Wheel Force Transducer, 6-Axis

Model LW150

- 33,700 lbf (150 kN) radial load capacity
- 16,850 lbf (75 kN) lateral load capacity
- Measures 3 forces and 3 moments
- Measures X and Z accelerations
- Adapts to 19.5 in and larger wheels
- Remains within vehicle width
- Swappable slip ring or telemetry system for signal transmission

Description

The *LW150 Wheel Force Transducer (WFT)* is ideal for measuring all of the wheel forces and moments on the front axle of class-8 trucks. It provides independent output signals for vertical, lateral, and longitudinal forces as well as camber, steer, and torque moments. The *LW150* uses a thin design and telemetry to remain within the vehicle width, making the *LW150* ideal for on-road testing. The robust IP67 design also allows for the harshest track and off-road measurements. The *LW150* offers the convenience of utilizing an outboard slip ring signal transmission or in-board telemetry signal transmission.

When using an outboard slip ring, the amplifier package easily mounts onto the transducer. With an outboard slip ring the *LW150* can be used with 19.5 in and larger wheel. Telemetry can be used with 22.5 in or larger wheels. Using the outboard slip ring 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]	9,675 lb (4,400 kg)
Maximum Force Capacity [Fx,Fz] (radial)	33,700 lbf (150 kN)
Maximum Force Capacity [Fy] (lateral)	16,850 lbf (75 kN)
Maximum Torque Capcity [Mx, My, Mz]	29,500 lbf · ft (40 kN · m)
Accelerometer Range	± 100 g
Nonlinearity	≤ 0.5 % of full scale output
Hysteresis	≤ 0.5 % of full scale output
Crosstalk Correction	≤ 1.0 % of full scale output
Temperature Range, Operating	-40 °F to 350 °F (-40 °C to 177 °C)
Angular Resolution	0.17°
Transducer Mass	46 lb (20.9 kg)

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Rev. A

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Wheel Force Transducer, 6-Axis

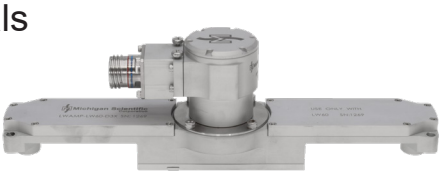
CT3 User Interface Box

- Performs real-time coordinate transformation and crosstalk compensation
- Easy to use Zero, Shunt Calibration, and Zero Angle functions
- CAN-FD, CAN 2.0, Analog, Ethernet, and EtherCAT signal outputs available
- Front display which prompts the user with instructions
- Simple connection to Embedded webpage via USB

Embedded webpage enables:
-Change set-up options
-Move WFT measurement origin
-View Transducer static values
-Create .dbc file

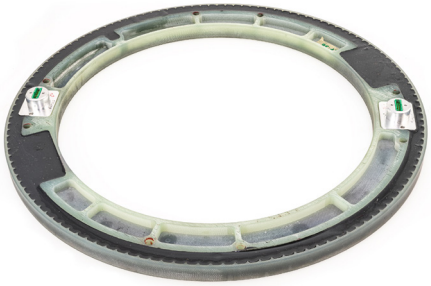
Amplifier & Slip Ring Package

- 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 to keep the assembly within vehicle width
- Telemetry Stator gets mounted in proximity to Rotating Telemetry Ring and contains the Telemetry Receiver, Encoder pick-ups, and Induction Primary Coil
- An Induction Module contains the WFT smart chip and provides Induction Power



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