Series option

T type cylinder switch with off delay timer
T2JH/T2JV

Overview

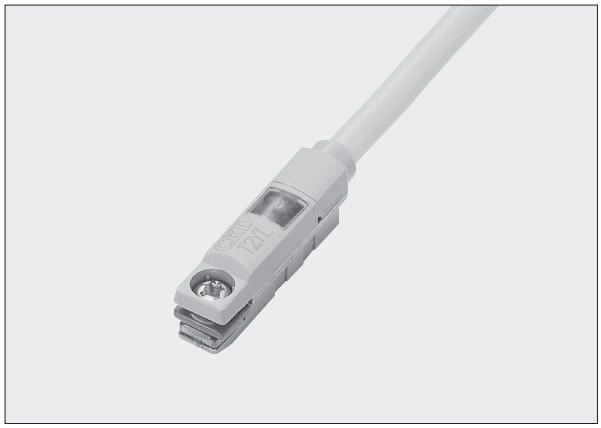
Optimum for intermediate detection of high speed cylinder.
Off delay timer realizes secure PC input.

Features

· PC input malfunctions at cylinder intermediate detection are prevented.
· Off delay timer 200±50 ms
· Installation to rodless cylinder SRL3 is possible.
· A great variety of cylinders.

* Made-to-order product when a switch is installed on the cylinder.
* Switchs are limited depending on cylinder. Refer to each cylinder page for the details.

T type cylinder switch coolant proof
T2YLH/V, T3YLH/V



Overview

This is a cylinder switch that prevents coolant for machine tools used at machining site, etc., from entering the cylinder switch.

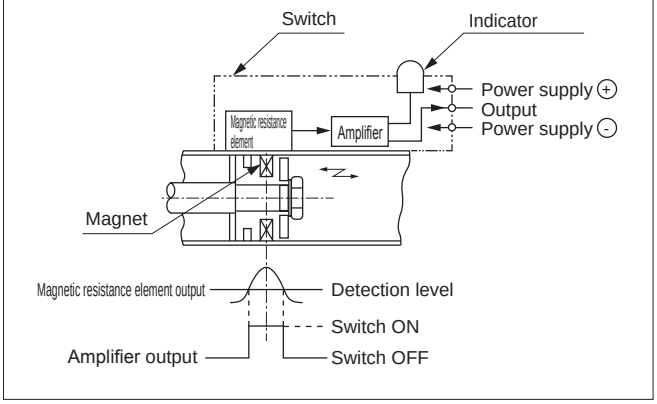
Features

· Oil resistance increased by applying coating to the circuit board.
  Usable even in an environment exposed to coolant.
· A great variety of cylinders

* Made-to-order product when a switch is installed on the cylinder.

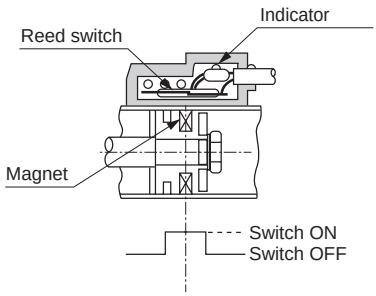
Operational principle

Proximity switch



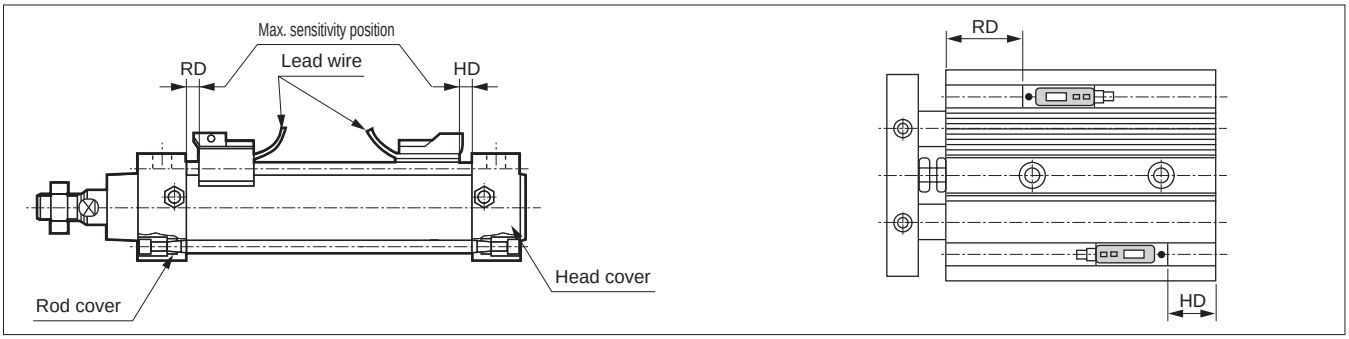
The magnetic field changes when the piston's magnet approaches, and the magnetic resistance element's output voltage changes as shown in the figure. Switching output as shown above is attained when this signal is amplified.

Reed switch



The magnetic field is generated when the piston's magnet approaches, and the contact matching the reed switch direction is magnetized to generate an attraction force and close the contact.

Switch mounting position



● Stroke end installation

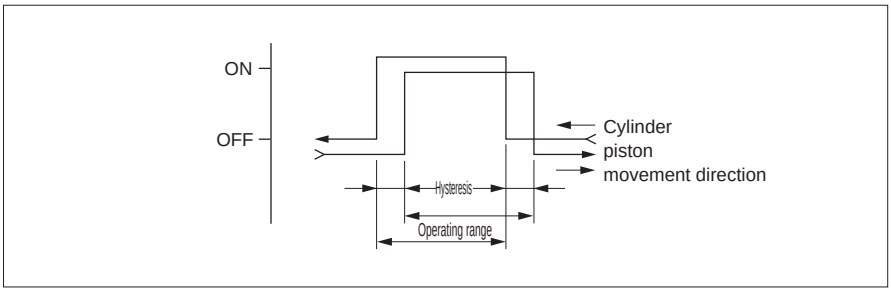
To check that the switch functions at the max. sensitivity position, mount 1 each at the rod side RD dimension position and at the head side HD dimension position.
HD and RD dimensions differ based on a cylinder. Refer to each cylinder dimension.
Mount the switch so the lead wire comes to the inside as shown above.

● Intermediate stroke position installation

In detection at the middle of the stroke, fix the piston at the stop position, and move the switch back and forth over the piston. Find the position where the switch turns ON first. The point between these 2 positions is the max. sensitivity position at that piston position, and is the installation position.

● Circumference direction installation

Differs depending on mounting bracket. When using a band, no limits are set on circumference direction.When using a tie rod, the position can be rotated in 90° increments. Circumferential rotation is not possible for the rail method.



Operating range

● The operating range is from the point where the piston moves and the switch turns ON to the point where the piston moves further in the same direction and the switch turns OFF.

The center of the operating range is max. sensitivity position. If this position is set as the piston stop position, it is not affected by disturbance and switch operation is stable.

Hysteresis

● Hysteresis is the distance from the point where the piston moves and the switch turns ON to the point where the piston moves in the reverse direction and the switch turns OFF. If the piston stops between these points, switch operation becomes unstable and is easily adversely affected by external sources. Please be careful.

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Pencil shaped cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
SCP*3	ø6	1.5 to 4	2.5 to 5	1.5 or less	1.0 or less	4 to 6	3 or less	I-3
	ø10	1.5 to 5.5	2.5 to 6			3.5 to 7		
	ø16	2 to 6	2.5 to 6			3.5 to 7.5		
Medium bore size cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
CMK2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less	I-79
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12		
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5		
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Medium bore size cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
CMA2	ø20	3 to 6	5 to 6.5	1.5 or less	1.0 or less	8.5 to 12	3 or less	I-191
	ø30	3 to 5.5	6 to 7			8 to 13		
	ø40	2.5 to 5.5	5.5 to 7.5			8.5 to 12.5		
Round shaped cylinder • Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SCM	ø20	3 to 8	4.5 to 9	1.5 or less	1.0 or less	6 to 14	3 or less	I-213
	ø25	3 to 9	5 to 9			5 to 14		
	ø32	3 to 8	5 to 9			5 to 12		
	ø40	3 to 9	5.5 to 9.5			6 to 14		
	ø50	3 to 9	6 to 10			6 to 14		
	ø63	3 to 9	6 to 10.5			7 to 15		
	ø80	4 to 10	6.5 to 11			7 to 15		
	ø100	4 to 10	7 to 11.5			9 to 15		
Tie rod cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SCG	ø32	2 to 7	6 to 9	1.5 or less	1.0 or less	6 to 11	3 or less	I-335
	ø40	2 to 7	6.5 to 9			7 to 12		
	ø50	2 to 7	7 to 10			7.5 to 12		
	ø63	2 to 7.5	7 to 10			8.5 to 13		
	ø80	2.5 to 8	7.5 to 10.5			9 to 13.5		
	ø100	2.5 to 8	8 to 11			9 to 14		
Medium bore size cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SCA2	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less	I-427
	ø50	2 to 7.5	3 to 10			5.5 to 13.5		
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14		
	ø80	3 to 8	4 to 11.5			6.5 to 14.5		
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5		
Medium bore size cylinder ● Applicable switch: Reed switch for strong magnetic fields (H0□) * The values in ( ) indicate H0Y.								
SCA2-L2	ø40	-		-	-	4 to 7.5(10.5 to 13.5)	3 or less	I-427
	ø50					4 to 7.5(11 to 14)		
	ø63					5 to 8(11.5 to 14.5)		
	ø80					5 to 8(10.5 to 14.5)		
	ø100					5 to 8(10.5 to 14.5)		
Large bore size cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SCS2	ø125	7.5 to 14	14 to 21	1.5 or less	1.0 or less	11 to 16	3 or less	I-605
	ø140	7.5 to 14	18 to 26					
	ø160	7.5 to 14	18 to 26					
	ø180	7.5 to 14	18 to 26					
	ø200	7.5 to 14	18 to 26					

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Tie rod cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
CKV2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less	I-659
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12		
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5		
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Tie rod cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
CAV2-L **COVP2-L** **COVN2-L**	ø50	3.8 to 6.7	4 to 6	0.8 or less	0.7 or less	7.7 to 8.3	1 or less	I-687
	ø75	3.8 to 6.7	4 to 6			7.7 to 8.3		
	ø100	3.8 to 6.7	4 to 6			7.7 to 8.3		
Compact cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SSD2	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less	I-729
	ø16	1.5 to 4.5	3 to 7			4 to 9		
	ø20	3 to 8	4.5 to 8			6 to 14		
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
	ø80	4 to 10	6 to 10			7 to 15		
	ø100	4 to 10	6 to 10			9 to 15		
	ø125	4 to 10	8 to 10			9 to 15		
	ø140	4 to 10	8 to 10			9 to 15		
	ø160	4 to 10	8 to 10			9 to 15		
Compact cylinder ● Applicable switch: Reed switch (ET0□)								
SSD2-T1L	ø16	-		-	-	8 to 11.5	3 or less	I-729
	ø20					9 to 13.5		
	ø25					9.5 to 14		
	ø32					9 to 13		
	ø40					9 to 14		
	ø50					11 to 16		
	ø63					13 to 18		
Compact cylinder • Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SSG	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less	I-1049
	ø16	1.5 to 4.5	3 to 7			4 to 9		
	ø20	3 to 8	4.5 to 8			6 to 14		
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			7 to 15		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
	ø80	4 to 10	6 to 10			9 to 15		
	ø100	4 to 10	6 to 10			9 to 15		

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Compact cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
SSD	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less	I-1065
	ø16	1.5 to 4.5	3 to 7			4 to 9		
	ø20	3 to 8	4.5 to 8			6 to 14		
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
	ø80	4 to 10	6 to 10			7 to 15		
	ø100	4 to 10	6 to 10			9 to 15		
	ø125	4 to 10	8 to 10			9 to 15		
	ø140	4 to 10	8 to 10			9 to 15		
	ø160	4 to 10	8 to 10			9 to 15		
Compact cylinder ● Applicable switch: Reed switch (ET0□)								
SSD-T1L	ø16	-		-	-	8 to 11.5	3 or less	I-1065
	ø20					9 to 13.5		
	ø25					9.5 to 14		
	ø32					9 to 13		
	ø40					9 to 14		
	ø50					11 to 16		
	ø63					13 to 18		
Small direct mounting cylinder ● Applicable switch: Proximity switch (F2□, F3□), reed switch (F0□)								
MDC2	ø6	1.5 to 3.5	-	1.0 or less	-	3.5 to 6.0	1.0 or less	I-1327
	ø8							
	ø10							
MDC2-X	ø6	2.0 to 3.5	-	1.0 or less	-	5.5 to 7.5	1.0 or less	
	ø8							
	ø10							
MDC2-Y	ø6	1.5 to 3.5	-	1.0 or less	-	4.5 to 6.0	1.0 or less	
	ø8							
	ø10							
Small cylinder/suction pad ● Applicable switch: Proximity switch (F2□, F3□), reed switch (F0□)								
MVC	ø6	1.5 to 3.5	-	1.0 or less	-	3.5 to 6.0	1.0 or less	I-1353
	ø10					4.5 to 6.0		
Compact cylinder ● Applicable switch: Proximity switch (K2□, K3□, K3P□, K2Y□, K3Y□), reed switch (K0□, K5□)								
SMG	ø6	1.5 to 7	3.5 to 7.5	2 or less	1.5 or less	3 to 9.5	3 or less	I-1365
	ø10	1.5 to 7	3.5 to 7.5			3.5 to 9.5		
	ø16	1.5 to 7	4.5 to 8.5			4 to 11		
	ø20	2.5 to 9	5 to 9			5 to 12.5		
	ø25	3.5 to 11	5.5 to 9.5			6.5 to 14		
	ø32	3.5 to 11.5	1.5 to 10.5			5.5 to 14		
Small compact cylinder ● Applicable switch: Proximity switch (F2□, F3□), reed switch (F0□)								
MSD-*L MSDG-L	ø6	1.5 to 3.0	-	1.0 or less	-	5 to 6	1.0 or less	I-1397
	ø8	1.5 to 3.5	-			5.5 to 6.5		
	ø12	1.5 to 3.5	-			5.5 to 7.5		
	ø16	1.5 to 3.5	-			4.5 to 7		

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Flat compact cylinder ● Applicable switch: Proximity switch (M2V, M3V, M3PV, M2WV, M3WV), reed switch (M0V, M5V)								
FCS-L	ø25	9 to 12	6 to 11	1.5 or less	1.0 or less	7 to 8.5	3 or less	I-1455
	ø32	9 to 12	6 to 11			7 to 8.5		
	ø40	8.5 to 12	6 to 11			7 to 8.5		
	ø50	8 to 12	6 to 11			6.5 to 8.5		
	ø63	8 to 12	6 to 11			6.5 to 8.5		
FCH-L **FCD-L** **FCD-DL** **FCD-KL**	ø25	6 to 12	5 to 11	1.5 or less	1.0 or less	7 to 12	3 or less	
	ø32	6 to 12	5 to 11			7 to 12		
	ø40	6 to 12	5 to 11			7 to 12		
	ø50	6 to 12	5 to 11			7 to 12		
	ø63	6 to 12	5 to 11			7 to 12		
Stopper cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
STK	ø20	3 to 8	4.5 to 8	1.5 or less	1.5 or less	6 to 14	3 or less	I-1491
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
Brake cylinder ● Applicable switch: Proximity switch (M2V, M3V, M3PV, M2WV, M3WV), reed switch (M0V, M5V)								
ULKP	ø16	5 to 9.5	4.5 to 9.5	1.5 or less	1.0 or less	5 to 9.5	3 or less	II-661
Brake cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
ULK	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less	II-661
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12		
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5		
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Brake cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
JSK2	ø20	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	6.5 to 11	3 or less	II-691
	ø25	2.5 to 5.5	3.5 to 7.5			7.5 to 12		
	ø32	2.5 to 6	3.5 to 8			6.5 to 11.5		
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Brake cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
JSM2	ø20	3 to 6	5 to 6.5	1.5 or less	1.0 or less	8.5 to 12	3 or less	II-710
	ø30	3 to 5.5	6 to 7			8 to 13		
	ø40	2.5 to 5.5	5.5 to 7.5			8.5 to 12.5		
Tie rod cylinder with brake ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
JSG	ø32	2 to 7	6 to 9	1.5 or less	1.0 or less	6 to 11	3 or less	II-727
	ø40	2 to 7	6.5 to 9			7 to 12		
	ø50	2 to 7	7 to 10			7.5 to 12		
	ø63	2 to 7.5	7 to 10			8.5 to 13		
	ø80	2.5 to 8	7.5 to 10.5			9 to 13.5		
	ø100	2.5 to 8	8 to 11			9 to 14		

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Brake cylinder	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)							
JSC3 (Medium bore size)	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less	II-757
	ø50	2 to 7.5	3 to 10			5.5 to 13.5		
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14		
	ø80	3 to 8	4 to 11.5			6.5 to 14.5		
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5		
Brake cylinder	● Applicable switch: Strong magnetic field proof reed switch (H0□)					* The values in ( ) indicate H0Y.		
JSC3-L2 (Medium bore size)	ø40	-		-		4 to 7.5(10.5 to 13.5)	3 or less	II-757
	ø50					4 to 7.5(11 to 14)		
	ø63					5 to 8(11.5 to 14.5)		
	ø80					5 to 8(10.5 to 14.5)		
	ø100					5 to 8(10.5 to 14.5)		
Brake cylinder	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)							
JSC4 (Large bore size)	ø125	7.5 to 14	14 to 21	1.5 or less	1.0 or less	11 to 16	3 or less	II-757
	ø140	7.5 to 14	18 to 26			11 to 16		
	ø160	7.5 to 14	18 to 26			11 to 16		
	ø200	7.5 to 14	18 to 26			11 to 16		
Position locking compact cylinder	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)							
USSD	ø20	3 to 8	4.5 to 8	1.5 or less	1.0 or less	6 to 14	3 or less	II-831
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
Free position locking flat cylinder	● Applicable switch: Proximity switch (M2□, M3□, M3P□, M2W□, M3W□), reed switch (M0□, M5□)							
UFCD	ø25	6 to 12	5 to 11	1.5 or less	1.0 or less	7 to 12	3 or less	II-875
	ø32	6 to 12	5 to 11			7 to 12		
	ø40	6 to 12	5 to 11			7 to 12		
	ø50	6 to 12	5 to 11			7 to 12		
	ø63	6 to 12	5 to 11			7 to 12		
Free position locking Medium bore size cylinder	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)							
USC	ø40	2 to 7	3 to 10	1.5 or less	1.0 or less	5 to 12.5	3 or less	II-891
	ø50	2 to 7.5	3 to 10			5.5 to 13.5		
	ø63	2.5 to 7.5	3.5 to 10.5			5.5 to 14		
	ø80	3 to 8	4 to 11.5			6.5 to 14.5		
	ø100	3 to 8.5	4 to 11.5			6.5 to 15.5		
Free position locking Medium bore size cylinder	● Applicable switch: Reed switch for strong magnetic field (H0□)					* The values in ( ) indicate H0Y.		
USC-L2	ø40	-		-	-	4 to 7.5(10.5 to 13.5)	3 or less	II-891
	ø50					4 to 7.5(11 to 14)		
	ø63					5 to 8(11.5 to 14.5)		
	ø80					5 to 8(10.5 to 14.5)		
	ø100					5 to 8(10.5 to 14.5)		
Guided cylinder	● Applicable switch: Proximity switch (F2□, F3□, F2Y□, F3Y□)							
STM	ø10	2.5 to 4.5	2.5 to 5.5	1.5 or less	1.5 or less	-	-	II-309
	ø16	2.5 to 4.5	2.5 to 5.5					

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Guided cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
STG	ø12	1.5 to 4.5	4 to 6	1.5 or less	1.5 or less	6 to 10	3 or less	II-329
	ø16	1.5 to 4.5	4 to 6			4 to 9		
	ø20	3 to 8	5 to 8.5			6 to 14		
	ø25	3 to 9	5 to 8.5			5 to 14		
	ø32	3 to 9	5 to 9			5 to 12		
	ø40	3 to 9	6 to 10			6 to 14		
	ø50	3 to 9	6 to 10			6 to 14		
	ø63	3 to 9	6 to 10			7 to 15		
	ø80	4 to 10	7 to 10			7 to 15		
Guided cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
STS/L	ø8	1.5 to 3.5	4 to 6	1.5 or less	1.5 or less	5 to 9	3 or less	II-437
	ø12	1.5 to 4.5	4 to 6			6 to 10		
	ø16	1.5 to 4.5	4 to 6			4 to 9		
	ø20	3 to 8	5 to 8.5			6 to 14		
	ø25	3 to 9	5 to 8.5			5 to 14		
	ø32	3 to 8	5 to 9			5 to 12		
	ø40	3 to 9	6 to 10			6 to 14		
	ø50	3 to 9	6 to 10			6 to 14		
	ø63	3 to 9	6 to 10			7 to 15		
	ø80	4 to 10	7 to 10			7 to 15		
	ø100	2 to 9	7 to 10			7 to 15		
Linear slide cylinder ● Applicable switch: Proximity switch (F2□, F3□, F2Y□, F3Y□)								
LCW	ø12	3.5 to 6.5	4.5 to 6.5	1.0 or less	1.0 or less	-	-	II-5
Linear slide cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
LCW	ø16	3 to 5	4 to 5.5	1.0 or less	1.0 or less	6.5 to 9.5	3.0 or less	II-5
	ø20	4.5 to 6.5	5.5 to 6.5			8 to 12		
Linear slide cylinder ● Applicable switch: Proximity switch (F2□, F3□, F2Y□, F3Y□)								
LCR	ø6	2 to 4	2.5 to 5.5	1.0 or less	1.0 or less	-	-	II-55
	ø8		3.5 to 6					
	ø12		3 to 4.5					
Linear slide cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
LCR	ø16	2 to 4	3 to 4.5	1.0 or less	1.0 or less	5 to 9	1.0 or less	II-55
	ø20	2 to 5.5	4 to 5.5			6.5 to 11		
	ø25	2.5 to 6	3.5 to 6			8 to 12		
Linear slide cylinder ● Applicable switch: Proximity switch (F2□, F3□, F2Y□, F3Y□)								
LCG	ø6	2 to 4	2.5 to 5.5	1.0 or less	1.0 or less	-	-	II-137
	ø8		3.5 to 6					
	ø12		3 to 4.5					
Linear slide cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
LCG	ø16	2 to 4	3 to 4.5	1.0 or less	1.0 or less	5 to 9	1.0 or less	II-137
	ø20	2 to 5.5	4 to 5.5			6.5 to 11		
	ø25	2.5 to 6	3.5 to 6			8 to 12		
Linear slide cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
LCX	ø25	0.5 to 6	1.0 to 5.5	2 or less	2 or less	2 to 10.5	3.5 or less	II-201
	ø32	1.0 to 5.5	0.5 to 5.0			1 to 11		

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Linear slide cylinder ● Applicable switch: Proximity switch (F2□, F3□, F2Y□, F3Y□)								
LCM	ø4.5	1 to 3	2 to 4	1.0 or less	1.0 or less	-	-	II-261
	ø6							
	ø8							
Twin rod cylinder ● Applicable switch: Proximity switch (K2□, K3□, K3P□, K2Y□, K3Y□), reed switch (K0□, K5□)								
STR2	ø6	1 to 6	4 to 7.5	2.0 or less	1.5 or less	4 to 9(STR2-M)	3.0 or less	II-567
	ø10	1 to 5.5	4 to 7.5			4 to 9(STR2-M)		
	ø16	1.5 to 7.5	4.5 to 9			5 to 12.5		
	ø20	3 to 9	5.5 to 10			6.5 to 14.5		
	ø25	3.5 to 10.5	6.5 to 10.5			8 to 14.5		
	ø32	-	-			-		
Unit cylinder ● Applicable switch: Proximity switch (T2□, T3□), reed switch (T0□, T5□)								
UCA2-*L	ø10	1.5 to 4	-	1.5 or less	-	4.5 to 8	3.0 or less	II-625
	ø16							
	ø25							
	ø32							
Hi energy absorption cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
HCM	ø20	3 to 8	4.5 to 9	1.5 or less	1.0 or less	6 to 14	3 or less	I-941
	ø25	3 to 9	5 to 9			5 to 14		
	ø32	3 to 8	5 to 9			5 to 12		
	ø40	3 to 9	5.5 to 9.5			6 to 14		
	ø50	3 to 9	6 to 10			6 to 14		
	ø63	3 to 9	6 to 10.5			7 to 15		
High speed cylinder ● Applicable switch: Proximity switch (R1, R2, R3, R2Y, R3Y), reed switch (R0, R4, R5, R6)								
HCA	ø20	6 to 14	11 to 18	1.5 or less	1.0 or less	7 to 14	3.0 or less	I-959
	ø25	6 to 14	11 to 18			8 to 13		
	ø32	6 to 14	11 to 18			9 to 14		
	ø50	6 to 14	11 to 18			9 to 14		
Rodless cylinder ● Applicable switch: Proximity switch (M2□, M3□, M3P□, M2WV, M3WV), reed switch (M0□, M5□)								
SRL3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less	I-1551
	ø16	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11		
	ø20	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11		
	ø25	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	8.5 to 13.5	3.5 or less	
	ø32	7.5 to 15	8 to 14	2.0 or less	1.5 or less	7 to 13.5		
	ø40	11.5 to 17.5	10 to 16.5	2.0 or less	1.5 or less	10 to 16		
	ø50	11 to 24	17 to 27	2.5 or less	1.5 or less	17 to 27	3.0 or less	
	ø63	11 to 24	17 to 27	2.5 or less	1.5 or less	17 to 27		
	ø80	26.5 to 45.5	16.5 to 40	5.0 or less	3.0 or less	20.5 to 41		
	ø100	25.5 to 40.5	21.5 to 36	3.0 or less	2.5 or less	24 to 37		
Rodless cylinder ● Applicable switch: Proximity switch (T2W□, T3W□, T2YD)								
SRL3	ø12	-	2 to 7	-	1.0 or less	-	-	I-1551
	ø16	-	2 to 7					
	ø20	-	3 to 8	-	1.5 or less			
	ø25	-	3 to 10					
	ø32	-	3 to 10					
	ø40	-	4 to 11					
	ø50	-	9 to 16					
	ø63	-	9 to 16					
	ø80	-	10 to 24	-	2.0 or less			
	ø100	-	10 to 24					

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
High precision guided rodless cylinder	● Applicable switch: Proximity switch (M2□, M3□, M3P□, M2WV, M3WV), reed switch (M0□, M5□)							
SRG3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less	I-1627
	ø16	4 to 13	4 to 12			3 to 11		
	ø20	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	3 to 11		
	ø25	9.5 to 15.5	9 to 14			8.5 to 13.5	3.5 or less	
High precision guided rodless cylinder	● Applicable switch: Proximity switch (T2W□, T3W□, T2YD)							
SRG3	ø12	-	2 to 7	-	1.0 or less	-	-	I-1627
	ø16	-	2 to 7					
	ø20	-	3 to 8	-	1.5 or less			
	ø25	-	3 to 10					
High precision guided rodless cylinder	● Applicable switch: Proximity switch (T2Y□, T3Y□, T2W□, T3W□, T2YD), reed switch (T0□, T5□, T8□)							
SRM3	ø25	-	6 to 9	-	1.0 or less	5.5 to 11	2.0 or less	I-1655
	ø32	-	6.5 to 9			5.5 to 10		
	ø40	-	7.5 to 10.5			5.5 to 9		
	ø63	-	8 to 11			5.5 to 10		
Rodless cylinder with brake	● Applicable switch: Proximity switch (M2□, M3□, M3P□, M2WV, M3WV), reed switch (M0□, M5□)							
SRT3	ø12	4 to 13	4 to 12	1.5 or less	1.0 or less	3 to 11	3.0 or less	I-1685
	ø16	4 to 13	4 to 12			3 to 11		
	ø20	4 to 13	4 to 12			3 to 11		
	ø25	9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	8.5 to 13.5	3.5 or less	
	ø32	7.5 to 15	8 to 14			7 to 13.5		
	ø40	11.5 to 17.5	10 to 16.5			10 to 16		
	ø50	16.5 to 24	14 to 21			14.5 to 21.5		
	ø63	16 to 24	14 to 21			14.5 to 21.5		
Rodless cylinder	● Applicable switch: Proximity switch (T2W□, T3W□, T2YD)							
SRT3	ø12	-	2 to 7	-	1.0 or less	-	-	I-1685
	ø16	-	2 to 7					
	ø20	-	3 to 8	-	1.5 or less			
	ø25	-	3 to 10					
	ø32	-	3 to 10					
	ø40	-	4 to 11					
	ø50	-	9 to 16					
	ø63	-	9 to 16					
Magnet rodless cylinder	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2W□, T3W□, T2Y□, T3Y□, T1□)							
MRL2	ø6	2 to 5	5.5 to 6.5	1.0 or less	1.0 or less	-	-	I-1713
	ø10	2.5 to 5.5	6 to 7.5					
	ø16	2 to 5	5.5 to 7					
	ø20	2 to 5	6 to 5.5					
	ø25	2 to 5	6 to 5.5					
	ø32	2 to 4.5	5.5 to 6.5					
Magnet rodless cylinder with high precision guide	● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2W□, T3W□,T2Y□, T3Y□, T1□), reed switch (T0□, T5□)							
MRG2	ø10	2 to 4.5	5.5 to 7	0.5 or less	0.5 or less	6.5 to 7.5	1 or less	I-1745
	ø16	2 to 5	6 to 7.5			7 to 8	2 or less	
	ø25	2 to 5	6 to 7			7.5 to 8	2 or less	

Operating range and hysteresis of each cylinder model with switch

(Unit: mm)

Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
Clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
CAC4	ø40	2 to 6.5	5.7 to 6.5	1.5 or less	1.0 or less	6.7 to 10.8	3 or less	II-989
	ø50	2.5 to 6.0	5.9 to 6.8			7.8 to 11.3		
	ø63	2.5 to 6	6.1 to 6.8			8.2 to 11.4		
	ø80	3 to 7	7.7 to 8.5			9 to 10.9		
Clamp cylinder ● Applicable switch: Reed switch for strong magnetic field (H0□)								
CAC4-L2	ø40	-		-	-	6.7 to 10.8	3 or less	II-989
	ø50					7.8 to 11.3		
	ø63					8.2 to 11.4		
	ø80					6.6 to 7.5		
Clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
UCAC2	ø50	2.5 to 6.0	5.9 to 6.8	1.5 or less	1.0 or less	7.8 to 11.3	3 or less	II-1013
	ø63	2.5 to 6.5	6.1 to 6.8			8.2 to 11.4		
Clamp cylinder ● Applicable switch: Reed switch for strong magnetic field (H0□)								
UCAC2-L2	ø50	-		-	-	7.8 to 11.3	3 or less	II-1013
	ø63					8.2 to 11.4		
Lightweight clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
CAC	ø32	2.5 to 6	3.5 to 8	1.5 or less	1.0 or less	6.5 to 11.5	3 or less	II-1027
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Position locking, lightweight clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2Y□, T3Y□, T2YD, T1□), reed switch (T0□, T5□, T8□)								
UCAC	ø32	2.5 to 6	3.5 to 8	1.5 or less	1.0 or less	6.5 to 11.5	3 or less	II-1027
	ø40	3 to 7	4 to 9			7.5 to 13.5		
Rotary clamp cylinder ● Applicable switch: Proximity switch (T2□„ T3□„ T3P□„ T2J□„ T2Y□„ T3Y□„ T2YD, T1□„), reed switch (T0□, T5□„ T8□„)								
RCS2	ø12	1.5 to 5.5	3 to 6	1.5 or less	1.0 or less	5 to 8	3 or less	
	ø16	1.5 to 4.5	3 to 7			4 to 9		
	ø20	3 to 8	4.5 to 8			6 to 14		
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
Rotary clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2W□, T3W□, T2Y□, T3Y□, T2YD), reed switch (T0□, T5□)								
RCC2	ø16	2 to 5	3 to 7	1.5 or less	1.0 or less	4 to 9	3 or less	II-1047
	ø20	3 to 8	4.5 to 8			6 to 14		
	ø25	3 to 9	4.5 to 8			5 to 14		
	ø32	3 to 8	4.5 to 8			5 to 12		
	ø40	3 to 9	5 to 8.5			6 to 14		
	ø50	3 to 9	5.5 to 9.5			6 to 14		
	ø63	3 to 9	5.5 to 9.5			7 to 15		
Rotary clamp cylinder ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□), reed switch (T0□, T5□)								
RCS	ø16	2 to 5	3 to 7	1.5 or less	1.0 or less	4 to 9	3 or less	II-1069

Operating range and hysteresis of each cylinder model with switch

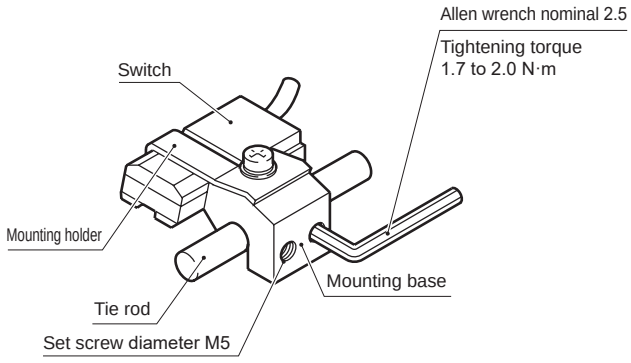
Model No.	Bore size (mm)	Proximity switch				Reed switch		Page
		Operating range		Hysteresis		Operating range	Hysteresis	
		1-color type	2-color type	1-color type	2-color type			
High power cylinder ● Applicable switch: Proximity switch (R1, R2, R3, R2Y, R3Y), reed switch (R0, R4, R5, R6)								
SHC	ø40	6.5 to 11.5		1.5 or less		9.5 to 12.5	3.0 or less	II-1095
	ø50	8 to 12.5				10.5 to 14.5		
	ø63	7.5 to 12.5				10.5 to 14.5		
	ø80	8 to 13.5				11.5 to 15.5		
	ø100	8 to 14				12 to 16		
High power cylinder ● Applicable switch: Reed switch (H0)								
SHC-L2	ø40	-		-		4 to 7	3.0 or less	II-1095
	ø50					5 to 7.5		
	ø63					5 to 8		
	ø80					5 to 8		
	ø100					5 to 8		
Mechanical power cylinder ● Applicable switch: Proximity switch (T2□, T3□, T3P□, T2J□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
MCP-S	2t	4 to 10	6 to 10	1.5 or less	1.0 or less	7 to 15	3 or less	II-1033
	5t	4 to 10	8 to 10			9 to 15		
MCP-W (rapid feed part)	2t	3.5 to 6.0	4.6 to 9.2	1.5 or less	1.0 or less	7.6 to 12.8	3 or less	
	5t	4.0 to 8	5.5 to 11.9			8.9 to 14.1		
Guideless cylinder ● Applicable switch: Proximity switch (R1, R2, R3, R2Y, R3Y), reed switch (R0, R4, R5, R6)								
GLC	ø40	7 to 17		1.5 or less		11.5 to 16.5	3.0 or less	II-1151
	ø50	9 to 17				13 to 18		
	ø63	10 to 18				15 to 20		
	ø80	8 to 19				15 to 20		
	ø100	11 to 20.5				13.5 to 19		
Guideless cylinder ● Applicable switch: Reed switch (H0)								
GLC-L2	ø40	-		-		4 to 9	3.0 or less	II-1151
	ø50					4 to 9		
	ø63					4 to 10		
	ø80					5 to 11		
	ø100					5 to 11		
Rotary actuator ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□, T2Y□, T3Y□, T1□), reed switch (T0□, T5□, T8□)								
RRC	8	15° to 60°	20° to 70°	-	-	70° to 90°	-	II-1241
	32	10° to 30°	10° to 30°			30° to 40°		
	63	10° to 30°	10° to 30°			30° to 40°		
Table rotary actuator ● Applicable switch: Proximity switch (T2□, T3□, T2W□, T3W□, T2Y□, T3Y□, T1□)								
GRC	5	10° to 35°	30° to 40°	-	-	-	-	II-1255
	10	5° to 30°	20° to 30°					
	20	10° to 35°	25° to 35°					
	30	5° to 25°	15° to 25°					
	50	5° to 25°	15° to 25°					
	80	5° to 25°	15° to 25°					
Compact rotary actuator ● Applicable switch: Proximity switch (SR-□)								
RV3*	3	15°±7°	-	3° or less	-	-	-	II-1293
	10	15°±7°	-					
	20	15°±7°	-					
	30	15°±7°	-					
Compact rotary actuator ● Applicable switch: Proximity switch (FR-□)								
RV3*	3	23°±7°	-	2° or less	-	-	-	II-1293
	10	23°±7°	-					
	20	23°±7°	-					
	30	23°±7°	-					
Large rotary actuator ● Applicable switch: Proximity switch (M2V, M3V, M3PV), reed switch (M0V, M5V)								
RV3*	50	Approx. 40°	-		-	Approx. 25°	-	II-1293
	150	Approx. 25°	-			Approx. 15°		
	300	Approx. 25°	-			Approx. 15°		
	800	Approx. 25°	-			Approx. 15°		

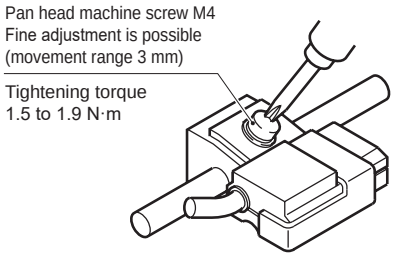
⚠CAUTION Relocation of switch

Tie rod mounting

Loosening the two set screws for fixing the mounting base by 1/2 to 3/4 turns allows you to move the switch axially without fallout.
After adjustment, lightly press the holder so that the switch contacts the tube, and tighten the set screw.
Tightening torque is 1.7 to 2.0 N·m. It is tightened enough if the Allen wrench begins to bend.

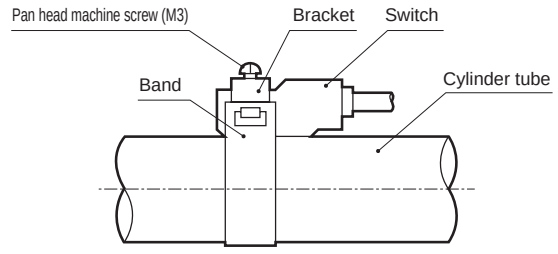
● Movement and tightening diagram





Band mounting

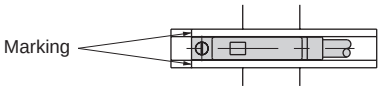
Loosen the fixing screw (pan head machine screw), move the body and band along the cylinder tube, and tighten the screw at the specified position. For fine adjustment, fix the band position and move only the switch body. Tightening torque is 0.5 to 0.7N·m.
Tightening torque for HCA ø80 and ø100 is 1.0 to 1.5 N·m.



Band mounting

(1) When moving the switch position to the stroke direction

- The 1-color LED switch can be fine-tuned by ±3 mm from the default. If the adjusting range exceeds ±3 mm, or when fine-tuning the 2-color LED switch, move the band position.
- The switch bracket rail has a marking 4 mm from the rail end. Use as a guide to the mounting position when replacing the switch. Switch rail markings are set to the default switch max. sensitivity position. The max. sensitivity position will change when the switch is changed or when the band is moved. Adjust the position accordingly in this case.

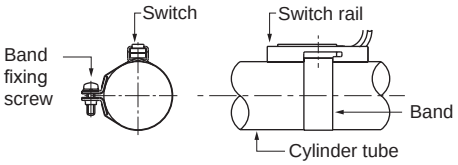


(2) When moving the switch position to the circumferential direction

- Loosen the band fixing screw, shift the switch rail in the circumferential direction, then tighten at the specified position. Tightening torque is 0.8 to 1.0 N·m.

(3) Shifting the band position

- Loosen the band fixing screw, shift the switch rail and band along the cylinder tube, and tighten at the specified position. Tightening torque is 0.8 to 1.0 N·m.



Switch groove mounting

Loosen the fixing screw (set screw), move the switch body along the switch groove, and tighten the screw at the specified position.
When using T2, T2W, T3, T3W, T0, T5, K2, K3, K0 or K5, use a flathead screwdriver (clockwork screwdriver, precision screwdriver, etc.) with a 5 to 6 mm grip diameter, a 2.4 mm or smaller tip and thickness 0.3 mm or less to tighten the screws with a tightening torque of 0.1 to 0.2 N·m.
When using T*C, T2J, T2Y, T3Y, K2Y, K3Y, T2YD, T1, T8, T2YL, T3YL or ET0, tighten with a tightening torque of 0.5 to 0.7 N·m.
When using F2*, F3*, F2Y* or F3Y*, tighten with a tightening torque of 0.03 to 0.08 N·m.

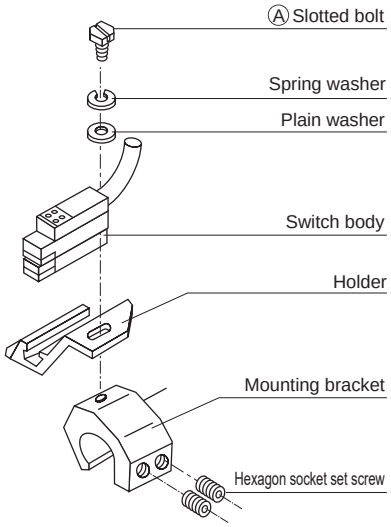
T2YD Tie rod mounting

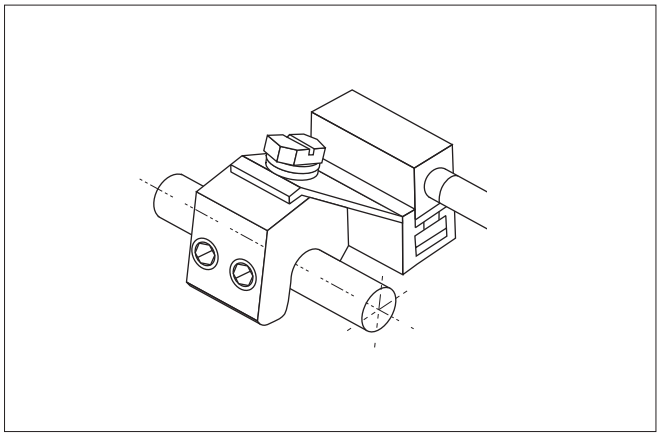
(1) Fine adjustment

Loosen the slotted hex socket bolt Ⓐ, move only the switch body, and fix at the required position. Tightening torque is 0.5 to 0.7 N·m.

(2) Rough adjustment

Completely loosen the slotted bolt Ⓐ and set screws, and move the entire mounting bracket to the required position. Tighten the slotted bolt Ⓐ. Tightening torque is 0.5 to 0.7 N·m.
Then tighten the set screw. Tightening torque is 1.7 to 2.0 N·m.





⚠ Notes for contact protection circuits (SKAC and SKDC)

If a reed switch is used and load falls under any of the following conditions, the contact may be kept on and the service life may become shorter. To prevent that, connect a contact protection circuit within 2 m from the switch.

- When the work load is an inductive load (relay, valve, etc., (coil-drive load)) or capacitance load (programmable controller, etc., (load including capacitor))
- When the lead wire lengths are as follows
  - 12 VDC : 100 m or more
  - 24 VDC : 50 m or more
  - 100 VAC : 20 m or more
  - 200 VAC : 10 m or more
- When overvoltage or overcurrent may occur due to other causes

For details on contact protection circuits, refer to Ending Page 27.

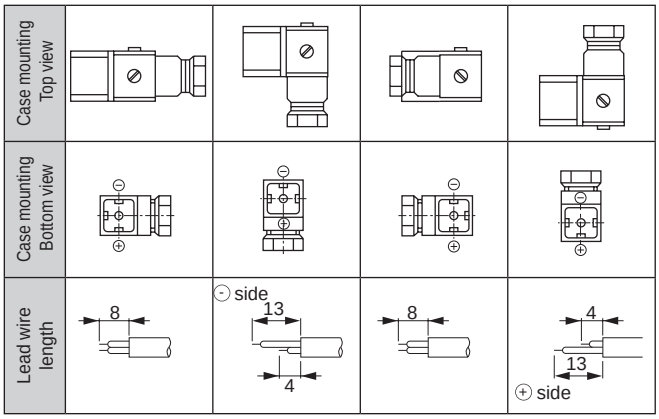
How to install the product to R*B terminal box

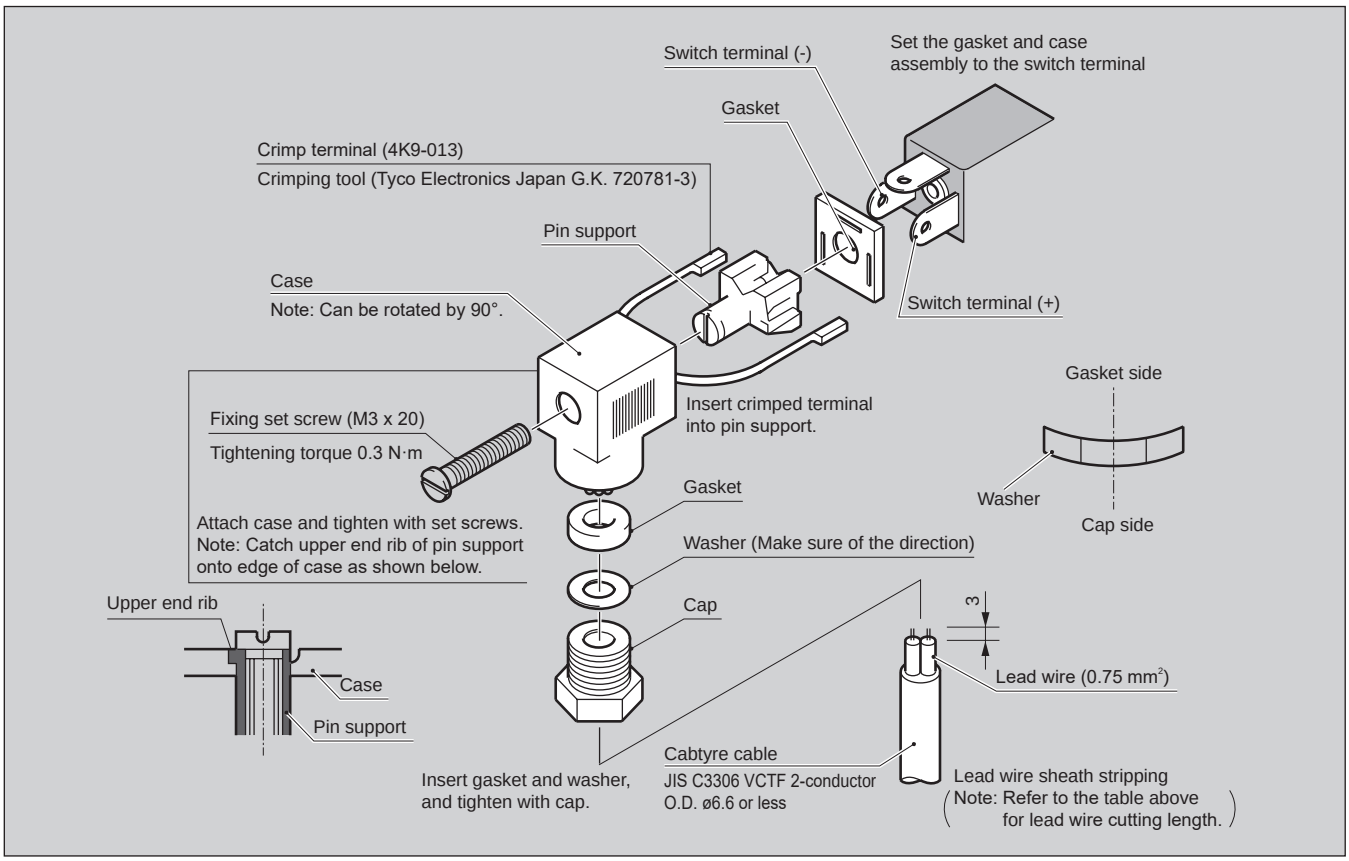
See the figure below and follow the following procedure to connect with the R*B terminal box.

(1) Remove the fixing screw completely and pull out the terminal box from the switch.
(2) Push out the pin support from the top of the case to separate the case and pin support.
(3) Remove the cap and take out the washer and gasket.
(4) Determine the direction to draw the lead wire from the terminal box.
(5) Refer to the top view of the case mounting orientation, and cut the lead wire based on the lead-out direction. Then strip the seal/sheath.
(6) Crimp the included terminal.
(7) Pass the lead wire through in the sequence of cap, washer, gasket, and case with attention to the orientation. Insert the lead wire into the case and pull it out with needle-nose pliers.
(8) Insert the terminal into the pin support and at the same time, push them into the case making sure of their direction. Push them until the upper end rib of the pin support comes out of the top of the case.
(9) Insert the fixing screw into the case and pin support.
(10) Insert the gasket and washer into the case and fix them by tightening the cap.
(11) Set the case to the switch terminal and fix it with the fixing screw.

● Lead cutting length

The lead cutting length differs with the case mounting orientation. Refer to the following table.





How to install the product to E0 terminal box

Prepare a heat-resistant cabtyre cable and flexible tube, and wire to the terminal box with reference to the figure below. The MAS insert, MAS holder, and cap nut are included as accessories.