

SCP*2
 CMK2
 CMA2
 SCM
 SCG
 SCA2
 SCS
 CKV2
 CA/OV2
 SSD
 CAT
 MDC2
 MVC
 SMD2
 MSD*
 FC*
 STK
 ULK*
 JSK/M2
 JSG
 JSC3
 USSD
 USC
 JSB3
 LMB
 STG
 STS/L
 LCS
 LCG
 LCM
 LCT
 LCY
 STR2
 UCA2
 HCM
 HCA
 SRL2
 SRG
 SRM
 SRT
 MRL2
 MRG2
 SM-25
 CAC3
 UCAC
 RCC2
 MFC
 SHC
 GLC
 Ending



Medium bore size cylinder
Double acting, low hydraulic type

CMK2-H Series

● Bore size: $\phi 20$, $\phi 25$, $\phi 32$, $\phi 40$

JIS symbol ● Double acting cylinder single rod type



Specifications

Descriptions		CMK2-H			
Bore size	mm	$\phi 20$	$\phi 25$	$\phi 32$	$\phi 40$
Actuation		Double acting low hydraulic type			
Working fluid		Hydraulic fluid			
Max. working pressure	MPa	1.0			
Min. working pressure	MPa	0.15			
Withstanding pressure	MPa	1.6			
Ambient temperature	°C	5 to 50			
Port size		Rc1/8			
Stroke tolerance	mm	$^{+2.0}_{-0}$ (up to 200), $^{+2.4}_{-0}$ (over 200)			
Working piston speed	mm/s	5 to 300			
Cushion		Rubber cushion			
Lubrication		Not required			
Allowable energy absorption	J	0.166	0.308	0.424	0.639

● Product weight, thrust and dimensions are same as CMK2 (standard type).

Stroke length

Bore size (mm)	Standard stroke length (mm)	Max. stroke length (mm)	Min. stroke length (mm)
$\phi 20$	25, 50, 75, 100, 150, 200, 250, 300	750	5
$\phi 25$			
$\phi 32$			
$\phi 40$			

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

Note 2: For single foot type (LS type), maximum stroke length is 50 mm.

Note 3: For bellows "J" type, stroke length should be longer than 25 mm.

Consult with CKD when stroke length is shorter than 25 mm.

Min. stroke length of type with switch

(Unit: mm)

Switch quantity Bore size (mm)	1				2				3			
	Proximity		Reed		Proximity		Reed		Proximity		Reed	
	T2, T3	T1, T*Y*	T0, T5	T8	T2, T3	T1, T*Y*	T0, T5	T8	T2, T3	T1, T*Y*	T0, T5	T8
φ 20	10				25	35	25	35	50	55	50	55
φ 25	10				25	35	25	35	50	55	50	55
φ 32	10				25	35	25	35	50	55	50	55
φ 40	10				25	35	25	35	50	55	50	55

Note 1: Up to three switches can be mounted.

Switch specifications

● 1 color/2 color indicator

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

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

● With preventive maintenance output

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

Note 1: Refer to Ending 1 for other switches.

Note 2: The above maximum load current of 20 mA applies at 25 °C. If the switch's working ambient temperature exceeds 25 °C, the load current will be lower than 20 mA.
(5 to 10 mA when 60 °C)

Cylinder weight

(Unit: kg)

Descriptions/mounting style	Product weight when stroke length (S) = 0 mm								Switch weight	Switch rail	Additional weight
	Basic type (00)	Axial foot type (LB)	Axial foot type (LS)	Flange type (FA/FB)	Eye bracket type (CA)	Clevis type (CC)	Clevis bracket type (CB)	Trunnion type (TA/TB)	Grommet	+ band weight	per S = 10 mm
ϕ 20	0.17	0.32	0.25	0.23	0.32	0.18	0.32	0.22	0.018	0.005	0.01
ϕ 25	0.26	0.52	0.39	0.41	0.50	0.26	0.50	0.36	0.018	0.005	0.01
ϕ 32	0.30	0.56	0.43	0.45	0.54	0.30	0.54	0.40	0.018	0.009	0.02
ϕ 40	0.48	0.74	0.61	0.63	0.72	0.50	0.72	0.64	0.018	0.009	0.02

(E.g.) Product weight of
CMK2-H-FA-32-50-T0H-D

When S = 0 mm, product weight is 0.45 kg

Additional weight at S = 50 mm is additional weight at S = 10 mm $0.02 \times \frac{\text{Product stroke length (50)}}{10} = 0.10$ kg

Weight of two switches is 0.036 kg

Weight of switch rail and two bands is 0.018 kg

Product weight is 0.45 kg + 0.1 kg + 0.036 kg + 0.018 kg = 0.604 kg

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder
Standard type

How to order

Without switch

CMK2-H - 00 - 20 - 100 - V I

With switch

CMK2-H - 00 - 20 - 100 - T0H - R - V I

A Mounting style
Note 1

B Bore size

C Port thread type

D Stroke length

E Switch model no.

Note on model no. selection

Note 1: The maximum stroke of the single-end foot type (LS type) is 50 mm.

Note 2: Refer to page 178 for min. stroke length with switch.

Note 3: For bellows "J" type, stroke length should be longer than 25 mm. Consult with CKD when stroke length is shorter than 25 mm.

Note 4: Instantaneous maximum temperature is the temperature when spark and spatter etc. instantaneously contacts to bellows.

Note 5: "I" "Y" can not be selected at the same time.

Note 6: Refer to Ending 89 for custom specifications of rod end form.

Note 7: Refer to page 84 for variation and combinations of options.

Note 8: Up to three switches can be mounted. If more than four switches are required, switch mounting brackets for the extra switches must be prepared separately.

<Example of model number>

CMK2-H-00-20-100-T0H-R-VI

Model: Medium bore size cylinder, double acting, low hydraulic type

- A Mounting style : Basic type
- B Bore size : ϕ 20 mm
- C Port thread type : Rc thread
- D Stroke length : 100 mm
- E Switch model no. : Reed T0H switch and lead wire 1 m
- F Switch quantity : One on rod end
- G Option : Boss cut off
- H Accessory : Rod eye

F Switch quantity
Note 8

G Option
Note 3, Note 4

H Accessory
Note 5

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type (both sides)
LS	Axial foot type (single)
FA	Rod side flange type
FB	Head side flange type
CA	Eye bracket type
CC	Fixed eye
CC1	Eye and bush press fitted type
CB	Clevis bracket type (pin and washer split pin attached)
TA	Rod side trunnion type
TB	Head side trunnion type

B Bore size (mm)	
20	ϕ 20
25	ϕ 25
32	ϕ 32
40	ϕ 40

C Port thread type	
Blank	Rc thread
NN	NPT thread (custom order)
GN	G thread (custom order)

D Stroke length (mm)		
Bore size	Stroke length Note 2	Custom stroke length
ϕ 20	5 to 750	By 1 mm increment
ϕ 25	5 to 750	
ϕ 32	5 to 750	
ϕ 40	5 to 750	

E Switch model no.				
Lead wire Straight type	Lead wire L type	Contact	Indicator	Lead wire
T0H*	T0V*	Reed	1 color indicator type	2-wire
T5H*	T5V*		Without indicator light	
T8H*	T8V*		1 color indicator type	
T1H*	T1V*	Proximity	1 color indicator type	2-wire
T2H*	T2V*		1 color indicator type (custom order)	3-wire
T3H*	T3V*			
T3PH*	T3PV*		2 color indicator type	2-wire
T2YH*	T2YV*		2 color indicator type (w/o light for preventive maintenance output)	3-wire
T3YH*	T3YV*		2 color indicator type (Light available for preventive maintenance output (1 color))	4 wire
T2YFH*	T2YFV*			3-wire
T3YFH*	T3YFV*		Off-delay type	4 wire
T2YMH*	T2YMV*			2-wire
T3YMH*	T3YMV*			
T2JH*	T2JV*			

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

F Switch quantity	
R	One on rod end
H	One on head end
D	Two
T	Three

G Option			
		Max. ambient	Max. instantaneous
J	Bellows	100 °C	200 °C
L	Bellows	250 °C	400 °C
M	Piston rod material (stainless steel)		
V	Boss cut off		
P6	Copper and PTFE free		

H Accessory	
I	Rod eye
Y	Rod clevis (pin and washer split pin attached)
B2	Clevis bracket (pin and snap ring attached)

How to order switch

- Switch body + mounting bracket

CMK2 - **T0H** - **20**

Switch model no. (item ⑤ on previous page)

Bore size (item ⑥ on previous page)

- Only switch body

SW - **T0H**

Switch model no. (item ⑤ on previous page)

- Mounting bracket

CMK2 - **T** - **20**

Bracket
Bore size (item ⑥ on previous page)

How to order mounting bracket

Bore size (mm)	φ 20	φ 25	φ 32	φ 40
Mounting bracket				
Axial foot type (LB/LS)	M1-LB-20	M1-LB-30	M1-LB-30	M1-LB-30
Flange (FA/FB)	M1-FA-20	M1-FA-30	M1-FA-30	M1-FA-30
Trunnion (TA/TB)	M1-TA-20	M1-TA-30	M1-TA-30	M1-TA-40
Eye bracket type (CA)	M1-CA-20	M1-CA-30	M1-CA-30	M1-CA-30
Clevis bracket type (CB)	M1-CB-20	M1-CB-30	M1-CB-30	M1-CB-30

Note 1: Mounting nut/toothed washer are attached to each mounting bracket.

Note 2: Two sets of "M1-LB-20" in the above table are required for the axial direction foot (double-sided).

Internal structure drawing

This is the same as the standard type. Refer to Page 94.

Dimensions

This is the same as the standard type. Refer to pages 95 to 101.

SCP*2
CMK2
CMA2
SCM
SCG
SCA2
SCS
CKV2
CA/OV2
SSD
CAT
MDC2
MVC
SMD2
MSD*
FC*
STK
ULK*
JSK/M2
JSG
JSC3
USSD
USC
JSB3
LMB
STG
STS/L
LCS
LCG
LCM
LCT
LCY
STR2
UCA2
HCM
HCA
SRL2
SRG
SRM
SRT
MRL2
MRG2
SM-25
CAC3
UCAC
RCC2
MFC
SHC
GLC
Ending

Medium bore size cylinder
Standard type