



## TM500 Series Digital Transmitter Monitor Introduction

### Fully Digital

The TM500 series digital transmitter monitor is ProvibTech's vibration monitor, vibration transmitter and vibration switch all combined into one package. Each TM500 module can be operated independently or networked together to create a machine protection system. TM500 contains redundant relay outputs, 4-20mA transmission and digital condition monitoring output, it can interface to a PLC or DCS system.

TM500 has all the functionalities of an API 670 multi-channel monitor plus a unique field linearization feature which enables the use of any manufacturers' probe and extension cable combination. TM500 modules are fully programmable, flexible, and highly reliable.

### Fully Forward compatibility

TM500 series Digital Transmitter Monitor can be compatible with TM Series Transmitter-Monitor. TM500 monitor can replace each TM monitor in the field.

### Highly Reliable System

The TM500 was designed to be used for critical machines as well as balance of plant applications. Built into every TM500 is a redundant system based upon a reliable microprocessor and proprietary system diagnostics which all contribute to a robust system design and maximize system uptime.

**System Diagnostics** –The TM500 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 TM500 will go off.

**System Management** –TM591 module allow to manage all TM500 modules in the system. TM591 could display scrolling real time value, channel OK status and alarm information. In addition, it could record alarm event and driver the OK relay output.

**Output Redundancy** –The monitor contains redundant relay outputs.

**Photoelectric isolation** –Optoelectronic isolation is employed for power input, sensor signal conditioning and relay output.

### System Centralized Management -TM591

**System Real Time Monitor**– display real time value and status of all modules in system.

**System Event Record** –record alarm event, display alarm information and driver the OK relay output.

**System Centralized Display** –display scrolling real time value, channel OK status, alarm information and alarm event records.

**System Centralized Control**–centralized control reset, bypass and trip multiply of module through integrated port.

**Configuration and Calibration**- TM591 can configure and calibrate each TM500 module in the system.

**Digital condition monitoring interface**- Static data (trend, overall, alarms, GAP, system OK) and dynamic data (waveform, spectrum, phase reference, waterfall) will be directly transferred into server by MODBUS-TCP interface of TM591 with no needs of additional interface hardware.

### Applications include

- Turbines
- Compressors
- Motors
- Pumps
- Fans
- Blowers
- Centrifuges
- Generators
- Turbochargers

### Module Type

TM500 series monitor with four different module types:

**TM531/TM532/TM535:** Proximity Probe Sensor Module (work without Probe Driver)

**TM521/TM522/TM525:** Proximity Probe Sensor Module (work with Probe Driver)

**TM511:** Case Vibration Sensors Module

**TM591:** System Integration Module



## *TM500 Series Digital-Transmitter-Monitor*

**TM531/TM532/TM535** is a proximity probe sensor module which provides measurements in radial vibration, axial position (thrust), and speed / phase reference. The TM53X works with any proximity probe system combination (including other manufacturers) and can be used:

- Work without Probe Driver
- Compatible with any combination of probe and extension cable. The TM53X has a field linearization feature which enables the TM53X to interface to any proximity probe system. This feature greatly reduces the requirement for spare parts.
- Works with any shaft material (Steel, Tungsten, K-monel and more).

**TM521/TM522/TM525** is a proximity probe sensor module which provides measurements in radial vibration, axial position(thrust), and speed / phase reference. The module works with any proximity probe system combination (including other manufacturers) and:

- Work with Probe Driver
- Works with any shaft material (Steel, Tungsten, K-monel and more).

**TM511** is a case mounted seismic sensor module which provides case vibration measurements in acceleration, velocity, or displacement. The TM511 works with any case mounted sensor (including other manufacturers):

- Accelerometers
- Velocity Transducers

**TM591** is a system integration module which can be networked together with up to 6 TM500 modules to create a machine protection system. TM591 has the following functions:

- Display alarm information and record alarm events of all modules in system.
- Display real time value and status of all modules in system.
- Calibrate 4-20mA output and adjust the Alarm and Danger set points of all modules in the field.
- Provides remote reset/bypass interface and remote trip multiply interface for all modules in system.
- Provides phase reference input interface for all modules in system.
- Provides digital condition monitoring interface





# TM500 Series Digital-Transmitter-Monitor

## Selection Guide of DTM Modules

Model Number	TM531	TM532	TM535	TM521	TM522	TM525	TM511	TM591
	Radial Vibration	Axial Position	Speed/ Phase Reference	Radial Vibration	Axial Position	Speed/ Phase Reference	Case Vibration	system integration
<b>Vibration Measurements</b>								
Radial Vibration	•			•				
Axial Position		•			•			
Speed/ Phase Reference			•			•		
Case Vibration							•	
<b>Compatible TM Module</b>								
TM301	•							
TM302		•						
TM502			•					
TM201				•				
TM202					•			
TM501						•		
TM101							•	
<b>Sensor Interfaces</b>								
Accelerometer							•	
Velocity Transducer							•	
Proximity Probe	•	•	•	•	•	•		
Works Without Probe Driver	•	•	•					
Works With Probe Driver				•	•	•		
<b>Outputs</b>								
4-20mA Output	•	•	•	•	•	•	•	
Relay Output	•	•	•	•	•	•	•	•
Buffered Output	•	•	•	•	•	•	•	
<b>Features</b>								
Push Button Setup								•
Screen Display								•
Power-Up Inhibit	•	•	•	•	•	•	•	•
System OK Checking	•	•	•	•	•	•	•	•
Warranty- 1 years	•	•	•	•	•	•	•	•

• = Complete Offering