

Series 10-/11- 21-/22-CA2

ø40, ø50, ø63 Air Cylinder

RoHS

How to Order

● **Clean series**

10	Relief type
11	Vacuum suction type

● **Mounting**

B	Basic
L	Axial foot
F	Rod flange
G	Head flange

● **Bore size (mm)**

● **Port thread type**

Nil	Rc
TN	NPT
TF	G

● **Built-in magnet**

Nil	No
D	With auto switch (Built-in magnet)

● **Copper, fluorine and silicone-free + Low particle generation**

21	Relief type
22	Vacuum suction type

● **Auto switch**

Reed switch	Z7□, A54/A59W
Solid state	J51/F5□, Y5□/Y7□

* The minimum stroke for auto switch mounting, operating range and auto switch mounting brackets/part no. are the same as standard products.

● **Number of auto switches**

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

● **Cylinder stroke (mm)**

10 - C D A 2 B 40 - 150 - Y59B

21 - C D A 2 B 40 - 150 - Y59B



Model

Model		Bore size (mm)	Port size	Lubrication	Action	Standard stroke (mm)	Auto switch mounting	Cushion
Relief type	10-/21-CA2□40	40	1/4	Non-lube	Double acting, single rod	50, 75, 100, 125,	Available	Air cushion
	10-/21-CA2□50	50	3/8					
	10-/21-CA2□63	63						
Vacuum suction type	11-/22-CA2□40	40	1/4			150, 200, 250, 300, 350, 400, 450, 500		
	11-/22-CA2□50	50	3/8					
	11-/22-CA2□63	63						

Note) Please consult with SMC for long strokes including packaging method (normal packaging according to the stroke).

Specifications

Bore size (mm)	
Item	40/50/63
Proof pressure	1.5 MPa
Maximum operating pressure	1.0 MPa
Minimum operating pressure	0.05 MPa
Ambient and fluid temperature	Without auto switch: -10°C to 70°C With auto switch: -10°C to 60°C (No freezing)
Piston speed	50 to 400 mm/s
Stroke length tolerance	Up to 250 ^{+1.0} ₋₀ mm, 251 to 1000 ^{+1.4} ₋₁ mm
Mounting	Basic/Axial foot/Rod flange/Head flange
Grease	10-/11-: Fluorine grease 21-/22-: Lithium soap based grease
Cleanliness class (ISO class)	10-: Class 4, 21-: Class 5
	11-/22-: Class 3

Suction Flow Rate of Vacuum Suction Type (Reference values)

Bore size	Suction flow rate L/min (ANR)
40	10
50/63	20

Directional Control Valves

Air Cylinders

Rotary Actuators

Air Grippers

Air Preparation Equipment

Modular F. R.

Pressure Control Equipment

Fittings & Tubing

Flow Control Equipment

Pressure Switches/Pressure Sensors



Applicable Auto Switch (Refer to the **WEB catalog** 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-wire connector	Applicable load	
					DC	AC		Tie-rod mounting	0.5 (Nil)	3 (L)	5 (Z)		
Reed auto switch	—	Grommet	Yes	3-wire (NPN equivalent)	—	5 V	—	Z76	●	●	—	—	IC circuit
				2-wire	24 V	12 V	100 V	Z73	●	●	●	—	—
Solid state auto switch	Diagnostic indication (2-color indication)	Grommet	Yes	3-wire (NPN)	24 V	5 V, 12 V	—	A59W	●	●	—	—	—
				3-wire (PNP)	24 V	5 V, 12 V	—	Y59A	●	●	○	○	IC circuit
				2-wire	—	—	100 V, 200 V	Y7P	●	●	○	○	—
				3-wire (NPN)	24 V	5 V, 12 V	—	J51	●	●	○	○	—
				3-wire (PNP)	24 V	5 V, 12 V	—	Y59B	●	●	○	○	—
				2-wire	—	—	100 V, 200 V	Y7NW	●	●	○	○	IC circuit
				3-wire (NPN)	24 V	5 V, 12 V	—	Y7PW	●	●	○	○	—
				3-wire (PNP)	24 V	5 V, 12 V	—	Y7BW	●	●	○	○	—
				2-wire	—	—	100 V, 200 V	Y7BA	●	●	○	○	—
				4-wire (NPN)	—	—	100 V, 200 V	F59F	—	●	○	○	IC circuit

* Lead wire length symbols: 0.5 m.....Nil (Example) A54
 3 m.....L (Example) A54L
 5 m.....Z (Example) A54Z

* Solid state switches marked with "○" are produced upon receipt of order.

Refer to page 889 for the applicable auto switch list.

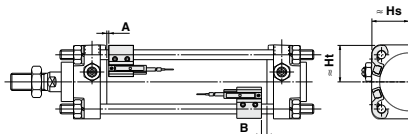
Proper Auto Switch Mounting Position (Detection at Stroke End) and Its Mounting Height

D-Z7□

D-Y59□/Y69□/Y7P/Y7PV

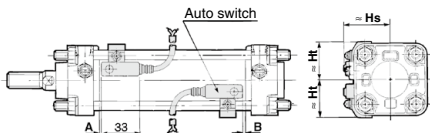
D-Y7□W/Y7□WV

D-Y7BAL

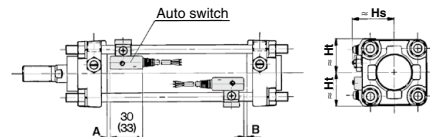


D-A5□

D-A59W



D-F5□/J5□



Values inside () are for D-F5LF.

Proper Auto Switch Mounting Position (mm)

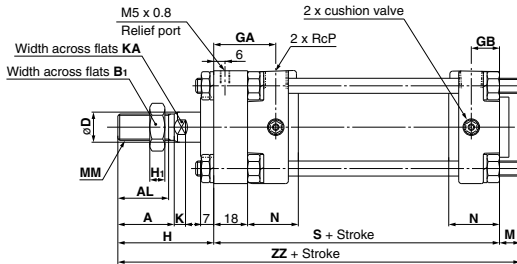
Auto switch model	D-Z7□ D-Y59□ D-Y7P D-Y7□W D-Y7BAL		D-A54		D-A59W		D-J51 D-F59F	
Bore size (mm)	A	B	A	B	A	B	A	B
40	3.5	1.5	0	0	4	2	7	4
50	3.5	1.5	0	0	4	2	6.5	4.5
63	6	5	2.5	1.5	6.5	5.5	12.5	8

(Note) The above values should be used as a guide for detection at stroke end. When actually mounting the auto switch, adjust the position after confirming the operating conditions of the auto switch.

Auto Switch Mounting Height (mm)

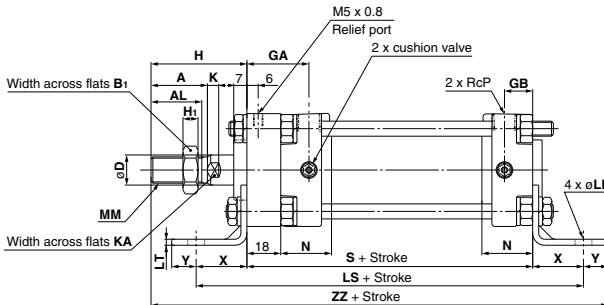
Auto switch model	D-Z7□ D-Y59□ D-Y7P D-Y7BAL D-Y7□W		D-A54 D-A59W		D-J51 D-F59F	
Bore size (mm)	Hs	Ht	Hs	Ht	Hs	Ht
40	30	30	38.5	31.5	38	31.5
50	34	34	42	35.5	42	35.5
63	41	41	46.5	43	47	43

Basic (B): 10-11-CA2B, 21-22-CA2B



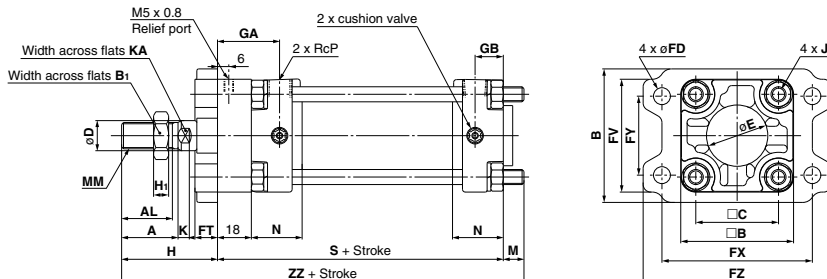
Symbol	Stroke range	A	AL	B	B ₁	C	D	E	GA	GB	H	H ₁	J	K	KA	M	MM	N	P	S	ZZ
40	Up to 1000	30	27	60	22	44	16	32	33	15	51	8	M8 x 1.25	6	14	11	M14 x 1.5	27	1/4	102	164
50	Up to 1000	35	32	70	27	52	20	40	35	17	58	11	M8 x 1.25	7	18	11	M18 x 1.5	30	3/8	108	177
63	Up to 1000	35	32	85	27	64	20	40	35	17	58	11	M10 x 1.25	7	18	14	M18 x 1.5	31	3/8	116	188

Axial Foot (L): 10-11-CA2L, 21-22-CA2L



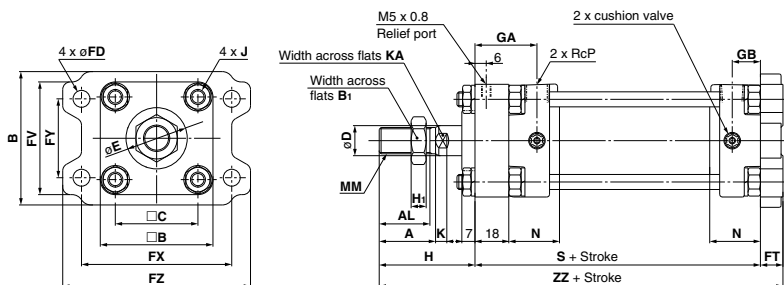
Symbol	Stroke range	A	AL	B	B ₁	C	D	E	GA	GB	H	H ₁	J	K	KA	LD	LH	LS	LT	LX	LY	MM	N	P	S	X	Y	ZZ
40	Up to 1000	30	27	60	22	44	16	32	33	15	51	8	M8 x 1.25	6	14	9	40	156	3.2	42	70	M14 x 1.5	27	1/4	102	27	13	193
50	Up to 1000	35	32	70	27	52	20	40	35	17	58	11	M8 x 1.25	7	18	9	45	162	3.2	50	80	M18 x 1.5	30	3/8	108	27	13	206
63	Up to 1000	35	32	85	27	64	20	40	35	17	58	11	M10 x 1.25	7	18	11.5	50	184	3.2	59	93	M18 x 1.5	31	3/8	116	34	16	224

Rod Flange (F): 10-11-CA2F, 21-22-CA2F



		(mm)																											
Symbol	Stroke range	A	AL	B	$\square B$	$\square B_1$	C	D	E	FV	FD	FT	FX	FY	FZ	GAGB	H	H ₁	J	K	KA	M	MM	N	P	S	ZZ		
Bore size																													
40	Up to 1000	30	27	71	60	22	44	16	32	60	9	12	80	42	100	33	15	51	8	M8 x 1.25	6	14	11	M14 x 1.5	27	1/4	102	164	
50	Up to 1000	35	32	81	70	27	52	20	40	70	9	12	90	50	110	35	17	58	11	M8 x 1.25	7	18	11	M18 x 1.5	30	3/8	108	177	
63	Up to 1000	35	32	101	85	27	64	20	40	86	11.5	15	105	59	130	35	17	58	11	M10 x 1.25	7	18	14	M18 x 1.5	31	3/8	116	188	

Head Flange (G): 10-11-CA2G, 21-22-CA2G



		(mm)																											
Symbol	Stroke range	A	AL	B	B ₁	C	D	E	FV	FD	FT	FX	FY	FZ	GAGB	H	H ₁	J	K	KA	M	MM	N	P	S	ZZ			
Bore size																													
40	Up to 1000	30	27	71	60	22	44	16	32	60	9	12	80	42	100	33	15	51	8	M8 x 1.25	6	14	11	M14 x 1.5	27	1/4	102	165	
50	Up to 1000	35	32	81	70	27	52	20	40	70	9	12	90	50	110	35	17	58	11	M8 x 1.25	7	18	11	M18 x 1.5	30	3/8	108	178	
63	Up to 1000	35	32	101	85	27	64	20	40	86	11.5	15	105	59	130	35	17	58	11	M10 x 1.25	7	18	14	M18 x 1.5	31	3/8	116	189	