DTM Series Distributed Transmitter Monitor Introduction

Fully Digital

The DTM series digital transmitter monitor is ProvibTech's transmitter monitor series based on the popular predecessor TM transmitter monitor. The DTM is a vibration monitor, vibration transmitter and vibration switch all rolled into one package. Each DTM module can be operated independently or networked together to create a machine protection system. It has the functionalities of an API 670 multi-channel monitor plus a unique field linearization feature which enables the use of any manufacturers' probes and extension cable combination. DTM modules are fully programmable, flexible and highly reliable.

Fully Programmable and Flexible

The DTM is modular in nature and can easily be expanded into a larger vibration system with the addition of: DTM10 (Proximity Probe Sensor Module), DTM 20 (Case Vibration Sensors Module), DTM 96 (Communication Module) and DTM- CFG (Configuration Software).

DTM10 is a proximity probe sensor module which provides measurements in radial vibration, axial (thrust) position, and speed/ phase reference. The DTM10 works with any proximity probe system combination (including other manufacturers):

- With or without Probe Driver
- Any combination of probe and extension cable. The DTM10 has a field linearization feature which enables the DTM10 to interface to any proximity probe system. This feature greatly reduces the requirement of spare parts.
- Works with any shaft material (Steel, Tungsten, K-monel and more).

DTM20 is a case mounted seismic sensor module which provides case vibration measurements in acceleration, velocity or displacement. The DTM20 works with any case mounted sensor (including other manufacturers):

- Accelerometers
- Velocity Transducers

DTM96 is a communication module used to network up to (32) DTMs together to form a vibration protection system. The DTM96 can be used to communicate directly with control systems (PLC or DCS) via modbus to provide status data from the DTMs: alarm status, system status, overall value and more.

DTM-CFG is the software used to configure, monitor and control the DTM modules (DTM10, DTM20 and DTM96) either with a local laptop computer or a remote computer on the network (requires Modbus connection).

Configure:
- Measurement Type (Case Vibration, Radial Vibration, Axial Position and Speed/Phase)
- Sensor Type and Sensitivity (Proximity Probe, Accelerometer and Velocity Transducer)
- Full Scale Range (Set this parameter to your requirements: g's, ips/s, mm/s, rms, pk and more)
- Time Delays
- Alarm Set Points
- Use with Safety Barrier

Monitor:
- Alarm and Channel OK Status
- Trip Multiply
- Bypass and Overall Vibration Level

Control:
- Trip Multiply
- Bypass and Reset

Note: The DTM can be pre-configured at the factory. DTM-CFG software is only required when field configuration is required.

Highly Reliable System

The DTM was designed to be used for critical machines as well as balance of plant applications. Built into every DTM is system redundancy, a reliable microprocessor and system diagnostics which all contribute to a robust system design which will maximize system uptime.

Power Redundancy- each DTM module has redundant power supply inputs to maximize the reliability of the system. A single power supply failure will not affect the operation of the system.

Output Redundancy- each DTM is equipped with redundant 4-20mA outputs, redundant relay outputs and a Modbus communication port. The DTM relay outputs can be configured for any logic configuration required.

Channel Redundancy- can be configured for triple-redundancy with multiple DTMs networked together.

System Diagnostics- the DTM performs internal diagnostic tests to search for errors: sensor status, supply voltage, system power up, fieldbus status and more. If there is an error, the system OK status LED on the DTM will go off, and an error will be registered for the channel and sent via modbus to the DTM-CFG software.

Reliable Microprocessor- critical data and system configuration is stored in a solid-state memory chip. The memory chips are designed not to lose data during an interruption of power. Once power is restored, the critical data and system configuration are recovered from the memory chips.

Additional Features

Power-Up Inhibit- This feature decreases false alarms due to higher vibration levels during start-up.

Condition Monitoring- Each DTM module has a buffered output port for easy connection to the condition monitoring system.