocks the entry of liquid from the indicator light

The thin construction of the body allows for light from the light source to shine through.



- Comparison with the D-M9BA (Existing model)

Auto switch model	Water (Coolant) resistance	Compactness
D-M7BA	◎	○
D-M9BA	○	◎

How to Order

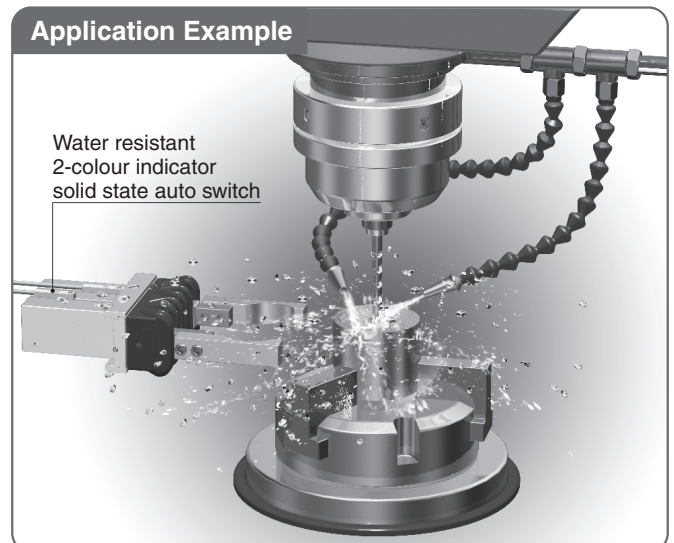
D-M7BA L

2-wire type

Lead wire length and termination

Symbol	Specifications
L	3000 mm (Half-stripped)
Z	5000 mm (Half-stripped)
SAPC	500 mm (M8 3-pin pre-wired)
SBPC	500 mm (M8 4-pin pre-wired)
SDPC	500 mm (M12 4-pin pre-wired)
MAPC	1000 mm (M8 3-pin pre-wired)
MBPC	1000 mm (M8 4-pin pre-wired)
MDPC	1000 mm (M12 4-pin pre-wired)

Application Example



D-M7BA □



22-EU786-UK

D-M7BA□

Specifications

Auto switch model	D-M7BA
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
Operating time	1 ms or less
Indicator light	Operating range: Red LED lights up. Optimum operating range: Green LED lights up.
Electrical entry	Grommet
Impact resistance	1000 m/s ²
Insulation resistance	50 MΩ or more (500 VDC measured via megohmmeter) (Between the lead wire and case)
Withstand voltage	1000 VAC for 1 min. (Between the lead wire and case)
Ambient temperature	-10 to 60 °C
Standards	CE/UKCA marking

* When using cutting oils, grinding oils, detergents, etc., generally no problems will occur if using a single solution. However, if a workpiece is transferred to the next process with solutions from the previous process adhering to it, multiple solutions may mix and reactions may occur, resulting in reduced product life. In addition, do not use with liquids or in environments that have explosion-proof requirements.

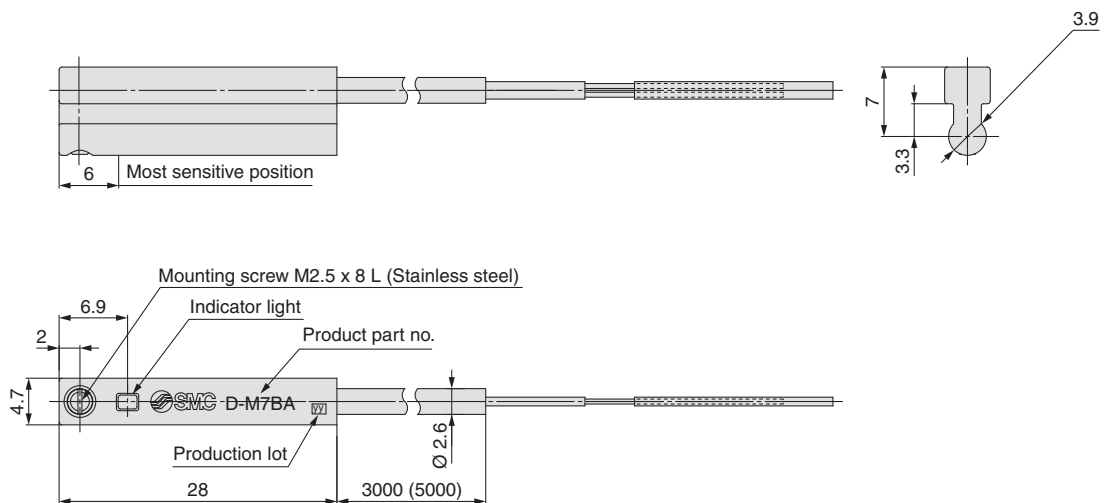
Oilproof Flexible Heavy-duty Lead Wire Specifications

Auto switch model		D-M7BA□
Sheath	Outside diameter	∅ 2.6
	Number of cores	2 cores (Brown/Blue)
Insulator	Outside diameter	∅ 0.88
	Effective area [mm ²]	0.15
Conductor	Strand diameter [mm]	∅ 0.05
	Min. bending radius [mm] (Reference value)	17

Weight

Auto switch model		D-M7BA□
Lead wire length	3 m (L)	32
	5 m (Z)	52

Dimensions

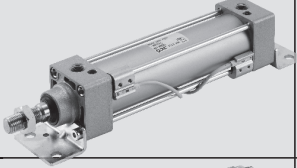
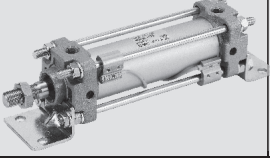






D-M7BA□ Series

Applicable Actuators

Water Resistant Cylinders

The D-M7BA□ cannot be ordered with the cylinder. It must be ordered separately. The operating range and proper mounting position are the same as those of the D-M9 series.

Applicable actuator	Series	Bore size [mm]								
		16	20	25	32	40	50	63	80	100
Air cylinder 	MB-Z*1				●	●	●	●	●	●
Air cylinder 	CA2-Z*1					●	●	●	●	●
Compact cylinder 	CQ2-Z		●	●	●	●	●	●	●	●
Compact guide cylinder 	MGP-Z		●	●	●	●	●	●	●	●
Rotary clamp cylinder 	MK-Z	●	●	●	●	●	●	●		
Stopper cylinder 	RSQ-Z				●	●	●			

*1 Mounting brackets are the same as those of the D-M9 series.

Applicable Actuators: Standard Type

The water resistant 2-colour indicator solid state auto switch (D-M7BA□) can be mounted on the following models, but SMC cannot guarantee water resistance. Please contact SMC for water-resistant products.

The D-M7BA□ cannot be ordered with the actuator. It must be ordered separately.

The operating range and proper mounting position are the same as those of the D-M9 series.

• Air Cylinders

Description	Series	Bore size [mm]
Pin cylinder	CDJP2	Ø 4 to Ø 16
Air cylinder	JMDB	Ø 32 to Ø 100
Air cylinder	MDB-Z	Ø 32 to Ø 100
Air cylinder	CDA2-Z	Ø 40 to Ø 100
Air cylinder	CDS1	Ø 125 to Ø 200
Air cylinder	CDS2	Ø 125 to Ø 300
Air cylinder ISO 6432	CD85	Ø 8 to Ø 25
Air cylinder ISO 15552	CP96□D	Ø 32 to Ø 125
Air cylinder ISO 15552	C96□D	Ø 32 to Ø 125
Mini free mount cylinder	CDUJ	Ø 6 to Ø 20
Free mount cylinder	CDU	Ø 6 to Ø 32
Compact cylinder	CDQS	Ø 12 to Ø 25
Compact cylinder	CDQ2-Z	Ø 12 to Ø 200
Compact cylinder ISO 21287	CD55	Ø 20 to Ø 100
Compact cylinder with air cushion	RDQ	Ø 20 to Ø 50
Compact cylinder/Guide rod type	CDQM	Ø 12 to Ø 100
Compact cylinder/Plate type	CDQU	Ø 20 to Ø 40
Compact slide	MXH-Z	Ø 6 to Ø 20
Air slide table	MXS	Ø 6 to Ø 25
Air slide table	MXQ□	Ø 6 to Ø 25
Air slide table	MXQ	Ø 6 to Ø 25
Low profile slide table	MXF	Ø 8 to Ø 20
Air slide table	MXW	Ø 8 to Ø 25
Air slide table	MXJ	Ø 4, Ø 6, Ø 8
Air slide table	MPX	Ø 6 to Ø 16
Air slide table/Long stroke type	MPY	Ø 6 to Ø 16
Precision cylinder	MTS	Ø 8 to Ø 40
Compact guide cylinder	MGP-Z	Ø 12 to Ø 100
Compact guide cylinder/Wide type	MGPW	Ø 20 to Ø 63
Platform cylinder	CXT	Ø 12 to Ø 40
Dual rod cylinder	JMGP	Ø 12 to Ø 63
Dual rod cylinder	CXSJ	Ø 6 to Ø 32
Smooth cylinder	MBY-Z	Ø 32 to Ø 100
Smooth cylinder	CDA2Y-Z	Ø 40 to Ø 100
Smooth cylinder	CDS2Y	Ø 125 to Ø 160
Smooth cylinder	CDQSY	Ø 12 to Ø 25
Smooth cylinder	CDQ2Y-Z	Ø 32 to Ø 100
Low speed cylinder	CDQSX	Ø 12 to Ø 25
Low speed cylinder	CDQ2X-Z	Ø 32 to Ø 100
Low speed cylinder	CDUX	Ø 10 to Ø 32
3 position cylinder	RZQ	Ø 32 to Ø 63
Rotary clamp cylinder	MK-Z	Ø 12 to Ø 63
Rotary clamp cylinder	MK2T	Ø 20 to Ø 63

• Air Cylinders

Description	Series	Bore size [mm]
Stopper cylinder	RSDQ(-Z)	Ø 12 to Ø 50
Heavy duty stopper cylinder	RS2H	Ø 50 to Ø 80
Escapements	MIS/MIW	Ø 8 to Ø 32
Cylinder with lock	MDNB	Ø 32 to Ø 100
Cylinder with lock	CDNA2	Ø 40 to Ø 100
Cylinder with lock	CDNS	Ø 125 to Ø 160
Cylinder with lock	CDLS	Ø 125 to Ø 200
Compact cylinder with lock	CDLQ	Ø 20 to Ø 100
Compact cylinder with air cushion and lock	RDLQ	Ø 32 to Ø 63
Fine lock cylinder	CDL1	Ø 40 to Ø 160
High precision stroke reading cylinder	CEP1	Ø 12, Ø 20
Stroke reading cylinder	CE1	Ø 32 to Ø 63

• Rotary Actuators

Description	Series	Size
Compact rotary actuator	CDRQ2	10 to 40
Mini rotary actuator	CRJ	05, 1
Rotary table/Rack & pinion type	MSQ	1 to 200
3-position rotary table	MSZ	10 to 50
Low-speed rotary actuator	CDRQ2X	10 to 40
Low-speed rotary actuator	MSQX	10 to 50

• Air Grippers




Description	Series	Bore size [mm]
Parallel type air gripper	MHZ2*1	6 to 40
Parallel type air gripper/Long stroke type	MHZ(L)2	16 to 40
Parallel type air gripper with dust cover	MHZJ2	6 to 25
Low profile air gripper	MHF2	8 to 20
Wide type parallel style air gripper	MHL2-Z	10 to 40
Rotary actuated air gripper	MDHR	10 to 30
Wedge cam operation slide guide	MHK(L)2	12 to 25
Parallel type air gripper	MHS(L)	16 to 25
Parallel type air gripper	MHSH/MHSJ	16 to 80
Toggle type air gripper	MHT2	32 to 63
180° angular type air gripper	MHY2	10 to 25

*1 Not applicable for bore size 10

* Mounting brackets are the same as those of the D-M9 series.

Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “Caution,” “Warning” or “Danger.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)¹⁾, and other safety regulations.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- 1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
- ISO 10218-1: Manipulating industrial robots - Safety.
etc.

Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalogue information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalogue.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”. Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered, whichever is first.²⁾ Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
 2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided. This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
 3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalogue for the particular products.
- 2) Vacuum pads are excluded from this 1 year warranty.
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered. Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Caution

SMC products are not intended for use as instruments for legal metrology.

Measurement instruments that SMC manufactures or sells have not been qualified by type approval tests relevant to the metrology (measurement) laws of each country.
Therefore, SMC products cannot be used for business or certification ordained by the metrology (measurement) laws of each country.

Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

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