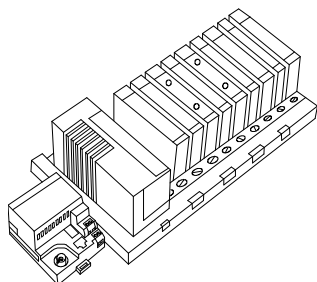


FieldMonitor* Machinery Protection System

Bently Nevada* Asset Condition Monitoring



Description

The FieldMonitor* Machinery Protection System provides traditional vibration and thrust position monitoring functions, while also providing a distributed architecture that you can tightly integrate with numerous machinery control systems. The system is capable of making the following measurements:

- Shaft radial vibration or shaft axial thrust position monitoring using proximity probes
- Casing seismic vibration measurements using either acceleration or velocity transducers

The system has been specifically designed to meet the needs of machinery Original Equipment Manufacturers and packagers. The design significantly reduces wiring and installation costs and allows you to mount the system on the machine skid. The system can directly accept selected proximity probe types without the need for an external Proximitor* sensor. The appropriate network adaptor permits single-cable digital communications between the FieldMonitor System and its host control system. Available network adapters support a variety of industrial communication networks such as ControlNet™, DeviceNet™, PROFIBUS™ DP, MODBUS™, and Allen-Bradley Remote I/O. Thus, any control system supporting these protocols as part of its input/output (I/O) structure can use the FieldMonitor System.

A single FieldMonitor Terminal Base can accommodate from 1 to 8 channels, plus a Keyphasor* transducer. When additional channels are needed, you can add other terminal bases as required. A separate terminal base is needed for each shaft rotative speed as each terminal base can accommodate only one Keyphasor transducer.

Distribute the bases on the machine where installed transducers must connect to them, and then connect the terminal bases to the host control system by means of the appropriate network adapter.

The FieldMonitor Machinery Protection System uses embedded technology from Allen-Bradley. Because it physically connects to Allen-Bradley's 1794 series Flex™ I/O family of products, including Allen-Bradley and third-party network adapters, it provides additional flexibility and application options when used in conjunction with Flex I/O. For example, the FieldMonitor system can share the same network adapter with other Flex I/O modules, if desired.

The host control system regards the FieldMonitor Machinery Protection System as an intelligent I/O node that can monitor its transducer inputs, compare measured values against user-configurable alarms, and perform sophisticated self-tests that ensure that the installation maintains monitoring system integrity at all times. You configure the system either via special configuration software designed to work in conjunction with the controller's programming environment, or by simply issuing appropriate commands from the controller.

You can expand the FieldMonitor Machinery Protection System to machinery management system that is capable of processing transient data by adding the 1701/22 FieldMonitor Management Interface Module. This module provides parallel waveform data capture over all machine speed conditions, including startup and shutdown. The module plugs directly into the terminal base and connects over an Ethernet network to a computer running System 1* or Data Manager* 2000 Software with Modification 145001-XX for the Display Software. The Ethernet network and the 1701/22 operate independently of and separately from the protection system and the industrial network that links FieldMonitor to its host control system.

A FieldMonitor Machinery Protection System requires at least one Terminal Base, Power Supply, Network Adapter, and 2-channel monitor module with its respective transducer I/O module (see note 1) You can add additional 2-channel monitor modules and their respective transducer I/O modules as required. A weatherproof housing is also available from Bently Nevada*, Inc.

Table 1: FieldMonitor System Components

Part Number	Description	Specification and Ordering Information
02200XXX	Network adapter	141477-01
1701/01-XX	FieldMonitor Configuration Software for RSLogix5	141613-01
1701/02-XX	FieldMonitor Configuration Software for RSLogix5000	147407-01
1701/05-01	Terminal Base (see note 2)	141478-01
1701/06-01	Isolator Terminal Base (see note 3)	141573-01
1701/10-01	24-volt dc Power Supply	141479-01
1701/15-01	Proximitor Input Monitor	141483-01
1701/22-01	FieldMonitor Management Interface Module	141969-01
1701/25-01	Seismic Input Monitor	141484-01
1701/30-01	Dynamic Pressure Monitor	148763-01
1701/50-XX-XX	Weatherproof Housing	141615-01
170133-XXX-XX	Internal 3300 Proximitor Module	141481-01
170150-XXX-XX	Internal 3300 NSv™ Proximitor Module	147386-01
170172-XXX-XX	Internal 7200 Proximitor Module	141482-01
170180-XX-XX	External Transducer I/O Module	141480-01
170190-XX	Dual galvanic Isolator (see note 3)	141573-01

Notes:

1. Transducer I/O module as used here refers to either an internal Proximitor sensor module (170133-XXX-XX, 170150-XX-XX or 170172-XXX-XX) or an external transducer I/O module (170180-XX-XX).
2. The 1701/05 Terminal Base is for applications in which transducers are installed in non-hazardous, Division 2 or Zone 2 areas, or which use external safety barriers. For more information, refer to Specifications and Ordering Information (part number 141478-01) for the 1701/05 Terminal Base.
3. The 1701/06 Isolator Terminal Base and 170190 Dual Galvanic Isolator are used when you will install transducers in Division 1 or Zone 1 areas, and you desire an intrinsically safe installation without the use of external safety barriers. For more information, refer to Specifications and Ordering Information (part number 141573-01) for the 1701/06 Isolator Terminal Base and 170190 Dual Galvanic Isolator.

Specifications

See individual Specifications and Ordering Information for each 1701 module listed in Table 1.

Ordering Information

See individual Specifications and Ordering Information for each 1701 module listed in Table 1.

In addition, you will require transducers and cables, which you can order from our standard transducer list. You may also require other accessories such as network parts, fittings, etc., that will vary depending on the host control system and industrial network you will use.

Accessories

139256-01

User Manual.

141970-01

FMIM User Manual.

144504-01

1701/30 User Manual.

139193-01

Blank slot cover.

138925-XXX-XX

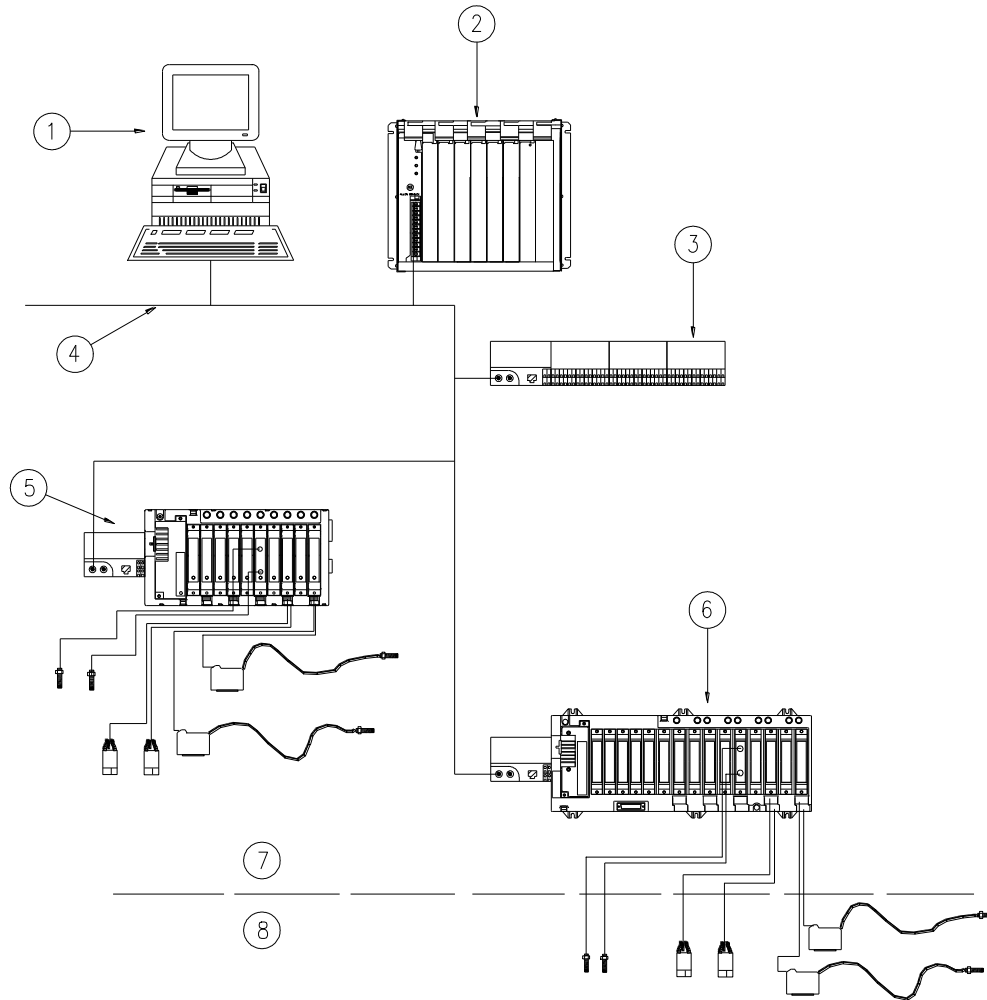
Dynamic cable.

02200794

120Vac/220Vac to 24Vdc power supply. This unit has been used for lab testing, but Bently Nevada, Inc. does not guarantee its use in industrial applications. Contact the manufacturer for more information.

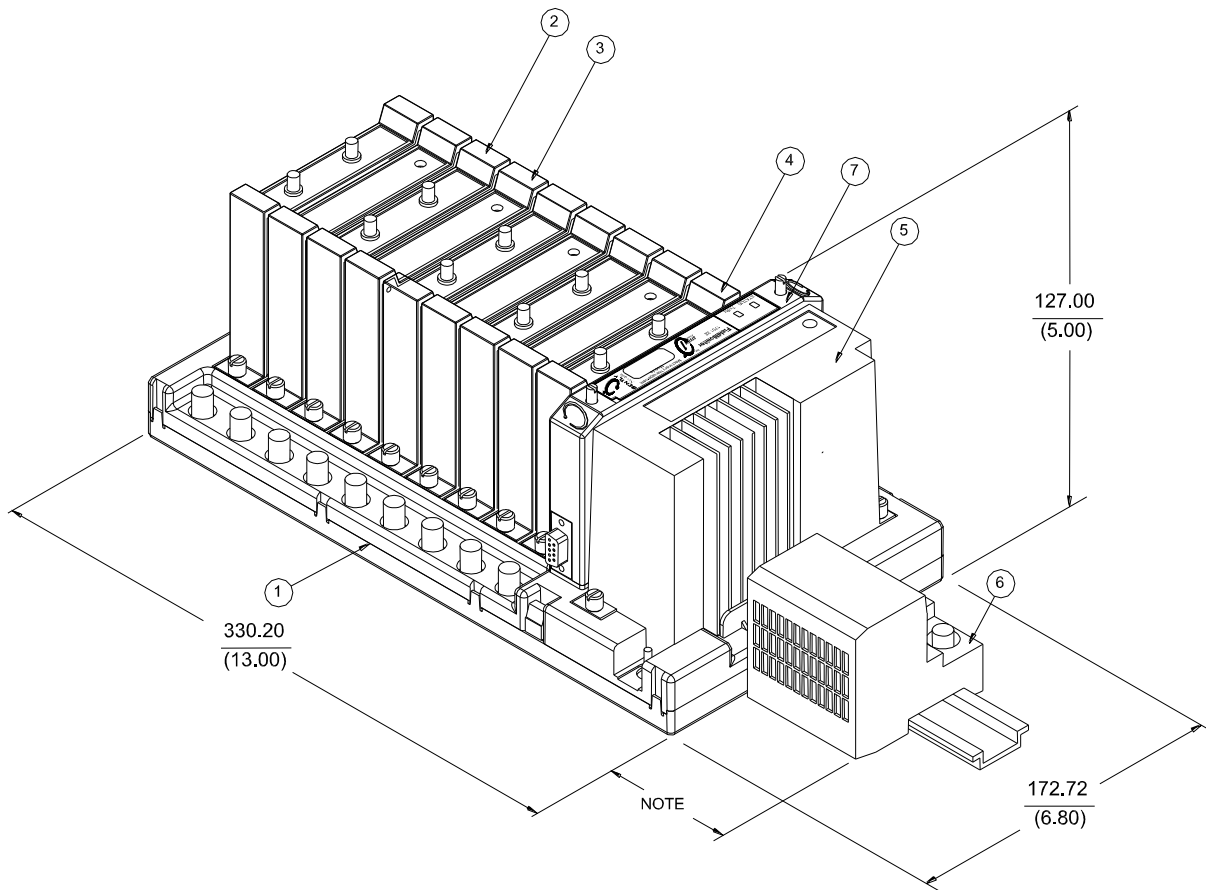
Figures and Diagrams

Note: All dimensions shown in millimetres (inches) except as noted.



1. HMI (Human Machine Interface)
2. PLC
3. A-B Flex I/O (optional)
4. Industrial network
5. FieldMonitor System using the 1701/05 Terminal Base
6. FieldMonitor System for hazardous areas using the 1701/06 Isolator Terminal Base
7. Div. 2 or safe area
8. Div. 1 or Zone 0/1 hazardous area

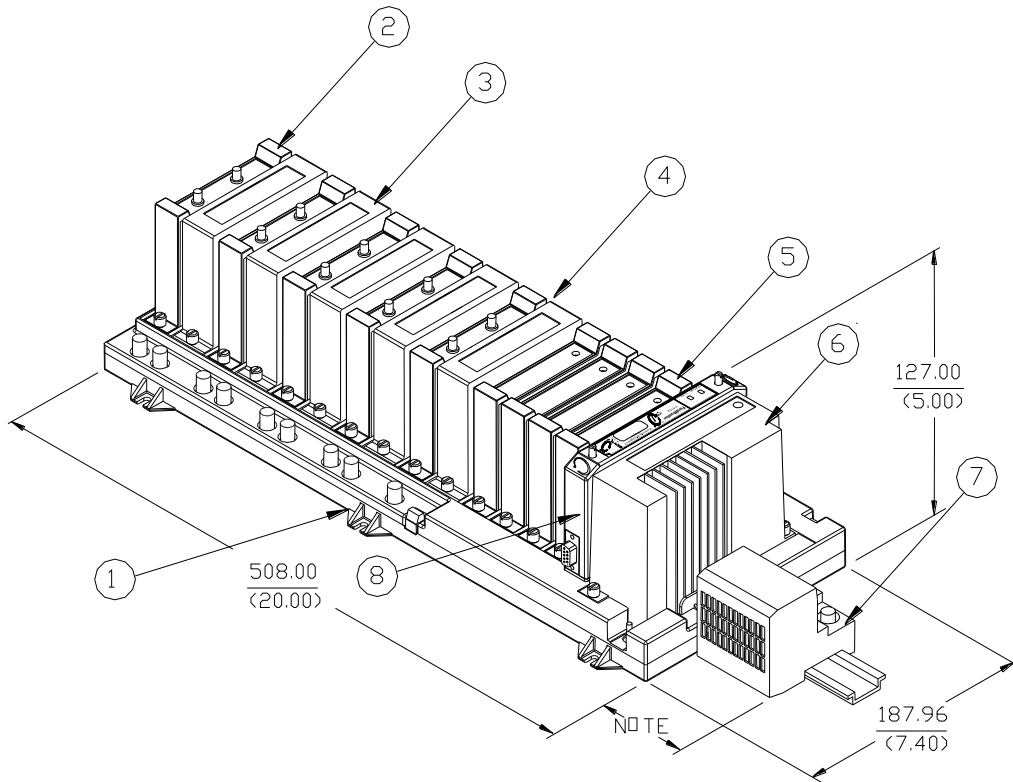
Figure 1: FieldMonitor System Overview Diagram



1. 1701/05 Terminal Base
2. Internal Proximity sensor or transducer I/O modules. One for each monitor
3. Monitors, four slots
4. Keyphasor signal input (Either an internal Proximity sensor or transducer I/O module)
5. Power supply
6. Network Adapter (specific to the Network Communication type)
7. 1701/22 FieldMonitor Management Interface Module (FMIM)

Figure 2: FieldMonitor Product Overview Using 1701/05 Base

Note: See adapter specification sheet for dimensions.



1. 1701/06 Isolator Terminal Base
2. Internal Proximity sensor or transducer I/O modules (one for each monitor)
3. Dual Galvanic Isolators. (1 for each internal Proximity sensor or transducer I/O module)
4. Keyphasor signal input (Isolator and internal Proximity or transducer I/O module)
5. Monitors, four slots
6. Power supply
7. Network adapter (Specific to the Network Communication type)
8. 1701/22 FieldMonitor Management Interface Module

Figure 3: FieldMonitor Product Overview Using the 1701/06 Isolator Terminal Base

Note: See adapter specification sheet for dimensions

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 DeviceNet is a trademark of the Open DeviceNet Vendors Association (ODVA)
 Allen-Bradley and Flex are trademarks of Rockwell Automation
 MODBUS is a trademark of Modbus-IDA
 PROFIBUS is a trademark of the PROFIBUS User Organization

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