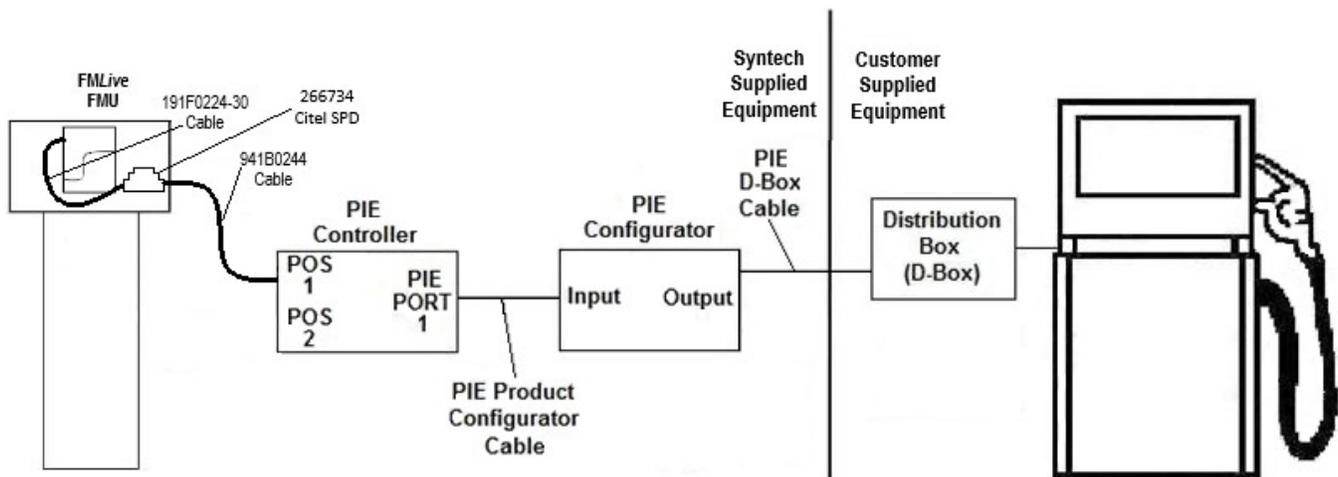# Interfacing an FM*Live* FMU
with an Electronic Dispenser

> **CAUTION**   These procedures provide installation instructions for Syntech Supplied Equipment (SSE). A technician familiar with Customer Supplied Equipment (CSE) must be present for installation. Problems with the CSE will prevent functionality regardless of the quality of SSE or its installation.

> **TIP**   Other reference materials supplied by Progressive International Electronics (PIE) are included with the SSE as necessary for equipment setup and testing. Save all information, including any disks provided.

Description

The image above represents an Electronic Dispenser Interface Kit interfacing an FM*Live* Fuel Management Unit (FMU) to an electronic dispenser. The SSE replaces the Point of Sale (POS) device found at convenience stores or truck stops and consists of parts produced by both FuelMaster® and PIE. The PIE components are preprogrammed for the desired application. FuelMaster cannot interface with retail electronic dispensers except through PIE equipment. When installed, all credit card inputs are initiated at the FMU rather than the dispensers' readers.

When purchasing an Electronic Dispenser Interface Kit, include information regarding your dispenser make and model (e.g., Gilbarco Encore 300), a good description of the dispenser and DBox setup, and a simple site layout sketch.

When Is an Electronic Interface Kit Required?

Most electronic retail dispensers require an Interface Kit. Some retail dispensers may connect to FuelMaster with or without an Interface Kit, but many customers prefer the Interface Kit, which allows pricing from FM*Live* to show on the dispenser. Without this, pricing must be updated at the pump itself.

Fueling Positions, Blending, and Grades

Each side of a Multi-Product Dispenser (MPD) is a fueling position. FM*Live* may control up to 32 electronic fueling positions, each with 8 grade choices, for a total of 256 grade choices. An FMU may control both mechanical and electronic dispensers. As of 3/14/24, each FM*Live* FMU must connect to its own Omega JR, and product blending is not yet available.

Components and Part Numbers

Available Interface Kits:

- 191F0245-10: Gilbarco, no DBox
- 191F0245-20: Gilbarco with DBox
- 191F0245-30: Wayne, no DBox
- 191F0245-40: Wayne with DBox
- 191F0245-50: Bennett, with DBox

Syntech Supplied Equipment:

- Citel RS-232 Surge Protection Device (SPD) (STS #: 266734)
- SPD to Omega JR Interface Cable (STS #: 941B0244-20)
  - This may be extended by splicing additional Belden 8771 cable to the loose end. If the extension must be pulled through underground conduit, use wet-rated cable. Do not pull this cable in the same conduit as AC power.
- Omega JR
- Configurator (usually seen in gold box like the Omega JR)
- EAPro to SPD Interface Cable (STS #: 191F0224-30)
- DBox (depending on kit purchased)
  - Normally the same brand as the dispensers, but also available from PIE – in which case, will include the Configurator. Each DBox supports up to eight dual-sided cabinets of a single dispenser make. DBoxes for different dispenser makes can be used with a single Omega JR or Configurator.

Customer Supplied Equipment:

- Omega JR to Configurator cable
- Configurator to DBox cable
- Uninterruptible Power Supply (UPS): The Omega JR does not have an internal battery. A UPS prevents transaction loss during power failures. No specific size is known, but in-house testing has proven successful for a 650 volt-amp unit.
- Dispenser

Installation

1. Connect the DBox or Configurator/DBox combo to the dispenser as outlined in the DBox Manual supplied by PIE.

2. Connect the supplied serial cable to the PiPort port.

3. Connect the other end of the serial cable to either Pi Port 1 or Pi Port 2 of the Omega JR, depending on the addressing of the dispenser. Pi Port 1 connects to addresses 1-16, while Pi Port 2 connects to addresses 17-32.

4. Connect the serial end of the 941B0244-20 cable to either the POS 1 or POS 2 port of the Omega JR. The POS ports are completely interchangeable.

5. Connect the bare ends of the 941B0244-20 cable to the LINE side of the Citel Surge Protection Device (SPD) using the below table:

| Wire Color	Port
Red	1a
White	2a
Black	4a

NOTE	The 941B0244-20 is an RS-232 cable, normally limited to 50 feet. This may be exceeded by increasing the conductor size and cable quality. If in doubt, test the connection before pulling the cable through conduit.

6. Connect the ferrule ends of the 191F0224-30 cable to the EQUIP side of the Citel SPD using the below table:

| Wire Color	Port
Orange	1b
Yellow	2b
Black	4b
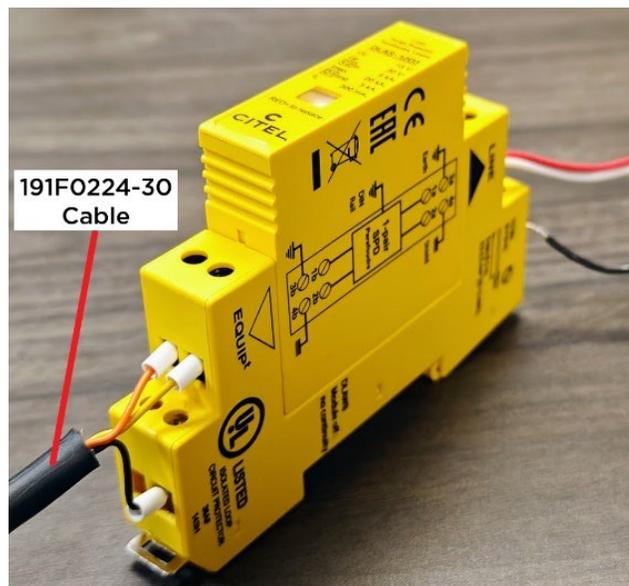
7. Attach the SPD to the DIN Rail, oriented so the EQUIP side faces left.

    a. Hook the SPD onto the DIN Rail.

    b. Utilize a flat head screwdriver to open the spring-loaded interlock.

    c. Push the SPD toward the Rail until in place; then, release the interlock to catch the rail.
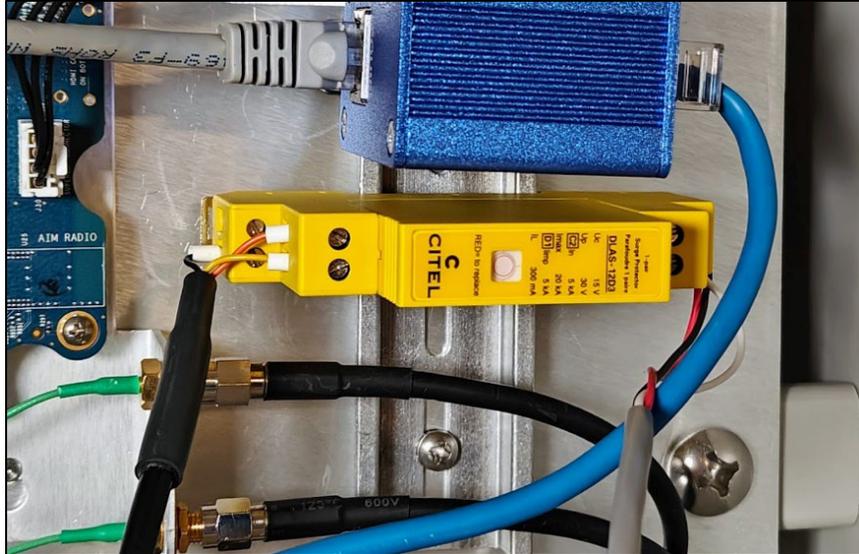
8. Connect the USB end of the 191F0224-30 cable to any available USB port on the EAPro.
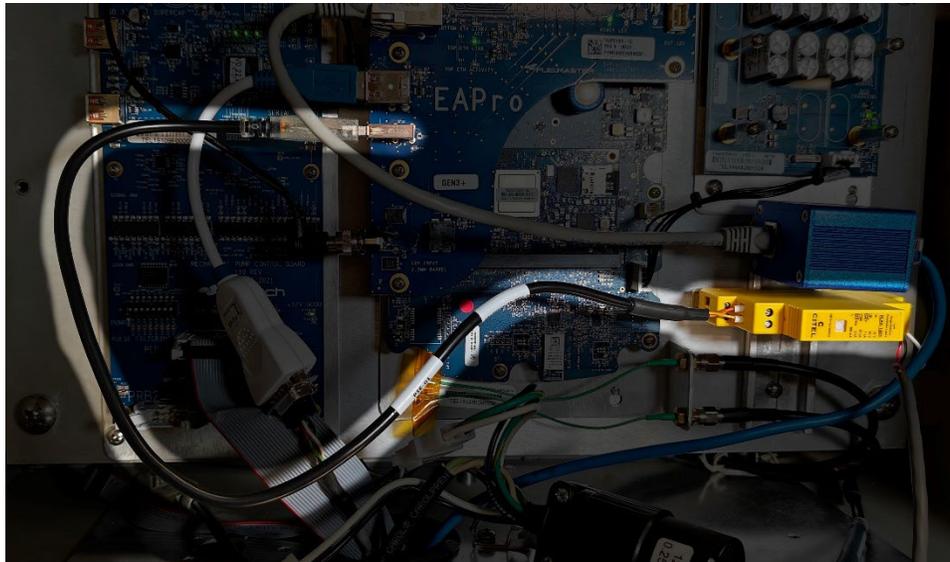
9. Power on the equipment in the following order:

    a. Dispenser
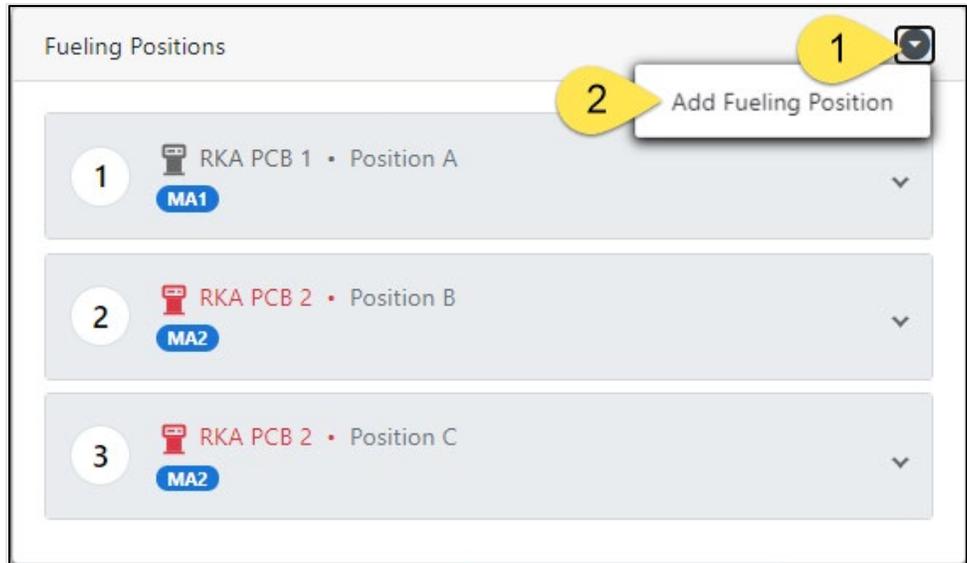
    b. DBox/Configurator

    c. Omega JR

    d. FMU

Configuration

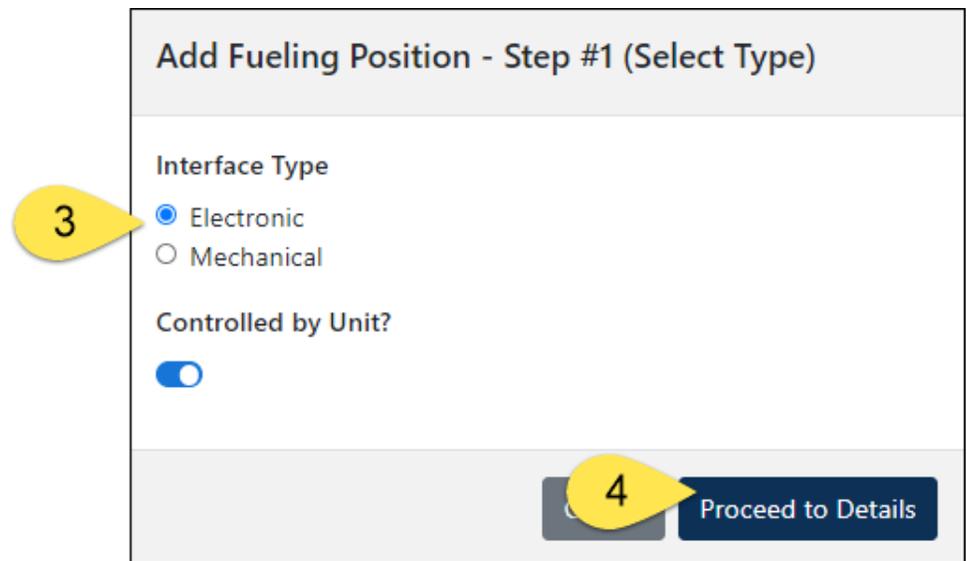| Assumptions |
|---|
| This tutorial assumes

   ● You have Facility Manager privileges.

   ● You have enabled and added pricing for all applicable products. |

1. *In Facilities -> Facility Dashboard -> Fueling Positions*, select the **dropdown menu**.

2. Select **Add Fueling Position**.

3. Select **Electronic** for the *Interface Type*.

4. Select **Proceed to Details**.

5. Enter the following information into the *Add Fueling Position - Step #2* screen:

Label	Field Name: Field Description	Image
a	**Number**: Unique Number associated with the fueling position. This typically matches the Unit Control Position.	
b	**Pump Start Timeout**: The amount of time the Unit will wait for the Operator to lift the pump handle after selecting a fueling position before it times out.	
c	**No Pulse Timeout**: The amount of time the transaction will remain authorized and available to start dispensing before time out.	
d	**Pump Finish Timeout**: The amount of time after pulses have ceased that the unit should wait before completing the transaction.	
e	**Controlling Unit**: The FlexFD that is controlling the fuel valve associated to the fuel position.	
f	**External Controller (PIE) Address**: An integer between 1 and 32.	

6. Select **Save & Proceed**.

7. Select the associated **Tank**.

8. Select **Save and Finish**.
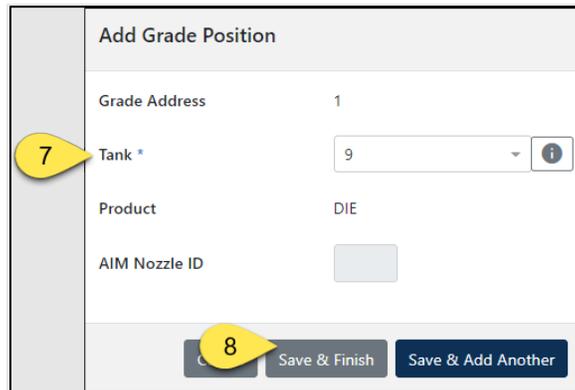
Troubleshooting

PIE Diagnostic Programs

PIE recommends performing an equipment test prior to installation and power-up of the Interface Kit, but many installers only perform this test if problems are encountered during installation and power-up. This test is outlined in the diagnostic section of the PIE Installation Guide included with the shipped parts.

LEDs

Omega JR

On the Omega JR, there are several lights that flash in normal operation. First, the white HB (heartbeat) light near the middle of the board should flash every second.
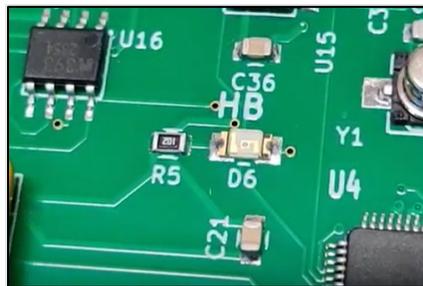
Next, near the POS plug, the POS TXD and RXD lights should be blinking. The green RXD (Received Data) light should blink quickly just before the longer red TXD (Transmitted Data) light.

Finally, when connected to a dispenser, the Bank 1 lights should show activity. These lights are to the right of and below the HB light. The red TXD and the green RXD should blink, but the speed at which they show activity can vary from dispenser to dispenser. The cream CTRL light should be lit if the Omega JR is powered up.

DBox

DBox lights will be in different locations on different styles of DBox. Regardless of the type, the TX Global and RX Global lights should be on the board in some location. Many DBoxes will also have a green power indicator.

Change Log

Date	Description
07/24/2014	Original
07/29/2016	Added Extended 941B0244 Cable information
07/12/2017	Reorganized and clarified information about dispenser settings in Omega Jr
10/27/2020	Rebranded/reformatted
09/15/2023	Added information for FM*Live* Interface; reorganized and edited.
03/14/2024	Established version 210a of this bulletin to address FM*Live* configuration.

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