

## Case History: Turbine Supervisory Instrumentation (TSI) #2



### The Problem:

A Mid-Western Power Company wanted to update their obsolete rack mounted TSI System mounted in the local panel. The user simply wanted the Vibration, Thrust and TSI Functions transmitted to their updated Plant Computer System. As there was local Field IO available the customer simply wanted 4-20 mA signals wired to it. Six (6) Bearings were to be monitored with X&Y Radial Vibration for 12 channels along with Dual Thrust Position, Keyphasor, Case Expansion, Differential Expansion and Rotor Eccentricity.

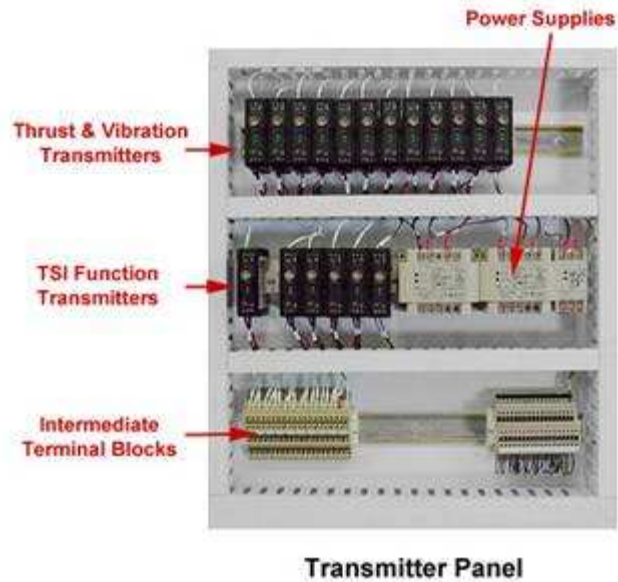
The user required local display of values along with a method to cover the hole left in the panel when the old obsolete system was removed. Existing sensors were used and only those that have failed were replaced. The customer plans to continue to update sensors during overhauls. Easy access to buffered sensor signals was a requirement for vibration analysis and balancing.

### The Solution:

A simple solution was engineered by STI and made up of two (2) parts. A custom integrated "Transmitter" panel that would easily mount inside their local panel and a custom "Mimic" panel that would cover the hole left by the old system and meet the customer's requirements of local display and easy access to buffered signal outputs. A complete dimensional and wiring documentation drawing package in AutoCAD was completed by STI.

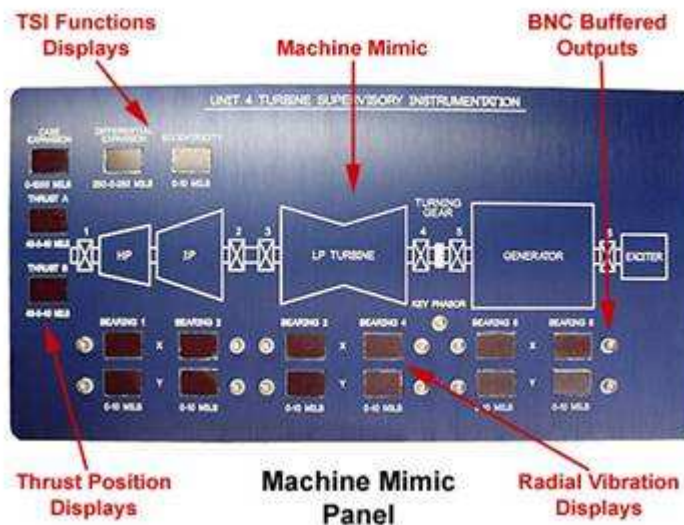
#### A. Transmitter Panel:

The "Transmitter Panel" was constructed with 16 CMCP540 Radial Vibration Transmitters, 2 CMCP545 Thrust Position Transmitters, 1 CMCP595 Keyphasor Module, 1 CMCP548 Case Expansion Transmitter, 1 CMCP547 Differential Expansion Transmitter and 1 CMCP585 Eccentricity Transmitter. +/- 24 VDC Power Supplies were integrated along with intermediate terminal blocks to simplify field wiring and interconnect to "Mimic Panel".



**B. Mimic Panel:**

The "Mimic Panel" was constructed from Blue anodized aluminum per the customer's request and included Machine Mimic, CMCP511 Bright Red LED Displays and BNC connectors for the buffered sensor signals. Mimic Panel was integrated with pigtail wiring of about 6 feet to be wired to the intermediate terminal blocks of the Transmitter Panel. Protective plastic film on each display is to be removed by customer after installation.



The entire system is modular and any single component can be easily diagnosed and replaced on a channel by channel basis. CMCP500 Series Transmitters are designed so that failure of any one transmitter will not cause failure of any other. CMCP500A Series Monitors with Alarms and Relays are also available but not required for this project. STI can also supply fully integrated Field IO if required or local Field IO is not available.

More information on STI Vibration Monitoring Inc's products may be found at [www.stiweb.com](http://www.stiweb.com). If you should have any questions or comments about Turbine Supervisory Instrumentation or Vibration Monitoring in general please feel free to contact us.