# Stroke Reading Cylinder with Brake



Note) CE-compliant: When connecting to a multi-counter (CEU5□□-D, power supply voltage 24 VDC) Refer to the counter operation manual for details.



#### CEP1 How to Order CE1 CE2 CE2 B 40 100 M9BW ML2B Mounting type Number of auto switches Basic type Nil 2 pcs. в Applicable counter/Controller L Foot type s 1 pc. CEU5 series F Rod side flange type "n" pcs. n CEU2 series G Head side flange type Single clevis type Suffix for cylinder С D Double clevis type Nylon tarpaulin .1 Center trunnion type Rod boot т Neoprene cross ĸ Nil With cushion on both ends Bore size • Ν Without cushion Auto switch 40 mm Cushion With rod cushion R Nil Without auto switch (Built-in magnet) 50 50 mm Port thread type н With head cushion 63 63 mm \* For the applicable auto switch model. Nil Rc Nil With connector refer to the table below. 80 80 mm Connector ΤN NPT 7 Without connector 100 100 mm TF G Cylinder stroke (mm)

Refer to"Standard Stroke" on page 686.

Applicable Auto Switches/Befer to pages 941 to 1067 for further information on auto switches

					L and voltage			Auto ouit	Lead wire length (m)					-	-	
-	o	ecial function Electrical entry	r lig	Wiring	Loau voltage		Auto switch model		Leau wire ierigin (in		(m)	Pre-wired	Annelland			
Type	Special function		ndicate	(Output)	DC		AC	nounting	mounting	0.5 (Nil)	(M)	3 (L)	5 (Z)	connector Applica		Die Ioad
								M9N	_	٠	•	٠	0	0		
				3-wire (NPN)	1			_	G59	•	-	•	0	0		
		Crommet		Quuine (DND)		5 V, 12 V		M9P	_	•	•	•	0	0	IC circuit	
		Grommet		3-wire (PINP)	24V		-	_	G5P	•		٠	0	0		
				2 wire		10.1/	1	M9B	_	•	•	٠	0	0		
£				2-wire		12 V		_	K59	•		۲	0	0		
Ę		Terminal		3-wire (NPN)		10.1/		G39C	G39		-	-	-	—	_	
s		conduit		2-wire		12 V		K39C	K39	_	-	—	-	-		( I
욕			se					M9NW	<u> </u>	•		٠	0	0		Delau
a			≻	3-wire (INPIN)		5 V 10 V		_	G59W		-	•	0	0	IC circuit	PLC
d state	Diagnostic indication (2-color indicator)			3-wire (PNP)		5 V, 12 V		M9PW	_	•	•	٠	0	0		1.50
							_	G5PW	•	-	٠	0	0			
.ĕ		Grommet		2-wiro	2-wire 3-wire (NPN)	/ 12 V	_	M9BW		•	•	۲	0	0		
S				2-1116			( 12 V		K59W	•		۲	0	0		
	Water resistant (2-color indicator)			3-wire (NPN)				M9NA*1		0	0	۲	0	0		
· · ·				3-wire (PNP)	0 1, 12 1		M9PA*1	_	0	0	۲	0	0			
				2-wiro		12 V		M9BA*1	_	0	0	۲	0	0		
				2-wile	12 V			G5BA*1	—		۲	0	0			
	With diagnostic output (2-color indicator)			4-wire (NPN)		5 V, 12 V		F59F	G59F	•	-	۲	0	0	IC circuit	
_			'es	3-wire (NPN equivalent)	-	5 V	_	A96**	_	•	•	•	-	-	IC circuit	-
달			~				100 V	A93**	_	•		•	•	-	-	
N.		Grommet	No	1			100 V or less	A90**	_	•	-	٠	-	-	IC circuit	Relay,
2			Yes				100 V, 200 V	A54	B54	•	-	•		-	P	PLC
au			No	2-wire	2414	12 V	200 V or less	A64	B64	•	-	•	-	-		
B		Terminal			24V		_	A33C	A33	-	-	-	-	-	] - [	PLC
å		conduit	SS					A34C	A34	-	-	—	-	-		Polov
		DIN terminal	⊁				100 V, 200 V	A44C	A44	_	-	_	-	_	-	PLC
	Diagnostic indication (2-color indicator)	Grommet			P	-	-	A59W	B59W		-	٠	-	_		1 20

\*1 Water resistant type auto switches can be mounted on the above models, but in such case SMC cannot guarantee water resistance. Consult with SMC regarding water resistant types with the above model numbers.

\* Lead wire length symbols: 0.5 m ..... Nil

1 m

(Example) M9NW (Example) M9NWM М

(Example) M9NWL 3 m ..... L

5 m-.....7 (Example) M9NWZ

\* Since there are other applicable auto switches than listed, refer to page 697 for details.
\* For details about auto switches with pre-wired connector, refer to pages 1014 and 1015.

\* D-A90/M90/M90/M90A(V) auto switches are shipped together (not assembled). (Only auto switch mounting brackets are assembled before shipped.) SMC

D-Z80 is recommended.

\* Solid state auto switches marked with "⊖" are produced upon receipt of order. \*\* Since D-A9□ and D-A9□V cannot be mounted on ø50, use of D-Z7□ or

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# CE2 Series





## Model

Series	Type Action		Bore size (mm)	Lock action		
CE2	Non-lube	Double acting	40, 50, 63 80, 100	Spring and pneumatic lock		

# **Rod Boot Material**

Symbol	Rod boot material	Maximum ambient temperatur				
J	Nylon tarpaulin	60°C				
к	Neoprene cross	110°C*				

\* Maximum ambient temperature for the rod boot itself.

Refer to pages 692 to 697 for cylinders with auto switches.

 Auto switch proper mounting position (detection at stroke end) and its mounting height

- Operating range
- · Minimum stroke for auto switch mounting

Auto switch mounting brackets/Part no.

# Cylinder Specifications

Bore size (mm)		ø <b>40</b>	ø <b>50</b>	ø <b>63</b>	ø <b>80</b>	ø100				
Fluid		Air (Non-lube)								
	Drive	1.5 MPa								
Proof pressure	Brake	0.75 MPa								
Maximum	Drive			1 MPa						
operating pressure	Brake			0.5 MPa						
Minimum			0.1 MPa							
operating pressure	Brake			0.3 MPa						
Piston speed		50 to 500 mm/s*								
Ambient temperatu	ire	00 to 60°C (No freezing)								
Brake system		Spring and pneumatic lock type								
Sensor cord length	ø7-500 mm Oil-resistant									
Stroke length tolera	ance	Up to 250 mm: +1.0, 251 mm to 1000 mm +1.4								
Be aware of the constraints in the allowable kinetic energy.										

#### Sensor Specifications

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Cable	ø7, 6 core twisted pair shielded wire (Oil, Heat and Flame resistant cable)				
Maximum transmission distance	20.5 m (when using SMC cable while using controller or counter)				
Position detection method	Magnetic scale rod/Sensor head <incremental type=""></incremental>				
Magnetic field resistance	14.5 mT				
Power supply	10.8 to 26.4 VDC (Power supply ripple: 1% or less)				
Current consumption	50 mA				
Resolution	0.1 mm/pulse				
Accuracy	±0.2 mm Note)				
Output type	Open collector (Max. 35 VDC, 80 mA) Note)				
Output signal	A/B phase difference output				
Insulation resistance	50 M $\Omega$ or more (500 VDC measured via megohmmeter) (between case and 12E)				
Vibration resistance	33.3 Hz, 6.8 G 2 hrs. each in X, Y directions 4 hrs. in Z direction based upon JIS D 1601				
Impact resistance	30 G, 3 times at X, Y, Z				
Enclosure	IP65 (IEC standard) Except connector part				
Extension cable (Option)	5 m, 10 m, 15 m, 20 m				

Note) Digital error under Controller (CEU2), Counter (CEU5) is included. Besides, the whole accuracy after mounting on an equipment may be varied depending on the mounting condition and surroundings. As an equipment, calibration should be done by customer.

#### Standard Stroke

Poro cizo (mm)	Standard s	troke (mm)	Range of manufa	cturable stroke*	
Dore Size (mm)	Without rod boot	With rod boot	Without rod boot	With rod boot	
40	25 to 850	25 to 700	Up to 1200	Up to 950	
50	25 to 800	25 to 650	Up to 1150	Up to 900	
63	25 to 800	25 to 650	Up to 1150	Up to 900	
80	25 to 750	25 to 600	Up to 1100	Up to 900	
100	25 to 750	25 to 600	Up to 1100	Up to 850	

(1.00)

\* Strokes longer than the standard stroke are made-to-order products.

# Weight

meigin							(Kg)
Bore si	ze (mm)		40	50	63	80	100
Basic weight	Basic typ	e	2.18	3.39	5.29	8.66	12.09
	Foot type		2.37	3.61	5.63	9.33	13.08
	Flange type		2.55	3.84	6.08	10.11	14.01
	Single clevis type		2.41	3.73	5.92	9.77	13.87
	Double clevis type		2.45	3.82	6.08	10.06	14.39
	Trunnion type		3.63	3.92	6.18	10.36	14.49
Additional weight per each 50 mm of stroke	Aluminum tube	Mounting bracket	0.22	0.28	0.37	0.52	0.65
	Single knuckle		0.23	0.26	0.26	0.60	0.83
Accessory bracket	Double k	nuckle	0.32	0.38	0.38	0.73	1.08
	Knuckle	oin	0.05	0.05	0.05	0.14	0.19

## Calculation example: CE2L40-100

Basic weight······2.37 (Foot type, ø40)

- Additional weight .....0.22/50 stroke
- Cylinder stroke 100 stroke
- 2.37 + 0.22 x 100/50 = 2.81 kg

### Accessories

Mounting		Basic	Axial foot	Rod flange	Head flange	Single clevis	Double clevis	Center trunnion
Chandard	Rod end nut	•	•	•	•	•	•	•
Standard	Clevis pin	_	_	_	—	—	•	
	Single knuckle joint	•	•	•	•	•	•	•
Option	Double knuckle joint (with pin)	•	•	•	•	•	•	•
	With rod boot		۲	•	• 🖌			•

\* Refer to page 690 for dimensions and part numbers of the option. Refer to page 688 for dimensions of the rod boot.

