

Product Advantages

Extremely High Strength:

- EDM wire-cut from high yield-strength stainless steel.
- Maximum allowable single-axis overload values are 4.8 to 19.9 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 Omega190 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

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

	SENSING RANGES		Calibrations										
	Axes		US-400-3000		US-800-6000		US-1600-12000						
ENGLISH CALIBRATIONS	Fx, Fy (±lbf)		400		800		1600						
	Fz (±lbf)		1000		2000		4000						
	Tx, Ty (±lbf-in)		3000		6000		12000						
	Tz (±lbf-in)		3000		6000		12000						
	RESOLUTION		System Type*										
Axes		CTL		Net/DAQ		CTL		Net/DAQ					
Fx, Fy (lbf)		5/32		5/64		5/16		5/32		5/8		5/16	
Fz (lbf)		5/16		5/32		5/8		5/16		1 1/4		5/8	
Tx, Ty (lbf-in)		15/16		15/32		1 7/8		15/16		3 3/4		1 7/8	
Tz (lbf-in)		5/8		5/16		1 1/4		5/8		2 1/2		1 1/4	

	SENSING RANGES		Calibrations										
	Axes		SI-1800-350		SI-3600-700		SI-7200-1400						
METRIC CALIBRATIONS	Fx, Fy (±N)		1800		3600		7200						
	Fz (±N)		4500		9000		18000						
	Tx, Ty (±Nm)		350		700		1400						
	Tz (±Nm)		350		700		1400						
	RESOLUTION		System Type*										
Axes		CTL		Net/DAQ		CTL		Net/DAQ					
Fx, Fy (N)		3/4		3/8		1 1/2		3/4		3		1 1/2	
Fz (N)		1 1/2		3/4		3		1 1/2		6		3	
Tx, Ty (Nm)		5/48		5/96		5/24		5/48		5/12		5/24	
Tz (Nm)		5/72		5/144		5/36		5/72		5/18		5/36	

*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	±8000 lbf	±36000 N
Fz	±25000 lbf	±110000 N
Txy	±60000 lbf-in	±6800 Nm
Tz	±60000 lbf-in	±6800 Nm
Stiffness (Calculated)	English	Metric
X-axis & Y-axis force (Kx, Ky)	1.4x10 ⁶ lb/in	2.4x10 ⁸ N/m
Z-axis force (Kz)	2.1x10 ⁶ lb/in	3.6x10 ⁸ N/m
X-axis & Y-axis torque (Ktx, Kty)	1.4x10 ⁷ lbf-in/rad	1.5x10 ⁶ Nm/rad
Z-axis torque (Ktz)	2.8x10 ⁷ lbf-in/rad	3.2x10 ⁶ Nm/rad
Physical Specifications	English	Metric
Weight*	14 lb	6.35 kg
Diameter (OD,ID)*	7.48 in, 2.25 in	190 mm, 57 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.

