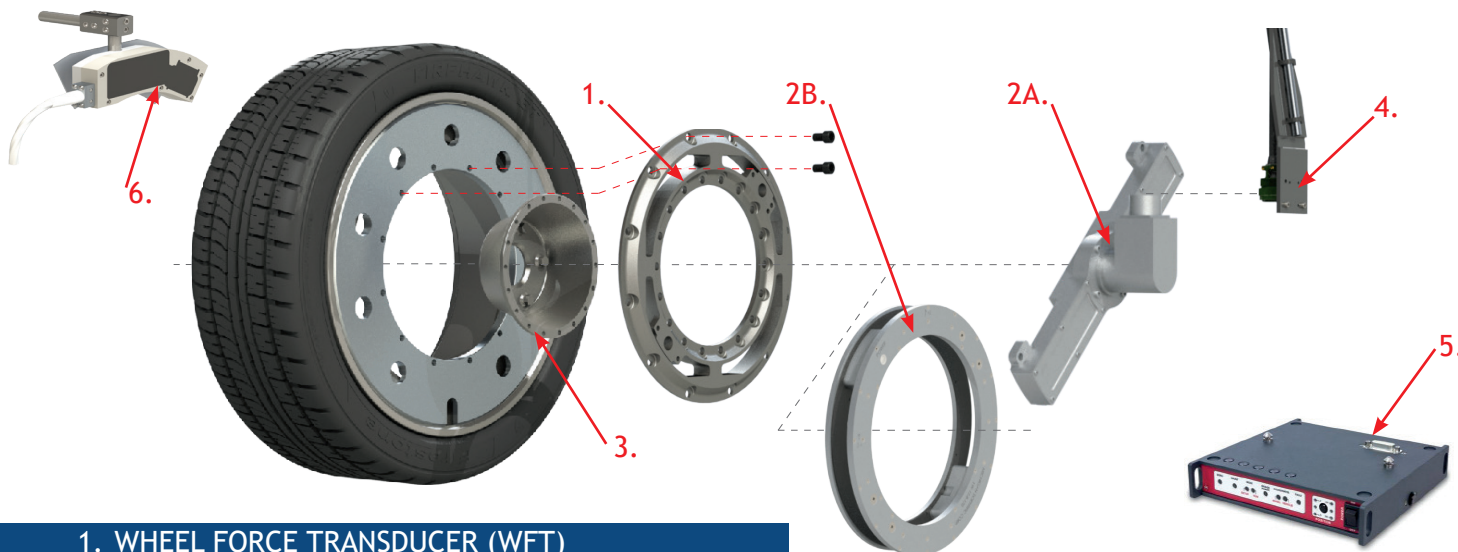


Wheel Force Transducers





1. WHEEL FORCE TRANSDUCER (WFT)

Measures: longitudinal (F_x), lateral (F_y), and vertical (F_z) forces, camber (M_x), torque (M_y), and steer (M_z) moments

2. SIGNAL CONDITIONING

A) Integrated Slip Ring & Amplifier Subassembly

Spinning amplifier package digitizes all signals before being transmitted through a slip ring assembly, reducing noise and allowing for a small, flexible signal cable

Slip Ring Assembly contains a high resolution encoder

OR

B) Wireless Telemetry Transmitter Subassembly

Compact, inductively powered transmitter digitizes and transmits signals via radio frequency to the Telemetry Stator

3. CUSTOM HUB & WHEEL ADAPTERS

Lightweight rim adapters are made from aluminum or carbon fiber and hub adapters are made from titanium

4. STATOR RESTRAINING ROD

Prevents rotation of the slip ring stator

5. CT2 TRANSDUCER INTERFACE BOX

Performs real-time coordinate transformations and crosstalk compensation with quick system set-up to provide analog, CAN, or Ethernet signal outputs for data acquisition

6. TELEMETRY STATOR RESTRAINT AND BRACKET

Receives telemetry signal, contains magnetic encoder pick-ups, and induction primary coil

Applications

- Durability Testing
- Computer Model Validation
- Vehicle Dynamics
- Brake Development
- Traction Studies
- Coefficient of Friction Measurements
- High Speed Course Testing
- Off-Road Driving

Michigan Scientific Corporation Wheel Force Transducers (WFT) output three forces, three moments, two accelerations, wheel speed, and wheel position signals to provide complete spindle load data with extreme accuracy. Every system combines a high strength, lightweight transducer with weatherproofed protective coatings for superior reliability and durability in a variety of driving conditions. A dedicated and knowledgeable customer support system makes installation quick and easy. The transducer system is backed by a three year warranty on the transducer, amplifier, and user interface box.

LIGHT & MEDIUM DUTY TRANSDUCER SPECIFICATIONS

	LW-MC-3.5K	LW9.5	LW12.8-T-20	LW12.8-50	LW12.8-50-TEL	LW65	LW9.5-HS	LW-2T-20K
Application	Motorcycle	ATV & Small Vehicle	Light Car	Passenger Car, SUV, & Light Duty Truck			Forklift & Construction Equipment	Pick-up Truck & Heavy SUV
Rim Size	≥ 11"	≥ 10"	≥ 13"	≥ 12"	≥ 14"	≥ 12"	≥ 10"	≥ 16"
Nonlinearity (% of Full Scale)	≤ 0.5	≤ 0.25	≤ 0.75			≤ 0.2	≤ 0.75	≤ 0.5
Weight	2.3 kg (5.0 lb)	3.6 kg (8.0 lb)	2.8 kg (6.2 lb)	4.7 kg (10.3 lb)	4.7 kg (10.3 lb)	7.9 kg (17.5 lb)	3.9 kg (8.5 lb)	10.6 kg (23.4 lb)
Maximum Static Weight (Fz)	320 kg (700 lb)	725 kg (1,600 lb)	410 kg (900 lb)	1,020 kg (2,250 lb)	1,015 kg (2,240 lb)	1,320 kg (2,900 lb)	1,900 kg (4,200 lb)	1,815 kg (4,000 lb)
Fx, Fz Load Capacity	15.6 kN (3,500 lb)	35 kN (8,000 lb)	20 kN (4,500 lb)	50 kN (11,200 lb)	50 kN (11,200 lb)	65 kN (14,500 lb)	93 kN (21,000 lb)	90 kN (20,000 lb)
Fy Load Capacity	5.3 kN (1,200 lb)	17.8 kN (4,000 lb)	15.1 kN (3,400 lb)	25 kN (5,600 lb)	25 kN (5,600 lb)	35 kN (7,850 lb)	44 kN (10,000 lb)	44 kN (10,000 lb)
Mx, Mz Load Capacity	1.6 kN-m (1,200 lb-ft)	5.4 kN-m (4,000 lb-ft)	4.0 kN-m (3,000 lb-ft)	6.5 kN-m (4,800 lb-ft)	6.5 kN-m (4,800 lb-ft)	10.5 kN-m (7,700 lb-ft)	9.5 kN-m (7,000 lb-ft)	14.9 kN-m (11,000 lb-ft)
My Load Capacity	3.4 kN-m (2,500 lb-ft)	5.4 kN-m (4,000 lb-ft)	4.0 kN-m (3,000 lb-ft)	6.5 kN-m (4,800 lb-ft)	6.5 kN-m (4,800 lb-ft)	10.5 kN-m (7,700 lb-ft)	9.5 kN-m (7,000 lb-ft)	20 kN-m (15,000 lb-ft)
Version	Telemetry	Slip Ring	Slip Ring or Telemetry	Slip Ring	Telemetry	Slip Ring and Telemetry	Slip Ring	Slip Ring and Telemetry

HEAVY DUTY TRANSDUCER SPECIFICATIONS

	LW-2T-30K	LW-2T-40K	LW-2T-50K	LW-2T-60K-S	LW-2T-100K-S	LW-2T-100K
Application	Medium Duty Truck & Bus, Skid Steer	Forklift, Truck, & Bus	Class 8 Truck, Agricultural & Construction Equipment			
Rim Size	≥ 15"		≥ 19.5"	≥ 20"		≥ 22.5"
Hub Size (PCD)	≤ 11" * (275 mm)		≤ 11.2" (285 mm)	≤ 13" (335 mm)		≤ 13" * (335 mm)
Nonlinearity (% of Full Scale)	≤ 0.75	≤ 1.5	≤ 1			
Weight	10.0 kg (22.0 lb)		16.1 kg (35.5 lb)	26 kg (58 lb)		28 kg (62 lb)
Maximum Static Weight (Fz)	2,720 kg (6,000 lb)	3,630 kg (8,000 lb)	4,540 kg (10,000 lb)	6,125 kg (13,500 lb)	9,070 kg (20,000 lb)	9,070 kg (20,000 lb)
Fx, Fz Load Capacity	133 kN (30,000 lb)	178 kN (40,000 lb)	222 kN (50,000 lb)	300 kN (67,400 lb)	445 kN (100,000 lb)	
Fy Load Capacity	66 kN (15,000 lb)	89 kN (20,000 lb)	111 kN (25,000 lb)	150 kN (33,700 lb)	222 kN (50,000 lb)	
Mx, Mz Load Capacity	30 kN-m (22,000 lb-ft)	40 kN-m (30,000 lb-ft)	68 kN-m (50,000 lb-ft)	81 kN-m (60,000 lb-ft)	108 kN-m (80,000 lb-ft)	135 kN-m (100,000 lb-ft)
My Load Capacity	30 kN-m (22,000 lb-ft)	40 kN-m (30,000 lb-ft)	68 kN-m (50,000 lb-ft)	81 kN-m (60,000 lb-ft)	108 kN-m (80,000 lb-ft)	135 kN-m (100,000 lb-ft)
Version	Slip Ring					

*LARGER HUB PCDs CAN BE ACCOMMODATED BY USING TWO-PIECE HUB ADAPTERS



Michigan Scientific Corporation

www.michsci.com

8500 Ance Road
Charlevoix, MI 49720
Tel: 231-547-5511
Fax: 231-547-7070

321 East Huron Street
Milford, MI 48381
Tel: 248-685-3939
Fax: 248-685-5406

Details and specifications provided in this document are purely for informational purposes and are subject to alterations. No liability is accepted for errors or omissions.

©2020 Michigan Scientific Corporation

REV: 11/13/2020