

Product Advantages

Extremely High Strength:

- EDM wire-cut from high-yield strength stainless steel.
- Maximum allowable single-axis overload values are 4.2 to 15 times rated capacities.
- Through-hole available in some cases.

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, IP65, and IP68 (10m) Versions Available: An IP60 version is for use in dusty environments. The 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

- Rehabilitation research
- Product testing
- Orthopedic research
- Friction stir welding
- Robotic assembly
- Telerobotics
- Part placement and removal in precision fixtures



The Omega160 F/T transducer

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

ENGLISH CALIBRATIONS	SENSING RANGES	Calibrations					
	Axes	US-200-1000		US-300-1800		US-600-3600	
	Fx, Fy (±lbf)	200		300		600	
	Fz (±lbf)	500		875		1500	
	Tx, Ty (±lbf-in)	1000		1800		3600	
	Tz (±lbf-in)	1000		1800		3600	
	RESOLUTION	System Type*					
	Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
	Fx, Fy (lbf)	1/16	1/32	5/34	5/68	1/4	1/8
	Fz (lbf)	1/8	1/16	5/17	5/34	1/2	1/4
Tx, Ty (lbf-in)	1/4	1/8	5/8	5/16	1	1/2	
Tz (lbf-in)	1/4	1/8	5/8	5/16	1/2	1/4	

METRIC CALIBRATIONS	SENSING RANGES	Calibrations					
	Axes	SI-1000-120		SI-1500-240		SI-2500-400	
	Fx, Fy (±N)	1000		1500		2500	
	Fz (±N)	2500		3750		6250	
	Tx, Ty (±Nm)	120		240		400	
	Tz (±Nm)	120		240		400	
	RESOLUTION	System Type*					
	Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
	Fx, Fy (N)	1/2	1/4	1/2	1/4	1	1/2
	Fz (N)	1/2	1/4	1	1/2	1 1/2	3/4
Tx, Ty (Nm)	1/20	1/40	1/10	1/20	1/10	1/20	
Tz (Nm)	1/40	1/80	1/20	1/40	1/10	1/20	

*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
F _{xy}	±3900 lbf	±18000 N
F _z	±11000 lbf	±48000 N
T _{xy}	±15000 lbf-in	±1700 Nm
T _z	±17000 lbf-in	±1900 Nm
Stiffness (Calculated)	English	Metric
X-axis & Y-axis force (K _x , K _y)	4.0x10 ⁵ lb/in	7.0x10 ⁷ N/m
Z-axis force (K _z)	6.8x10 ⁵ lb/in	1.2x10 ⁸ N/m
X-axis & Y-axis torque (K _{tx} , K _{ty})	2.9x10 ⁶ lbf-in/rad	3.3x10 ⁵ Nm/rad
Z-axis torque (K _{tz})	4.6x10 ⁶ lbf-in/rad	5.2x10 ⁵ Nm/rad
Resonant Frequency (Non-IP rated, Measured)		
F _x , F _y , T _z	1300 Hz	
F _z , T _x , T _y	1000 Hz	
Physical Specifications	English	Metric
Weight*	6.0 lb	2.72 kg
Diameter*	6.16 in	156.5 mm
Height*	2.2 in	55.9 mm

*Specifications include standard interface plates and are for non-IP rated models. Diameter excludes any connector block.

