e-*ASK*

electronic *A*ccess *S*ecurity *K*eyless-entry

e-*FOB* RF Keyless-entry System
TM-Multi Installation Manual
FCC ID: TV2EFOB1
(UM21 ~ 22795-01)

Table of Contents

Introduction

This manual provides the necessary information for the proper installation and use of Tri*Mark*'s **e-*FOB*** transmitter/receiver system.

Basic functions of the system include:
- Locking and unlocking entry doors
- Light activation

The **e-*FOB*** system includes:
- Receiver
- 2 FOB transmitters
- 10-pin wire harness
- 5-wire heavy-duty harness

The receiver and FOB transmitters are shipped programmed. After a proper installation to recommended specifications (see appendix page I), the **e-*FOB*** system will function as indicated in this manual.

e-*FOB* Operation and Features

Lock button
(Channel 1)

Channel 3

Channel 4

Unlock button
(Channel 2)

Button	Function
Lock	Locks all doors.
Unlock	Unlocks all doors.

DIP Switch Setting Assignment

The DIP switch settings control additional functions. Power to the receiver should be disconnected and reconnected after a DIP switch is changed. Functional assignments are described below:

Switch		DIP Switch Settings	
#1	**Channel Output**	ON = 5-channels, no onboard relays	OFF = 7-channels 2 relay outputs
#2	**Channels 1-2**	ON = Sustained	OFF = Pulse
#3	**Channels 3-4**	ON = Sustained	OFF = Pulse
#4	**Channels 6-7**	ON = Independent	OFF = Lock/Unlock Confirmation

DIP Switch #1: 5-Channel or 7-Channel Mode
- DIP switch #1 ON: 5 Outputs available on 10-pin harness. No output at relays.
- DIP switch #1 OFF: Two relay outputs (30 amp) and 5 non-relay outputs available.

DIP Switch #2: Channel 1 - 2 Sustained Output
- DIP switch #2 ON: Channels 1 - 2 provide a sustained output. Output lasts as long as the button is pressed–up to 30 seconds.
- DIP switch #2 OFF: Channels 1 - 2 provide a 0.5 second pulse output.

DIP Switch #3: Channel 3 - 4 Sustained Output
- DIP switch #3 ON: Channels 3 - 4 provide a sustained output. Output lasts as long as the button is pressed–up to 30 seconds.
- DIP switch #3 OFF: Channels 3 - 4 provide a 0.5 second pulse output.

DIP Switch #4: Lock/Unlock Confirmation
- DIP switch #4 ON: Channels 6 - 7 provide independent operation.
- DIP switch #4 OFF: Channel 6 provides a 1-pulse confirmation for lock and a 2-pulse confirmation for unlock. Channel 7 provides a 30 second output with unlock.

Teaching Additional FOB
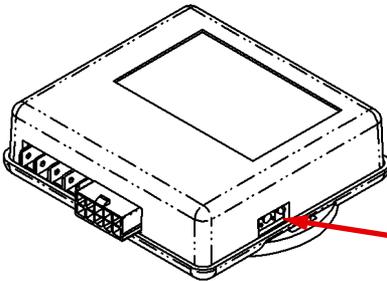
- Programming Button
- LED

1. Turn ignition off.
2. Press and release the programming button 3 times. The LED will turn on within 3 seconds.
3. Press and release the Lock button of each FOB transmitter to be used with this receiver one at a time. The LED will flash. Up to 4 transmitters may be programmed to a module.

Notes:
- If you place the system in learn mode and teach nothing, the system will exit in 10 seconds with no changes.
- When new transmitters are taught, all old transmitters are erased.
- The memory for codes will not be erased if power is removed.
- As soon as the LED turns off, the system is fully functional.

Troubleshooting

Problem Description	Possible Solution
e-*FOB* Hints	
Button press does not provide correct operation	Verify power to the RF receiver
	Replace FOB transmitter battery
	Re-teach the FOB transmitter to the receiver
No operation or intermittent operation	Mount RF receiver away from enclosed metal areas and fully extend antenna
	Check FOB transmitter battery voltage. Batteries need to be changed every 1-2 years depending on usage.
One particular **e-*FOB*** function does not work	Check wire connection of affected function at RF module and wiring harness

This product has been manufactured with methods to ensure high quality and to meet the high expectations of our customers. Tri*Mark* warrants this product to be free from workmanship defects and will remedy issues per Tri*Mark*'s warranty policy.

Remote transmitter FOBs, batteries, and other equipment subject to normal wear and deterioration may need to be replaced periodically by dealer and/or end user and are not covered by this warranty. Tri*Mark* will not be liable for indirect, special, incidental or consequential damages.

This system complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference and (2) This device must accept any interference received including interference that may cause undesired operation.

Note: The manufacturer is not responsible for any radio or television interference caused by unauthorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

Appendix: Installation and Mounting e-*FOB* System

Contact Tri*Mark* for specific mounting details, such as drawings, placement suggestions, cable loop straps, etc.

General Mounting Guidelines:
The RF receiver should be placed in an interior location that does not shield RF signals. You may need to try multiple locations to optimize reception. The antennae must be left fully extended and exposed. Minimize shielding from metal enclosures. Loop straps hook through the tabs and are screwed to the vehicle for mounting.

## Wiring Color Code Tables and Diagrams
The following tables and diagrams are provided to show color-coded wire and pin assignments for the **e-*FOB*** system. Connect all wires before plugging module into wiring harness.
Mating connector and terminals to 10-pin connector is **Amp 1-106527-0** and terminals **106529-2** or equivalents. The 5-pin harness mates with 0.25-inch female spade terminals.

Polarity of Channel 1 & 2 Input:
The jumpers located next to the DIP switch define polarity. When the jumpers are over the top terminals, the system is looking for a positive input. If the jumpers are at the bottom, a negative input is required.

RF Receiver

Pin 1   Pin 1
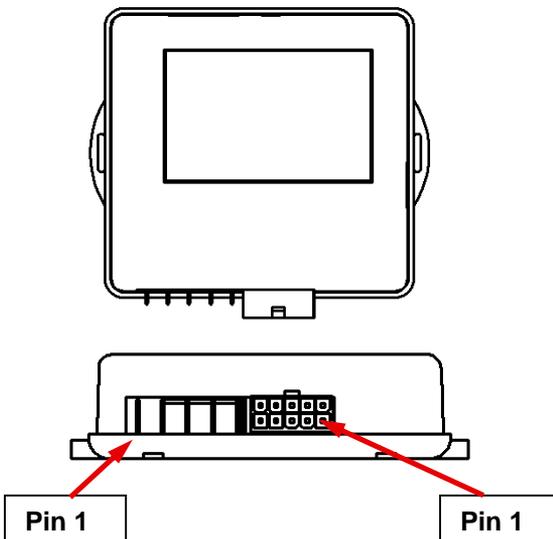
DIP Switch #1 - OFF		
WIRE COLORS	**CONNECTOR 5: 5-PIN HARNESS**	
Yellow	Channel 2 output (30 amp)	1
Brown	Channel 1 output (30 amp)	2
Red	Lock/Unlock Polarity (N/0) relay	3
Orange	Channel 2 (N/C)	4
Purple	Channel 1 (N/C)	5
WIRE COLORS	**CONNECTOR 4: 10-PIN HARNESS**	
Black	System Ground (-)	1
Green	Channel 2 Input	2
Purple	Channel 7 Output (dome light)	3
Blue	Channel 5 Output	4
Orange	Channel 3 Output	5
Red	+12V System Power	6
Yellow	Ignition Input	7
Gray	Channel 1 Input	8
White/Black	Channel 6 Output (confirmation pulse)	9
Brown	Channel 4 Output	10

* DO NOT USE A TEST LIGHT ON THE MODULE'S 500MA OUTPUTS

DIP Switch #1 - ON		
WIRE COLORS	**CONNECTOR 5: 5-PIN HARNESS**	
Not Available		
WIRE COLORS	**CONNECTOR 4: 10-PIN HARNESS**	
Black	System Ground (-)	1
Green	--	2
Purple	Channel 5 Output	3
Blue	Channel 3 Output	4
Orange	Channel 1 Output	5
Red	+12V System Power	6
Yellow	Ignition Input	7
Gray	--	8
White/Black	Channel 4 Output	9
Brown	Channel 2 Output	10

* DO NOT USE A TEST LIGHT ON THE MODULE'S 500MA OUTPUTS

Wiring Connections

Wiring Diagram – Lock/Unlock 2-Bank Cargo System using Internal Relays

Notes:
Additional door actuators can be installed in parallel on each bank (i.e. connecting all blue wires together on every relay on the same bank) as appropriate based on amp draw from actuators and amp ratings on relays

If amp draw from actuators exceeds the rating of the relay, add an additional relay pair in parallel (i.e. connect channel 3 and channel 4 to the 86 terminals of an additional relay pair for more bank 2 capacity)

TriMark Connectors

Actuators

Brown
Red
Black
Orange

10 9 8 7 6
5 4 3 2 1

Pin 87A (NC) GND — Purple
Pin 87A (NC) GND — Orange
Pin 87 (NO) +12V — Red
Pin 30 to Actuator — Brown
Pin 30 to Actuator — Yellow

BANK 1
ENTRY DOOR

BANK 2
TYPICALLY CARGO

86
87 87a 30
Bank 2 Lock Relay
85

86
87 87a 30
Bank 2 Unlock Relay
85

12 V DC
SOURCE

Wiring Diagram – Basic Lock/Unlock Control System using Internal Relays

Notes:
Additional door actuators can be installed in parallel on each bank (i.e. connecting all blue wires together on every relay on the same bank) as appropriate based on amp draw from actuators and amp ratings on relays

If door operation is reverse of what is expected, switch the connections of the green and blue wires of the actuator
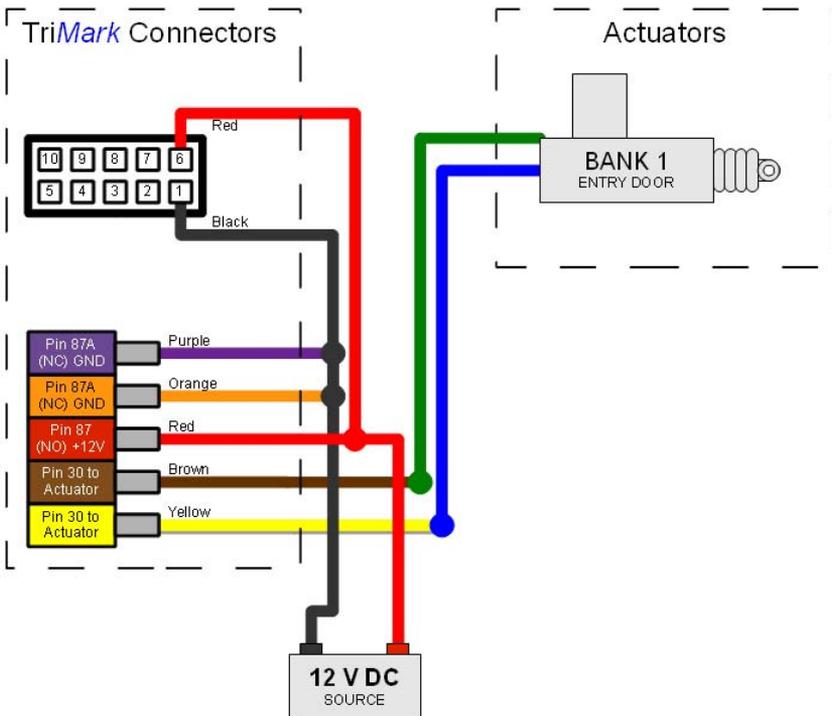
Wiring Diagram –
Accessory Connections

Notes:
Each output is a ground pulse designed to drive a relay, not power a high-amp circuit (i.e. Parking Lights, Doorbells, Horns, etc.). Isolate each output with a relay to integrate it into your circuit.

If channels 3 and 4 are not being used to control lock and unlock relays for cargo bays, they can be used for controlling other features.
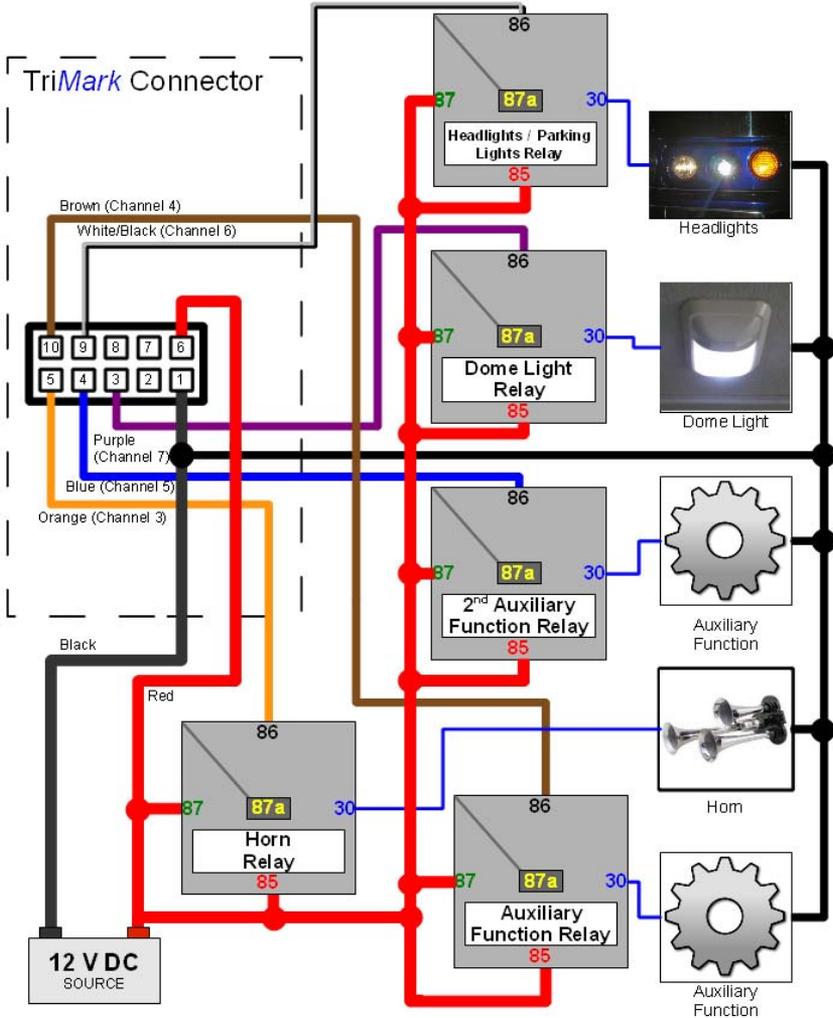
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