

Air Cylinder: Standard Type Single Acting, Spring Return/Extend

Series CM2

ø20, ø25, ø32, ø40

How to Order

Mounting style

B	Basic style
L	Axial foot style
F	Rod side flange style
G	Head side flange style
C	Single clevis style
D	Double clevis style
U	Rod side trunnion style

T Head side trunnion style
E Clevis integrated style
BZ Boss-cut basic style
FZ Boss-cut rod side flange style
UZ Boss-cut rod side trunnion style

Piping

Nil	Rc (Screw-in piping)
F	Built-in One-touch fittings

Cylinder stroke (mm)
(Refer to "Standard Stroke" on page 157.)

Made to Order
(Refer to page 157 for details.)

With auto switch (Built-in magnet)

CM2 **L** **32** **-** **150** **S** **-** **M9BW**

With auto switch

CDM2 **L** **32** **-** **150** **S** **-** **M9BW**

Bore size

20	20 mm
25	25 mm
32	32 mm
40	40 mm

Action

S	Single acting, Spring return
T	Single acting, Spring extend

Number of auto switches

Nil	2 pcs.
S	1 pc.
n	"n" pcs.

Auto switch

Nil	Without auto switch
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Built-in Magnet Cylinder Model

If a built-in magnet cylinder without an auto switch is required, there is no need to enter the symbol for the auto switch.
(Example) CDM2F40-100T

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

Applicable Auto Switch/Refer to pages 1263 to 1371 for further information on auto switches.

Type	Special function	Electrical entry	Indicator light	Wiring (Output)	Load voltage		Auto switch model	Lead wire length (m)					Pre-wired connector	Applicable load		
					DC	AC		0.5 (Nil)	1 (M)	3 (L)	5 (Z)	None (N)				
Solid state switch	—	Grommet	Yes	3-wire (NPN)	24V	5V, 12V	—	M9N	●	●	●	○	○	○	IC circuit	Relay, PLC
		3-wire (PNP)				M9P		●	●	●	○	○	○			
		Connector		2-wire		12V		M9B	●	●	●	○	○	○		
								H7C	●	—	●	●	—			
	Diagnostic indication (2-color indication)	Grommet		3-wire (NPN)	5V, 12V	G39A	—	—	—	—	●	—	IC circuit			
				2-wire	12V	K39A	—	—	—	—	●	—	—			
				3-wire (NPN)	5V,12V	M9NW	●	●	●	○	○	○	IC circuit			
				3-wire (PNP)		M9PW	●	●	●	○	○	○				
				Water resistant (2-color indication)	2-wire	12V	M9BW	●	●	●	○	○	○	—		
							H7BA	—	—	●	○	○	○			
With diagnostic output (2-color indication)		4-wire (NPN)	5V, 12V	H7NF	●	—	●	○	○	○	IC circuit					
Reed switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5V	—	A96	●	—	●	—	—	—	IC circuit	Relay, PLC
				2-wire	24V	12V	100V	A93	●	—	●	—	—	—	—	
							100V or less	A90	●	—	●	—	—	—	IC circuit	
							100V, 200V	B54	●	—	●	●	—	—	—	
		200V or less					B64	●	—	●	—	—	—			
		—					C73C	●	—	●	●	●	—	IC circuit		
		24V or less					C80C	●	—	●	●	●	—			
		—					A33A	—	—	—	—	●	—		—	
		100V, 200V					A34A	—	—	—	—	●	—			
		Terminal conduit		A44A	—	—	—	—	●	—	Relay, PLC					
				DIN terminal	B59W	●	—	●	—	—		—				
		Diagnostic indication (2-color indication)		Grommet			—	—								

* Lead wire length symbols: 0.5 m Nil (Example) M9NW
1 m M (Example) M9NWM
3 m L (Example) M9NWL
5 m Z (Example) M9NWZ
None N (Example) H7CN

* Solid state auto switches marked with "○" are produced upon receipt of order.
* D-A9□V/M9□V/M9□WV and D-M9□A(V)L cannot be mounted.
* Do not indicate suffix "N" for no lead wire on D-A3□A/A44A/G39A/K39A models.

* Since there are other applicable auto switches than listed above, refer to page 218 for details.

* For details about auto switches with pre-wired connector, refer to pages 1328 and 1329.

* D-A9□/M9□/M9□W auto switches are shipped together (not assembled). (However, auto switch mounting brackets are assembled when being shipped.)

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Specifications

Bore size (mm)		20	25	32	40
Action		Single acting, Spring return/Single acting, Spring extend			
Type		Pneumatic			
Cushion		Rubber bumper			
Fluid		Air			
Proof pressure		1.5 MPa			
Maximum operating pressure		1.0 MPa			
Minimum operating pressure	Single acting, Spring return	0.18 MPa			
	Single acting, Spring extend	0.23 MPa			
Ambient and fluid temperature		Without auto switch: -10 to 70°C (No freezing) With auto switch: -10 to 60°C (No freezing)			
Lubrication		Not required (Non-lube)			
Stroke length tolerance		$+1.4$ 0 mm			
Piston speed		50 to 750 mm/s			
Allowable kinetic energy (J)		0.27	0.4	0.65	1.2

Standard Stroke

Bore size (mm)	Standard stroke (mm) ⁽¹⁾
20	25, 50, 75, 100, 125, 150
25	25, 50, 75, 100, 125, 150
32	25, 50, 75, 100, 125, 150, 200
40	25, 50, 75, 100, 125, 150, 200, 250

Note 1) Other intermediate strokes can be manufactured upon receipt of order.
Manufacture of intermediate strokes at 1 mm intervals is possible.
(Spacers are not used.)

Note 2) Please contact SMC for longer strokes.

Mounting Bracket

For the mounting bracket part numbers other than basic style, refer to page 158.

Theoretical Output

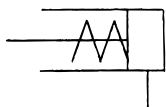
Refer to "Theoretical Output 1" on page 1573.

Spring Reaction Force

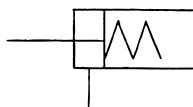
Refer to page 1570 (Table 3: Spring Reaction Force).

JIS Symbol

Single acting,
Spring return



Spring extend



Made to Order Specifications
(For details, refer to pages 1373 to 1498.)

Symbol	Specifications
—XA□	Change of rod end shape
—XB12	External stainless steel cylinder
—XC3	Special port location
—XC6	Piston rod and rod end nut made of stainless steel
—XC13	Auto switch mounting rail style
—XC20	Head cover axial port
—XC25	No fixed orifice of connecting port
—XC27	Double clevis pin and double knuckle pin made of stainless steel
—XC29	Double knuckle joint with spring pin
—XC52	Mounting nut with set screw

Refer to pages 214 to 218 for cylinders with auto switches.

- Minimum stroke for auto switch mounting
- Proper auto switch mounting position (detection at stroke end) and mounting height
- Operating range
- Switch mounting bracket: Part no.

Boss-cut style

Boss for the head side cover bracket is eliminated and the total length of cylinder is shortened.



Comparison of the Full Length Dimension (Versus standard type) (mm)

ø20	ø25	ø32	ø40
▲13	▲13	▲13	▲16

Mounting style

- Boss-cut basic style (BZ)
- Boss-cut flange style (FZ)
- Boss-cut trunnion style (UZ)

CJ1

CJP

CJ2

CM2

CG1

MB

MB1

CA2

CS1

CS2

D-□

-X□

Individual

-X□

Technical
data