

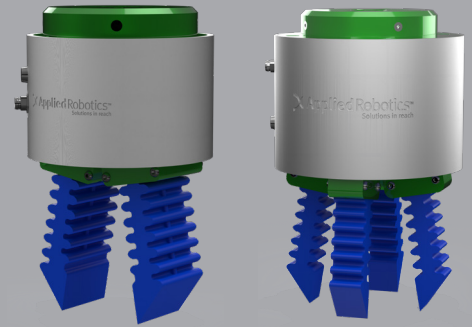
# Flexible Smart Gripper™

## FSG-2, FSG-4, FSG-2e, and FSG-4e

The Flexible Smart Gripper™ (FSG) is a fully electrically actuated soft gripper.

### Advantages:

- Fully electric with embedded controller for easy process control
- Patented finger design with a soft body, flexible in gripping direction and rigid in all other degrees of freedom:
  - allows to softly, but firmly grip delicate objects;
  - allows to handle objects of varying size, shape, and weight.
- Fast finger movement for high throughput
- Mobile/wireless setup for quick setup
- Programmable Open/Close Finger Position settings
- Enhanced Intelligence version
  - Part Grip Confirmation
  - Force Control



## SPECIFICATIONS

Model	Number of Fingers	Rated Payload	Gripper Weight	Maximum Finger Opening at the Tip	Gripping Time	Maximum Current (Idle)	Maximum Current (Load)	Maximum Current (Instantaneous)
		kg (lb)	kg (lb)	mm(in)	ms/mm (ms/in)	A	A	A
FSG-2	2	1.5 (3.3)	0.8 (1.8)	175 (6.9)	1450 (57)	0.03	2	3
FSG-4	4	1.5 (3.3)	1.3 (2.9)	195 (7.7)	1450 (57)	0.08	3	5
FSG-2e	2	1.5 (3.3)	0.8 (1.8)	175 (6.9)	1450 (57)	0.03	2	3
FSG-4e	4	1.5 (3.3)	1.3 (2.9)	195 (7.7)	1450 (57)	0.08	3	5

Rated Voltage: **15 VDC – 25 VDC**

Operating Temperature: **5 - 60 °C (40 - 140 °F)**

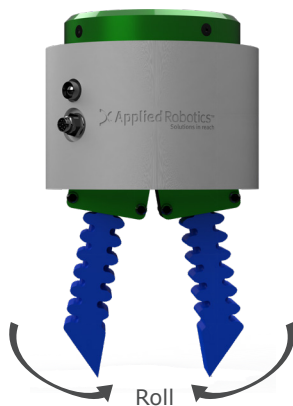
Noise Emissions (Sound Pressure): **≤ 70 dB(A) in any direction**

Control Interface: **Digital Input**

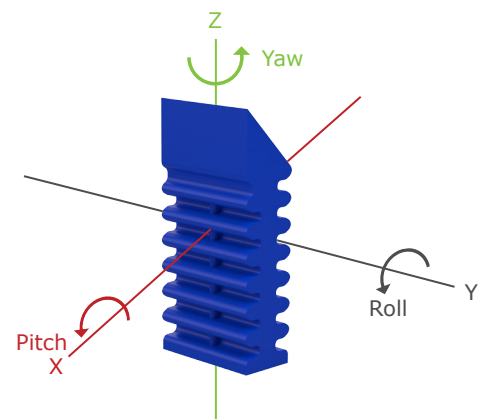
Enhanced Intelligence version: **Two digital inputs, one digital output**

**Serial (ROS, socket)** available on request

## PATENTED FLEXIBLE FINGER

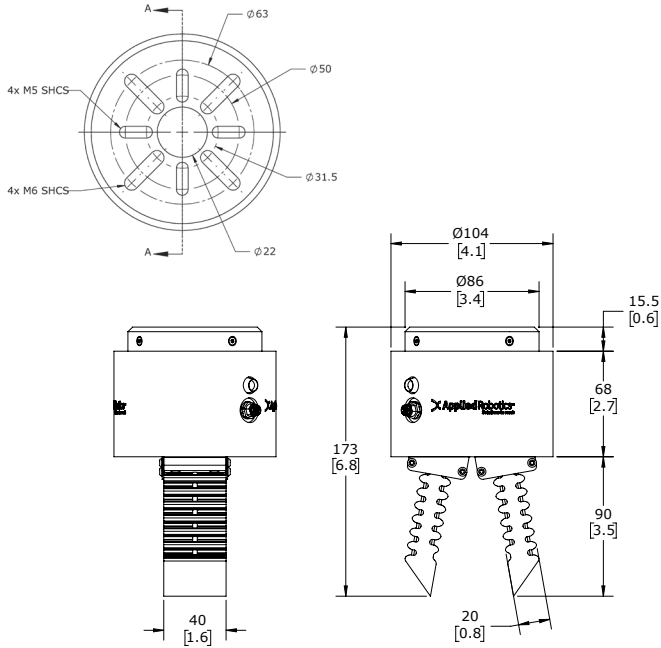


The Flexible Smart Gripper™ (FSG) allows for the picking and placing of a multitude of shapes and sizes due to its patented, FDA approved silicone fingers, actuated by a fully electric system. The ability to rotate in the Roll degree of freedom, while keeping rigid in the Pitch and the Yaw degrees of freedom, allows for dependable, soft, and flexible gripping of delicate objects.

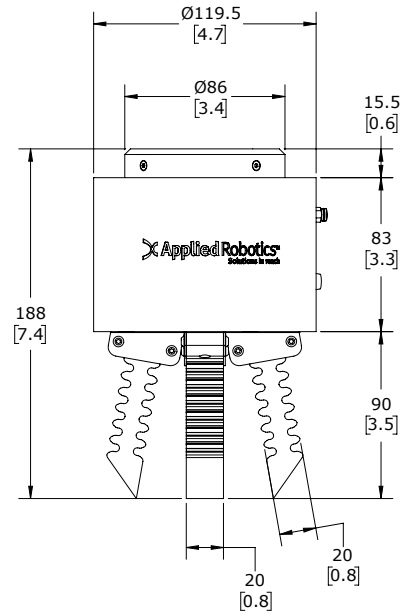


# PRODUCT INFORMATION

## FSG-2 / FSG-2e



## FSG-4 / FSG-4e



\* Dimensions are in millimeters (inches).  
 \*\* Interface Plate has bolt circle patterns according to ISO 9409-1 specification: 31.5mm, 40mm, 50mm, and 63mm.

# ENHANCED INTELLIGENCE VERSION



The Enhanced Intelligence version of the FSG provides additional finger position settings for grip precision and efficiency (an additional digital input), as well as force control and part gripping confirmation (digital output) with adjustable threshold, allowing the user to reliably handle delicate objects. The FSG can be easily programmed through a simple user interface that can be accessed with any Wi-Fi enabled device.

FSG-e Specific



Finger Positions	
Position 1 (00) = 0	Position 2 (01) = 2
Position 3 (10) = -3	Position 4 (11) = 6
Force Control	
Part Confirmation: 400 mA	Force Limitation: 1500 mA
Set Values	
Finger Calibration	
Finger 1	Finger 2
< >	< >



Applied Robotics  
 648 Saratoga Road  
 Glenville, NY 12302 USA  
 Tel. +1 518 384 1000 Fax +1.5183841200  
 info@appliedrobotics.com  
 www.appliedrobotics.com



EFFECTO GROUP S.p.A.  
 Via Roma, 141/143  
 28017 San Maurizio d'Opaglio (NO) - Italy  
 Tel. +39 0322 96142 Fax +39 0322 967453  
 info@effecto.com  
 www.effecto.com

