ENGINEERING DOCUMENTATION

# Two-Finger Parallel Electric Gripper

Dimensional & Integration Guide

| DOCUMENT | REVISION / ISSUE | STATUS |
| --- | --- | --- |
| DIG-ES-EG-C00-S002-V005 | DRAFT-08 / 28 Aug 2026 | Engineering Integration Reference |

### Integration Overview

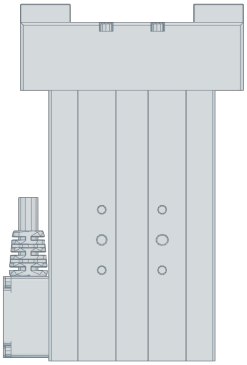
Electric end effector for automated gripping and workpiece handling. This guide supports mounting, finger interface, load-path, cable, commissioning and service planning for ES-EG-C00-S002-V005.

### Key Integration Facts

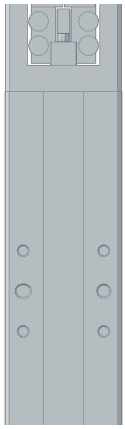
| INTEGRATION ITEM | VALUE |
| --- | --- |
| Measurement Repeatability | ± 0.02 mm |
| Gripping Force (Per Side) | 6~15 N |
| Maximum Recommended Payload | 0.25 kg |
| Weight | 0.6 kg ( /  ) kg |
| Driving Method | + |
| Unweighted Noise Level | < 50 dB |
| Communication Interface | : Modbus RTU (RS485) Digital I/O : TCP/IP ( USB2.0 CAN2.0A PROFINET EtherCAT)* |
| Peak Current | 0.3 A( ) 0.8 A( ) A |

# 3D Orientation and Interface Views

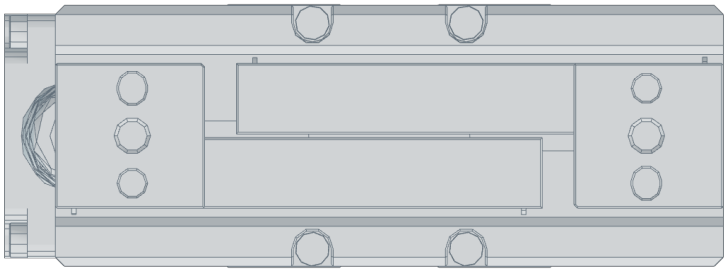
The front, right-side and top views are retained because each exposes a different integration relationship: finger geometry, cable routing direction and robot-side mounting orientation. Dimensions remain governed by the applicable 2D drawing and exact-SKU parameters.



Front View



Right Side View

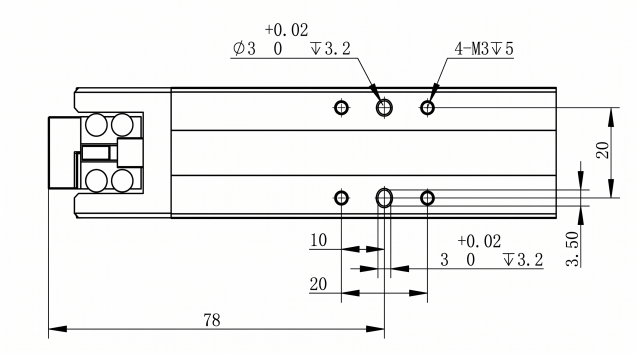


Top View

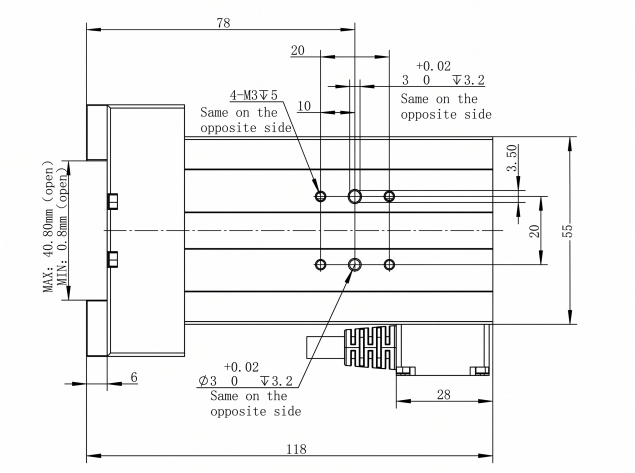
Each selected view contributes a distinct orientation or interface relationship used by the integration guidance.

# Product Structure & Views

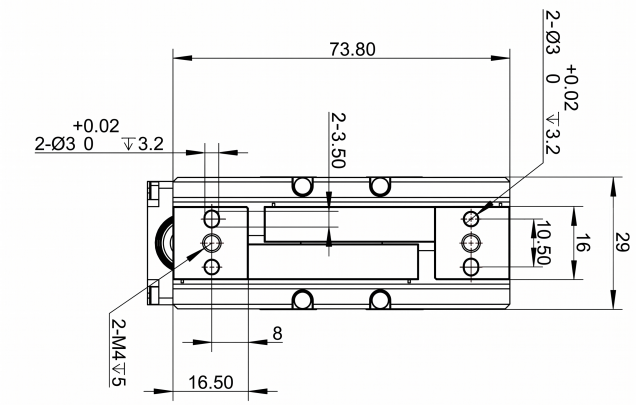
These views present product structure, mounting interfaces and relevant integration geometry for this SKU.



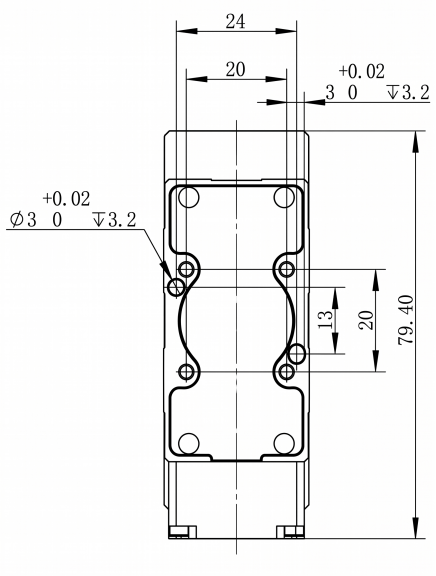

Mechanical View 1




Mechanical View 2




Mechanical View 3




Mechanical View 4

| VIEW | FIELD | VALUE |
|---|---|---|
| Mechanical View 1 | Upper row locating hole specification | Diameter 3 mm with tolerance +0.02/0, depth 3.2 mm |
| | Threaded mounting hole specification | 4 × M3 threaded holes, depth 5 mm |
| | Lower row locating hole specification | Diameter 3 mm with tolerance +0.02/0, depth 3.2 mm |
| | Horizontal hole spacing | 10 mm |
| | Horizontal hole spacing | 20 mm |
| | Overall longitudinal reference dimension | 78 mm |
| | Right-side vertical hole spacing | 20 mm |
| | Right-side lower offset dimension | 3.50 mm |
| | Local vertical offset dimension | 3.50 mm |

| VIEW | FIELD | VALUE |
|---|---|---|
| Mechanical View 2 | Upper body length | 78 mm |
| | Mounting hole column spacing | 20 mm |
| | Mounting hole diameter and tolerance | Diameter 3 mm, tolerance +0.02/0, associated 3.2 callout |
| | Threaded hole specification | 4 × M3, 5 |
| | Mounting hole offset | 10 mm |
| | Same on opposite side note | Same on the opposite side |
| | Local vertical spacing | 3.50 mm |
| | Mounting hole row spacing | 20 mm |
| | Main body height | 55 mm |
| Mechanical View 3 | Two diameter 3 holes with +0.02 tolerance and surface roughness 3.2 | 2 × Ø3, tolerance 0/+0.02, surface roughness 3.2 |
| | Overall length | 73.80 |
| | Right-side two diameter 3 holes | 2 × Ø3, tolerance 0/+0.02, surface roughness 3.2 |
| | Two-hole pitch | 2 × 3.50 pitch/spacing |
| | Right mounting height | 29 |
| | Right mounting hole group height | 16 |
| | Right mounting hole center spacing | 10.50 |
| | Left hole group horizontal offset | 8 |
| | Two M4 threaded holes depth 5 | 2 × M4, depth 5 |
| | Left mounting hole horizontal location | 16.50 |
| Mechanical View 4 | Top outside width | 24 |
| | Top inside width | 20 |
| | Right-side hole diameter tolerance and surface finish | Diameter 3, tolerance +0.02/0, surface finish 3.2 |
| | Left-side hole diameter tolerance and surface finish | Diameter 3, tolerance +0.02/0, surface finish 3.2 |
| | Overall height | 79.40 |
| | Mounting hole vertical pitch | 20 |
| | Local mounting hole vertical pitch | 13 |

# Technical Specifications - 1

| PARAMETER | VALUE | UNIT |
|---|---|---|
| Measurement Repeatability | ± 0.02 | mm |
| Gripping Force (Per Side) | 6~15 | N |
| Maximum Recommended Payload | 0.25 | kg |
| Weight | 0.6 kg ( / ) | |
| Driving Method | + | |
| Unweighted Noise Level | < 50 | dB |
| Communication Interface | : Modbus RTU (RS485) Digital I/O : TCP/IP ( USB2.0 CAN2.0A PROFINET EtherCAT)* | |
| Peak Current | 0.3 A( ) 0.8 A( ) | A |

# Technical Specifications - 2

| PARAMETER | VALUE | UNIT |
|---|---|---|
| Standards Compliance | CE, FCC, RoHS | |
| Permissible Moment (My) | 5 | N·m |
| Continuous Rated Current | 0.3 A( ) 0.8 A( ) | A |
| Allowable Static Vertical Load Fz | 150 | N |
| Permissible Moment (Mx) | 4.5 | N·m |
| Permissible Moment (Mz) | 7 | |
| Peak Power | 20 | 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-V005 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.