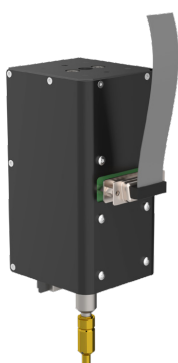


OptoFidelity Force Actuator Instrument

- Designed for measuring user interfaces with force sensitive surfaces, including touch display force sensors, haptic & tactile buttons, mechanical buttons and others.
- Enables measuring and calibrating the force levels, haptic feedback activation thresholds and latencies and impact force responses of accelerometers.
- Provides user controllable force profile (force level, force rise, constant and fall times) or controllable impact force (speed).
- Provides interface to capture force level, position and speed data for measurement analysis and visualization.
- GUI, python API and flexible control interfaces for production automation, including IO based triggering.
- Available as standalone instrument or as integrated OptoFidelity measurement solution based on client needs.



OptoFidelity Force Actuator

Standard force range	20 - 1000 gf (0.2 - 10 N)
Possible force range	0 - 100 gf (0 - 1 N) via customization
Dimensions (WDH)	60 x 65 x 120 mm (width x depth x height)
Frame material	Aluminum
Cover material	Steel
Weight	0.85 kg / 1.87 lbs
Mounting	6 x M3, mounting interface on top
Electrical interfaces	D-sub-15 for connecting to 2-up control box
Cabling (included)	Ribbon cable to connect to 2-up control box
Operating temp.	+5...+40 °C
Motor	Voice coil
Axis travel/stroke	19 mm
Encoder resolution	0.488 µm magnetic encoder
Probes	Changeable, mounting shaft & screw locking

Performance

Force range	Force accuracy	Force repeatability	Force control step	Force rise time
min. 20 gf (0.2 N) - max. 1000 gf (10 N)	max. 2 %	max. 0.05 %	min. 1 gf (0.01 N)	min. 26 ms - max. 10000 ms
Force overshoot	Force constant time	Force fall time	Impact speed range	
typical 3.5 %	min. 5 ms - max. 10000 ms	min. 26 ms - max. 10000 ms	min. 10 mm/s - max. 180 mm/s	



2-up Actuator Controller

2-up actuator controller provides interface and control for two force actuator units

Extendable - single control interface for up to 16 force actuators by chaining the 2-up actuator controllers

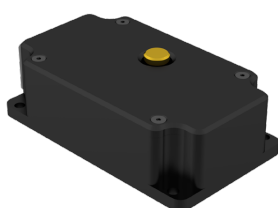
Dimensions	55 x 95 x 105 mm (width, height, length)
Materials	Steel covers
Weight	0.65 kg
Mounting	DIN rail (top hat rail IEC/EN 60715)
Electrical interfaces	<ul style="list-style-type: none"> • M8 power in +24V and STO (Safe Torque Off) • RJ45 Ethernet control • D-sub-9 IO (6 output, 2 input) • 2 x RJ45 motion bus in and out for chaining • 2 x D-sub-15 for force actuators
Cabling	Available per request
Operating temperature range	+5...+40 deg C
Features	<ul style="list-style-type: none"> • GUI and python 3.5 API for setup, configuration and control • Internal memory for storing the force actuator calibration data • Flexible control interfaces which can be customized for production automation, including IO based triggering.

Accessory: Force audit and calibration block

2-up actuator controller provides interface and control for two force actuator units

Dimensions	85 x 45 x 145 (width x height x length)
Materials	Aluminium
Weight	0.82 kg
Mounting	4x M6, hole pattern 125 x 75 mm
Equipped with load cell rated for	454 grams (1lb) or 907 grams (2lbs)
Max. error tolerance	0.2% of rated output

Load cell calibration certificate included
 USB 2.0 Communication Link
 SW tools and driver for the force actuator calibration



About OptoFidelity

At OptoFidelity we thrive for the ultimate user experience by simulating and testing user interactions for smart devices.

OptoFidelity is an agile measurement automation partner with a wide range of expertise in smart device testing from R&D concepting to smart manufacturing.

OptoFidelity's offering ranges from individual test modules to fully automated turnkey solutions which help demanding customers to optimize throughput time and eliminate various defects and errors in product design, prototyping, component validation, NPI, manufacturing, repair and support.

For over a decade OptoFidelity has helped hi-tech SMEs and Fortune 500 companies to develop their products, technologies and testing processes in R&D labs and factory environments globally.

OPTOFIDELITY FAST FACTS

- 15 years of expertise in precision high-volume test automation, metrology, software and mechatronics
- Off-the-shelf products and tailored test solutions
- Engineering services
- 18 support and service teams on 3 continents
- Own manufacturing in Finland, Estonia and in China
- 9/10 largest smartphone companies as customers including Google, Microsoft and Samsung
- Strongest credit rating AAA.

Mechatronics



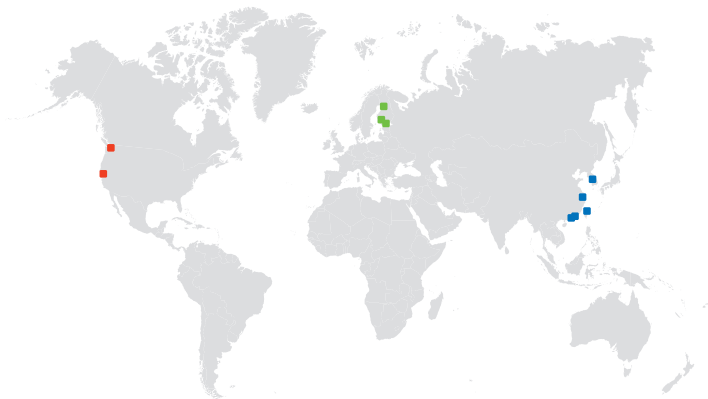
Machine vision



Signal processing



Operations services



LOCATIONS

USA: Cupertino CA, Redmond WA

FINLAND: Tampere (Global HQ), Oulu, Espoo/Greater Helsinki

SOUTH KOREA: Seoul

GREATER CHINA: Hong Kong, Shenzhen, Zhuhai (China HQ, manufacturing center)

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