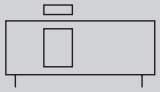


High precision guided rodless cylinder

SRG3 Series

● Bore size: ø12/ø16/ø20/ø25 or equiv.



RoHS CAD

Specifications

Item	SRG3 (Standard/with switch)			
Bore size	ø12	ø16	ø20	ø25
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)			0.1 (≈15 psi)
Proof pressure MPa	1.05 (≈150 psi, 10.5 bar)			
Ambient temperature °C	5 (41°F) to 60 (140°F)			
Port size	M5		Rc1/8	
Stroke tolerance mm	$^{+2.0}_{0}$			
Working piston speed mm/s	50 to 1000 (*1)			
Repeat stopping accuracy mm	±0.05 (With shock absorber)			
Cushion	Air cushion			
Lubrication	Not required	Use turbine oil class 1 ISO VG32 if necessary for lubrication. Once lubricated, the cylinder will need periodic lubrication.		

*1: For common port piping, the working piston speed varies depending on the stroke. Contact CKD.

Allowable absorbed energy

Bore size (mm)	Cushioned		Without cushion	With shock absorber (initial set point)	
	Allowable absorbed energy (J)	Cushion stroke (mm)	Allowable absorbed energy (J)	Absorbed energy (J)	Effective stroke (mm)
ø12 or equiv.	0.03	14.5	0.003	2.4	5.5
ø16 or equiv.	0.22	19.2	0.007	2.4	5.5
ø20 or equiv.	0.59	22.2	0.010	5.7	7
ø25 or equiv.	1.40	20.9	0.015	10	9

Stroke

Bore size (mm)	Standard stroke (mm)	Max. stroke (mm)	Min. stroke (mm)
ø12 or equiv.	200, 300, 400	450	1
ø16 or equiv.	200, 300, 400, 500	800	
ø20 or equiv.	600, 700, 800		
ø25 or equiv.	200/300/400/ 500/600/700/ 800/900/1000	1000	

* The custom stroke is available in 1 mm increments.

Number of installed M-switches and min. stroke (mm)

Switch quantity	1		2		3		4		5		6	
Switch model No. / Bore size (mm)	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H	M*V	M*H
ø12 or equiv.	10	10	30	45(70)	60	90(120)	90	135(170)	120	180(220)	150	225(270)
ø16 or equiv.	10	10	30	45(70)	60	90(120)	90	135(170)	120	180(220)	150	225(270)
ø20 or equiv.	10	10	30	45(70)	60	90(120)	90	135(170)	120	180(220)	150	225(270)
ø25 or equiv.	10	10	30	45(70)	60	90(120)	90	135(170)	120	180(220)	150	225(270)

Note: Values in ( ) are the min. stroke with switch of the full stroke adjustable.

Number of installed T-switches and min. stroke (mm)

Switch quantity	1		2		3		4		5		6	
Switch model No. / Bore size (mm)	T*V	T*H	T*V	T*H	T*V	T*H	T*V	T*H	T*V	T*H	T*V	T*H
ø12 or equiv.	5	5	45	50(70)	85	100(120)	125	150(170)	165	200(220)	205	250(270)
ø16 or equiv.	5	5	45	50(70)	85	100(120)	125	150(170)	165	200(220)	205	250(270)
ø20 or equiv.	5	5	45	50(70)	85	100(120)	125	150(170)	165	200(220)	205	250(270)
ø25 or equiv.	10	10	45	50(70)	85	100(120)	125	150(170)	165	200(220)	205	250(270)

Note: Values in ( ) are the min. stroke with switch of the full stroke adjustable.

Switch specifications (M-switch)

● 1-color/2-color LED

Item	2-wire proximity		3-wire proximity		
	M2V,M2H	M2WV (2-color LED)	M3H,M3V	M3PH/M3PV (made to order)	M3WV
Applications	Dedicated for programmable controller		For programmable controller, relay, IC circuit, compact solenoid valve		
Output method	-		NPN output	PNP output	NPN output
Power supply voltage	-		4.5 to 28 VDC		10 to 28 VDC
Load voltage	10 to 30 VDC		30 VDC or less		
Load current	5 to 20 mA		100 mA or less	100 mA or less	100 mA or less
Indicator	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)
Leakage current	1 mA or less		10 μA or less	0.05 mA or less	10 μA or less
Weight g	1 m:22 3 m:57 5 m:93				

Item	2-wire reed			
	M0V, M0H		M5V, M5H	
Applications	Programmable controller, relay		For programmable controller, relay, IC circuit (without indicator lamp), serial connection	
Power supply voltage	-		-	
Load voltage	12/24 VDC	110 VAC	24 VDC or less	110 VAC or less
Load current	5 to 50 mA	7 to 20 mA	50 mA or less	20 mA or less
Indicator	LED (Lit when ON)		No indicator lamp	
Leakage current	0 mA			
Weight g	1 m:22 3 m:57 5 m:93			

*1: Refer to Ending Page 1 for detailed switch specifications and dimensions.

Switch specifications (T-switch)

● 2-color LED

Item	2-wire proximity		3-wire proximity	
	T2YH/T2YV	T2WH/T2WV	T3YH/T3YV	T3WH/T3WV
Applications	Dedicated for programmable controller		For programmable controller, relay	
Output method	-		NPN output	NPN output
Power supply voltage	-		10 to 28 VDC	
Load voltage	10 to 30 VDC	24 VDC ±10%	30 VDC or less	
Load current	5 to 20 mA (*3)		50 mA or less	
Indicator	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)	Red/green LED (Lit when ON)
Leakage current	1 mA or less		10 μA or less	
Weight g	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80	1 m:33 3 m:87 5 m:142	1 m:18 3 m:49 5 m:80

● For AC magnetic field

Item	2-wire proximity
	T2YD, T2YDT (*4)
Applications	Dedicated for programmable controller
Indicator	Red/green LED (Lit when ON)
Load voltage	24 VDC ±10%
Load current	5 to 20 mA
Internal voltage drop	6V or less
Leakage current	1.0 mA or less
Weight g	1 m:61 3 m:166 5 m:272

*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)
*4 : AC magnetic field proof switch (T2YD/T2YDT) cannot be used in DC magnetic field.

Cylinder weight

Unit: kg

Bore size (mm)	Weight for 0 mm stroke				Mounting bracket weight		Additional weight per 100mm stroke
	Basic (00)	Foot		Switch weight	T type	M type	
		(LB)	(LB1)				
ø12 or equiv.	0.46	0.47	0.48	Refer to the weight in the switch specifications.	0.005	0.001	0.23
ø16 or equiv.	0.61	0.62	0.64				0.28
ø20 or equiv.	0.96	0.98	1.02				0.33
ø25 or equiv.	1.73	1.83	1.83				0.52

How to order

No switch (built-in magnet for switch)

SRG3 - 00 - 25 ○ B - 200 ——— A

With switch (built-in magnet for switch)

SRG3 - 00 - 25 ○ B - 200 - M0H - R - A

Ⓐ Mounting *1
Ⓑ Bore size
Ⓒ Port thread
Ⓓ Cushion
Ⓔ Stroke
Ⓕ Switch model No. *3/*4
Ⓖ Switch quantity
Ⓗ Option *5, *6 *7, *8 *9

Code	Description
Ⓐ Mounting	
00	Basic
LB	Axial foot
LB1	Axial foot
Ⓑ Bore size (mm)	
12	ø12
16	ø16
20	ø20
25	ø25
Ⓒ Port thread	
Blank	Rc thread (M5 for ø12 and ø16)
N	NPT thread (ø20 or more) (made-to-order product)
G	G thread (ø20 or more) (made-to-order product)
Ⓓ Cushion	
B	Both sides cushioned
R	R side cushioned
L	L side cushioned
N	Without cushion

Ⓔ Stroke (mm)

Bore size	Stroke *2	Custom stroke
ø12	**1 to 450**	**In 1 mm increments**
ø16	**1 to 800**	
ø20	**1 to 800**	
ø25	**1 to 1000**	

Ⓕ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Indicator	Lead wire
M0H*	**M0V***	Reed	●	●	1-color LED	2-wire
M5H*	**M5V***		●	●	No indicator lamp	
M2H*	**M2V***	Proximity		●	1-color LED	
-	**M2WV***			●	2-color LED	2-wire
M3H*	**M3V***			●	1-color LED	
-	**M3WV***			●	2-color LED	3-wire
M3PH*	**M3PV***			●	1-color LED (custom)	3-wire
T2WH*	**T2WV***			●	2-color LED	2-wire
T2YH*	**T2YV***			●		
T3WH*	**T3WV***			●		3-wire
T3YH*	**T3YV***			●		
T2YD*	**-**			●	2-color LED	2-wire
T2YDT*	**-**			●	AC magnetic field	

*** Lead wire length**

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

Ⓖ Switch quantity

R	1 on R side
L	1 on L side
D	2
T	3
4	4 (when there are more than 4 switches, indicate switch quantity.)

Ⓗ Option

			Bore size (ø)	12	16	20	25
A			Both-sides full stroke adjustable, shock absorber	●	●	●	●
A1			R side full stroke adjustable, shock absorber	●	●	●	●
A2			L side full stroke, adjustable, shock absorber	●	●	●	●
A3			Full stroke adjustable, adjusting bracket to be added	●	●	●	●
H			Larger thread for table installation	●	●	●	
Blank	Port position	F (Standard)	Cushion needle position F (Standard)	●	●	●	●
R		R (Common port)	F	●	●	●	●
B		F	B	●	●	●	
T		R (Common port)	B	●	●	●	
D		D	F				●

⚠ Precautions for model No. selection

*1 : Mounting bracket will be shipped assembled with the product.
*2 : Refer to page 1650 for the min. stroke with switch.
*3 : Avoid environments where the cylinder is exposed to welding spatter.
Be careful with T2YD and T2YDT in use.
*4 : Switches other than Ⓕ Switch model No. are also available. (Made to order) Refer to Ending Page 1 for details.
*5 : Refer to the dimensions for the port and cushion needle position codes.
*6 : For option codes "R" and "T", the mounting will be "00" or "LB1".
(Piping with "LB" is not possible for option codes "R" and "T".)
*7 : A flat nut is already attached to option code "A3" so that you can add the full stroke adjusting bracket later.
*8 : The thread size of option code "H" is M4 for ø12/ø16 and M5 for ø20.
*9 : LB1 with port position D is not possible.
(ø25)

[Example of model No.]

SRG3-00-25B-200-M0H-R-A

Model: High precision guided rodless cylinder

Ⓐ Mounting : Basic
Ⓑ Bore size : ø25 mm
Ⓒ Port thread : Rc thread
Ⓓ Cushion : Both sides cushioned
Ⓔ Stroke : 200 mm
Ⓕ Switch model No. : Reed MOH switch
Ⓖ Switch quantity : 1 on R side
Ⓗ Option : Both-side full stroke adjustable, with shock absorber

How to order switch

(Common with SRL3.)

● Switch body + mounting bracket set

SRL3 - M0H

Switch model No.
(Item Ⓕ on page 1652)

● Switch body only

SW - M0H

Switch model No.
(Item Ⓕ on page 1652)

● Mounting bracket set (*2)

M-switch

SRL3 - M

T-switch

SRL3 - T

● Lead wire holder (*3)

SRL3 - MH

(*1) "Switch body + mounting bracket set" does not include lead wire holders. Order lead wire holders separately if necessary.
(*2) The mounting bracket is different between the M-switch and T-switch.
(*3) The quantity of lead wire holders per set is 10.

How to order discrete shock absorber

SRL3 - 20 - NCK

Bore size
(Item Ⓑ on page 1652)

(One shock absorber, one shock absorber fixing hexagon nut)

Applicable shock absorber model No.

Model No.	Compatible model
NCK-00-0.3-C	SRG3-12/16
NCK-00-0.7-C	SRG3-20
NCK-00-1.2	SRG3-25

How to order repair parts

SRL3 - 20 K - 200

Bore size
(Item Ⓑ on page 1652)

Stroke
(Item Ⓔ on page 1652)

How to order mounting bracket

SRL3 - LB - 20

Mounting
(Item Ⓐ on page 1652)

Bore size
(Item Ⓑ on page 1652)

(Bracket x 2, mounting bolt x 4)

How to order full stroke adjusting bracket kit

(Applies to option code A3.)

SRG3 - 20 - A (Both-side full stroke adjusting bracket kit)
SRG3 - 20 - A1 (R side full stroke adjusting bracket kit)
SRG3 - 20 - A2 (L side full stroke adjusting bracket kit)

Bore size
(Item Ⓑ on page 1652)

(For configurations, refer to page 1659)

Theoretical thrust table

(Unit: N)

Bore size (mm)	Operating direction	Working pressure MPa						
		0.1	0.2	0.3	0.4	0.5	0.6	0.7
ø12	Push/Pull	-	27.7	41.5	55.3	69.1	83.0	96.8
ø16	Push/Pull	-	43.2	64.8	86.4	$1.08x10^2$	$1.30x10^2$	$1.51x10^2$
ø20	Push/Pull	-	62.9	94.4	$1.26x10^2$	$1.57x10^2$	$1.89x10^2$	$2.20x10^2$
ø25	Push/Pull	54.2	$1.08x10^2$	$1.63x10^2$	$2.17x10^2$	$2.71x10^2$	$3.25x10^2$	$3.80x10^2$