STI Vibration Monitoring Inc.
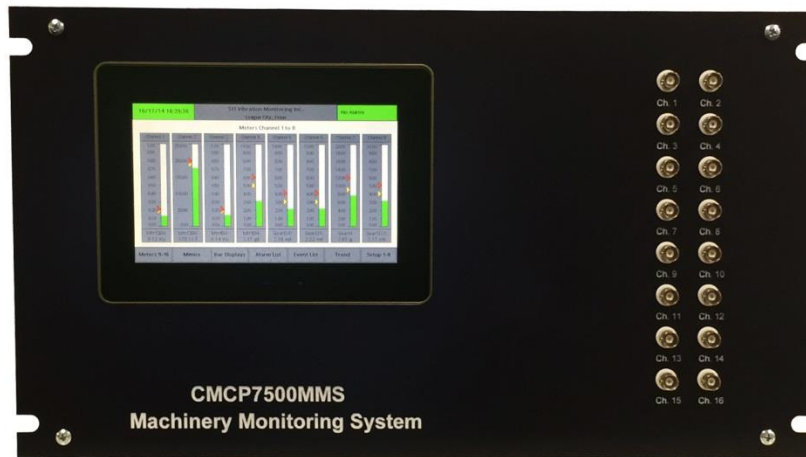
CMCP7500MMS

Machine Monitoring System

Configuration and Setup

Contents

Software Configuration and Setup

Channel Configuration and Setup:

Programming Channels using the CMCP7500 Software is simple and accomplished by using the Setup Screen which is accessible by pressing or touching the bottom right "Setup" button on the touch screen and entering the system password if requested.

Figure 1: Channel Setup

Channels can be turned off or on, ranges selected, alarm values set, tags entered and relays assigned from the Setup Screen. Simply touch the value you want to change and a Pop Up "Alpha" or "Numeric" entry window will appear. Enter the new value keeping in mind the constraints listed below and press return.

Figure 2: Alpha/Numeric Pop-Up Window
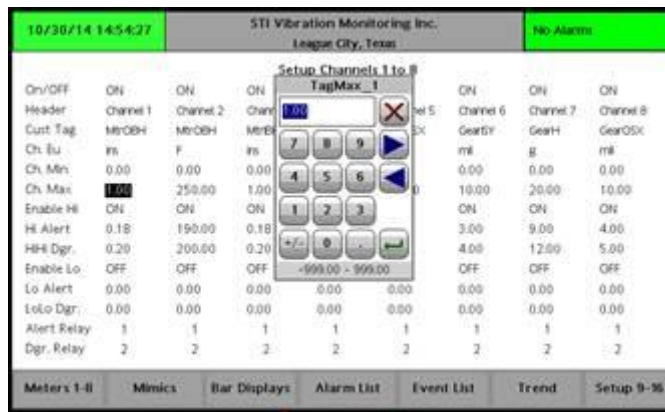
Figure 3: Numeric Pop-Up Window

There are Fourteen (14) items that need to be entered to setup each channel as shown on left side of screen. They are as follows:

On/OFF: (Channel, On/Off)

Each Channel may be turned "Off" or "On". When Off the Meters and Bargraphs will not display that channel. Alarming and trending will also be disabled.

Header: (Channel Header, 12 Characters)

The Header field contains up to 12 Alpha Numeric Characters and is completely editable. We use this field for Channel Numbers and recommend you leave them as such.

Cust Tag: (Customer Tag, 7 Characters)

The Customer Tag field is completely editable and contains up to 7 Alpha Numeric Characters of your choice. An example is "MtrOBH" for Motor Outboard Horizontal.

Ch. EU: (Channel Engineering Units, 4 Characters)

Channel Engineering Units can contain up to 4 Alpha Numeric Characters of your choice and is used to attach engineering units to that channels value. Examples are, mils, Vel, ins, gE, F, C, g's or um, mm, mms, Vel, gE or g's.

Ch. Min: (Channel Minimum Value, -999.00 to 999.00)

Channel Minimum Value determines the lower value of the display range. It will also determine the lower range in which alarms can be set. This value is normally but not always "0" and must match the lower range of the Channel Input Card you have selected for that channel. Examples are: 0-1.00 in/sec, 0-10.0 mils, -40.0-0-40.0 Thrust, 0 – 300 F, 0-25 mm/sec, etc.

Ch. Max: (Channel Maximum Value, -999.00 to 999.00)

Channel Maximum Value determines the upper value of the display range. It will also determine the upper range in which alarms can be set. This must match the lower range of the Channel Input Card you have selected for that channel. Examples are: 0-1.00 in/sec, 0-10.0 mils, -40.0-0-40.0 Thrust, 0 – 300 F, 0-25 mm/sec, etc.

Enable Hi: (Enable Hi Alarms, Yes/No)

Enable Hi Alarms allow you to turn on or off the two (2) high alarms usually known as Alert and Danger (Hi and HIHi). When Off Upper Alarms are disabled and no alarming will occur.

Hi Alert: (High Alert Value or Hi Alarm, Min/Max)

Allows you to enter the Alert (Hi) value for this channel. Your entry will be limited by the Channel min/max scale you have previously selected. Value entered must be between the Channel Min and Max entered for this Channel.

HIHi Dgr: (High Danger or HiHi Alarm, Min/Max)

Allows you to enter the Danger (HiHi) value for this channel. Your entry will be limited by the Channel min/max scale you have previously selected. Value entered must be between the Channel Min and Max entered for this Channel.

Enable Lo: (Enable Low Alarms, Yes/No)

Enable Low Alarms allow you to turn on or off the two (2) low alarms usually known as Low Alert and Low Danger (Lo and LoLo). When Off Lower Alarms are disabled and no low alarming will occur. Low alarms are most commonly used for Thrust Position measurement and low oil temperatures.

Lo Alert: (Low Alert or Lo Alarm, Min/Max)

Allows you to enter the Low Alert (Lo) value for this channel. Your entry will be limited by the Channel min/max scale you have previously selected. Value entered must be between the Channel Min and Max entered for this Channel.

LoLo Dgr: (Low Danger or LoLo Alarm, Min/Max)

Allows you to enter the Low Danger (LoLo) value for this channel. Your entry will be limited by the Channel min/max scale you have previously selected. Value entered must be between the Channel Min and Max entered for this Channel.

Alert Relay: (Assigned Alert Relay, 0 to 12)

This Alert Relay entry assigns which relay number will be triggered by this Channels Alert (Hi) or Low Alert Alarms (Lo). Be sure your relay entry is correct for the size system you purchased. Multiple channels may select the same relay.

Dgr. Relay: (Assigned Danger Relay, 0-12)

This Danger Relay entry assigns which relay number will be triggered by this Channels Danger (HiHi) or Low Danger Alarm (LoLo). Be sure your relay entry is correct for the size system you purchased. Multiple channels may select the same relay.

System Setup:

The first step to configure your CMCP7500 Software is to setup the System Information which includes basic information such as date and time, company name and location. The Data Logger may also be turned on and off on this page. To access System Information simply press the "Setup" Button on the Touchscreen until the Setup System screen appears.

Adjust Date/Time:

If the CMCP7500 is not receiving date and time over an network then it will be necessary to enter both the current date and time using the Popup Screen that appears when touched. Date and Time Tags are used on all Alarm Lists and Trends.

Company Name: (30 Characters)

Company Name can include up to 30 Characters of your choice. You may also use this field to identify a particular machine id, unit or location. Entry has no effect on system function.

Company Location: (30 Characters)

Company Location can include up to 30 Characters of your choice. You may also use this field to identify a particular machine id, unit or location. Entry has no effect on system function.

Data Logger Status: (On/Off)

Data Logger Status allows you to turn On or Off Data Logging. While usually left On you may desire to turn it Off while the machine is not operating or being rebuilt. Turning Off will affect the Trend Function.

Hardware Configuration

General Description:

The CMCP7500MMS 19" EIA Rack Mounted Machinery Monitoring System is designed to work with STI's line of Vibration, Thrust, Temperature and TSI (Turbine Supervisory Instrumentation) Din Rail Mounted Transmitters or Signal Input Cards. The CMCP7500MMS is ordered in blocks of 8 Channels for a maximum of 32 Channels if CMCP700 Series Slim line Transmitters are used. If CMCP500 Series Transmitters are used as Signal Input Cards the maximum is 16 Channels. Total DIN Rail mounting space allocated for Signal Input Cards is 16" (406.2 mm). When Signal Input Cards are ordered with the CMCP7500MMS STI will complete the installation of the Transmitters and will perform a full Factory Acceptance Test of the complete integrated system.
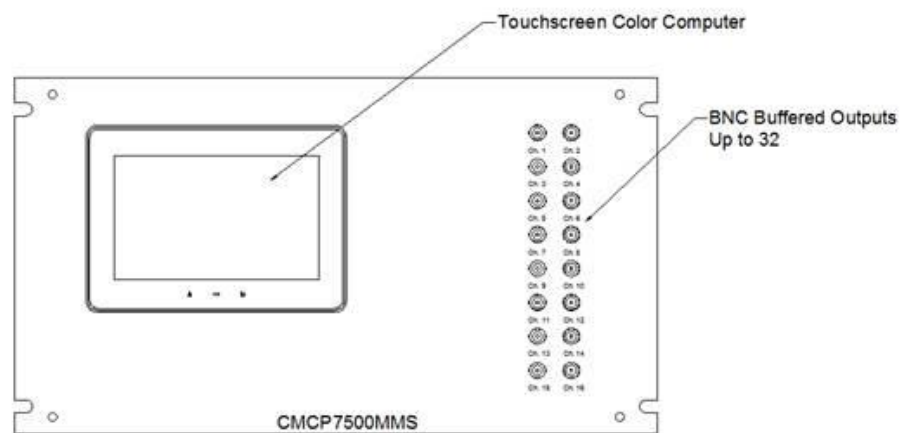
Front Panel Layout:

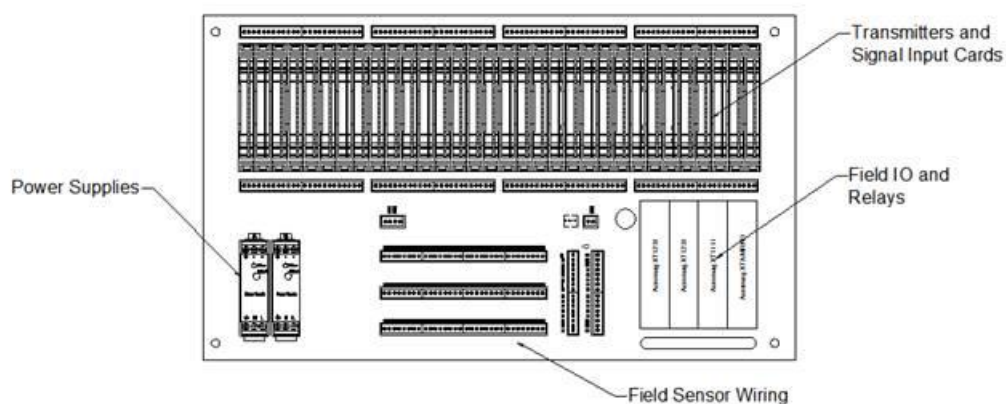*Figure 4: Front Panel*

Back Panel Layout:

Figure 5: Back Panel

Block Diagram:

The following Block Diagram shows hoe the CMCP7500MMS is populated to be a 8, 16, 24, 0r 32 Channel Base System. The actual channels of monitoring are determined by the number of Transmitters or Signal Input Cards purchased. The CMCP7500MMS can be expanded in the future up to a total of 32 Channels.
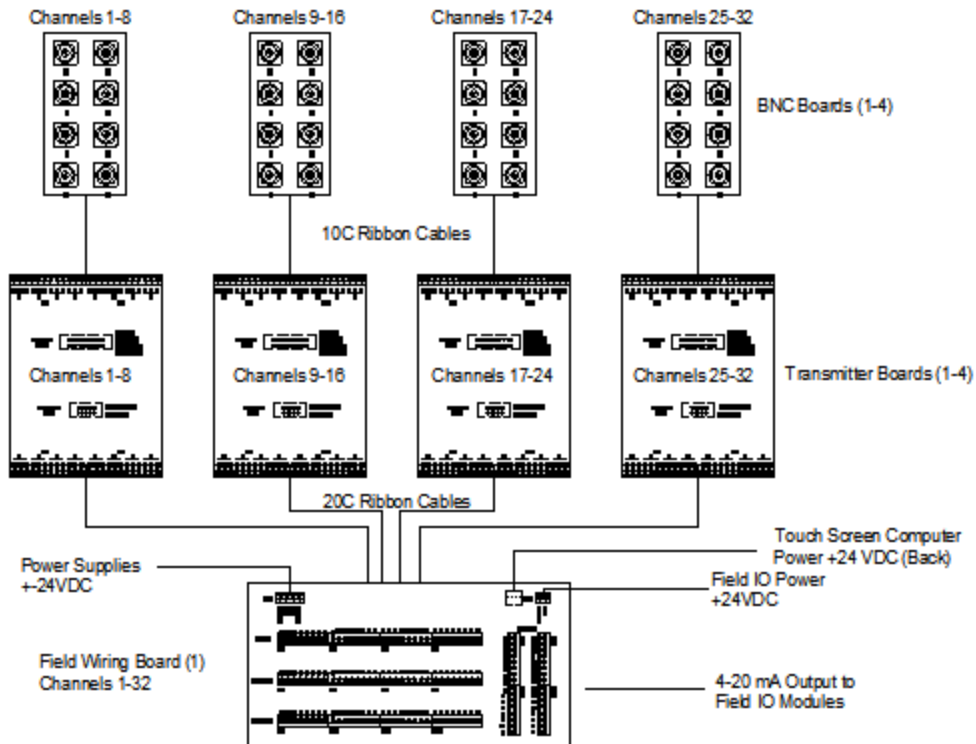

Figure 6: Block Diagram

BNC Buffered Output Boards:

BNC or Buffered Output Boards are preinstalled in Blocks of 8 Channels up to a total of 32 Channels and connect to the Transmitter or Signal Input Card Board via Ribbon Cables. Each Transmitter or Signal Input Board will be provided with a BNC Board. The BNC Board allows the connection of Analyzers from the front of the CMCP7500MMS using a standard BNC Connectors. No user wiring is required and if a BNC Connector is damaged it may be easily replaced.
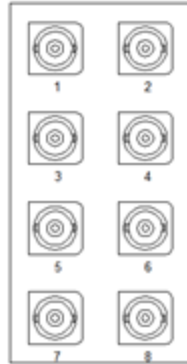

Figure 7: BNC Board

Transmitter or Signal Input Card Board:

The CMCP7500MMS Transmitter or Signal Input Boards are preinstalled in blocks of 8 Channels for a total of up to 4 boards for 32 total channels. They are mounted on the inside of the back plate so only the terminals are visible from the back. This is where STI's CMCP500 or CMCP700 Series Transmitters interface to the CMCP7500MMS HMI Based Monitoring System. There are a total of six (6) terminal positions for each Transmitter. Three (3) above and three (3) below. If you ordered Transmitters or Signal Input Cards when ordering all integration and testing will be completed. These instructions will allow you to add additional channels when required. The Transmitter or Signal Input Boards connect via ribbon cables to both the Buffered Output Board and the Field Wiring Board.
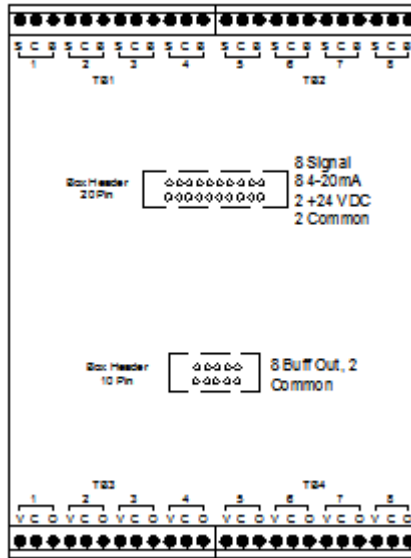
Figure 8: Transmitter Board

Transmitter Board Terminal Connection Key:

Upper Three (3) Terminal Connections		
S	C	B
Signal	Common	Buffered Output

Lower Three (3) Terminal Connections		
V	C	O
+24 VDC	Common	4-20 mA Output

Field Wiring Board:

The Field Wiring Board is where all field sensors are connected to the CMCP7500MMS System. There is only one size of Field Wiring Board and it may be connected to one (1) or up to four (4) Transmitter Boards for a total of up to 32 Channels. The Field Wiring Board allows the connection of both IEPE Powered Accelerometers and -24 VDC Powered Proximity Systems.

IEPE Accelerometers field wiring connects to Signal and Common (Constant Current Power is provided on Signal Terminal) Proximity Probe Systems field wiring connects to Signal, Common and -24 VDC
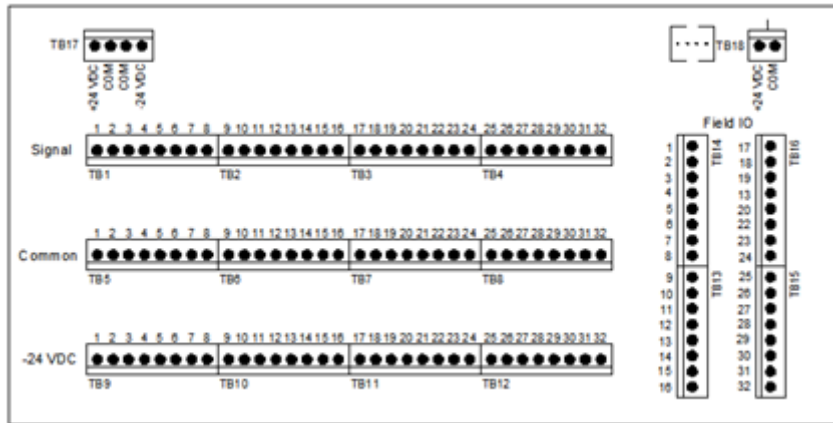
Figure 9: Field Wiring Board

Transmitters and Signal Input Cards:

Due to the many models available current data sheets and detailed manuals for STI CMCP500 and CMCP700 Series Transmitters and Signal Input Cards are available by downloading from STI's web site at www.stiweb.com.

Power Supplies:

Power Supplies size varies depending on CMCP7500 MMS Channel Quantity ordered. Both a +24VDC and -24 VDC Power Supplies (for proximity systems) are provided. Quantity and Model Number are:

Part Number	8 Channel	16 Channel	24 Channel	32 Channel
CMCP515-1250	2			
CMCP515-2080		2		
CMCP515-4200			2	2

Field IO:

Current Data Sheets and Detailed Manuals for the Field IO and Relay Modules are available by downloading from STI's web site at www.stiweb.com. Part Numbers and quantities are as follows.

Part Number	8 Channel	16 Channel	24 Channel	32 Channel
CMCP-XT-1211 8 Ch. AI	1		1	
CMCP-XT-1231 16 Ch. AI		1	1	2
CMCP-XT-1111 16 Ch. DO	1	1	1	1
CMCP-XRA-MRNO Relay Mod.	1	1	1	1

Color Touchscreen HMI Computer:

Current Data Sheets and Detailed Manuals for the standard G7 Color Touchscreen HMI Computer are available by downloading from STI's web site at www.stiweb.com .
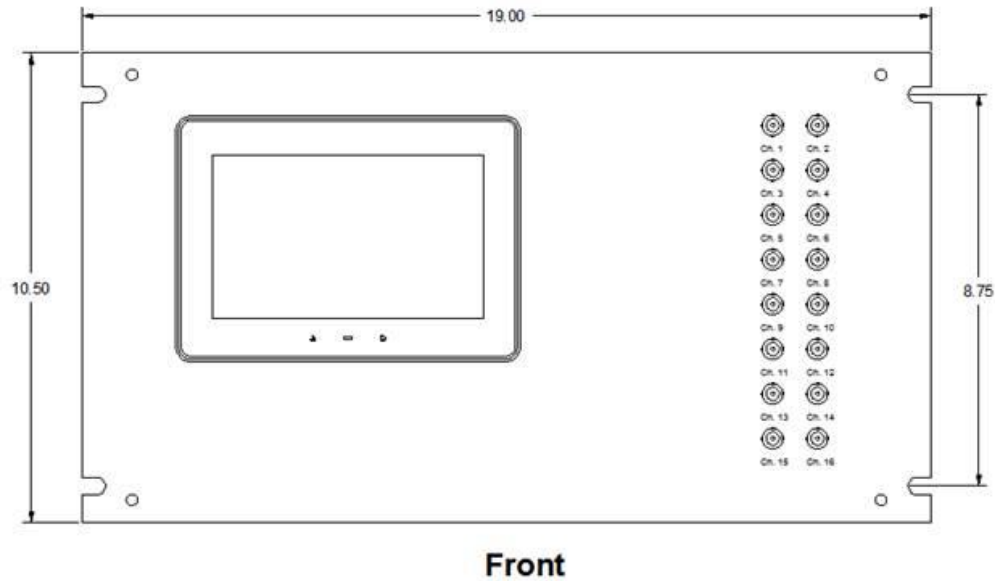
Dimensions:

Figure 10 Front Panel Dimensions

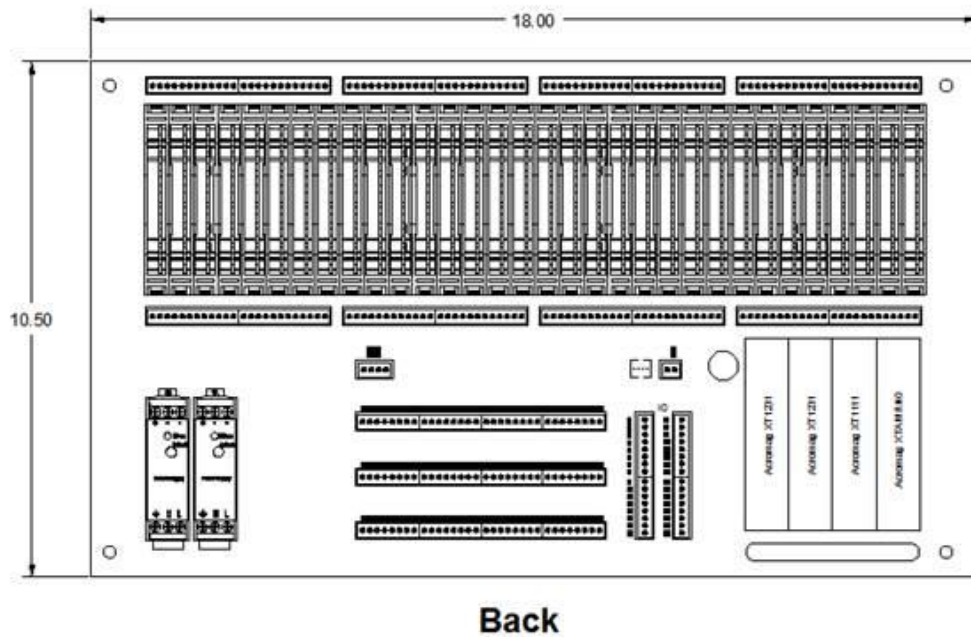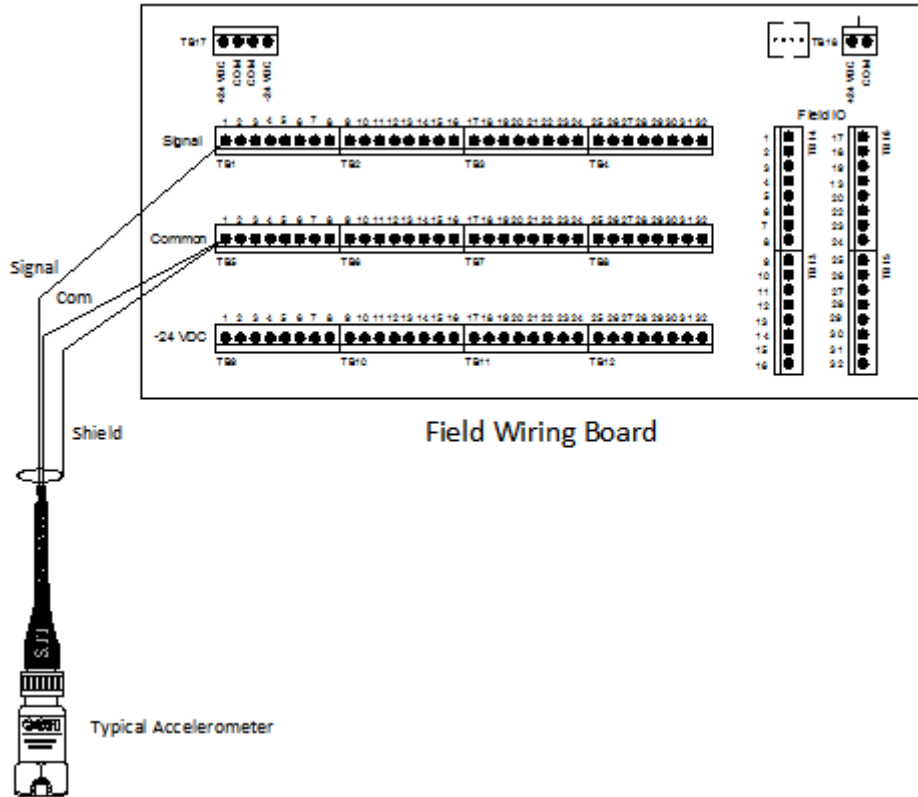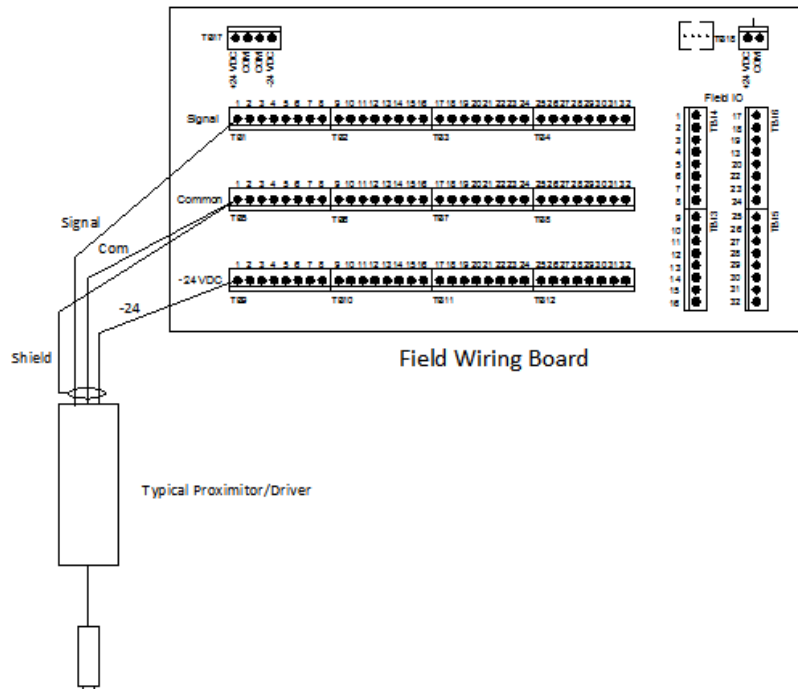*Figure 11 Back Panel Dimensions*

Sensor Wiring:

Figure 12 Typical Accelerometer Wiring

Figure 13 Typical Proximity System Wiring