Heavy Duty Wheel Force Transducer, 6 Axis

Model LW450

- 101,150 lbf (450 kN) radial load capacity
- 50,580 lbf (225 kN) lateral capacity
- Measures 3 forces and 3 moments
- Measures X and Z accelerations
- Measures combined loads of one or two tires
- Adapts to 22.5 in and larger wheels
- Environmentally protected
- Temperature compensated
- Rugged stainless steel construction



Description

The *LW450 Wheel Force Transducer (WFT)* is capable of measuring all of the wheel forces and moments on class 8 trucks, large off-road vehicles and heavy equipment. It provides independent output signals for vertical, lateral, and longitudinal forces as well as camber, steer and torque moments. Completely weatherproof, it is ideal for on-road and off-road measurements in all weather conditions. It can also be used to monitor and control laboratory tests. One sensor measures the combined loads for a dual wheel set or a single tire.

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, 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 Force Capacity [Fx, Fz] (radial)	101,150 lbf (450 kN)
Maximum Force Capacity [Fy] (lateral) at Tire Patch	50,580 lbf (225 kN)
Maximum Torque Capacity [Mx, My, Mz]	100,000 lbf · ft (135 kN · m)
Accelerometer Range	± 100 g
Sensor	4 arm strain gauge bridges
Nonlinearity	≤ 0.5 % of full scale output
Hysteresis	< 0.5 % of full scale output
Cross Axis Sensitivity after Correction	< 0.5 % of full scale output
Temperature Range, Operating	-40 °F to 350 °F (-40 °C to 177 °C)
Angular Resolution	0.17°

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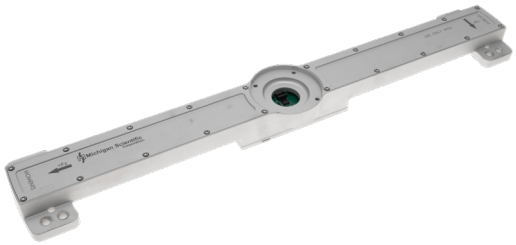
CT3 User Interface Box

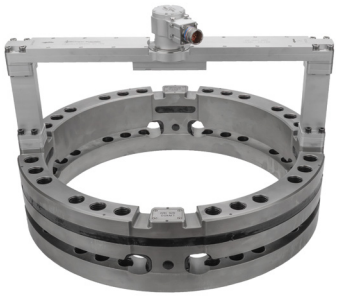
- Performs real-time coordinate transformation, cross-talk correction, offset correction, and polarity correction
- Simple Zero, Shunt Calibration Check, and Zero Angle set-up functions
- CAN FD, CAN 2.0, EtherCAT, and analog signal outputs
- Synchronization through IEEE 1588 PTPv2
- Works with both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

- Internal ± 100 g X, Y, 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









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