

Twin rod cylinder Double acting/standard

STR2-$^{M}_{B}$ Series

● Bore size: ø6/ø10/ø16/ø20/ø25/ø32

JIS symbol



RoHS CAD

Specifications

Item		STR2-M (metal bush bearing) STR2-B (ball bearing)					
Bore size mm		ø6	ø10	ø16	ø20	ø25	ø32
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure MPa		0.7 (≈100 psi, 7 bar)					
Min. working pressure MPa		0.2 (≈29 psi, 2 bar)	0.15 (≈22 psi, 1.5 bar)	0.1 (≈15 psi, 1 bar)			
Proof pressure MPa		1.05 (≈150 psi, 10.5 bar)					
Ambient temperature °C		-10 (14°F) to 60 (140°F) (no freezing)					
Port size		M5					Rc1/8
Stroke tolerance mm		+2.0 0					
Adjustable stroke range mm		0 to -5					
Working piston speed mm/s		50 to 500					
Non-rotating accuracy (reference value)	STR2-M	±0.4°	±0.3°			±0.2°	
	STR2-B	±0.2°	±0.1°			±0.3°	
Piston rod	STR2-M	Metal bush bearing					
Bearing	STR2-B	Ball bearing					
Cushion		Rubber cushion					
Lubrication		Not required (use turbine oil class 1 ISO VG32 if necessary for lubrication)					
Max absorbed energy J	PUSH	0.008	0.061	0.181	0.303	0.68	1.3
	PULL	0.059	0.083	0.083	0.127	0.237	0.311

Stroke length

Bore size	Stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)	Available stroke length (mm)	Min. stroke with switch (mm)
ø6	10, 20, 30, 40, 50	50	5	100	10
ø10					
ø16	10, 20, 30, 40, 50 60, 70, 80, 90, 100	100 *1		200	
ø20					
ø25					
ø32					

*1 : In the case of rear piping:
· ø16: 70
· ø20/ø25: 60
· ø32: 50

*2 : Custom stroke length
Available in 1 mm increments.
However, the total length is the same as that of the next longer standard stroke length.

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa							
		0.1	0.15	0.2	0.3	0.4	0.5	0.6	0.7
ø6	Push	-	-	11.3	17.0	22.6	28.3	33.9	39.6
	Pull	-	-	6.28	9.42	12.6	15.7	18.8	22.0
ø10	Push	-	23.6	31.4	47.1	62.8	78.5	94.2	1.10×10^{2}
	Pull	-	15.1	20.1	30.2	40.2	50.3	60.3	70.4
ø16	Push	40.2	60.3	80.4	1.21×10^{2}	1.61×10^{2}	2.01×10^{2}	2.41×10^{2}	2.81×10^{2}
	Pull	24.5	36.8	49.0	73.5	98.0	1.23×10^{2}	1.47×10^{2}	1.72×10^{2}
ø20	Push	62.8	94.2	1.26×10^{2}	1.88×10^{2}	2.51×10^{2}	3.14×10^{2}	3.77×10^{2}	4.40×10^{2}
	Pull	40.2	60.3	80.4	1.21×10^{2}	1.61×10^{2}	2.01×10^{2}	2.41×10^{2}	2.81×10^{2}
ø25	Push	98.2	1.47×10^{2}	1.96×10^{2}	2.95×10^{2}	3.93×10^{2}	4.91×10^{2}	5.89×10^{2}	6.87×10^{2}
	Pull	67.4	1.01×10^{2}	1.35×10^{2}	2.02×10^{2}	2.70×10^{2}	3.37×10^{2}	4.04×10^{2}	4.72×10^{2}
ø32	Push	1.61×10^{2}	2.41×10^{2}	3.22×10^{2}	4.83×10^{2}	6.43×10^{2}	8.04×10^{2}	9.65×10^{2}	1.13×10^{3}
	Pull	1.21×10^{2}	1.81×10^{2}	2.41×10^{2}	3.62×10^{2}	4.83×10^{2}	6.03×10^{2}	7.24×10^{2}	8.44×10^{2}

Switch specifications

● 1-color/2-color display

Item	Proximity 2-wire		Proximity 3-wire			Reed 2-wire			
	K2H/K2V	K2YH/K2YV	K3H/K3V	K3PH/K3PV (Made to order)	K3YH/K3YV	K0H/K0V		K5H/K5V	
Applications	Dedicated for programmable controller		For programmable controller, relay			For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection	
Output method	-		NPN output	PNP output	NPN output	-			
Power supply voltage	-		10 to 28 VDC			-			
Load voltage	10 to 30 VDC		30 VDC or less			12 VDC/24 VDC	110 VAC	5/12/24 VDC	110 VAC
Load current	5 to 20 mA (*3)		50 mA or less			5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator lamp	LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)	Yellow LED (Lit when ON)	Red/green LED (Lit when ON)	LED (Lit when ON)		-	
Leakage current	1 mA or less		10 μA or less			0 mA			
Weight g	1 m:18 3 m:49 5 m:80	1 m:31 3 m:85 5 m:139	1 m:18 3 m:49 5 m:80		1 m:31 3 m:85 5 m:139	1 m:18 3 m:49 5 m:80			

*1 : Refer to Ending Page 1 for detailed switch specifications and dimensions.
*2 : Switches other than the above models, such as switches with connectors, are also available. Refer to Ending Page 1.
*3 : The max. load current is 20 mA at 25°C. The current is lower than 20 mA if the operating ambient temperature around the switch is higher than 25°C. (5 to 10 mA at 60°C)

Cylinder weight

Unit: g

Bore size	Product weight at 0 mm stroke		Additional weight per S = 10 mm
	STR2-M	STR2-B	
ø6	60	64	10
ø10	140	155	14
ø16	240	300	20
ø20	340	405	40
ø25	580	610	52
ø32	1300	1150	83

(Example) Product weight

STR2-M-6-10-K2H-D

● Product weight for 0 mm stroke length ... 60 g

● Additional weight for stroke length 10 mm ... 10 g x 1 = 10 g

● Weight of 2 cylinder switches ... 18 g x 2 = 36 g

● Product weight ... 60 g + 10 g + 36 g = 106 g

Clean-room specifications

(Catalog No. CB-033SA)

● Anti-dust generation structure for use in cleanrooms

STR2-B-·····-P7*

STR2-B-·····-P5*

Specifications for rechargeable battery

(Catalog No. CC-1226A)

● Design compatible with rechargeable battery manufacturing process.

STR2-M/B-·····-P4*

How to order

Without switch (built-in magnet for switch)

STR2 - M - 16 ○ - 30 ——— F

With switch (built-in magnet for switch)

STR2 - M - 16 ○ - 30 - K0H - R - F

Model No.

Ⓐ Bearing

Ⓑ Bore size

Ⓒ Port thread

Ⓓ Stroke length *1

■ The custom stroke length is available in 1 mm increments.

Ⓔ Switch model No. *2

Ⓕ Switch quantity

Ⓖ Option *3 *4

Code	Description
Ⓐ Bearing	
M	Metal bush bearing
B	Ball bearing
Ⓑ Bore size (mm)	
6	ø6
10	ø10
16	ø16
20	ø20
25	ø25
32	ø32
Ⓒ Port thread	
Blank	Rc thread
NN	NPT thread (ø32 only) (made-to-order product)
GN	G thread (ø32 only) (made-to-order product) *5

Ⓓ Stroke length (mm)

Bore size	Stroke length	Available stroke length	Custom stroke length
ø6	**5 to 50**	**100**	**In 1 mm increments**
ø10	**5 to 50**	**100**	
ø16	**5 to 100**	**200**	
ø20	**5 to 100**	**200**	
ø25	**5 to 100**	**200**	
ø32	**5 to 100**	**200**	

Ⓔ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Indicator	Lead wire
K0H*	**K0V***	Reed	●	●	1-color display	2-wire
K5H*	**K5V***		●	●	no indicator lamp	
K2H*	**K2V***	Proximity		●	1-color display	2-wire
K3H*	**K3V***			●		3-wire
K3PH*	**K3PV***			●	1-color display (made to order)	3-wire
K2YH*	**K2YV***			●	2-color display	2-wire
K3YH*	**K3YV***			●		3-wire

*** Lead wire length**

Blank	1 m (standard)
3	3 m (option)
5	5 m (option)

Ⓕ Switch quantity

R	1 on rod side
H	1 on head side
D	2

Ⓖ Option

F	End plate material: steel
P6	Copper and PTFE free
O	Piping port position on the 180° opposite side
R	Rear piping

⚠ Precautions for model No. selection

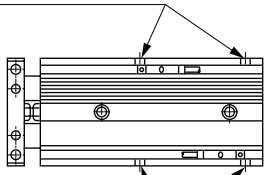
*1 : The max stroke length of rear piping "R" is:
- ø6/10 : 50 Stroke
- ø16 : 70 Stroke
- ø20/25 : 60 Stroke
- ø32 : 50 Stroke

*2 : STR2-B-6 and 10 are not compatible with a reed switch.

*3 : The ball bearing is copper and PTFE free "P6" standard.

*4 : The piping port positions for "O" are as shown in the figure below.

Piping port positions for standard (blank)



Piping port position on the 180° opposite side (Code: 0) piping port

*5 : In the case of G thread, ports on the opposite side (option "O") are not available. Rather than plug sealing, they are simply not provided.
(The standard ports are not provided in the case of option "O".)

[Example of model No.]

STR2-M-16-30-K0H-R-F

Model: Twin rod cylinder, standard

Ⓐ Bearing : Metal bush bearing
Ⓑ Bore size : ø16 mm
Ⓒ Port thread : Rc thread
Ⓓ Stroke length : 30 mm
Ⓔ Switch model No. : Reed K0H switch
Ⓕ Switch quantity : 1 on rod side
Ⓖ Option : End plate material: steel

How to order switch

SW - K0H*

Switch model No.
(Item Ⓔ above)