

Tank Monitor Interface with EAPro

CAUTION The FMU upper cabinet door must be opened to replace the LCD. Exercise caution to prevent moisture (rain, snow) from entering FMU.

Description

FuelMaster FMUs (Fuel Management Units) may interface a Tank Monitor Unit (TMU) to obtain Tank Monitor quantity data. TMU interface components for a Master FMU are available in kit form from Syntech Systems, Inc (Figure 1).

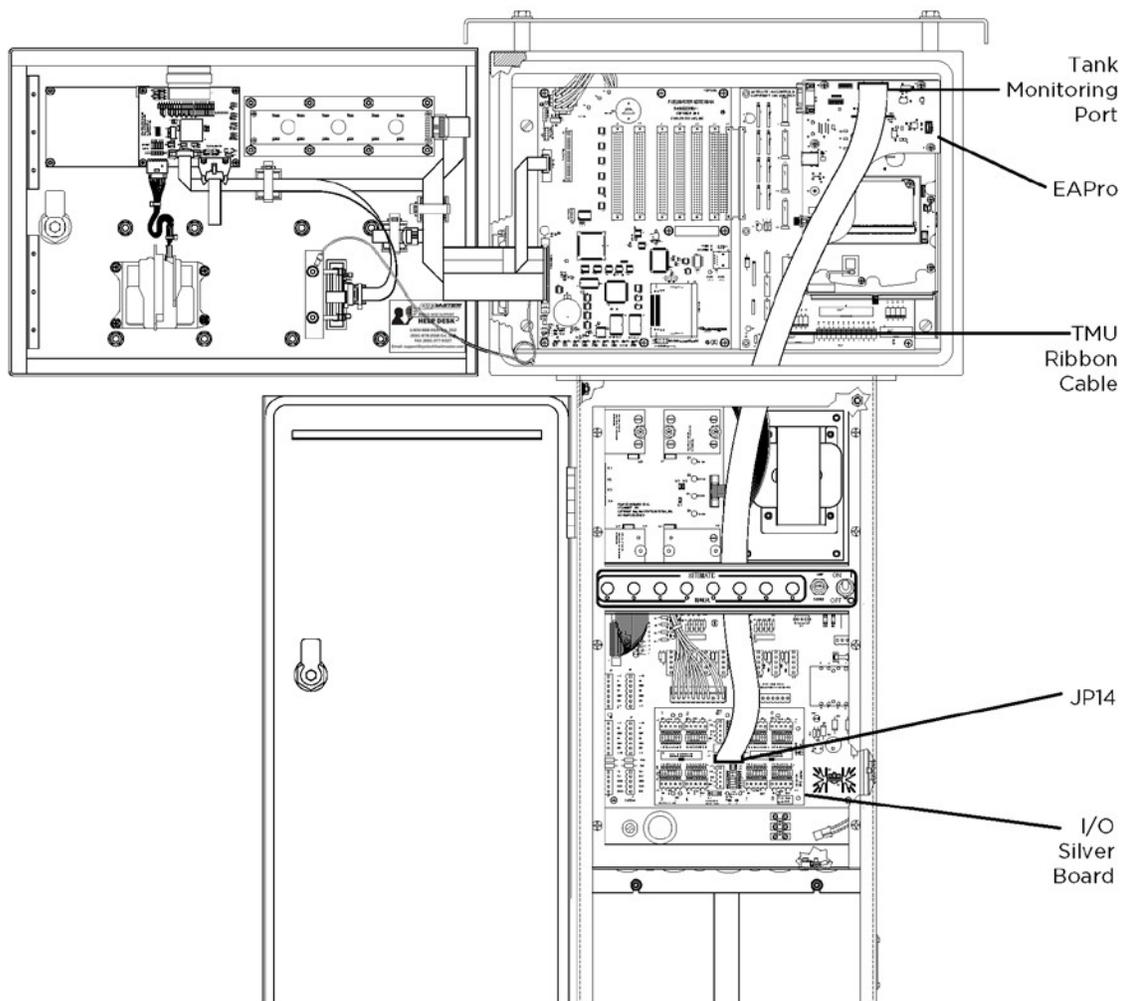


Figure 1. Tank Monitor Interface Kit Installed in FMU Equipped with EAPro

The Tank Monitor Interface Kit (TMIK) includes an I/O Silver Board (see Figure 2). If the TMIK is being purchased and installed in an FMU already possessing an I/O Silver Board, let Syntech know the application. The TMIK I/O Silver Board may be sent with the additional components installed on the board to cover both applications.

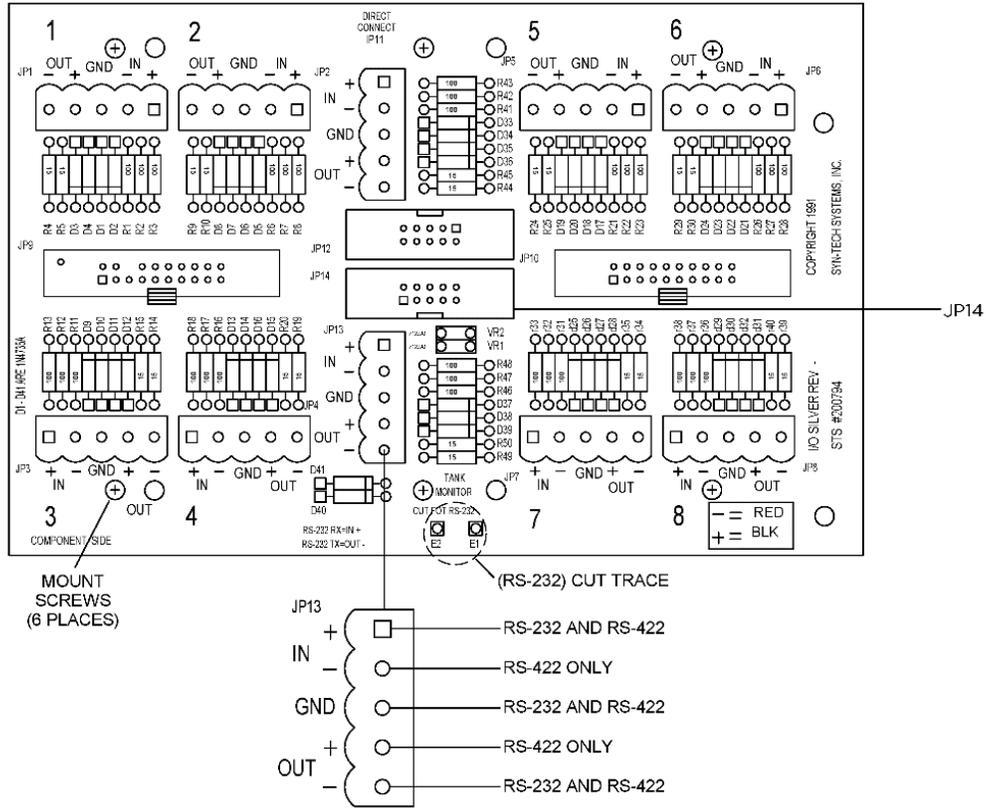


Figure 2. I/O Silver Board for Tank Monitor Interface Kit

A wireless connection between the FMU and tank monitor may be configured using a Zlinx wireless modem. The application is covered in Product Bulletin 133.

If using a cable connection, an RS-232 or RS-422 cable must be routed from the FMU to the TMU control box. The FMU will accept either RS-232 or RS-422 connections. RS-232 cable lengths should not exceed the TMU manufacturer’s recommendations. RS-422 cable lengths should not exceed 2000 feet.

If the TMU control box requires an RS-232 cable connection, and the distance between the FMU and TMU exceeds the manufacturer’s recommendation, an RS-422 cable may be stepped down to RS-232 through the use of an RS-232/422 converter at the TMU control box.

One such RS-232/422 converter is the Patton Electronics 222N with a 25-pin tank monitor connector. Syntech carries it with part number 219517. Patton Electronics (<http://www.patton.com/>) carries these converters with other connectors (DB9, RJ11, RJ45).

Install Tank Monitor Interface Kit

1. Shut off AC power to the FMU and all connected dispensers at the circuit breaker.
2. Unlock and open the FMU cabinet and pedestal doors, and remove the upper and lower electrical access covers from the pedestal electrical access panel.
3. As required, pull RS-232 or RS-422 cable through rigid explosion-proof conduit from the TMU control box to the FMU electrical access panel.

NOTE If the FMU was previously configured with an I/O Silver Board for another purpose, the new I/O Silver Board may be ordered with the additional components necessary to support the previous configuration.

4. If applicable, remove the previously used I/O Silver Board mounted over the Pedestal I/O Board on six standoffs:
5. Note location, and disconnect all ribbon cables and plugs from I/O Silver Board.
6. Remove I/O Silver Board from standoffs (6 screws).
7. If no previous I/O Silver Board, remove six screws from Pedestal I/O Board (above and below TB1, TB2, and TB3) and thread six standoffs into the screw holes.
8. Position new I/O Silver Board over Pedestal I/O Board and attach to standoffs with 6 screws.
9. If applicable, reconnect any pre-existing cables and plugs.

NOTE RS-422 cable contains 4 conductors and a drain. The drain is usually a bare, uninsulated stranded wire. The drain should be connected to FMU GND (ground) on one end and bent over and taped to the cable at the other end without connecting to ground. If the cable has two drain wires, twist the two drains together and connect to FMU GND (ground) on one end, and bend over and tape on the other end.

10. Make the following cable connections. FMU JP13 is the 5 pin connector on the I/O Silver Board. RS-232 TMU DB25 are the connections you make to the DB25 connector on the TMU when running RS-232 from the FMU to the TMU. With RS-232, only the IN+, GND, and OUT- pins on JP13 are used. RS-232/422 Converter has the connections you make on the Patton converter before plugging it into the TMU DB25.

FMU	RS-232	RS-232/422
JP13	TMU DB25	Converter
IN+	2 (TX)	XMT-
IN-		XMT+
GND	7 (GND)	Do Not Connect
OUT+		RCV-
OUT-	3 (RX)	RCV+

NOTE Do not cut the trace between E1 and E2 if using RS-422 cable!

11. For RS-232, cut the trace between E1 and E2 at the bottom center of the I/O Silver Board. Do not cut the trace for RS-422.
12. Connect one end of the new ribbon cable into JP14. Route the other end of the cable up to the FMU upper cabinet and plug into the Tank Monitoring Port located on the EAPro.

13. On the EAPro, set the S3 for correct interface type. RS-232 is used for the OMNTEC Proteus, Veeder-Root TLS 350, and Pneumercator TMS-2000.
14. Refer to the TMU Operator’s Manual or applicable manufacturer’s technical support staff and program the TMU for correct emulation. Where available, use Veeder Root TLS-250 or TLS-350 emulation.
15. Installation of the Tank Monitor Interface Kit has to be enabled in both the FMU and FMLive. Some tank monitors must be configured with specific communications parameters. It is advisable to determine the communications parameters set in the tank monitor, and make those settings in the FMLive. In the Tank Monitor Control Box, determine the baud rate, data bits, stop bits, and parity configured for the TMU. Some tank monitors may have additional settings when making an RS-232 communications connection.

Add Tank Monitoring to a Unit in FMLive

Assumptions

This tutorial assumes

- Your Organization has been configured
- Your Facility has been configured
- You have navigated to Facility Dashboard
- You are a
 - System Administrator or
 - Facility Manager

1. Select **All Units** from the Unit Status widget.
2. Select the unit to which you will add tank monitoring.
3. Select **Add Tank Monitoring** (Figure 1).

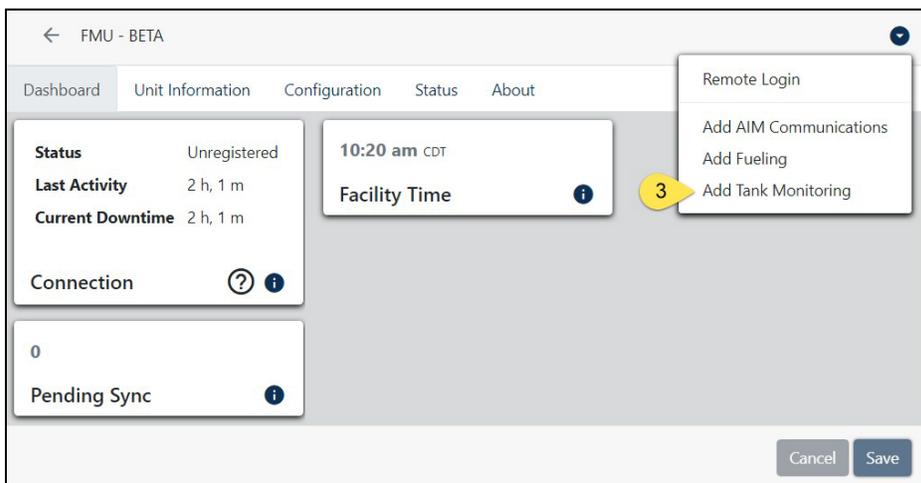


Figure 1

4. Select the TMU Model you will be using (Figure 2).

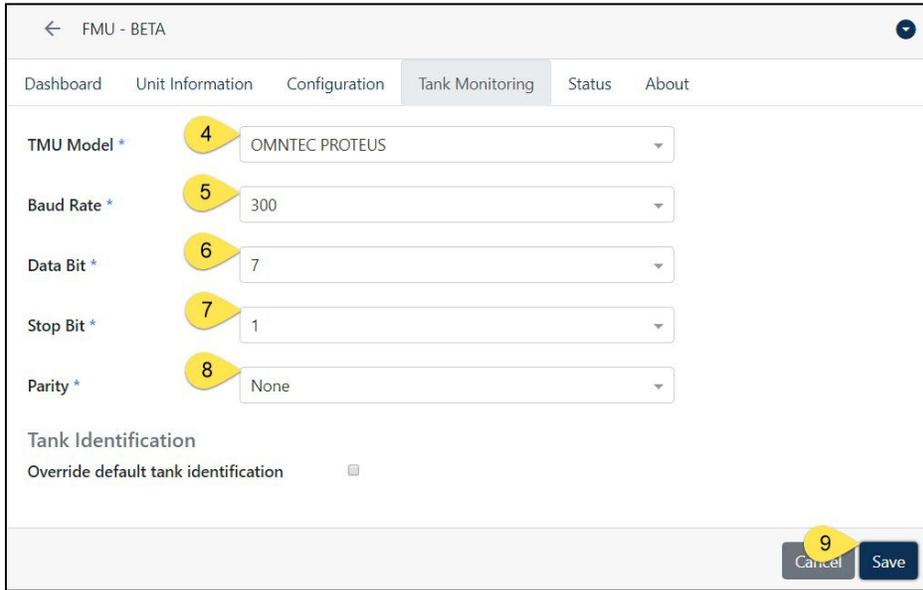


Figure 2

5. Use the Baud Rate dropdown menu to select the rate at which information will be transferred.

NOTE The TMU instruction manual and/or manufacturer should be able to provide you with the correct configuration information for your TMU.

6. Use the Data Bits dropdown menu to select the number of bits that will be used to transmit text.

NOTE If being transmitted by modem use either seven or eight bits, other form of data require eight bits.

7. Use the Stop Bits dropdown menu to indicate the end of a whole transmission.

8. Use the Parity dropdown menu to allow a user to check if data has been lost or written over when transmitted from one place to another.

9. Click **Save**. The enterprise will send the configurations to the registered unit.

NOTE Override default tank identification can be used if the tank numbers configured in FMLive do not match those being returned from the unit.

Key Terms

Term	Definition
Baud Rate	The rate at which the information will be transferred. Use the dropdown arrow to select a baud rate. Data transfer rate measured in bits per second. FuelMaster® Plus operates best at 2,400 and 4,800 baud rate.
Data Bits	The number of bits that will be used to transmit text. If being transmitted by modem use either seven or eight bits, other form of data require eight bits. Use the dropdown arrow to select the Data Bits needed.
Parity	Allows for the user to check if data has been lost or written over when transmitted from one place to another.
Stop Bits	Used to indicate the end of a whole transmission. Use the dropdown arrow to select the Stop Bits.
Tank Monitoring	Device which monitors the tank fuel level; Three models are supported: Omntec Proteus, Pneumercator TMS-2000, Veeder Root TLS 350

TIP

If any questions arise, contact Syntech Systems, Inc.'s Customer Satisfaction Center (CSC) at 1-800-888-9136, ext. 2, or email support@myfuelmaster.com.

Change Log

Date	Description
07/10/2009	Drafted to handle install with EAPro and configuration in FMLive.
11/23/2020	Reformatted/rebranded