ENGINEERING DOCUMENTATION

Two-Finger Parallel Electric Gripper

Dimensional & Integration Guide

DOCUMENT	REVISION / ISSUE	STATUS
DIG-ES-EG-C00-S002-V002	DRAFT-08 / 28 Aug 2026	Engineering Integration Reference

Integration Overview

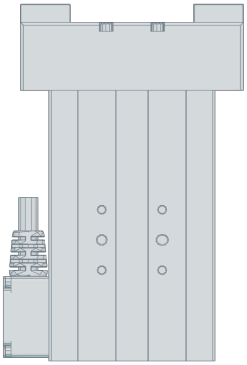
Electric end effector for automated gripping and workpiece handling. This guide supports mounting, finger interface, load-path, cable, commissioning and service planning for ES-EG-C00-S002-V002.

Key Integration Facts

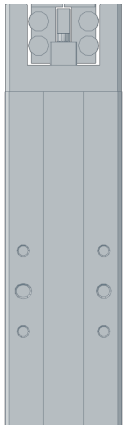
INTEGRATION ITEM	VALUE
Measurement Repeatability	± 0.02 mm
Gripping Force (Per Side)	30~100 N
Maximum Recommended Payload	2 kg
Communication Interface	Standard: Modbus RTU (RS485), Digital I/O; optional: TCP/IP, USB 2.0, CAN 2.0A, PROFINET, EtherCAT
Operating Voltage	24 V DC ± 10% V DC
Weight	0.6 kg kg
Permissible Moment (My)	5 N·m
Allowable Static Vertical Load Fz	150 N

3D Orientation and Interface Views

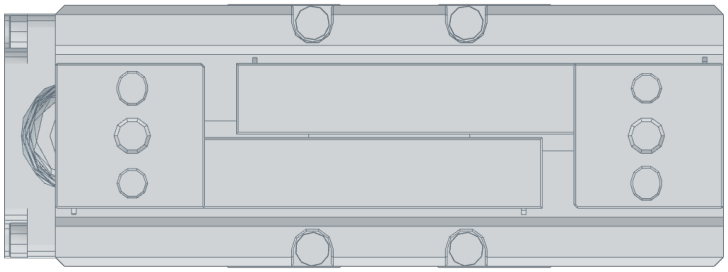
The front, right-side and top views are retained because each exposes a different integration relationship: finger geometry, cable routing direction and robot-side mounting orientation. Dimensions remain governed by the applicable 2D drawing and exact-SKU parameters.



Front View



Right Side View

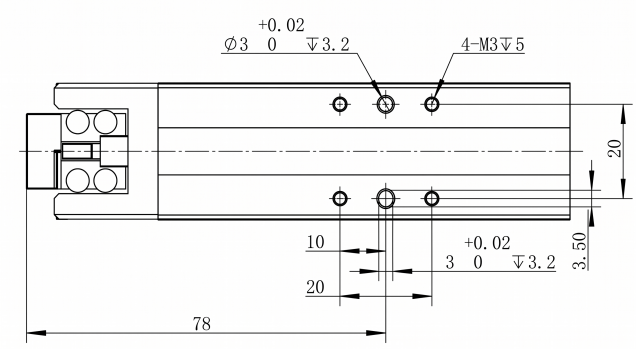


Top View

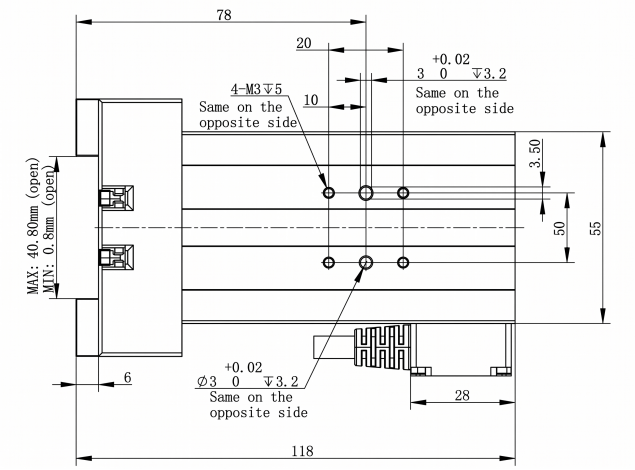
Each selected view contributes a distinct orientation or interface relationship used by the integration guidance.

Product Structure & Views

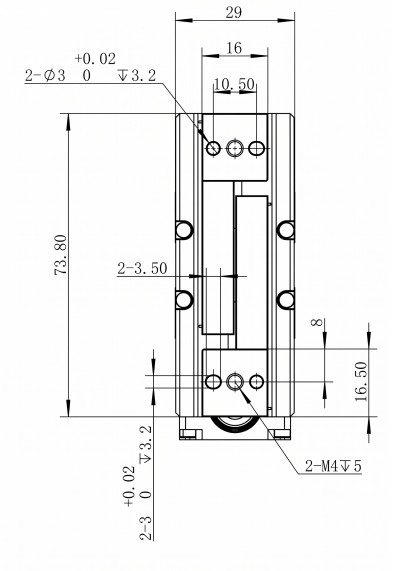
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



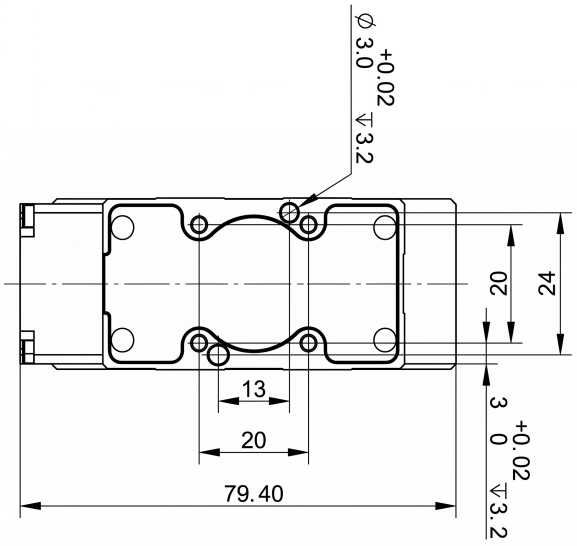
Mechanical View 1



Mechanical View 2



Mechanical View 3



Mechanical View 4

VIEW	FIELD	VALUE
Mechanical View 1	Upper row hole diameter with tolerance and surface finish	Diameter 3 mm, tolerance +0.02/0, surface finish/depth callout 3.2
	Threaded hole quantity and specification	4 × M3 threaded holes, depth/surface callout 5
	Vertical hole spacing	20 mm vertical spacing
	Lower row vertical offset	3.50 mm offset
	Horizontal hole spacing 1	10 mm horizontal spacing
	Lower row hole diameter with tolerance and surface finish	Diameter 3 mm, tolerance +0.02/0, surface finish/depth callout 3.2
	Horizontal hole spacing 2	20 mm horizontal spacing
	Longitudinal locating dimension	78 mm longitudinal dimension

VIEW	FIELD	VALUE
Mechanical View 2	Upper mounting segment length	78 mm
	Hole column center spacing	20 mm
	Hole column offset distance	10 mm
	Threaded hole specification	4x M3 threaded holes, depth 5 mm
	Dowel/pin hole specification	Diameter 3 mm, tolerance +0.02/0, depth 3.2 mm
	Right side height offset	3.50 mm
	Maximum dimension in open state	Max 40.80 mm when open
	Minimum clearance	Min 0.8 mm
	Main body width	50 mm
	Overall height	55 mm
Mechanical View 3	Top width	29 mm
	Upper mounting hole center distance	16 mm
	Upper locating hole diameter and tolerance	2 holes, diameter 3 mm, tolerance +0.02/0 mm
	Upper hole surface roughness	Surface roughness Ra 3.2
	Upper small hole center distance	10.50 mm
	Main body height	73.80 mm
	Side slot or hole offset	2 features at 3.50 mm offset
	Right side step offset	8 mm
	Right lower height	16.50 mm
	Lower threaded holes	2 x M4 threaded holes, depth 5 mm
	Lower locating hole diameter and tolerance	2 holes, diameter 3 mm, tolerance +0.02/0 mm
	Lower hole surface roughness	Surface roughness Ra 3.2
Mechanical View 4	Upper hole diameter with tolerance	Diameter 3 mm, tolerance +0.02/0
	Upper hole surface texture	Surface texture value 3.2
	Right-side overall height	24
	Right-side internal height or spacing dimension	20
	Central horizontal spacing	13
	Central horizontal mounting spacing	20
	Lower hole diameter with tolerance	Diameter 3 mm, tolerance +0.02/0
	Lower hole surface texture	Surface texture value 3.2
	Bottom overall length	79.40

Technical Specifications - 1

PARAMETER	VALUE	UNIT
Measurement Repeatability	± 0.02	mm
Gripping Force (Per Side)	30~100	N
Maximum Recommended Payload	2	kg
Communication Interface	Standard: Modbus RTU (RS485), Digital I/O; optional: TCP/IP, USB 2.0, CAN 2.0A, PROFINET, EtherCAT	
Operating Voltage	24 V DC ± 10%	V DC
Weight	0.6 kg	kg
Permissible Moment (My)	5	N·m
Allowable Static Vertical Load Fz	150	N

Technical Specifications - 2

PARAMETER	VALUE	UNIT
Driving Method	Rack and pinion + crossed-roller guide	
Permissible Moment (Mx)	4.5	N·m
Permissible Moment (Mz)	7	
Recommended Operating Environment	0–40 °C; relative humidity below 85%	
Unweighted Noise Level	< 50	dB
Peak Current	0.3 A( ) 1.2 A( )*	A
Standards Compliance	CE, FCC, RoHS	
Ingress Protection	IP 40	

Technical Specifications - 3

PARAMETER	VALUE	UNIT
Continuous Rated Current	0.3 A( ) 1.2 A( )*	A
Peak Power	30	W

Mounting, Fingertip and Workpiece Integration

- Support the complete robot mounting interface and verify locating features, fastener engagement and surrounding clearance.
- Validate fingertip mass, overhang, stiffness, retention, contact pressure and the complete finger and workpiece collision envelope.

Load, Cable and Commissioning

- Validate payload, grip contact, workpiece center of mass, acceleration, emergency stop and allowable moments as one installed load case.
- Provide suitable cable routing and strain relief, then verify supply, interface, initialization, command authority and feedback states before automatic operation.

Integration Checklist

01	Confirm the exact-SKU drawing and parameter set.
02	Verify mounting geometry, locating features, fasteners and body envelope.
03	Validate fingertips, workpiece contact, payload, acceleration and moments.
04	Route and strain-relieve the cable through the complete motion envelope.
05	Verify initialization, command authority, feedback and fault behavior.

View SKU Product Datasheet **Request controlled 2D drawing** **Request controlled STEP review** **Request a Quote**

Engineering Use and Verification Notice

01. This Dimensional & Integration Guide applies only to EmbodyStack SKU ES-EG-C00-S002-V002 and is intended for dimensional evaluation and preliminary integration. It is not a manufacturing drawing, machine-level load approval, wiring final integration, safety validation or production authorization. Before design freeze, installation or commissioning, verify all dimensions, interfaces, fits, fasteners, loads, motion limits, cable requirements, environmental boundaries and maintenance requirements against the applicable EmbodyStack engineering documentation for this exact SKU. Validate the complete installed system under intended operating and fault conditions.