

Wheel Force Transducer, 6-Axis

Model LW700

- 157,360 lbf (700 kN) load capacity
- Measures 3 forces and 3 moments
- Measures X and Z accelerations
- Adapts to 425 mm PCD with standard hub
- Low cross axis sensitivity
- Environmentally protected
- Swappable slip ring or telemetry system for signal transmission



Description

The *LW700 Wheel Force Transducer (WFT)* is capable of measuring all of the wheel forces and moments. It can be used on 425 mm PCD with standard hubs. It provides independent output signals for vertical, lateral, and longitudinal forces as well as camber, steer, and torque moments. The *LW700's* robust IP67 design is ideal for the harshest track and off-road measurements as well as non-spinning applications to monitor and control laboratory test rigs. For spinning applications, the *LW700* offers the convenience of utilizing an outboard slip ring signal transmission, and in-board telemetry signal transmission.

When using an outboard slip ring, the amplifier package easily mounts onto the transducer. It amplifies and digitizes the transducer signals before they pass through the slip ring. Michigan Scientific *Slip Ring Assemblies* are known worldwide for their signal quality and robust design.

The *CT3 User Interface Box* performs real-time coordinate transformation and crosstalk correction, and provides CAN FD, CAN 2.0, and Ethernet signal outputs. EtherCAT and analog signal outputs are also available with optional modules. An embedded webpage accessed via USB allows the user to easily configure the WFT system. A front display indicates important information and prompts the user with instructions.

Specifications

Maximum Recommended Static Weight [Fz]	52,360 lb (23,800 kg)
Maximum Force Capacity [Fx,Fz] (radial)	157,360 lb (700 kN)
Maximum Force Capacity [Fy] (lateral)	157,360 lb (700 kN)
Maximum Torque Capacity [Mx, Mz]	202,830 lb · ft (275 kN · m)
Maximum Torque Capacity [My]	202,830 lb · ft (275 kN · m)
Nonlinearity	≤ 0.5% of full scale output
Hysteresis	≤ 0.5% of full scale output
Cross Axis Sensitivity After Correction	≤ 0.2% of full scale output
Transducer Mass	142 lb (64.5 kg)

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Wheel Force Transducer, 6-Axis

CT3 User Interface Box

- Performs real-time coordinate transformation and crosstalk correction, offset correction, and polarity correction
- Simple Zero, Shunt Calibration Check, and Zero Angle set-up functions
- Works with both slip ring and telemetry systems
- Embedded webpage enables user to:
 - Change set-up options
 - Move WFT measurement origin
 - View transducer static values
 - Correct file type creation



Amplifier & Slip Ring Package

- Internal ± 100 g X and Z accelerometers
- High resolution optical encoder for position and speed measurement
- Removable smart chip contains all calibration, zero, and shunt values
- Provides signal conditioning, amplification, and digitization to the transducer strain gauge signals



Telemetry Package

- Non-contact signal transmission
- High resolution magnetic encoder for position and speed measurement
- Telemetry Package can be mounted inboard for ATV & car applications, or outboard for motorcycle applications.
- Telemetry Stator gets mounted in proximity to Rotating Telemetry Ring and contains the Telemetry Receiver, Encoder pick-ups, and Induction primary coil.
- CT3 is the User Interface Box as well as Induction Power Supply



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