Product Advantages

Extremely High Strength:

- Precision machined from high-strength stainless steel.
- Maximum allowable single-axis overload values are 5.9 to 24.9 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.

IP65 and IP68 (10m) Versions Available: 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 Omega85 F/T transducer
The transducer is made of hardened stainless steel, and the standard mounting adapter is made of high-strength stainless steel.

Typical Applications

- Rehabilitation research
- Prosthetics research
- Humanoid robots
- Robotic assembly and machining

Note: The Omega85 does not support an on-board mux board. For Controller F/T systems we recommend the Mini85.

English Calibrations

SENSING RANGES	Calibrations					
Axes	US-105-185		US-210-370		US-420-740	
Fx, Fy (±lbf)	105		210		420	
Fz (±lbf)	210		420		840	
Tx, Ty (±lbf-in)	185		370		740	
Tz (±lbf-in)	185		370		740	
RESOLUTION	System Type*					
Axes	CTL	Net/DAQ	CTL	Net.DAQ	CTL	Net/DAQ
Fx, Fy (lbf)	1/26	1/52	5/64	5/128	5/32	5/64
Fz (lbf)	3/65	3/130	3/32	3/64	3/16	3/32
Tx, Ty (lbf-in)	3/56	3/112	3/28	3/56	3/14	3/28
Tz (lbf-in)	1/24	1/48	1/12	1/24	1/6	1/12

Metric Calibrations

SENSING RANGES	Calibrations					
Axes	SI-475-20		SI-950-40		SI-1900-80	
Fx, Fy (±N)	475		950		1900	
Fz (±N)	950		1900		3800	
Tx, Ty (±Nm)	20		40		80	
Tz (±Nm)	20		40		80	
RESOLUTION	System Type*					
Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
Fx, Fy (N)	1/7	1/14	2/7	1/7	4/7	2/7
Fz (N)	3/14	3/28	3/7	3/14	6/7	3/7
Tx, Ty (Nm)	5/748	5/1496	5/374	5/748	5/187	5/374
Tz (Nm)	7/1496	7/2992	7/748	7/1496	7/374	7/748

*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).

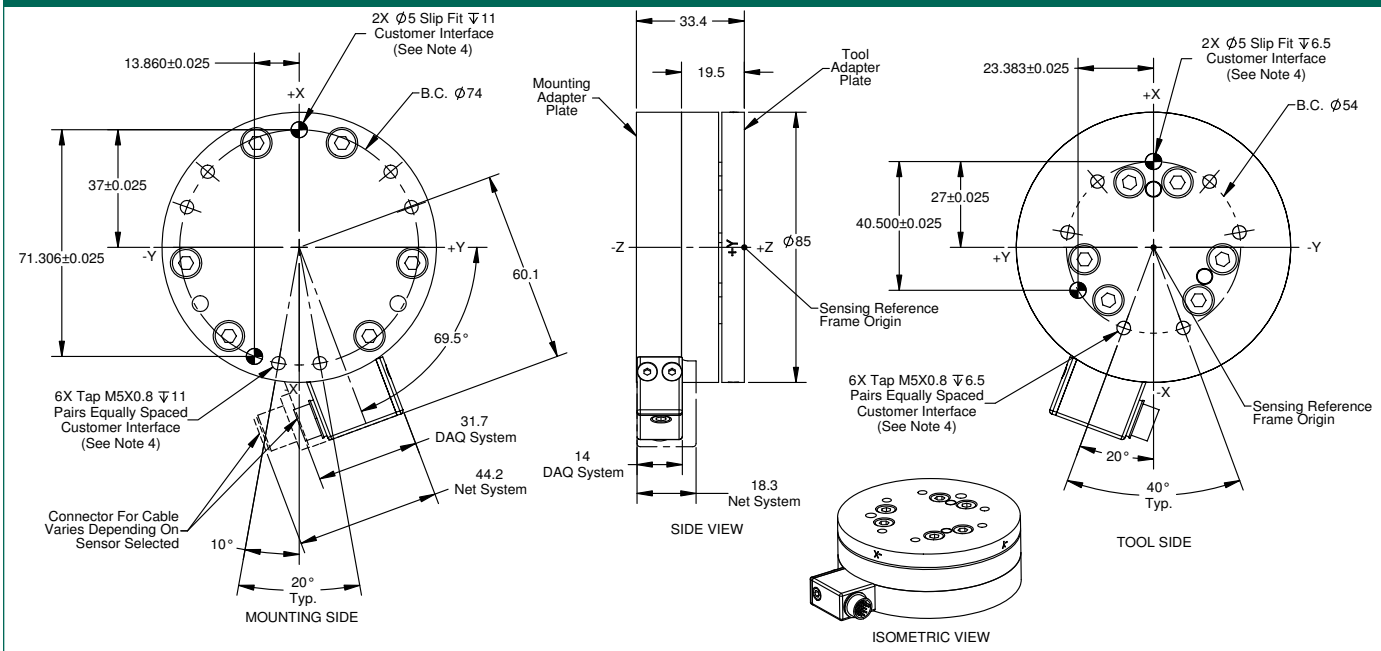
Single-Axis Overload	English	Metric
Fxy	±2800 lbf	±13000 N
Fz	±6100 lbf	±27000 N
Txy	±4400 lbf-in	±500 Nm
Tz	±5400 lbf-in	±610 Nm
Stiffness (Calculated)	**English**	**Metric**
X-axis & Y-axis force (Kx, Ky)	4.4×10^5 lb/in	7.7×10^7 N/m
Z-axis force (Kz)	6.8×10^5 lb/in	1.2×10^8 N/m
X-axis & Y-axis torque (Ktx, Kty)	7.2×10^5 lbf-in/rad	8.1×10^4 Nm/rad
Z-axis torque (Ktz)	1.2×10^6 lbf-in/rad	1.3×10^5 Nm/rad
Resonant Frequency (Measured)		
Fx, Fy, Tz	2100 Hz	
Fz, Tx, Ty	3000 Hz	
Physical Specifications	**English**	**Metric**
Weight*	1.45 lb	0.658 kg
Diameter*	3.4 in	85 mm
Height*	1.3 in	33 mm

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

"ATI force sensors have become our choice sensors for force measurement in surface finishing processes. With this in mind, we are about to place our 6th order for ATI sensors in the past two years."

Dr. Vikram Cariapa
Dr. Robert Stango
Associate Professors of Mechanical and Industrial Engineering
Marquette University

OMEGA85



Notes:
1. Material: Hardened stainless steel and aluminum.
2. Sensing Reference Frame Origin at surface center of Tool Adapter.
3. Do not disassemble transducer. Doing so could damage transducer and will void warranty.
4. **DO NOT EXCEED INTERFACE DEPTH, MAY CAUSE DAMAGE.**
5. For best accuracy, transducer must be mounted to surfaces rigid enough to support loads without deflection.

Customer Drawing # 9230-05-1341-03