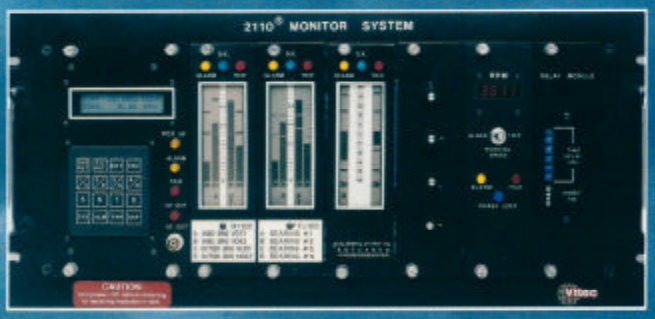
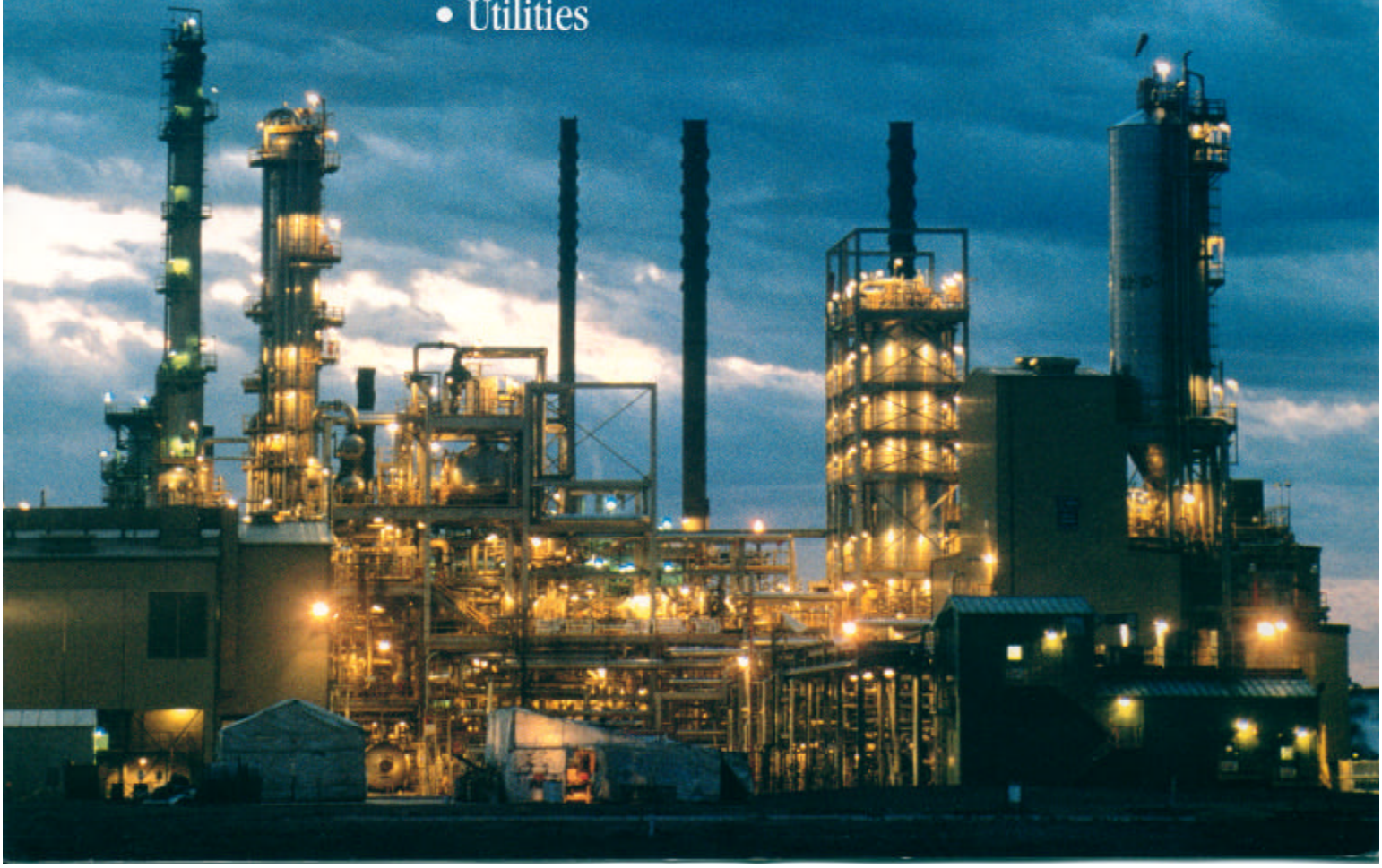
2110 Monitor System

Continuous Protection for Process Machinery

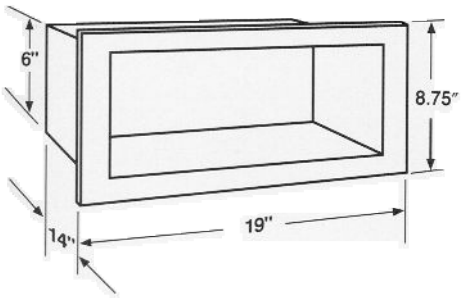


- Pipeline
- Refining
- Petrochemical
- Pulp & Paper
- Water & Wastewater
- Manufacturing
- Utilities

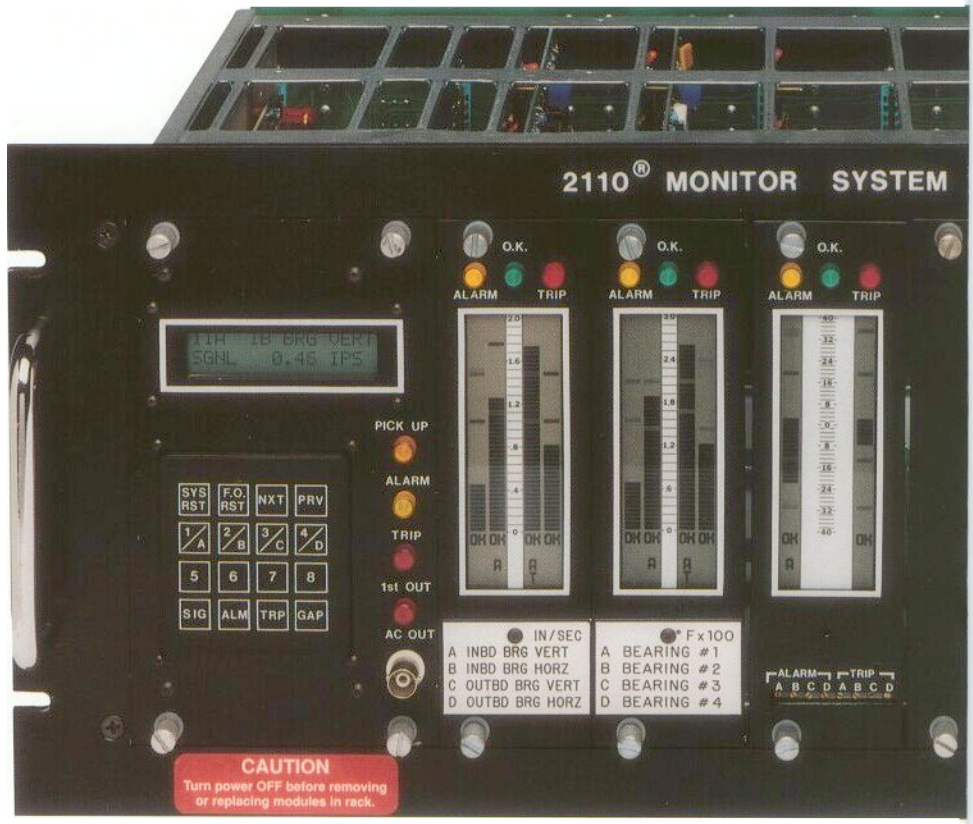


2110 Monitor

1 Mounting Rack



The first rack in each system is referred to as the "Master" rack, as it will typically house the control module/power supply and up to six additional monitoring modules. Additional mounting racks are referred to as "Slave" racks, and are capable of housing up to eight monitoring modules, or specialty modules, in any combination.



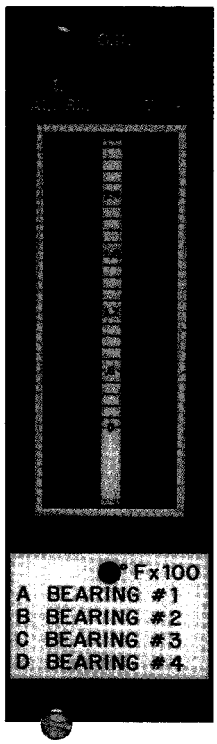
2 Control Module/ Power Supply

The 2110 Control Module/Power Supply is a double-wide module located in positions one and two of the master rack. This module is capable of operating up to 248 channels of continuous monitoring. The touch control keypad allows for system interrogation, providing such features as monitor point identification, digital display of measured values, alarm and trip limit verification, system reset, and gap.

LED indications for malfunctioning pickups, alarm warning and trip warning conditions, and first-out indications are located on the front panel, providing the operator a quick visual indication of the status of the channel being interrogated. A buffered AC signal is brought to a single BNC connector, allowing analyzers or other devices to be interfaced easily.

By selecting a channel via the keypad, the proportional signal is automatically brought to the output jack. Channels can be selected either by the "next" or "previous" keys, or by the lettered/numbered keys — you cannot make a wrong keystroke.

System A custom syste assembled fro



3 Signal Conditioning Module

High-Density Monitoring Modules

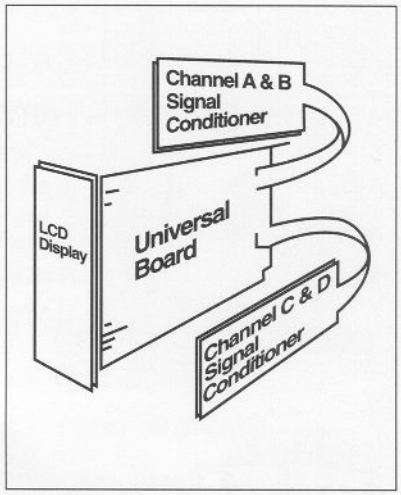
Plug in modules with bar graph displays have continuous signal conditioning for up to four channels of input per two inch wide module. In addition to displaying the level of the measured channel, the bar graph display indicates both the alarm and trip setpoint for each of the channels through the use of blinking segments in the bar graph. Monitoring points which require four setpoints use two module channels per individual input. In general, there are five different types of signal conditioning modules. Type "PV-1" modules monitor four separate transducers with one positive alarm and one positive trip setpoint per transducer. Type "PV-2" modules monitor two separate transducers with one positive and one negative alarm and trip setpoint per transducer. Type "PV-3" modules have the same setpoint configuration as the "PV-2" modules but ulilize a dual voting system for each point of monitoring. Type "PV-4" modules have channels A & B configured per Type "PV-1" and channels C & D configured per Type "PV-2". Type "PV-5" modules monitor four separate transducers with one negative alarm and one positive trip setpoint per channel. Other modules can be custom tailored to specific application requirements.

The Key to Powerful System Flexibility...

The high-density monitoring modules are built using four simple, reliable components—the universal board with four-channel LCD display and dual signal conditioning cards. Measured values are continuously displayed on the four-channel LCD. Setpoint levels appear as blinking segments, on each bar graph display. Modules are custom-tailored to fit your precise requirements—there is no operator set-up or programming necessary.

Across the top of each module is a row of color-coded LEDs which indicate the status of that module. If an alarm or trip level has been exceeded, the appropriate LED will energize. Located below each bar graph is an "OK" indication and an "A" or "T", that indicates that channels' status within the module.

Behind each engraved name tag is a row of adjustable pots. The pots allow the operator to independently adjust the alarm and trip setpoint levels for each of the channels. Exact setpoint levels are digitally shown on the control module display, and as a blinking segment on that particular channel bar graph.



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n four standard components

4 Specialty Modules

Digital Speed Module

Input: *Non-Contact Probes*

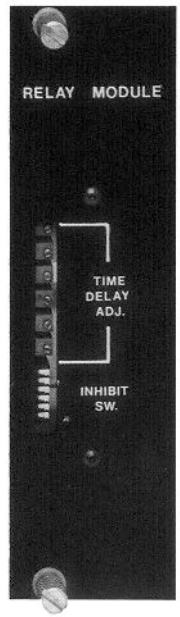
Analog Output: *0-5 VDC, standard or 4-20mADC, optional*

General: *This type of module provides a single channel of speed monitoring. Digital circuitry is used to allow monitoring accuracies of ± one RPM.*

Display: *A digital LED display is used to give a continuous indication of speed in RPM.*

Setpoints: *Two individually adjustable setpoints are available for alarm and trip purposes. Moving the toggle switch to the alarm or trip position displays the alarm or trip setpoint on the digital display.*

Module size: *2" wide x 6-7/8" high, uses one module space.*



Relay Module

Each relay module contains six (6) relays to be used for alarm or trip purposes.

Rating: *Each relay is a SPDT relay rated at 5 amps at 150VDC non-inductive. However, the relays can also be configured as three (3) DPDT relays.*

Time Delay: *Each relay has an individual, front panel accessible time delay adjustment that can be adjusted from one (1) to fifteen (15) seconds.*

Relay Inhibit: *Each relay can be inhibited individually by a front panel accessible slide switch behind the relay nameplate. Each relay module can also be inhibited by a customer supplied switch closure connected to the rear terminals.*

Relay State: *Each relay can be set individually to be latching or non-latching, failsafe or non-failsafe. Each relay provides a common, normally open and normally closed contact connection on the rear terminal strip.*

Module Size: *2" wide x 6-7/8" high, uses one module space.*

Also available with indicating LEDs.

Key Phase Module

Input: *Non-contact probes*

Analog Output: *None*

Display: *None. This is a special four channel module that provides signal conditioning for key phase application. Each module provides four BNC jacks that provide a pulsed output for each of up to four different key phase channels.*

Operation: *The key phase module provides a 10-volt square wave output signal upon sensing of a slot in the shaft. The circuitry of this module exceeds the API specifications by allowing the input signal circuit to be adjusted for various depths of slots.*

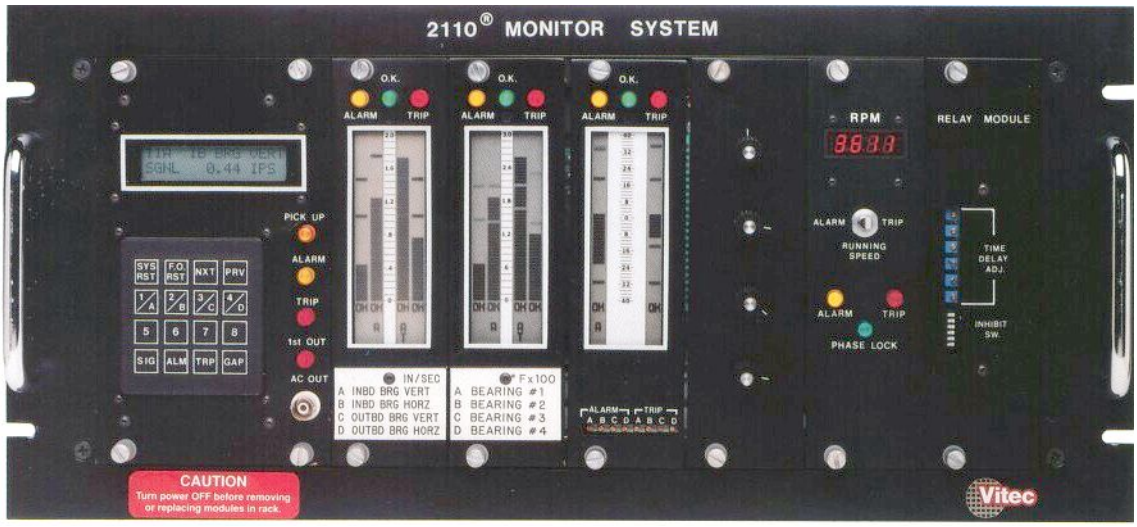
Module Size: *2" wide x 6-7/8"high, uses one module space.*

Blank Panel

Blank panel covers unused mounting rack spaces.

Vitec

A Flexible, Expandable, Reliable Continuous Monitoring System.



Measures vibration, speed, temperature and other process variables in any combination.

The 2110 provides around-the-clock monitoring of machinery and processing equipment and warns operating personnel when predetermined limits have been exceeded. Individual bargraph displays give continuous indications of each channel allowing the operator to view the vibration, speed, or other process variable levels at a glance. LED's on the individual modules energize to indicate alarm, trip and pick-up status.

The unit features high density operation — up to 248 channels of process variable monitoring. Modular construction insures economical system expansion, without the need for field programming or returning the system to the factory for modification.

The system combines the proven reliability of analog signal conditioning with the ease of use and dynamic display capabilities of a microprocessor-based system.

Along with sophisticated hardware and software, the 2110 comes with another valuable feature — Vitec applications support. Our experienced Application Engineers are available to help you custom tailor a system to fit your individual needs or simply answer your vibration questions. A system is only as good as the company that backs it.

Features

- Economical cost per channel with high quality protection
- Single AC output with ability to select up to 248 channels
- Compact design — 32 channels per 19 inch rack
- Local or computer-directed system capability
- Full time alarm, trip and pick-up status indication
- One low power, power supply per 248 channels
- Standardized design — pre-engineered for cost-effective addition of options
- Can be interfaced with existing transducers for cost-effective retrofit of obsolete systems
- Modular design for easy expansion
- Choice of 0-5 VDC or 4-20 mADC analog output
- User-friendly touch-pad for system interrogation
- Easily interfaced with analyzers — computer interface option available
- No operator setup or programming is required

Specifications

Input Power: 110/220 VAC, 50/60 Hz, ±10% line regulation
105-150 VDC, optional

Analog Output: 0-5 VDC, standard 4-20 mA DC, optional
(other ranges available-consult factory)

Bar graph Indicators: 50 segment, 2% resolution

Modes: Acceleration, velocity, and displacement (for vibration)
5-digit RPM indication for Digital Speed Module Degrees Fahrenheit or Centigrade (RTD or Thermocouple input).
Displacement readout for axial position/dual-voting axial position.
Other modes available for additional measured variables (PSI, etc.).

Ranges: 0-1, 0-2, 0-3, 0-5, 0-10, 0-15, 0-30, 0-40, 0-100, ±30, ±140, ±150, ±60

Input Devices: Vitec supplied transducers, or others

Filtering: High-pass, low-pass, bandpass fixed filtering available, optional (consult the Vitec factory)

Module Sizes: Control module 4" x 6-7/8", Monitoring/Relay modules 2" x 6-7/8"

Enclosures: NEMA 4 or NEMA 12, stand-up or panel mount, optional

***Note:** A nominal engineering charge may be applicable for certain special order items or options. Consult the Vitec factory for engineering estimates. Tailored to fit your precise requirements — there is no operator setup or programming necessary.*

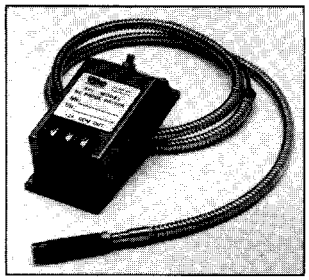
Other Vitec Products

VITEC SERIES 4000 ACCELEROMETERS

- Measure vibration frequencies from two to 10,000 HZ, ideal for machines ranging from cooling tower fans to high speed gear boxes
- Provide high outputs for cable runs to 1,000 feet
- Equipped with heavy duty connectors and stainless steel bodies designed to stand up to rugged industrial applications.

VITEC MODEL 4033/4034 VELOCITY PICKUPS

- Equipped with extra-strong aluminum body, easy to install and compatible with most makes of monitoring equipment
- Self-generating, no power required
- Designed with electro-magnetic damping for uniform response over a wide frequency range (4033 only)
- Provides high output for cable runs to 1,000 feet with optimum signal-to-noise characteristics



VITEC NON-CONTACT PROBE

- Incorporates rugged, compact design
- Measures shaft vibration or position without contact
- Provides wide frequency response
- Conforms to API Standard 670
- Offers high degree of tolerance to temperature changes
- Provides 200 MV/MIL output

MARK 400

PORTABLE REAL TIME ANALYZER. The first full function, low cost, light weight, easy-to-use analyzer for field analysis, includes FFT analysis, AC signal analysis, water-falls, balancing and built-in diagnostic programs. Connect the Mark 400 to the A.C. output of the 2110 for a detailed analysis of your machines without leaving the control room.

Vitec

Protecting the machines of production for more than a quarter-century
24755 Highpoint Road, Cleveland, Ohio 44122
(216) 464-4670 • Fax: (216) 464-5324