Cylinder switch variation

CKD cylinders with switches cover wide applications with miniature to large cylinders and rotary actuators. Please refer to the variation table below to select the best products.

| Proximity switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | Descriptions |
| M Series | | | | | | | | R Series | | | | | T Series | | | | | | | | | | | | | | | | | | | | K Series | | | | | | | | | F Series | | | | |
M2V	M2H	M2WV	M3V	M3PV	M3H	M3PH	M3WV	R1	R2	R2Y	R3	R3Y	T1	T2	T2J	T2Y	T2W	T2YL	T2YF	T2YM	T2C	T2YC	T3	T3P	T3Y	T3W	T3YL	T3YF	T3YM	T3C	T3YC	T2YD	K2	K2Y	K2YF	K2YM	K3	K3P	K3Y	K3YF	K3YM	F2	F2Y	F3	F3Y	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Grommet
								●	●	●	●	●																																		Terminal box
●	●	●						●	●	●			●	●	●	●	●				●	●								●	●	●	●	●								●	●			2 wire
			●	●	●	●	●			●		●							●	●			●	●	●	●		●	●						●	●	●	●	●					●	●	3 wire
																												●	●											●	●					4 wire
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	LED (ON lighting)
																																														Neon light (OFF lighting)
																																														Without indicator light
		●					●			●		●				●	●	●	●	●					●	●	●	●	●		●	●		●	●	●			●	●	●		●		●	2 color indicator type
			●	●	●													●	●																											5 VDC
●	●	●							●	●				●	●	●	●	●	●	●	●	●											●	●	●	●	●	●				●	●			10VDC to 30 VDC
			●	●	●	●	●			●		●											●	●	●	●	●	●	●						●	●	●	●	●					●	●	30 VDC or less
								●					●																																	100 VAC
								●					●																																	200 VAC
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	Programmable controller
			●	●	●	●	●				●	●															●	●	●	●	●				●	●	●	●	●					●	●	IC circuit
			●	●	●	●	●			●	●	●															●	●	●	●	●				●	●	●	●	●					●	●	Compact relay, valve
																																														Large relay, valve

Ending

Descriptions		Reed switch																					
		M Series				R Series				T Series					K Series		F	H Series		E Series		V Series	
		M0V	M0H	M5V	M5H	R0	R4	R5	R6	T0	T5	T0C	T5C	T8	K0	K5	F0	H0	H0Y	E0	ET0	V0	V7
Electric connection	Grommet	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●
	Terminal box					●	●	●	●											●			
No. of connection	2 wire	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	3 wire																						
	4 wire																						
Indicator light	LED (ON lighting)	●	●			●			●	●		●		●	●		●	●	●	●	●	●	
	Neon light (OFF lighting)						●																●
	Without indicator light			●	●			●			●		●			●							
	2 color indicator type																		●				
Use voltage	5 VDC			●	●			●			●		●			●							
	10VDC to 30 VDC																		●			●	●
	30 VDC or less	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●		
	100 VAC	●	●	●	●	●	●	●		●	●	●	●	●	●	●		●		●	●	●	
	200 VAC					●	●	●					●							●			
Applications	Programmable controller	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	IC circuit			●	●			●			●		●			●							
	Compact relay, valve	●	●	●	●	●		●		●	●	●	●	●	●	●			●	●	●	●	●
	Large relay, valve						●																

Cylinder switch

Variation of cylinders with switches

CKD cylinders with switches cover wide applications with miniature to large cylinders and rotary actuators. Please refer to the variation table below to select the best products.

	Proximity switch					
	F Series	M Series	R Series	T Series	K Series	
	F2V F2H F3V F3H	M2V M2H M2WV M3V M3PV M3H M3PH M3WV	R1 R1K R2 R2K R2Y R2YK R3 R3K R3Y R3YK	T1 T2 T2J T2Y T2YL T2YF T2YM T2C T2YC T3 T3P T3Y T3YL T3YF T3YM T3C T3YC T2YD T2YDP	K2 K2Y K2YF K2YM K3 K3P K3Y K3YF K3YM	

Cylinder switch

Variation of cylinders with switches

Cylinder model		Bore size	Installation method			Compatibility with body	Reed switch																			
			Band	Tie rod	Rail		M Series				R Series				T Series					K Series		F	H Series		E Series	
							M0V	M0H	M5V	M5H	R0	R4	R5	R6	T0	T5	T0C	T5C	T8	K0	K5	F0	H0	H0Y	E0	ET0
Pencil shaped cylinder	SCP*2	φ6 to φ16	●				●		●																	
Medium bore size cylinder	CMK2	φ20 to φ40	●			Magnet provided as standard									●	●	●	●	●							
Medium bore size cylinder	CMA2	φ20 to φ40	●			Magnet provided as standard					●	●	●	●												
Round shaped cylinder	SCM	φ20 to φ100	●		●	Magnet provided as standard									●	●	●	●	●Note 5							
Tie rod cylinder	SCG	φ40 to φ100		●		Magnet provided as standard									●	●	●	●								
Medium bore size cylinder	SCA2	φ40 to φ100		●		Magnet provided as standard					●	●	●	●	●	●	●	●	●				▲	▲	▲	
Medium bore size cylinder with valve	SCA2-V	φ40 to φ100		●		Magnet provided as standard					●	●	●	●	●	●	●	●								
Medium bore size cylinder	SCS	φ125 to φ200	●								●	●	●	●												
Medium bore size cylinder with valve	CKV2	φ20 to φ40	●			Magnet provided as standard									●	●	●	●	●							
Cylinder with valve	CAV2 COV2	φ50 to φ100		●							●	●	●	●												
Compact cylinder	SSD	φ12 to φ160			●										●	●	●	●	●Note 6						▲	
Small direct mounting cylinder	MDC2	φ4 to φ10			●																	●				
Small cylinder with vacuum pad	MVC	φ6, φ10			●	Magnet provided as standard																●				
Compact cylinder	SMD2	φ6 to φ32			●															●	●					
Small compact cylinder	MSD	φ6 to φ16			●																		●			
Small guided compact cylinder	MSDG	φ6 to φ16			●																		●			
Flat and compact cylinder	FC*	φ25 to φ63			●		●		●																	
High rigid cylinder	STK	φ20 to φ50			●										●	●	●	●	●							
Brake cylinder	ULKP	φ16	●				●		●																	
Brake cylinder	ULK	φ20 to φ40	●			Magnet provided as standard									●	●	●	●	●							
Brake cylinder	JSK2	φ20 to φ40	●			Magnet provided as standard									●	●	●	●	●							
Brake cylinder	JSM2	φ20 to φ40	●			Magnet provided as standard					●	●	●	●												
Tie rod cylinder with brake	JSG	φ40 to φ100		●		Magnet provided as standard									●	●	●	●	●							
Brake cylinder medium bore size	JSC3	φ40 to φ100		●		Magnet provided as standard					●	●	●	●	●	●	●	●	●				▲	▲		
Brake cylinder large bore size	JSC3	φ125 to φ180		●							●	●	●	●												
Position locking compact cylinder	USSD	φ40 to φ63			●										●	●	●	●	●							
Free locking positioning cylinder	USC	φ40 to φ100		●		Magnet provided as standard					●	●	●	●	●	●	●	●	●				▲	▲		

Note 1: Including custom order
Note 2: ▲ enable to mount depending on variation. H type (L2), coolant proof (G2/G3), etc.
Note 3: Excluding φ16 or less
Note 4: Excluding φ12, φ16, position locking all bore sizes
Note 5: Excluding φ40 or less
Note 6: Excluding φ12 to φ32 of L, XL, YL, OL, LF, BL, WL and ML, φ12 and φ16 of KL and DL, and φ16 of QL
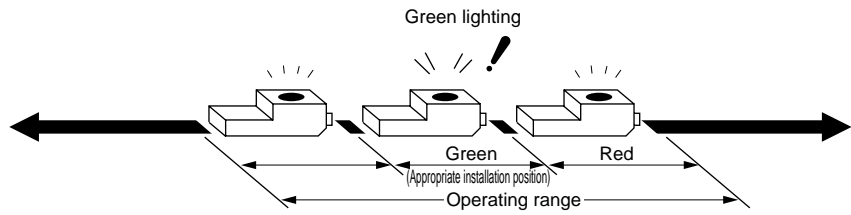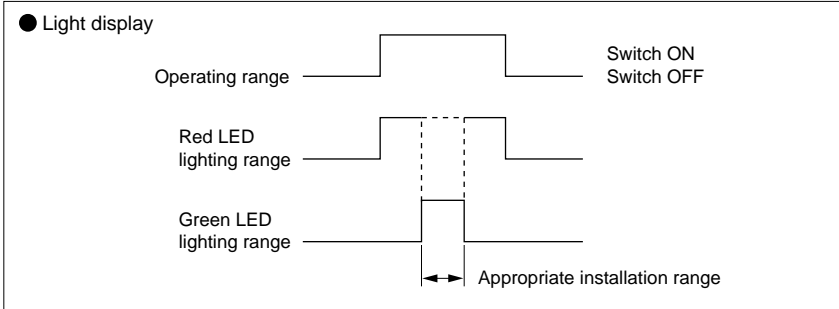
Cylinder switch

CKD Ending 5

| Proximity switch | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F Series | | | | M Series | | | | | | | | R Series | | | | | | | | | | T Series | | | | | | | | | | | | | | | | | | | | | K Series | | | | | | | |
F2	F2Y	F3	F3Y	M2V	M2H	M2WV	M3V	M3PV	M3H	M3PH	M3WV	R1	R1K	R2	R2K	R2Y	R2YK	R3	R3K	R3Y	R3YK	T1	T2	T2J	T2Y	T2W	T2YL	T2YF	T2YM	T2C	T2YC	T3	T3P	T3Y	T3W	T3YL	T3YF	T3YM	T3C	T3YC	T2YD	T2YDP	K2	K2Y	K2YF	K2YM	K3P	K3Y	K3YF	K3YM
																						●	●	●	●	●	▲	●	●	●	●	●	●	●		▲	●	●	●	●	●										
																						●	●	●	●	●	▲	●	●	●	●	●	●			▲	●	●	●	●	●										
●		●																				●									●	●																			
●	●	●	●																			●			●						●			●																
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												●		●		●		●		●																															
				●	●	●	●	●	●	●	●														●		●	●		●		●		●		●	●		●	●										
				●	●	●	●	●	●	●	●														●		●	●		●		●		●		●	●		●	●										
																									●		●	●		●		●		●		●	●		●	●										
				●	●	●	●	●	●	●	●														●		●	●		●		●		●		●	●		●	●										
																						●	●	●	●	●		●	●	●	●	●	●	●			●	●	●	●	●										
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																						●								●	●																			

Cylinder switch

Variation of cylinders with switches

Cylinder model		Bore size	Band	Tie rod	Rail	Compatibility with body	M0V	M0H	M5V	M5H	R0	R4	R5	R6	T0	T5	T0C	T5C	T8	K0	K5	F0	H0	H0Y	E0	ET0
Tierod cylinder Guided cylinder	STG	φ12 to φ80			●	Magnet provided as standard									●	●	●	●	● Note 4							
Guided cylinder	STS/L	φ8 to φ100			●	Magnet provided as standard									●	●	●	●	● Note 3							
Linear slide cylinder	LCS	φ6 to φ32			●										●	●										
Linear slide cylinder	LCG	φ6 to φ25			●										●	●										
Linear slide cylinder	LCM	φ4.5 to φ8			●																					
Linear slide cylinder	LCT	φ8 to φ25			●										●	●										
Linear slide cylinder	LCY	φ10 to φ25			●															●	●					
Super twin rod cylinder	STR2	φ6 to φ32			●	Magnet provided as standard														●	●					
Unit cylinder	UCA2	φ10 to φ32			●										●	●										
High energy absorption cylinder	HCM	φ20 to φ63			●	Magnet provided as standard									●	●	●	●	●							
High speed cylinder	HCA	φ20 to φ100	●			Magnet provided as standard					●	●	●	●												
Rodless cylinder	SRL2	φ10 to φ100			●	Magnet provided as standard	●	●	●	●																
High precision guided rodless cylinder	SRG	φ12 to φ25			●		●	●	●	●																
High precision guided rodless cylinder	SRM	φ25 to φ40, 63			●										●	●	●	●	●							
Rodless cylinder with brake	SRT	φ32 to φ63			●	Magnet provided as standard	●	●	●	●																
Magnet type rodless cylinder	MRL2	φ6 to φ20			●																					
High precision guided magnet type rodless cylinder	MRG2	φ10 to φ25			●	Magnet provided as standard									●	●	●	●								
Clamp cylinder	CAC3	φ40 to φ80		●		Magnet provided as standard									●	●	●	●	●							
Clamp cylinder with position locking	UCAC	φ50, φ63		●		Magnet provided as standard									●	●							▲			
Rotary clamp cylinder	RCC2	φ20 to φ63			●	Magnet provided as standard									●	●										
Robot cylinder	MFC	φ30 to φ80		●							●	●	●	●												
High power cylinder	SHC	φ40 to φ100		●		Magnet provided as standard					●	●	●	●									▲			
High rigid guideless cylinder	GLC	φ40 to φ100		●		Magnet provided as standard					●	●	●	●									▲			
Rotary actuator	RRC	Size 8, 32, 63			●	Magnet provided as standard									●	●		●								
Table type rotary actuator	GRC	Size 5 to 80			●	Magnet provided as standard																				
Rotary actuator	RV3*	Size 1 to 300					●		●																	
Hand-chuck																										

Note 1: Including custom order
Note 2: ▲ enable to mount depending on variation. H type (L2), coolant proof (G2/G3), etc.
Note 3: Excluding φ16 or less
Note 4: Excluding φ12, φ16, position locking all bore sizes
Note 5: Excluding φ40 or less
Note 6: Excluding φ12 to φ32 of L, XL, YL, OL, LF, BL, WL and ML, φ12 and φ16 of KL and DL, and φ16 of QL

Ending

Cylinder switch

CKD Ending 7

2 color indicator type proximity cylinder switch

● Light display

Operating range — Switch ON / Switch OFF

Red LED lighting range

Green LED lighting range

Appropriate installation range

Overview

Conventionally, the pneumatic cylinder position detection switch required installation and adjustment because of the operating range and hysteresis.

With the 2-color proximity cylinder switch, the optimal installation position is instantly indicated by the green LED lighting at the optimal installation position, and the red LED lighting at the normal operating range. This eliminates time and hassle required to adjust the switch and prevents setting errors, resulting in high reliability.

Features

● Installation and easy adjustment
The green LED lights at the optimal installation position, so the switch can be installed and adjusted very easily.
● Reliability is high.
This highly reliable switch integrated our original hybrid IC with a magnetic resistance element.

Green lighting

Green (Appropriate installation position)   Red

Operating range

● Comparison of cylinder and switch setting

(Conventional) ————————————→ (2 color indicator type switch)

1. The switch is moved in one direction and the lighting start position is marked.

Lighting start position

Mark ①

1. The switch is moved in only one direction, and is fixed at the position where the green LED lights.

Green lighting

Installation position

2. In the same manner, the switch is moved from the other direction, and the lighting start position is marked.

Mark ①   Mark ②

3. The edge of the switch is set and fixed at the center of the two marks.

Center of mark

2 color indicator type switch:
(1) Can be installed quickly
(2) Can be installed easily
(3) Can eliminate incorrect installation

Ending

Proximity cylinder switch with preventive maintenance output
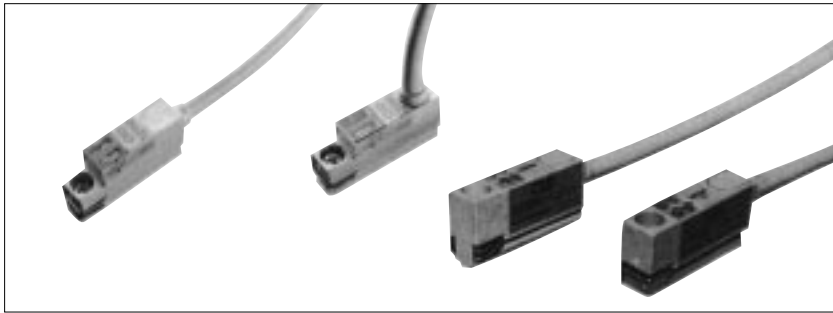
Overview

Conventionally, with the 2 color proximity cylinder switch, fluctuations of the piston stop position and deviation of the switch installation position had to be confirmed by the red LED lighting.

Preventive maintenance output that operates at the hazardous installation range (red indication position) in added to this switch so dislocation is used confirmed with the controller. This information is used for preventive maintenance, enabling high realbility.

Features

● Load side timer installation not required (-YM Series)
The preventive maintenance section has a timer, so it does not operate if the piston passes through the hazardous installation range (red indiator position) within the set time.

● Self hold (-YM Series)
The preventive maintenance output section is selfholding, making it easy to see whether preventive maintenance output is being output from the switch on the head side or rod side.

● Load side self hold release circuit installation not required (-YM Series)
The self-holding preventive maintenance output can be released by stopping the piston in the optimuminstallation range (green indication position) for a set time or longer.

● Low speed/cushioned cylinder available (-YF Series)
The -YF Series has a time for setting on the load side, so if the -YF Series is inappropriate for use, this can be used with a low-speed/cushened sylinder etc.

● Installation and easy adjustment
The green LED lights at the optimal installation position, so the switch can be installed and adjusted very easily.

● 2 types of lead wire outlet direction available
The lead wire outlet is provided in the vertiacal and horizontal directions, and can be used bassed on the mounted cylinder and use.

Operation chart
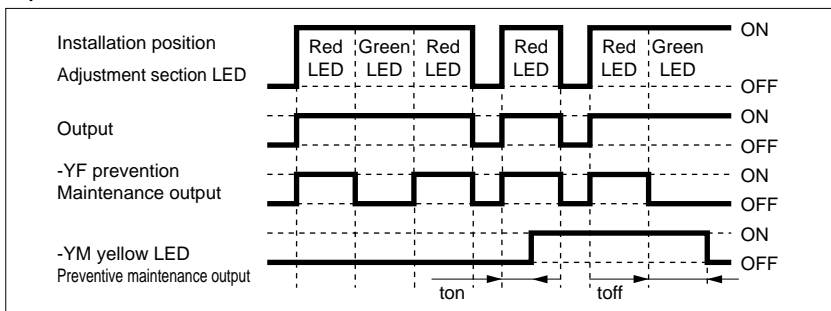
● T2YM. T3YM. K2YM. K3YM switch operation chart

(1) Piston stops at (2) G zone.

(2) Piston stops at (1) R zone.

(3) Piston stops at (3) R zone.

Cylinder switch

CKD Ending 9
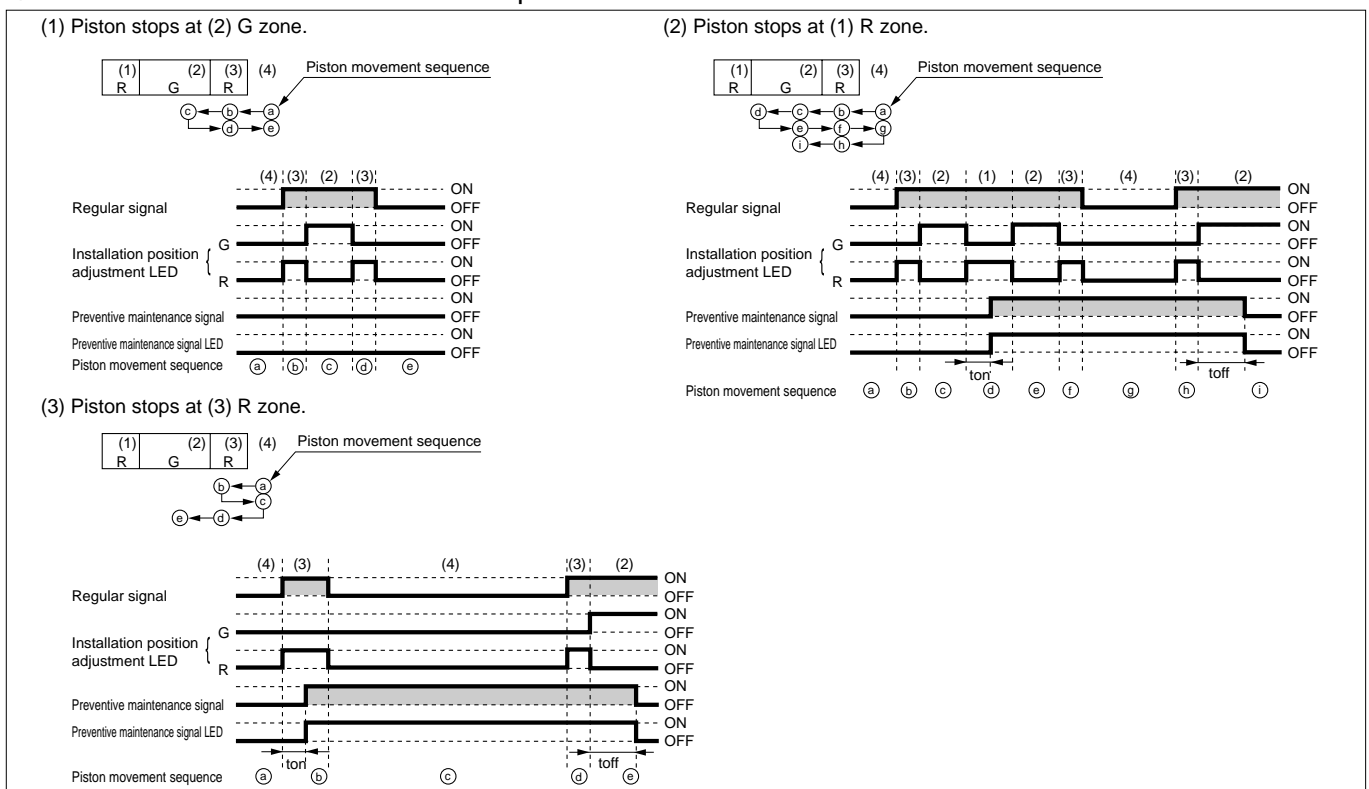
Strong magnetic field proof cylinder switch
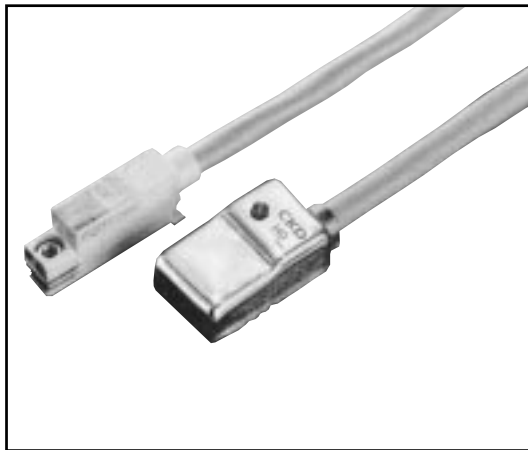
Overview

This cylinder switch is used in environments having strong magnetic fields, such as near spot welding machines and magnetizing units in automobile plants, etc.

Features

● Easy installation/position adjustment (V*, T2YD)
Rail mounting enebles the switch to be installed with a single set screw and adjusted easily.
● Heat resistant material
Metal (H0, H0Y) and self-extinguishing resin UL94-V0 (V*, T2YD), and flame-resistant leads (optional for T2YD) do not burn of fuse due to spatter.
● Not polarized (H0, T2YD, H0Y)
Diode bridge eliminates polarity and the hassle of checking plus/minus polarity, helping prevent connection errors.
● Easy installation and adjustment with 2 color indication (T2YD, H0Y)
The green LED lights at the optimum installation position, so the switch can be installed and adjusted very easily.

⚠ CAUTION

1. Spot welding current - malfunction distance characteristics
   (For detection stroke 30mm and over for V* switch)

2. SSD detection stroke - malfunction distance characteristics
   (V*switch)

Detection stroke length - malfunction distance characteristics
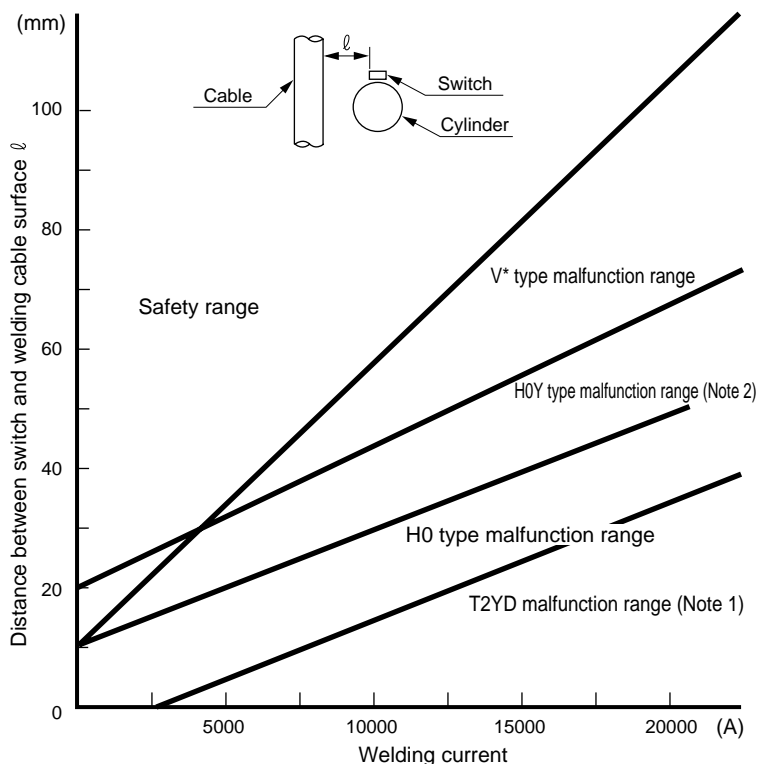
The above external magnetic field resistance properties apply when H0 is installed within the "max. sensitive position ±1 mm," within the "max. sensitive position ±1.5 mm" for V*, and within the "optimum installation range" for H0Y. Install switches within this range. Do not apply welding current to flow during movement of a cylinder piston.

If more than 2 welding cables are energized simultaneously, magnetic flux will increase due to the synergistic effect of cables. Consult with CKD before this use. Note that the switch cannot be set within the cable loop.

Note 1: Indicates a malfunction occuring when the cylinder piston magnet is degaussed by a welding field.
Note 2: Malfunction of H0Y indicates output malfunction.

When using with the detection stroke set to 30 mm or less, provide the above distance between the welding cable and switch.

3. H type cylinder switch
   Magnetic performance near spot welding

(mm) Spot welding current - piston magnet degaussing characteristics

Distance between cylinder tube and welding cable surface

50

40

30

Safety range

20

10

Demagnetization range

0

10000   15000   20000   (A)

Welding current

Degaussing occurs when an alternating current filed is applied to the magnet. Corrective action has been taken with the magnet for the H cylinder with switch. Degaussing does not occur up to 15,000 A. When using with 15,000 A or more, provide the above distance between the cylinder tube and welding cable surfaces.

M Series	Application cylinder	SCP*2/FC*/RV*/SRL2/SRG/SRT/SRB2

CE Refer to Intro 21 for details.

M*V

M*H

Specifications

Descriptions	Proximity 2 wire		Proximity 3 wire		
	M2V/M2H	M2WV (2 color indicator type)	M3H/V (NPN output type)	M3PH/V (PNP output type)	M3WV (2 color indicator type)
Applications	Programmable controller		Programmable controller, relay, IC circuit, small solenoid valve		
Output method	-		NPN output	PNP output	NPN output
Power voltage	-		4.5 to 28 VDC		10 to 28 VDC
Load voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 30mA		200mA or less	100mA or less	150mA or less
Current consumption	-		10mA or less with 24 VDC	12mA or less with 24 VDC	15mA or less with 24 VDC
Internal voltage drop	4V or less		0.5V or less		
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)
Leakage current	1mA or less		10μA or less	0.05mA or less	10μA or less
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.2mm^2)		1m (oil resistant vinyl cabtire cable 3 conductor 0.15mm^2)		
Maximum shock resistance	980m/s^2				
Insulation resistance	100MΩ and over with 500 VDC megger				
Withstand voltage	No failure impressed at 1000 VAC for one minute				
Ambient temperature	-10 to + 60°C				
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance				
Weight	1m: 20g 3m: 60g 5m: 90g		1m: 20g 3m: 60g 5m: 90g		

Descriptions	Reed 2 wire			
	M0V/M0H		M5V/M5H	
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (without light), serial connection	
Power voltage	-			
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50mA	7 to 20mA	50mA or less	20mA or less
Current consumption	-			
Internal voltage drop	3V or less		0V	
Light	LED (ON lighting)		Without indicator light	
Leakage current	0mA			
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.2mm^2)			
Maximum shock resistance	294m/s^2			
Insulation resistance	100MΩ and over with 500 VDC megger			
Withstand voltage	No failure impressed at 1000 VAC for one minute			
Ambient temperature	-10 to + 60°C			
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance			
Weight	1m: 20g 3m: 60g 5m: 90g			

Note 1: M*H is available for SRL2, SRG, SRT and SRB2.
Note 2: Please refer to the pages that each cylinder model is listed about model no. cylinder switch.

Ending

Dimensions

● M*V Series (radial lead wire) ● M*W Series (2 color indicator type, radial lead wire) ● M*H Series (axial lead wire)
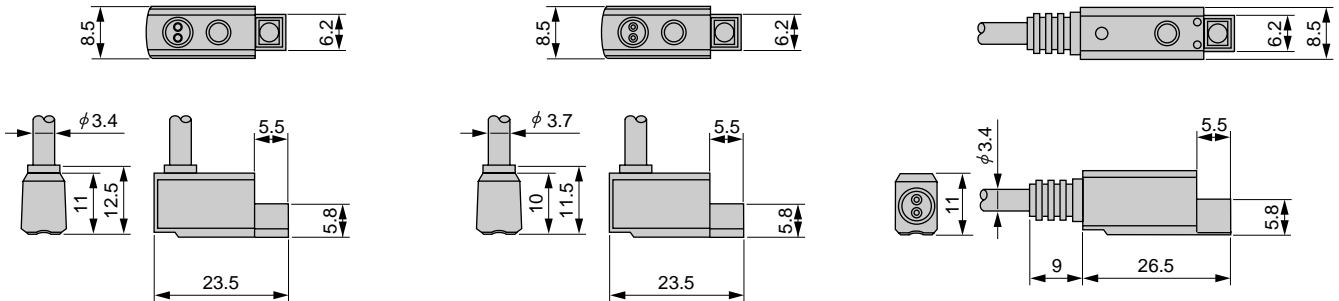
Switch internal circuit diagram

● M2V/M2H/M2WV	● M3V/M3H/M3WV	● M3PV/M3PH	● M0V/M0H

Switch main circuit — Brown line (+) / Blue line (-)

Switch main circuit — Brown line (power supply +) / Black line (output) / Blue line (power supply -)

Switch main circuit — Brown line (power supply +) / Black line (output) / Blue line (power supply -)

Blue line (-) / Brown line (+)

● M5V/M5H

Brown line   Blue line

R Series	Application cylinder	CMA2, SCA2, SCS, HCA, JSM2, JSC3, MFC, CAV2, COV2, GLC, SHC, USC

CE Refer to Intro 21 for details.

R*/R*Y R*B R*A

Specifications

Descriptions	Proximity 2 wire			Proximity 3 wire	
	R1/R1K	R2/R2K	R2Y/R2YK (2 color indicator type)	R3/R3K	R3Y/R3YK (2 color indicator type)
Applications	Programmable controller, relay, small solenoid valve	Programmable controller		Programmable controller, relay, IC circuit, solenoid valve	
Output method	-			NPN output	
Power voltage	-	-		4.5 to 28 VDC	
Load voltage	85 to 265 VAC	10 to 30 VDC		30 VDC or less	30 VDC or less
Load current	5 to 100mA	5 to 30mA		200mA or less	150mA or less
Current consumption	-	-		With 24 VDC (ON lighting)	
				10mA or less	16mA or less
Internal voltage drop	7V or less	4V or less		0.5V or less at 150mA	0.5V or less
Light	LED (ON lighting)		Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)
Leakage current	1mA or less with 100 VAC 2mA or less with 200 VAC	1mA or less	1.2mA or less	10 μA or less	
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm²)			1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm²)	
Maximum shock resistance	980m/s²				
Insulation resistance	20MΩ and over with 500 VDC megger				
Withstand voltage	No failure impressed at 1500 VAC for one minute	No failure impressed at 1000 VAC for one minute			
Ambient temperature	-10 to + 60°C				
Protective structure	Grommet type: IEC standards IP67, JIS C0920 (water tight type), oil resistance				
Option	Terminal box R*A (IP64), terminal box R*B (no water proof)				
Weight	1m: 40g 3m: 100g 5m: 160g			1m: 60g 3m: 110g 5m: 170g	

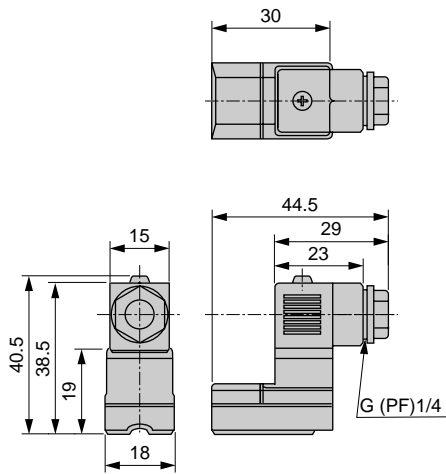| Descriptions	Reed 2 wire							
	R0			R4		R5		R6
Applications	Relay, programmable controller			High capacity relay, solenoid valve		Programmable controller, relay, IC circuit (w/o indicator light), serial connection		Programmable controller (With DC self hold)
Power voltage	-			-		-		-
Load voltage	12/24 VDC	110 VAC	220 VAC	110 VAC	220 VAC	5/12/24 VDC	110 VAC	220 VAC	24 VDC
Load current	5 to 50mA	7 to 20mA	7 to 10mA	20 to 200mA	10 to 200mA	50mA or less	20mA or less	10mA or less	5 to 50mA
Current consumption	-			-		-		-
Internal voltage drop	2.4V or less			2V or less		0V		5V or less
Light	LED (ON lighting)			Neon light OFF (OFF lighting)		None		LED (ON lighting)
Leakage current	0mA			1mA or less		0mA		0.1mA or less
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm²)							
Maximum shock resistance	294m/s²							
Insulation resistance	20MΩ and over with 500 VDC megger							
Withstand voltage	No failure impressed at 1500 VAC for one minute							
Ambient temperature	-10 to + 60°C							
Protective structure	Grommet type: IEC standards IP67, JIS C0920 (water tight type), oil resistance							
Option	Terminal box R*A (IP64), terminal box R*B (no water proof)							
Weight	1m: 40g 3m: 100g 5m: 160g							

Note: For proximity switch SCS/JSC3 (large bore size), "K" is indicated at the end of model number. (e.g.) R1K, R2K, R3K, R2YK, R3YK
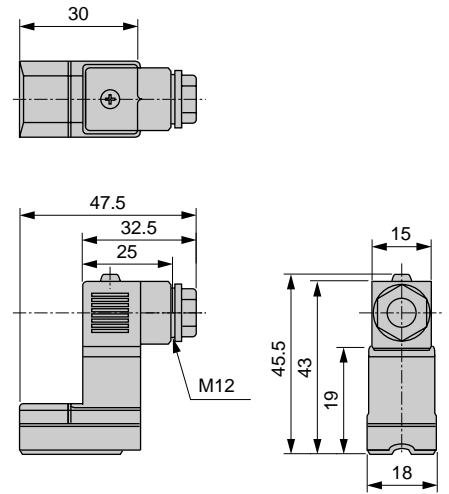
Ending

Dimensions

● R Series (grommet type)
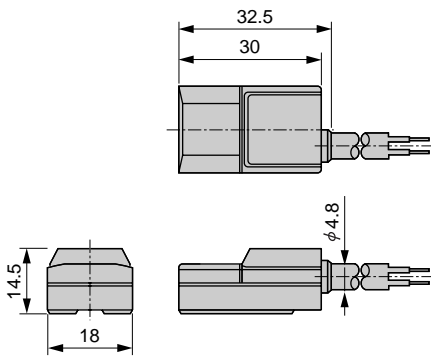
32.5
30

φ4.8

14.5

18

● R Series (terminal box R*B type)

30

44.5
29
23

15

40.5
38.5
19

18

G (PF)1/4

● R Series (terminal box R*A type)

30

47.5
32.5
25

M12

15

45.5
43
19

18

Switch internal circuit diagram

● R1	● R2/R2Y	● R3/R3Y
Switch main circuit → Brown line (to) / Blue line (to)	Switch main circuit → Brown line (+) / Blue line (-)	Switch main circuit → Brown line (power supply +) / Black line (output) / Blue line (power supply -)

● R0	● R4	● R5	● R6
Brown line (+) Blue line (-)	Brown line (to) Blue line (to)	Brown line Blue line	Brown line (+) Blue line (-)

| T Series | 1 color/2 color indicator | Application cylinder | CMK2, SCM, SCG, CKV2, SSD, JSG, ULK, JSK2, STG, STS/STL, SRM, MRL2, MRG2, UCA2, STK, LCS, LCG, LCT, UCAC, HCM, CSC3, RRC, Hand-chuck |

CE Refer to Intro 21 for details.

T*H   T*V   T*WH   T*WV   T*YH   T*YV   T*C

Specifications

Descriptions	Proximity 2 wire						Proximity 3 wire			
	T1H/T1V	T2H/T2V/T2C	T2HR3/T2VR3 (Bend resistance)	T2JH/T2JV (Off-delay type)	T2YH/T2YV T2YC (2 color indicator)	T2WH/T2WV (2 color indicator)	T3H/T3V/T3C	T3PH/T3PV (PNP output type)	T3YH/T3YV T3YC (2 color indicator)	T3WH/T3WV (2 color indicator)
Applications	Programmable controller, relay, compact solenoid valve	Programmable controller					Programmable controller, relay			
Output method	-						NPN output	PNP output	NPN output	NPN output
Power voltage	-						10 to 28 VDC			
Load voltage	85 to 265 VAC	10 to 30 VDC				24 VDC ±10%	30 VDC or less			
Load current	5 to 100mA	5 to 20mA (Note 1)					100mA or less		50mA or less	
Current consumption	-	-					10mA or less with 24 VDC	12mA or less with 24 VDC	10mA or less with 24 VDC	
Internal voltage drop	7V or less	4V or less					0.5V or less			
Delay hour off	-			200±50ms	-		-			
Light	LED (ON lighting)				Red/green LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Green LED (ON lighting)	Red/green LED (ON lighting)	
Leakage current	1mA or less with 100 VAC 2mA or less with 200 VAC	1mA or less					10 μA or less			
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm²)	1m (oil resistant cabtire cable 2 conductor 0.2mm²)	3m (bend resistance, oil resistant cabtire cord 2 conductor 0.3mm²)	1m (oil resistant cabtirecord 2 conductor 0.3mm²)	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm²)		1m (oil resistant vinyl cabtire 3 conductor cable 0.2mm²)			
Maximum shock resistance	980m/s²									
Insulation resistance	100MΩ and over with 500 VDC megger	20MΩ and over with 500 VDC megger		100MΩ and over with 500 VDC megger	20MΩ and over 500 VDC megger	20MΩ and over with 500 VDC megger			100MΩ and over with 500 VDC megger	20MΩ and over 500 VDC megger
Withstand voltage	No failure impressed at 1500 VAC for one min.	No failure impressed at 1000 VAC for one minute								
Ambient temperature	-10 to + 60°C									
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistant									
Weight	1m: 30g 3m: 90g 5m: 140g	1m: 20g 3m: 50g 5m: 80g		1m: 30g 3m: 90g 5m: 140g	1m: 20g 3m: 50g 5m: 80g		1m: 20g 3m: 50g 5m: 80g		1m: 30g 3m: 90g 5m: 140g	1m: 20g 3m: 50g 5m: 80g

Descriptions	Reed 2 wire							
	T0H/T0V/T0C			T5H/T5V/T5C		T8H/T8V		
Applications	Programmable controller, relay			Programmable controller, relay, IC circuit (without light), serial connection		Programmable controller, relay		
Power voltage	-							
Load voltage	12/24 VDC	110 VAC	220 VAC	5/12/24 VDC	110 VAC	12/24 VDC	110 VAC	220 VAC
Load current	5 to 50mA	7 to 20mA	7 to 10mA	50mA or less	20mA or less	5 to 50mA	7 to 20mA	7 to 10mA
Current consumption	-							
Internal voltage drop	3V or less			0V		3V or less		
Light	LED (ON lighting)			Without indicator light		LED (ON lighting)		
Leakage current	0mA							
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.2mm²)					1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm²)		
Maximum shock resistance	294m/s²							
Insulation resistance	20MΩ and over with 500 VDC megger					100MΩ and over with 500 VDC megger		
Withstand voltage	No failure impressed at 1000 VAC for one minute					No failure impressed at 1500 VAC for one minute		
Ambient temperature	-10 to + 60°C							
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance							
Weight	1m: 20g 3m: 50g 5m: 80g					1m: 30g 3m: 90g 5m: 140g		

Note 1: Maximum load current above: 20mA applies at 25°C. The current will be lower than 20mA if ambient temperature around switch is higher than 25°C. (5 to 10mA at 60°C.)
Note 2: T2C, T2HR3, T2VR3, T3C, T3PH, T3PV, T0C, T5C switches are available as custom order when installed onto applicable cylinders.
Note 3: T2JH and T2JV switches are available as custom order when installed onto SRL2(φ32 to φ100), MRL2, LCS, UCAC or Hand-chuck.
Note 4: The T0/T5 switches can be used at 220 VAC. Consult with CKD for working conditions.
Note 5: Switch types are limited depending on cylinder. Refer to each cylinder page for the details.

Ending

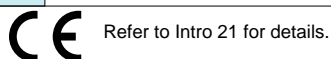| T Series	With preventive maintenance output	Application cylinder	CMK2, SCM, SCG, CKV2, SSD, JSG, ULK, JSK2, STG, STS/STL, SRM, STK, SRL2, SRG, SRT, SRB2, MRL2, HCM

T*YMH

T*YMV

Specifications

Descriptions		Proximity 3 wire	Proximity 4 wire	Proximity 3 wire	Proximity 4 wire
		T2YF H/V	T3YF H/V	T2YM H/V	T3YM H/V
Applications		Programmable controller	Programmable controller, relay	Programmable controller	Programmable controller, relay
Output method		NPN output			
Light — Installation position adjustment		Red/green LED (ON lighting)			
Light — Preventive maintenance output		-		Yellow LED (ON lighting)	
Output section — Power voltage		-	10 to 28 VDC	-	10 to 28 VDC
Output section — Load voltage		10 to 30 VDC	30 VDC	10 to 30 VDC	30 VDC or less
Output section — Load current		5 to 20mA	50mA or less	5 to 20mA	50mA or less
Output section — Internal voltage drop		4V or less	0.5V or less	4V or less	0.5V or less
Output section — Current consumption		-	10mA or less	-	10mA or less
Output section — Leakage current		1mA or less	10μA or less	1.2mA or less	10μA or less
Preventive maintenance output — Load voltage		30 VDC or less			
Preventive maintenance output — Load current		20mA or less	50mA or less	5 to 20mA	50mA or less
Preventive maintenance output — Internal voltage drop		0.5V or less		4V or less	2.4V or less
Preventive maintenance output — Leakage current		10μA or less			
Preventive maintenance output — Signal holding (Ton)		-	-	After 0.4$\pm$0.2sec from installation position adjustment section red LED lighting	
Preventive maintenance output — Signal release (Toff)		-	-	After 0.7$\pm$0.2sec from installation position adjustment section green LED lighting	
Lead wire length		1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 4 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 4 conductor 0.2mm²)
Maximum shock resistance		100MΩ and over with 500 VDC megger			
Insulation resistance		No failure impressed at 1000 VAC for one minute			
Withstand voltage		980m/s²			
Ambient temperature		-10 to + 60°C			
Protective structure		IEC standards IP67, JIS C0920 (water tight type), oil resistant			
Weight		1m: 30g 3m: 90g 5m: 140g			

T Series	Strong magnetic field proof	Application cylinder	SCG, SCA2, JSG, JSC3, SCS, STG, STS/STL, SRM, CAC3, SRL2, SRG, SRT, SRB2, SSD, SCM, STK, UCAC

CE   Refer to Intro 21 for details.

T Series	Coolant proof	Application cylinder	SRL2-J, CMK2-G2/3, SCG-G2/3, SCA2-G2/3, SSD-G2/3, STG-G2/3, STS/L-G2/3, HRL-G2/3

CE   Refer to Intro 21 for details.

Specifications   T2YD

Descriptions	Proximity 2 wire	
	T2YD	T2YDT
Applications	Programmable controller	
Light	Red/green LED (ON lighting)	
Load voltage	24 VDC $\pm$10%	
Load current	5 to 20mA	
Internal voltage drop	6V or less	
Leakage current	1.0mA or less	
Output delay time (Note 1) (ON/OFF delay)	30 to 60mS	
Lead wire	1m (oil resistant vinyl cabtire cable 2 conductor 0.5mm²) (standard)	1m (flame resistance vinylcabtire cord 2 conductor 0.5mm²) (option)
Insulation resistance	100MΩ and over with 500 VDC megger	
Withstand voltage	No failure impressed at 1000 VAC for one minute	
Max. shock resistance	980m/s²	
Ambient temperature	-10 to + 60°C	
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistant	
Weight	1m: 60g 3m: 170g 5m: 270g	

Note 1: This shows the time from magnetic sensor detects piston magnet until outputs a signal.
Note 2: This switch is not available in direct-current magnetic field.
Note 3: When installed on SCS or JSC3, model no. is T2YDP.

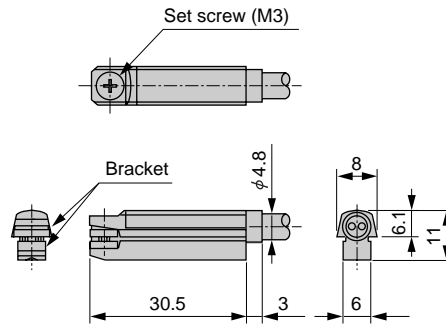## Specifications   T*YLH

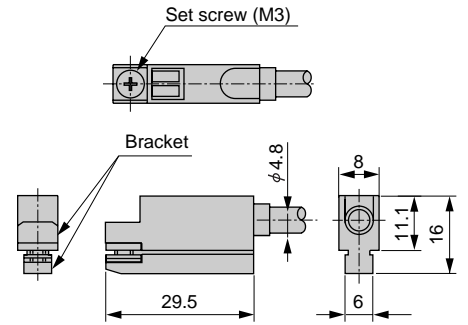| Descriptions	Proximity 2 wire	Proximity 3 wire
	T2YLH, T2YLV	T3YLH, T3YLV
Applications	Programmable controller	Programmable controller, relay
Output method	-	NPN output
Power voltage	-	10 to 28 VDC
Load voltage/current	10 to 30 VDC 5 to 20mA	30 VDC or less 50mA or less
Current consumption	-	10mA or less with 24 VDC (ON lighting)
Internal voltage drop	4V or less	0.5V or less
Leakage current	1mA or less	10μA or less
Light	Red/green LED (ON lighting)	
Lead wire	Oil resistant vinyl cabtire cable 0.3mm², 2 conductor 1m	Oil resistant vinyl cabtire cable 0.2mm², 3 conductor 1m
Insulation resistance	100MΩ and over with 500 VDC megger	
Withstand voltage	No failure impressed at 1000 VAC for one minute.	
Max. shock resistance	980m/s²	
Hysteresis	1.5mm or less	
Ambient temperature	-10 to + 60°C	
Protective structure	IEC standards IP67, JIS C0920(water tight type), oil resistant	
Weight	1m: 30g 3m: 90g 5m: 140g	

Ending

Cylinder switch

T Series

Dimensions

● T*H/T*WH Series
(Axial lead wire)

Set screw (M2.5)

4.5
5.2
6
φ3.4
T0H, T5H, T*WH = 22.5
T2H,T3H = 18.5
3

● T*YH/T2JH/T8H Series
(2 color indicator type, axial lead wire)

Set screw (M3)

Bracket
φ4.8
8
6.1
11
30.5
3
6

● T*Y*H/T1H Series
(With preventive maintenance output, axial lead wire)

Set screw (M3)

Bracket
φ4.8
8
11.1
16
29.5
6

● T*V/T*WV Series
(Radial lead wire)

Set screw (M2.5)

4.5
8.7
5.2
6
φ3.4
T0V, T5V,T*WV = 22.5
T2V,T3V = 18.5
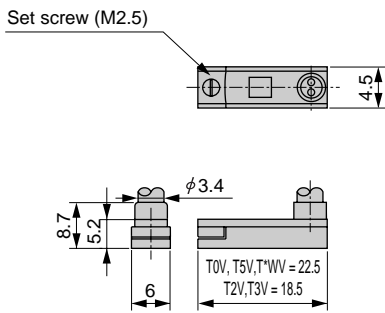
● T*YV/T2JV/T8V Series
(2 color indicator type, radial lead wire)
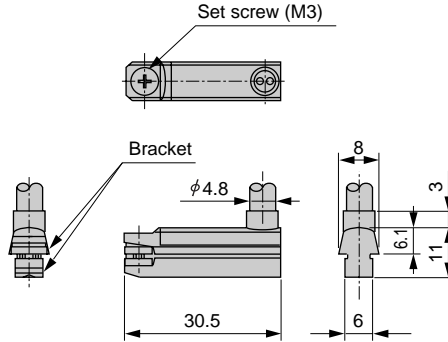
Set screw (M3)

Bracket
φ4.8
8
3
6.1
11
30.5
6

● T*Y*V/T1V Series
(With preventive maintenance output, radial lead wire)

Set screw (M3)

Bracket
φ4.8
8
3
6.1
11
11.1
16
29.5
6

● T2YD (Strong magnetic field proof switch)

Set screw (M3)

Bracket
φ6
8
0.4
11
16
29.5
6
6

● T* (Y) C Series

M8
23.2
11
6.1
6
8
8
30.5

● T*YLH Series
(Axial lead wire)

Set screw (M3)

Bracket
φ4.8
8
6.1
11
30.5
3
6

● T*YLV Series
(Radial lead wire)

Set screw (M3)

Bracket
φ4.8
8
3
6.1
11
30.5
6
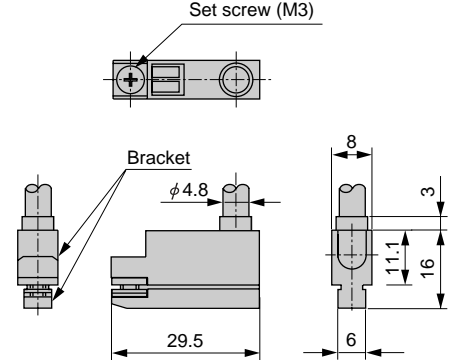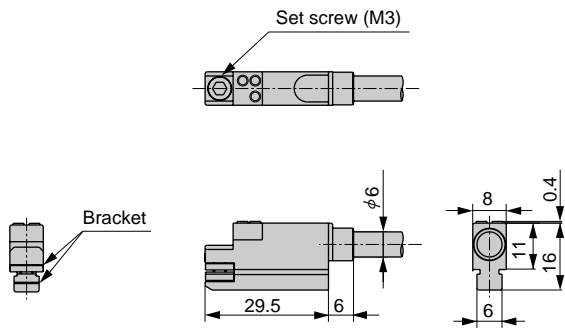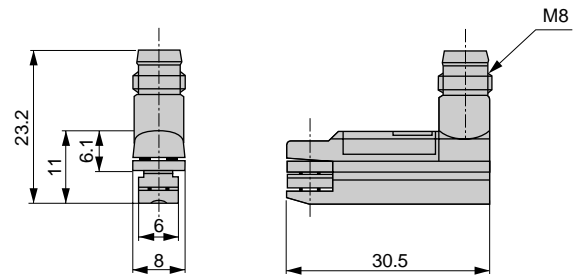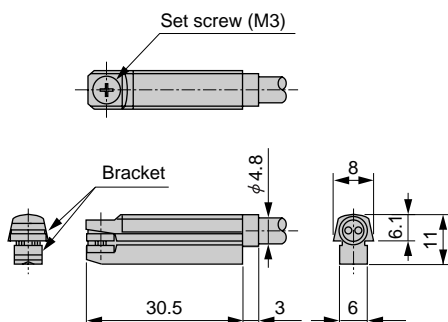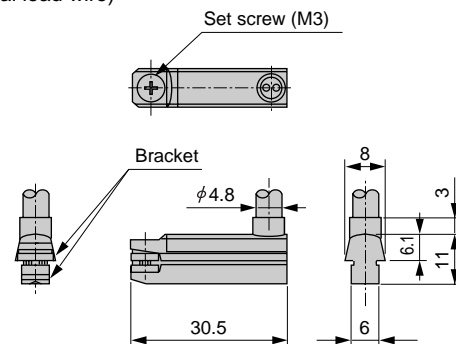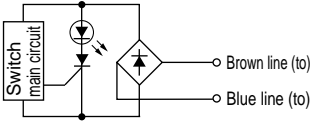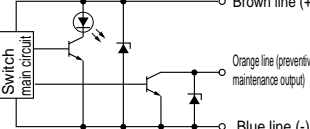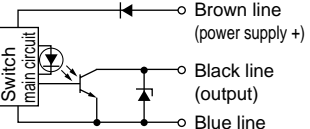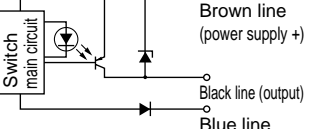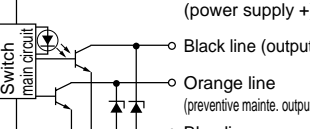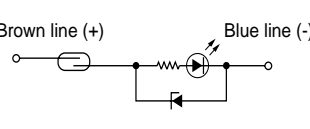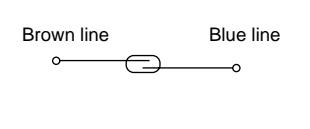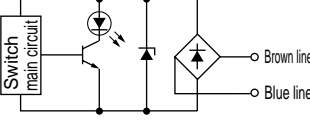
Switch internal circuit diagram

● T1H/T1V	● T2H/T2V/T2YH/T2YV/T2WH/T2WV/ T2JH/T2JV/T2C/T2YC/T2YLH/T2YLV	● T2YFH/T2YFV/T2YMH/T2YMV	● T3H/T3V/T3YH/T3YV/T3WH/T3WV/ T3C/T3YC/T3YLH/T3YLV
Switch main circuit — Brown line (to) / Blue line (to)	Switch main circuit — Brown line (+) / Blue line (-)	Switch main circuit — Brown line (+) / Orange line (preventive maintenance output) / Blue line (-)	Switch main circuit — Brown line (power supply +) / Black line (output) / Blue line (power supply -)

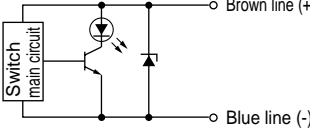| ● T3PH/T3PV	● T3YFH/T3YFV/T3YMH/T3YMV	● T0H/T0V/T0C/T8H/T8V	● T5H/T5V/T5C
Switch main circuit — Brown line (power supply +) / Black line (output) / Blue line (power supply-)	Switch main circuit — Brown line (power supply +) / Black line (output) / Orange line (preventive mainte. output) / Blue line (power supply -)	Brown line (+) — Blue line (-)	Brown line — Blue line

● T2YD
Switch main circuit — Brown line / Blue line
This switch is not polarized.

Cylinder switch

Ending

K Series	1 color/2 color indicator	Application cylinder	SMD2, STR2, LCY

CE Refer to Intro 21 for details.

K*PH	K*PV	K*YH	K*YV
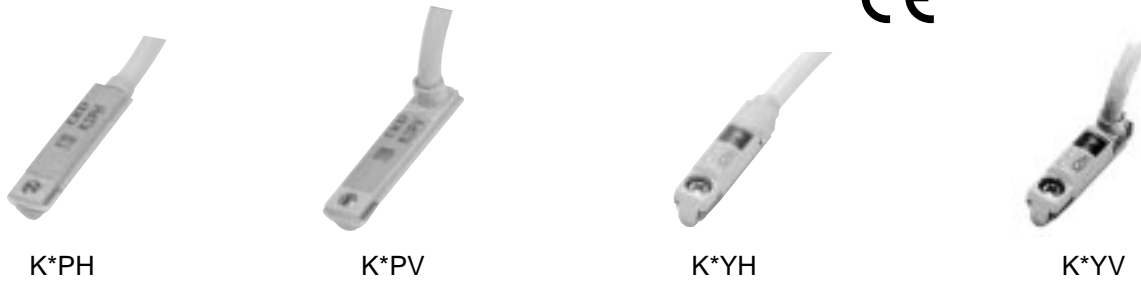
Specifications

Descriptions	Proximity 2 wire		Proximity 3 wire		
	K2H/K2V	K2YH/K2YV	K3H/V (NPN output type)	K3PH/V (PNP output type)	K3YH/V (2 color indicator type)
Applications	Programmable controller		Programmable controller, relay		
Output method	-		NPN output	PNP output	NPN output
Power voltage	-		10 to 28 VDC		
Load voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 20mA (Note 1)		50mA or less		
Current consumption	-		10mA or less with 24 VDC	12mA or less with 24 VDC	10mA or less with 24 VDC
Internal voltage drop	4V or less		0.5V or less		
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)
Leakage current	1mA or less		10μA or less		
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm^2)	1m (oil resistant vinyl cabtire cable 2 conductor 0.3mm^2)	1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm^2)		
Maximum shock resistance	980m/s^2				
Insulation resistance	20MΩ and over with 500 VDC megger	100MΩ and over with 500 VDC megger	20MΩ and over with 500 VDC megger		100MΩ and over with 500 VDC megger
Withstand voltage	No failure impressed at 1000 VAC for one minute				
Ambient temperature	-10 to + 60°C				
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance				
Weight	1m: 20g 3m: 50g 5m: 80g	1m: 30g 3m: 90g 5m: 140g	1m: 20g 3m: 50g 5m: 80g		1m: 30g 3m: 90g 5m: 140g

Descriptions	Reed 2 wire			
	K0H/K0V		K5H/K5V	
Applications	Programmable controller, relay		Programmable controller, relay, IC circuit (without light), serial connection	
Power voltage	-			
Load voltage	12/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 50mA	7 to 20mA	50mA or less	20mA or less
Current consumption	-			
Internal voltage drop	3V or less		0V	
Light	LED (ON lighting)		-	
Leakage current	0mA			
Lead wire length	1m (oil resistant vinyl cabtire cable 2 conductor 0.2mm^2)			
Maximum shock resistance	294m/s^2			
Insulation resistance	20MΩ and over with 500 VDC megger			
Withstand voltage	No failure impressed at 1000 VAC for one minute			
Ambient temperature	-10 to + 60°C			
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance			
Weight	1m: 20g 3m: 50g 5m: 80g			

Ending

Note 1: Maximum load current above: Applies at 25°C. The current will be lower than 20mA if ambient temperature around switch is higher than 25°C.
(5 to 10mA at 60°C.)
Note 2: Installation of K3PH, K3PV onto applicable cylinders is a custom order.

| K Series | With preventive maintenance output | Application cylinder | SMD2, STR2, LCY |

K*YFH

K*YFV

Specifications

Descriptions		Proximity 3 wire	Proximity 4 wire	Proximity 3 wire	Proximity 4 wire
		K2YF H/V	K3YF H/V	K2YM H/V	K3YM H/V
Applications		Programmable controller	Programmable controller, relay	Programmable controller	Programmable controller, relay
Output method		NPN output			
Light	Installation position adjustment	Red/green LED (ON lighting)			
	Preventive maintenance output	-		Yellow LED ON lighting	
Output section	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 20mA	50mA or less	5 to 20mA	50mA or less
	Internal voltage drop	4V or less	0.5V or less	4V or less	0.5V or less
	Current consumption	-	10mA or less	-	10mA or less
	Leakage current	1mA or less	10μA or less	1.2mA or less	10μA or less
Preventive maintenance output	Load voltage	30 VDC or less			
	Load current	20mA or less	50mA or less	5 to 20mA	50mA or less
	Internal voltage drop	0.5V or less		4V or less	2.4V or less
	Leakage current	10μA or less			
	Signal holding (Ton)	-	-	After 0.4±0.2sec from installation position adjustment section red LED lighting	
	Signal release (Toff)	-	-	After 0.7±0.2sec from installation position adjustment section green LED lighting	
Lead wire length		1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 4 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 3 conductor 0.2mm²)	1m (oil resistant vinyl cabtire cable 4 conductor 0.2mm²)
Maximum shock resistance		100MΩ and over with 500 VDC megger			
Insulation resistance		No failure impressed at 1000 VAC for one minute			
Withstand voltage		980m/s²			
Ambient temperature		-10 to + 60°C			
Protective structure		IEC standards IP67, JIS C09020 (water tight type), oil resistance			
Weight		1m: 30g 3m: 90g 5m: 140g			

Note 1: Maximum load current above: Applies at 25°C. The current will be lower than 20mA if ambient temperature around switch is higher than 25°C. (5 to 10mA at 60°C.)

Dimensions

● K*H Series (axial lead wire)

Set screw (M2.5)

φ3.4

5

7

24

27

● K*YH Series
(2 color indicator type, axial lead wire)

Set screw (M3)

Bracket

φ4.8

8

6.2

11

31

3

7

● K*Y*H Series
(With preventive maintenance output, axial lead wire)

Set screw (M3)

Bracket

φ4.8

8

11.2

16

30

3

7

● K*V Series (radial lead wire)

Set screw (M2.5)

φ3.4

5

7

27

7.8

● K*YV Series
(2 color indicator type, radial lead wire)

Set screw (M3)

Bracket

φ4.8

8

3

6.2

11

31

7

● K*Y*V Series
(With preventive maintenance output, radial lead wire)

Set screw (M3)

Bracket

φ4.8

8

3

11.2

16

30

7

Ending
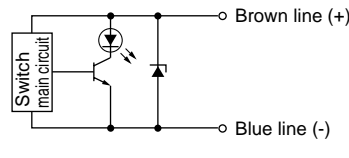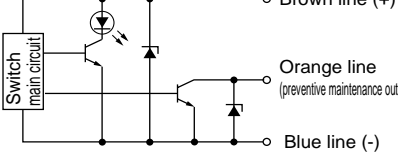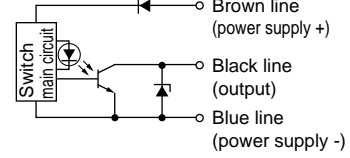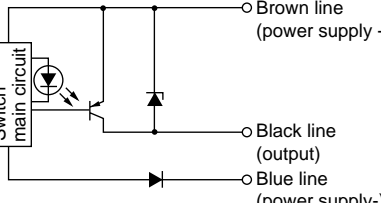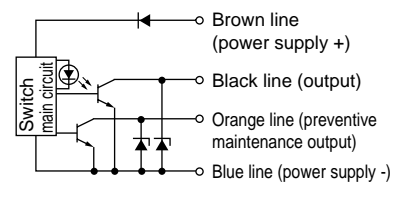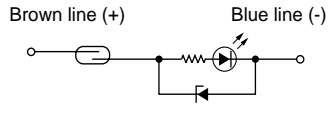
Switch internal circuit diagram

K2H/K2V/K2YH/K2YV

Brown line (+)

Blue line (-)

K2YFH/K2YFV/K2YMH/K2YMV

Brown line (+)

Orange line (preventive maintenance output)

Blue line (-)

K3H/K3V/K3YH/K3YV

Brown line (power supply +)

Black line (output)

Blue line (power supply -)

K3PH/K3PV

Brown line (power supply +)

Black line (output)

Blue line (power supply-)

K3YFH/K3YFV/K3YMH/K3YMV

Brown line (power supply +)

Black line (output)

Orange line (preventive maintenance output)

Blue line (power supply -)

K0H/K0V

Brown line (+)   Blue line (-)

K5H/K5V

Brown line   Blue line

F Series	Application cylinder	LCS, LCG, LCM, MDC2, MSD, MSDG-L, MVC
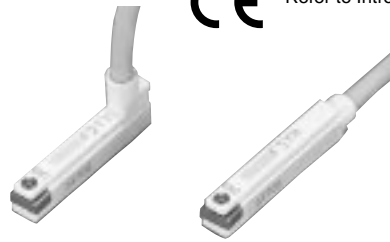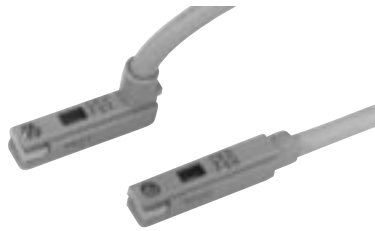
CE Refer to Intro 21 for details.

Specifications

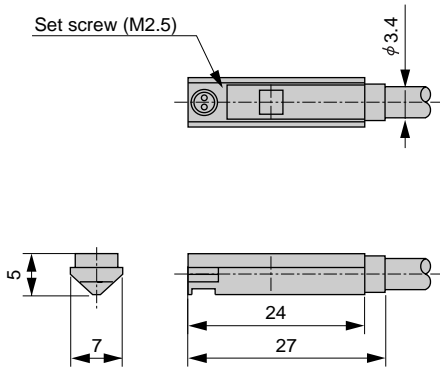| Descriptions	Reed 2 wire	Proximity 2 wire		Proximity 3 wire	Proximity 3 wire
	F0H/V	F2H/V	F2YH/F2YV	F3H/V	F3YH/F3YV
Applications	Programmable controller			Programmable controller, relay	
Output method	-			NPN output	
Power voltage	-			10 to 28 VDC	
Load voltage	24 VDC	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20mA (Note 1)			50mA or less	
Current consumption	-			10mA or less with 24 VDC	
Internal voltage drop	4V or less			0.5V or less	
Light	Yellow LED (ON lighting)		Red/green LED (ON lighting)	Yellow LED (ON lighting)	Red/green LED (ON lighting)
Leakage current	1mA or less			10 μA or less	
Lead wire length (standard)	Standard 1m (oil resistant vinyl cabtire cable 2 conductor 0.15mm^2)			Standard 1m (oil resistant vinyl cabtire cable 3 conductor 0.15mm^2)	
Maximum shock resistance	294m/s^2	980m/s^2			
Insulation resistance	20MΩ and over with 500 VDC megger				
Withstand voltage	No failure for one minute at 1000 VAC				
Ambient temperature	-10 to + 60°C				
Protective structure	IEC standards IP67, JIS C0920(water tight type), oil resistance				
Weight	1m: 10g 3m: 30g	1m: 20g 3m: 50g		1m: 10g 3m: 30g	1m: 20g 3m: 50g

Note 1: The maximum load current 20mA is applied at 25°C. The current will be lower than 20mA if ambient temperature around switch is higher than 25°C. (5 to 10mA at 60°C.)

Dimensions

● F*H Series (axial lead wire)
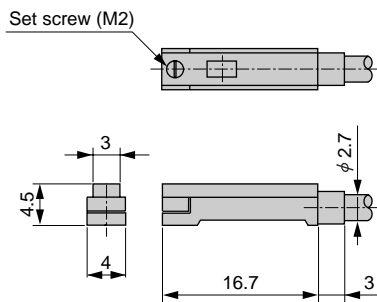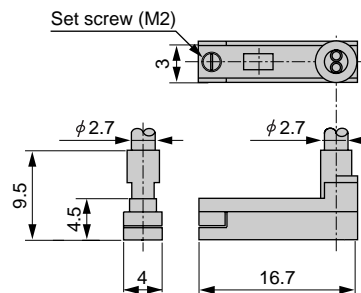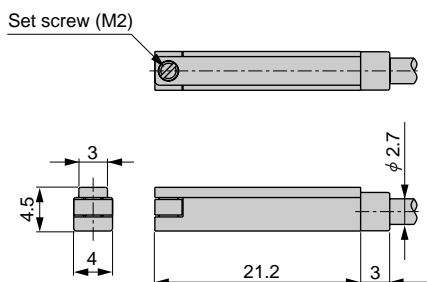
Set screw (M2)

3
4.5
4
16.7
3
ϕ 2.7

● F*V Series (radial lead wire)

Set screw (M2)

3
9.5
4.5
4
ϕ 2.7
ϕ 2.7
16.7

● F*YH Series (axial lead wire)

Set screw (M2)

3
4.5
4
21.2
3
ϕ 2.7

● F*YV Series (radial lead wire)

Set screw (M2)

3
9.5
4.5
4
ϕ 2.7
ϕ 2.7
21.2

Switch internal circuit diagram

● F0H/F0V	● F2H/F2V/F2YH/F2YV	● F3H/F3V/F3YH/F3YV

Switch main circuit — Brown line (+)
Switch main circuit — Blue line (-)

Switch main circuit — Brown line (+)
Switch main circuit — Blue line (-)

Switch main circuit — Brown line (power supply +)
Switch main circuit — Black line (output)
Switch main circuit — Blue line (power supply -)
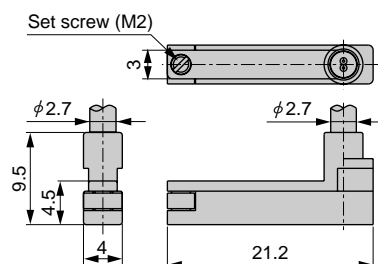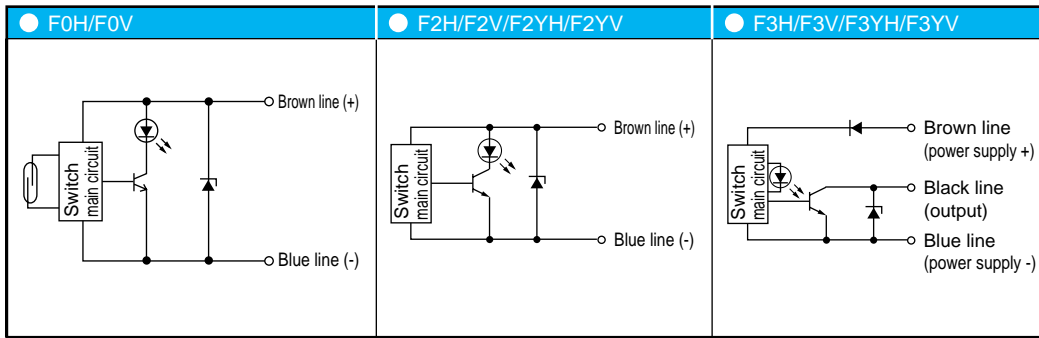
H Series	Strong magnetic field proof	Application cylinder	SCA2-L2, JSC3-L2, CAC3-L2, UCAC-L2

CE   Refer to Intro 21 for details.

H0   H0Y

Specifications

Descriptions	Reed 2 wire		
	H0		H0Y (2 color indicator type)
Applications	Programmable controller, relay		Programmable controller
Load voltage	12/24 VDC	110 VAC	24 VDC
Load current	5 to 50mA	7 to 20mA	5 to 20mA
Internal voltage drop	5V or less		6V or less
Light	Green LED (ON lighting)		Red/green LED (ON lighting)
Leakage current	10μA or less		
Lead wire length	1m (flame resistance cabtire cable 2 conductor 0.5mm^2)		
Insulation resistance	100MΩ and over with 500 VDC megger		
Withstand voltage	No failure impressed at 1000 VAC for one minute		
Maximum shock resistance	294m/s^2		
Ambient temperature range	-10 to + 60°C		
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance		
Weight	1m: 80g 3m: 180g 5m: 270g		

Dimensions

● H Series (strong magnetic field proof)

34
30
φ6
13
11.4
18

Switch internal circuit diagram

Ending

● H0	● H0Y
Brown line / Blue line	Brown line / Blue line, SW, Main circuit
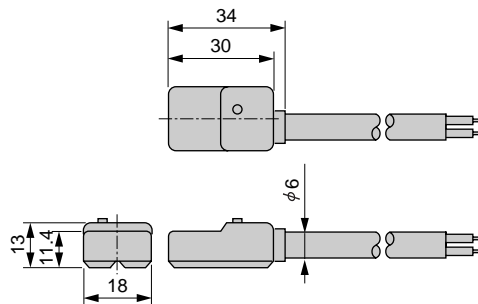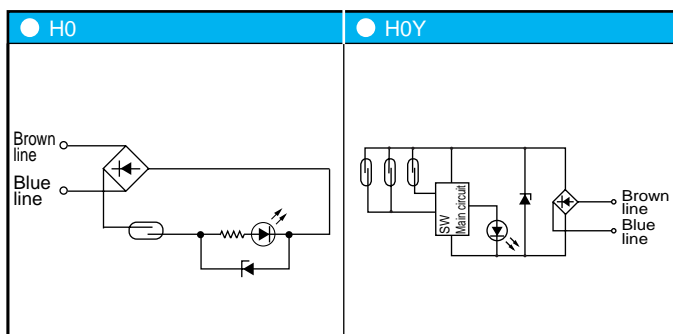
E Series	Heat resistance	Application cylinder	SCA2-L2T (E0), SSD-T1L (ET0)

CE

E0　　　　　　　　ET0

Specifications

Descriptions	Reed 2 wire				
	E0			ET0	
Applications	Relay, programmable controller				
Load voltage	12/24 VDC	110 VAC	220 VAC	12/24 VDC	110 VAC
Load current	5 to 50mA	7 to 20mA	7 to 10mA	5 to 50mA	7 to 20mA
Internal voltage drop	4V or less			2.4V or less	
Leakage current	0mA				
Light	LED (ON lighting)				
Conduit	G1/2			-	
Lead wire	-			1m (heat resistance fluorine insulation cabtire cable 2 conductor 0.5mm²)	
Insulation resistance	100MΩ and over with 500 VDC megger				
Withstand voltage	No failure impressed at 1500 VAC for one minute			No failure impressed at 1000 VAC for one minute	
Maximum shock resistance	294m/s²				
Ambient temperature	-10 to + 120°C			-10 to + 150°C	
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance				
Weight	160g			40g	

Dimensions

● E Series
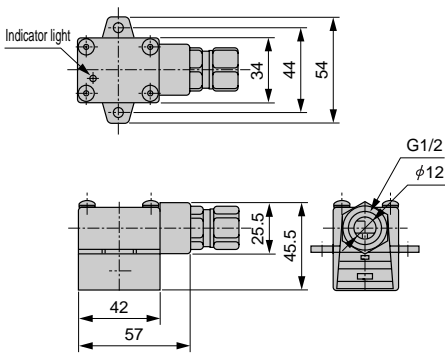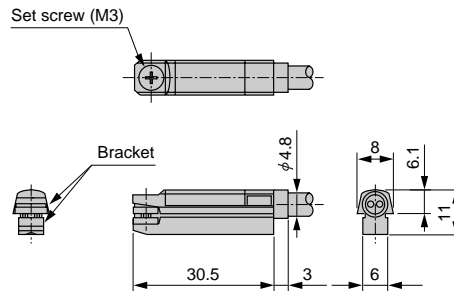
Indicator light

34　44　54

25.5　45.5

G1/2　φ12

42
57

● ET0H Series (axial lead wire)

Set screw (M3)

Bracket

φ4.8　8

6.1　11

30.5　3　6

● ET0V Series (radial lead wire)

Set screw (M3)

Bracket

φ4.8　8

3　6.1　11

30.5　6

Switch internal circuit diagram

● E0	● ET0H
Brown line (+)　　　Blue line (-)	Brown line (+)　　　Blue line (-)
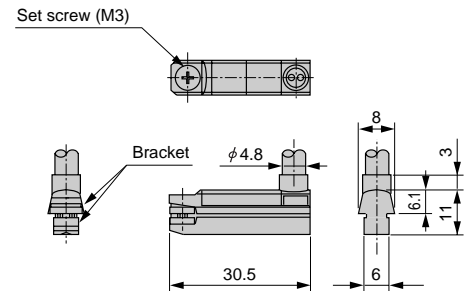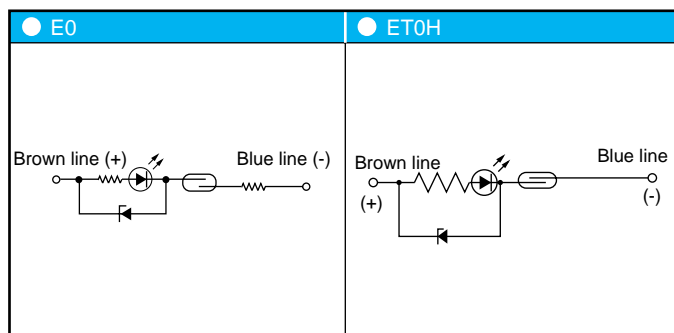
V Series	Small strong magnetic field proof	Application cylinder	SSD-L4, USSD-L4

CE   Refer to Intro 21 for details.

V0

Specifications

Descriptions	Reed 2 wire		
	V0		V7
Applications	Relay, programmable controller		
Load voltage	12/24 VAC	110 VAC	24 VDC
Load current	5 to 50mA	7 to 20mA	50mA or less
Internal voltage drop	2.4V or less (load current 40mA)		0V
Light	LED (ON lighting)		LED (OFF lighting)
Leakage current	0mA		1mA or less
Lead wire	1m (flame resistance cabtire cable 2 conductor $0.5mm^2$)		
Insulation resistance	100MΩ and over with 500 VDC megger		
Withstand voltage	No failure impressed at 1000 VAC for one minute		
Maximum shock resistance	$294m/s^2$		
Ambient temperature	-10 to + 60°C		
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance		
Weight	1m: 60g 3m: 160g 5m: 260g		

Dimensions

● V Series (strong magnetic field proof)

M3✕6 hexagon socket head cap bolt

Bracket

8

15

10

6

ϕ6

27

5

Switch internal circuit diagram

● V0	● V7
Brown (+) (-) Blue line	Brown line Blue line
	(+) (-)
	This switch is not polarized.
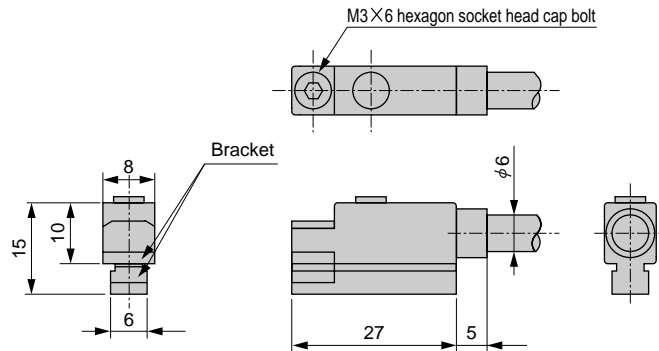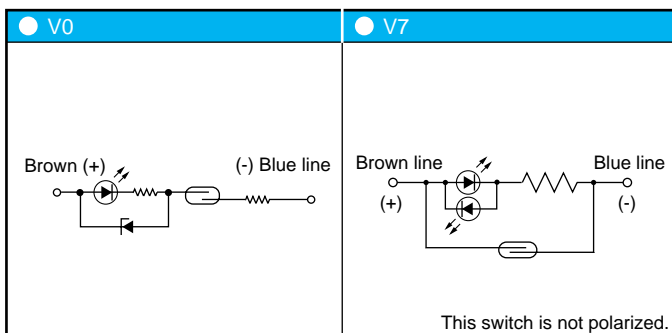
Contact protecting circuit box	SKAC, SKDC
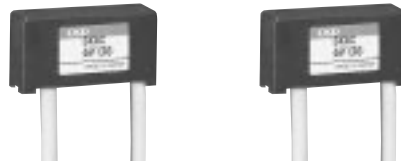
Specifications

Descriptions	Circuit AC		Circuit DC
	SKAC		SKDC
Load voltage	100/110 VAC	200/220 VAC	24 VDC
Load current	20mA or less	10mA or less	50mA or less
Lead wire	1m (oil resistant cabtire cable 2 conductor 0.2mm^2)		
Maximum shock resistance	980m/s^2		
Insulation resistance	100MΩ and over with 500 VDC megger		
Withstand voltage	No failure for one minute at 1500VDC		
Ambient temperature	-10 to + 60°C		
Protective structure	IEC standards IP67, JIS C0920 (water tight type), oil resistance		

Applicable cylinder switch: Proximity switch except R type

How to order

SW - **SKAC**

Symbol	Descriptions
SKAC	Circuit AC
SKDC	Circuit DC

Dimensions

● SKAC/SKDC Series

16
φ3.4
30
10

Internal circuit diagram

● SKAC/SKDC

Brown line — Brown line
Blue line — Blue line

*: Input and output do not have polarity, so either can be connected to the switch.
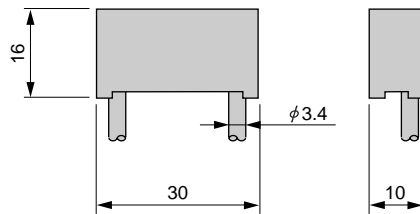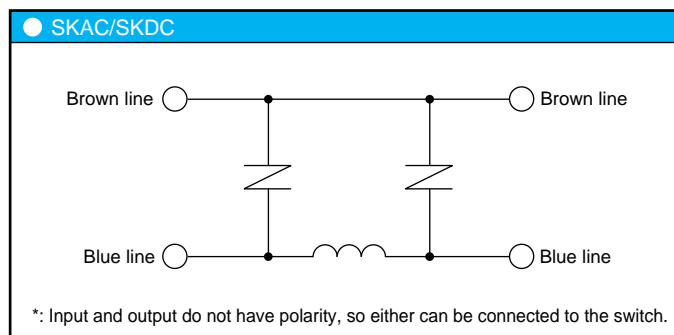
Note: SKDC is not available at 100/110/200/220 VDC.

Ending

Cylinder switch

Series option

T type cylinder switch M8 connector Series
T0C, T5C, T2C/T2YC, T3C/T3YC

Overview

Wiring man-hours reduced and wire mistake prevented.

Features

· Push-in connection dramatically increases work efficiency.
  Eliminating misconnection.
· Comparing with conventional wiring connector,
  mechanical strength is increased.
· Water proof treatment is not required IP67.
· When switch replacement, main body replacement
  enables very quick replacement.

* Custom order when a switch is installed on the cylinder.

T type cylinder switch with off delay timer
T2JH/T2JV

Overview

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

Features

· PC input problem at cylinder intermediate detection is
  prevented.
· Off delay timer 200±50ms
· Installation to rodless cylinder SRL2 is also possible.
· Great variety of applicable cylinders

* Custom order when a switch is installed on the cylinder.
* The mounted switch may be limited, depending on the cylinder.
  See each cylinder pages for details.

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

Overview

This is a switch that prevents cutting oil for machining, etc.
from entering into the cylinder switch.

Features

· 10 times stronger oil resistant that standard cylinder
  switch.
  This enables use even in the environment where cutting oil
  is applied.
· Great variety of applicable cylinder

* Custom order when a switch is installed on the cylinder.

Ending

Operational principle

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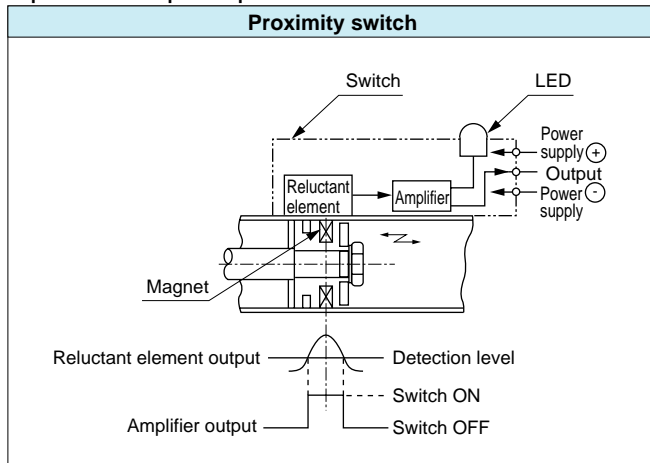
The magnetic field changes when the piston's magnet approaches, and the magnetic resistance element's output voltage changes as shown in the figure. Switching output as shown above is attained when this signal is amplified.
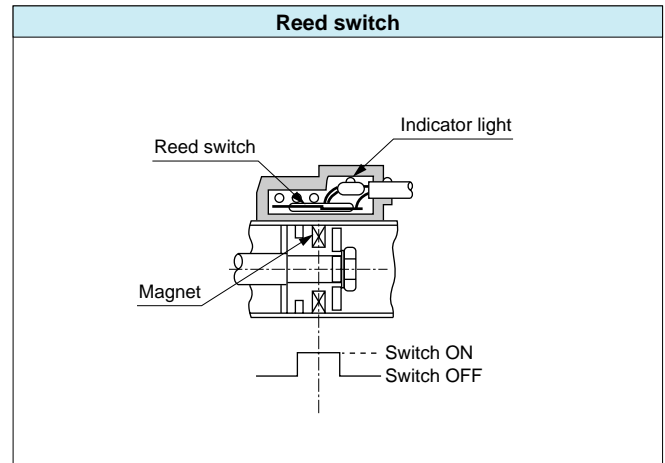
Reed switch

The magnetic field changes 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 installation position
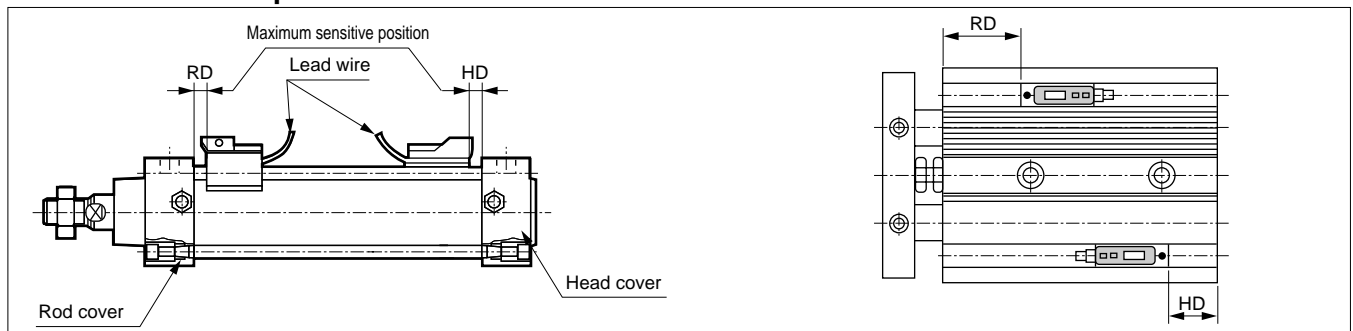
● Stroke end installation
To check that the switch functions at the maximum sensitive position, mount 1 each at the rod RD dimension position and at the head HD dimension position.
HD and RD dimensions differ based on a cylinder. Refer to each cylinder dimension. Mount the switch so the lead comes to 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 maximum sensitive position at that piston position, and is the installation position.

● Circumference direction installation
Differs based on an installation bracket. When using a band, no limits are set on circumference direction.
When using a tie rod, the position can be rotated in 90°C increments. Rotation of a circumference direction can not be made for the rail method.

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. Care must be taken.
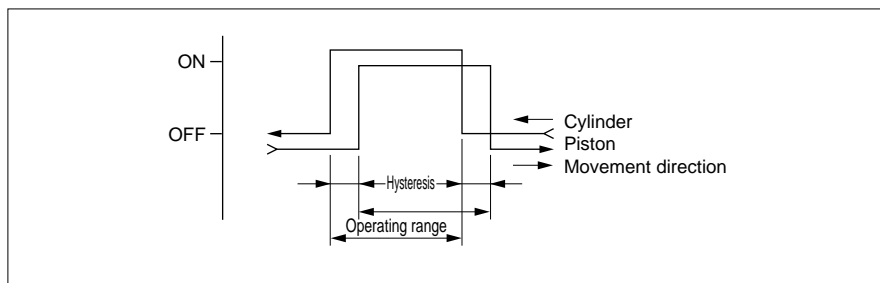
Operating range

● 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 maximum sensitive position. If this position is set as the piston stop position, it is not affected by disturbance and switch operation is stable.

Cylinder switch

Ending

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Maximum sensitive position Head end HD (mm) Stroke length				Rod end RD (mm) Stroke length				Proximity switch Operating range (Reference value) 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed switch Operating range (Reference value)	Hysteresis	Page
		15	30	45	60	15	30	45	60							
Pencil shaped cylinder ● Applicable switch: Proximity switch (M2V, M2WV, M3V, M3PV, M3WV) / Reed switch (M0V, M5V)																
SCPS2 SCPS2-M	φ6	1.0				13.5	25.5	37.5	49.5	4.5 to 8.5	4.5 to 9.5			4.5 to 8.5		I-3
	φ10	1.5				14.5	26.5	38.5	50.5	4.5 to 9	4.5 to 9.5	1.5 or less	1.0 or less	4.5 to 9	3 or less	
	φ16	1.5				14.5	26.5	38.5	50.5	5 to 9.5	4.5 to 9.5			5 to 9.5		
SCPH2	φ6	12	24	36	48	2				4.5 to 8.5	4.5 to 9.5			4.5 to 8.5		
	φ10	13	25	37	49	3				4.5 to 9	4.5 to 9.5	1.5 or less	1.0 or less	4.5 to 9	3 or less	
	φ16	13.5	25.5	37.5	49.5	2.5				5 to 9.5	4.5 to 9.5			5 to 9.5		
SCPD2	φ6	1.5				1.5				4.5 to 8.5	4.5 to 9.5			4.5 to 8.5		
	φ10	1.5				3				4.5 to 9	4.5 to 9.5	1.5 or less	1.0 or less	4.5 to 9	3 or less	
	φ16	1.5				2.5				5 to 9.5	4.5 to 9.5			5 to 9.5		
SCPD2-D	φ6	RD=1.5				1.5				4.5 to 8.5	4.5 to 9.5			4.5 to 8.5		
	φ10	RD=4.5				4.5				4.5 to 9	4.5 to 9.5	1.5 or less	1.0 or less	4.5 to 9	3 or less	
	φ16	RD=4.5				4.5				5 to 9.5	4.5 to 9.5			5 to 9.5		

Model no.	Bore size (mm)	Proximity switch Maximum sensitive position Head end HD (mm) 1 color type	2 color type	Rod end RD (mm) 1 color type	2 color type	Operating range (Reference value) 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed switch Maximum sensitive position HD	RD	Operating range (Reference value)	Hysteresis	Page
Pencil shaped cylinder ● Applicable switch: Proximity switch (M2V, M2WV, M3V, M3PV, M3WV) / Reed switch (M0V, M5V)														
SCPD2-V	φ10	1.5		3		4.5 to 9	4.5 to 9.5	1.5 or less	1.0 or less	1.5	3	4.5 to 9	3 or less	I-3
	φ16	1.5		2.5		5 to 9.5	4.5 to 9.5			1.5	2.5	5 to 9.5		

Medium bore size cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)

Model no.	Bore size	HD 1 color	2 color	RD 1 color	2 color	Operating range 1 color	2 color	Hysteresis 1 color	2 color	Reed Max sens HD	RD	Operating range	Hysteresis	Page
CMK2	φ20	7	6	8	7	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	7	8	6.5 to 11	3 or less	I-81
	φ25	8.5	7.5	9.5	8.5	2.5 to 5.5	3.5 to 7.5			8.5	9.5	7.5 to 12		
	φ32	8.5	7.5	9.5	8.5	2.5 to 6	3.5 to 8			8.5	9.5	6.5 to 11.5		
	φ40	10.5	9.5	11.5	10.5	3 to 7	4 to 9			10.5	11.5	7.5 to 13.5		

● 1 color indicator type (T1*, T8*)

Model no.	Bore size	HD 1 color	2 color	RD 1 color	2 color	Operating range 1 color	2 color	Hysteresis 1 color	2 color	Reed Max sens HD	RD	Operating range	Hysteresis	Page
CMK2	φ20	6	-	7	-	2.5 to 5.5	-	1.5 or less	-	1	2	6.5 to 11	3 or less	I-81
	φ25	7.5	-	8.5	-	2.5 to 5.5	-			2.5	3.5	7.5 to 12		
	φ32	7.5	-	8.5	-	2.5 to 6	-			2.5	3.5	6.5 to 11.5		
	φ40	9.5	-	10.5	-	3 to 7	-			4.5	5.5	7.5 to 13.5		

Model no.	Bore size (mm)	Maximum sensitive position Head end HD (mm) Stroke length				Rod end RD (mm) Stroke length				Proximity switch Operating range (Reference value) 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed switch Operating range (Reference value)	Hysteresis	Page
		15	30	45	60	15	30	45	60							
Medium bore size cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)																
CMA2	φ20	7.5				7.5				7.5 to 12	12 to 16			10.0 to 14.0		I-191
	φ30	10.5				10.5				7 to 12	12 to 16	1.5 or less	1.0 or less	10.0 to 14.0	3 or less	
	φ40	11.5				11.5				7 to 12.5	12 to 16			10.0 to 14.0		

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Guided cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color, w/o indicator display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCM	∮20	6.8	5.5	7.7	6.5	3 to 8	4.5 to 9	1.5 or less	1.0 or less	3.8	6.7	6 to 14	3 or less	I-213
	∮25	5.8	4.5	8.7	7.5	3 to 9	5 to 9			2.8	7.7	5 to 14		
	∮32	6.8	5.5	9.7	8.5	3 to 8	5 to 9			3.8	8.7	5 to 12		
	∮40	8.8	7.5	11.7	10.5	3 to 9	5.5 to 9.5			5.8	10.7	6 to 14		
	∮50	11.3	10	13.2	12	3 to 9	6 to 10			8.3	12.2	6 to 14		
	∮63	11.3	10	13.2	12	3 to 9	6 to 10.5			8.3	12.2	7 to 15		
	∮80	13.4	12.1	20.1	18.9	4 to 10	6.5 to 11			10.4	19.1	7 to 15		
	∮100	13.4	12.1	20.1	18.9	4 to 10	7 to 11.5			10.4	19.1	9 to 15		

● 1 color indicator type (T1*, T8*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCM	∮20	5.5	-	6.5	-	3 to 8	-	1.5 or less	-	-	-	-	-	I-213
	∮25	4.5	-	7.5	-	3 to 9	-			-	-	-		
	∮32	5.5	-	8.5	-	3 to 8	-			-	-	-		
	∮40	7.5	-	10.5	-	3 to 9	-			-	-	-		
	∮50	10	-	12	-	3 to 9	-			2.3	6.2	6 to 14	3 or less	
	∮63	10	-	12	-	3 to 9	-			2.3	6.2	7 to 15		
	∮80	12.1	-	18.9	-	4 to 10	-			4.4	13.1	7 to 15		
	∮100	12.1	-	18.9	-	4 to 10	-			4.4	13.1	9 to 15		

Tie rod cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*)

● 1 color/2 color, w/o indicator display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCG Types in ( ) are for rubber cushion type.	∮32	5 (8)	4 (7)	5 (8)	4 (7)	2 to 7	6 to 9	1.5 or less	1.0 or less	5 (8)	5 (8)	6 to 11	3 or less	I-337
	∮40	5 (8)	4 (7)	5 (8)	4 (7)	2 to 7	6.5 to 9			5 (8)	5 (8)	7 to 12		
	∮50	5 (9)	4 (8)	6.5 (10.5)	5.5 (9.5)	2 to 7	7 to 10			5 (9)	6.5 (10.5)	7.5 to 12		
	∮63	5 (9)	4 (8)	6.5 (10.5)	5.5 (9.5)	2 to 7.5	7 to 10			5 (9)	6.5 (10.5)	8.5 to 13		
	∮80	6 (11)	5 (10)	12.5 (17.5)	11.5 (16.5)	2.5 to 8	7.5 to 10.5			6 (11)	12.5 (17.5)	9 to 13.5		
	∮100	6.5 (11.5)	5.5 (10.5)	12 (17)	11 (16)	2.5 to 8	8 to 11			6.5 (11.5)	12 (17)	9 to 14		

● 1 color/2 color indicator, w/o display (T1*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCG Types in ( ) are for rubber cushion type.	∮30	4 (7)	-	4 (7)	-	2 to 7	-	1.5 or less	-	0 (2)	0 (2)	6 to 11	3 or less	I-337
	∮40	4 (7)	-	4 (7)	-	2 to 7	-			0 (2)	0 (2)	7 to 12		
	∮50	4 (8)	-	5.5 (9.5)	-	2 to 7	-			0 (3)	0.5 (4.5)	7.5 to 12		
	∮63	4 (8)	-	5.5 (9.5)	-	2 to 7.5	-			0 (3)	0.5 (4.5)	8.5 to 13		
	∮80	5 (10)	-	11.5 (16.5)	-	2.5 to 8	-			0 (5)	6.5 (11.5)	9 to 13.5		
	∮100	5.5 (10.5)	-	11 (16)	-	2.5 to 8	-			0.5 (5.5)	6 (11)	9 to 14		

Medium bore size cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color, w/o indicator display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCA2	∮40	11	10	11	10	2 to 7	3 to 10	1.5 or less	1.0 or less	11	11	5 to 12.5	3 or less	I-431
	∮50	13	12	13	12	2 to 7.5	3 to 10			13	13	5.5 to 13.5		
	∮63	13	12	13	12	2.5 to 7.5	3.5 to 10.5			13	13	5.5 to 14		
	∮80	14.5	13.5	14.5	13.5	3 to 8	4 to 11.5			14.5	14.5	6.5 to 14.5		
	∮100	18.5	17.5	18.5	17.5	3 to 8.5	4 to 11.5			18.5	18.5	6.5 to 15.5		

● 1 color indicator type (T1*, T8*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	Hyst 1	Hyst 2	HD	RD	Op range	Hyst	Page
SCA2	∮40	10	-	10	-	2 to 7	-	1.5 or less	-	5	5	5 to 12.5	3 or less	I-431
	∮50	12	-	12	-	2 to 7.5	-			7	7	5.5 to 13.5		
	∮63	12	-	12	-	2.5 to 7.5	-			7	7	5.5 to 14		
	∮80	13.5	-	13.5	-	3 to 8	-			8.5	8.5	6.5 to 14.5		
	∮100	17.5	-	17.5	-	3 to 8.5	-			12.5	12.5	6.5 to 15.5		

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Maximum sensitive position								Proximity switch				Reed switch		Page
		Head end HD (mm)				Rod end RD (mm)				Operating range (Reference value)		Hysteresis		Operating range (Reference value)	Hysteresis	
		Stroke length														
		15	30	45	60	15	30	45	60	1 color type	2 color type	1 color type	2 color type			
Medium bore size cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)																
SCA2	φ40	5.5				5.5				6.5 to 11.5	10 to 14	1.5 or less	1.0 or less	9.5 to 12.5	3 or less	I-431
	φ50	7.5				7.5				8 to 12.5	12 to 16			10.5 to 14.5		
	φ63	7.5				7.5				7.5 to 12.5	12 to 16			10.5 to 14.5		
	φ80	9				9				8 to 13.5	12 to 16			11.5 to 15.5		
	φ100	13				13				8 to 14	12 to 17			12 to 16		
Medium bore size cylinder ● Applicable switch: Strong magnetic field proof proximity switch (T2YD)																
SCA2	φ40	10				10				-	6.5 to 9	-	1.5 or less	-	-	I-431
	φ50	12				12				-	7 to 10					
	φ63	12				12				-	7 to 10					
	φ80	13.5				13.5				-	7.5 to 10.5					
	φ100	17.5				17.5				-	8 to 11					
Medium bore size cylinder ● Applicable switch: Strong magnetic field proof reed switch (H0*) The values in ( ) indicate H0Y.																
SCA2-L2	φ40	4				4				-	-	-	-	4 to 7.5 (10.5 to 13.5)	3 or less	I-431
	φ50	6				6				-	-			4 to 7.5 (11 to 14)		
	φ63	6				6				-	-			5 to 8 (11.5 to 14.5)		
	φ80	7.5				7.5				-	-			5 to 8 (10.5 to 14.5)		
	φ100	11.5				11.5				-	-			5 to 8 (10.5 to 14.5)		

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)						HD	RD			
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type					
Medium bore size cylinder ● Applicable switch: Proximity switch (R1K, R2K, R2YK, R3K, R3YK) / Reed switch (R0, R4, R5, R6)														
SCS	φ125	0		0		7.5 to 14	14 to 21	1.5 or less	1.0 or less	0	0	11 to 16	3 or less	I-601
	φ140	0		0		7.5 to 14	18 to 26			0	0			
	φ160	0		0		7.5 to 14	18 to 26			0	0			
	φ180	0		0		7.5 to 14	18 to 26			0	0			
	φ200	1		2		7.5 to 14	18 to 26			1	2			
Medium bore size cylinder ● Applicable switch: Strong magnetic field proof proximity switch (T2YDP)														
SCS	φ125	-	3.5	-	3.5	-	6.5 to 8	-	1.0 or less	-	-	-	-	I-601
	φ140	-	3	-	3	-	6.5 to 8.5	-		-	-	-		
	φ160	-	4	-	4	-	6.5 to 8.5	-		-	-	-		
	φ180	-	5	-	5	-	6.5 to 9	-		-	-	-		
	φ200	-	5	-	7	-	7 to 9	-		-	-	-		
Medium bore size cylinder with valve ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)														
● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)														
CKV2	φ20	7	6	8	7	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	7	8	6.5 to 11	3 or less	I-655
	φ25	8.5	7.5	9.5	8.5	2.5 to 5.5	3.5 to 7.5			8.5	9.5	7.5 to 12		
	φ32	8.5	7.5	9.5	8.5	2.5 to 6	3.5 to 8			8.5	9.5	6.5 to 11.5		
	φ40	10.5	9.5	11.5	10.5	3 to 7	4 to 9			10.5	11.5	7.5 to 13.5		
● 1 color indicator type (T1*, T8*)														
CKV2	φ20	6	-	7	-	2.5 to 5.5	-	1.5 or less	-	1	2	6.5 to 11	3 or less	I-655
	φ25	7.5	-	8.5	-	2.5 to 5.5	-			2.5	3.5	7.5 to 12		
	φ32	7.5	-	8.5	-	2.5 to 6	-			2.5	3.5	6.5 to 11.5		
	φ40	9.5	-	10.5	-	3 to 7	-			4.5	5.5	7.5 to 13.5		
Cylinder with valve ● Applicable switch: Proximity switch (R1, R2, R2Y, R3Y) / Reed switch (R0, R4, R5, R6)														
CAV2-L COVP2-L COVN2-L	φ50 N	7.5		7.5		8 to 12.5	12 to 16	2 or less	2 or less	7.5	7.5	10.5 to 14.5	3 or less	I-685
	φ50 B	20.5		20.5						20.5	20.5			
	φ75 N	8.5		8.5		6 to 11	12 to 16.5			8.5	8.5	9.5 to 10		
	φ75 B	32.5		32.5						32.5	32.5			
	φ100 N	13		13		8 to 14	12 to 17			13	13	12 to 16		
	φ100 B	31.5		31.5						31.5	31.5			

Ending

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Compact cylinder   ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op.range 1 color	Op.range 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op.range	Reed Hyst	Page
SSD	φ12	0	4.5	2.5	2.5	2 to 6	3 to 6			0	2.5	5 to 8		
	φ16	0	4.5	2	2.5	2 to 5	3 to 7			0	2	4 to 9		
	φ20	3	1.5	6.5	5	3 to 8	4.5 to 8			3	6.5	6 to 14		
	φ25	3	1.5	9.5	8	3 to 9	4.5 to 8			3	9.5	5 to 14		
	φ32	3.5	2	9	7.5	3 to 8	4.5 to 8			3.5	9	5 to 12		
	φ40	7	5.5	12	10.5	3 to 9	5 to 8.5			7	12	6 to 14		
	φ50	7.5	6	12.5	11	3 to 9	5.5 to 9.5	1.5 or less	1.0 or less	7.5	12.5	6 to 14	3 or less	I-715
	φ63	12.5	11	13	11.5	3 to 9	5.5 to 9.5			12.5	13	7 to 15		
	φ80	17.5	16	15.5	14	4 to 10	6 to 10			17.5	15.5	7 to 15		
	φ100	23	21.5	19.5	18	4 to 10	6 to 10			23	19.5	9 to 15		
SSD large bore size	φ125	24.5	23	29.5	28	4 to 10	8 to 10			24.5	29.5	9 to 15		
	φ140	31	29.5	33	31.5	4 to 10	8 to 10			31	33	9 to 15		
	φ160	34	32.5	39	37.5	4 to 10	8 to 10			34	39	9 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op.range 1 color	Op.range 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op.range	Reed Hyst	Page
SSD	φ12	4.5	-	2.5	-	2 to 6	-			-	-	-	-	
	φ16	4.5	-	2.5	-	2 to 5	-			-	-	-	-	
	φ20	1.5	-	5	-	3 to 8	-			-	-	-	-	
	φ25	1.5	-	8	-	3 to 9	-			-	-	-	-	
	φ32	2	-	7.5	-	3 to 8	-			-	-	-	-	
	φ40	5.5	-	10.5	-	3 to 9	-			1	6	6 to 14		
	φ50	6	-	11	-	3 to 9	-	1.5 or less	-	1.5	6.5	6 to 14		I-715
	φ63	11	-	11.5	-	3 to 9	-			6.5	7	7 to 15		
	φ80	16	-	14	-	4 to 10	-			11.5	9.5	7 to 15	3 or less	
	φ100	21.5	-	18	-	4 to 10	-			17	13.5	9 to 15		
SSD large bore size	φ125	23	-	28	-	4 to 10	-			18.5	23.5	9 to 15		
	φ140	29.5	-	31.5	-	4 to 10	-			25	27	9 to 15		
	φ160	32.5	-	37.5	-	4 to 10	-			28	33	9 to 15		

● 1 color/2 color, w/o indicator display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op.range 1 color	Op.range 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op.range	Reed Hyst	Page
SSD-K	φ12	2.5	1	4.5	4.5	2 to 6	3 to 6			2.5	4.5	5 to 8		
	φ16	3	1.5	4	4.5	2 to 5	3 to 7			3	4	4 to 9		
	φ20	6 (12.5)	4.5 (11)	8.5 (13.5)	7 (12)	3 to 8	4.5 to 8			6 (12.5)	8.5 (13.5)	6 to 14		
	φ25	5.5 (14)	4 (12.5)	12 (17)	10.5 (15.5)	3 to 9	4.5 to 8			5.5 (14)	12 (17)	5 to 14		
	φ32	8.5 (16)	7 (14.5)	14 (14)	12.5 (12.5)	3 to 8	4.5 to 8	1.5 or less	1.0 or less	8.5 (16)	14 (14)	5 to 12	3 or less	I-715
	φ40	9.5 (19)	8 (17.5)	19.5 (19.5)	18 (18)	3 to 9	5 to 8.5			9.5 (19)	19.5 (19.5)	6 to 14		
	φ50	10 (19)	8.5 (17.5)	20 (25)	18.5 (23.5)	3 to 9	5.5 to 9.5			10 (19)	20 (25)	6 to 14		
	φ63	17.5 (23)	16 (21.5)	18 (23)	16.5 (21.5)	3 to 9	5.5 to 9.5			17.5 (23)	18 (23)	7 to 15		
	φ80	22 (28)	20.5 (26.5)	20.5 (25.5)	19 (24)	4 to 10	6 to 10			22 (28)	20.5 (25.5)	7 to 15		
	φ100	28 (33.5)	26.5 (32)	24.5 (29.5)	23 (28)	4 to 10	6 to 10			28 (33.5)	24.5 (29.5)	9 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op.range 1 color	Op.range 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op.range	Reed Hyst	Page
SSD-K	φ12	1	-	4.5	-	2 to 6	-			-	-	-	-	
	φ16	1.5	-	4.5	-	2 to 5	-			-	-	-	-	
	φ20	4.5 (11)	-	7 (12)	-	3 to 8	-			0 (6.5)	2.5 (7.5)	6 to 14		
	φ25	4 (12.5)	-	10.5 (15.5)	-	3 to 9	-			0 (8)	6 (11)	5 to 14		
	φ32	7 (14.5)	-	12.5 (12.5)	-	3 to 8	-	1.5 or less	-	3.5 (10)	8 (8)	5 to 12		I-715
	φ40	8 (17.5)	-	18 (18)	-	3 to 9	-			3.5 (13)	13.5 (13.5)	6 to 14		
	φ50	8.5 (17.5)	-	18.5 (23.5)	-	3 to 9	-			4 (13)	14 (19)	6 to 14	3 or less	
	φ63	16 (21.5)	-	16.5 (21.5)	-	3 to 9	-			11.5 (17)	12 (17)	7 to 15		
	φ80	20.5 (26.5)	-	19 (24)	-	4 to 10	-			16 (22)	14.5 (19.5)	7 to 15		
	φ100	26.5 (32)	-	23 (28)	-	4 to 10	-			22 (27.5)	18.5 (23.5)	9 to 15		

Note: Values in parentheses apply when the φ20 diameter 100 stroke, φ25 to 50 diameter 150 stroke, and φ63 to 100 diameter 200 stroke are exceeded.

Ending

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Compact cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op 1 color	Op 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op range	Reed Hyst	Page
SSD-Q Rod end	φ16	6.5	5	33	31.5	2 to 5	3 to 7	1.5 or less	1.0 or less	6.5	33	4 to 9	3 or less	I-715
	φ20	10	8.5	34.5	33	3 to 8	4.5 to 8			10	34.5	6 to 14		
	φ25	9.5	8	37.5	36.5	3 to 9	4.5 to 8			9.5	37.5	5 to 14		
	φ32	13	11.5	40.5	39	3 to 8	4.5 to 8			13	40.5	5 to 12		
	φ40	14	12.5	53	51.5	3 to 9	5 to 8.5			14	53	6 to 14		
	φ50	15	13.5	70.5	69.5	3 to 9	5.5 to 9.5			15	70.5	6 to 14		
	φ63	22.5	21	69	67.5	3 to 9	5.5 to 9.5			22.5	69	7 to 15		
	φ80	24	22.5	96	94.5	4 to 10	6 to 10			24	96	7 to 15		
	φ100	29.5	28	91	89.5	4 to 10	6 to 10			29.5	91	9 to 15		
SSD-Q Head end	φ16	34.5	33	5	3.5	2 to 5	-	1.5 or less	1.0 or less	34.5	5	4 to 9	3 or less	
	φ20	35	33.5	9.5	8	3 to 8	-			35	9.5	6 to 14		
	φ25	34.5	33	12.5	11.5	3 to 9	-			34.5	12.5	5 to 14		
	φ32	38	36.5	15.5	14	3 to 8	-			38	15.5	5 to 12		
	φ40	46	44	21	20	3 to 9	-			46	21	6 to 14		
	φ50	65	63.5	20.5	19.5	3 to 9	-			65	20.5	6 to 14		
	φ63	73	71.5	19	17.5	3 to 9	-			73	19	7 to 15		
	φ80	99	97.5	21.5	20	4 to 10	-			99	21.5	7 to 15		
	φ100	95	93.5	25.5	24	4 to 10	-			95	25.5	9 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op 1 color	Op 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op range	Reed Hyst	Page
SSD-Q Rod end	φ16	5	-	31.5	-	2 to 5	3 to 7	1.5 or less	-	-	-	-	3 or less	I-715
	φ20	8.5	-	33	-	3 to 8	4.5 to 8			4	28.5	6 to 14		
	φ25	8	-	36.5	-	3 to 9	4.5 to 8			3.5	31.5	5 to 14		
	φ32	11.5	-	39	-	3 to 8	4.5 to 8			7	34.5	5 to 12		
	φ40	12.5	-	51.5	-	3 to 9	5 to 8.5			8	47	6 to 14		
	φ50	13.5	-	69.5	-	3 to 9	5.5 to 9.5			9	64.5	6 to 14		
	φ63	21	-	67.5	-	3 to 9	5.5 to 9.5			16.5	63	7 to 15		
	φ80	22.5	-	94.5	-	4 to 10	6 to 10			18	90	7 to 15		
	φ100	28	-	89.5	-	4 to 10	6 to 10			23.5	85	9 to 15		
SSD-Q Head end	φ16	33	-	3.5	-	2 to 5	-	1.5 or less	-	-	-	-	3 or less	
	φ20	33.5	-	8	-	3 to 8	-			29	3.5	6 to 14		
	φ25	33	-	11.5	-	3 to 9	-			28.5	6.5	5 to 14		
	φ32	36.5	-	14	-	3 to 8	-			32	9.5	5 to 12		
	φ40	44	-	20	-	3 to 9	-			40	15	6 to 14		
	φ50	63.5	-	19.5	-	3 to 9	-			59	14.5	6 to 14		
	φ63	71.5	-	17.5	-	3 to 9	-			67	13	7 to 15		
	φ80	97.5	-	20	-	4 to 10	-			93	15.5	7 to 15		
	φ100	93.5	-	24	-	4 to 10	-			89	19.5	9 to 15		

● Reed (ET0*)

Model no.	Bore size	HD 1 color	HD 2 color	RD 1 color	RD 2 color	Op 1 color	Op 2 color	Hyst 1 color	Hyst 2 color	Reed HD	Reed RD	Reed Op range	Reed Hyst	Page
SSD-T1L	φ16	-	-	-	-	-	-	-	-	0	0	8 to 11.5	3 or less	I-715
	φ20	-	-	-	-	-	-			0	0	9 to 13.5		
	φ25	-	-	-	-	-	-			0.5	1	9.5 to 14		
	φ32	-	-	-	-	-	-			0.5	2	9 to 13		
	φ40	-	-	-	-	-	-			1.5	7	9 to 14		
	φ50	-	-	-	-	-	-			1.5	6	11 to 16		
	φ63	-	-	-	-	-	-			5.5	5.5	13 to 18		

Small direct mounting cylinder ● Applicable switch: Proximity switch (F2H/V, F3H/V) / Reed switch (F0H/V)

Model no.	Bore size	HD	RD	Op range	Hysteresis	Reed HD	Reed RD	Reed Op range	Reed Hyst	Page
MDC2	φ6	1	6.5	1.5 to 3.5	1.0 or less	0	1	3.5 to 6.0	1.0 or less	
	φ8	1	6.5			0	1			
	φ10	2.5	8			0.5	3.5			
MDC2-X	φ6	0.5	7	2.0 to 3.5	1.0 or less	0	1	5.5 to 7.5	1.0 or less	I-961
	φ8	1	7.5			0	2			
	φ10	2	8.5 to 11.5			0	5			
MDC2-Y	φ6	5	6.5	1.5 to 3.5	1.0 or less	2.5	2.5	4.5 to 6.0	1.0 or less	
	φ8	6	6.5			3.5	2.5			
	φ10	3.5 to 6.5	8			2.5	3.5			

Small cylinder with vacuum pad ● Applicable switch: Proximity switch (F2*, F3*) / Reed switch (F0*)

Model no.	Bore size	HD	RD	Op range	Hysteresis	Reed HD	Reed RD	Reed Op range	Reed Hyst	Page
MVC	φ6	3.5	7.5	1.5 to 3.5	1.0 or less	1.5	3	3.5 to 6.0	1.0 or less	I-985
	φ10	5.0	9			3	4.5	4.5 to 6.0		

Ending

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)						HD	RD			
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type					
Compact cylinder ● Applicable switch: Proximity switch (K2, K3, K3P*, K2Y*, K3Y*, K2YF/M*, K3YF/M*) / Reed switch (K0, K5)														
SMD2	φ6	-3	-8.3	6	4.5	1.5 to 7	3.5 to 7.5	2 or less	1.5 or less	-2	5	3 to 9.5	3 or less	I-999
	φ10	-1	-6.3	7	5.5	1.5 to 7	3.5 to 7.5			0	6	3.5 to 9.5		
	φ16	0	-5.3	11	9.5	1.5 to 7	4.5 to 8.5			1	10	4 to 11		
	φ20	3	-2.3	14	12.5	2.5 to 9	5 to 9			4	13	5 to 12.5		
	φ25	7	1.7	14	12.5	3.5 to 11	5.5 to 9.5			8	13	6.5 to 14		
	φ32	7.5	2.2	20.5	19	3.5 to 11.5	1.5 to 10.5			8.5	19.5	5.5 to 14		
Small compact cylinder ● Applicable switch: Proximity switch (F2*, F3*) / Reed switch (F0*) — Note: Dimensions in ( ) show F0V installation position when F0H is different from F0V installation position.														
MSD-L	φ6	1.5		7.5		1.5 to 3.0		1.0 or less		3.5 (0)	3.5	5 to 6	1.0 or less	I-1039
	φ8	1.0		9.5		1.5 to 3.5				4.0 (0)	5.5	5.5 to 6.5		
MSD-XL	φ6	1.5		7.5 to 12.5		1.5 to 3.0		1.0 or less		4.0 (0)	4.0 to 9.0	5 to 6	1.0 or less	
	φ8	1.5		9.0 to 14.0		1.5 to 3.5				4.0 (0)	5.5 to 10.5	5 to 6.5		
MSD-YL	φ6	7.0 to 12.0		8.0		1.5 to 3.0		1.0 or less		2.5 to 7.5	3.5	5 to 6	1.0 or less	
	φ8	6.0 to 11.0		10.0		1.5 to 3.5				2.0 to 7.0	5.5	5.5 to 6.5		
MSD-KL	φ6	3.5		10.0		1.5 to 3.0		1.0 or less		0	6	5 to 6	1.0 or less	
	φ8	2.5		12.5		1.5 to 3.5				0	8.5	5.5 to 6.5		
	φ12	3.5		13.0		1.5 to 3.5				0	9	5.5 to 7.5		
	φ16	3.5		17.5		1.5 to 3.5				0	14.0	4.5 to 7		
MSDG-L	φ6	3.5		10.0		1.5 to 3.0		1.0 or less		0	6	5 to 6	1.0 or less	
	φ8	2.5		12.5		1.5 to 3.5				0	8.5	5.5 to 6.5		
	φ12	3.5		13.0		1.5 to 3.5				0	9	5.5 to 7.5		
	φ16	3.5		17.5		1.5 to 3.5				0	14	4.5 to 7		
Flat and compact cylinder ● Applicable switch: Proximity switch (M2V, M2WV, M3V, M3PV, M3WV) / Reed switch (M0V, M5V)														
FCS-L	φ25	2.5		7.5		9 to 12	6 to 11	1.5 or less	1.0 or less	2.5	7.5	7 to 8.5	3 or less	I-1097
	φ32	2.5				9 to 12	6 to 11					7 to 8.5		
	φ40	2.5				8.5 to 12	6 to 11					7 to 8.5		
	φ50	3.5				8 to 12	6 to 11			3.5		6.5 to 8.5		
	φ63	2.5				8 to 12	6 to 11			2.5		6.5 to 8.5		
FCH-L FCD-L FCD-DL	φ25	2.5		7.5		6 to 12	5 to 11	1.5 or less	1.0 or less	2.5	7.5	7 to 12	3 or less	I-1097
	φ32	2.5				6 to 12	5 to 11					7 to 12		
	φ40	2.5				6 to 12	5 to 11					7 to 12		
	φ50	3.5				6 to 12	5 to 11			3.5		7 to 12		
	φ63	2.5				6 to 12	5 to 11			2.5		7 to 12		
FCD-KL	φ25	3		10		6 to 12	5 to 11	1.5 or less	1.0 or less	3	10	7 to 12	3 or less	
	φ32	4				6 to 12	5 to 11			4		7 to 12		
	φ40	5				6 to 12	5 to 11			5		7 to 12		
	φ50	6				6 to 12	5 to 11			6		7 to 12		
	φ63	2.5		7.5		6 to 12	5 to 11			2.5	7.5	7 to 12		
High rigid cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)														
● 1 color/2 color indicator w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)														
STK	φ20	5.5	4	21	19.5	3 to 8	4.5 to 8	1.5 or less	1.5 or less	5.5	21	6 to 14	3 or less	I-1131
	φ32	9.5	8	21	19.5	3 to 8	4.5 to 8			9.5	21	5 to 12		
	φ40	10.5	8.5	24	22.5	3 to 9	5 to 8.5			10.5	24	6 to 14		
	φ50	11.5	10	24	22.5	3 to 9	5.5 to 9.5			11.5	24	6 to 14		
STK-Y STK-Y1	φ20	7	5.5	19.5	18	3 to 8	4.5 to 8	1.5 or less	1.5 or less	7	19.5	6 to 14	3 or less	
	φ32	10.5	9	20	18.5	3 to 8	4.5 to 8			10.5	20	5 to 12		
	φ40	11.5	10	23	21.5	3 to 9	5 to 8.5			11.5	23	6 to 14		
	φ50	12.5	11	23	21.5	3 to 9	5.5 to 9.5			12.5	23	6 to 14		
● 1 color indicator (T1*, T8*)														
STK	φ20	4	-	19.5	-	3 to 8	-	1.5 or less	-	0	15	6 to 14	3 or less	I-1131
	φ32	8	-	19.5	-	3 to 8	-			3.5	15	5 to 12		
	φ40	8.5	-	22.5	-	3 to 9	-			4.5	18	6 to 14		
	φ50	10	-	22.5	-	3 to 9	-			5.5	18	6 to 14		
STK-Y STK-Y1	φ20	5.5	-	18	-	3 to 8	-	1.5 or less	-	1	13.5	6 to 14	3 or less	
	φ32	9	-	18.5	-	3 to 8	-			4.5	14	5 to 12		
	φ40	10	-	21.5	-	3 to 9	-			5.5	17	6 to 14		
	φ50	11	-	21.5	-	3 to 9	-			6.5	17	6 to 14		

Ending

Cylinder switch

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch — Max sensitive position Head end HD (mm) 1 color type	2 color type	Max sensitive position Rod end RD (mm) 1 color type	2 color type	Operating range (Reference value) 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed switch Max sensitive position HD	RD	Operating range (Reference value)	Hysteresis	Page
Brake cylinder ● Applicable switch: Proximity switch (M2V, M2WV, M3V, M3WV) / Reed switch (M0V, M5V)														
ULKP	φ16	1.5		2.5		5 to 9.5	4.5 to 9.5	1.5 or less	1.0 or less	1.5	2.5	5 to 9.5	3 or less	I-1191
Brake cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)														
● 1 color/2 color indicator w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)														
ULK	φ20	7	6	8	7	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	7	8	6.5 to 11	3 or less	I-1191
	φ25	8.5	7.5	9.5	8.5	2.5 to 5.5	3.5 to 7.5			8.5	9.5	7.5 to 12		
	φ32	8.5	7.5	9.5	8.5	2.5 to 6	3.5 to 8			8.5	9.5	6.5 to 11.5		
	φ40	10.5	9.5	11.5	10.5	3 to 7	4 to 9			10.5	11.5	7.5 to 13.5		
1 color indicator type (T1*, T8*)														
ULK	φ20	6	-	7	-	2.5 to 5.5	-	1.5 or less	-	1	2	6.5 to 11	3 or less	I-1191
	φ25	7.5	-	8.5	-	2.5 to 5.5	-			2.5	3.5	7.5 to 12		
	φ32	7.5	-	8.5	-	2.5 to 6	-			2.5	3.5	6.5 to 11.5		
	φ40	9.5	-	10.5	-	3 to 7	-			4.5	5.5	7.5 to 13.5		
Brake cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)														
● 1 color/2 color indicator w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)														
JSK2	φ20	7	6	8	7	2.5 to 5.5	3.5 to 7.5	1.5 or less	1.0 or less	7	8	6.5 to 11	3 or less	I-1221
	φ25	8.5	7.5	9.5	8.5	2.5 to 5.5	3.5 to 7.5			8.5	9.5	7.5 to 12		
	φ32	8.5	7.5	9.5	8.5	2.5 to 6	3.5 to 8			8.5	9.5	6.5 to 11.5		
	φ40	10.5	9.5	11.5	10.5	3 to 7	4 to 9			10.5	11.5	7.5 to 13.5		
1 color indicator type (T1*, T8*)														
JSK2	φ20	6	-	7	-	2.5 to 5.5	-	1.5 or less	-	1	2	6.5 to 11	3 or less	I-1221
	φ25	7.5	-	8.5	-	2.5 to 5.5	-			2.5	3.5	7.5 to 12		
	φ32	7.5	-	8.5	-	2.5 to 6	-			2.5	3.5	6.5 to 11.5		
	φ40	9.5	-	10.5	-	3 to 7	-			4.5	5.5	7.5 to 13.5		
Brake cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)														
JSM2	φ20	7.5		7.5		7.5 to 12	12 to 16	1.5 or less	1.0 or less	7.5	7.5	10.5 to 14.0	3 or less	I-1221
	φ30	10.5		10.5		7 to 12	12 to 16			10.5	10.5	10.0 to 14.0		
	φ40	11.5		11.5		7 to 12.5	12 to 16			11.5	11.5	10.0 to 14.0		
Tie-rod cylinder with brakes ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*)														
1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)														
JSG Types in ( ) are for rubber cushion type.	φ32	5 (8)	4 (7)	5 (8)	4 (7)	2 to 7	6 to 9	1.5 or less	1.0 or less	5 (8)	5 (8)	6 to 11	3 or less	I-1255
	φ40	5 (8)	4 (7)	5 (8)	4 (7)	2 to 7	6.5 to 9			5 (8)	5 (8)	7 to 12		
	φ50	5 (9)	4 (8)	6.5 (10.5)	5.5 (9.5)	2 to 7	7 to 10			5 (9)	6.5 (10.5)	7.5 to 12		
	φ63	5 (9)	4 (8)	6.5 (10.5)	5.5 (9.5)	2 to 7.5	7 to 10			5 (9)	6.5 (10.5)	8.5 to 13		
	φ80	6 (11)	5 (10)	12.5 (17.5)	11.5 (16.5)	2.5 to 8	7.5 to 10.5			6 (11)	12.5 (17.5)	9 to 13.5		
	φ100	6.5 (11.5)	5.5 (10.5)	12 (17)	11 (16)	2.5 to 8	8 to 11			6.5 (11.5)	12 (17)	9 to 14		
● 1 color/2 color indicator, w/o display (T1*)														
JSG Types in ( ) are for rubber cushion type.	φ32	4 (7)	-	4 (7)	-	2 to 7	-	1.5 or less	-	0 (2)	0 (2)	6 to 11	3 or less	I-1255
	φ40	4 (7)	-	4 (7)	-	2 to 7	-			0 (2)	0 (2)	7 to 12		
	φ50	4 (8)	-	5.5 (9.5)	-	2 to 7	-			0 (3)	0.5 (4.5)	7.5 to 12		
	φ63	4 (8)	-	5.5 (9.5)	-	2 to 7.5	-			0 (3)	0.5 (4.5)	8.5 to 13		
	φ80	5 (10)	-	11.5 (16.5)	-	2.5 to 8	-			0 (5)	6.5 (11.5)	9 to 13.5		
	φ100	5.5 (10.5)	-	11 (16)	-	2.5 to 8	-			0.5 (5.5)	6 (11)	9 to 14		
Brake cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)														
● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)														
JSC3 (Medium bore size)	φ40	11	10	11	10	2 to 7	3 to 10	1.5 or less	1.0 or less	11	11	5 to 12.5	3 or less	I-1287
	φ50	13	12	13	12	2 to 7.5	3 to 10			13	13	5.5 to 13.5		
	φ63	13	12	13	12	2.5 to 7.5	3.5 to 10.5			13	13	5.5 to 14		
	φ80	14.5	13.5	14.5	13.5	3 to 8	4 to 11.5			14.5	14.5	6.5 to 14.5		
	φ100	18.5	17.5	18.5	17.5	3 to 8.5	4 to 11.5			18.5	18.5	6.5 to 15.5		
● 1 color indicator (T1*, T8*)														
JSC3 (Medium bore size)	φ40	10	-	10	-	2 to 7	-	1.5 or less	-	5	5	5 to 12.5	3 or less	I-1287
	φ50	12	-	12	-	2 to 7.5	-			7	7	5.5 to 13.5		
	φ63	12	-	12	-	2.5 to 7.5	-			7	7	5.5 to 14		
	φ80	13.5	-	13.5	-	3 to 8	-			8.5	8.5	6.5 to 14.5		
	φ100	17.5	-	17.5	-	3 to 8.5	-			12.5	12.5	6.5 to 15.5		

Ending

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)						HD	RD			
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type					

Brake cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
JSC3	φ40	5.5	5.5	5.5	5.5	6.5 to 11.5	10 to 14			5.5	5.5	9.5 to 12.5		I-1287
	φ50	7.5	7.5	7.5	7.5	8 to 12.5	12 to 16			7.5	7.5	10.5 to 14.5		
	φ63	7.5	7.5	7.5	7.5	7.5 to 12.5	12 to 16	1.5 or less	1.0 or less	7.5	7.5	10.5 to 14.5	3 or less	
	φ80	9	9	9	9	8 to 13.5	12 to 16			9	9	11.5 to 15.5		
	φ100	13	13	13	13	8 to 14	12 to 17			13	13	12 to 16		

Brake cylinder ● Applicable switch: Strong magnetic field proof reed switch (H0*) The values in ( ) indicate H0Y.

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
JSC3	φ40	-	-	-	-	-		-		4	4	4 to 7.5 (10.5 to 13.5)		I-1287
	φ50	-	-	-	-	-		-		6	6	4 to 7.5 (11 to 14)		
	φ63	-	-	-	-	-		-		6	6	5 to 8 (11.5 to 14.5)	3 or less	
	φ80	-	-	-	-	-		-		7.5	7.5	5 to 8 (10.5 to 14.5)		
	φ100	-	-	-	-	-		-		11.5	11.5	5 to 8 (10.5 to 14.5)		

Brake cylinder ● Applicable switch: Proximity switch (R1K, R2K, R2YK, R3K, R3YK) / Reed switch (R0, R4, R5, R6)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
JSC3 (Large bore size)	φ125	0	0	0	0	7.5 to 14	14 to 21			0	0	11 to 16		I-1287
	φ140	0	0	0	0	7.5 to 14	18 to 26			0	0	11 to 16		
	φ160	0	0	0	0	7.5 to 14	18 to 26	1.5 or less	1.0 or less	0	0	11 to 16	3 or less	
	φ180	0	0	0	0	7.5 to 14	18 to 26			0	0	11 to 16		

Brake cylinder ● Applicable switch: Strong magnetic field proof proximity switch (T2YDP)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
JSC3 (Large bore size)	φ125	-	3.5	-	3.5	-	6.5 to 8	-	1 or less	-	-	-		I-1287
	φ140	-	3	-	3	-	6.5 to 8.5	-	1 or less	-	-	-	-	
	φ160	-	4	-	4	-	6.5 to 8.5	-	1 or less	-	-	-		
	φ180	-	5	-	5	-	6.5 to 9	-	1 or less	-	-	-		

Position locking compact cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
USSD	φ20	3	1.5	6.5	5	3 to 9	4.5 to 8			3	6.5	6 to 14		I-1357
	φ25	3	1.5	9.5	8	3 to 9	4.5 to 8			3	9.5	5 to 14		
	φ32	3.5	2	9	7.5	3 to 8	4.5 to 8	1.5 or less	1.0 or less	3.5	9	5 to 12	3 or less	
	φ40	7	5.5	12	10.5	3 to 9	5 to 8.5			7	12	6 to 14		
	φ50	7.5	6	12.5	11	3 to 9	5.5 to 9.5			7.5	12.5	6 to 14		
	φ63	12.5	11	13	11.5	3 to 9	5.5 to 9.5			12.5	13	7 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
USSD	φ20	1.5	-	5	-	3 to 8	-			-	-	-	-	I-1357
	φ25	1.5	-	8	-	3 to 9	-			-	-	-	-	
	φ32	2	-	7.5	-	3 to 8	-	1.5 or less	-	-	-	-	-	
	φ40	5.5	-	10.5	-	3 to 9	-			1	6	6 to 14		
	φ50	6	-	11	-	3 to 9	-			1.5	6.5	6 to 14	3 or less	
	φ63	11	-	11.5	-	3 to 9	-			6.5	7	7 to 15		

● 1 color/2 color indicator w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
USSD-K	φ20	6 (12.5)	4.5 (11)	8.5 (13.5)	7 (12)	3 to 8	4.5 to 8			6 (12.5)	8.5 (13.5)	6 to 14		I-1357
	φ25	5.5 (14)	4 (12.5)	12 (17)	10.5 (15.5)	3 to 9	4.5 to 8			5.5 (14)	12 (17)	5 to 14		
	φ32	8.5 (16)	8 (14.5)	14 (14)	12.5 (12.5)	3 to 8	4.5 to 8	1.5 or less	1.0 or less	8.5 (16)	14 (14)	5 to 12	3 or less	
	φ40	9.5 (19)	8 (17.5)	19.5 (19.5)	18 (18)	3 to 9	5 to 8.5			9.5 (19)	19.5 (19.5)	6 to 14		
	φ50	10 (19)	8.5 (17.5)	20 (25)	18.5 (23.5)	3 to 9	5.5 to 9.5			10 (19)	20 (25)	6 to 14		
	φ63	17.5 (23)	16 (21.5)	18 (23)	16.5 (21.5)	3 to 9	5.5 to 9.5			17.5 (23)	18 (23)	7 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	OR	Hyst	Page
USSD-K	φ20	4.5 (11)	-	7 (12)	-	3 to 8	-			0 (6.5)	2.5 (7.5)	6 to 14		I-1357
	φ25	4 (12.5)	-	10.5 (15.5)	-	3 to 9	-			0 (8)	6 (11)	5 to 14		
	φ32	8 (14.5)	-	12.5 (12.5)	-	3 to 8	-	1.5 or less	-	3.5 (10)	8 (8)	5 to 12	3 or less	
	φ40	8 (17.5)	-	18 (18)	-	3 to 9	-			3.5 (13)	13.5 (13.5)	6 to 14		
	φ50	8.5 (17.5)	-	18.5 (23.5)	-	3 to 9	-			4 (13)	14 (19)	6 to 14		
	φ63	16 (21.5)	-	16.5 (21.5)	-	3 to 9	-			11.5 (17)	12 (17)	7 to 15		

Note: Values in parentheses apply when the 20 diameter 100 stroke, 25 to 50 diameter 150 stroke, and 63 to 100 diameter 200 stroke are exceeded.

Ending

Cylinder switch

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Free locking positioning medium bore size cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
USC	φ40	11	10	11	10	2 to 7	3 to 10	1.5 or less	1.0 or less	11	11	5 to 12.5	3 or less	I-1399
	φ50	13	12	13	12	2 to 7.5	3 to 10			13	13	5.5 to 13.5		
	φ63	13	12	13	12	2.5 to 7.5	3.5 to 10.5			13	13	5.5 to 14		
	φ80	14.5	13.5	14.5	13.5	3 to 8	4 to 11.5			14.5	14.5	6.5 to 14.5		
	φ100	18.5	17.5	18.5	17.5	3 to 8.5	4 to 11.5			18.5	18.5	6.5 to 15.5		

1 color indicator (T1*, T8*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
USC	φ40	10	-	10	-	2 to 7	-	1.5 or less	-	5	5	5 to 12.5	3 or less	I-1399
	φ50	12	-	12	-	2 to 7.5	-			7	7	5.5 to 13.5		
	φ63	12	-	12	-	2.5 to 7.5	-			7	7	5.5 to 14		
	φ80	13.5	-	13.5	-	3 to 8	-			8.5	8.5	6.5 to 14.5		
	φ100	17.5	-	17.5	-	3 to 8.5	-			12.5	12.5	6.5 to 15.5		

Free locking positioning medium bore size cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)

Model no.	Bore size (mm)	Head end HD		Rod end RD		1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
USC	φ40	5.5		5.5		6.5 to 11.5	10 to 14	1.5 or less	1.0 or less	5.5	5.5	9.5 to 12.5	3 or less	I-1399
	φ50	7.5		7.5		8 to 12.5	12 to 16			7.5	7.5	10.5 to 14.5		
	φ63	7.5		7.5		7.5 to 12.5	12 to 16			7.5	7.5	10.5 to 14.5		
	φ80	9		9		8 to 13.5	12 to 16			9	9	11.5 to 15.5		
	φ100	13		13		8 to 14	12 to 17			13	13	12 to 16		

Free locking positioning medium bore size cylinder ● Applicable switch: Strong magnetic field proof proximity switch (T2YD)/ Strong magnetic field proof reed switch (H0*)

Model no.	Bore size (mm)	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
USC	φ40	-	10	-	10	-	6.5 to 9.5	-		4	4	4 to 7.5 (10.5 to 13.5)	3 or less	I-1399
	φ50	-	12	-	12	-	7 to 10	-		6	6	4 to 7.5 (11 to 14)		
	φ63	-	12	-	12	-	7 to 10	-	1.5 or less	6	6	5 to 8 (11.5 to 14.5)		
	φ80	-	13.5	-	13.5	-	7.5 to 10.5	-		7.5	7.5	5 to 8 (10.5 to 14.5)		
	φ100	-	17.5	-	17.5	-	8 to 11	-		11.5	11.5	5 to 8 (10.5 to 14.5)		

Note: Values in parentheses indicate "H0Y".

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)						HD	RD			
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type					

Guided cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color type HD	2 color type HD	1 color type RD	2 color type RD	1 color type OR	2 color type OR	1 color Hyst	2 color Hyst	Reed HD	Reed RD	Reed OR	Reed Hyst	Page
STG	φ12	5	4	5	4	1.5 to 5	4 to 6			5	5	6 to 10		
	φ16	10	9	4	3	1.5 to 5	4 to 6			10	4	4 to 9		
	φ20	8.5	7.5	9.5	8.5	3 to 8	5 to 8.5			8.5	9.5	6 to 14		
	φ25	8.5	7.5	10	9	3 to 9	5 to 8.5			8.5	10	5 to 14		
	φ32	8.5	7.5	10	9	3 to 9	5 to 9	1.5 or less	1.5 or less	8.5	10	5 to 12	3 or less	
	φ40	12	11	13	12	3 to 9	6 to 10			12	13	6 to 14		
	φ50	11.5	10.5	13.5	12.5	3 to 9	6 to 10			11.5	13.5	6 to 14		
	φ63	16	15	14	13	3 to 9	6 to 10			16	14	7 to 15		
	φ80	19.5	18.5	18	17	4 to 10	7 to 11			19.5	18	7 to 15		
STG-C	φ16	18	17	20.5	19.5	1.5 to 5	4 to 6			18	20.5	4 to 9		
	φ20	19.5	18.5	23.5	22.5	3 to 8	5 to 8.5			19.5	23.5	6 to 14		I-1439
	φ25	17.5	16.5	25.5	24.5	3 to 9	5 to 8.5			17.5	25.5	5 to 14		
	φ32	20	19	23.5	22.5	3 to 9	5 to 9	1.5 or less	1.5 or less	20	23.5	5 to 12	3 or less	
	φ40	22.5	21.5	27.5	26.5	3 to 9	6 to 10			22.5	27.5	6 to 14		
	φ50	20.5	19.5	30	29	3 to 9	6 to 10			20.5	30	6 to 14		
	φ63	24	23	31	30	3 to 9	6 to 10			24	31	7 to 15		
STG-Q-H	φ20	36	36	9.5	8.5	3 to 8	5 to 8.5			36	9.5	6 to 14		
	φ25	34	34	10	9	3 to 9	5 to 8.5			34	10	5 to 14		
	φ32	34.5	34.5	10	9	3 to 9	5 to 9	1.5 or less	1.5 or less	34.5	10	5 to 12	3 or less	
	φ40	37	36.5	13	12	3 to 9	6 to 10			37	13	6 to 14		
	φ50	37	37	13.5	12.5	3 to 9	6 to 10			37	13.5	6 to 14		
	φ63	40	39	14	13	3 to 9	6 to 10			40	14	7 to 15		
STG-Q-R	φ20	8.5	7.5	34.5	34	3 to 8	5 to 8.5			8.5	34.5	6 to 14		
	φ25	8.5	7.5	35	34.5	3 to 9	5 to 8.5			8.5	35	5 to 14		
	φ32	8.5	8	35	34.5	3 to 9	5 to 9	1.5 or less	1.5 or less	8.5	35	5 to 12	3 or less	
	φ40	12	11	40	39.5	3 to 9	6 to 10			12	40	6 to 14		
	φ50	11.5	10.5	39	39	3 to 9	6 to 10			11.5	39	6 to 14		
	φ63	16	15	39	39	3 to 9	6 to 10			16	39	7 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size	1 color type HD	2 color type HD	1 color type RD	2 color type RD	1 color type OR	2 color type OR	1 color Hyst	2 color Hyst	Reed HD	Reed RD	Reed OR	Reed Hyst	Page
STG	φ12	4	-	4	-	1.5 to 5	-			-	-	-	-	
	φ16	9	-	3	-	1.5 to 5	-			-	-	-	-	
	φ20	7.5	-	8.5	-	3 to 8	-			2.5	3.5	6 to 14		
	φ25	7.5	-	9	-	3 to 9	-			2.5	4	5 to 14		
	φ32	7.5	-	9	-	3 to 9	-	1.5 or less	-	2.5	4	5 to 12	3 or less	
	φ40	11	-	12	-	3 to 9	-			6	7	6 to 14		
	φ50	10.5	-	12.5	-	3 to 9	-			5.5	7.5	6 to 14		
	φ63	15	-	13	-	3 to 9	-			10	8	7 to 15		
	φ80	18.5	-	17	-	4 to 10	-			13.5	12	7 to 15		
STG-C	φ16	17	-	19.5	-	1.5 to 5	-			12	14.5	4 to 9		
	φ20	18.5	-	22.5	-	3 to 8	-			13.5	17.5	6 to 14		
	φ25	16.5	-	24.5	-	3 to 9	-			11.5	19.5	5 to 14		I-1439
	φ32	19	-	22.5	-	3 to 9	-	1.5 or less	-	14	17.5	5 to 12	3 or less	
	φ40	21.5	-	26.5	-	3 to 9	-			16.5	21.5	6 to 14		
	φ50	19.5	-	29	-	3 to 9	-			14.5	24	6 to 14		
	φ63	23	-	30	-	3 to 9	-			18	25	7 to 15		
STG-Q-H	φ20	36	-	8.5	-	3 to 8	-			-	-	-		
	φ25	34	-	9	-	3 to 9	-			-	-	-		
	φ32	34.5	-	9	-	3 to 9	-	1.5 or less	-	-	-	-	-	
	φ40	36.5	-	12	-	3 to 9	-			-	-	-		
	φ50	37	-	12.5	-	3 to 9	-			-	-	-		
	φ63	39	-	13	-	3 to 9	-			-	-	-		
STG-Q-R	φ20	7.5	-	34	-	3 to 8	-			-	-	-		
	φ25	7.5	-	34.5	-	3 to 9	-			-	-	-		
	φ32	8	-	34.5	-	3 to 9	-	1.5 or less	-	-	-	-	-	
	φ40	11	-	39.5	-	3 to 9	-			-	-	-		
	φ50	10.5	-	39	-	3 to 9	-			-	-	-		
	φ63	15	-	39	-	3 to 9	-			-	-	-		

Ending

Cylinder switch

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Guided cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
STS/L	φ8	2.5	1.5	0.5	5.5	1.5 to 4	4 to 6	1.5 or less	1.5 or less	2.5	6.5	5 to 9	3 or less	I-1523
	φ12	8.5	7.5	5	4	1.5 to 5	4 to 6			8.5	5	6 to 10		
	φ16	9.5	8.5	4.5	3.5	1.5 to 5	4 to 6			9.5	4.5	4 to 9		
	φ20	9.5	8	12	9.5	3 to 8	5 to 8.5			9.5	12	6 to 14		
	φ25	9	7.5	13	11.5	3 to 9	5 to 8.5			9	13	5 to 14		
	φ32	13.5	12	17.5	16	3 to 9	5 to 9			13.5	17.5	5 to 12		
	φ40	14	12.5	21	19.5	3 to 9	6 to 10			14	21	6 to 14		
	φ50	16	13.5	22	21.5	3 to 9	6 to 10			16	22	6 to 14		
	φ63	23	21.5	20	18.5	3 to 9	6 to 10			23	20	7 to 15		
	φ80	30.5	29.5	26.5	25	4 to 10	7 to 11			30.5	26.5	7 to 15		
	φ100	34.5	34.5	24	24	2 to 9	7 to 11			34.5	24	7 to 15		

● 1 color indicator (T1*, T8*)

Model no.	Bore size	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD	Op. range	Hyst.	Page
STS/L	φ8	1.5	-	5.5	-	1.5 to 4	-	1.5 or less	-	-	-	-	3 or less	I-1523
	φ12	7.5	-	4	-	1.5 to 5	-			-	-	-		
	φ16	8.5	-	3.5	-	1.5 to 5	-			-	-	-		
	φ20	8	-	9.5	-	3 to 8	-			3.5	6	6 to 14		
	φ25	7.5	-	11.5	-	3 to 9	-			3	7	5 to 14		
	φ32	12	-	16	-	3 to 9	-			7.5	11.5	5 to 12		
	φ40	12.5	-	19.5	-	3 to 9	-			8	15	6 to 14		
	φ50	13.5	-	21.5	-	3 to 9	-			10	16	6 to 14		
	φ63	21.5	-	18.5	-	3 to 9	-			17	14	7 to 15		
	φ80	29.5	-	25	-	4 to 10	-			24.5	20.5	7 to 15		
	φ100	34.5	-	24	-	2 to 9	-			28.5	18	7 to 15		

Model no.	Bore size (mm)	Maximum sensitive position																	Proximity switch				Reed switch		Page
		Head end HD (mm)								Rod end RD (mm)									Operating range (Reference value)		Hysteresis		Operating range (Reference value)	Hysteresis	
		Stroke length																							
		10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	1 color type	2 color type	1 color type	2 color type			

Linear slide cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*) / Reed switch (T0*, T5*)

Model	Bore	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	1 color	2 color	1 col	2 col	Reed Op	Reed Hyst	Page
LCS	φ8	27.5	27.5	27.5	36.5	36.5	36.5	-	-	-	18.5	8.5	8.5	8.5	8.5	8.5	-	-	-	1.5 to 4	4 to 6	1.5 or less	1.5 or less	5 to 9	3 or less	I-1651
	φ12	32.5	32.5	32.5	32.5	32.5	41.5	41.5	-	-	34.5	24.5	14.5	14.5	14.5	14.5	14.5	-	-	1.5 to 5	4 to 6			6 to 10		
	φ16	36.5	36.5	36.5	36.5	36.5	53.5	53.5	53.5	-	34.5	24.5	14.5	14.5	14.5	14.5	14.5	14.5	-	1.5 to 5	4 to 6			4 to 9		
	φ20	44.5	44.5	44.5	44.5	44.5	56	56	56	56	35	25	15	15	15	15	15	15	15	3 to 8	5 to 8.5			6 to 14		
	φ25	59	59	59	59	59	79.5	79.5	79.5	79.5	35.5	25.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5	3 to 9	5 to 8.5			5 to 14		

Linear slide cylinder ● Applicable switch: Proximity switch (F2H/V, F3H/V)

Model	Bore	10	20	30	40	50					10	20	30	40	50					1 color	2 color	1 col	2 col	Reed Op	Reed Hyst	Page
LCS	φ6	22.5	22.5	22.5	22.5	22.5	--				25.5	15.5	15.5	25.5	25.5	--				2.5 To 3.5	-	1.5 or less	-	-	-	I-1651

Linear slide cylinder ● Applicable switch: Proximity switch (F2*, F3*, F2Y*, F3Y*)

Model	Bore	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	1 color	2 color	1 col	2 col	Reed Op	Reed Hyst	Page
LCG	φ6	22.5	22.5	22.5	22.5	22.5	-	-	-	-	25.5	15.5	15.5	25.5	25.5	-	-	-	-	2 to 4	2.5 to 5.5	1 or less	1 or less	-	-	I-1697
	φ8	23	23	23	23	32	32	-	-	-	24	14	14	14	14	14	-	-	-		3.5 to 6			-		
	φ12	27	27	27	27	27	53.5	53.5	-	-	61.5	51.5	41.5	41.5	41.5	37	37	-	-		3 to 4.5			-		

Linear slide cylinder ● Applicable switch: Proximity switch (T2*, T3*, T2W*, T3W*) / Reed switch (T0*, T5*)

● 1 color indicator, w/o display (T2*, T3*, T0*, T5*)

Model	Bore	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	1 color	2 color	1 col	2 col	Reed Op	Reed Hyst	Page
LCG	φ16	36.5	36.5	36.5	36.5	36.5	53.5	53.5	53.5	-	57	47	37	37	37	37	37	37	-	2 to 4	-	1 or less	-	5 to 9	1 or less	I-1697
	φ20	49.5	49.5	49.5	49.5	49.5	61	61	61	61	61	51	41	41	41	41	41	41	41	2 to 5.5				6.5 to 11		
	φ25	59	59	59	59	59	79.5	79.5	79.5	79.5	63.5	53.5	43.5	43.5	43.5	18.5	18.5	18.5	18.5	2.5 to 6				8 to 12		

● 2 color indicator type (T2W*, T3W*)

Model	Bore	10	20	30	40	50	75	100	125	150	10	20	30	40	50	75	100	125	150	1 color	2 color	1 col	2 col	Reed Op	Reed Hyst	Page
LCG	φ16	34	34	34	34	34	51	51	51	-	59.5	49.5	39.5	39.5	39.5	39.5	39.5	39.5	-	3 to 4.5	-	1 or less	-	-	-	I-1697
	φ20	47	47	47	47	47	58.5	58.5	58.5	58.5	63.5	53.5	43.5	43.5	43.5	43.5	43.5	43.5	43.5	4 to 5.5				-		
	φ25	56.5	56.5	56.5	56.5	56.5	77	77	77	77	66	56	46	46	46	21	21	21	21	3.5 to 6				-		

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Linear slide cylinder ● Applicable switch: Proximity switch (F2*, F3*, F2Y*, F3Y*)

Model no.	Bore size (mm)	Maximum sensitive position — Head end HD (mm) 5	10	15	20	Rod end RD (mm) 5	10	15	20	Proximity switch Operating range 1 color type	2 color type	Hysteresis 1 color type	2 color type	Proximity switch Operating range	Hysteresis	Page
LCM	φ4.5	17 (7)	17 (7)	-	-	12	7 (17)	-	-	1 to 3	2 to 4			-		
	φ6	18 (7)	18 (7)	23 (7)	-	13 (12)	8 (17)	8 (22)	-	1 to 3	2 to 4	1mm or less	1mm or less	-	-	I-1761
	φ8	18 (7)	18 (7)	28 (7)	28 (7)	13 (12)	8 (17)	13 (22)	8 (27)	1 to 3	2 to 4			-		

Linear slide cylinder ● Applicable switch: Proximity switch (T2*, T3*) / Reed switch (T0*, T5*)

Model no.	Bore size (mm)	HD 10	20	30	40	50	75	100	125	150	RD 10	20	30	40	50	75	100	125	150	Prox. Op. range 1 color type	2 color type	Prox. Hyst.	Reed Op. range 1 color type	2 color type	Reed Hyst.	Page
LCT	φ8	-	-	-	-	28.5	28.5	28.5	28.5	28.5	-	-	-	-	78.5	103.5	128.5	153.5	178.5	1.5 to 4		1.5 or less	5 to 9			I-1819
	φ12	-	-	-	-	30	30	30	30	30	-	-	-	-	80	105	130	155	180	1.5 to 5			6 to 10			
	φ16	-	-	-	-	33	33	33	33	33	-	-	-	-	83	108	133	158	183	1.5 to 5			4 to 9	3 or less		
	φ20	-	-	-	-	40	40	40	40	40	-	-	-	-	90	115	140	165	190	3 to 8			6 to 14			
	φ25	-	-	-	-	40	40	40	40	40	-	-	-	-	90	115	140	165	190	3 to 9			5 to 14			

Linear slide cylinder ● Applicable switch: Proximity switch (K2*, K3*, K3P*, K2YF*, K3YF*, K2YM*, K3YM*) / Reed switch (K0*, K5*)

Model no.	Bore size (mm)	Prox. Max sensitive position Head end HD 1 color type	2 color type	Rod end RD 1 color type	2 color type	Operating range 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed Max sens. pos. HD	RD	Reed Operating range	Reed Hysteresis	Page
LCY	φ10	20	14.5	9	7.5	1.5 to 5.5	4.0 to 7.0			21	8	4.5 to 9.0		I-1843
	φ16	30.5	25	11.5	10	2.0 to 6.0	4.5 to 7.5	1.5 or less		31.5	10.5	4.5 to 9.5	3.0 or less	
	φ20	34.5	29	14.5	13	3.0 to 8.0	5.5 to 8.5			35.5	13.5	6.0 to 12.0		
	φ25	49	43.5	15	13.5	3.5 to 8.0	6.0 to 9.0			50	14	7.0 to 12.5		

Twin rod cylinder ● Applicable switch: Proximity switch (K2, K3, K3P*, K2Y*, K3Y*, K2YF/M*, K3YF/M*) / Reed switch (K0, K5)

Model no.	Bore size (mm)		Prox. HD 1 color type	2 color type	Prox. RD 1 color type	2 color type	Operating range 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed HD	RD	Reed Operating range	Reed Hysteresis	Page
STR2	φ6	B	3.5	2.5	21	20	1 to 6	4 to 7.5			-	-	-		I-1863
		M									3.5	21	4 to 9		
	φ10	B	2.5	1	33	32	1 to 5.5	4 to 7.5			-	-	-		
		M									2.5	33	4 to 9		
	φ16	B	7	5.5	39.5	38.5	1.5 to 7.5	4.5 to 9			7	39.5	5 to 12.5		
		M													
	φ20	B	10.5	9.5	45	44	3 to 9	5.5 to 10	2 or less	1.5 or less	10.5	45	6.5 to 14.5	3 or less	
		M													
	φ25	B	11.5	10.5	43.5	42.5	3.5 to 10.5	6.5 to 10.5			11.5	43.5	8 to 14.5		
		M													
	φ32	B	15.5	14.5	55.5	54.5	-	-			15.5	15.5	-		
		M													

Unit cylinder ● Applicable switch: Proximity switch (T2*, T3*) / Reed switch (T0*, T5*)

Model no.	Bore size (mm)	Prox. Max sens. pos. Plate A side RA (mm) 1 color type	Plate B side RB (mm) 1 color type	Operating range 1 color type	Hysteresis 1 color type	Reed Max sens. pos. RA (mm)	RB (mm)	Reed Operating range	Reed Hysteresis	Page
UCA2-X **UCA2-B-X**	φ10	32	32			32.7	32.7			I-1917
	φ16	32	32	1.5 to 4	1.5 or less	32.7	32.7	4.5 to 8	3 or less	
	φ20	32	32			32.7	32.7			
	φ32	32	32			32.7	32.7			
UCA2-Y **UCA2-B-Y**	φ10	32	14 + stroke length			32.7	13.3 + stroke length			
	φ16	38	20 + stroke length	1.5 to 4	1.5 or less	38.7	19.3 + stroke length	4.5 to 8	3 or less	
	φ20	42	24 + stroke length			42.7	23.3 + stroke length			
	φ32	42	24 + stroke length			42.7	23.3 + stroke length			

Ending

Cylinder switch

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Guided age Linda ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T1*) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

HCM	⌀20	10	9	10	9.5	3 to 8	4.5 to 9	1.5 or less	1.5 or less	9	9.5	6 to 14	3 or less	I-1833
	⌀25	9	8	11	10	3 to 9	5 to 9			8	10	5 to 14		
	⌀32	9	8	11	10	3 to 8	5 to 9			8	10	5 to 12		
	⌀40	11	10.5	13	12	3 to 9	5.5 to 9.5			10.5	12	6 to 14		
	⌀50	12	11.5	14	13	3 to 9	6 to 10			11.5	13	6 to 14		
	⌀63	12	11.5	14	13	3 to 9	6 to 10.5			11.5	13	7 to 15		

● 1 color indicator (T1*, T8*)

HCM	⌀20	9	-	9.5	-	3 to 8	-	1.5 or less	-	3	3.5	6 to 14	3 or less	I-1833
	⌀25	8	-	10	-	3 to 9	-			2	4	5 to 14		
	⌀32	8	-	10	-	3 to 8	-			2	4	5 to 12		
	⌀40	10.5	-	12	-	3 to 9	-			4.5	6	6 to 14		
	⌀50	11.5	-	13	-	3 to 9	-			5.5	7	6 to 14		
	⌀63	11.5	-	13	-	3 to 9	-			5.5	7	7 to 15		

High speed cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)

HCA	⌀20	15.5		17.5		6 to 14	11 to 18	1.5 or less	1.0 or less	15.5	17.5	7 to 14	3 or less	I-1853
	⌀25	22		21		6 to 14	11 to 18			22	21	8 to 13		
	⌀32	22		21		6 to 14	11 to 18			22	21	9 to 14		
	⌀50	19		25		6 to 14	11 to 18			19	25	9 to 14		

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			

Rodless cylinder ● Applicable switch: Proximity switch (M2V/H, M2WV, M3V/H, M3PV/H, M3WV) / Reed switch (M0V/H, M5V/H)

SRL2	⌀12	40.5		60.5		4 to 13	4 to 12	1.5 or less	1.0 or less	40.5	60.5	3 to 11	3 or less	I-1993
	⌀16	47		67		4 to 13	4 to 12	1.5 or less	1.0 or less	47	67	3 to 11		
	⌀20	52.5		72.5		4 to 13	4 to 12	1.5 or less	1.0 or less	52.5	72.5	3 to 11		
	⌀25	60		82		9.5 to 15.5	9 to 14	2.0 or less	1.5 or less	60	82	8.5 to 13.5	3.5 or less	
	⌀32	74		96		7.5 to 15	8 to 14	2.0 or less	1.5 or less	74	96	7 to 13.5		
	⌀40	80		102		11.5 to 17.5	10 to 16.5	2.0 or less	1.5 or less	80	102	10 to 16		
	⌀50	79		101		11 to 24	17 to 27	2.5 or less	1.5 or less	79	101	17 to 27	3 or less	
	⌀63	98		120		11 to 24	17 to 27	2.5 or less	1.5 or less	98	120	17 to 27		
	⌀80	170		190		26.5 to 45.5	16.5 to 40	5.0 or less	3.0 or less	170	190	20.5 to 41		
	⌀100	175		195		25.5 to 40.5	21.5 to 36	3.0 or less	2.5 or less	175	195	24 to 37		

Rodless cylinder ● Applicable switch: Proximity switch (T2YF/M*, T3YF/M*, T2YD, T2YL*, T3YL*)

SRL2 SRL2-J	⌀12	36		65		2 to 7		1.0 or less		-	-	-	-	I-1993
	⌀16	42		72		2 to 7								
	⌀20	48		77		3 to 8		1.5 or less						
	⌀25	56		86		3 to 10								
	⌀32	70		100		3 to 10								
	⌀40	76		106		4 to 11								
	⌀50	75		105		9 to 16								
	⌀63	94		124		9 to 16								
	⌀80	165		195		10 to 24		2.0 or less						
	⌀100	170		200		10 to 24								

High precision guided rodless cylinder ● Applicable switch: Proximity switch (M2V/H, M2WV, M3H/V, M3PH/V, M3WV) / Reed switch (M0V/H, M5V/H)

SRG	⌀12	40.5		60.5		4 to 13 (2-wire)	4 to 12 (3-wire)	1.5 or less (2-wire)	1.0 or less (3-wire)	40.5	60.5	3 to 11	3.0 or less	I-2083
	⌀16	47		67						47	67			
	⌀20	52.5		72.5						52.5	72.5			
	⌀25	60		82		9.5 to 15.5 (2-wire)	9 to 14 (3-wire)	2.0 or less (2-wire)	1.5 or less (3-wire)	60	82	8.5 to 13.5	3.5 or less	

High precision guided rodless cylinder ● Applicable switch: Proximity switch (T2YF/M*, T3YF/M*)

SRG	⌀12	36		65		2 to 7		1.0 or less		-	-	-	-	I-2083
	⌀16	42		72						-	-	-		
	⌀20	48		77		3 to 8		1.5 or less		-	-	-		
	⌀25	56		86		3 to 10				-	-	-		

Ending

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)						HD	RD			
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type					

High precision guided rodless cylinder ● Applicable switch: Proximity switch (T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD) / Reed switch (T0*, T5*, T8*)

● 1 color/2 color indicator (T2Y*, T3Y*, T2YF/M*, T3YF/M*, T2YD, T0*, T5*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	1 color	2 color	HD	RD	Op. range	Hyst.	Page
SRM	φ25	-	87.5	-	108.5	-	6 to 9	-	1.0 or less	87.5	108.5	5.5 to 11	2 or less	I-2107
	φ32	-	95.5	-	116.5	-	6.5 to 9			95.5	116.5	5.5 to 10		
	φ40	-	120.5	-	141.5	-	7.5 to 10.5			120.5	141.5	5.5 to 9		
	φ63	-	176.5	-	197.5	-	8 to 11			176.5	197.5	5.5 to 10		

● 1 color w/o indicator (T8*)

Model no.	Bore size	1 color	2 color	1 color	2 color	1 color	2 color	1 color	2 color	HD	RD	Op. range	Hyst.	Page
SRM	φ25	-	-	-	-	-	-	-	-	81.5	102.5	5.5 to 11	2 or less	I-2107
	φ32	-	-	-	-	-	-			89.5	110.5	5.5 to 10		
	φ40	-	-	-	-	-	-			114.5	135.5	5.5 to 9		
	φ63	-	-	-	-	-	-			170.5	191.5	5.5 to 10		

Note: RD is the same as HD for the radial lead wire.

Rodless cylinder with brake ● Applicable switch: Proximity switch (M2V/H, M2WV, M3V/H, M3PV/H, M3WV) / Reed switch (M0V/H, M5V/H)

Model no.	Bore size	Head end HD	Rod end RD	Op. range 1 color	Op. range 2 color	Hyst. 1 color	Hyst. 2 color	HD	RD	Op. range	Hyst.	Page
SRT	φ12	40.5	60.5	4 to 13	4 to 12	1.5 or less	1.0 or less	40.5	60.5	3 to 11	3.0 or less	I-2137
	φ16	47	67	4 to 13	4 to 12			47	67	3 to 11		
	φ20	52.5	72.5	4 to 13	4 to 12			52.5	72.5	3 to 11		
	φ25	60	82	9.5 to 15.5	9 to 14			60	82	8.5 to 13.5		
	φ32	74	96	7.5 to 15	8 to 14	2.0 or less	1.5 or less	74	96	7 to 13.5		
	φ40	80	102	11.5 to 17.5	10 to 16.5			80	102	10 to 16	3.5 or less	
	φ50	79	101	16.5 to 24	14 to 21			79	101	14.5 to 21.5		
	φ63	98	120	16 to 24	14 to 21			98	120	14 to 21.5		

Rodless cylinder with brake ● Applicable switch: Proximity switch (T2YF/M*, T3YF/M*)

Model no.	Bore size	Head end HD	Rod end RD	Operating range	Hysteresis	HD	RD	Op. range	Hyst.	Page
SRT	φ12	36	65	2 to 7	1.0 or less	-	-	-	-	I-2137
	φ16	42	72			-	-	-		
	φ20	48	77	3 to 8	1.5 or less	-	-	-		
	φ25	56	86	3 to 10		-	-	-		
	φ32	70	100			-	-	-		
	φ40	76	106	4 to 11		-	-	-		
	φ50	75	105	7 to 14		-	-	-		
	φ63	94	124			-	-	-		

Magnet type rodless cylinder ● Applicable switch: Proximity switch (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*)

● 1 color/2 color indicator (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*)

Model no.	Bore size	Head HD 1 color	Head HD 2 color	Rod RD 1 color	Rod RD 2 color	Op. range 1 color	Op. range 2 color	Hyst. 1 color	Hyst. 2 color	HD	RD	Op. range	Hyst.	Page
MRL2	φ6	29	28	4	5	2 to 5	5.5 to 6.5	1 or less	1 or less	-	-	-	-	I-2167
	φ10	29	28	4	5	2.5 to 5.5	6 to 7.5			-	-	-		
	φ16	44.5	43.5	3.5	4.5	2 to 5	5.5 to 7			-	-	-		
	φ20	64	63	3	4	2 to 5	6 to 6.5			-	-	-		
	φ25	60	59	3	4	2 to 5	6 to 6.5			-	-	-		
	φ32	68	67	3	4	2 to 4.5	5.5 to 6.5			-	-	-		

● 1 color indicator type (T1*)

Model no.	Bore size	Head HD 1 color	Head HD 2 color	Rod RD 1 color	Rod RD 2 color	Op. range 1 color	Op. range 2 color	Hyst. 1 color	Hyst. 2 color	HD	RD	Op. range	Hyst.	Page
MRL2	φ6	28	-	5	-	2 to 5	-	1 or less	-	-	-	-	-	I-2167
	φ10	28	-	5	-	2.5 to 5.5	-			-	-	-		
	φ16	43.5	-	4.5	-	2 to 5	-			-	-	-		
	φ20	63	-	4	-	2 to 5	-			-	-	-		
	φ25	59	-	4	-	2 to 5	-			-	-	-		
	φ32	67	-	4	-	2 to 4.5	-			-	-	-		

Ending

Cylinder switch

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch — Maximum sensitive position — Head end HD (mm) 1 color type	2 color type	Rod end RD (mm) 1 color type	2 color type	Operating range (Reference value) 1 color type	2 color type	Hysteresis 1 color type	2 color type	Reed switch — Maximum sensitive position HD	RD	Operating range (Reference value)	Hysteresis	Page
Magnet type rodless cylinder high precision guide ● Applicable switch: Proximity switch (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*) / Reed switch (T0*, T5*)													
● 1 color/2 color indicator (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T0*, T5*)													
MRG2	φ10	76.5	75.5	2.5	1.5	2 to 4.5	5.5 to 7			75.5	1.5	6.5 to 7.5	1 or less	
	φ16	104.5	103.5	2.5	1.5	2 to 5	6 to 7.5			103.5	1.5	7 to 8	2 or less	
	φ25	143.5	142.5	1.5	0.5	2 to 5	6 to 7			142.5	0.5	7.5 to 8	2 or less	
MRG2-*-A	φ10	101.5	100.5	27.5	26.5	2 to 4.5	5.5 to 7			100.5	26.5	6.5 to 7.5	1 or less	
	φ16	129.5	128.5	27.5	26.5	2 to 5	6 to 7.5			128.5	26.5	7 to 8	2 or less	I-2197
	φ25	193.5	192.5	51.5	50.5	2 to 5	6 to 7	0.5 or less	0.5 or less	192.5	50.5	7.5 to 8	2 or less	
MRG2-*-A1	φ10	76.5	75.5	52.5	51.5	2 to 4.5	5.5 to 7			75.5	51.5	6.5 to 7.5	1 or less	
	φ16	104.5	103.5	52.5	51.5	2 to 5	6 to 7.5			103.5	51.5	7 to 8	2 or less	
	φ25	143.5	142.5	101.5	100.5	2 to 5	6 to 7			142.5	100.5	7.5 to 8	2 or less	
MRG2-*-A2	φ10	126.5	125.5	2.5	1.5	2 to 4.5	5.5 to 7			125.5	1.5	6.5 to 7.5	1 or less	
	φ16	154.5	153.5	2.5	1.5	2 to 5	6 to 7.5			153.5	1.5	7 to 8	2 or less	
	φ25	243.5	242.5	1.5	0.5	2 to 5	6 to 7			242.5	0.5	7.5 to 8	2 or less	
● 1 color indicator type (T1*)													
MRG2	φ10	75.5	-	1.5	-	2 to 4.5	-			-	-	-	-	
	φ16	103.5	-	1.5	-	2 to 5	-			-	-	-	-	
	φ25	142.5	-	0.5	-	2 to 5	-			-	-	-	-	
MRG2-*-A	φ10	100.5	-	26.5	-	2 to 4.5	-			-	-	-	-	
	φ16	128.5	-	26.5	-	2 to 5	-			-	-	-	-	I-2197
	φ25	192.5	-	50.5	-	2 to 5	-	0.5 or less	-	-	-	-	-	
MRG2-*-A1	φ10	75.5	-	51.5	-	2 to 4.5	-			-	-	-	-	
	φ16	103.5	-	51.5	-	2 to 5	-			-	-	-	-	
	φ25	142.5	-	100.5	-	2 to 5	-			-	-	-	-	
MRG2-*-A2	φ10	125.5	-	1.5	-	2 to 4.5	-			-	-	-	-	
	φ16	153.5	-	1.5	-	2 to 5	-			-	-	-	-	
	φ25	242.5	-	0.5	-	2 to 5	-			-	-	-	-	
Clamp cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YD, T1*) / Reed switch (T0*, T5*, T8*, H0*)													
● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T1*, T0*, T5*, T8*)													
CAC3	φ40	8.5	10.5			2.2 to 6.8	5.7 to 6.5			8.5 (T8*: 3.5)	10.5 (T8*: 5.5)	6.7 to 10.8		
	φ50					2.5 to 6.0	5.9 to 6.8					7.8 to 11.3		
	φ63					2.8 to 6.5	6.1 to 6.8	1.5 or less	1.0 or less			8.2 to 11.4	3 or less	I-2243
	φ80	19	26			3 to 7.2	7.7 to 8.5			19 (T8*: 14)	26 (T8*: 21)	9 to 10.9		
● Compact strong magnetic field proof (H0*)													
CAC3-L2	φ40	-	-	-	-	-	-			4	6	6.7 to 10.8		
	φ50											7.8 to 11.3		
	φ63											8.2 to 11.4	3 or less	I-2243
	φ80									12.5	19.5	6.6 to 7.5		
● Strong magnetic field proof (T2YD)													
CAC3	φ40	8.5	10.5	-		6 to 9				-	-	-	-	
	φ50					6.5 to 9.5			1.5 or less					I-2243
	φ63					6.5 to 9.5								
	φ80	19	26			6.6 to 7.9								
Clamp cylinder ● Applicable switch: Proximity switch (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T2YD, T1*) / Reed switch (T0*, T5*, T8*, H0*)													
● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T1*, T0*, T5*, T8*)													
UCAC	φ50	8.5	10.5			2.5 to 6.0	5.9 to 6.8	1.5 or less	1.0 or less	8.5 (T8*: 3.5)	10.5 (T8*: 5.5)	7.8 to 11.3	3 or less	I-2267
	φ63					2.8 to 6.5	6.1 to 6.8					8.2 to 11.4		
● Compact strong magnetic field proof (H0*)													
UCAC-L2	φ50	-	-	-	-	-	-			4	6	7.8 to 11.3	3 or less	I-2267
	φ63											8.2 to 11.4		
● Strong magnetic field proof (T2YD)													
UCAC	φ50	8.5	10.5			6.5 to 9.5		-	1.5 or less	-	-	-	-	I-2267
	φ63					6.5 to 9.5								
High power cylinder ● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)													
SHC	φ40	4	6			6.5 to 11.5				4	6	9.5 to 12.5		
	φ50	7	4.5			8 to 12.5				7	4.5	10.5 to 14.5		
	φ63	6	7			7.5 to 12.5	1.5 or less			6	7	10.5 to 14.5	3 or less	I-2329
	φ80	11.5	12			8 to 13.5				11.5	12	11.5 to 15.5		
	φ100	16	12			8 to 14				16	12	12 to 16		
High power cylinder ● Applicable switch: Reed switch (H0)													
SHC	φ40	-	-	-		-				2.5	4.5	4 to 7		
	φ50	-	-	-		-				5.5	3	5 to 7.5		
	φ63	-	-	-		-	-			4.5	5.5	5 to 8	3 or less	I-2329
	φ80	-	-	-		-				10	10.5	5 to 8		
	φ100	-	-	-		-				14.5	10.5	5 to 8		

Ending

Maximum sensitive position of each cylinder with switch

(Unit: mm)

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			
High rigid guideless cylinder		● Applicable switch: Proximity switch (R1, R2, R2Y, R3, R3Y) / Reed switch (R0, R4, R5, R6)												
GLC	φ40	4		0		7 to 17		1.5 or less		3	0	11.5 to 16.5	3 or less	I-2367
	φ50	6		3		9 to 17				5.5	2.5	13 to 18		
	φ63	7.5		5		10 to 18				7	4.5	15 to 20		
	φ80	15		7.5		8 to 19				14.5	7	15 to 20		
	φ100	19.5		10		11 to 20.5				18.5	8.5	13.5 to 19		
High rigid guideless cylinder		● Applicable switch: Reed switch (H0)												
GLC	φ40	-		-		-		-		4	0	4 to 9	3 or less	I-2367
	φ50	-		-		-				6	3	4 to 9		
	φ63	-		-		-				7.5	5	4 to 10		
	φ80	-		-		-				15	7.5	5 to 11		
	φ100	-		-		-				19.5	10	5 to 11		

Model no.	Bore size (mm)	Proximity switch						Operating range (°) (Reference value)		Hysteresis		Reed switch			Operating range (°)	Hysteresis	Page
		Maximum sensitive position										Maximum sensitive position					
		1 color type			2 color type							1 color type					
		90°	80°	270°	90°	80°	270°	1 color type	2 color type	1 color type	2 color type	90°	80°	270°			
Rotary actuator		● Applicable switch: Proximity switch (T2*, T3*, T2Y*, T3Y*, T1*) / Reed switch (T0*, T5*, T8*)															
● 1 color/2 color indicator, w/o display (T2*, T3*, T3P*, T2J*, T2Y*, T3Y*, T1*, T0*, T5*, T8*)																	
RRC	8	32.2	37	41.6	30.8	35.5	40.2	20 to 70	20 to 70	-	-	30	34.3	41	70 to 90	-	II-3
	32	58.2	67.7	77.1	56.8	66.3	75.5	10 to 30	10 to 30			57.6	67.1	76.5	30 to 40		
	63	65.9	76.9	87.9	64.5	75.5	86.5	10 to 30	10 to 30			65.3	76.3	87.3	30 to 40		
● 1 color/2 color indicator, w/o display (T1*, T8*)																	
RRC	8	30.8	35.5	40.2	-	-	-	20 to 70	-	-	-	24	28.3	35	70 to 90	-	II-3
	32	56.8	66.3	75.5	-	-	-	10 to 30	-			51.6	61.1	70.5	30 to 40		
	63	64.5	75.5	86.5	-	-	-	10 to 30	-			59.3	70.3	81.3	30 to 40		

Model no.	Bore size (mm)	Proximity switch				Operating range (mm)		Hysteresis		Reed switch		Operating range (°)	Hysteresis	Page
		Maximum sensitive position								Maximum sensitive position				
		1 color type, 2 color type								1 color type				
		Clockwise end RD (mm)		Counterclockwise end LD (mm)										
		90°	180°	90°	180°	1 color type	2 color type	1 color type	2 color type	90°	180°			
Table type rotary actuator		● Applicable switch: Proximity switch (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*)												
● 1 color/2 color indicator (T2*, T3*, T2Y*, T3Y*, T2YF/M*, T3YF/M*, T1*)														
GRC	5	22.5	25.5	21.5	25.5	10 to 35	30 to 40	-	-	-	-	-	-	II-17
	10	26	30.5	24.5	30.5	5 to 30	20 to 30			-	-	-		
	20	31	37.5	31	37.5	10 to 35	25 to 35			-	-	-		
	30	40	49.5	38.5	49.5	5 to 25	15 to 25			-	-	-		
	50	51	61	48.5	61	5 to 25	15 to 25			-	-	-		
	80	54	64	51.5	64	5 to 25	15 to 25			-	-	-		

Model no.	Bore size (mm)	Proximity switch								Reed switch				Page
		Maximum sensitive position				Operating range (Reference value)		Hysteresis		Maximum sensitive position		Operating range (Reference value)	Hysteresis	
		Head end HD (mm)		Rod end RD (mm)										
		1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	1 color type	2 color type	HD	RD			
Rotary actuator (vane mechanism)		● Applicable switch: Proximity switch (M2V, M3V, M3PV) / Reed switch (M0V, M5V)												
RV3S	3	-		-		15±7	-	3 or less		-	-	-	-	II-55
	10	-		-		15±7	-			-	-	-		
	20	-		-		15±7	-			-	-	-		
RV3S, RV3D	50	-		-		40	-	-		-	-	25	-	
	150	-		-		25	-			-	-	15		
	300	-		-		25	-			-	-	15		

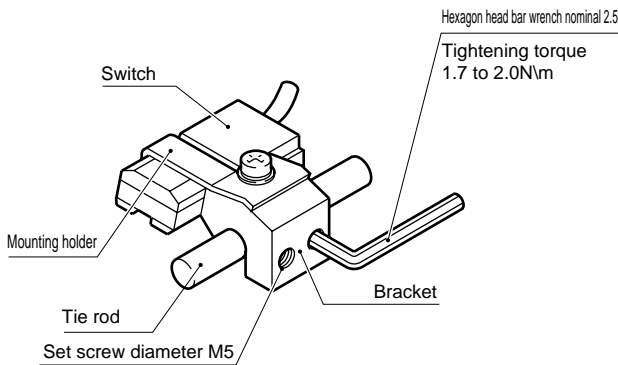# Cylinder switch

⚠ CAUTION   Relocation of switch

Tie rod installation type (SCA2, JSC3, CAV2)

When the 2 set screw for fixing the bracket are loosend by 1/2 to 3/4 turn, the switch can be moved axially without falling off.
After adjusting, fix by lightly pressing the holder so that the switch is seated against the tube, then tighten set screws.
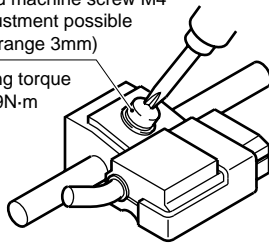Tightening torque is 1.7 to 2.0N·m. As a guide, the screw is sufficiently tightened if the hexagonal wrench starts to flex.

● Movement and tightening drawing

Hexagon head bar wrench nominal 2.5

Tightening torque
1.7 to 2.0N\m

Switch

Mounting holder

Tie rod

Set screw diameter M5

Bracket

Pan head machine screw M4
Fine adjustment possible
(Moving range 3mm)

Tightening torque
1.5 to 1.9N·m

Band installation type (SCPD2, CMA2, HCA)

Loosen the tightening screw (pan head small screw), and move the switch and band along the cylinder tube. Tighten at the required position. To finely adjust, fix the band position, and move only the switch. Tightening torque is 0.5 to 0.7N·m. 1.0 to 1.5N·m for HCA ϕ80, ϕ100.

Pan head machine screw (M3)   Bracket   Switch

Band

Cylinder tube

Band installation type (CMK2, SCM, CKV2, ULK)

(1) Moving the switch position in the stroke direction
● The 1-color indicator switch is line-tuned by ±3 mm from the default. If the adjustment range exceeds 3 mm, or when adjusting the 2-color indicator switch, move the band position.
● The switch bracket rail has a mark 4 mm from the rail end. Use this as a guide to the mounting position when replacing the switch. Switch rail markings are set to the default switch maximum sensitivity. The maximum sensitivity position will change when the switch type is changed or when the band is moved. Adjust the position accordingly in this case.
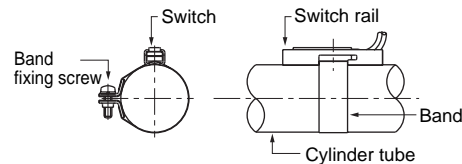
Markings
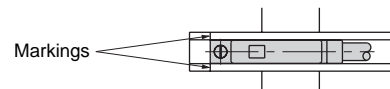
(2) Shifting the switch position in the circumference direction
● Loosen the band fixing screw, shift the switch rail in the circumference direction, then tighten at the specified position. Tightening torque is 0.8 to 1.0N·m.
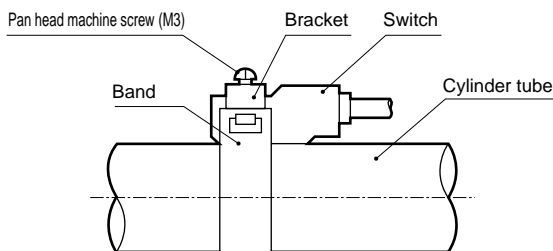
(3) Shifting the band position
● Loosen the band fixing screw, shift the switch rail and band along the cylinder tube, and tighten at the specified position. Tightening torque is 0.8 to 1.0N·m.

Switch   Switch rail

Band
fixing screw

Band

Cylinder tube

Switch groove installation type (SSD, SMD2, MRL, SCM, STR2)

Loosen the tightening screw (set screw), and move the switch along the switch groove. Tighten at the required position. When using T2, T3, T0, T5, K2, K3, K0 or K5 type, tighten the switch fixing screw using a minus headed screw driver with 5 to 6mm grip diameter, 2.4 or smaller end width, and 0.3mm or thinner flat tip screw driver, or one for clocks). Tighten with a tightening torque of 0.1to 0.2N·m. Tightenin torque 0.5 to 0.7N·m for T*C, T2J, T2Y, T3Y, T2YF, T3YF, T2YM, T3YM, K2Y, K3Y, K2YF, K3YF, K2YM, K3YM, T2YD, ET0.
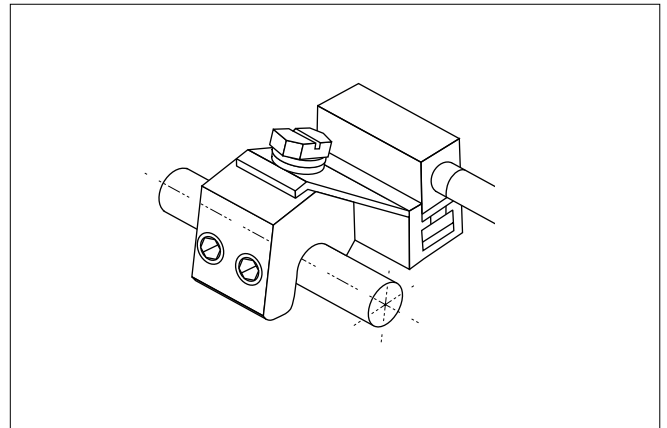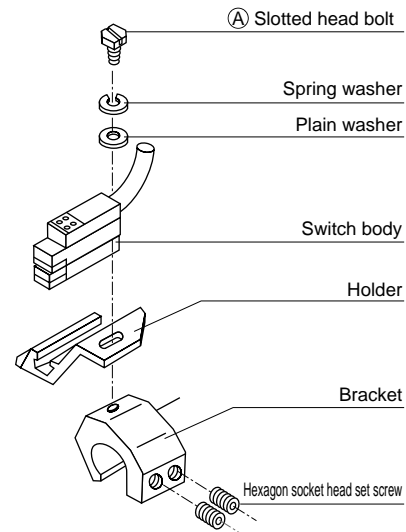
T2YD tie rod installation type (SCA2, CAC3)

(1) Fine adjustment

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

(2) Rough adjustment

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

Ⓐ Slotted head bolt

Spring washer

Plain washer

Switch body

Holder

Bracket

Hexagon socket head set screw

Contact protection circuit (SKAC, SKDC)

If the circuit configuration has a cylinder switch (0, 5, or 8) and load, excluding the R cylinder switch, the contact life could drop (remain on), so connect a contact protection circuit 1 m or nearer to the switch.

● When the work load is inductive (relay, valve, etc.) or capacitance load (programmable controller AC input card)

● When lead wire's wiring path is 10m or longer

● When causes of overvoltage or overcurrent exist

Refer to Ending 29 for details of contact protection circuit.

Cylinder switch

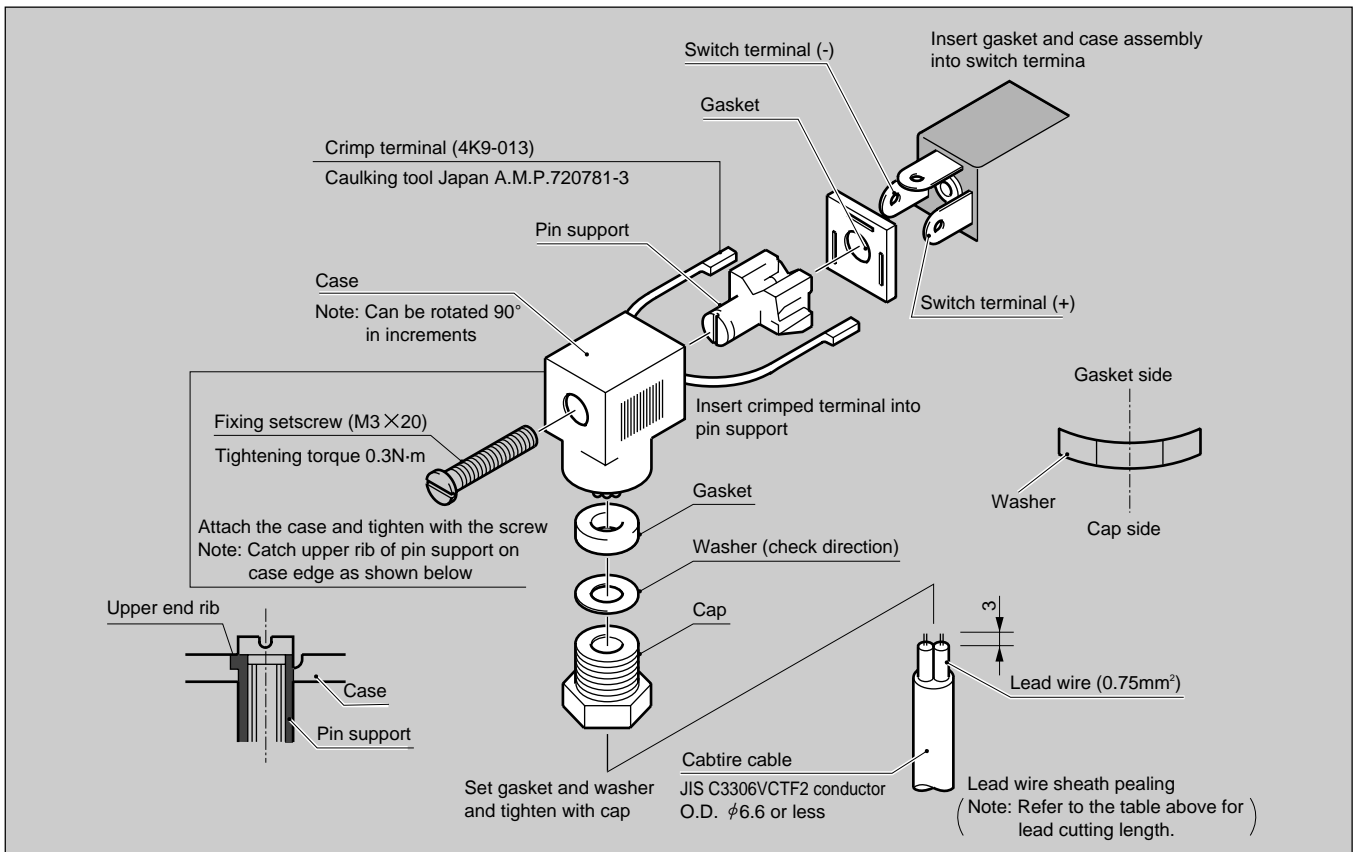## How to install the product to R*B terminal box

Refer to the following drawing when connecting to the R*B terminal box.

1. After completely removing the fixing screw, pull the terminal box off the switch.
2. Push out the pin support from the top of the case, and separate the case and pin support.
3. Remove the cap, and then the washer and gasket.
4. Decide the direction to guide the lead out of the terminal box.
5. Refer to the top view of the case mounting direction, and cut the lead based on the lead-out direction. Then, peel the seal and sheath.
6. Crimp the enclosed terminal.
7. Pass the lead through in the sequence of the cap, washer, gasket, and case as following instruction. Pull out with a pair of radio pliers.
8. While inserting the terminal into the pin support, take check orientation, and push into the case. Push until the upper rib of the pin support comes to 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 tighten with the cap.
11. Insert the case into the switch terminal and fix with the fixing screw.

● Lead cutting length

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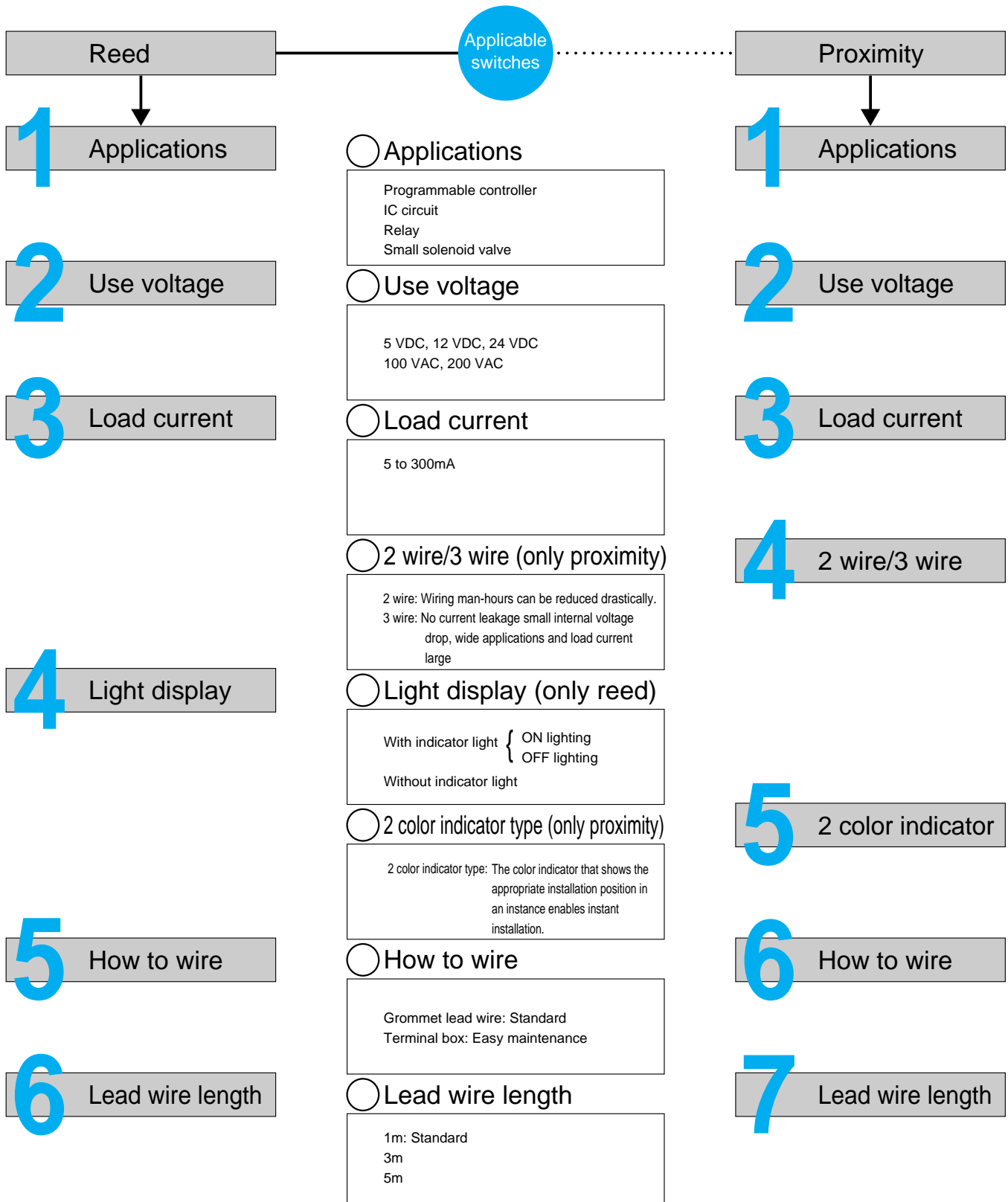

How to install the product to E0 terminal box

Ending

Prepare a heat-resistant cabtire cable and flexible tube, and wire to the terminal box while referring to the following drawing. The MAS insert, MAS holder, and cap nut are included as accessories.
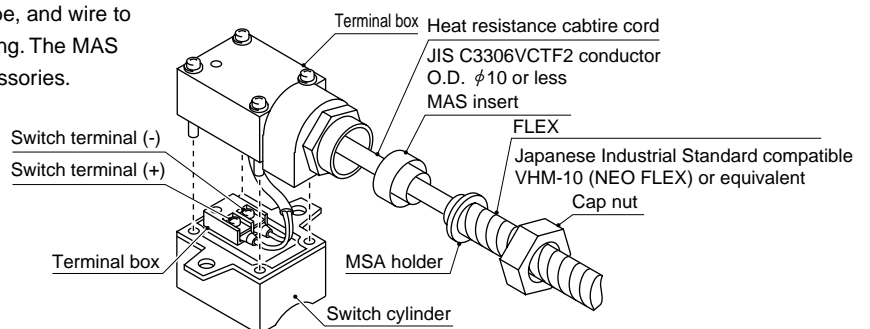
When selecting a cylinder switch, at first, check that either reed or proximity switch is used, then follow the selecting chart below.

Cylinder switch selecting chart

Reed	Applicable switches	Proximity

1 Applications

○ Applications

Programmable controller
IC circuit
Relay
Small solenoid valve

1 Applications

2 Use voltage

○ Use voltage

5 VDC, 12 VDC, 24 VDC
100 VAC, 200 VAC

2 Use voltage

3 Load current

○ Load current

5 to 300mA

3 Load current

○ 2 wire/3 wire (only proximity)

2 wire: Wiring man-hours can be reduced drastically.
3 wire: No current leakage small internal voltage
drop, wide applications and load current
large

4 2 wire/3 wire

4 Light display

○ Light display (only reed)

With indicator light { ON lighting
OFF lighting

Without indicator light

○ 2 color indicator type (only proximity)

2 color indicator type: The color indicator that shows the
appropriate installation position in
an instance enables instant
installation.

5 2 color indicator

5 How to wire

○ How to wire

Grommet lead wire: Standard
Terminal box: Easy maintenance

6 How to wire

6 Lead wire length

○ Lead wire length

1m: Standard
3m
5m

7 Lead wire length

Ending

Cylinder switch

Trouble shooting [Cylinder switch]

Trouble	Cause	Factor	Countermeasures
The switch remains ON and output does not stop * Load · Programmable controller · Relay · Others	The load was shot-circuited	Internal circuit damage of switch	(1) Replace the cylinder switch and select so the cylinder switch's maximum rating matches the load rating
	A load current exceeding catalog value was passed		
	A load voltage or power voltage exceeding catalog values was impressed		
	The connection is incorrect	Malfunction caused by miss-wiring	(1) Connect correctly
		Internal circuit damage caused by miss-wiring (Such as AC, DC, polarity)	(1) Replace the cylinder switch and connect correctly
	Long wire length (refer to Intro 78 of the catalog)	Internal circuit damage of switch	(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro 78 and 80)
	Surge voltage is generated depending on the connection of the inductive load (relay, solenoid valve)	Internal circuit damage of switch	(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro 78 and 80)
	When using proximity switches, servomotor or robot, etc., that may generate noise is located in the same equipment	Noise is applied	(1) Add a noise filter or replace with a reed switch
	The power and signal cables are wired together		(2) Separate the power cable and signal cable
	The same power supply as the noise source is used		(3) Separate the power source
	The cylinder switch installation position does not match the piston stop position	The position is adjusted incorrectly	(1) Adjust the position again
		The installation position deviates due to a loose screw	(1) Tighten with the specified tightening torque range
		The installation position is in reverse	(1) Mount in the correct direction
	The ambient temperature is -10°C or less	The piston magnetic force in the cylinder has increased	(1) Raise the ambient temperature to -10°C
	Water or oil, etc., come in contact with the cylinder switch	Water or oil entered into the cylinder switch and damaged the internal circuit	(1) Change from standard cylinder switch to T*YL of coolant proof specifications (T switch only) (2) Replace the cylinder switch, and provide a partition so water and oil do not come in excessive contact
	Water or oil, etc., entered the relay box of the lead Water or oil come in contact with the terminal section	Malfunction caused by entry of water or oil	(1) Set a partition so water and oil do not come in contact with the relay box, or place the relay box in a waterproof box

	There is magnetic field generating equipment in the area
	· Spot welding machine
	· Magnetizer, etc
		Cylinder switch is reacting to an external magnetic field	(1) Change to a strong magnetic field proof switch. The cylinder body must also be changed to one for strong magnetic fields
			(2) Check that magnetic fields are not applied
			      a. Distance the magnetic field origin
			      b. Set a magnetic material partition between the magnetic field origin and cylinder switch
			(3) Provide magnetic shield

	There is magnetic substance in the area	There is an iron bolt in the areas	(1) Replace with a stainless steel bolt (2) Mount the cylinder switch on a surface distanced from the iron bolt
		There is magnetic substance near the cylinder switch	(1) Separate the cylinder switch from the magnetic substance by the value recommended in the catalog (2) Mount the cylinder switch on a surface distanced from the magnetic substance (3) Change the magnetic substance's material to a nonmagnetic material such as stainless steel, aluminum, cupper, etc.
		Iron chips accumulated around the cylinder switch	(1) Remove iron chips
	External force was applied to the cylinder switch	Internal circuit damage of switch	(1) Replace the cylinder switch and check that external force is not applied to the cylinder switch

Trouble shooting [Cylinder switch]

Trouble	Cause	Factor	Countermeasures
The Cylinder switch turns ON/OFF, the load remains ON	The relation of the cylinder switch's leakage current and load's input specifications is: Leakage current > OFF current	The load is reacting to the leakage current	(1) Change the cylinder switch from *2 →*0 or *3 type.
			(2) Change the cylinder switch to one with a large load OFF current value.
		The leakage current is increasing because of a parallel connection (Refer to Intro 79)	(3) Wire bleeder resistance

* Select a programmable controller or relay, etc., that does not malfunction due to proximity switch leakage current.
* Check the model No. and contact the manufacturer or CKD for the load's input specifications.

Trouble	Cause	Factor	Countermeasures
The output correctly turns ON-OFF, the light does not light	The wiring poles are reverse (only when using reed *0 with DC)	Malfunction caused by miss-wiring	(1) Connect correctly

Cylinder switch

Trouble shooting [Cylinder switch]

Trouble	Cause	Factor	Countermeasures
Cylinder switch does not turn ON No output Load does not react * Load · Programmable controller · Relay · Other	The impress voltage is incorrect	Internal circuit damage of switch	(1) Replace the cylinder switch and set the correct voltage
			(2) Replace with a cylinder switch in correct voltage
	The load was shot-circuited	Internal circuit damage of switch	(1) Replace the cylinder switch and select so the cylinder switch's maximum rating matches the load rating
	A load current exceeding catalog value was passed		
	A load voltage or power voltage exceeding catalog values was impressed		
	The connection is incorrect	The switch is not activated depending on the miss-wiring	(1) Connect correctly
		Internal circuit damage caused by miss-wiring (Such as AC, DC, polarity)	(1) Replace the cylinder switch and connect correctly
	Excessive bending is applied to the lead.	Disconnection of lead wire	(1) Replace the cylinder switch and provide a sufficient bending radius (9mm and over) for the lead so one section is not excessively bent
			(2) Change the cylinder switch to T2*R type with elasticity specifications (T switch only)
	Excessive tension is applied to the lead	Disconnection of lead wire	(1) Replace the cylinder switch, and take measures to prevent excessive tension from being applied
	Long wire length (Refer to the Intro 78)	Internal circuit damage of switch	(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro 78 and 80)
	Surge voltage generated due to connection of an inductive load (relay, valve)	Internal circuit damage of switch	(1) Replace the cylinder switch and wire the protective circuit (Refer to Intro 78 and 80)
	When using proximity switches, servomotor or robot, etc., that may generate noise is located in the same equipment	Noise is applied	(1) Add a noise filter or replace with a reed switch
	The power and signal cables are wired together		(2) Separate the power cable and signal cable
	The same power supply as the noise source is used		(3) Separate the power source
	The cylinder switch installation position does not match the piston stop position	The position is adjusted incorrectly	(1) Adjust the position again
		The installation position deviates due to a loose screw	(1) Tighten with the specified tightening torque range
		The installation position is in reverse	(1) Mount in the correct direction
	The ambient temperature exceeds 60°C	The magnetic force of the piston magnet in the cylinder has weakened	(1) Lower the ambient temperature to 60°C or less
			(2) Replace with a heat-resistant cylinder switch (Refer to the catalog for applicable models)
	Water or oil, etc., come in contact with the cylinder switch	Water or oil entered into the cylinder switch and damaged the internal circuit	(1) Changes from standard cylinder switch to T*YL of coolant proof specifications (T switch only)
			(2) Replace the cylinder switch, and provide a partition so water and oil do not come in excessive contact
	Water or oil, etc., entered the relay box of the lead Water or oil come in contact with the terminal section	Internal circuit error caused by the entry of water or oil	(1) Set a partition so water and oil do not come in contact with the relay box, or place the relay box in a waterproof box
	There is magnetic field generating in the area · Spot welding machine · Magnetizer, etc.	Cylinder switch does not react due to the effect of the peripheral magnetic field	(1) Change to a strong magnetic field proof switch. The cylinder body must also be changed to one for strong magnetic fields

			(2) Check that magnetic fields are not applied
			    a. Distance the magnetic field origin
			    b. Set a magnetic material partition between the magnetic field origin and cylinder switch

			(3) Provide magnetic shield
	There is magnetic substance in the area	There is an iron bolt in the areas	(1) Replace with a stainless steel bolt
			(2) Mount the cylinder switch on a surface distanced from the iron bolt
		There is magnetic substance near the cylinder switch	(1) Separate the cylinder switch from the magnetic substance by the value recommended in the catalog
			(2) Mount the cylinder switch in a surface distanced from the magnetic substance
			(3) Change the magnetic substance's material to a nonmagnetic material such as stainless steel, aluminum, copper, etc.
		Iron chips accumulated around the cylinder switch	(1) Remove iron chips
	External force was applied to the cylinder switch	Internal circuit damage of switch	(1) Replace the cylinder switch and check that external force is not applied to the cylinder switch

Ending

Ending

Cylinder switch

Trouble shooting [Cylinder switch]

Trouble	Cause	Factor	Countermeasures
The cylinder switch light turns ON but the load does not operate	The relation of the cylinder switch voltage drop and load input specifications is: (power voltage - inner voltage drop) ＜ min. operation voltage	The load and cylinder switch do not match	(1) Replace the cylinder switch with a type of small inner drop voltage *2 type → *0 type → *3 type → *5 type (2) Replace the load with a min. operation voltage
		Occurrence of internal voltage drop caused by serial connection (Refer to Intro 79)	
	When using 3-wire type, the programmable controller (PLC) input specifications (source input, sink input) do not match	The cylinder switch's signals are not received	(1) Source input ― Select NPN output *3 type (NPN output is standard type) (2) Sink input ―― Select PNP output *3P type (T, K or M switch only) (3) Change the cylinder switch to 2-wire type
	Cylinder switch output is set to the middle of the air cylinder stroke	The cylinder speed is fast and the load does not react	(1) Change to T2J with OFF delay specifications (T switch only) (2) Connect several cylinder switches in parallel to increase the operating range (3) Connect a sensor controller etc., between the cylinder switch and load, and change to a signal time that matches load performance Example: OMRON S3D2 (4) Decrease cylinder speed

Ending

Ending

Cylinder switch

Cylinder switch

Ending 58 **CKD**

CKD Ending 59