

Product Advantages

Extremely High Strength:

- EDM wire-cut from high yield-strength stainless steel.
- Maximum allowable single-axis overload values are 4.2 to 15.2 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.



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.

Typical Applications

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

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

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

*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	2.7 kg
Diameter*	6.10 in	160 mm
Height*	2.20 in	55.9 mm

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

OMEGA160

