



Vibration Monitoring System for Fin Fan

Funan Field



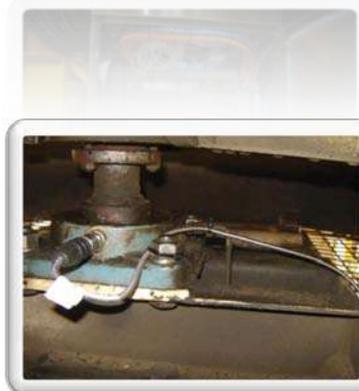
Advance Siam Tech Co., Ltd



AST



Chevron Thailand and Exploration Funan Platform

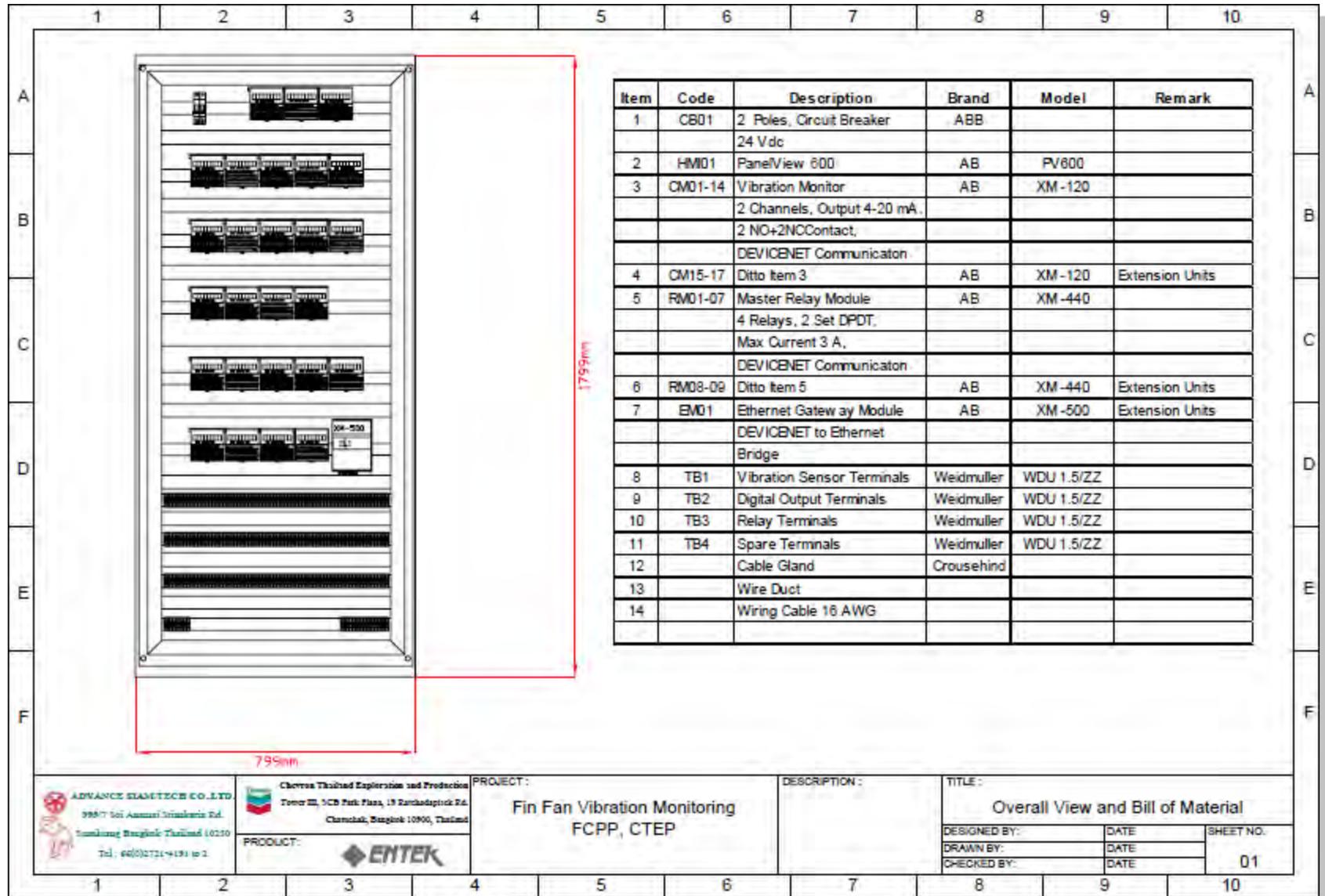


Most Valued Global Provider of Predictive Maintenance Solution

Monitoring Cabinet



Cabinet Layout



ADVANCE ELECTECH CO. LTD
 988/7 Soi Anusorn 11, Bangkok Rd.
 Suanlumpong Bangkok Thailand 10250
 Tel : 66(0)2721-9191 to 2

Cherxes Thailand Exploration and Production
 Tower III, 5CB Park Plaza, 19 Zankadapitok Rd.
 Charoat, Bangkok 10900, Thailand

PRODUCT: **ENTEK**

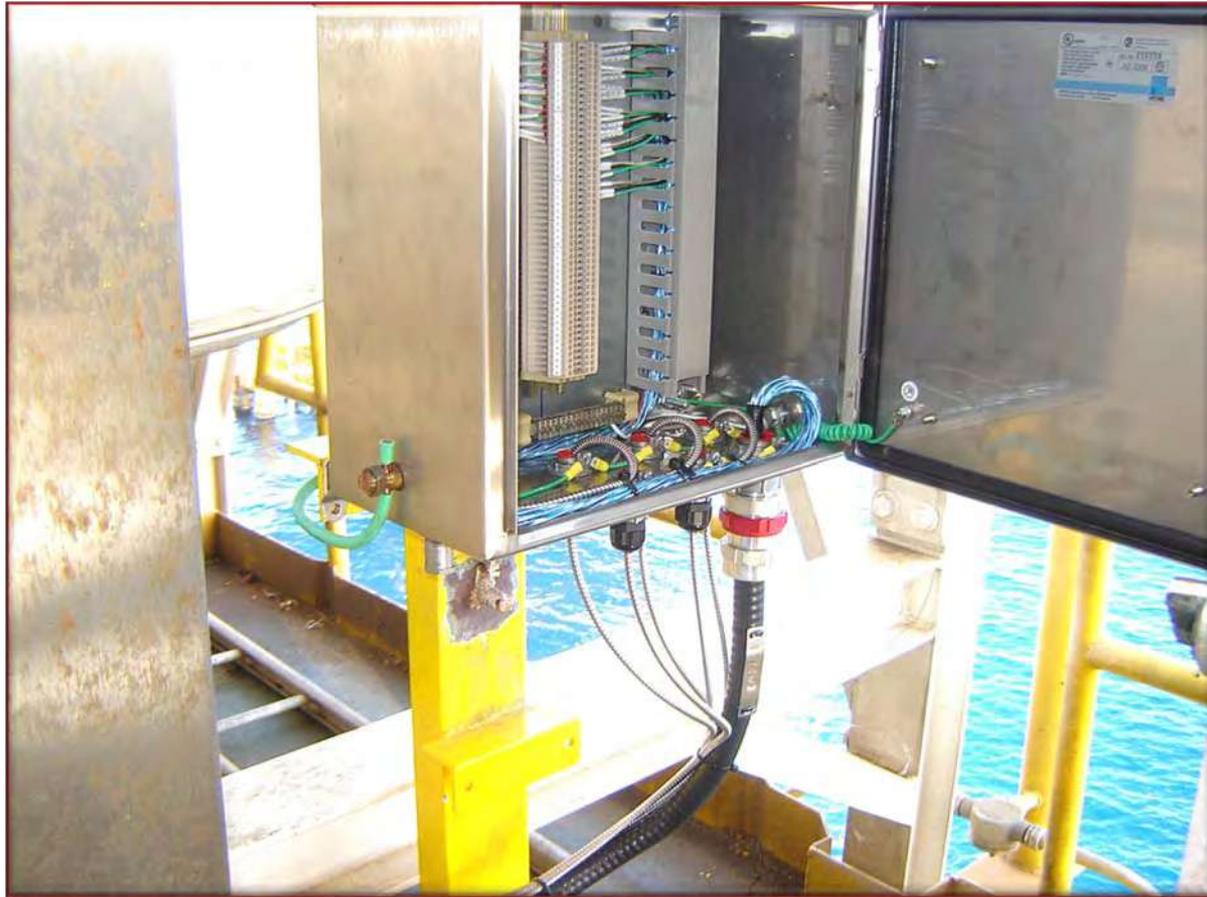
PROJECT: **Fin Fan Vibration Monitoring
FCPP, CTEP**

DESCRIPTION :

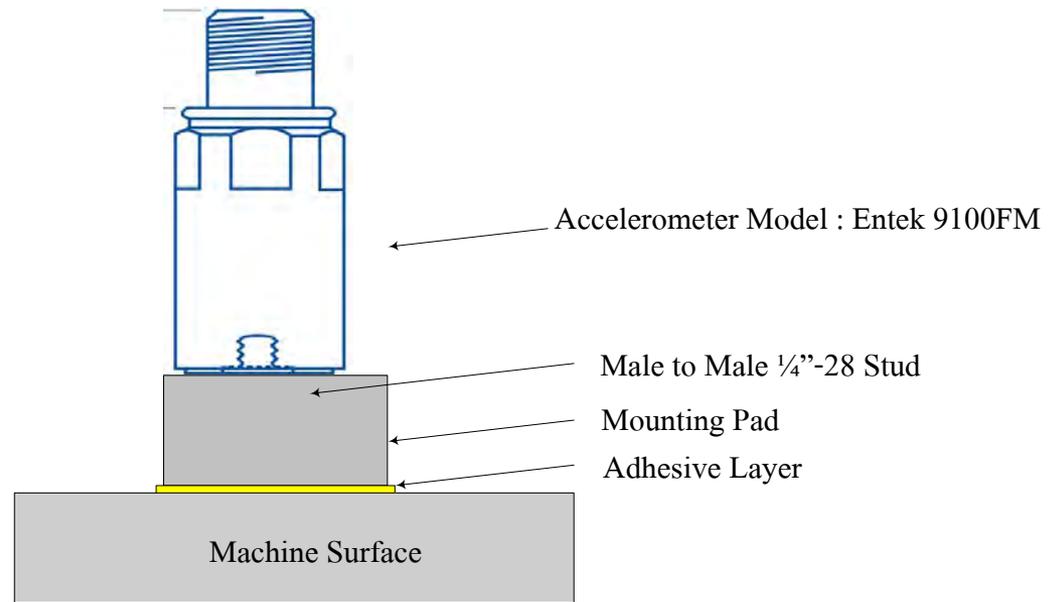
TITLE : **Overall View and Bill of Material**

DESIGNED BY:	DATE	SHEET NO. 01
DRAWN BY:	DATE	
CHECKED BY:	DATE	

Junction Box



Sensor Installation



Surface Preparation Tool

- Scrub off the machine surface desired to install the sensor on with the spot face tool (Shown as the picture below) attached to the gimlet



Mounting Pad Installation

- Dry the scrubbed surface. Heavy grease, oil and dirt should be wiped away.
- Apply adhesive (LOCTITE 330) amount to the spot face and seat the model SF8 pad with a turning motion.



Sensor Installation

- Fill the adhesive around the sides of the pad to increase shear strength and assist electrical isolation. The working time is 5 minutes but may vary depending on the ambient temperature.
- Do not get epoxy in the sensor mounting surface.

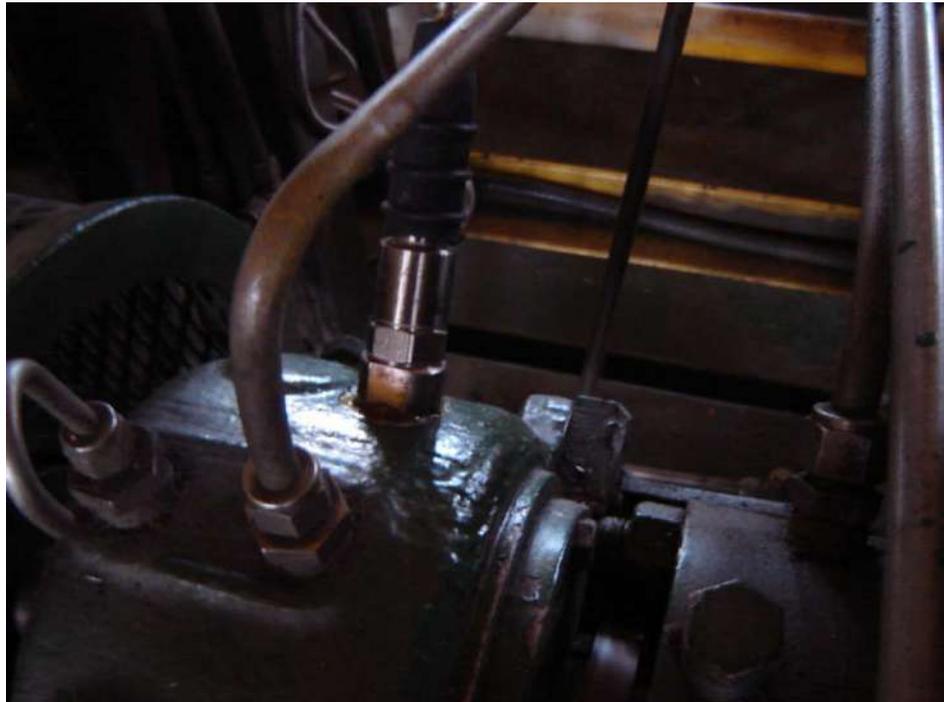
Stud Installation

- Apply the Loctite's thread lock type 242 about 2-3 drops to the tapped hole in the sensor.
- Screw the male to male $\frac{1}{4}$ -28 stud (as shown below) into the sensor and seat with a screwdriver.



Sensor Installation

- Apply the thread lock type 242 to the tapped hole in the mounting pad.
- Torque the sensor with the stud onto the mounting pad to 24 inch-pounds



Vibration Sensor Specification

9100FM General Purpose



DYNAMIC

Sensitivity, $\pm 5\%$, 25°C	100 mV/g
Acceleration Range ¹	50 g peak
Amplitude Nonlinearity	1%
Frequency Response	
$\pm 5\%$	0.6 - 4,000 Hz
$\pm 10\%$	0.4 - 5,000 Hz
± 3 dB	0.2 - 10,000 Hz
Resonance Frequency	20 kHz
Transverse Sensitivity, max.	5% of axial
Temperature Response	see graph

ELECTRICAL

Power Requirement	
voltage source	18 - 28 VDC
current regulating diode ^{1,2}	2 - 20 mA
Electrical Noise, equiv. g, nominal	
Broadband 1 Hz to 10 kHz	50 μ g
Spectral	
10 Hz	4.0 μ g/ $\sqrt{\text{Hz}}$
100 Hz	0.8 μ g/ $\sqrt{\text{Hz}}$
1,000 Hz	0.4 μ g/ $\sqrt{\text{Hz}}$
Output Impedance, max.	100 Ohms
Bias Output Voltage, nominal	8 - 12 VDC
Grounding	case isolated, internally shielded

ENVIRONMENTAL

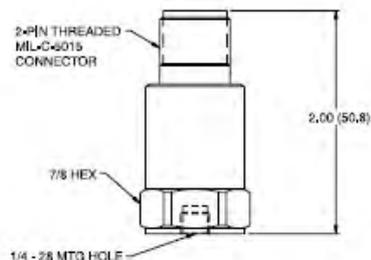
Temperature Range	-54 to 121°C
Shock Limit	5,000 g peak

PHYSICAL

Weight	93 gm
Case Material	stainless steel
Mounting	1/4 - 28 tapped hole
Output Connector	MIL-C-5015, 2 pin
Pin A	signal, power
Pin B	common

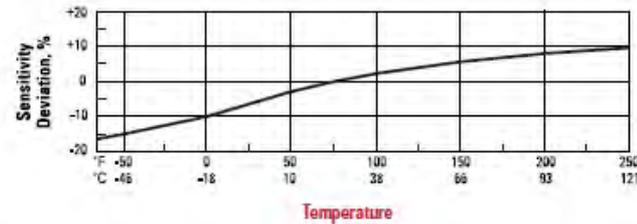
FEATURES:

- Rugged, general purpose
- Corrosion resistant
- Hermetic seal
- Ground isolated
- ESD and miswiring protection



Vibration Sensor Specification (Cont.)

TYPICAL TEMPERATURE RESPONSE



NOTES:

- 1 To minimize the possibility of signal distortion when driving long cables with high vibration signals, 24 to 30 VDC powering is recommended. The higher level constant current source should be used when driving long cables (Please consult Entek Customer Service).
- 2 A maximum current of 6 mA is recommended for operating temperatures in excess of 100 °C.

ACCESSORIES SUPPLIED: 1/4-28 Mounting screw, Calibration data

Factory Mutual Approved Standards	
Division 1	Continuous or Intermittent Hazards
Class 1	Gasses and Vapors
Group A	Acetylene
B	Hydrogen
C	Ethylene
D	Methane
Class 2	Dusts
Group E	Metal Dust
F	Coal Dust
G	Grain Dust
Class 3	Fibers - No subgroups
Temperature Code T4	135 °C (maximum surface temperature)

Ordering Information		
Model	Description	P/N
9100FM	General purpose accelerometer - 100 mV/g, 0.2-10,000 Hz (3dB), top exit, Mil Spec connector.	437851

Amour Cable

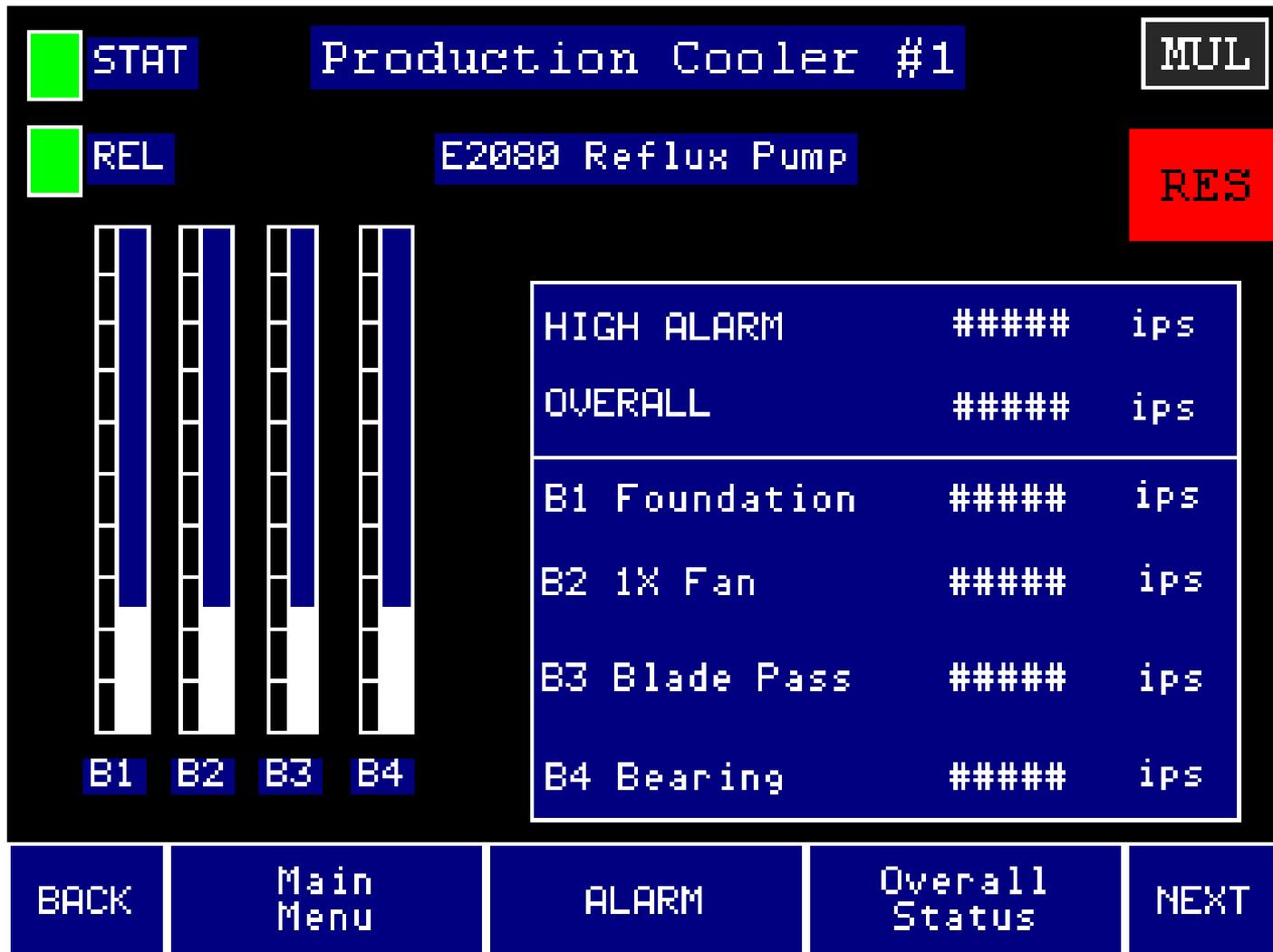
Two (2) pin socket connector with integral, molded splash proof boot with 7.1 mm (0.28") diameter, SST armored jacket with cable, twisted shielded pair wires. xxx.x = Armor length in meters.
yyy.y = Cable length in meters.



Overall Display

VIBRATION OVERALL STATUS (ips)						
█ E1130 █ #####	█ E3131 █ #####	█ E3190 █ #####	█ E2161 █ #####	█ E2115 █ #####		
█ E1131 █ #####	█ E3132 █ #####	█ E3191 █ #####	█ E2170 █ #####	█ E2120 █ #####		
█ E1132 █ #####	█ E3133 █ #####	█ E2060 █ #####	█ E2171 █ #####	█ E2040 █ #####		
█ E1133 █ #####	█ E3134 █ #####	█ E2061 █ #####	█ E2175 █ #####	█ E2045 █ #####		
█ E1134 █ #####	█ E3135 █ #####	█ E2090 █ #####	█ E4180 █ #####	█ E2080 █ #####		
█ E1135 █ #####	█ E1190 █ #####	█ E2091 █ #####	█ E5180 █ #####	█ E2085 █ #####		
█ E3130 █ #####	█ E1191 █ #####	█ E2160 █ #####				Main Menu

Band Display for Individual Channel



Alarm Settings

- Cooling Fan Layout

Cooling Fan

1. Cooling Fans No. : 1130, 1131, 1132, 1133, 2160, 2161, 3130, 3131, 3132, 3133, 2170, 2171, 2060, 2061, 2090, 2091, 4180 and 5180 refer to ISO 2372 class 3

Alert : 7.1 mm/s = 0.28 ips

Danger : 11.2 mm/s = 0.44 ips

2. Cooling Fans No. : 1134, 1135, 1190, 1191, 3190, 3191 and 2175 refer to ISO 2372 Class 4

Alert : 11.2 mm/s = 0.44 ips

Danger : 18 mm/s = 0.71 ips

3. Cooling Fans No. : 3134 and 3135 was manually alarm set as their structure condition

Alert : 11.2 mm/s = 0.44 ips

Danger : 18 mm/s = 0.71 ips

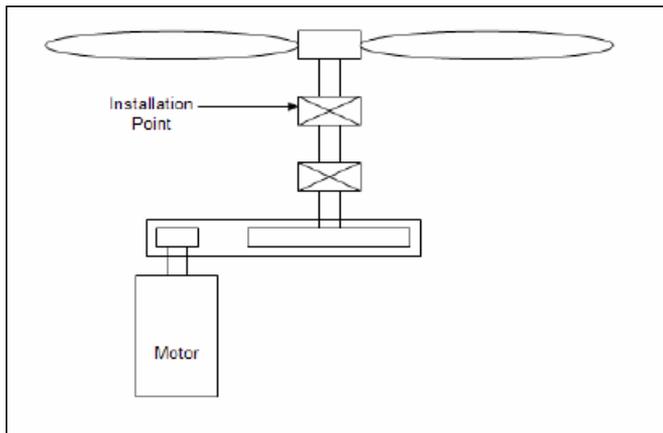
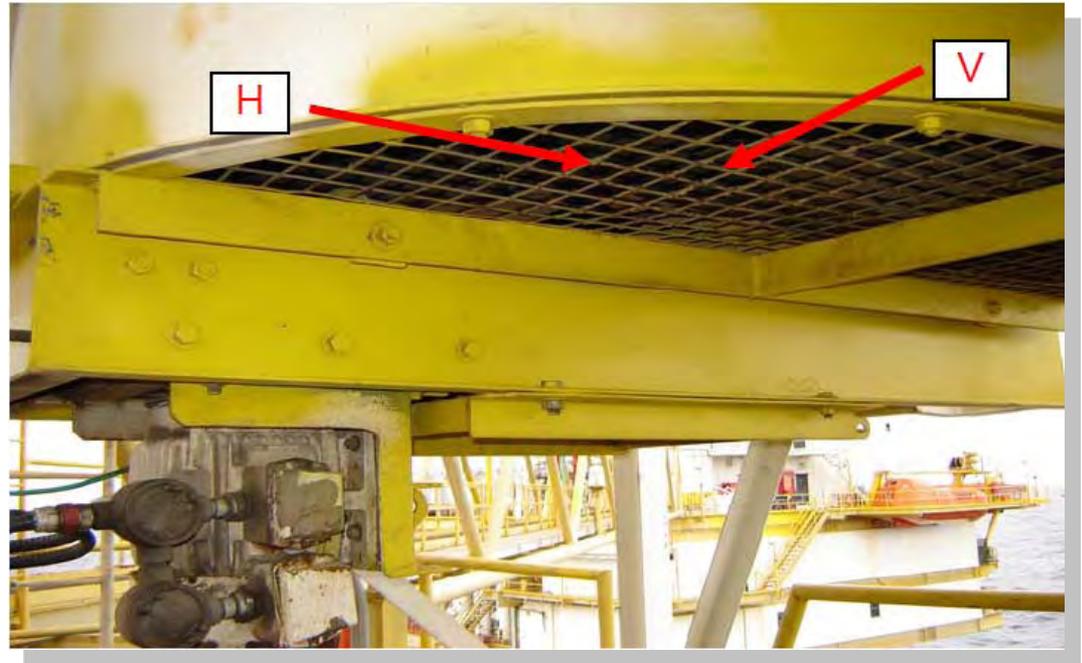
Pump

All 6 Pumps No. : 2115, 2120, 2040, 2045, 2080 and 2085 refer to ISO 10816 Part 3, Group3, External Driven on Relatively Flexible Structure

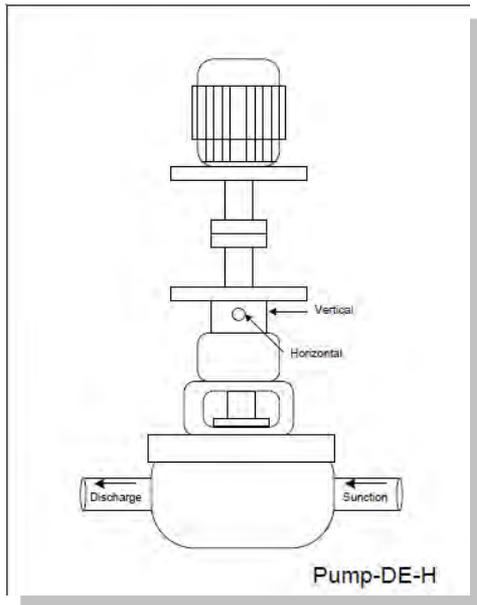
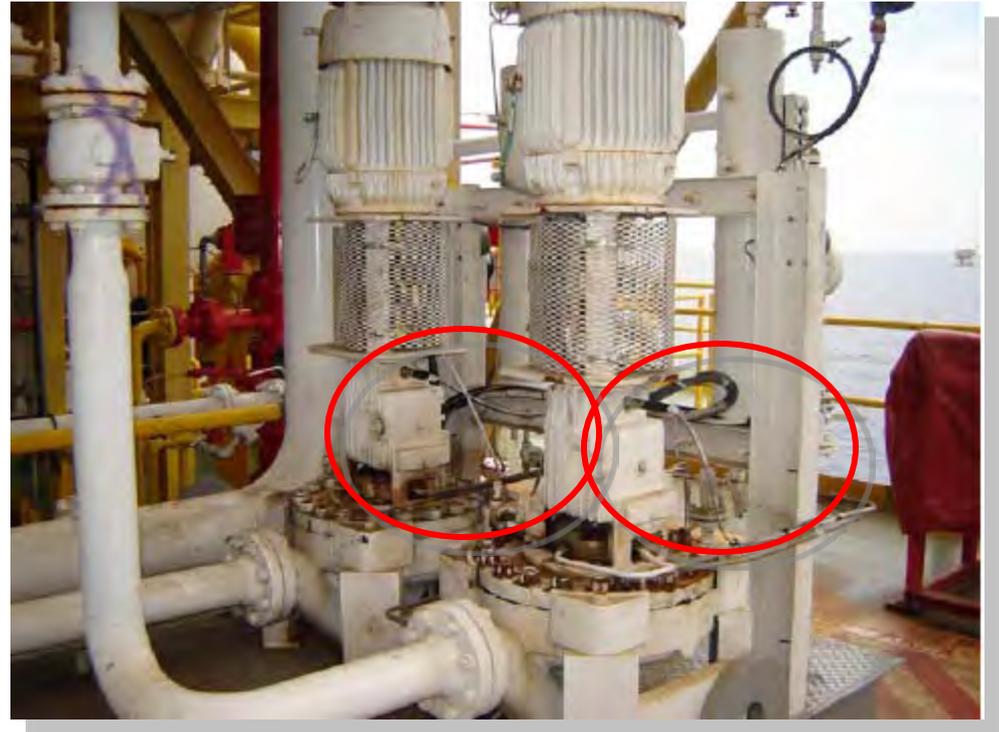
Alert : 7.1 mm/s = 0.28 ips

Danger : 11.2 mm/s = 0.44 ips

Location



Example



Calibration





XM Module



XM-120's Inputs



Shaft Displacement

Includes onboard power supply for non-contact eddy current displacement probes.

Casing Vibration

Includes onboard 4mA excitation for piezoelectric transducers with integrated circuits.



Voltage Input

Supports almost any externally powered or self powering voltage output sensor that produces a calibrated linear signal.



Just *ONE* module for any *DYNAMIC* measurement...

Inputs – 1 Tachometer...



- $\pm 25V$ (50V max. peak to peak)
- 1 to 50,000 events per revolution
- 120k Ω minimum input impedance
- 1 to 1,200,000 RPM (0.0167 to 20,000Hz) speed range
- 500 Hz/sec maximum rate of change

XM-120's Output

Analog

- Two 4-20mA outputs
- Configurable as any of the calculated parameters

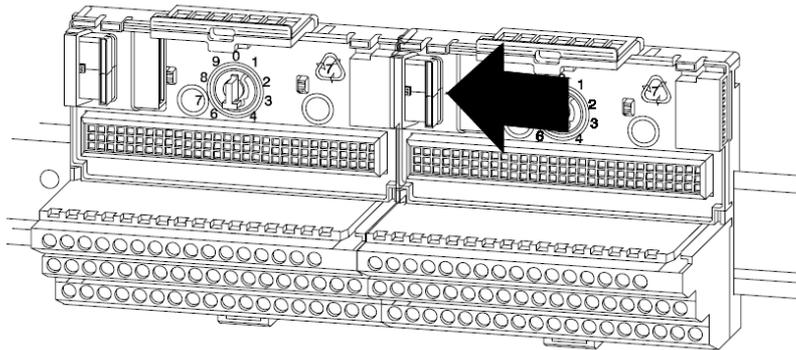


Relays

- Single onboard relay
- Expandable to five (supports one XM-441 Expansion Relay Module)

XM Features

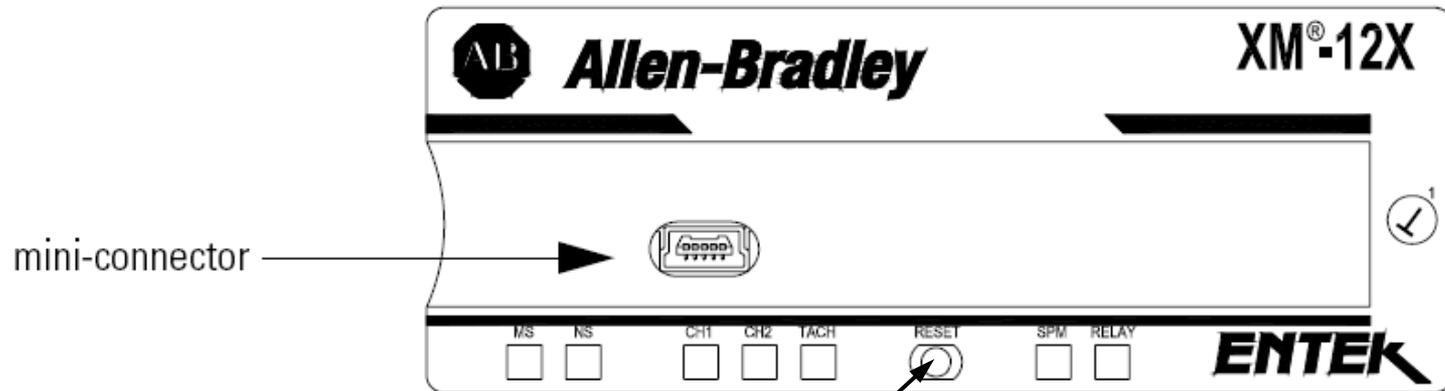
- Communicates between the Module via the DEVICENET



XM Features

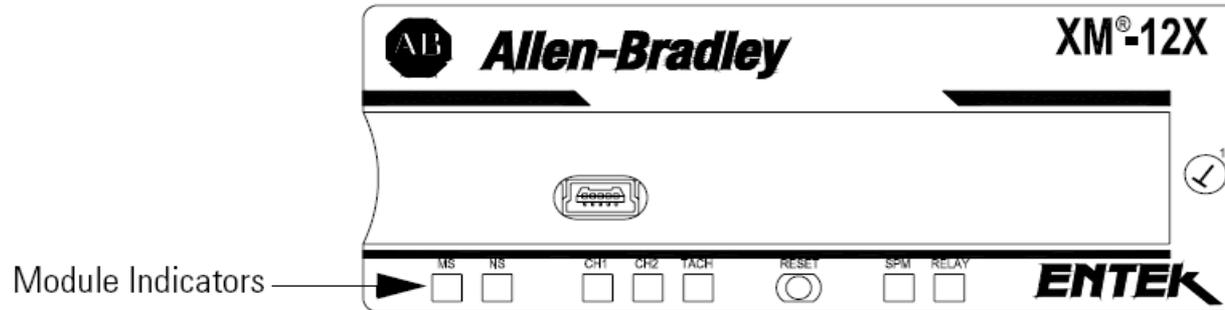


XM Features



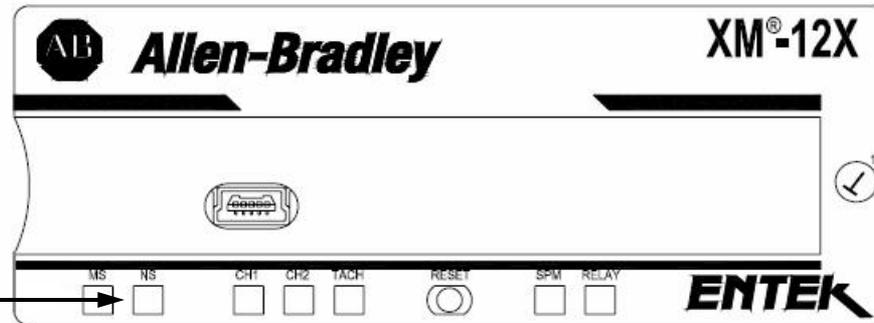
Press the Reset Switch
to reset the relays

XM Features



Color	State	Description
No color	Off	No power applied to the module.
Green	Flashing Red	Module performing power-up self test.
	Flashing	Module operating in Program Mode.
	Solid	Module operating in Run Mode.
Red	Flashing	Application firmware is invalid or not loaded. Download firmware to the module.
		Firmware download is currently in progress.
	Solid	An unrecoverable fault has occurred. The module may need to be repaired or replaced.

XM Features

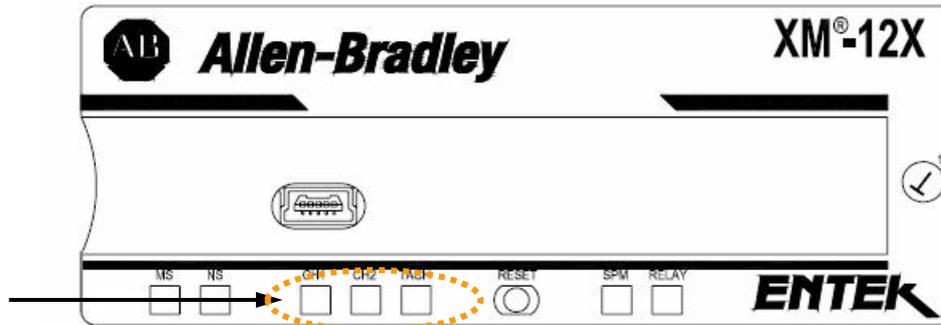


Network Status Indicator

Color	State	Description
No color	Off	Module is not online. <ul style="list-style-type: none"> • Module is autobauding. • No power applied to the module, look at Module Status LED.
Green	Flashing	Module is online (DeviceNet) but no connections are currently established.
	Solid	Module is online with connections currently established.
Red	Flashing	One or more I/O connections are in the timed-out state.
	Solid	Failed communications (duplicate MAC ID or Bus-off).

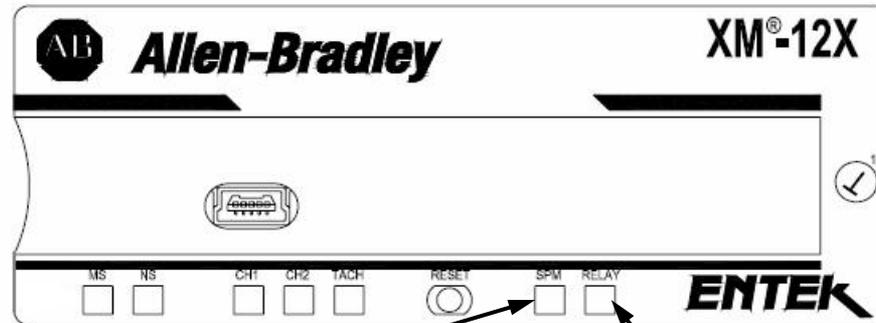
XM Features

Channel 1, Channel 2 and
Tachometer Status Indicator



Color	State	Description
No color	Off	<ul style="list-style-type: none"> • Normal operation within alarm limits on the channel. • No power applied to the module, look at Module Status LED.
Yellow	Solid	An alert level alarm condition exists on the channel (and no transducer fault, tachometer fault, or danger level alarm condition exists).
	Flashing	(Tach LED only) Tachometer fault (no transducer fault) condition exists on the channel.
Red	Solid	A danger level alarm condition exists on the channel (and no transducer fault or tachometer fault condition exists).
	Flashing	A transducer fault condition exists on the channel.

XM Features



Setpoint Multiplier Indicator

Color	State	Description
-------	-------	-------------

Yellow	Off	Setpoint multiplier is not in effect.
	Solid	Setpoint multiplier is in effect.

Relay Indicator

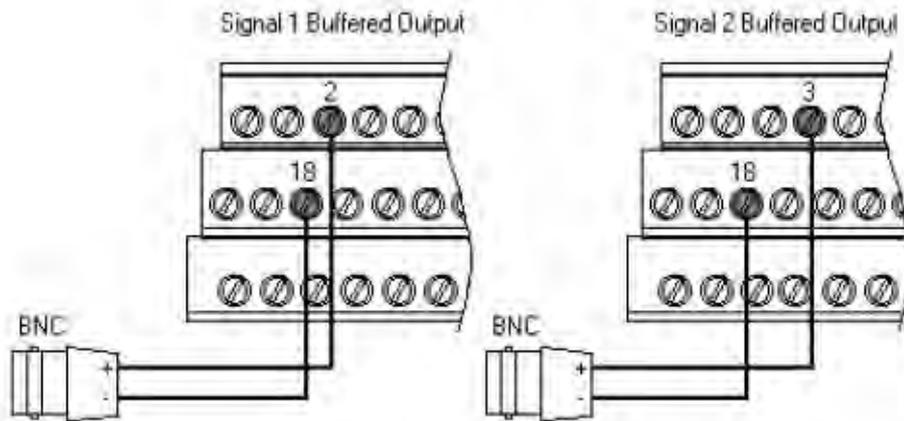
Color	State	Description
-------	-------	-------------

Red	Off	On-board relay is not activated.
-----	-----	----------------------------------

	Solid	On-board relay is activated.
--	-------	------------------------------

XM-120 Features

- Data Collection Tapped by Portable with the Additional Wiring

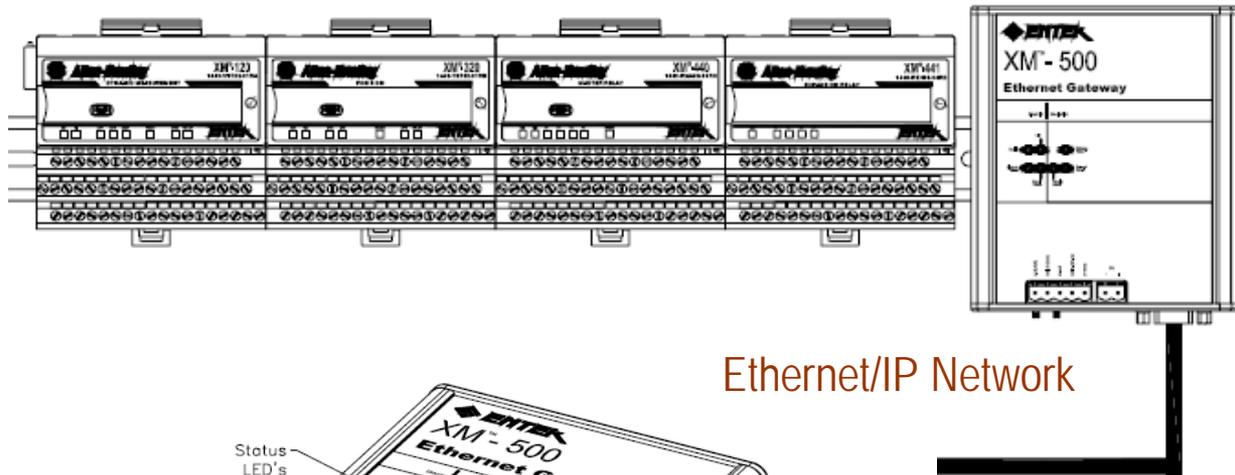


XM-440 Features

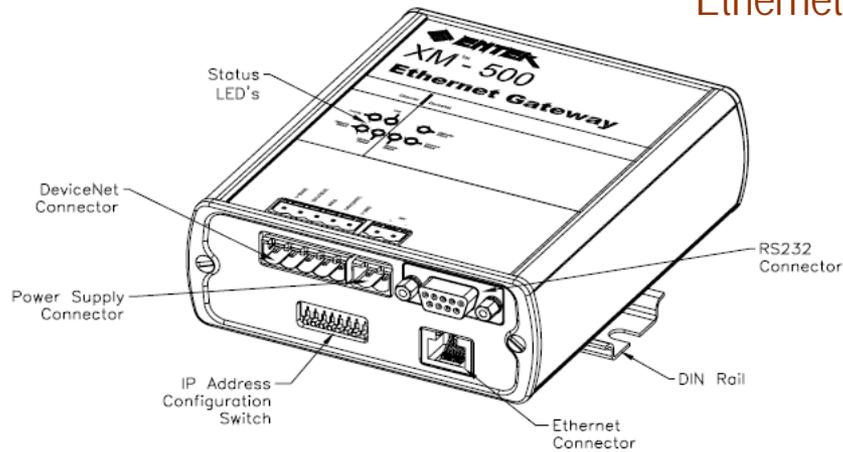
- 4 Integrated Relay (12 Relays Available with XM-441 Expansion Modules)
- All Alarms are able to be configured individual



XM-500 Gateway



Ethernet/IP Network



XM-500 Gateway

XM-500 Address Reference

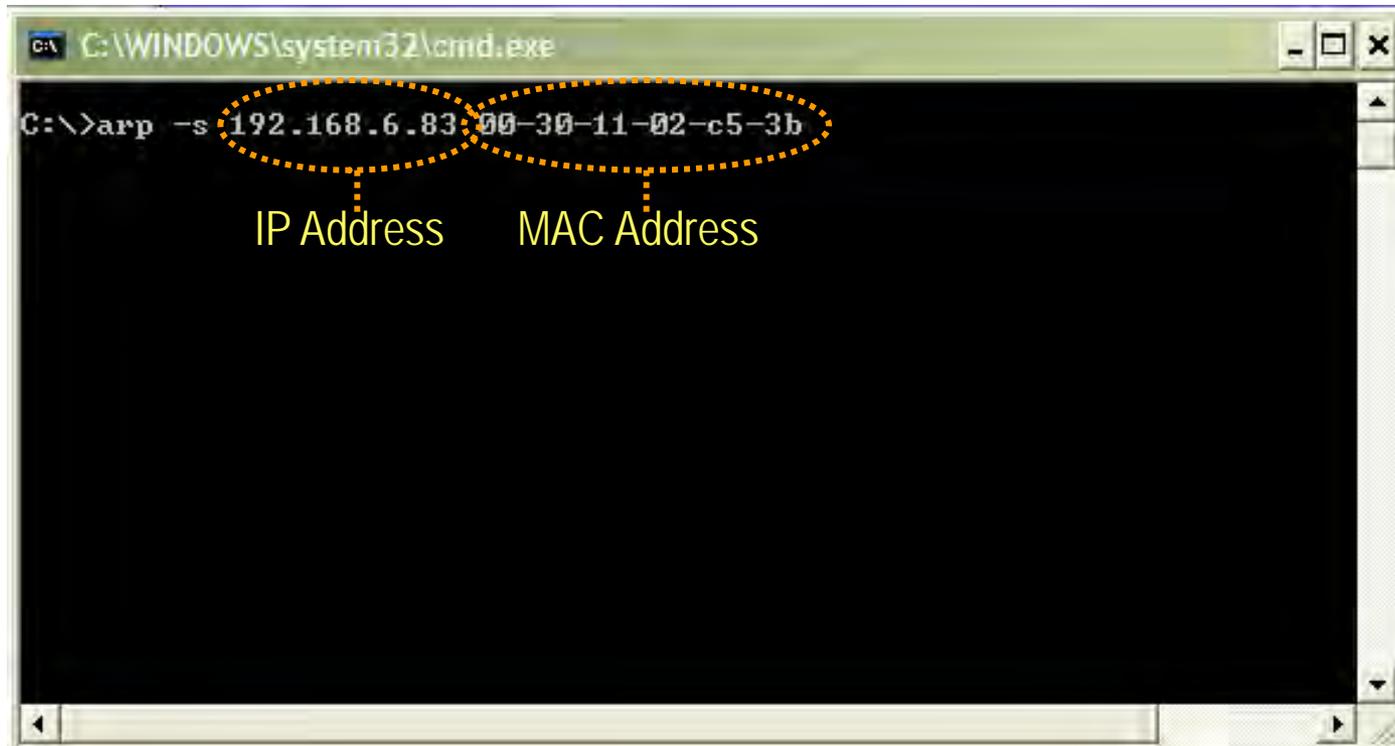
MAC Address : 00-30-11-02-C5-3B

IP Address : 192.168.6.83



XM-500 Gateway

XM-500 IP Configure



```
C:\WINDOWS\system32\cmd.exe
C:\>arp -s 192.168.6.83:00-30-11-02-c5-3b
```

IP Address MAC Address

XM-500 Gateway

XM-500 IP Configure

Address

Hms Configuration
Configuration

AnyBus-S Ethernet 10/100

IP address:

Subnet mask:

Gateway address:

SMTP server address:

DHCP enabled:

XM Software



The Interface between all AB Hardware Instruments and all Rockwell's Software



XM Serial Configuration

The software to local configure and review all data from only one node of stand alone XM Module via the RS232 Serial Cable



Enterprise Online Configuration Utility

The software to configure and review all data from XM Module(s) via the XM-500 and Online Network

XM Software



Real-time interactive display, analysis and management of data from XM systems



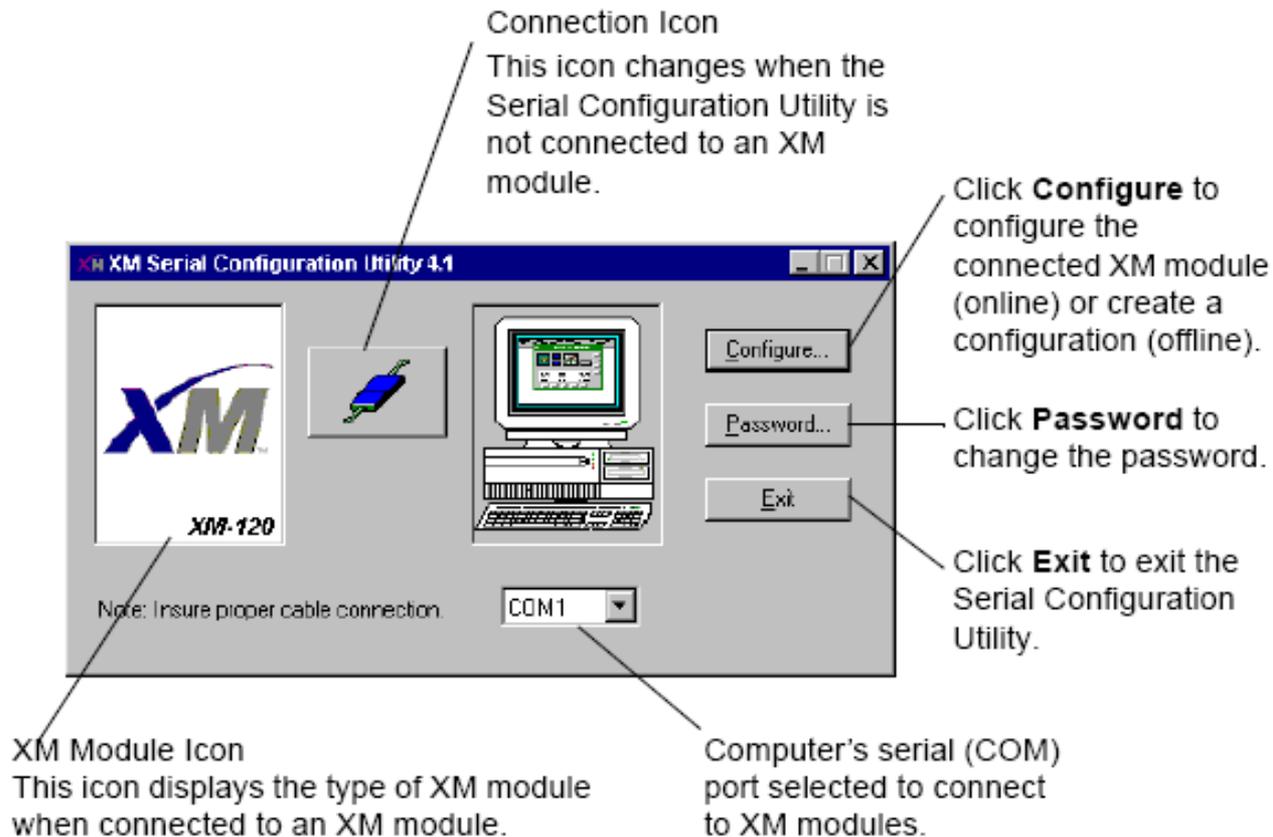
The feature utility in both the EOL Monitor and the Emonitor to harvest and map the data from all XM to the Emonitor's Database



Predictive Maintenance historian, data analysis and reporting system.

Supports multiple data types and sources.

XM Serial Configuration

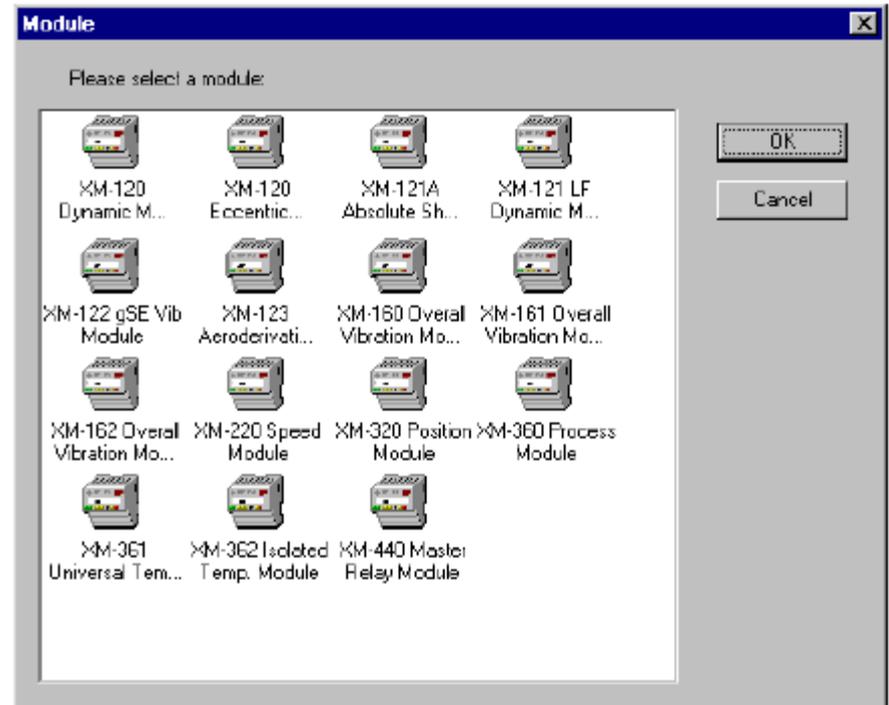


XM Serial Configuration



Not connected to an XM module (offline)

Clicking Configure when not connected to an XM module displays the Module dialog so you can select an XM module.



XM Serial Configuration

XM-120 Dynamic Measurement Module Configuration Tool

File Edit Device Help

Channel 1 | Channel 2 | Tachometer | Alarm, Relay and 4-20 mA Output | Triggered Trend | SU/CD Trend | I/O Data | Module | View Data

Channel name:

Transducer

Enable IEPE power

Sensitivity: mv/mils

Eng. units:

Fault low: Volt

Fault high: Volt

DC bias time constant: sec

Full scale: Volt

Signal processing

Output data unit:

High pass filter: Hz

Sampling mode:

Internal gear teeth:

External gear teeth:

Measurement options

Signal detection:

Overall time constant:

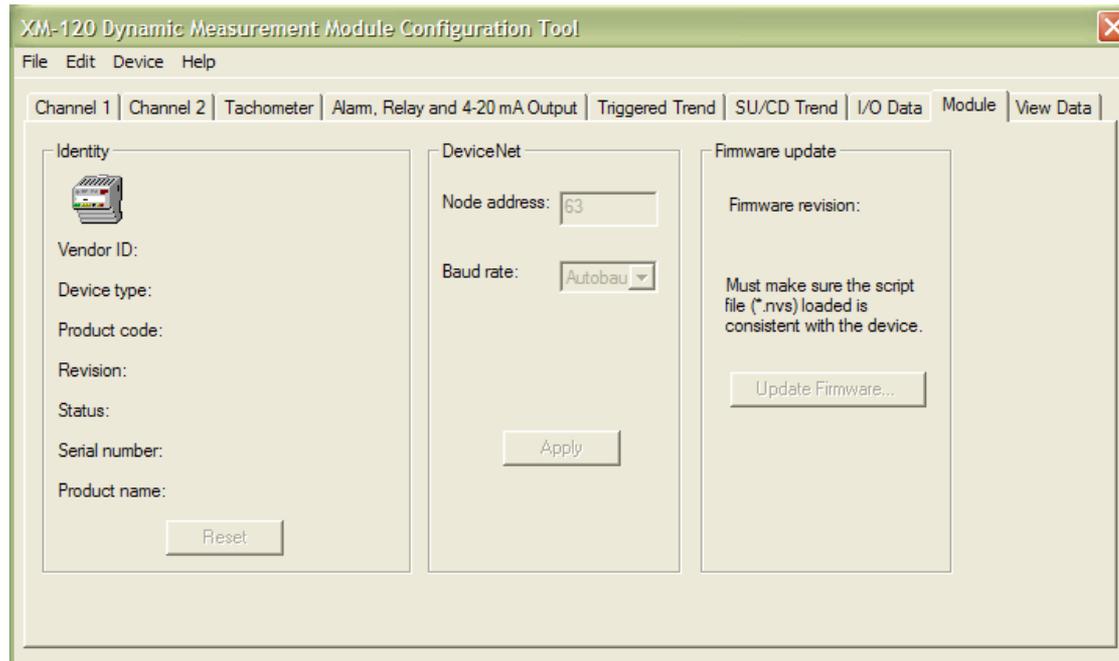
Overall damping factor:

Overall filter:

Low pass filter: Hz

Order of sum harmonics:

XM Serial Configuration



Apply the Node Address to the configured module first (Be aware the assigned number was not used by another)

Then download all configuration to the module and turn it to RUN Mode

XM Serial Configuration Tool

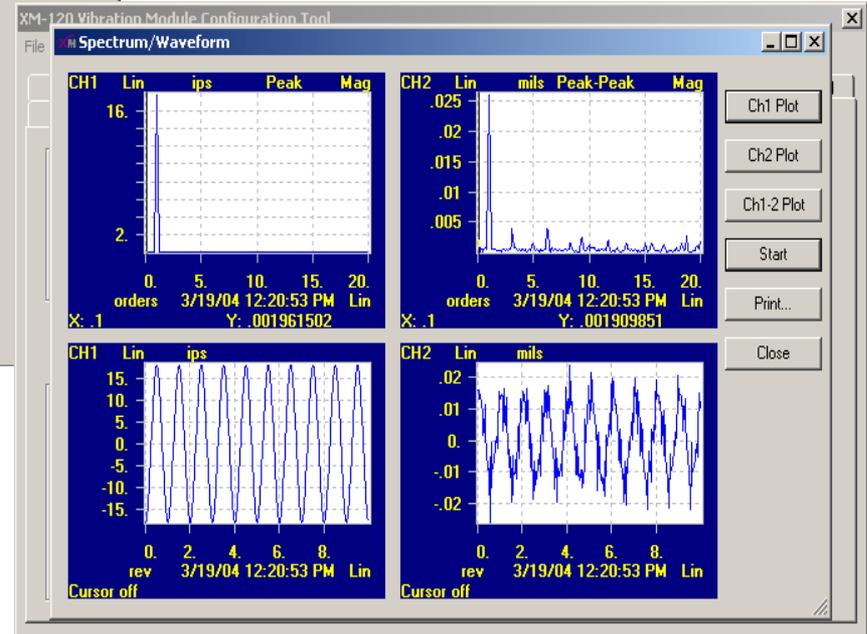
View Channel 1, 2 Data

Ch1 transducer fault:	No Fault	Ch2 transducer fault:	No Fault	Stop
Ch1 DC gap voltage:	1.1143 Volt	Ch2 DC gap voltage:	0.0093 Volt	Cancel
Ch1 sum harmonics:	17.8356	Ch2 sum harmonics:	0.0150	

Ch1 band measurement		Ch2 band measurement	
Status:	No Fault	Status:	No Fault
Band measurement 1:	0.0112 ips	Band measurement 1:	0.0049 ips
Band measurement 2:	17.8352 ips	Band measurement 2:	0.0160 ips
Band measurement 3:	0.0039 ips	Band measurement 3:	0.0018 ips
Band measurement 4:	0.0007 ips	Band measurement 4:	0.0006 ips

Ch1 Not 1X and Vector		Ch2 Not 1X and Vector	
Status:	No Fault	Status:	No Fault
Not 1X value:	0.0206 ips	Not 1X value:	0.0030 ips
Speed value:	3600.0117 RPM	Speed value:	3600.0117 RPM
1X magnitude:	17.8336 ips	1X magnitude:	0.0150 ips
1X phase:	183.0488 deg	1X phase:	100.5000 deg
2X magnitude:	0.0025 ips	2X magnitude:	0.0004 ips
2X phase:	148.7435 deg	2X phase:	59.8754 deg
3X magnitude:	0.0020 ips	3X magnitude:	0.0002 ips

Everything you need to install and configure your XM system – over a serial link

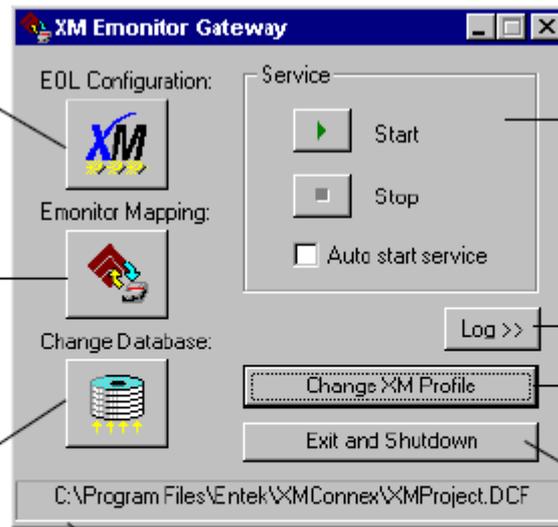


XM Configuration by XM Gateway

Start the XM Online Configuration Utility to configure XM modules and networks

Map XM module measurements to measurement definitions in the Emonitor database

Select the Emonitor database to receive the exported XM data



Use the Service group controls to start and stop data export

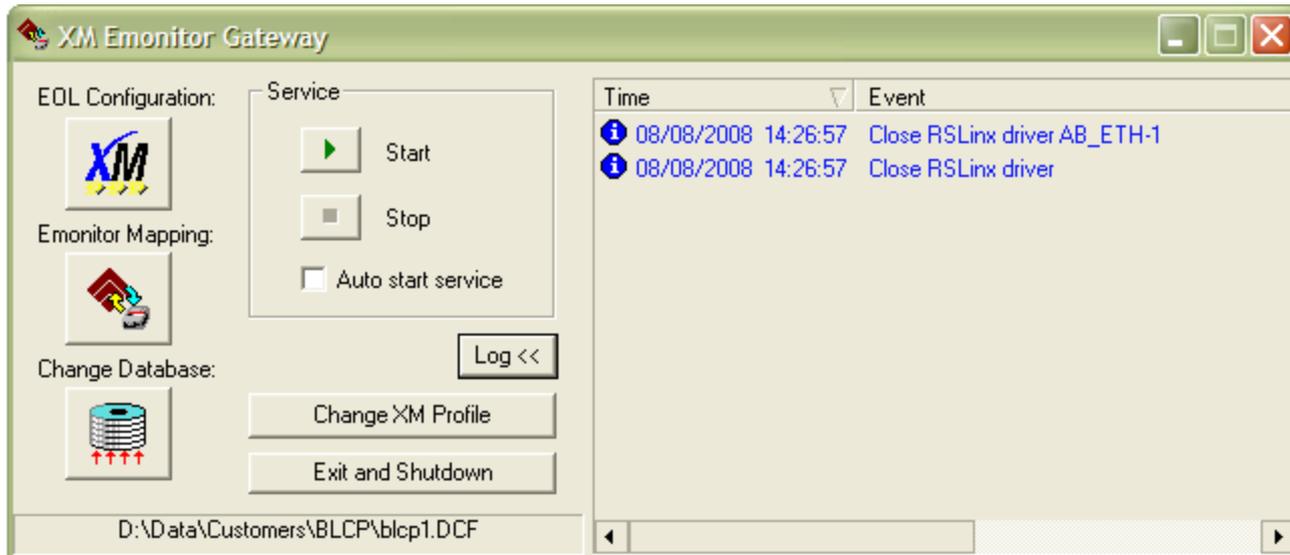
Show/hide the message log

Select the network configuration file

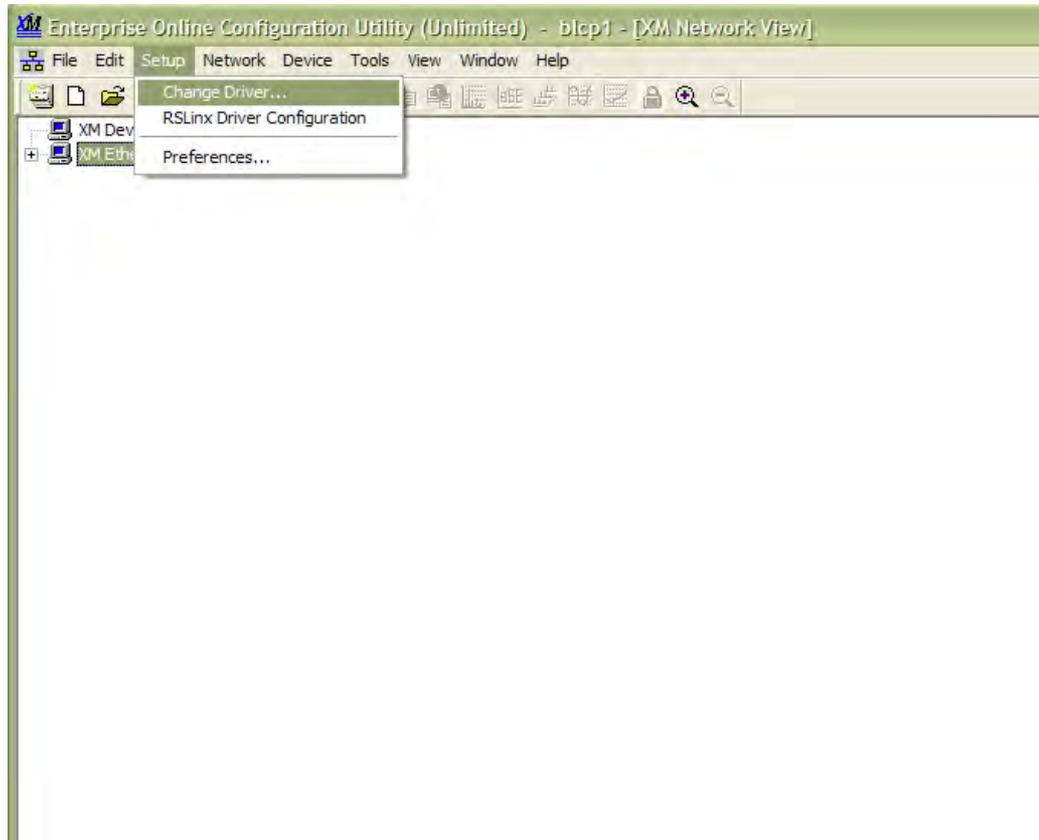
Exit XM Emonitor Gateway and stop exporting data

The status bar shows the name of the current network configuration file

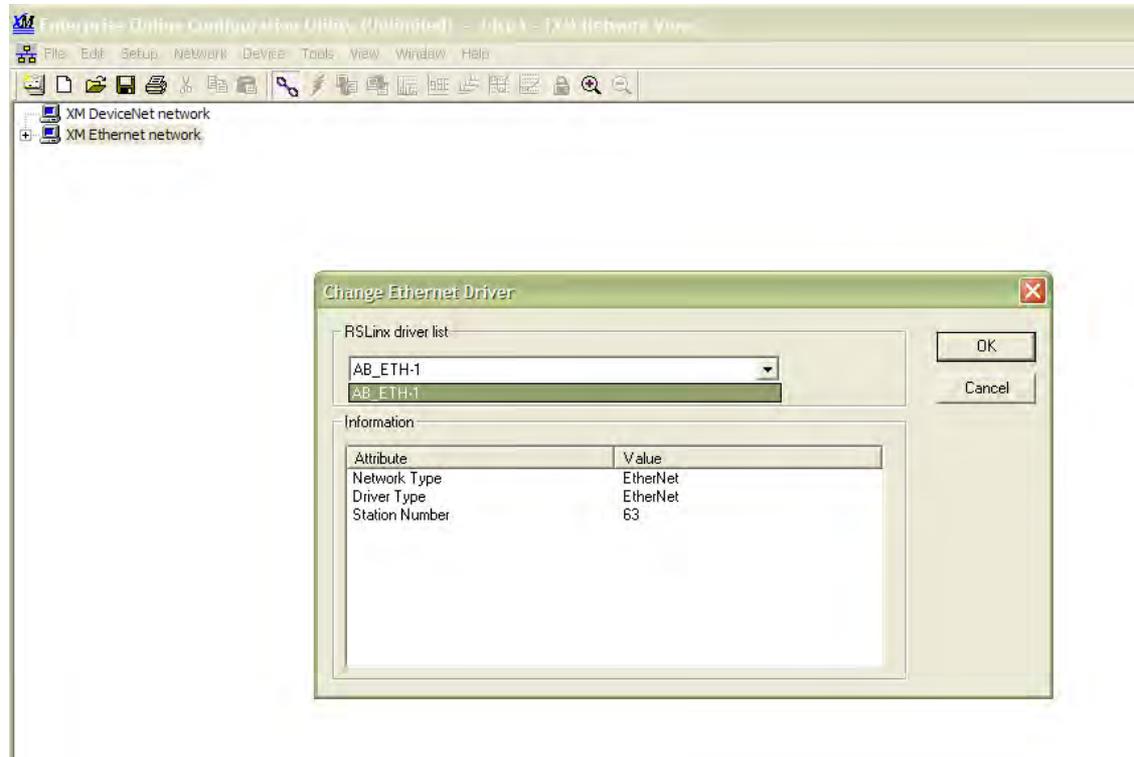
XM Configuration by XM Gateway



XM Configuration by XM Gateway



XM Configuration by XM Gateway



XM Configuration by XM Gateway

Enterprise Online Configuration Utility (Unlimited) - b1op1 - [XM Network View]

File Edit Setup Network Device Tools View Window Help

XM Ethernet network

- RSLink Driver AB_ETH-1 Station Number: 63
 - Ethernet Station Number: 000 (192.168.2.21) , XM-500 EtherNet/IP Gateway Unit 1
 - 01, XM-120_ST BRG 01
 - 02, XM-120_ST BRG 02
 - 03, XM-120_ST BRG 03
 - 04, XM-120_ST BRG 04
 - 05, XM-120_ST BRG 05
 - 06, XM-120_ST BRG 06
 - 07, XM-120_GEN BRG 07
 - 08, XM-120_GEN BRG 08
 - 09, XM-120_GEN BRG 09
 - 10, XM-120_GEN BRG 10
 - 11, XM-220_ST Speed & Phase
 - 12, XM-12E_ST Eccentricity
 - 13, XM-320_ST SHAFT POS A/B
 - 14, XM-320_ST SHAFT POS C & CASING EXP
 - 15, XM-320_ST DIFF EXP
 - 16, XM-120_BFP-A BRG 02
 - 17, XM-120_BFP-A BRG 01
 - 18, XM-220_BFP-A SPEED & PHASE
 - 19, XM-12E_BFP-A Eccentricity
 - 20, XM-320_BFP-A & BFP-B SHAFT POS
 - 21, XM-120_BFP-B BRG 02
 - 22, XM-120_BFP-B BRG 01
 - 23, XM-220_BFP-B SPEED & PHASE
 - 24, XM-12E_BFP-B Eccentricity
 - 25, XM-500 EtherNet/IP Gateway Unit 1
 - Ethernet Station Number: 001 , XM-500 EtherNet/IP Gateway Unit 2
 - 01, XM-120_ST BRG 01
 - 02, XM-120_ST BRG 02
 - 03, XM-120_ST BRG 03

	Indicates an XM-500 network gateway module, either the Ethernet side or the DeviceNet side of the module
	Indicates an XM measurement or relay module
	Indicates an active XM measurement or relay module in communication with the Online Configuration Utility
	Indicates an active XM measurement or relay module that is in Program mode
	Indicates an XM measurement or relay module that appears in the Online Configuration Utility network configuration, but is not in communication with the Online Configuration Utility

XM Configuration by XM Gateway

The screenshot displays the XM Enterprise Online Configuration Utility (Maintenance - Ethernet - [XM Network View]). The main window shows a tree view of the network configuration, including the XM DeviceNet network, XM Ethernet network, and RSLinx Driver AB_ETH-1 Station Number: 63. The XM-120 Dynamic Measurement Module Configuration dialog box is open, showing the following settings:

- Channel 1** | Channel 2 | Tachometer | Alarm, Relay, and 4-20mA Output | Triggered Trend | SU/CD Trend | I/O Data | Module
- Copy Ch1 to Ch2** (button)
- Channel name:** XM1Ch1
- Transducer:**
 - Enable IEPE power
 - Sensitivity:** 100 mv/g
 - Eng units:** g
 - Fault low:** 8 Volt
 - Fault high:** 15 Volt
 - DC bias time constant:** 1.769 sec
 - Full scale:** 2 Volt
 - Auto Full Scale...** (button)
- Signal processing:**
 - Output data unit:** ips
 - High pass filter:** 5 Hz
 - Sampling mode:** Asynchronous
 - Internal gear teeth:** 1
 - External gear teeth:** 1
- Measurement options:**
 - Signal detection:** RMS
 - Overall time constant:** 1
 - Overall damp factor:** 0.99
 - Overall filter:** Low Pass Filter
 - Low pass filter:** 1000 Hz
 - Order of sum harmonics:** 4
 - Spectrum/Waveform...** (button)
 - Band...** (button)

The dialog box has buttons for Download, Upload, OK, Cancel, and Help. The main window also has buttons for Tree View and Graph View, and a status bar showing Offline.

XM Configuration by XM Gateway

The screenshot displays the Enterprise Online Configuration Utility (v11.0.0.0) interface. The main window shows a tree view of the XM network configuration, including the XM Ethernet network and RSLinx Driver AB_ETH-1 Station Number: 63. A dialog box titled "XM-120 Dynamic Measurement Module Configuration" is open, showing the configuration for Channel 1. The dialog box is divided into four sections: Band1 measurement, Band2 measurement, Band3 measurement, and Band4 measurement. Each section has a "Measurement" dropdown menu set to "Band Overall", a "Minimum frequency" field, and a "Maximum frequency" field. The "Band1" section has a minimum frequency of 1.73 Hz and a maximum frequency of 3.47. The "Band2" section has a minimum frequency of 4.63 Hz and a maximum frequency of 6.94. The "Band3" section has a minimum frequency of 18.5 Hz and a maximum frequency of 27.76. The "Band4" section has a minimum frequency of 500 Hz and a maximum frequency of 1000. The dialog box also includes "OK" and "Cancel" buttons. The main window has a menu bar (File, Edit, Setup, Network, Device, Tools, View, Window, Help) and a toolbar. The status bar at the bottom shows "Offline" and the system tray with the time 17:20.

Enterprise Online Configuration Utility (v11.0.0.0) - Ethernet - [XM Network View]

File Edit Setup Network Device Tools View Window Help

XM DeviceNet network
XM Ethernet network
RSLinx Driver AB_ETH-1 Station Number: 63
Ethernet Station Number: 63
00, PanelView
01, XM-120 Vit
02, XM-120 Vit
03, XM-120 Vit
04, XM-120 Vit
05, XM-120 Vit
06, XM-120 Vit
07, XM-120 Vit
08, XM-120 Vit
09, XM-120 Vit
10, XM-120 Vit
11, XM-120 Vit
12, XM-120 Vit
13, XM-120 Vit
14, XM-120 Vit
15, XM-440 Me
16, XM-440 Me
17, XM-440 Me
18, XM-440 Me
19, XM-440 Me
20, XM-440 Me
21, XM-440 Me
63, XM-500 Et

XM-120 Dynamic Measurement Module Configuration

Channel 1

Band1 measurement
Measurement: Band Overall
Minimum frequency: 1.73 Hz
Maximum frequency: 3.47

Band2 measurement
Measurement: Band Overall
Minimum frequency: 4.63 Hz
Maximum frequency: 6.94

Band3 measurement
Measurement: Band Overall
Minimum frequency: 18.5 Hz
Maximum frequency: 27.76

Band4 measurement
Measurement: Band Overall
Minimum frequency: 500 Hz
Maximum frequency: 1000

OK Cancel

Download Upload

OK Cancel Help

Tree View Graph View

Offline

start Chevron untitled - P... XMGW SQLBase S... XM Emonito... Enterprise ... 17:20

XM Configuration by XM Gateway

The screenshot displays the Enterprise Online Configuration Utility (EON) interface. The main window shows a tree view of the XM Ethernet network configuration, including RSLink Driver AB_ETH-1 Station Number: 63 and various XM-120 and XM-440 modules. A dialog box titled "XM-120 Dynamic Measurement Module Configuration" is open, showing the configuration for Channel 1. The dialog box has tabs for Channel 1, Channel 2, Tachometer, Alarm, Relay, and 4-20mA Output, Triggered Trend, SU/CD Trend, I/O Data, and Module. The Channel 1 tab is selected, and the "Channel name" is set to "XM1Ch1". The "Transducer" section has "Enable IEPE power" checked. The "Sensitivity" is set to 1, "Eng units" to g, "Fault low" to 8, "Fault high" to 1, and "DC bias time constant" to 1. The "Full scale" is set to 2. The "Signal processing" section has "Output data unit" set to ips. A sub-dialog box titled "Channel 1 - Spectrum/Waveform" is also open, showing the following settings: FMAX: 1000 Hz, Number of lines: 800, Period: 0.8 Seconds, Number of points: 2048, Window type: Hanning, and Number of averages: 4. The "OK" button is highlighted in the sub-dialog box. The main dialog box has "Download" and "Upload" buttons at the bottom left, and "OK", "Cancel", and "Help" buttons at the bottom right. The Windows taskbar at the bottom shows the start button, several open applications (Chevron, CM01Ch1..., XMGW, SQLBase S..., XM Emonito..., Enterprise ...), and the system tray with the time 17:19.

XM Configuration by XM Gateway

The screenshot displays the XM Enterprise Online Configuration Utility (XM Gateway) interface. The main window shows a tree view of the XM network configuration, including the XM DeviceNet network, XM Ethernet network, and RSLinx Driver AB_ETH-1 Station Number: 63. The configuration dialog box for the XM-120 Dynamic Measurement Module is open, showing the following settings:

- Channel 1 | Channel 2 | Tachometer | Alarm, Relay, and 4-20mA Output | Triggered Trend | SU/CD Trend | I/O Data | Module
- Tachometer name: XM1Tacho
- Transducer:
 - Fault low: -5 Volt
 - Fault high: 5 Volt
 - DC bias time constant: 1.769 sec
- Tachometer:
 - Pulses per revolution: 0
 - Fault time-out: 11 sec
 - Auto trigger
 - Trigger hysteresis: 20 Volt
 - Trigger threshold: 0 Volt
 - Trigger slope: positive
 - Exponential averaging time constant: 1200 ms

The dialog box includes buttons for Download, Upload, OK, Cancel, and Help. The background window shows a taskbar with various applications and the system clock at 17:26.

XM Configuration by XM Gateway

The screenshot displays the XM Enterprise Online Configuration Utility interface. The main window shows a tree view of the network configuration, including the XM Ethernet network and RSLink Driver AB_ETH-1 Station Number: 63. The configuration dialog box, titled "XM-120 Dynamic Measurement Module Configuration", is open, showing settings for Channel 1, Channel 2, Tachometer, Alarm, Relay, and 4-20mA Output. The dialog is divided into several sections:

- Alarms:** Number (1-16) is set to Alarm 1, Name is Alarm 01, Enable is checked, Measurement is Ch. 1 Overall, Condition is Greater than, Alert threshold is 0.3 ips, Danger threshold is 0.5 ips, and Hysteresis is 0.001 ips.
- Relays:** Number (1-5) is set to Relay 1, Name is Relay 1, Enable and Latching are unchecked, Activation delay is 1 sec, Activation logic is A only, Alarm A is Alarm 2, and Alarm B is Alarm 2.
- 4-20 mA outputs:** 4-20 mA output A: Enable is checked, Measurement is Ch. 1 Overall, Min range is 0 ips, and Max range is 1 ips. 4-20 mA output B: Enable is checked, Measurement is Ch. 2 Overall, Min range is 0 ips, and Max range is 1 ips.
- Alarm status to activate on:** Normal, Alert, Danger, Disarm, Xdcr fault, Module fault, and Tachometer fault are all unchecked. Relay installed is checked, and Failsafe is unchecked.

The dialog box includes buttons for Download, Upload, OK, Cancel, and Help. The main window also has buttons for Tree View and Graph View, and a status bar at the bottom showing the system is Offline and the time is 17:27.

XM Configuration by XM Gateway

The screenshot displays the XM Enterprise Online Configuration Utility interface. The main window is titled "XM-170 Dynamic Measurement Module Configuration" and is divided into several tabs: Channel 1, Channel 2, Tachometer, Alarm, Relay, and 4-20mA Output, Triggered Trend, SU/CD Trend, I/O Data, and Module. The "Alarm" tab is currently selected, showing configuration options for "Alarm 1".

The "Alarm 1" configuration includes the following fields and options:

- Number (1-16): Alarm 1
- Name: Alarm 01
- Enable: Enable
- Measurement: Ch. 1 Over
- Condition: Greater than
- Alert threshold: 0
- Danger threshold: 0
- Hysteresis: 0.001
- Startup period: 0.5 min
- Threshold multiplier: 2
- Inhibit Tachometer Fault:
- Speed range enable:
- Speed range low: 0 RPM
- Speed range high: 0 RPM

The "Advanced Configuration" dialog box is open, showing the "Alarm1 Advanced Configuration" settings. The "Speed" section is expanded, showing the "Speed range enable" checkbox and the "Speed range low" and "Speed range high" fields, both set to 0 RPM.

The main window also shows a tree view on the left with the following structure:

- XM DeviceNet network
- XM Ethernet network
 - RSLinx Driver AB_ETH-1 Station Number: 63
 - Ethernet Station Number
 - 00, PanelView
 - 01, XM-120 Vit
 - 02, XM-120 Vit
 - 03, XM-120 Vit
 - 04, XM-120 Vit
 - 05, XM-120 Vit
 - 06, XM-120 Vit
 - 07, XM-120 Vit
 - 08, XM-120 Vit
 - 09, XM-120 Vit
 - 10, XM-120 Vit
 - 11, XM-120 Vit
 - 12, XM-120 Vit
 - 13, XM-120 Vit
 - 14, XM-120 Vit
 - 15, XM-440 Ma
 - 16, XM-440 Ma
 - 17, XM-440 Ma
 - 18, XM-440 Ma
 - 19, XM-440 Ma
 - 20, XM-440 Ma
 - 21, XM-440 Ma
 - 63, XM-500 Et

The bottom of the window shows the Windows taskbar with the start button and several open applications, including "Chevron", "untitled...", "XMGW", "SQLBas...", "XM Emo...", "XM Enterpri...", and "Config". The system clock shows 17:28.

XM Configuration by XM Gateway

The screenshot displays the Enterprise Online Configuration Utility (Maintenance) - Forum - [XM Network View] window. The main interface shows a tree view of the XM network configuration, including the XM DeviceNet network, XM Ethernet network, RSLinx Driver AB_ETH-1 Station Number: 63, and Ethernet Station Number. The XM-120 Dynamic Measurement Module Configuration dialog is open, showing the following settings:

- Channel 1 | Channel 2 | Tachometer | Alarm, Relay, and 4-20mA Output | Triggered Trend | SU/CD Trend | I/O Data | Module**
- Alarms:**
 - Number (1-16): Alarm2
 - Name: Alarm 02
 - Enable
 - Measurement: Ch. 2 Overall
 - Condition: Greater than
 - Alert threshold: 0.3 ips
 - Danger threshold: 0.5 ips
 - Hysteresis: 0.001 ips
- Relays:**
 - Number (1-5): Relay1
 - Name: Relay 1
 - Enable Latching
 - Activation delay: 1 sec
 - Activation logic: A only
 - Alarm A: Alarm2
 - Alarm B: Alarm2
 - Alarm status to activate on:
 - Normal Alert
 - Danger Disarm
 - Xdcr fault Module fault
 - Tachometer fault
 - Relay installed Failsafe
- 4 - 20 mA outputs:**
 - 4-20 mA output A:
 - Enable
 - Measurement: Ch. 1 Overall
 - Min range: 0 ips
 - Max range: 1 ips
 - 4-20 mA output B:
 - Enable
 - Measurement: Ch. 2 Overall
 - Min range: 0 ips
 - Max range: 1 ips

The dialog also includes buttons for Download, Upload, OK, Cancel, and Help, and an Advanced Configuration... button.

XM Configuration by XM Gateway

The screenshot shows the Enterprise Online Configuration Utility (XM Network View) with a tree view on the left and a configuration dialog box for the XM-440 Master Relay Module. The tree view shows the network structure, including the XM Ethernet network and various vibration modules. The dialog box is titled "XM-440 Master Relay Module Configuration" and has several tabs: Scanner Configuration Table, Relay Parameters, Scanlist, Group Triggers, Event Log, and Module. The "Relay Parameters" tab is active, showing the following configuration:

Relay number: Relay 1

Available device list: Add to Input List >>

- Node01 XM-120 Vibration Module
- Node02 XM-120 Vibration Module
- Node03 XM-120 Vibration Module
- Node04 XM-120 Vibration Module
- Node05 XM-120 Vibration Module
- Node06 XM-120 Vibration Module
- Node07 XM-120 Vibration Module
- Node08 XM-120 Vibration Module
- Node09 XM-120 Vibration Module
- Node10 XM-120 Vibration Module
- Node11 XM-120 Vibration Module
- Node12 XM-120 Vibration Module
- Node13 XM-120 Vibration Module
- Node14 XM-120 Vibration Module

Parameters:

Relay name: Relay 1 Relay enable Latch enable

Activation delay: 3 sec Relay installed Fail-safe enable

Logic: 1

Alarm status to activate on:

Normal Alert Danger Disarm Xdcr fault

Module fault Tacho fault Unknown

Input List: Delete from Input List <<

Entry	Node Address	Input No.
1	01	Alarm 01

Buttons: Download, Upload, OK, Cancel, Help

XM Configuration by XM Gateway

The screenshot displays the XM Enterprise Online Configuration Utility (v04.00.00) in 'XM Network View'. The main window shows a tree view of the network configuration, including an XM Ethernet network with an RSLinx Driver AB_ETH-1 and an XM-500 EtherNet/IP Gateway. A dialog box titled 'XM-440 Master Relay Module Configuration' is open, showing the configuration for 'Relay 2'. The dialog has tabs for 'Scanner Configuration Table', 'Relay Parameters', 'Scanlist', 'Group Triggers', 'Event Log', and 'Module'. The 'Relay Parameters' tab is active, showing the following settings:

- Relay number: Relay 2
- Relay name: Relay 2
- Activation delay: 3 sec
- Logic: 1
- Relay enable:
- Latch enable:
- Relay installed:
- Failsafe enable:
- Alarm status to activate on: Normal, Alert, Danger, Disarm, Xdcr fault, Module fault, Tacho fault, Unknown

The 'Available device list' shows 14 nodes, with 'Node01 XM-120 Vibration Module' selected. The 'Input List' table is as follows:

Entry	Node Address	Input No.
1	01	Alarm 02

The dialog also includes 'Download', 'Upload', 'OK', 'Cancel', and 'Help' buttons. The taskbar at the bottom shows the Windows Start button and several open applications, including 'XM Emonitor...' and 'Enterprise ...'. The system clock shows 20:52.