Wheel Force Transducer, 6-Axis, Telemetry

Model LW12.8-50-TEL

- 11,200 lbf (50 kN) radial load capacity
- 5,600 lbf (25 kN) lateral load capacity
- Measures 3 forces and 3 moments
- Wireless telemetry and induction system
- CAN FD, CAN 2.0, analog, and Ethernet signals
- Adapts to 14 in and larger wheels
- Low cross axis sensitivity
- Temperature compensated
- Remove wheel without removing electronics
- Tested to SAE J328 fatigue strength standard

Description

The *LW12.8-50-TEL Wheel Force Transducer (WFT)* is capable of measuring all of the wheel forces and moments on passenger cars and light duty trucks. 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 testing in all weather conditions.

The telemetry and induction powered electronics are packaged into the transducer to create a low profile and durable assembly.

The *CT3 User Interface Box* performs real-time coordinate transformation and crosstalk correction, and outputs CAN FD, CAN 2.0, analog and Ethernet signals. An embedded webpage accessed via USB allows the user to easily configure the WFT system.

Specifications

Maximum Force Capacity [Fx, Fz] Radial	11,200 lbf (50 kN)
Maximum Force Capacity [Fy] Lateral at Tire Patch	5,600 lbf (25 kN)
Maximum Torque Capacity [Mx, My, Mz]	4,800 lbf · ft (6.5 kN · m)
Sensor	4 arm strain gauge bridges
Nonlinearity [Fx, Fy, Fz, My]	≤ 0.5 % of full scale output
Nonlinearity [Mx, Mz]	≤ 1.0 % of full scale output
Hysteresis	< 1.0 % of full scale output
Crosstalk After Compensation	< 1.0 % of full scale output
Transducer Temperature Range, Operating	-40 °F to 257 °F (-40 °C to 125 °C)
CT2-TEL Temperature Range	-5 ºF to 140 °F (-20 ºC to 60 ºC)
Mass (Transducer & Telemetry Electronics)	13.0 lb (6.0 kg)
Angular Resolution	0.25°
Transmission Rate of Data	2,200 Hz
Data Bandwidth	200 Hz (<-0.1 dB) ; 500 Hz (<-1.0 dB)
Data Resolution in Engineering Units (16 bit ADC)	0.4 lbf (1.8 N) ; 0.2 lbf · ft (0.27 N · m)
System Delay on Analog Channels	20.69 ms
Anti-Alias Filter Type	Bessel Linear Phase
Input Power Requirements	10–36 Vdc, approx 2.0 A at 13.5 Vdc typical

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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
- CAN FD, CAN 2.0, analog, Ethernet, and EtherCAT signal outputs available
- Front display which prompts the user with instructions
- Embedded webpage enables user to:
    - Change set-up options
    - Move WFT measurement origin
    - View transducer static values
    - Correct file type creation

Telemetry Stator

- Receives and decodes the telemetry signal from the transducer
- Provides high resolution speed and position signals
- Mounts inboard of the transducer