eRDH SERIES

2-Jaw Configurable Electric Parallel Grippers | Features and Benefits | How To Order

Features:

- Strokes up to 16 mm [0.63 in]
- Grip force up to 1600 N [360 lbf]
- Finger lengths up to 120 mm [4.72 in]
- Intuitive interface for fast parameter adjustment
- Integrated smart electronics
- No software or programming required
- Integrated keypad functions include:
  - 4 levels of grip force adjustment
  - 4 integrated teachable grip sensing locations
  - 2 levels of speed adjustment
  - ID/OD configurable
  - Operator keypad lockout
  - LED indicators for configuration and fault detection
- Self-locking: grip force maintained upon power loss
- Enhanced built-in auto recovery fault detection
- Fault detection output status signals to PLC
- Accepts standard PLC/Robot discrete I/O signal commands
- Ultra-low power consumption for battery powered applications
- IP67 test as per standard IEC 60529:2013



Applications:

- Mobile Robotic Platforms
- Warehousing and Packaging
- Assembly manufacturing

How To Order

Base Model	Description
eRDH	2-Jaw

Stroke	Description
N	Standard
L	Extended

Options	Description
0	None

Size
1M
2M
3M†

Signal	Description
P	PNP Output (Standard)

†Contact DESTACO for availability.

Accessories

eRDH Accessories	Models	Part Number	Qty
Keypad Cover Kit	All Models	ELEC-01-PC-CLR	1
Cable, M12, 8 PIN Connector, 5m, Shielded (Straight)	All Models with PNP Output	CABL-064	1
Cable, M12, 8 PIN Connector, 5m, Shielded (Right Angle)	All Models with PNP Output	CABL-065	1

*Sensor and cable sold separately.

Dimensions and technical information are subject to change without notice

Specifications	Units	-1-N	-1-L	-2-N	-2-L	-3-N†	-3-L†
Total Stroke	mm [in]	4 [0.16]	8 [0.32]	6 [0.24]	12 [0.47]	8 [0.32]	16 [0.63]
Total Rated Grip Force (Min)**	N [lbf]	500 [112]	220 [50]	960 [215]	420 [95]	1600 [360]	900 [202]
Power Down Grip Force (continuous)		100% via Self-locking					
Max. Permissible Finger Length L**	mm [in]	75 [2.95]		80 [3.15]		120 [4.72]	
Accuracy	mm [in]	±0.04 [±0.002]					
Repeatability	mm [in]	±0.02 [±0.001]					
Min. Actuation Time @ 2mm from Home Position***	s	0.35	0.35	0.45	0.35	0.7	0.4
Max. Actuation Time to Longest Usable Stroke***	s	0.45	0.45	0.6	0.6	1.2	1.2
Jaw Velocity (Fast Speed Setting)	mm/s [in/s]	4 [0.16]	8 [0.31]	5 [0.20]	10 [0.39]	8 [0.31]	20 [0.79]
Jaw Velocity (Slow Speed Setting)	mm/s [in/s]	2.5 [0.1]	5.5 [0.22]	3 [0.12]	6 [0.24]	6 [0.94]	12 [0.47]
Max. Cycle Rate							
@20° C	cycles/min	85	120	66	100	50	70
@30° C	cycles/min	55	75	45	50	30	40
@40° C	cycles/min	25	30	20	30	15	20
@45° C	cycles/min	12	12	8	15	5	8
Weight	kg [lb]	0.7 [1.54]		1.1 [2.44]		2.11 [4.65]	
Environmental							
Noise Emission	dB(A)	<60 normal operation					
IP Protection Class, Standard		IP67 test as per standard IEC 60529:2013					
Cleanroom Class, Standard		Consult DESTACO					
Operating Temperature	°C [°F]	0° to 50°C [32° to 122°F] Derated*					
Electrical							
Connector		M12, 8-Pin, A-Code, Pin Receptacle					
Gripper Actuator Electronics		Onboard Integrated Controls					
Nominal Voltage	V DC	24 +/- 10%					
Power Management		See Page 6					
Open and Close Inputs	V DC	2 Discrete Inputs, 24V@5mA Active High >16.8V, Low <7.2V					
4 Point Sensor Feedback Outputs	V DC	4 Discrete Outputs, 24V@80mA Max. Per Output					
CE Testing Standard		EN/IEC 61000-6-4, EN/IEC 61000-6-2					
Certifications		CE, REACH, RoHS					

*Duty cycle derated at higher ambient temperatures.
**See grip force charts, Total Rated Grip Force occurs at each sensor teach location. Grip force remains minimal outside of sensor position locations.
***See Teaching Sensor Positions Diagram

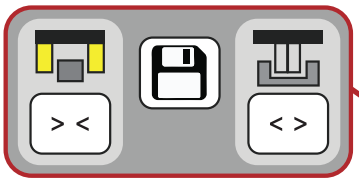
†Contact DESTACO for availability.

eRDH SERIES

Configurable Electric Parallel Grippers | Functions and Controls

Grip Mode and Local Control

External Grip Internal Grip



Select between two grip modes or use local control actuation for easy commissioning.

Speed Control

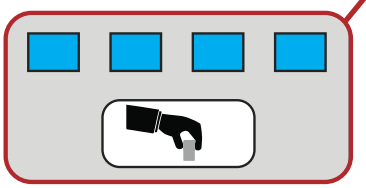
Slow Fast



Quickly change the jaw open/close actuation speed.

Grip Force Control

Four levels

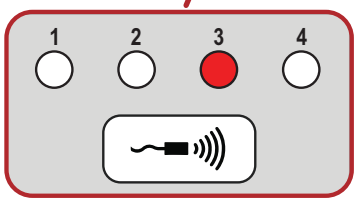


Easily select 1 of 4 force settings via keypad interface.

Save and Lockout

Save configuration changes or engage keypad lockout to prevent tampering.





Integrated Position Sensing

Four teachable grip positions.

Electrical Connector

M12, 8-Pin, A-Code, Pin Receptacle

Pin #	Color Code	Signal Description
1	WHITE	IN 1 OPEN: 24VDC**
2	BROWN	+24 VDC SUPPLY
3	GREEN	IN 2 CLOSE: 24VDC**
4*	YELLOW	SENSOR OUT 1
5*	GRAY	SENSOR OUT 2
6*	PINK	SENSOR OUT 3
7	BLUE	0 VDC
8*	RED	SENSOR OUT 4
SHELL	SHIELD	SHIELDED GROUND

*Applying power to pins 4,5,6 & 8 can damage gripper.
** 24VDC PLC Open & Close Control Signals

Application Notes:

- For highest cycle rate, design fingers to grip part at the minimum sensor teach distance from the home position
- Part tolerance must be within ±0.4mm
- Grip force is independent of the speed setting
- Full grip force is only applied at taught sensor locations for optimized power management
- Extremely low power consumption for mobile applications
- Gripper not intended for applications that require precision force adjustment

Dimensions and technical information are subject to change without notice

Power Management

Electrical	Units	1M-N	1M-L	2M-N	2M-L	3M-N	3M-L
Idle Current at Grip	mA	25	25	25	25	25	25
Nominal Current During Stroke	mA	500	300	350	300	660	750
Max. Current Developing Grip Force	mA	1300	800	1100	950	3375	3600
Average Power @ Max. Stroke	W	15	11	11	12	16	18

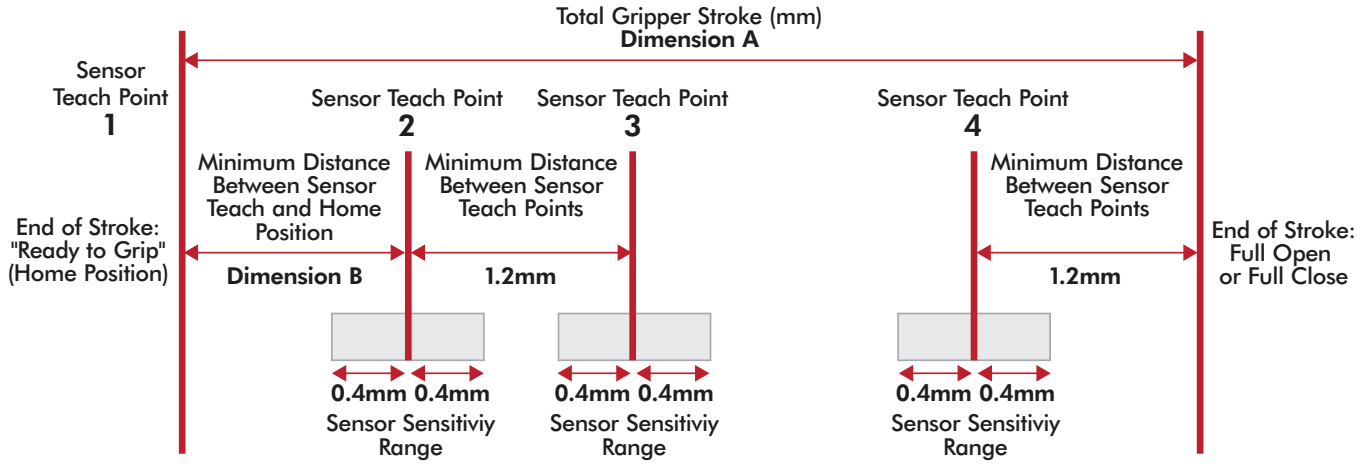
Gripper Power Management Operation:

- Gripper remains at idle current when jaws are not in motion
- Nominal current is used during stroke travel to a sensor position (grip a part)
- If a part is detected at a sensor position, max. current is applied very briefly to generate full grip force
- eRDH returns to idle current once grip force is generated due to self-lock grip feature
- Reverse order above to release a gripped part

Sensor Compliance

Sensing Information	Units	1M-N	1M-L	2M-N	2M-L	3M-N	3M-L
Total Gripper Stroke (Dimension A)	mm	4	8	6	12	8	16
Minimum Distance Between Home and a Sensor Teach Position (Dimension B)*	mm	0.7	1.5	0.7	1.5	0.7	1.5

***External Gripping:** Home is at gripper full open. **Internal Gripping:** Home is at gripper full closed.



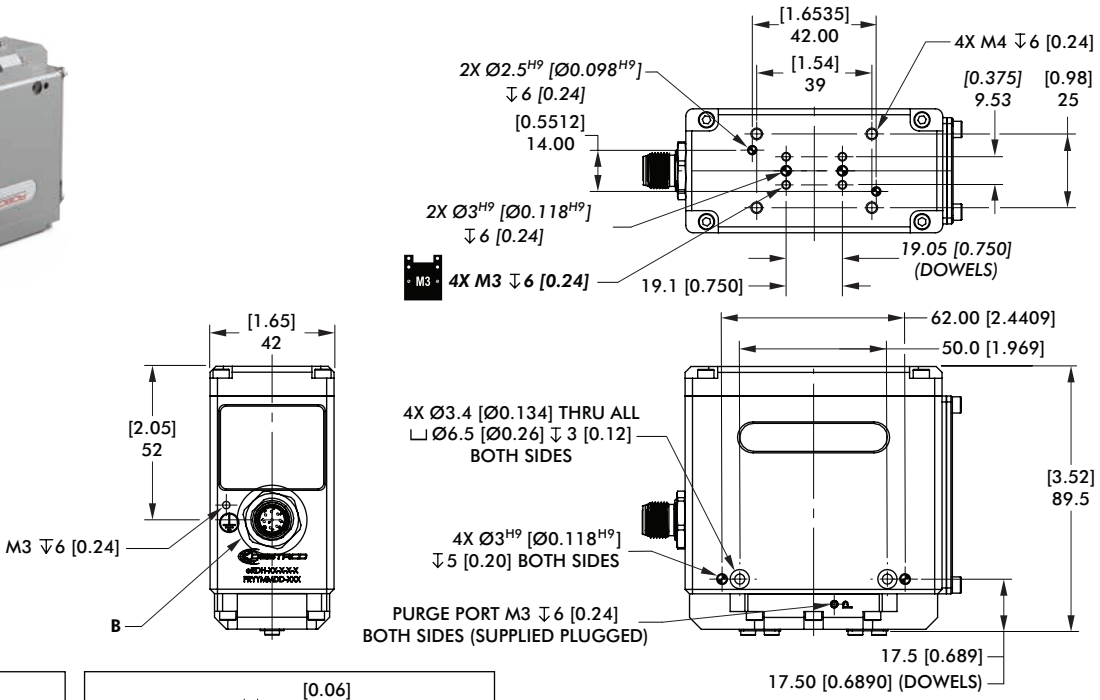
Sensor Settings:

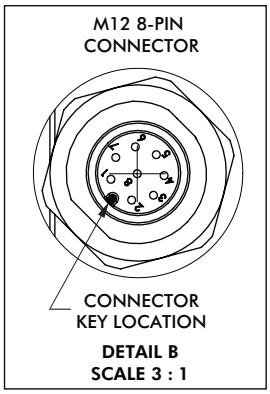
- Sensor output signal is HIGH when gripper jaws grip within +/- 0.4mm of a sensor teach point
- Distance required between sensor settings is 1.2mm except for the home position (Dimension B)
- All four sensor positions can be set anywhere along the gripper stroke if the required distance separation is maintained—eRDH-1M-N has three sensor positions possible due to stroke limitation
- Sensor settings are performed using the integrated keypad which can include both the full open and full closed positions
- See manual for complete sensor setting capabilities

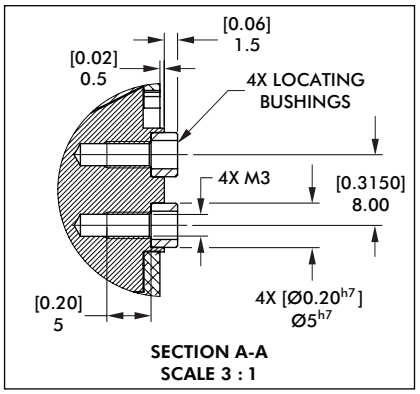
eRDH-1M-N, -1M-L

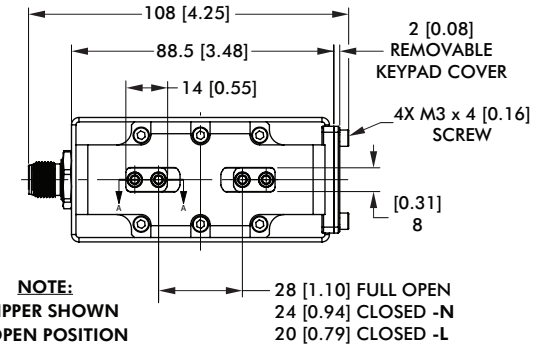
Configurable Electric Parallel Grippers | Dimensions and Technical Specifications



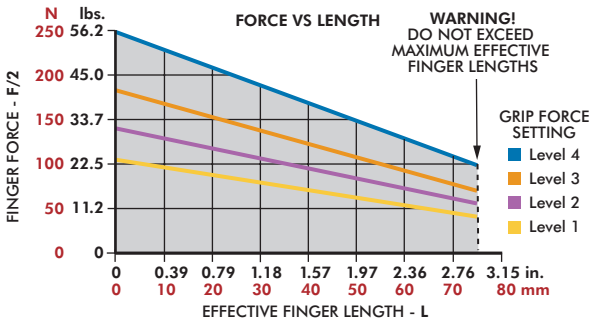


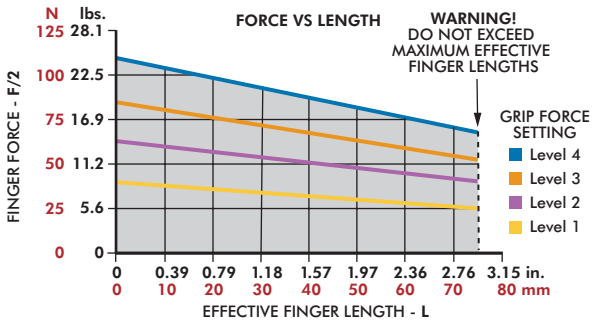






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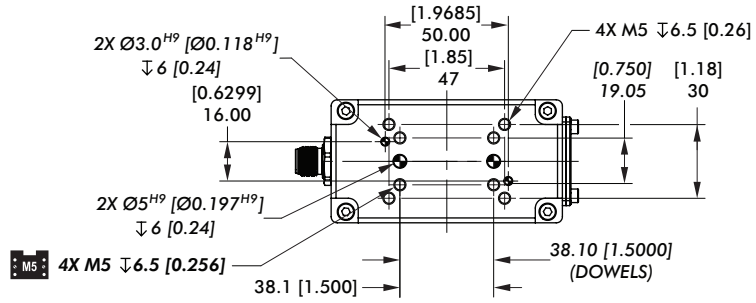
eRDH-1M-N	Static†
Maximum Tensile **T**	594 N [134 lbs]
Maximum Compressive **C**	779 N [175 lbs]
Maximum Moment M_x	18 Nm [159 in-lbs]
Maximum Moment M_y	23 Nm [204 in-lbs]
Maximum Moment M_z	14 Nm [124 in-lbs]

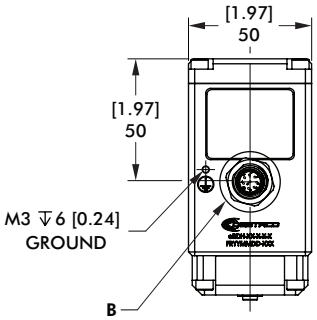
†Capacities are per set of jaws and are not simultaneous

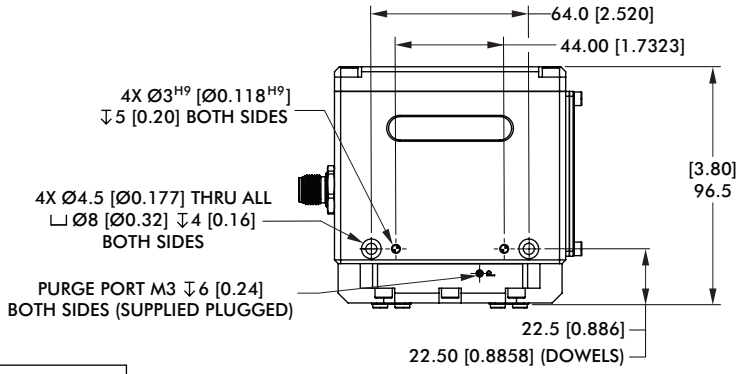
eRDH-1M-L	Static†
Maximum Tensile **T**	540 N [121 lbs]
Maximum Compressive **C**	708 N [159 lbs]
Maximum Moment M_x	16 Nm [142 in-lbs]
Maximum Moment M_y	19 Nm [168 in-lbs]
Maximum Moment M_z	12 Nm [106 in-lbs]

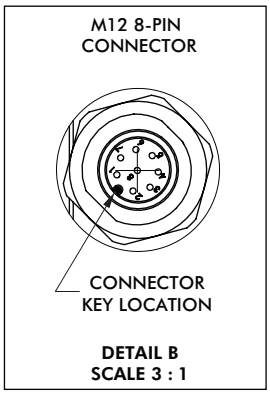
†Capacities are per set of jaws and are not simultaneous

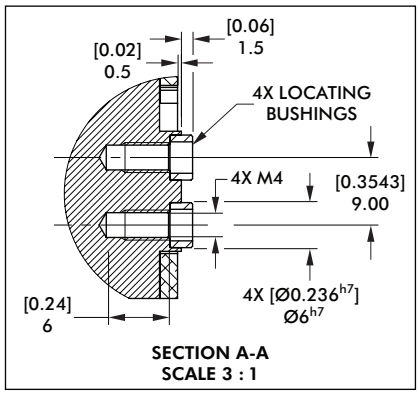


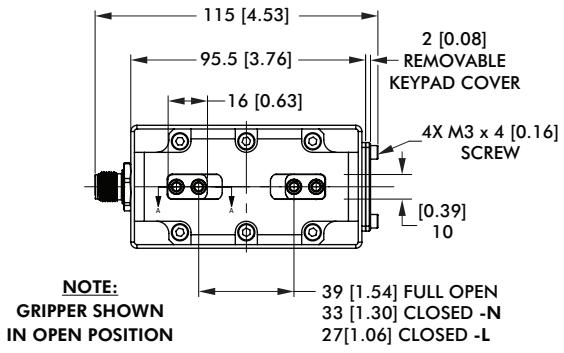




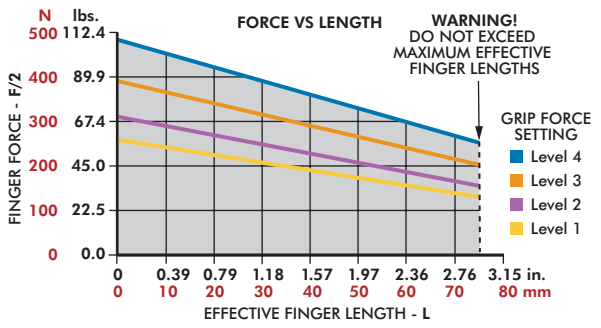


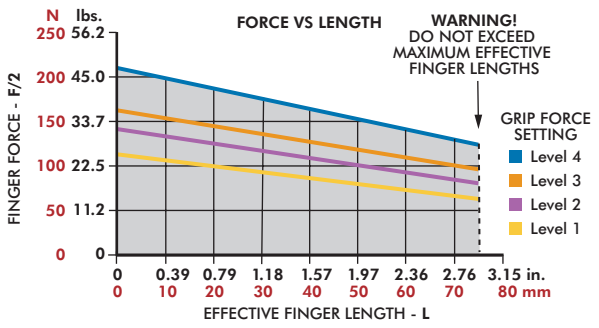






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eRDH-2M-N	Static†
Maximum Tensile **T**	849 N [191 lbs]
Maximum Compressive **C**	1103 N [248 lbs]
Maximum Moment M_x	36 Nm [319 in-lbs]
Maximum Moment M_y	51 Nm [451 in-lbs]
Maximum Moment M_z	32 Nm [283 in-lbs]

†Capacities are per set of jaws and are not simultaneous

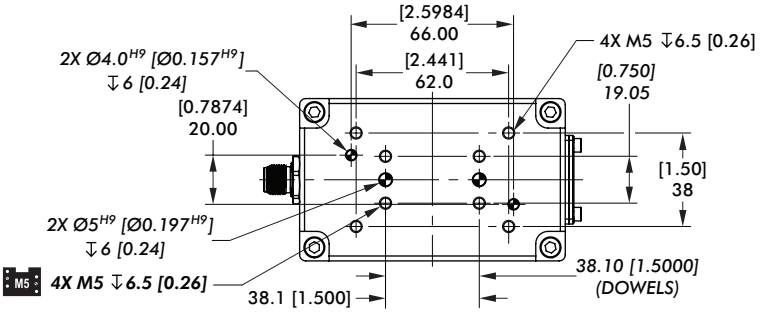
eRDH-2M-L	Static†
Maximum Tensile **T**	764 N [172 lbs]
Maximum Compressive **C**	993 N [223 lbs]
Maximum Moment M_x	32 Nm [283 in-lbs]
Maximum Moment M_y	41 Nm [363 in-lbs]
Maximum Moment M_z	26 Nm [230 in-lbs]

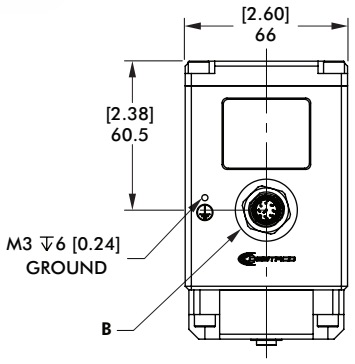
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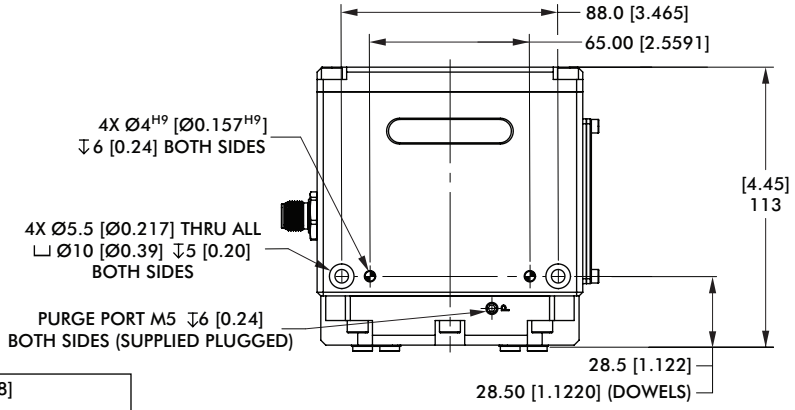
eRDH-3M-N, -3M-L

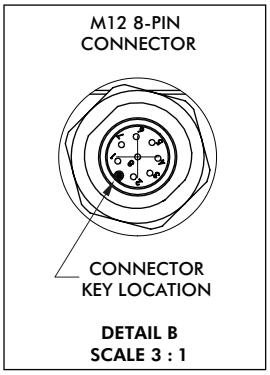
Configurable Electric Parallel Grippers | Dimensions and Technical Specifications

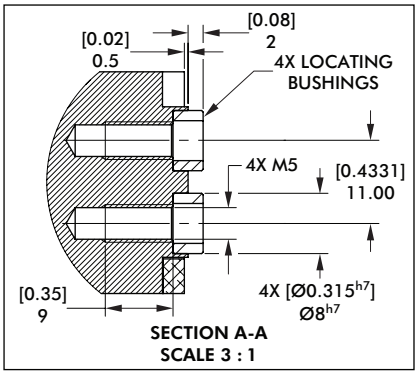


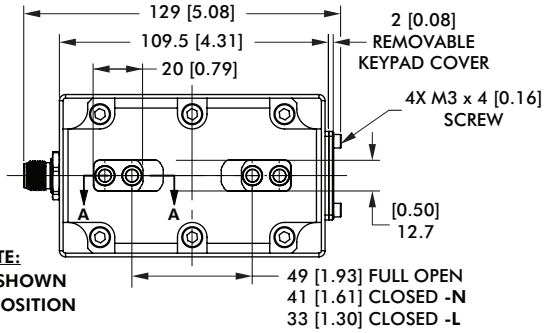






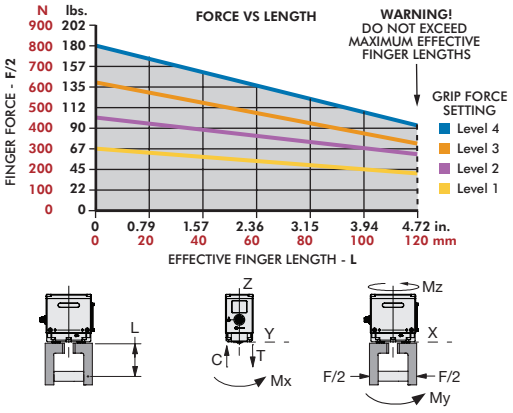






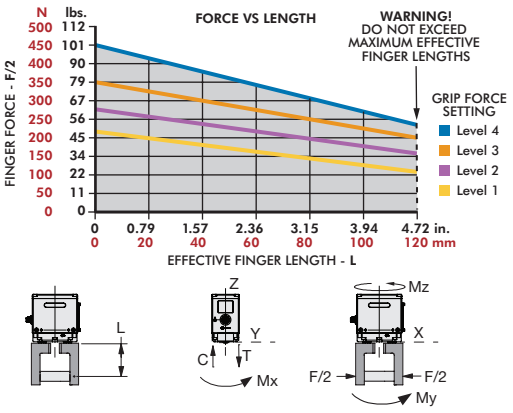
NOTE:
GRIPPER SHOWN IN OPEN POSITION

Loading Information



eRDH-3M-N	Static†
Maximum Tensile **T**	1284 N [289 lbs]
Maximum Compressive **C**	1665 N [374 lbs]
Maximum Moment M_x	58 Nm [513 in-lbs]
Maximum Moment M_y	83 Nm [735 in-lbs]
Maximum Moment M_z	54 Nm [478 in-lbs]

†Capacities are per set of jaws and are not simultaneous



eRDH-3M-L	Static†
Maximum Tensile **T**	1146 N [258 lbs]
Maximum Compressive **C**	1485 N [334 lbs]
Maximum Moment M_x	52 Nm [460 in-lbs]
Maximum Moment M_y	66 Nm [584 in-lbs]
Maximum Moment M_z	43 Nm [381 in-lbs]

†Capacities are per set of jaws and are not simultaneous

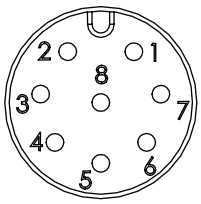
Keypad Protection Kit



Part #	Item	Description	Quantity
ELEC-01-PC-CLR	1	Keypad Cover; Polycarbonate	1
	2	O-Ring Buna-N	1
	3	FHSCS M2 X 6mm	4
	4	Wrench, Allen 2.5mm Hex	1

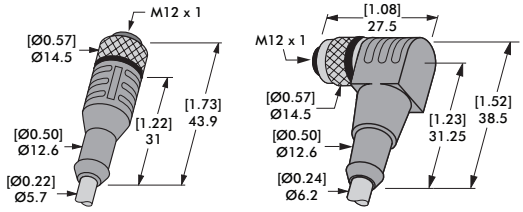
Note: Keypad Cover Kit is included with gripper. Compatible with all gripper sizes.

Accessories - Cordset



Pin #	Color Code	Signal Description
1	WHITE	IN 1 OPEN: 24VDC**
2	BROWN	+24 VDC SUPPLY
3	GREEN	IN 2 CLOSE: 24VDC**
4*	YELLOW	SENSOR OUT 1
5*	GRAY	SENSOR OUT 2
6*	PINK	SENSOR OUT 3
7	BLUE	0 VDC
8*	RED	SENSOR OUT 4
SHELL	SHIELD	SHIELDED GROUND

*Applying power to pins 4,5,6 & 8 can damage gripper.
** 24VDC PLC Open & Close Control Signals



Specifications	CABL-064	CABL-065
Connector Style	M12, 8-Pin, A-Code, Socket Plug	
Connector Socket	Straight	90°
Termination	Wire Leads	
Cable Diameter	6 mm	
Cable Length	5 m	
Connector Locking System	Threaded, Coupling Nut	
Mating Torque	0.4 Nm [3.54 in-lb]	
Housing Material	Polyurethane (PUR)	
Ingress Protection	Dust Tight, Waterproof	
Current Rating	2.0 Amps	
Voltage Rating	30V	
Operating Temperature	-25°C ~ 90°C	
EMC Compliance	Shielded	

CAUTION Overtightening the connector may result in damage to the gripper.

Electrical Connection Circuit

