Product Advantages

One of the Smallest 6-Axis Sensors in the World: The Nano17 fits into restricted spaces of research applications.

Extremely High Strength:

- EDM wire-cut from high-yield-strength stainless steel.
- Maximum allowable single-axis overload values are 3.1 to 13 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 (4m) Versions Available: The IP65 version of the transducer is available for use in wet environments. The IP68 version is for underwater environments to a maximum depth of 4 meters in fresh water. Contact ATI Industrial Automation for drawings and more information.

The Nano17 F/T transducer
The transducer is made of hardened stainless steel, with integral interface plates made from high-strength aircraft aluminum.

Typical Applications

- Dental research
- Robotic surgery
- Robotic hand research
- Finger-force research

English Calibrations

SENSING RANGES	Calibrations					
Axes	US-3-1		US-6-2		US-12-4	
Fx, Fy (±lbf)	3		6		12	
Fz (±lbf)	4.25		8.5		17	
Tx, Ty (±lbf-in)	1		2		4	
Tz (±lbf-in)	1		2		4	
RESOLUTION	System Type*					
Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
Fx, Fy (lbf)	1/640	1/1280	1/320	1/640	1/160	1/320
Fz (lbf)	1/640	1/1280	1/320	1/640	1/160	1/320
Tx, Ty (lbf-in)	1/4000	1/8000	1/2000	1/4000	1/1000	1/2000
Tz (lbf-in)	1/4000	1/8000	1/2000	1/4000	1/1000	1/2000

Metric Calibrations

SENSING RANGES	Calibrations					
Axes	SI-12-0.12		SI-25-0.25		SI-50-0.5	
Fx, Fy (±N)	12		25		50	
Fz (±N)	17		35		70	
Tx, Ty (±Nmm)	120		250		500	
Tz (±Nmm)	120		250		500	
RESOLUTION	System Type*					
Axes	CTL	Net/DAQ	CTL	Net/DAQ	CTL	Net/DAQ
Fx, Fy (N)	1/160	1/320	1/80	1/160	1/40	1/80
Fz (N)	1/160	1/320	1/80	1/160	1/40	1/80
Tx, Ty (Nmm)	1/32	1/64	1/16	1/32	1/8	1/16
Tz (Nmm)	1/32	1/64	1/16	1/32	1/8	1/16

*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	±56 lbf	±250 N
Fz	±110 lbf	±480 N
Txy	±14 lbf-in	±1.6 Nm
Tz	±16 lbf-in	±1.8 Nm
Stiffness (Calculated)	**English**	**Metric**
X-axis & Y-axis force (Kx, Ky)	4.7×10^4 lb/in	8.2×10^6 N/m
Z-axis force (Kz)	6.5×10^4 lb/in	1.1×10^7 N/m
X-axis & Y-axis torque (Ktx, Kty)	2.1×10^3 lbf-in/rad	2.4×10^2 N/m/rad
Z-axis torque (Ktz)	3.4×10^3 lbf-in/rad	3.8×10^2 N/m/rad
Resonant Frequency (Non-IP rated, Measured)		
Fx, Fy, Tz	7200 Hz	
Fz, Tx, Ty	7200 Hz	
Physical Specifications	**English**	**Metric**
Weight*	0.02 lb	0.00907 kg
Diameter*	0.669 in	17 mm
Height*	0.571 in	14.5 mm

*Specifications are for non-IP rated models. Diameter excludes any connector or cable features.

"I used the Nano17 in a recent design application. The support I received from ATI for my special application was excellent. The documentation was well-written, the installation and set-up was easy and the sensor proved to be robust and highly accurate for my application."

Peter W. Johnson, PhD
President
Ergonomic Research and Consulting, Inc.

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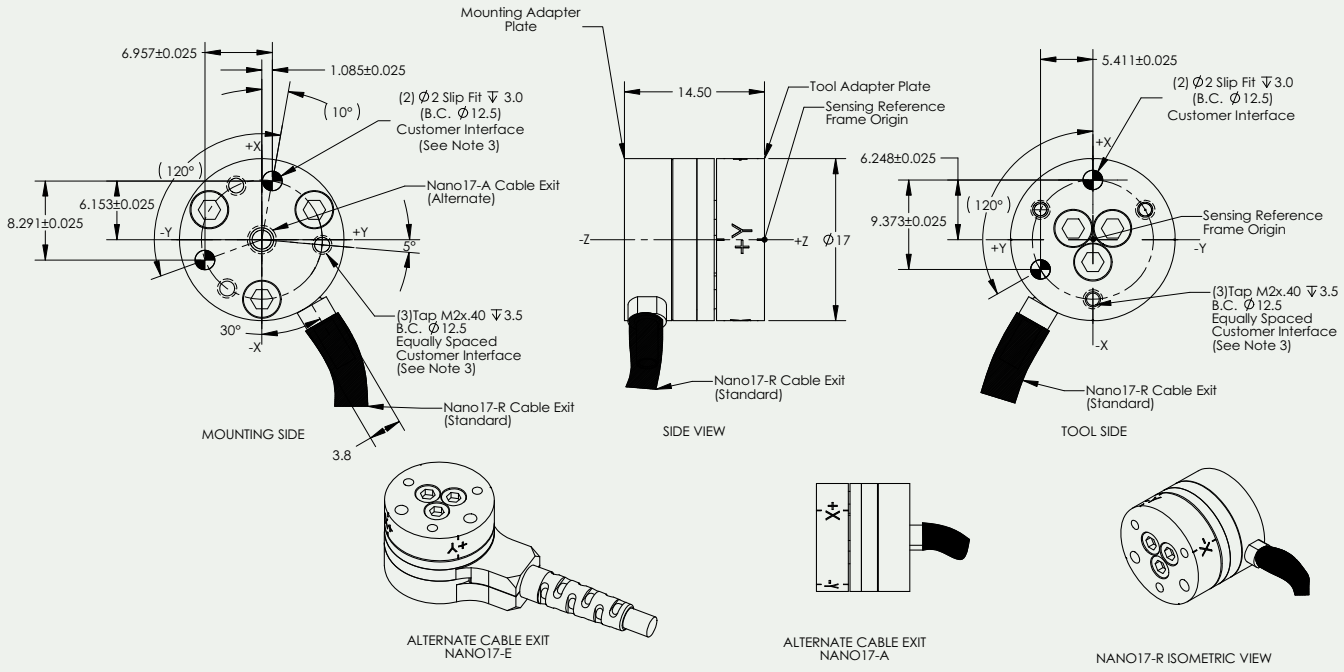

Notes:
1. Mounting and Tool Adapter made of Aluminum. Transducer made of hardened Stainless Steel.
2. **WARNING: DO NOT LOOSEN OR REMOVE INTERFACE PLATES OR CABLE FITTING DUE TO POTENTIAL DAMAGE.**
3. **DO NOT EXCEED INTERFACE DEPTH, MAY CAUSE DAMAGE.**
4. Connector (not shown) has 17mm diameter and is 67.5mm long.

Customer Drawing # 9230-05-1073-13