

Electric Rotary Grippers

RGI / RGD Series



Serie	Gripping Force (Per Jaw)	Recommended Workpiece Weight	Stroke	Reference Page
RGI-100-14/22/30	30~100 N	1.5 kg	14/22/30 mm	P43-44
RGIC-35-12	13-35 N	0.5 kg	12 mm	P45-46
RGIC-100-35	40~100 N	1 kg	35 mm	P47-48
RGD-5-14	2~5.5 N	0.05 kg	14 mm	P49-51
RGD-35-14/30	10~35 N	0.35 kg	14/30 mm	P52-54

Product Features

DH-Robotics offers industrial Electric Rotary Gripper, including the RGI and RGD series. The RGI is the market's first fully independently developed infinite rotary gripper, overcoming the challenges of wiring and power supply, with a compact and precise structure. The RGD direct-drive rotary electric gripper adopts a zero-backlash rotary module, improving rotational accuracy and making it perfectly suitable for high-precision manufacturing scenarios.

RGI Series

◆ Gripping & Infinite Rotation

The unique structural design in the industry can realize the simultaneous gripping and infinite rotation on one electric gripper, and solve the winding problem in non-standard design and rotation.

◆ Compact Double Servo System

Dual servo systems are creatively integrated in a thin machine body, which is compact in design and can be adapted to many industrial scenes.

◆ High Gripping Force and Torque

The maximum single-sided gripping force is **100N**, and the maximum torque is **1.5N·m**. Though precise force control and position control, the RGI gripper can more stably complete the grasping and rotating tasks.

RGD Series

◆ Zero Rotary Backlash High Repeatability

The RGD series adopts direct-drive rotary motors to realize zero rotary backlash and a rotary resolution of up to 0.01°, which applies to rotary positioning scenarios in semiconductor production.

◆ High Dynamic Response High-speed Stability

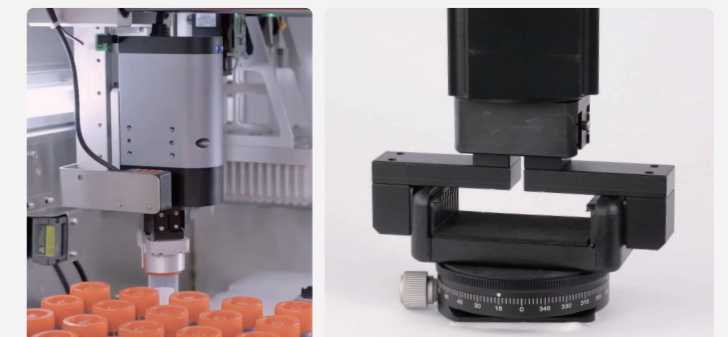
The precision direct-drive technology, coupled with DH-Robotics' excellent drive control, realizes perfect control of gripping and rotation. The rotation speed is up to **1500°** per second.

◆ All-in-one Design Power-off Protection

The gripper adopts the design of integrating the dual servo system of gripping and rotation with the drive control module, which is smaller and more compact, and applies to more scenarios. Brakes are optional to meet the requirements of various applications.

Application

In the field of medical automation, the RGI-100 series electric grippers come standard with fingertip modules, which can be adapted to 10-in-1 and 20-in-1 size test tubes. They support the processing, opening and closing, and barcode scanning of samples such as reagents, blood samples, and nucleic acids, meeting the needs of large-scale nucleic acid sampling. The RGD grippers adopt direct drive technology, which greatly improves the rotation accuracy and is widely used in high-precision positioning assembly, handling, and correction adjustment in the fields of 3C electronics and semiconductors.



Parameter Table of Rotational Time in Place for Different Inertia Loads

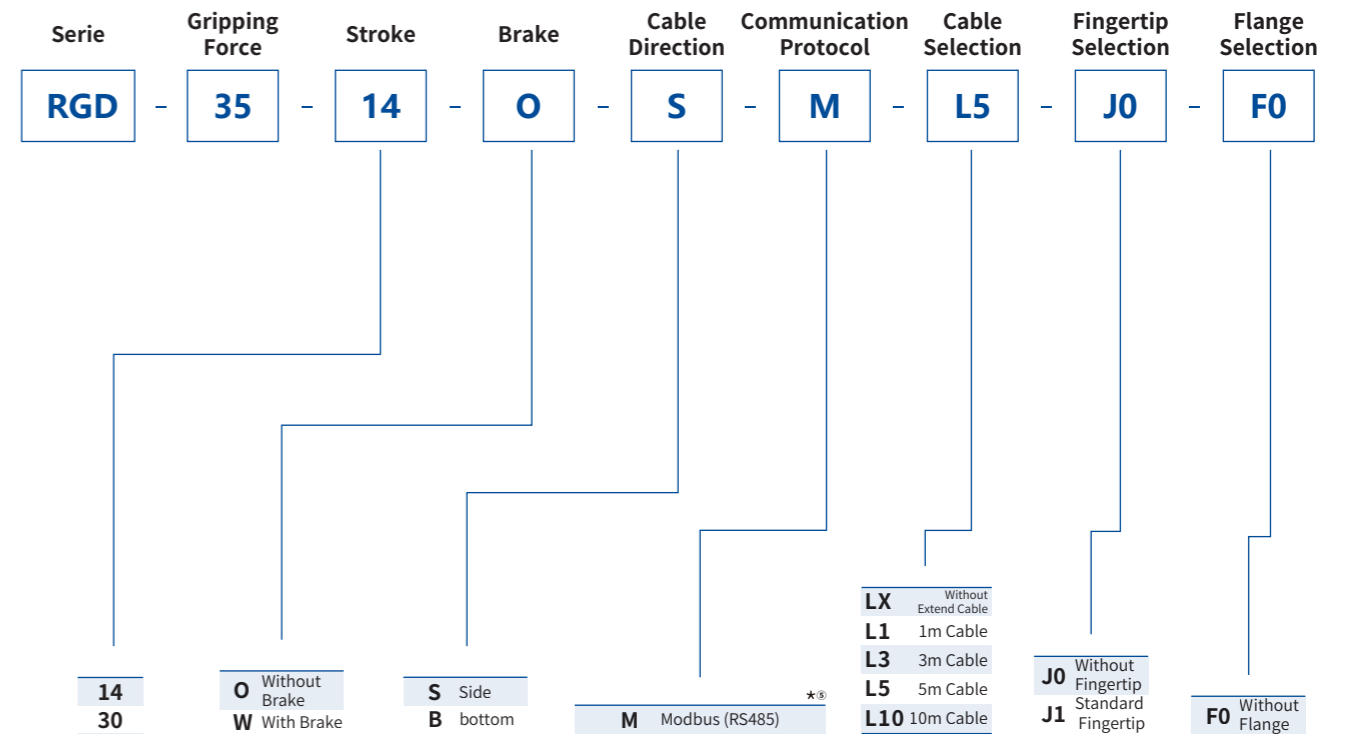
Reference Size/mm	Material	Weight/g	Corresponding Inertia/Kg · mm ²	Actual Rotation Angle/°	Reference Correction Time/ms
Unload	-	0	0	45	200
				90	200
				180	400
				360	500
				720	700
20*80*25	Aluminum Block	57	61	45	200
				90	300
				180	400
				360	500
				720	700
74.7*80*25	Aluminum Block	387	402	45	300
				90	350
				180	400
				360	550
				720	750
96.7*80*25	Aluminum Block	503	685	45	400
				90	450
				180	500
				360	650
				720	850
111.3*80*25	Aluminum Block	582	941	45	850
				90	1000
				180	1200
				360	1450
				720	1650
126*80*25	Aluminum Block	662	1263	45	1350
				90	1550
				180	1850
				360	1950
				720	2450

RGD-35

Direct Drive Rotary Gripper

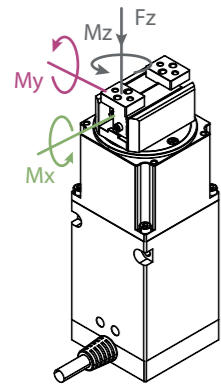


Selection Method



*^⑤ It is recommended that no more than 4 units of DH-Robotics products be accessed on a single 485 bus, otherwise 485 communication anomalies may occur. If you need to access more than 4 devices, it is recommended to contact the sales staff for product adjustment.
The Modbus RTU (RS485) to USB module will no longer be provided for free. Please place a separate order if needed.

TECHNICAL SPECIFICATIONS



Static Vertical Allowable Load

Fz 150 N

Allowable Loading Moment

Mx 2 N·m

My 1.5 N·m

Mz 2.5 N·m

- Build-in Controller
- Gripping Force Adjustable
- Position Adjustable
- Speed Adjustable
- Drop Detection
- Rotary Adjustable
- Self-locking Mechanism

*① The peak torque can be increased to a maximum of 0.5 N·m. For specific details, please consult with technical support personnel.
 *② The recommended load calculation is based on pure friction force gripping, with a friction coefficient of 0.2 and a safety factor of 4. The center of gravity shift of the gripped object will also affect the load. If you have any questions, please consult us.
 *③ Requires external communication convertor or customization, please contact sales or technical support.
 *④ When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

Product Parameter	RGD-35-14	RGD-35-30
Gripping force (per jaw)	10-35 N	10-35 N
Recommended workpiece weight(Fingertip included) *②	0.35 kg	0.35 kg
Stroke	14 mm	30 mm
Full stroke opening/closing time	0.5 s/0.5 s	0.7 s/0.7 s
Repeat accuracy (position)	± 0.02 mm	± 0.02 mm
Repeat accuracy (swiveling)	± 0.1 °	± 0.1 °
Max. rotation speed	1500 °/s	1500 °/s
Rated torque	0.1 N·m	0.1 N·m
Peak torque*①	0.25 N·m	0.25 N·m
Rotary backlash	Zero backlash	Zero backlash
Rotary range	Infinite Rotating	Infinite Rotating
Weight	0.86 kg(without brake) 0.88 kg(with brake)	1 kg(without brake) 1.02 kg(with brake)
Size	159 mm x 50 mm x 50 mm Rotary Diameter: 47 mm	159 mm x 50 mm x 50 mm Rotary Diameter: 83.6 mm
Noise emission	< 60 dB	< 60 dB

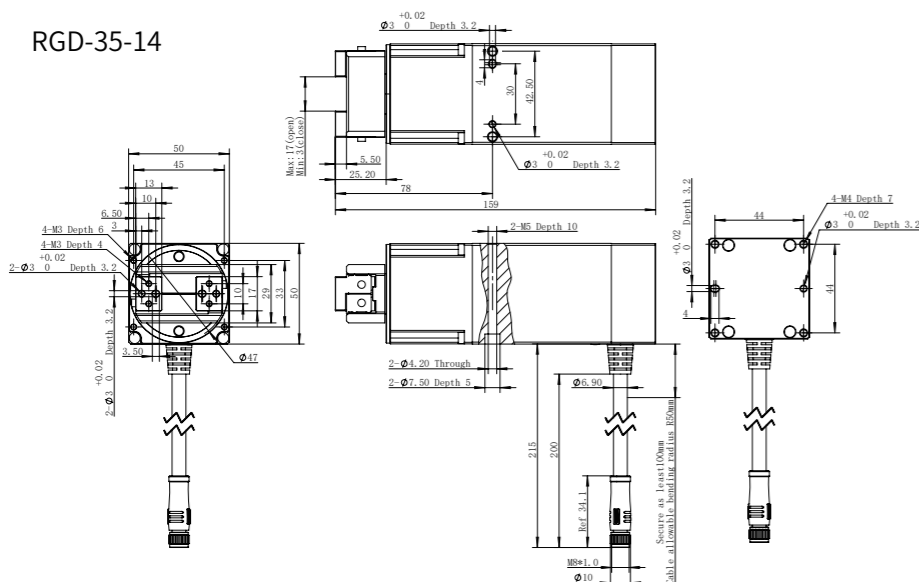
Working Environment

Communication interface	Modbus RTU (RS485) Optional: : TCP/IP, EtherCAT *③
Rated voltage	24 V DC ± 10%
Current	1.2 A(Rated)/ 2.5 A(Peak) *④
Rated power	60 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE, FCC, RoHS

Parameter Table of Rotational Time in Place for Different Inertia Loads

Reference Size/mm	Material	Weight/g	Corresponding Inertia/Kg · mm ²	Actual Rotation Angle/°	Reference Correction Tme/ms
Unload	-	0	0	45	200
				90	200
				180	400
				360	500
				720	700
20*80*25	Aluminum Block	57	61	45	200
				90	300
				180	400
				360	500
				720	700
74.7*80*25	Aluminum Block	387	402	45	300
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				90	1550
				180	1850
				360	1950
				720	2450

Technical Drawings

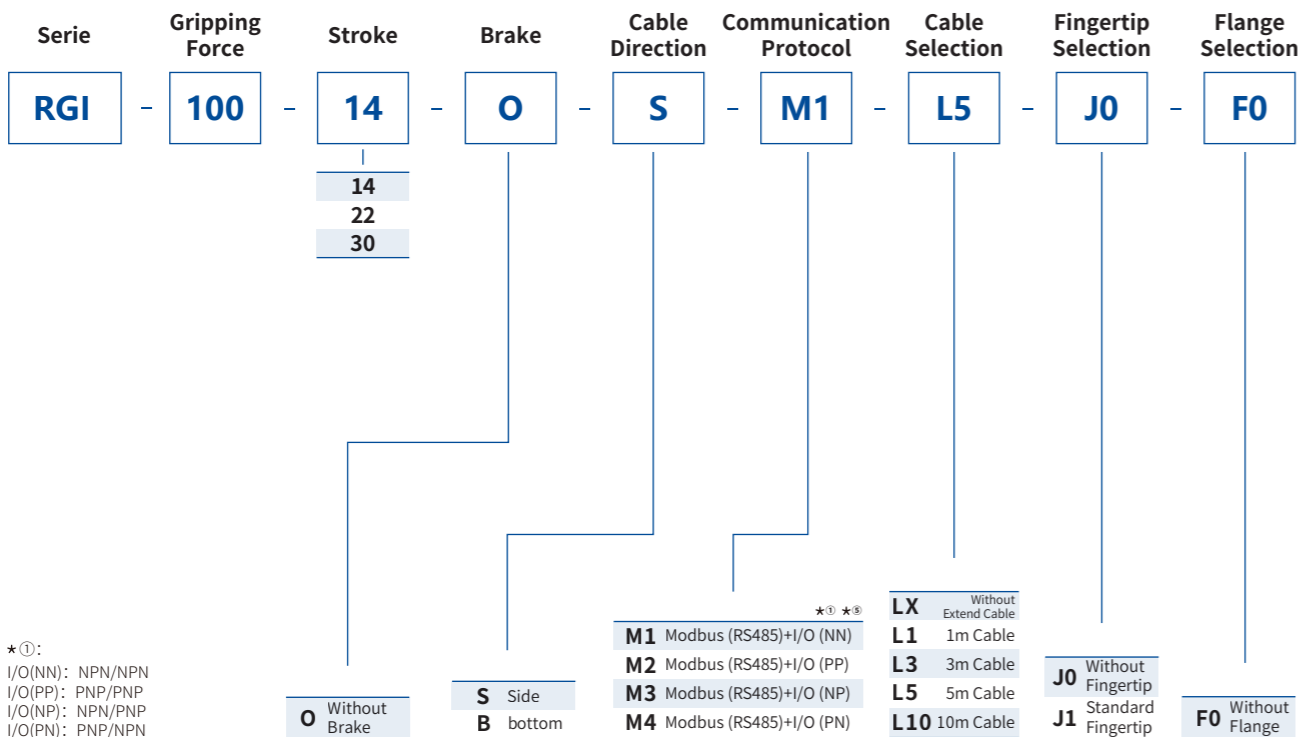


RGI-100

Electric Rotary Gripper



Selection Method

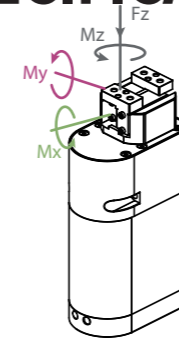


*①:
I/O(NN): NPN/NPN
I/O(PP): PNP/PNP
I/O(NP): NPN/PNP
I/O(PN): PNP/NPN

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TECHNICAL SPECIFICATIONS



Static Vertical Allowable Load

	RGI-100-14	RGI-100-22	RGI-100-30
Fz	150 N	200 N	150 N

Allowable Loading Moment

	RGI-100-14	RGI-100-22	RGI-100-30
Mx	2.5 N·m	3.5 N·m	3.5 N·m
My	3 N·m	4 N·m	4 N·m
Mz	4 N·m	5.5 N·m	5.5 N·m

<input checked="" type="checkbox"/> Build-in Controller	<input checked="" type="checkbox"/> Gripping Force Adjustable	<input checked="" type="checkbox"/> Position Adjustable	<input checked="" type="checkbox"/> Speed Adjustable
<input checked="" type="checkbox"/> Drop Detection	<input checked="" type="checkbox"/> Rotary Adjustable	<input checked="" type="checkbox"/> Self-locking Mechanism	

*② The recommended load calculation is based on pure friction force gripping, with a friction coefficient of 0.2 and a safety factor of 4. The center of gravity shift of the gripped object will also affect the load. If you have any questions, please consult us.

*③ Requires external communication converter or customization, please contact sales or technical support.

*④ When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

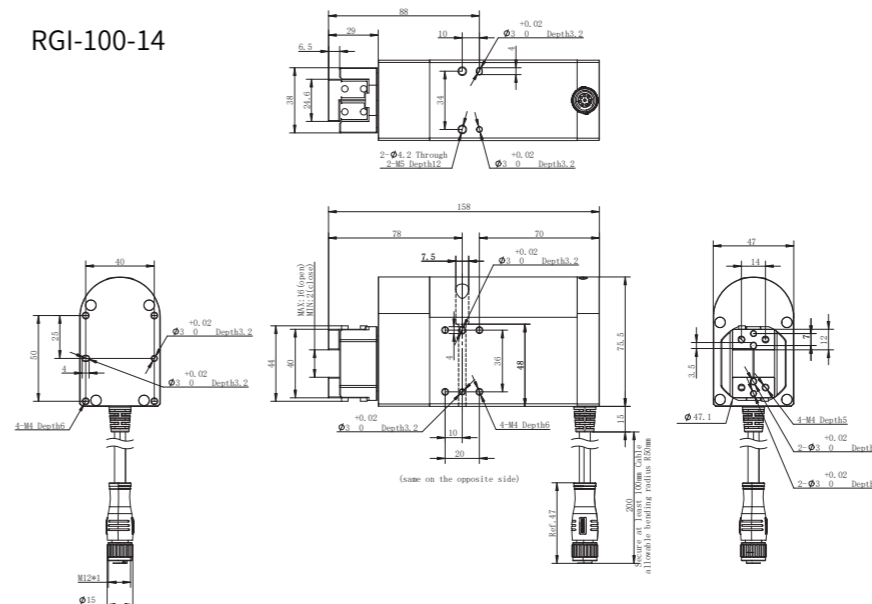
Product Parameter	RGI-100-14	RGI-100-22	RGI-100-30
Gripping force (per jaw)	30~100 N	30~100 N	30~100 N
Recommended workpiece weight (Fingertip included) *②	1.5 kg	1.5 kg	1.5 kg
Stroke	14 mm	22 mm	30 mm
Full stroke opening/closing time	0.45 s/0.25 s	0.5 s/0.3 s	0.55 s/0.35 s
Repeat accuracy (position)	± 0.02 mm	± 0.02 mm	± 0.02 mm
Repeat accuracy (swiveling)	± 0.05 °	± 0.05 °	± 0.05 °
Max. rotation speed	2160 °/s	2160 °/s	2160 °/s
Rated torque	0.5 N·m	0.5 N·m	0.5 N·m
Peak torque	1.5 N·m	1.5 N·m	1.5 N·m
Rotary range	Infinite Rotating	Infinite Rotating	Infinite Rotating
Weight	1.28 kg	1.4 kg	1.5 kg
Size	158 x 75.5 x 47 mm Rotary Diameter: 47.1 mm	158 x 75.5 x 47 mm Rotary Diameter: 67.1 mm	158 x 75.5 x 47 mm Rotary Diameter: 84.8 mm

Working Environment

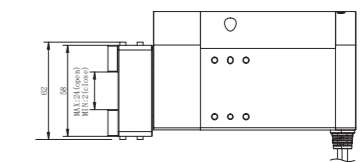
Communication interface	Standard: Modbus RTU (RS485), Digital I/O(2 inputs 2 outputs) Optional: TCP/IP, CAN2.0A, PROFINET, EtherCAT *③
Rated voltage	24 V DC ± 10%
Current	1 A (Rated)/4 A (Peak) *④
Rated power	24 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE, FCC, RoHS

Technical Drawings

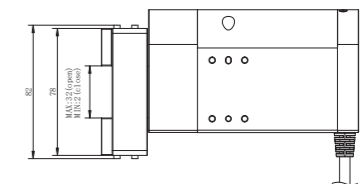
RGI-100-14



RGI-100-22

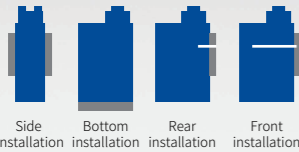


RGI-100-30



RGIC-35-12

Electric Rotary Gripper



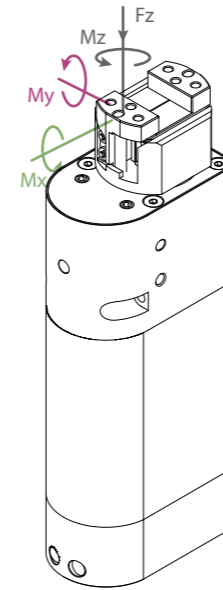
Selection Method

Serie	Gripping Force	Stroke	Brake	Cable Direction	Communication Protocol	Cable Selection	Fingertip Selection	Flange Selection
RGIC	35	12	O	S	M1	L5	JO	F0

<p>★①:</p> <p>I/O(NN): NPN/NPN I/O(PP): PNP/PNP I/O(NP): NPN/PNP I/O(PN): PNP/NPN</p>	<p>O Without Brake</p> <p>S Side B bottom</p>	<p>★① ★②</p> <p>M1 Modbus (RS485)+I/O (NN) M2 Modbus (RS485)+I/O (PP) M3 Modbus (RS485)+I/O (NP) M4 Modbus (RS485)+I/O (PN)</p>	<p>LX Without Extend Cable L1 1m Cable L3 3m Cable L5 5m Cable L10 10m Cable</p>	<p>JO Without Fingertip J1 Standard Fingertip</p>	<p>F0 Without Flange</p>
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TECHNICAL SPECIFICATIONS



Static Vertical Allowable Load

Fz 100 N

Allowable Loading Moment

Mx 1.5 N·m

My 1.1 N·m

Mz 2.1 N·m

★② The recommended load calculation is based on pure friction force gripping, with a friction coefficient of 0.2 and a safety factor of 4. The center of gravity shift of the gripped object will also affect the load. If you have any questions, please consult us.
 ★③ Requires external communication converter or customization, please contact sales or technical support.
 ★④ When selecting the power supply, please select according to the peak current. If the current is lower than the parameter, it will cause the product can not work normally.

Product Parameter

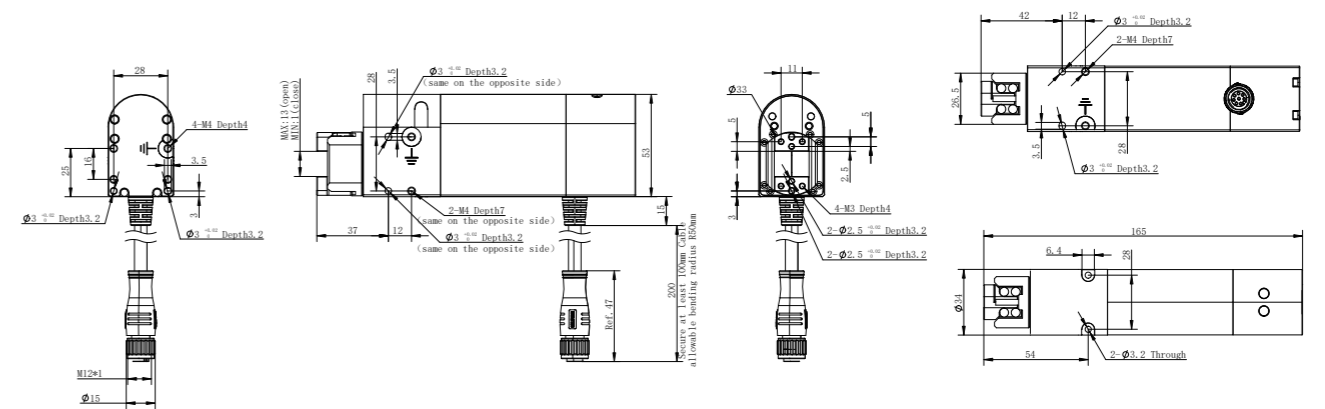
Gripping force (per jaw)	13~35 N
Recommended workpiece weight(Fingertip included) ★②	0.5 kg
Stroke	12 mm
Full stroke opening/closing time	0.5 s/0.4 s
Repeat accuracy (position)	± 0.02 mm
Rated torque	0.2 N·m
Peak torque	0.5 N·m
Rotary range	Infinite Rotating
Max. rotation speed	2160 °/s
Repeat accuracy (swiveling)	± 0.05 °
Weight	0.64 kg
Size	165 mm x 53 mm x 34 mm Rotary Diameter:33 mm

Working Environment

Communication interface	Standard: Modbus RTU (RS485) , Digital I/O(2 inputs 2 outputs) Optional: TCP/IP, CAN2.0A, PROFINET, EtherCAT ★③
Rated voltage	24 V DC ± 10%
Current	1.7 A(Rated)/ 2.5 A(Peak)★④
Rated power	40.8 W
IP class	IP 40
Recommended environment	0~40°C, under 85% RH
Certification	CE, FCC, RoHS



Technical Drawings



*Product size change on January 10, 2025: Height dimension changed from 150 to 165, others remain unchanged.






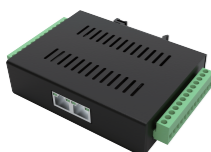

Short Wire Correspondence Table

Our gripper can directly connect to the end interface of each brand of collaborative robot through a short wire.
(The serial number represent the short wire type.)

Support electric gripper models	UR CB Series	UR E Series	Elite CS Series	SIASUN	Hanwha A Series	ROKAE CR Series	DOBOT CR Series	Jaka
Small current electric gripper (Peak current≤0.6A)	C01							
Small current electric gripper (Peak current<1.5A)		C01	C01	C01	C01			C02
High current electric claw (Peak current>1.5A)								
In common (Support large and small current electric gripper)						C01	C01	

Dh-robotics' Gripper And Cylinder Communication Converter

The communication within DH-Robotics' Servo Gripper and Servo Electric Cylinder defaults to Modbus RTU (RS485) and a small number of I/O(2 inputs 2 outputs). If customers choose other communication converter, they will need to use the communication converter. The following communication converter are available for selection:

	communication converter Name	Ordering Model
	EtherCAT 1-1	M2E-B1-1
	EtherCAT 1-4	M2E-B1-4
	EtherCAT to I/O 1-More	Please contact our technical staff confirm the specific parameters
	TCP/IP 1-1	M2T-B1-1-YBT
	PROFINET 1-2	M2P2-B1-2-HJ
	PROFINET 1-11	M2P-B1-11-9
	Modbus RTU (RS485) to USB Converter Module	A801-0036-WG

Customer Trust

More than 800 customers around the world are using DH-Robotics products
The number of customers continues to grow rapidly. . .



Version Change Log

Revision Date	Released Version	Change Log
2025.09	CN.2509	<ul style="list-style-type: none"> Integration of old and new electric gripper selection manuals; Added notes on rotational repeatability accuracy for RGI & RGIC Introduction of the new DH-5-6 dexterous hand
2025.04	CN.2504	<ul style="list-style-type: none"> New option added for robot short-line configuration.; The free configuration for Modbus RTU (RS485) to USB module has been canceled. If needed, please place a separate order for purchase.。
2025.03	CN.2503	<ul style="list-style-type: none"> Version one

Due to continuous product upgrades, content changes may occur without prior notice.
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