



High energy absorption cylinder, double acting/single rod type

HCM Series

- Bore size: 20, 25, 32, 40, 50, 63 mm

JIS symbol



Specifications

Descriptions		HCM					
Bore size	mm	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.
Actuation		Double acting					
Working fluid		Compressed air					
Max. working pressure	MPa	1.0					
Min. working pressure	MPa	0.15					
Withstanding pressure	MPa	1.6					
Ambient temperature	°C	-10 to 60 (to be unfrozen)					
Port size		Rc½	Rc½	Rc¾	Rc¾	Rc1	Rc1
Stroke length tolerance	mm	+2.0 0			+2.0 0		
Working piston speed	mm/s	50 to 2000 (use this within the range of allowable energy absorption.)					
Cushion		Air cushion					
Lubrication		Not required (when lubrication, use turbine oil Class 1 ISOVG32.)					
Allowable energy absorption J (Note 1)	Air cushion	3	5	9	14	23	30
Effective cushion length	mm	56.5	56.5	56.5	55.5	58.5	58.5

Note 1: When kinetic energy exceeds this value, consider installing an external shock absorber.
Please refer to Page 1428 to 1431 about energy calculation/size selection.

Stroke length

Stroke length (Note 1)							
Bore size	mm	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.
Stroke range	mm	200 to 700			200 to 1000		

Note 1: Consult with CKD about stroke length other than above.

Cylinder mass

(Unit: kg)

Bore size (mm)		20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.
Product mass when 0 mm stroke	Basic type 00	0.33	0.47	0.62	0.98	1.58	2.27
	Axial foot type LB	0.44	0.6	0.78	1.2	2.06	2.99
	Flange type FA/FB	0.36	0.51	0.68	1.06	1.92	2.77
Switch mass (per switch)		0.018					
Additional mass per stroke length without switch 100mm		0.012	0.016	0.017	0.027	0.040	0.044
Additional mass per stroke length with switch rail 100mm		0.014	0.018	0.019	0.029	0.042	0.046

[Calculation e.g.]

Product mass of HCM-LB-40B-500-T2H-D

When stroke length 0mm, product mass is 1.2kg.

Additional mass at stroke length 500mm is $0.029 \times \frac{500}{100} = 0.145\text{kg}$.

Mass of two switch is $0.018 \times 2 = 0.036\text{kg}$

Product mass is $1.2 + 0.145 + 0.036 = 1.381\text{kg}$

Switch specifications

- One color/bi-color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire			
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V		T5H/T5V	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection	
Power voltage	-		DC10 to 28V		-			
Load voltage	DC10 to 30V		DC30V or less		DC12/24V AC110V		DC5/12/24V	AC110V
Load current	5 to 20mA (Note 1)		100mA or less	50mA or less	5 to 50mA 7 to 20mA		50mA or less	20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-	

Note 1: Max. load current : 20mA above is the value at 25 °C. When ambient temperature around a switch is higher than 25 °C, the value is lower than 20mA. (5 to 10mA at 60 °C).

- 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		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Light	Installation position adjustment	Red/green LED (ON lighting)							
	Preventive maintenance output	-				Yellow LED (ON lighting)			
Output	Current voltage	-		DC10 to 28V		-		DC10 to 28V	
	Load voltage	DC10 to 30V		DC30V or less		DC10 to 30V		DC30V or less	
	Load current	DC5 to 20mA		DC50mA or less		DC5 to 20mA		DC50mA or less	
	Load voltage	DC30V or less							
Preventive maintenance output	Load current	DC20mA or less		DC50mA or less		DC5 to 20mA or less		DC50mA or less	

- Strong magnetic field

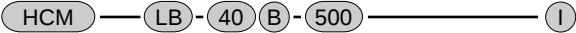
Descriptions	Proximity switch	
	T2YD	
Applications	Programmable controller	
Light	Red/green LED (ON lighting)	
Load voltage	DC24V±10%	
Load current	5 to 20mA	
Internal voltage drop	6V or less	
Leakage current	1.0mA or less	

SCP * 2
CMK2
CMA2
SCM
SCA2
SCS
CKV2
CAV2/
COV * 2
CAT
MDC2
MVC
SMD2
MSD/
MSDG
SSD
SSD
(large)
FC *
ULKP/
ULK
JSK2/
JSM2/
JSC3
(medium)
JSC3
(large)
JSB3
UCAC
STS/
STL
LCS
LCY
STR2
UCA2
STK
USSD
USC
MFC
GLC
SHC
CAC3
HCM
HCA
MRL2
SRL2
SRG
SRM
SRT
SRB2

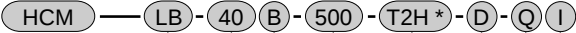
High-speed type
High energy absorption cylinder

How to order

Without switch



With switch



A Mounting style

B Bore size

C Cushion

D Stroke length

E Switch model No.

F Switch quantity

G Option

H Accessory

<Example of model number>

HCM-LB-40B-500-T2H-D-Q-I

Model: High energy absorption cylinder, double acting

A Mounting style : Axial foot type

B Bore size : 40 mm

C Cushion : Both sides cushion

D Stroke length : 500 mm

E Switch model No.: Proximity T2H switch, lead wire 1m

F Switch quantity : Two

G Option : Switch rail attached at shipment

H Accessory : Rod eye

Symbol	Descriptions
A Mounting style	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type

B Bore size (mm)	
20	20 dia.
25	25 dia.
32	32 dia.
40	40 dia.
50	50 dia.
63	63 dia.

C Cushion	
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	No cushion

D Stroke length (mm)							
Bore size (mm)		20	25	32	40	50	63
200	200	●	●	●	●	●	●
250	250	●	●	●	●	●	●
300	300	●	●	●	●	●	●
350	350	●	●	●	●	●	●
400	400	●	●	●	●	●	●
450	450	●	●	●	●	●	●
500	500	●	●	●	●	●	●
550	550	●	●	●	●	●	●
600	600	●	●	●	●	●	●
650	650	●	●	●	●	●	●
700	700	●	●	●	●	●	●
750	750	-	-	-	●	●	●
800	800	-	-	-	●	●	●
850	850	-	-	-	●	●	●
900	900	-	-	-	●	●	●
950	950	-	-	-	●	●	●
1000	1000	-	-	-	●	●	●

E Switch model No.			
Lead wire	Lead wire	Read Contact	Indicator
Straight type	Radial type		
T0H *	T0V *	1 color indicator	2 wire
T5H *	T5V *		
T2H *	T2V *		
T3H *	T3V *	2 color indicator	3 wire
T2YH *	T2YV *		
T3YH *	T3YV *		
T2YFH *	T2YFV *	Proximity	With preventive maintenance output
T3YFH *	T3YFV *		
T2YMH *	T2YMV *		
T3YMH *	T3YMV *		
T2YD *	-	Strong magnetic field proof switch	2 wire
T2YDT *	-		
T2JH *	T2JV *	Off delay type	2 wire

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

F Switch quantity	
R	One on rod side
H	One on head side
D	Two
T	Three
4	4
5	5

G Option	
Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)

H Accessory	
I	Rod eye
Y	Rod clevis

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