

Wheel Force Transducer, 6-Axis

Model LW25

- 5,600 lbf (25 kN) radial load capacity
- 2,000 lbf (8.9 kN) lateral load capacity
- Measures 3 forces and 3 moments
- Measures X and Z accelerations
- Adapts to 8 in and larger wheels
- Swappable slip ring or telemetry system for signal transmission



Description

The *LW25 Wheel Force Transducer (WFT)* is capable of measuring all of the wheel forces and moments on motorcycles, ATVs, and small cars. It can be used on wheels 11 in (279 mm) and larger with simple rim adapters and on wheels 8 in (203 mm) and larger with a two-piece rim adapter. It provides independent output signals for vertical, lateral, and longitudinal forces as well as camber, steer, and torque moments. The *LW25'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 *LW25* offers the convenience of utilizing an outboard slip ring signal transmission, in-board telemetry signal transmission, or out-board telemetry signal transmission for motorcycle applications.

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 compensation, and provides CAN FD, CAN2.0, 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]	1,200 lb (550 kg)
Maximum Force Capacity [Fx,Fz] (radial)	5,600 lbf (25 kN)
Maximum Force Capacity [Fy] (lateral)	2,000 lbf (8.9 kN)
Maximum Torque Capacity [Mx, Mz]	1,500 lbf · ft (2.0 kN · m)
Maximum Torque Capacity [My]	2,500 lbf · ft (3.4 kN · m)
Accelerometer Range	± 100 g
Nonlinearity [Fx,Fy,Fz,My]	≤ 0.25 % of full scale output
Nonlinearity [Mx,Mz]	≤ 0.50 % of full scale output
Hysteresis	≤ 0.25 % of full scale output
Crosstalk After Correction	≤ 0.4 % of full scale output
Temperature Range, Operating	-40 °F to 257 °F (-40 °C to 125 °C)
Angular Resolution	0.17° (slip ring) 0.25° (telemetry)
Transducer Mass	3.2 lb (1.5 kg)

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Rev. A

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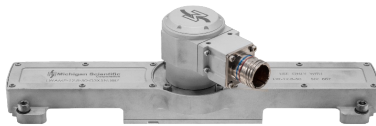
CT3 User Interface Box

- Performs real-time coordinate transformation, cross-talk correction, offset correction, and polarity correction
- Simple Zero, Shunt Calibration Check, and Zero Angle set-up functions
- CAN FD, CAN 2.0, EtherCAT, and analog signal outputs
- Synchronization through IEEE 1588 PTPv2
- 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



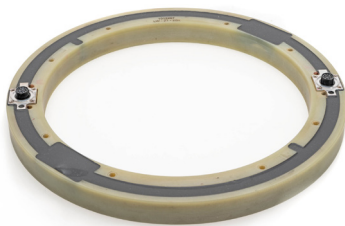
Amplifier and Slip Ring Package

- 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 and 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



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