

## Smart Relay Assembly Installation and Use

There are some devices which may be controlled by FuelMaster, but do not have pulse emitters. Under normal operating conditions, if a FuelMaster Fuel Management Unit (FMU) provides an authorization signal but does not receive pulses, it will shut the hose position down through Zero Quantity Transaction Limits, a safety feature built into the FMU to prevent continual authorization when no pulses are received. Gate openers and car washes are examples of devices which do not have pulse emitters. For these applications, a pulse must be generated, or a device must be used that is programmed to operate without pulses.

Devices which do not have pulse emitters may be controlled: 1) with a dual control relay assembly or solid-state relay assembly wired to generate pulses (see Product Bulletin 184 for instructions), 2) with a Smart Relay Assembly (SRA) covered in this bulletin, or 3) with an AIM access point. Applications 1) and 2) generate pulses. The AIM access point is programmed for continued operation without pulses, and requires activation with an AIM module.

An SRA (STS part number 233579) may be programmed to perform simple tasks the dual control relay assembly or solid-state relay assembly may be wired for. The dual control relay assembly or solid-state relay assembly are supplied as standard equipment with an FMU. The SRA is a priced option. It is not practical to use the SRA for simple tasks which may be performed with a dual control or solid-state relay assembly.

SRAs (see figure on page 2) have Programmable Interface Controllers (PICs) which may be programmed for unusual applications not possible with a dual control or solid-state relay assembly such as:

- Applications which cannot be accomplished with a common activation signal normally required by gate openers and car washes.
- Multiple actions which must be controlled by a single FMU (multiple car wash bays, multiple actions in a single car wash bay, restrictions on product selections, etc.).
- Need to control multiple actions or sequencing from a single activation (some car washes with multiple wash and rinse cycles).

Probably the easiest way to determine if an SRA may be needed is to ask if the desired task can be accomplished with a single activation signal from a dual control or solid-state relay assembly. If it cannot, an SRA may be the answer.

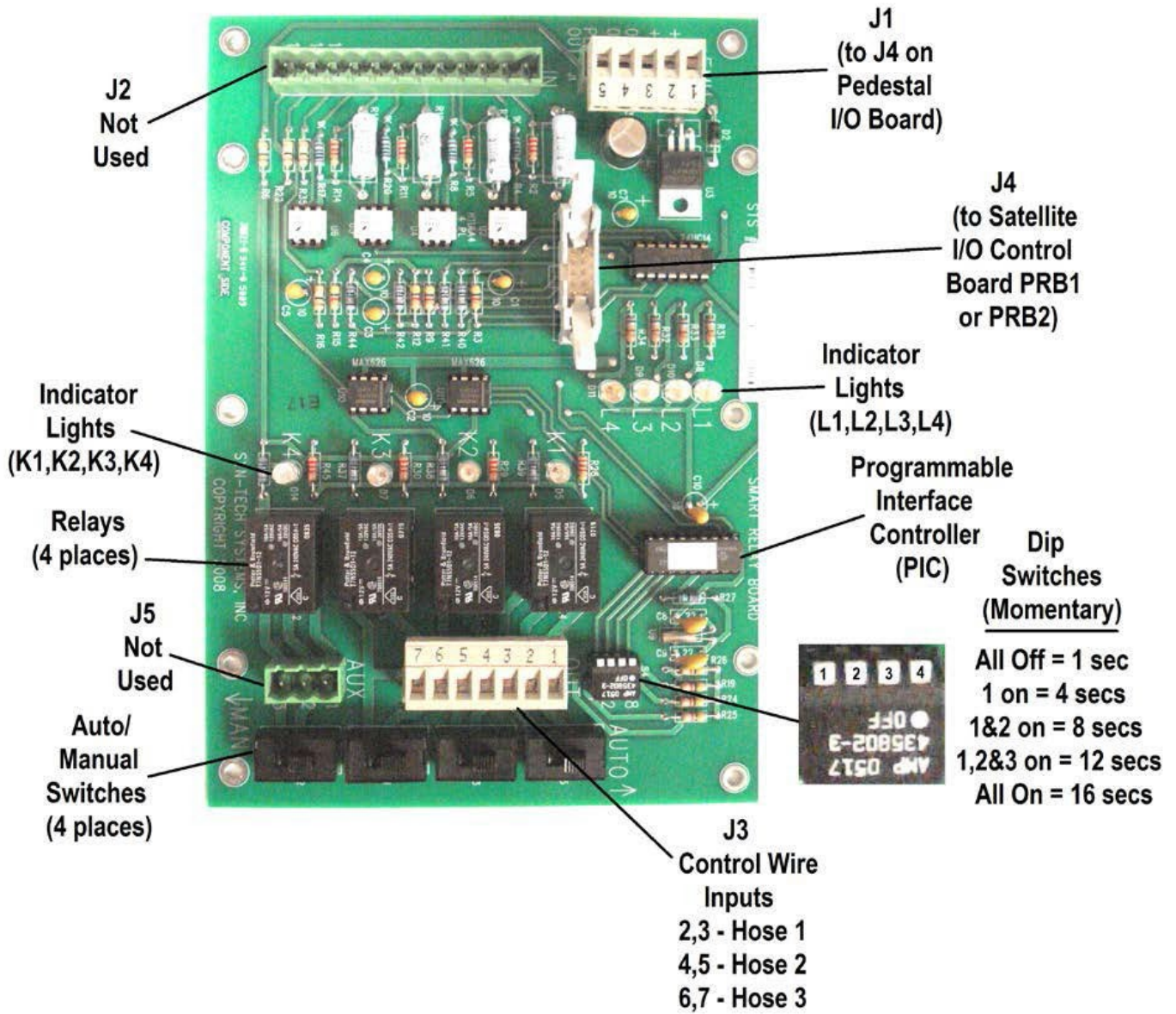
Because the SRA is programmable, the parameters to be programmed must be identified. It is not easy to make a generic program will all those parameters. The program will likely be unique for each application. Provide as much information as possible along with good contact information. There will likely be questions.

The SRA may be added as a first or second relay assembly in an FMU. The SRA has four relays. In most applications, three relays are used for control and the fourth relay is used to generate pulses.

SRAs do not utilize the Pedestal I/O Board or FMU Auto/Manual Switches for control. Control wires are wired direct into the SRA. Auto/manual switches specifically for use with the SRA are installed on the SRA (see figure on page 2).

SRAs have a dip switch (see figure on page 2) panel with four switches which may be used to adjust the duration of the momentary signal sent to the device(s) being controlled. The dip switches are not numbered. The figure on page 2 shows the positions left to right as 1-4, with a reference to the length of the momentary when the switches are turned on. The switches are on when pushed up; off when pushed down. A momentary of 4 seconds (dip switch 1 ON) is a good starting point for a new application.

The J3 receptacle is fitted with a 7-pin terminal plug for control wiring inputs. Instructions for use will be dependent upon the program developed. When instructions are provided, be sure to follow the pin numbers silkscreened on the SRA circuit board; some connectors are numbered differently from the numbers silkscreened on the circuit board. The two positions for each hose are not polarity sensitive. Either position may be an input or output.



Smart Relay Assembly (“as installed” orientation)

**NOTE** If the part number 233129 cable is not connected between the SRA and Pedestal I/O Board, the SRA will not function. It needs both the 12VDC and 0V from the Pedestal I/O Board for power and ground.

A cable (part number 233129) is provided with the SRA to connect J1 on the SRA to the applicable Pedestal I/O Board pulser connector (J4, J5, J6, or J7). Connectivity is as follows:

<b>SRA J1</b>	<b>Wire Color</b>	<b>Pedestal I/O Board J4, J5, J6, J7</b>
1 (+12)	White	1 or 7 (+12V)
3 (0V)	Black	6 (0V)
5 (PLS OUT)	Green	2 (P_) or 4 (P_)

The part number 233129 cable is configured for pulse outputs to only one hose position for one controlled device. If more than one device is to be controlled by the SRA, jumper wires must be installed to carry SRA pulse outputs to additional Pedestal I/O Board pulse input positions. Run a jumper wire from the 7-pin terminal plug pin 2 (P1) to each additional P\_ position (maximum of two additional) requiring pulse input from the SRA.

The indicator lights L1, L2, and L3 illuminate when a signal is sent to the SRA from the Satellite I/O Control Board. The light stays on until the relay turns off and the Pump Finish Timer expires. The indicator lights K1, K2, and K3 illuminate when the corresponding relay is activated. The indicator light K4 illuminates when the relay is generating pulses, and flashes until ten pulses are generated to create a transaction.

Additional actions and instructions will be provided with the SRA programmed for the requested application. Be sure to follow these instructions. The instructions may address installation as well as operation.

**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

<b>Date</b>	<b>Description</b>
2/8/2010	Original
7/18/2016	Revised Added second paragraph page 2 to describe dip switch settings Revised figure, page 2, to add dip switch settings and hose positions on J3
11/17/2016	Revised figure, page 2, to show correct pin positions on J3 terminal plug. Numbers were reversed from silkscreen on circuit board.
2/10/2021	Reformatted/rebranded