

Test Instruments: Rotational speed



Problem: Three common challenges in making rotational speed measurements are:

1. No keyway or gear teeth available for detection.
2. It is not possible to locate a sensor close to the shaft or gear.
3. Tachometers require specialized power supplies/signal conditioners.



Solution: The LaserTach™ provides a non-contact rotational speed measurement. The design eliminates the need for a separate tachometer conditioner by using constant current from a dynamic signal analyzer or ICP® sensor power supply. Reflection from a simple retro-reflective tape spot enables a separation of up to 20 inches.



Benefit: Multichannel data acquisition system users are now able to easily add tachometer channels. The flexibility in separation distance and ICP operation makes it easier to use new multi-tachometer methods to identify and track additional sources of noise or imbalance. Request the paper entitled, “The Time Variant DFT as an Order Tracking Method” for more information on tracking closely spaced or crossing orders like automotive wheels, etc.



Fig 1. Threaded LaserTach™ with BNC for connection to >3 mA constant current power.

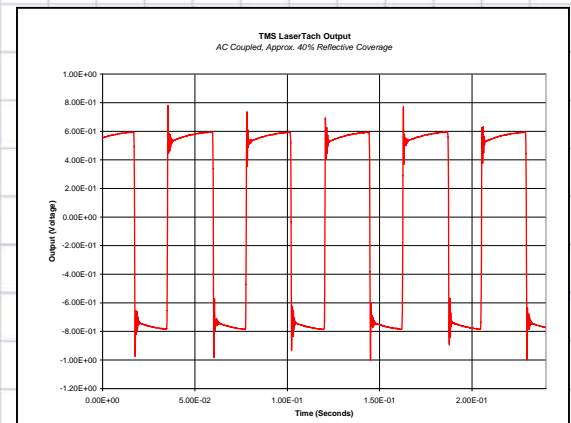


Fig 2. Typical output of pulse train detecting a once per revolution retro-reflective tape marker.

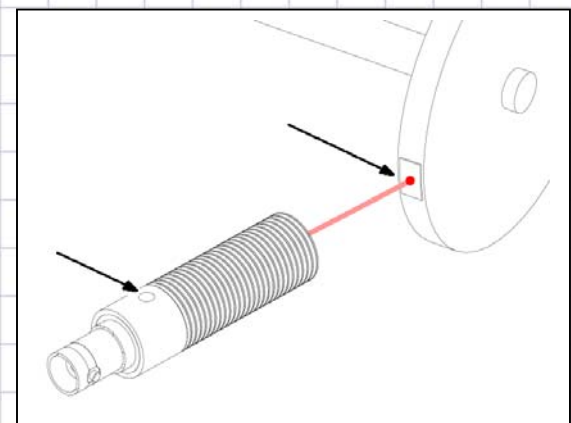


Fig 3. Illustration of LaserTach with arrows denoting retro-reflective tape and LED.

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