

Clamp Cylinder with Magnetic Field Resistant Auto Switch (Rod Mounting Style)

Series **CKG1/CKP1** $\varnothing 40, \varnothing 50, \varnothing 63$

How to Order

Built-in standard magnet type with magnetic field resistant auto switch

Built-in strong magnet type with magnetic field resistant auto switch

CKG1 A 50 100 Y [] P4DWSC []

CKP1 A 50 100 Y [] P79WSE []

Bore size		Clevis width		Cylinder stroke (mm)		Number of auto switches	
40	40 mm	A	16.5 mm	40	50, 75, 100, 125, 150	Nil	2 pcs.
50	50 mm	B	19.5 mm	50	50, 75, 100, 125, 150	S	1 pc.
63	63 mm			63	50, 75, 100, 125, 150	n	"n" pcs.

End bracket	
Nil	None
I	Single knuckle joint (M6 without tap)
IA	Single knuckle joint (M6 with tap)
Y	Double knuckle joint (M6 without tap)
YA	Double knuckle joint (M6 with tap)

Note 1) IA and YA are equivalent to the conventional models.
 Note 2) Knuckle pin, cotter pin and flat washer are provided as a standard for Y and YA.

Option	
Nil	None
B	Limit switch mounting base
D	Dog fitting
L	Foot
K	Pedestal (for 75, 100, 150 strokes only)

Note 1) Clevis width B (19.5 mm) is not available with mounting base K.
 Note 2) When the dog bracket is selected, choose the rod end bracket IA or YA (M6 with tap).

Auto switch	
Nil	Without auto switch Without switch mounting rod
P	Without auto switch With switch mounting rod

* Select applicable auto switch models from the table below.

Built-in Standard (Strong) Magnet Cylinder Part No.

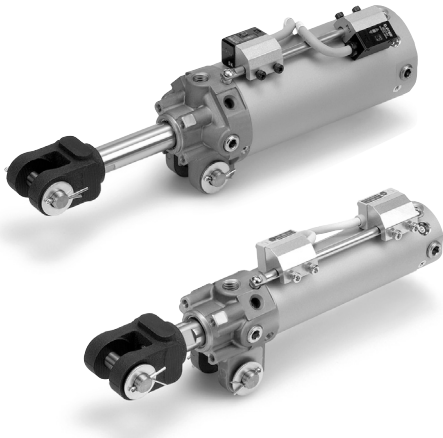
- 1) Built-in standard (strong) magnet type without auto switch and switch mounting rod
 Symbol for the auto switch type is "Nil" as shown below.
 CKG1: (Example) CKG1A50-50Y
 CKP1: (Example) CKP1A50-50Y
- 2) Built-in standard (strong) magnet type without auto switch, with switch mounting rod
 Symbol for the auto switch type is "P" as shown below.
 CKG1: (Example) CKG1A50-50Y-P
 CKP1: (Example) CKP1A50-50Y-P

Applicable Magnetic Field Resistant Auto Switches

Applicable cylinder series	Type	Auto switch model	Applicable magnetic field	Electrical entry	Indicator light	Wiring (Pin no in use)	Load voltage	Lead wire length	Applicable load
CKG1 series	Solid state switch	D-P4DWSC	AC magnetic field (Single-phase AC welding magnetic field)	Pre-wired connector	2-color display	2-wire (3-4)	24 VDC	0.3 m	Relay, PLC
		D-P4DWSE				2-wire (1-4)			
		D-P4DWL		Grommet		2-wire		3 m	
		D-P4DWZ							
CKP1 series	Reed switch	D-P79WSE	DC / AC magnetic field	Pre-wired connector	2-color display	2-wire (1-4)	24 VDC	0.3 m	
		D-P74L		Grommet (Pre-wired connector) ^{Note 3)}	1-color display	2-wire	24 VDC 100 VAC	3 m	
		D-P74Z						5 m	

Note 1) PLC: Programmable Logic Controller
 Note 2) Refer to page 12 when ordering the auto switch mounting bracket assembly or switch mounting rod assembly.
 Note 3) Refer to page 23 for pre-wired connector products.

Series CK□1



Specifications

Clevis width	16.5 mm	CKG1A/CKP1A series
	19.5 mm	CKG1B/CKP1B series

Fluid	Air
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Ambient and fluid temperature	-10C to +60C
Piston speed	50 to 500 mm/s
Cushion ^{Note 1)}	Unclamped side (head end): With air cushion
Speed controller	Equipped on both ends
Lubrication	Non-lube
Thread tolerance	JIS Class 2
Stroke length tolerance	+1.0 0
Mounting ^{Note 2)}	Double clevis

Note 1) With cushion on both ends are available as Made to Order.
For details, refer to page 18, Made to Order 5.

Ordering example **CKG1A50-100Y-P4DWSC -X1515**

↑ With cushion on both ends

Note 2) Clevis pin, Cotter pin, Flat washer are equipped as a standard.

Standard Stroke

Bore size (mm)	Standard stroke (mm)
40, 50, 63	50, 75, 100, 125, 150

End Bracket / Options

Symbol	Description	Parts no.		
		CKG1A/CKP1A series	CKG1B/CKP1B series	
I	Single knuckle joint	M6 without tap	CKB-I04	
IA		M6 with tap	CKB-IA04	
Y	Double knuckle joint (Knuckle pin, Cotter pin, Flat washer are equipped as a standard.)	M6 without tap	CKA-Y04	
YA		M6 with tap	CKA-YA04	
B	Limit switch mounting base	CK-B04		
D	Dog fitting	CK-D04		
L	Foot	CK-L04		
K	Pedestal	For 75 stroke	CKA-K075	—
		For 100 stroke	CKA-K100	—
		For 150 stroke	CKA-K150	—

Theoretical Output

Unit: N

Bore size (mm)	Rod size (mm)	Operating direction	Piston area (mm ²)	Operating pressure (MPa)			
				0.3	0.4	0.5	0.6
40	20	OUT	1260	378	504	630	756
		IN	943	283	377	472	566
50	20	OUT	1960	588	784	980	1180
		IN	1650	495	660	825	990
63	20	OUT	3120	934	1250	1560	1870
		IN	2800	840	1120	1400	1680

Weight (Basic weight includes the switch mounting rod. At 0 stroke)

Unit: kg

	Bore size (mm)	40	50	63
	CKG1□ cylinder	Basic weight	0.75	0.97
	Additional weight per 25 mm stroke	0.11	0.12	0.14
CKP1□ cylinder	Basic weight	0.77	1.03	1.34
	Additional weight per 25 mm stroke	0.11	0.12	0.14
Single knuckle joint		0.20		
Double knuckle joint (Knuckle pin, Cotter pin, Flat washer are equipped as a standard.)		0.34		
Limit switch mounting base		0.22		
Dog fitting		0.12		
Foot		0.24		
Pedestal		2.2		

Calculation

Example) **CKG1□50-100Y-P**

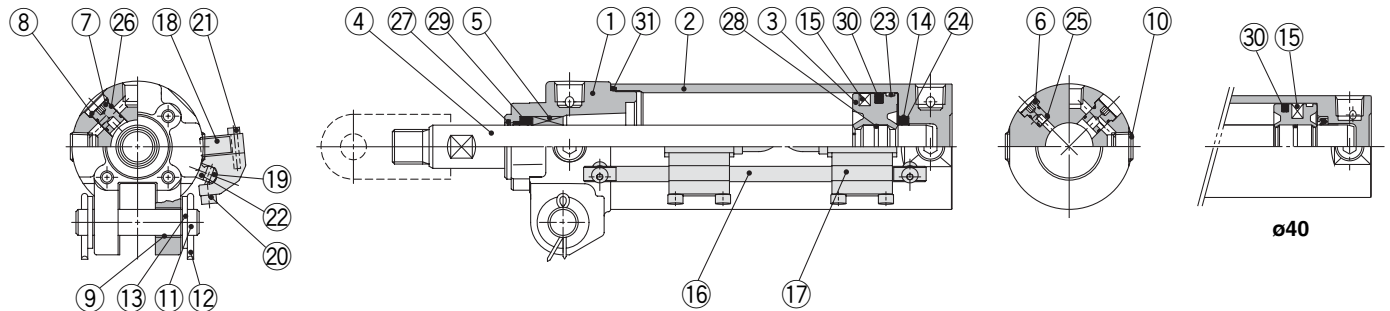
- Basic weight 0.97 (ø50)
- Additional weight ... 0.12/25 mm
- Cylinder stroke 100 mm

- Double knuckle joint...0.34 (Y)

$$0.97 + 0.12 \times 100/25 + 0.34 = 1.79 \text{ kg}$$

Construction

CKG1□40, 50, 63 Built-in standard magnet type / With magnetic field resistant auto switch

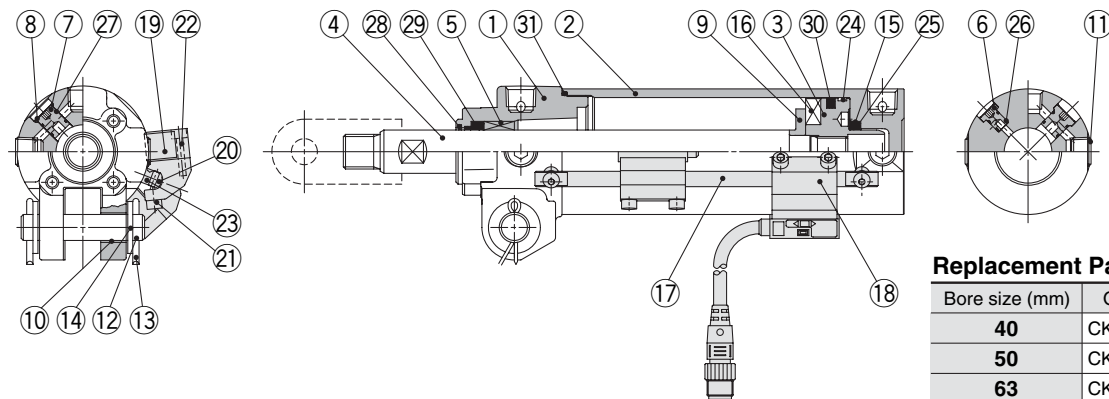


Component Parts

No.	Description	Material	Qty	Note
1	Rod cover	Aluminum alloy	1	Chromated
2	Tube cover	Aluminum alloy	1	Hard anodized
3	Piston	Aluminum alloy	1	Chromated
4	Piston rod	Carbon steel	1	Hard chrome plated
5	Bushing	Copper alloy	1	
6	Cushion valve	Aluminum alloy	1	
7	Speed controller valve	Aluminum alloy	2	
8	Snap ring	Spring steel	3	
9	Clevis bushing	Oil-impregnated sintered alloy	2	
10	Hexagon socket head plug	Carbon steel	4	Rc 1/4
11	Pin	Carbon steel	1	
12	Cotter pin	Low carbon steel wire rod	2	
13	Flat washer	Rolled steel	2	
14	Cushion seal retainer	Rolled steel	1	Zinc chromated
15	Magnet	Magnetic material	1	
16	Switch mounting rod	Carbon steel	1	Zinc chromated
17	Switch mounting bracket	Aluminum alloy	—	

No.	Description	Material	Qty	Note
18	Magnetic field resistant auto switch	—	—	
19	Hexagon socket head button screw	Steel wire	2	M4 x 0.7 x 12 L
20	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
21	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M3 x 0.5 x 14 L
22	Switch mounting spacer	Aluminum alloy	2	
23	Wear ring	Resin	1	
24	Cushion seal	Urethane	1	
25	Cushion valve seal	NBR	2	
26	Speed controller valve seal	NBR	4	
27	Coil scraper	Phosphor bronze	1	
28	Piston gasket	NBR	1	
29	Rod seal	NBR	1	
30	Piston seal	NBR	1	
31	Tube gasket	NBR	1	

CKP1□40, 50, 63 Built-in strong magnet type / With magnetic field resistant auto switch



Component Parts

No.	Description	Material	Qty	Note
1	Rod cover	Aluminum alloy	1	Chromated
2	Tube cover	Aluminum alloy	1	Hard anodized
3	Piston	Aluminum alloy	1	Chromated
4	Piston rod	Carbon steel	1	Hard chrome plated
5	Bushing	Copper alloy	1	
6	Cushion valve	Aluminum alloy	1	
7	Speed controller valve	Aluminum alloy	2	
8	Snap ring	Spring steel	3	
9	Magnet holder	Aluminum alloy	1	Chromated
10	Clevis bushing	Oil-impregnated sintered alloy	2	
11	Hexagon socket head plug	Carbon steel	4	Rc 1/4
12	Pin	Carbon steel	1	
13	Cotter pin	Low carbon steel wire rod	2	
14	Flat washer	Rolled steel	2	
15	Cushion seal retainer	Rolled steel	1	Zinc chromated
16	Magnet	Magnetic material	1	
17	Switch mounting rod	Carbon steel	1	Zinc chromated

Replacement Parts: Seal Kit

Bore size (mm)	Order no.	Contents
40	CK1A40-PS	Set of nos. above 29, 30, 31.
50	CK1A50-PS	
63	CK1A63-PS	

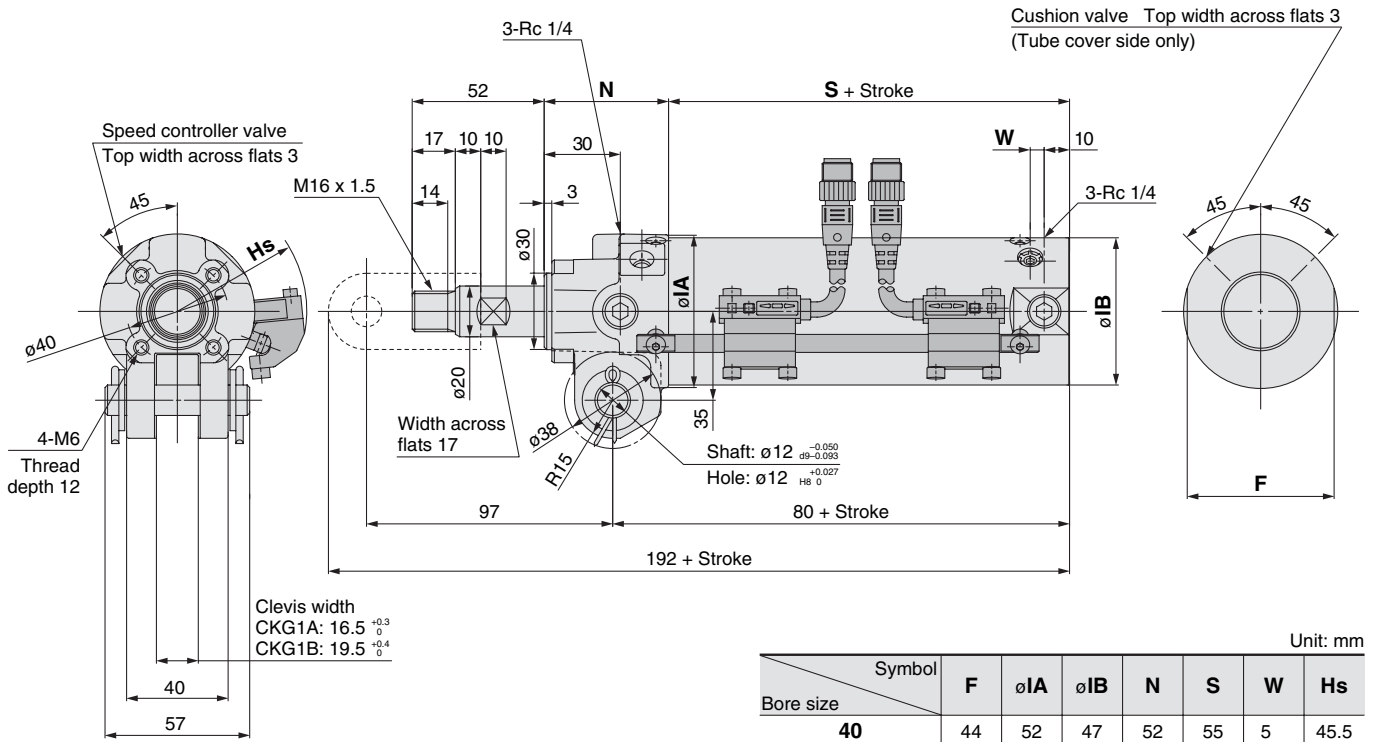
Note) Seal kits are the same as the CKG1□/CKP1□.

No.	Description	Material	Qty	Note
18	Switch mounting bracket	Aluminum alloy	—	
19	Magnetic field resistant auto switch	—	—	
20	Hexagon socket head button screw	Steel wire	2	M4 x 0.7 x 12 L
21	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M4 x 0.7 x 8 L
22	Hexagon socket head cap screw	Steel wire	2 pcs. per switch	M3 x 0.5 x 16 L
23	Switch mounting spacer	Aluminum alloy	2	
24	Wear ring	Resin	1	
25	Cushion seal	Urethane	1	
26	Cushion valve seal	NBR	2	
27	Speed controller valve seal	NBR	4	
28	Coil scraper	Phosphor bronze	1	
29	Rod seal	NBR	1	
30	Piston seal	NBR	1	
31	Tube gasket	NBR	1	

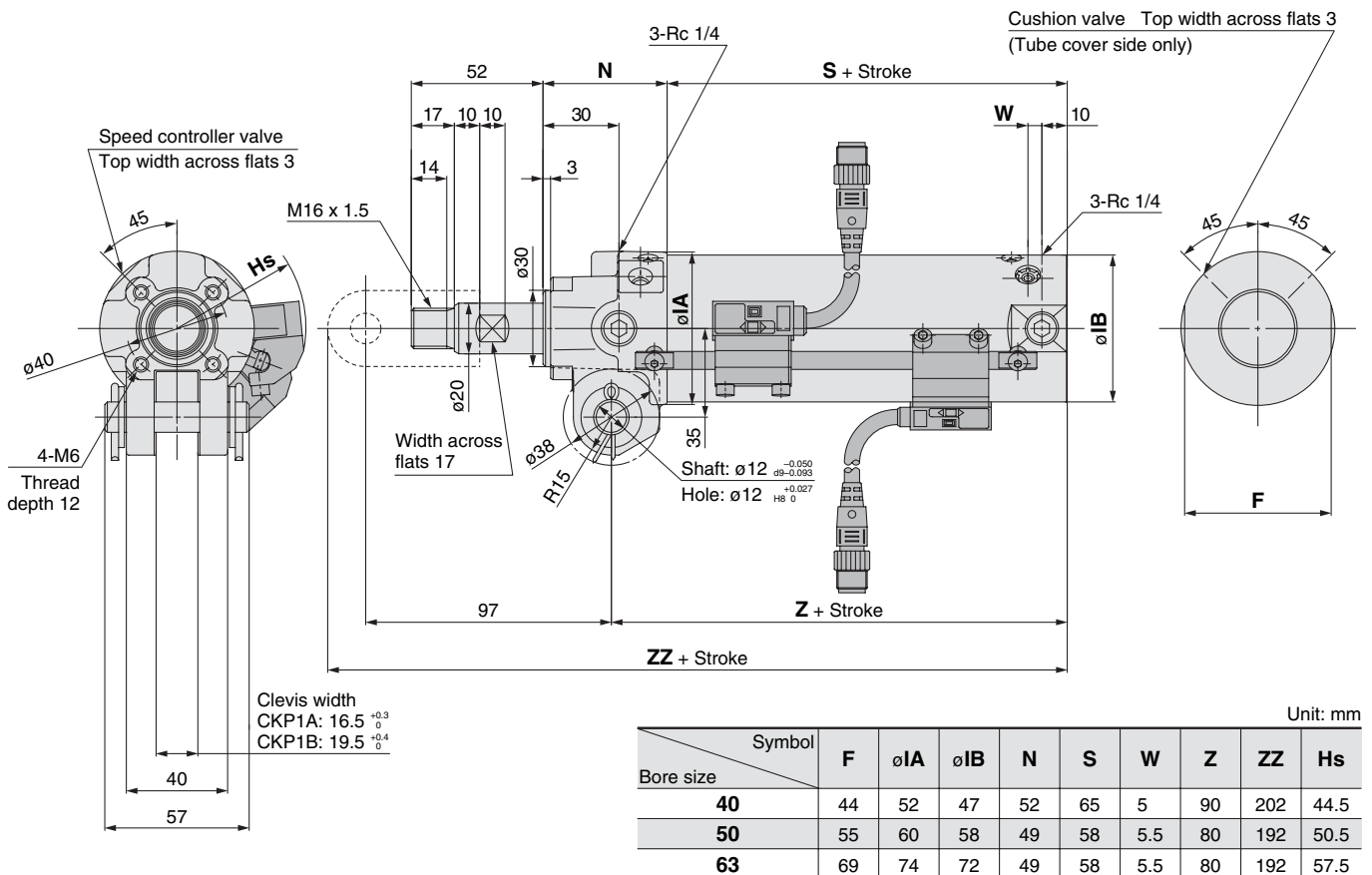
Series CK□1

Dimensions

CKG1□40, 50, 63 Built-in standard magnet type / With magnetic field resistant auto switch (D-P4DWS□ type)

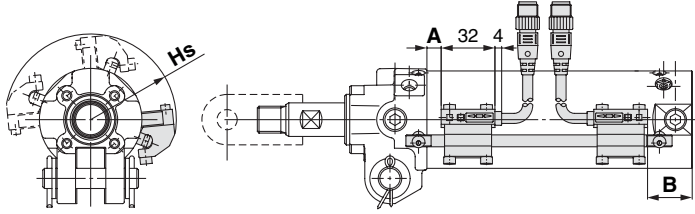


CKP1□40, 50, 63 Built-in strong magnet type / With magnetic field resistant auto switch (D-P79WSE type)



Auto Switch Proper Mounting Position and Its Mounting Height for Stroke End Detection

Rod mounting D-P4DW□□ type



Note) The above drawing is the mounting example for the D-P4DWS□ type.

Auto Switch Mounting Position and Its Height: Rod Mounting Style

Unit: mm

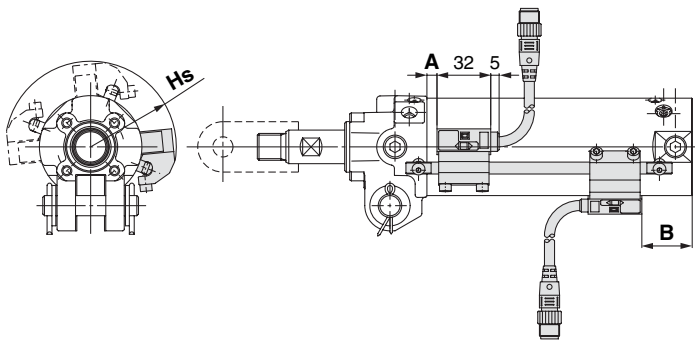
Auto switch model	Symbol	Auto switch set value and its height		
		40	50	63
D-P4DW□□	A	8	4.5	4.5
	B	21	27.5	27.5
	Hs	45.5	51	58.5
D-P79WSE D-P74□	A	5.5	0	0
	B	27.5	26	26
	Hs	44.5	50.5	57.5

Note 1) The mounting position should be referred for reference only for the auto switch mounting position at the stroke end detection. Adjust the auto switch after confirming the operation to set actually.

Note 2) A/B dimensions are the distance from the standard position (above drawing) to the end surface of the auto switch.

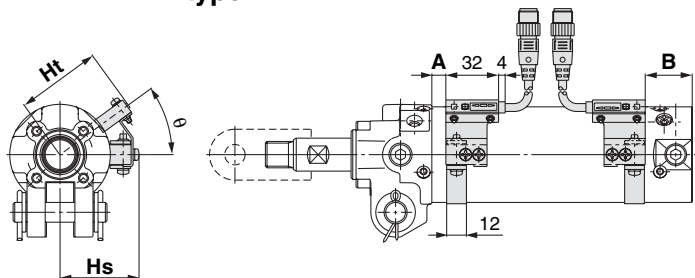
Note 3) The auto switch mounting position is temporarily set at the time of shipping from our factory. Change it to the desired position in accordance to your facility.

D-P7□□□□ type



Note) The above drawing is the mounting example for the D-P79WSE type.

Band mounting D-P4DW□□ type



Note) The above drawing is the switch band mounting example for the D-P4DWS□ type.

Auto Switch Mounting Position and Its Height: Band Mounting Style / D-P4DW□□ Type

Unit: mm

Auto switch model	Symbol	Auto switch set value and its height		
		ø40	ø50	ø63
D-P4DW□□	A	8	4.5	4.5
	B	21	27.5	27.5
	Hs	43	48	55
	Ht	46	51.5	58.5
	θ	45	36	33

Note 1) The mounting position should be referred for reference only for the auto switch mounting position at the stroke end detection. Adjust the auto switch after confirming the operation to set actually.

Note 2) A/B dimensions are the distance from the standard position (above drawing) to the end surface of the auto switch.

Note 3) As for D-P4DW□□ type, band mounting style, the switch mounting bracket and the auto switch have to be ordered separately. For details, refer to page 5.

Minimum Stroke for Auto Switch Mounting

Unit: mm

Auto switch model	1 pc.	2 pcs.
D-P4DW□□	50	50
D-P79WSE		
D-P74□		

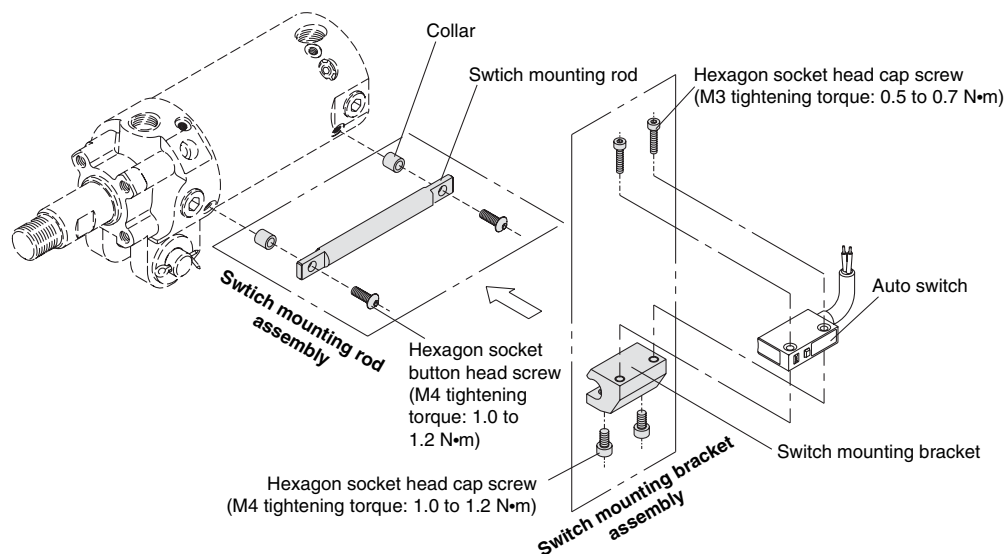
Operation Range

Unit: mm

Auto switch model		Bore size		
		40	50	63
D-P4DW□□	Rod mounting	4	4	4.5
	Band mounting	5	5	5.5
D-P79WSE	Rod mounting	8	9	9.5
D-P74□				

Auto Switch Mounting Bracket / Part No.

Switch mounting rod assembly / Switch mounting bracket assembly



Switch Mounting Rod Assembly / Part No.

Applicable series	Applicable clamp cylinder	Part no.
Dedicated to CKP1□40 series	CKP1□40-50	CKP40-R050
	CKP1□40-75	CKP40-R075
	CKP1□40-100	CKP40-R100
	CKP1□40-125	CKP40-R125
	CKP1□40-150	CKP40-R150
CKG1□40/50/63 series	CKG1□40-50 CKG1□50-50/CKP1□50-50 CKG1□63-50/CKP1□63-50	CKG40-R050
	CKG1□40-75 CKG1□50-75/CKP1□50-75 CKG1□63-75/CKP1□63-75	CKG40-R075
	CKG1□40-100 CKG1□50-100/CKP1□50-100 CKG1□63-100/CKP1□63-100	CKG40-R100
Common	CKG1□40-125 CKG1□50-125/CKP1□50-125 CKG1□63-125/CKP1□63-125	CKG40-R125
	CKG1□40-150 CKG1□50-150/CKP1□50-150 CKG1□63-150/CKP1□63-150	CKG40-R150

Switch Mounting Bracket Assembly / Part No.

Applicable cylinder series	Applicable auto switch	Mounting bracket part no.		
		40	50	63
CKG1 series	D-P4DWSC D-P4DWSE D-P4DWL/Z	BK1T-040		
CKP1 series	D-P79WSE D-P74L/Z	BAP1T-040		

Magnetic Field Resistant 2-color Indication Reed Switch

D-P79WSE



For details about certified products conforming to international standards, visit us at www.smcworld.com

Grommet



Auto Switch Specifications

Auto switch model	D-P79WSE
Load voltage	24 VDC
Load current range	8 to 20 mA
Contact protection circuit	Yes
Internal voltage drop	6 V or less
Operating time	1.2 ms
Indicator light	Operating position.....Red LED illuminates when turned ON. Optimum operating position.....Green LED illuminates when turned ON.

- Lead wire — Oilproof, fire resistant heavy-duty vinyl cord $\phi 6$ 0.75 mm² 2-core (300 mm)
- Impact resistance — 300 m/s²
- Insulation resistance — 50 M 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 — IEC standard IP67 waterproof (JIS C0920), oilproof construction

Caution

Precautions

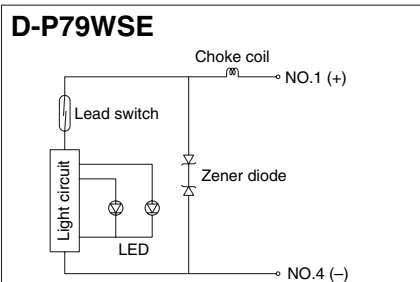
Cylinder with a strong integrated magnet must be used.

Dimensions

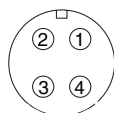
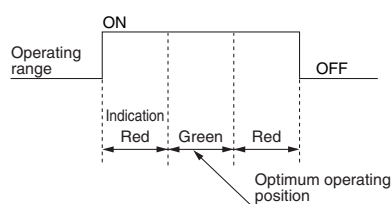
Unit: mm

D-P79WSE

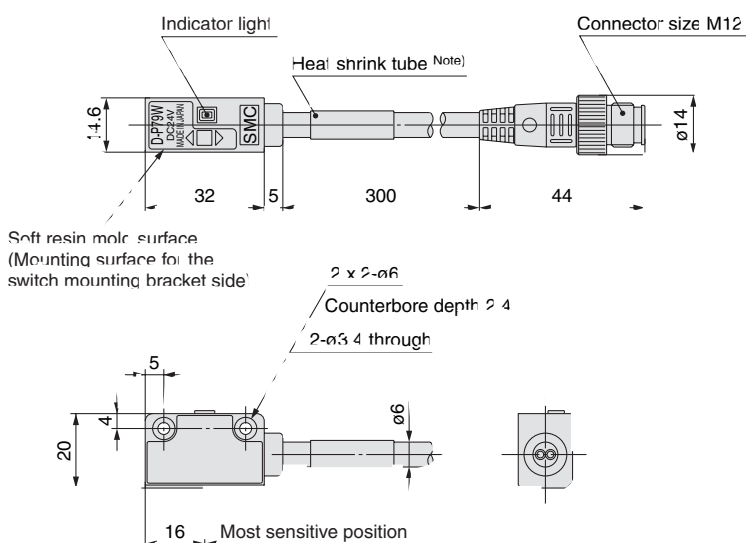
Auto Switch Internal Circuit



Indicator light/Display method



Connector pin



Note) D-P79WSE - "SE 4"

Caution

Please be careful of the mounting direction.
The soft resin mold surface must be directed to the switch mounting bracket side.

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



For details about certified products conforming to international standards, visit us at www.smcworld.com

Grommet



Auto Switch Specifications

D-P74□ (With indicator light)		
Auto switch model	D-P74L	D-P74Z
Electrical entry	Grommet	
Application	Relay, PLC	
Load voltage	24 VDC	100 VDC
Max. load voltage/Load current range	5 to 40 mA	5 to 20 mA
Contact protection circuit	Yes	
Internal voltage drop (internal resistance)	2.4 V or less	
Leakage current	0	
Operating time	1.2 ms	
Indicator light	Red LED illuminates when turned ON.	

Caution

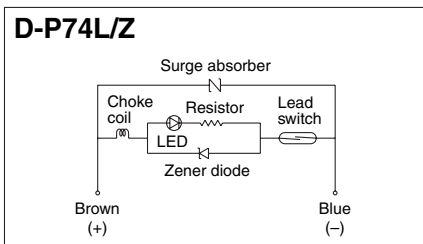
Precautions

Cylinder with a strong integrated magnet must be used.

- Lead wire — Oilproof fire resistant heavy-duty vinyl core $\phi 6.8$ 0.75 mm² 2 cores (Brown, Blue), D-P74L: 3 m, D-P74Z: 5 m
 - Impact resistance — 300 m/s²
 - Insulation resistance — 50 M 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 60C
 - Enclosure — IEC standard IP67 waterproof (JIS C0920), oilproof construction
- * Indicate "L" for 3 m lead wire and "Z" for 5 m lead wire at the end of an auto switch part number.

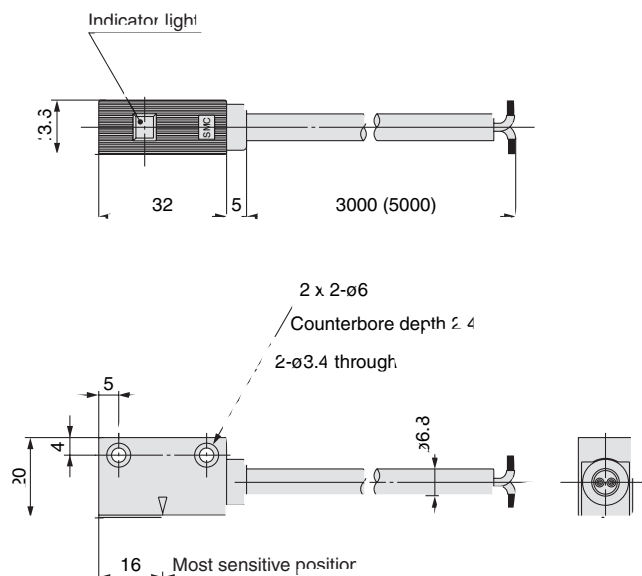
Auto Switch Internal Circuit

D-P74L/Z



Dimensions

Unit: mm



Note: () denotes the value of D-P74Z.