

FPT100D Engine Torque Measurement System



Dynamic, Non-Contacting Measurement of Engine Torque

TLTS offers a non-contact sensor to address the challenging application of measuring engine output torque. This is accomplished by customizing and instrumenting the flex plate or flywheel that connects the engine crankshaft to the torque converter. No other modifications to the existing powertrain design are required. Teledyne has adapted this technology to a number of engine/transmission interfaces including many hybrid vehicles. The FPT100D is used widely for engine torque mapping and automatic transmission calibration.

Specifications

| Torque Sensor Flex plate/Flywheel & Rotating Electronics | |
|---|---|
| Torque capacity | Dependent on production flex plate, typically ±750 ft-lbs |
| Calibration range | 0-6000 ft-lbs (8100 Nm) |
| Operating temperature range | -40 to +120C |
| Environmental concerns | Completely weatherproof |
| Maximum speed | Same as production flexplate/flywheel |
| Stationary Electronics | |
| Combined accuracy | 0.5% FS NIST Traceable |
| Output signal | 0+/-5, 0+/-10 V (scalable) |
| Sample rate | 27,000 s/s |
| System frequency response | 2, 20, 200 or 2000 Hz (-3dB, user selectable) |
| Input power requirements | 9 to 15 VDC, 0.8 amp (1.8 amp startup surge) |
| Operating temperature range | 0 to +50C |
| Physical size | 7.5"W x 7.5" D x 2.0" H |

Key Features

- Replaces existing flex plate/flywheel, no additional space required
- Measure piston pulses and engine harmonics
- Inductively powered, no batteries or slip rings
- Digital data transfer for a clean signal
- Scalable analog output
- Temperature compensated output
- User selectable frequency response
- NIST traceable turnkey installation with 0.5% F.S. accuracy
- Remote shunt calibration capability
- Two channel versions available for measuring thrust, strain or temperature
- Racing and dynamometer units available

Applications

- Engine mapping
- Transmission development
- Hybrid powertrain development
- Torsional analysis
- Fleet & customer-use testing
- Racing vehicles tuning