

Product Advantages

Extremely High Strength:

- EDM wire-cut from high-yield strength stainless steel.
- Maximum allowable single-axis overload values are 10 to 40 times rated capacities.

High Signal-to-Noise Ratio: Silicon strain gages provide a signal 75 times stronger than conventional foil gages. This signal is amplified, resulting in near-zero noise distortion.

IP60 (Standard), IP65, and IP68 (10m) Versions Available: An IP60 version is for use in dusty environments and is standard on this model. An IP65 version of the transducer provides protection against water spray. The IP68 version is for underwater environments to a maximum depth of 10 meters in fresh water. Contact ATI Industrial Automation for drawings and more information.

Typical Applications

- Product testing
- Telerobotics
- Force feedback
- Part placement and removal in precision fixtures



The Omega250 F/T transducer

The transducer is made of hardened stainless steel, and the tool and mounting adapters are made of high-strength stainless steel.

ENGLISH CALIBRATIONS	SENSING RANGES	Calibrations					
	Axes	US-900-4500		US-1800-9000		US-3600-18000	
	Fx, Fy (±lbf)	900		1800		3600	
	Fz (±lbf)	1800		3600		7200	
	Tx, Ty (±lbf-in)	4500		9000		18000	
	Tz (±lbf-in)	4500		9000		18000	
	RESOLUTION	System Type*					
	Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
	Fx, Fy (lbf)	1	1/2	2	1	5	2
	Fz (lbf)	1	1/2	2	1	5	2
Tx, Ty (lbf-in)	2	1	5	2	10	5	
Tz (lbf-in)	2	1	5	2	10	5	

METRIC CALIBRATIONS	SENSING RANGES	Calibrations					
	Axes	SI-4000-500		SI-8000-1000		SI-16000-2000	
	Fx, Fy (±N)	4000		8000		16000	
	Fz (±N)	8000		16000		32000	
	Tx, Ty (±Nm)	500		1000		2000	
	Tz (±Nm)	500		1000		2000	
	RESOLUTION	System Type*					
	Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
	Fx, Fy (N)	2	1	4	2	8	4
	Fz (N)	4	2	8	4	16	8
Tx, Ty (Nm)	1/4	1/8	1/2	1/4	1	1/2	
Tz (Nm)	1/4	1/8	1/2	1/4	1	1/2	

*CTL: Controller F/T System; Net: Net F/T System; DAQ: 16-bit DAQ F/T System. The resolution is typical for most applications and can be improved with filtering. Resolutions quoted are the effective resolution after dropping four counts of noise (Net/DAQ) or eight counts of noise (CTL). All sensors calibrated by ATI.

Applied loads must be within range in each of the six axes for the F/T sensor to measure correctly (refer to the transducer manual for complex loading information).

Single-Axis Overload	English	Metric
Fxy	±37000 lbf	±160000 N
Fz	±74000 lbf	±330000 N
Txy	±180000 lbf-in	±21000 Nm
Tz	±220000 lbf-in	±25000 Nm
Stiffness (Calculated)	English	Metric
X-axis & Y-axis force (Kx, Ky)	2.4x10 ⁶ lb/in	4.2x10 ⁸ N/m
Z-axis force (Kz)	3.2x10 ⁶ lb/in	5.6x10 ⁸ N/m
X-axis & Y-axis torque (Ktx, Kty)	2.7x10 ⁷ lbf-in/rad	3.0x10 ⁶ Nm/rad
Z-axis torque (Ktz)	5.5x10 ⁷ lbf-in/rad	6.2x10 ⁶ Nm/rad
Resonant Frequency (Non-IP rated, Measured)		
Fx, Fy, Fz	780 Hz	
Fz, Tx, Ty	770 Hz	
Physical Specifications	English	Metric
Weight*	70 lb	31.8 kg
Diameter*	11.6 in, 2.12 in	295 mm, 54 mm
Height*	3.74 in	94.9 mm

*Specifications include standard interface plates. Diameter excludes any connector block.

