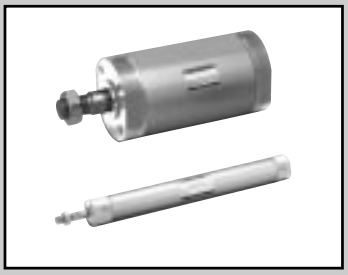
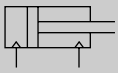


Round shaped cylinder double acting single rod type

SCM Series

● Bore size: ϕ 20, ϕ 25, ϕ 32, ϕ 40
ϕ 50, ϕ 63, ϕ 80, ϕ 100

JIS symbol



RoHS CAD

Specifications

Descriptions		SCM							
Bore size mm		ϕ 20	ϕ25	ϕ32	ϕ40	ϕ50	ϕ63	ϕ80	ϕ100
Actuation		Double acting							
Working fluid		Compressed air							
Max. working pressure MPa		1.0							
Min. working pressure MPa		0.1				0.05			
Withstanding pressure MPa		1.6							
Ambient temperature ℃		-10 to 60 (no freezing)							
Port size	Rubber cushioned	Rc1/8				Rc1/4		Rc3/8	Rc1/2
	Air cushioned	M5		Rc1/8		Rc1/4		Rc3/8	Rc1/2
Stroke tolerance mm	Rubber cushioned	+1.4 0 (up to 1000)			+1.4 0 (up to 1500)	+2.3 0 (up to 1000),		+2.7 0	(up to 1500)
	Air cushioned	+1.4 0 (up to 1000)			+1.4 0 (up to 1500)	+1.4 0 (up to 1000),		+1.8 0	(up to 1500)
Working piston speed mm/s		30 to 1000 (Use within the allowable energy absorption.)							
Cushion		Selection of rubber cushion and air cushion possible							
Effective air cushion length mm		8.1	8.1	8.6	8.6	13.4	13.4	15.4	15.4
Lubrication		Not required (when lubricating, use turbine oil ISO VG32.)							
Allowable energy absorption J	Rubber cushioned	0.1	0.2	0.5	0.9	1.6	1.6	3.3	5.8
	Air cushioned	0.8	1.2	2.5	3.7	8.0	14.4	25.4	45.6
	No cushion	-	-	-	-	0.057	0.057	0.112	0.153

Note 1: If "No cushion" is selected for the allowable absorption energy, when the air cushion symbol "R" is selected, the head has no cushion, and the indicated allowable absorption energy is applied. When the air cushion symbol "H" is selected, the rod has no cushion, and the indicated allowable absorption energy is applied.

Note 2: If "No cushion" is selected, the large energy generated by the external load cannot be absorbed, so an external shock absorber should be used.

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
ϕ20	25, 50, 75,100, 125, 150, 200, 250, 300	1000	10
ϕ25			
ϕ32			
ϕ40			
ϕ50		1500	
ϕ63			
ϕ80			
ϕ100			

Note 1: Custom stroke length is available per 1 mm increment.

Switch quantity and min. stroke length (mm)

● Switch installation method: Rail method

Switch quantity	1		2		3		4		5	
Bore size (mm)	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed	Proximity	Reed
ϕ20	10		25		40	50	55		75	85
ϕ25	10		25		40	50	55		75	85
ϕ32	10		25		40	50	55		75	85
ϕ40	10		25		40	50	55		75	85
ϕ50	10		25		40	50	55		75	85
ϕ63	10		25		40	50	55		75	85
ϕ83	10		25		40	50	55		75	85
ϕ100	10		25		40	50	55		75	85

Note 1: Trunion mounting is not available when installing one switch with a stroke of 10 mm or more, less than 25 mm, since the switch rail mounting position will change.
Refer to page 333 for the installation position.

● Switch installation method: Band method

Switch quantity	1			2			3			4			5		
Bore size (mm)	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed	Proximity		Reed
	T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*		T2, T3	T*Y*	
ϕ 20	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 25	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 32	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 40	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 50	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 63	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 83	10			25	35	25	50	55	50	75	80	70	95	100	95
ϕ 100	10			25	35	25	50	55	50	75	80	70	95	100	95

Switch specifications

* The T0/T5 switch can be used with 220 VAC. Contact CKD for working conditions.

● 1 color/2 color indicator

Descriptions	Proximity 2-wire			Proximity 3-wire			Reed 2-wire						
	T1H/T1V	T2H/T2V/ T2JH/T2JV	T2YH/ T2YV	T3H/ T3V	T3PH/T3PV (Custom order)	T3YH/ T3YV	T0H/T0V	T5H/T5V		T8H/T8V		
Applications	Programmable controller, relay, small solenoid valve	Programmable controller dedicated		Programmable controller, relay			Programmable controller, relay	Programmable controller, relay, IC circuit (w/o light), serial connection		Programmable controller, relay		
Output method	-			NPN output	PNP output	NPN output	-					
Power voltage	-			10 to 28 VDC			-					
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 100 mA	5 to 20 mA (Note 1)		100 mA or less		50 mA or less	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less	5 to 50 mA	7 to 10 mA	
Light	LED (ON lighting)	LED (ON lighting)	Red/Green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		without light		LED (ON lighting)		
Leakage current	1 mA or less with 100 VAC 2 mA or less with 200 VAC	1 mA or less		10 μA or less			0 mA						

● With preventive maintenance output

Descriptions		Proximity 3-wire	Proximity 4-wire	Proximity 3-wire	Proximity 4-wire
		T2YFH/V	T3YFH/V	T2YMH/V	T3YMH/V
Applications		Programmable controller dedicated	Programmable controller, relay	Programmable controller dedicated	Programmable controller, relay
Output method		NPN output			
Light	Installation position adjustment section	Red/Green LED (ON lighting)			
	Preventive maintenance output	-		Yellow LED (ON lighting)	
Regular output	Power voltage	-	10 to 28 VDC	-	10 to 28 VDC
	Load voltage	10 to 30 VDC	30 VDC or less	10 to 30 VDC	30 VDC or less
	Load current	5 to 20 mA	50 mA or less	5 to 20 mA	50 mA or less
	Leakage current	1 mA or less	10 μA or less	1.2 mA or less	10 μA or less
Preventive maintenance output	Load voltage	30 VDC or less			
	Load current	20 mA or less	50 mA or less	5 to 20 mA or less	50 mA or less
	Leakage current	10 μA or less			

Note 1: Refer to Ending 1 for other switch specifications.
Note 2: Max. load current above: 20 mA at 25 ℃. The current will be lower than 20 mA if ambient temperature around switch is higher than 25 ℃. (5 to 10mA at 60 ℃)

Cylinder weight

(Unit: kg)

Descriptions/mounting style / Bore size (mm)	Product weight when stroke length (S) = 0 mm					Switch weight	Additional weight	Additional weight	Band weight
	Basic type (00)	Axial foot type (LB)	Flange type (FA/FB)	Clevis type	Trunnion type (TA/TB)	Grommet	per S = 10 mm	per S = 10 mm (w/switch) rail	per 1 switch
φ20	0.10	0.21	0.13	0.15	0.11	0.018	0.01	0.012	0.007
φ25	0.17	0.30	0.21	0.25	0.19	0.018	0.014	0.016	0.007
φ32	0.26	0.42	0.32	0.41	0.29	0.018	0.018	0.02	0.007
φ40	0.41	0.63	0.49	0.64	0.46	0.018	0.03	0.032	0.007
φ50	0.77	1.25	1.11	1.17	0.91	0.018	0.044	0.046	0.008
φ63	1.07	1.79	1.57	1.75	1.21	0.018	0.052	0.054	0.009
φ80	2.04	3.00	2.75	2.75	-	0.018	0.07	0.072	0.010
φ100	3.17	4.92	4.52	4.45	-	0.018	0.098	0.10	0.010

(Eg.) Product weight of SCM-LB-40B-100-T2H-D

- Product weight when S = 0 mm ····· 0.63 kg
- Additional weight when S = 100 mm ·· 0.032 x $\frac{100}{10}$ = 0.32 kg
- Weight of 2 switches ····· 0.018 x 2 = 0.036 kg
- Product weight ····· 0.63 + 0.32 + 0.036 = 0.986 kg

Clean room specifications

(Catalog No. CB-033SA)

● Dust generation preventing structure for use in cleanrooms

SCM ····· P7*
SCM ····· P5*

How to order

Without switch

SCM - LB - 40 ( ) B - 100 ——— J I

With switch

SCM - LB - 40 ( ) B - 100 - T2H - D - ( ) J I

Ⓐ Mounting style Note 1

Ⓑ Bore size

Ⓒ Port thread type

Ⓓ Cushion

Ⓔ Stroke length

Ⓕ Switch model no. Note 3

Ⓖ Switch quantity

Ⓗ Switch installation method

Ⓘ Option Note 4 Note 6

Ⓙ Accessory Note 7

Symbol	Descriptions								
Ⓐ Mounting style									
	Bore size (ϕ)	20	25	32	40	50	63	80	100
00	Basic type	●	●	●	●	●	●	●	●
LB	Axial foot type	●	●	●	●	●	●	●	●
FA	Rod end flange type	●	●	●	●	●	●	●	●
FB	Head end flange type	●	●	●	●	●	●	●	●
CA	Eye bracket type	●	●	●	●	●	●		
CB	Clevis bracket type (pin and snap ring attached)							●	●
TA	Rod end trunnion type	●	●	●	●	●	●		
TB	Head end trunnion type	●	●	●	●	●	●		

Ⓑ Bore size (mm)	
20	ϕ 20
25	ϕ 25
32	ϕ 32
40	ϕ 40
50	ϕ 50
63	ϕ 63
80	ϕ 80
100	ϕ 100

Ⓒ Port thread type	
Blank	Rc thread
N	NPT threads (custom order) air cushioned is ϕ 32 or more
G	G thread (custom order) air cushioned is ϕ 32 or more.

Ⓓ Cushion	
B	Both sides air cushioned
R	Rod end air cushioned
H	Head end air cushioned
D	Both sides rubber cushioned

Ⓔ Stroke length (mm)		
Bore size	**Stroke length Note 2**	**Custom stroke length**
ϕ 20 to ϕ 32	**10 to 1000**	**Per 1 mm**
ϕ40 to ϕ100	**10 to 1500**	

Ⓕ Switch model no.

Lead wire straight	Lead wire L type	Contact	Indicator	Lead wire
T0H*	**T0V***	Reed	1 color indicator type	2-wire
T5H*	**T5V***		without light	
T8H*	**T8V***		1 color indicator type	
T1H*	**T1V***	Proximity	1 color indicator type	2-wire
T2H*	**T2V***			
T3H*	**T3V***			3-wire
T3PH*	**T3PV***		1 color indicator type (custom order)	
T2YH*	**T2YV***		2 color indicator type	2-wire
T3YH*	**T3YV***			3-wire
T2YFH*	**T2YFV***		2 color indicator type (W/o light for preventive maintenance output)	3-wire
T3YFH*	**T3YFV***			4-wire
T2YMH*	**T2YMV***		2 color indicator type (W/ light for preventive maintenance output (1 color))	3-wire
T3YMH*	**T3YMV***			4-wire
T2YD*	**-**		Strong magnetic field proof switch	2-wire
T2YDT*	**-**			
T2JH*	**T2JV***		Off-delay type	2-wire

***Lead wire length**	
Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

Ⓖ Switch quantity	
R	One on rod end
H	One on head end
D	Two
T	Three
4	4 switches (When more than 4 switches, indicate switch quantity.)

Ⓗ Switch installation method	
Blank	Rail method
Z	Band method

Ⓘ Option

		Max. ambient temperature	Max. instantaneous
J	Bellows	60 ℃	100 ℃
K	Bellows	100 ℃	200 ℃
L	Bellows	250 ℃	400 ℃
Q	Switch rail attached at shipment		
M	Piston rod material (stainless steel)		
P6	Copper and PTFE free		

Ⓙ Accessory

	Bore size (ϕ)	20	25	32	40	50	63	80	100
I	Rod eye	●	●	●	●	●	●	●	●
Y	Rod clevis (pin and snap ring attached)	●	●	●	●	●	●	●	●
B1	Eye bracket							●	●
B2	Clevis bracket	●	●	●	●	●	●		

⚠ Note on model no. selection

Note 1: The mounting bracket is shipped with the product.
Note 2: Refer to page 224 for switch quantity and min. stroke length.
Note 3: Switches other than switch model no. "F" are available. (Custom order)
Refer to Ending 1 for details.
Note 4: The instantaneous maximum temperature is that at which sparks, swarf, etc., temporarily contact bellows.
Note 5: Refer to Ending 89 about custom specifications of rod end form.
Note 6: When the switch mounting type "Z" is selected, the switch rail enclosed shipment "Q" cannot be selected.
Note 7: "I" and "Y" can not be selected at the same time.

<Example of model number>

SCM-LB-40B-100-T2H-D-JI

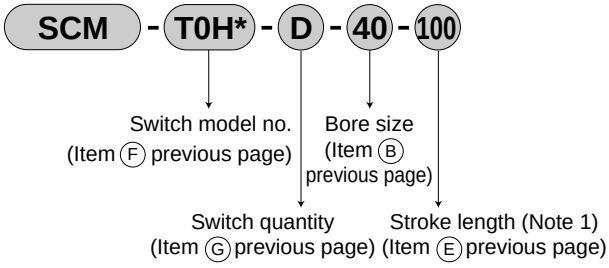
Model: Round shaped cylinder double acting

- Ⓐ Mounting style : Axial foot type
- Ⓑ Bore size : ϕ 40 mm
- Ⓒ Port thread type : Rc thread
- Ⓓ Cushion : Both sides air cushioned
- Ⓔ Stroke length : 100 mm
- Ⓕ Switch model no. : Proximity T2H switch, lead wire 1 m
- Ⓖ Switch quantity : 2
- Ⓗ Switch installation method : Rail method
- Ⓘ Option : Bellows material / max. ambient temperature 60 ℃
- Ⓙ Accessory : Rod eye

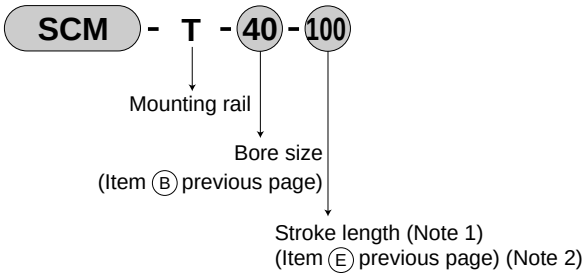
How to order switch

(switch installation method: rail method)

● Switch body + mounting rail set

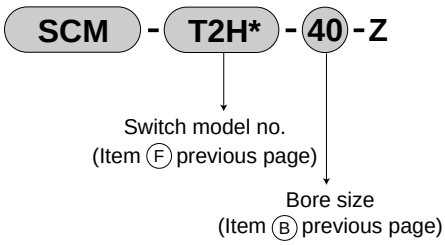


● Only mounting rail

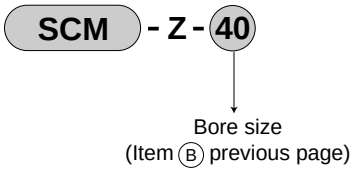


(switch installation method: band method)

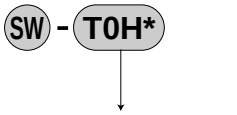
● Switch body + mounting rail + band



● Mounting rail + band



(only switch body)



Note 1: Indicate "X", when more than 300 mm stroke. A short rail (100 mm switch adjustment distance) is provided per switch.
Note 2: When X is indicated only with the mounting rail, order the same number of rails as the number of switches being used.

How to order mounting bracket

Bore size (mm) / Mounting bracket	ϕ 20	ϕ 25	ϕ 32	ϕ 40	ϕ 50	ϕ 63	ϕ 80	ϕ 100
Foot (LB)	SCM-LB-20	SCM-LB-25	SCM-LB-32	SCM-LB-40	SCM-LB-50	SCM-LB-63	SCM-LB-80	SCM-LB-100
Flange (FA/FB)	SCM-FA-20	SCM-FA-25	SCM-FA-32	SCM-FA-40	SCM-FA-50	SCM-FA-63	SCM-FA-80	SCM-FA-100
Eye (CA)	SCM-CA-20	SCM-CA-25	SCM-CA-32	SCM-CA-40	SCM-CA-50	SCM-CA-63	-	-
Clevis (CB)	-	-	-	-	-	-	SCM-CB-80	SCM-CB-100
Trunnion (TA/TB)	SCM-TA-20	SCM-TA-25	SCM-TA-32	SCM-TA-40	SCM-TA-50	SCM-TA-63	-	-

Note 1: Mounting bolts are attached to each mounting bracket.
Note 2: 2 piece/set is applied for a foot type mounting bracket.