

Hybrid robot
Single axis unit

HRL-1 Series

● Load capacity: 5/10/15/25/50/65 kg

RoHS CAD

Specifications

Item		HRL-1□-05	HRL-1□-10	HRL-1□-15	HRL-1□-15H	HRL-1□-25	HRL-1□-50	HRL-1□-65
Load capacity (vertical) *1 kg		5	10	15		25	50	65
Basic cylinder		SCM-00-20D	SCM-00-25D	SCM-00-32D		SCM-00-40D	SCM-00-50D	SCM-00-63B
Bore size mm		20	25	32		40	50	63
Guide rod diameter mm		13	13	16	20	20	25	30
Speed mm/s		50 to 500						
Working pressure MPa		0.3 (≈44 psi, 3 bar) to 0.7 (≈100 psi, 7 bar)						
Adjustable stroke range *2 mm		0 to -10 mm (push)						
Shock absorber *3		NCK-00-0.7		NCK-00-1.2		NCK-00-12		
Product weight kg	Basic	2 + (0.0033 x stroke length)	2.1 + (0.0037 × stroke length)	2.8 + (0.0051 × stroke length)	2.9 + (0.0069 × stroke length)	10.8 + (0.0081 × stroke length)	11.9 + (0.0122 × stroke length)	13.3 + (0.02 × stroke length)
	Long body	2.3 + (0.0033 × stroke length)	2.4 + (0.0037 × stroke length)	3.1 + (0.0051 × stroke length)	3.2 + (0.0069 × stroke length)	12.5 + (0.0081 × stroke length)	13.6 + (0.0122 × stroke length)	15+(0.02 x stroke length)
Movable part weight kg	Basic	0.9 + (0.0025 × stroke length)	0.9 + (0.0027 × stroke length)	1.3 + (0.0041 × stroke length)	1.6 + (0.0059 × stroke length)	4.1 + (0.0066 × stroke length)	5.2 + (0.0102 × stroke length)	6.1 + (0.0137 × stroke length)
	Long body	1.0 + (0.0025 × stroke length)	1.0 + (0.0027 × stroke length)	1.5 + (0.0041 × stroke length)	1.8 + (0.0059 × stroke length)	4.4 + (0.0066 × stroke length)	5.7 + (0.0102 × stroke length)	6.8 + (0.0137 × stroke length)
Speed controller *4		SC3W-6-6				SC3W-6-8	SC3W-8-8	

*1 : Load capacity varies with air pressure, speed and absorption energy. (Value is for reference.)
*2 : Adjustable stroke is not available for pulled side.
*3 : The shock absorber is built into the body. Use within the following allowable shock absorber tolerance values at the working speed and working air pressure.
· HRL-1□F-05/10/15/15H Pull... 70% or less
· HRL-1□F-25/50/65 Pull... 65% or less
· Other than the above: 74% or less
*4 : The speed controller is included.

Switch specifications

● 1-color/2-color display/for AC magnetic field proof

Item	Proximity 2-wire			Proximity 3-wire			Reed 2-wire				Proximity 2-wire
	T2H/T2V	T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3PH/T3PV	T3YH/T3YV	T0H/T0V		T5H/T5V		T2YD (*4) T2YDT
Applications	Dedicated for programmable controller			For programmable controller, relay			For programmable controller, relay		For programmable controller, relay, IC circuit (no indicator lamp), serial connection		For programmable controller
Output method	-			NPN output	PNP output	NPN output	-				-
Pwr. supp. V.	-			10 to 28 VDC			-				-
Load voltage	10 to 30 VDC			30 VDC or less			12/24 VDC	110 VAC	5/12/24 VDC	110 VAC	24 VDC ±10%
Load current	5 to 20 mA (*3)			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 20 mA
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)		-		Red/green LED (Lit when ON)
Leakage current	1 mA or less			10 μA or less			0 mA				1 mA or less
Weight	1 m:18 g 3 m:49 g 5 m:80 g		1 m:33 g 3 m:87 g 5 m:142 g	1 m:18 g 3 m:49 g 5 m:80 g		1 m:33 g 3 m:87 g 5 m:142 g	1 m:18 g 3 m:49 g 5 m:80 g				1 m:61 g 3 m:166 g 5 m:272 g

*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 fields.

How to order

Without switch *1

HRL-1 L - 05 - 350 - Q

With switch

HRL-1 L - 05 - 350 - Q - T0H3 - R

Ⓐ Basic shape
Ⓑ Load capacity
Ⓒ Stroke length
Ⓓ Position locking mechanism *2
Ⓔ Switch model No. * indicates the lead wire length.
Ⓕ Switch quantity

Code	Description
Ⓐ Basic shape	
Blank	Basic
L	Long body
F	Basic front flange
LF	Long body front flange
Ⓑ Load capacity (vertical)	
05	5 kg
10	10 kg
15	15 kg
15H	
25	25 kg
50	50 kg
65	65 kg
Ⓒ Stroke length (mm)	
[Basic body shape]	
50, 75, 100, 125, 150, 200, 250, 300	
[Long body shape]	
350, 400, 450, 500, 550, 600	
Ⓓ Position locking mechanism	
Blank	Without
Q	With

Ⓔ Switch model No.

Axial lead wire	Radial lead wire	Contact	Voltage AC	Voltage DC	Display	Lead wire
T0H*	**T0V***	Reed	●	●	1-color display	2-wire
T5H*	**T5V***	Reed	●	●	Without indicator lamp	2-wire
T2H*	**T2V***	Proximity		●	1-color display	2-wire
T3H*	**T3V***	Proximity		●	1-color display	3-wire
T3PH*	**T3PV***	Proximity		●	1-color display	3-wire
T2YH*	**T2YV***	Proximity		●	2-color display	2-wire
T3YH*	**T3YV***	Proximity		●	2-color display	3-wire
T2YD*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2YDT*	-	Proximity		●	2-color display AC magnetic field	2-wire
T2JH*	**T2JV***	Proximity		●	1-color display off-delay	2-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
T	3

⚠ Precautions for model No. selection

*1 : When without switch is selected, with/without cylinder switch rail depends on whether position locking is selected.
Without position locking mechanism: Without switch rail
With position locking mechanism: With switch rail

*2 : The position locking mechanism can be installed on the head side of the cylinder only.

[Example of model No.]

HRL-1L-05-350-Q-T0H3-R

Model: Hybrid robot HRL-1 Series

Ⓐ Basic shape : Long body
Ⓑ Load capacity : 5 kg
Ⓒ Stroke length : 350 mm
Ⓓ Position locking mechanism : With
Ⓔ Switch model No. : Reed T0H switch, lead wire 3 m
Ⓕ Switch quantity : 1 on rod side

Specifications for rechargeable battery (Catalog No. CC-1226A)

● Design compatible with rechargeable battery manufacturing process.

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