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e-*ASK*

Electronic Access Security Keyless-entry

e-*ASK* Keyless-entry System Installation & Instructions

CAN Multiplex System

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Introduction

This manual provides the necessary information for the proper installation and use of Tri*Mark*'s CAN **e-*ASK*** system. The **e-*ASK*** system comes with the following components:

- **e-*FOB*** (keyless entry radio frequency [RF] FOB transmitter and receiver)
- **e-*PAD*** keypad user interface

e-*FOB* Operation and Features

Button	Function
Entry Lock	Locks entry door and arms security system.
Entry Unlock	Unlocks entry door and activates the porch light.

Note:

- The FOB transmitters and receiver are shipped programmed. After making all necessary wiring connections (see page 11 for wiring information), the e-*FOB* system will function as shown.

Non-doorbell e-*PAD* Operation and Features

The e-*PAD* is shipped with default authority and access codes. Unless the OEM or dealer has changed default codes, the authority and access codes are as follows:

Access code:

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
1/2	3/4	5/6	7/8	9/0

Authority code:

Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
7/8	7/8	7/8	7/8	7/8

Locking doors with keypad

Press and hold down the (1 / 2) or (1) button for 1-2 seconds. An access code is not needed to lock the doors.

Secure Operations

Entering a valid 5-digit access code enables secure operations. After entering an access code, the keypad is enabled for 5 seconds and an additional button press initiates a secure operation, such as unlocking the doors.

Notes:

- The authority code does not allow for secure operations. It is only used to assign access codes (see page 9 for information on setting access codes).
- If an unassigned button or no button is pressed while the system is enabled, the keypad reverts back to disabled state.
- The secure keypad operations are set depending on the system configuration.

e-*ASK* CAN DIP Switch Configuration -

- DIP switches 1-3:

The settings of DIP switches 1-3 define CAN address of the IO RF receiver module. The setting a unique address is required if multiple modules are used on CAN network. If only 1 module is used on network then all DIP switches should be set to default ON position.

- DIP Switch 1: On
- DIP Switch 2: On
- DIP Switch 3: On

- **DIP switches 4-6:**

The setting of DIP switches 4-6 define configuration of the IO RF receiver module. Different configurations of provide different functionality for keypad and interior switches. Spartan's setting is as follows:

- DIP Switch 4: On
- DIP Switch 5: Off
- DIP Switch 6: Off

- **DIP switch 7:**

The setting of DIP switch 7 defines the type of remote fob transmitter, either standard fob or cargo fob. Spartan would have this DIP switch on.

- On: Cargo fob

- **DIP switch 8:**

The setting of DIP switch 8 defines the type of CAN protocol, either RV-C or SAE J1939. Spartan would have this DIP switch on.

- On: SAE J1939

Additional Features

Dome Light Activation

The dome light is activated for a timed duration (20 seconds) whenever the system is unlocked from keypad or FOB transmitter.

e-*PAD* Anti-tamper Deactivating Feature

After repeated attempts to enter incorrect codes (20 button presses without enabling), the keypad enters an inactive mode that disables button for 1 minute. This helps prevent undesired access by entering random

codes. No beep will sound with button press while the system is disabled.

Keypad Learn Wire

The yellow input wire is used to reset the keypad to assign a new authority code. See page 9 for further information on teaching keypad a new authority code.

Status LED

LED flashes at power-up and can provide other trouble shooting diagnostics codes

Miscellaneous I/O Module Features

Door locking and unlocking

A short single pulse output provides locking and unlocking operation to the entry doors (zone 1). The compartment doors are locked and unlocked with a single pulse. The locking and unlocking pulses have opposite polarities. Locking and unlocking operations are activated via vehicle switch inputs or according to **e-*PAD*** and **e-*FOB*** instructions.

Teaching Additional Transmitter Fobs

There are 2 ways that one can put the receiver into learn mode. The first requires that a CAN keypad be connected to the network. This option allows the receiver to be put into train mode without accessing the module. The 2nd option requires one to have access to the receiver, but a keypad is not required.

Option 1 (if CAN keypad is connected to network):

1. Hold middle (5/6) button of keypad for 5 seconds. The keypad will beep and the LEDs will flash.
2. Enter authority code buzzer stays on.
3. Hold 9/0 for 5 seconds. A double-beep plays.
4. The receiver module is now in FOB Learn Mode (The LED under the receiver enclosure will be blinking rapidly-this will not be visible unless the enclosure cover is removed)
5. Next press lock button of each fob (up to 4) that should be synched. (LED stays solid for 2 seconds as each one is learned.) Press the fob button for 0.5-2.0 seconds. Do not attempt to synch subsequent fobs until minimum of 3 seconds.
6. After 60 seconds of FOB button inactivity, or by simply pressing any key on the keypad, you will hear the successful indication (4 quick beeps) and the I/O module will reboot and address claim again to go back to normal operation.

Option 2 (if no CAN keypad is connected to network):

1. Remove power from door module
2. Open up door module enclosure
3. Move DIP switches 4-6 to the “ON” position. Make sure that the antenna module PCB is installed.
4. Connect door module to CAN network
5. Connect power to door module (8 pin connector)
6. Wait about 5 seconds. Module will perform a start up sequence during this time interval. After start up sequence LED will continue to flash.
7. Press any fob button until LED pattern changes (longer -0.5 second flash), then release. This synchs the first fob transmitter.
8. Press any fob button of 2nd fob, LED pattern changes immediately. This synchs the 2nd fob transmitter.
9. Repeat above step 8 until all fobs are synched (up to 4 fobs)
10. Remove power and CAN connector from door module
11. Move DIP switches 4-6 to normal position and verify DIP switches 1-3 are in proper position. Further information on DIP switches is above.
12. Reassemble enclosure.

13. Reconnect CAN connector.
14. Reconnect power to door module.
15. Verify that fobs are synched to the door module and that range is of RF transmission is acceptable. Door module needs to be connected to a valid CAN network (2+ modules on network) for verify functionality.

Please Note:

- Up to 4 transmitters can be synched with a door module.

Teaching Keypad New Authority / Access Codes

When you assign a new authority code, you delete the existing authority code as well as any access codes.

Note: The authority code you assign following these instructions also becomes an access code saved to the 1/2 button.

1. Connect yellow learn wire of keypad to ground There will be three-second beep.
2. Enter a new five-digit code-this will be your access and authority code.
3. Enter the new code again.
4. The existing code will only be erased if a new code is assigned.
5. The code is stored in position one.

Important: Authority and access codes should not be the same. If someone figures out an access code and discovers it to be an authority code as well, they can then create their own access code and gain entrance to your vehicle.

Once resetting the keypad, your next step should be to create a new access code and store it in position one so as to ensure the access code is no longer the same as the authority code.

Notes:

- The authority code is to be controlled by individuals (owners of vehicle, fleet manager, etc.) who manage the distribution of access codes to vehicle users.
- The authority code should be changed when the vehicle is sold.
- The authority code does not enable secure functions (lock/unlock doors, etc.) it is only used to assign access codes.

The following area can be used to document the authority code:

Authority Code				
Digit 1	**Digit 2**	**Digit 3**	**Digit 4**	**Digit 5**

Assign New Access Codes

With a valid authority code (see pages 4 and 9), an access code can be programmed with the following instructions.

1. Press the (5/6) button for 5 seconds, the keypad will beep. The backlighting LED of the keypad will flash indicating the learn mode.
2. Enter in the 5-digit authority code (see pages 4 and 9). Keypad will provide a long beep that will stop after you have defined an access number.
3. Press and release the button that corresponds to the access number. For example, press (1/2) button for access #1 and press (3/4) button for access #2. During this activity you are defining 1 of 5 access numbers. A subsequent code will be assigned to this access #. The keypad will provide a confirmation beep after this single button press.
4. Enter in your new 5-digit access code. The keypad will provide confirmation beeps.
5. Re-enter new access code. The keypad will provide confirmation beeps.

Repeat process to assign additional access codes.

Up to 5 different access codes can be assigned at one time. As additional access codes are defined, pre-existing access codes are overwritten. For example, if a new access code is assigned for access #3, the previous access #3 code is no longer valid.

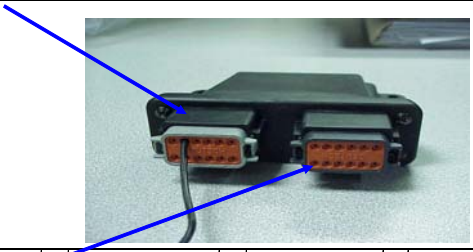
The following area can be used to document the access code assignments.

Access #	User Name	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
1						
2						
3						
4						
5						

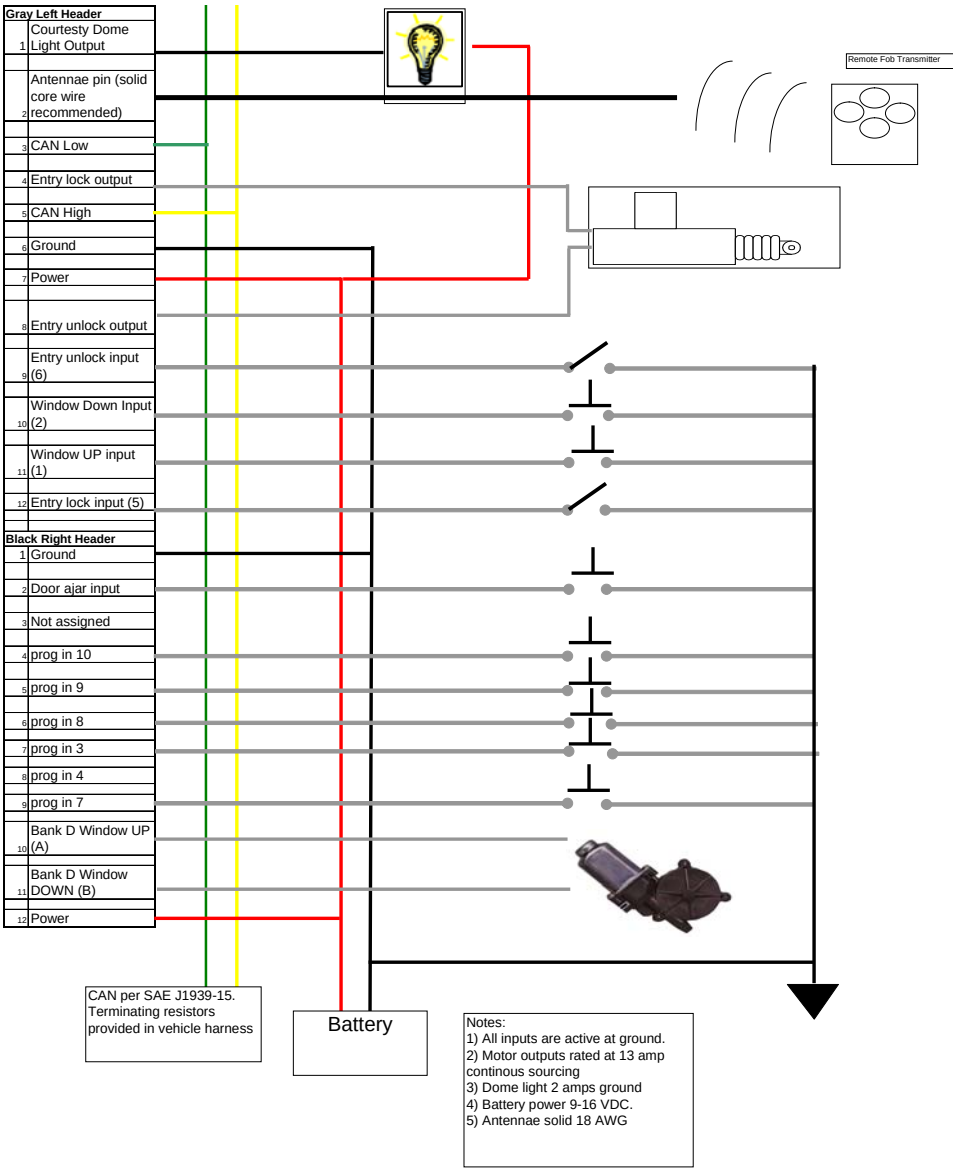
Wiring Assignments

Deutsch Enclosure Style

Gray Left Header											
1	Courtesty Dome Light Output	2	Antennae pin (solid core wire recommended)	3	CAN Low	4	Entry lock output	5	CAN High	6	Ground
12	Entry lock input (5)	11	Window UP input (1)	10	Window Down Input (2)	9	Entry unlock input (6)	8	Entry unlock output	7	Power



Black Right Header											
1	Ground	2	Door ajar input	3	Not assigned	4	prog in 10	5	prog in 9	6	prog in 8
12	Power	11	Bank D Window DOWN (B)	10	Bank D Window UP (A)	9	prog in 7	8	prog in 4	7	prog in 3


Gray Left Header
1 Courtesty Dome Light Output
2 Antennae pin (solid core wire recommended)
3 CAN Low
4 Entry lock output
5 CAN High
6 Ground
7 Power
8 Entry unlock output
9 Entry unlock input (6)
10 Window Down Input (2)
11 Window UP input (1)
12 Entry lock input (5)
Black Right Header
1 Ground
2 Door ajar input
3 Not assigned
4 prog in 10
5 prog in 9
6 prog in 8
7 prog in 3
8 prog in 4
9 prog in 7
10 Bank D Window UP (A)
11 Bank D Window DOWN (B)
12 Power
Remote Fob Transmitter
CAN per SAE J1939-15. Terminating resistors provided in vehicle harness
Battery
Notes:
1) All inputs are active at ground.
2) Motor outputs rated at 13 amp continous sourcing
3) Dome light 2 amps ground
4) Battery power 9-16 VDC.
5) Antennae solid 18 AWG

Troubleshooting

Problem Description	Possible Solution
e-*FOB* Hints	
Button press does not provide correct operation	Verify power to the I/O module and RF receiver.
	Re-teach the FOB transmitter to the receiver.
No operation or intermittent operation	Mount RF receiver away from enclosed metal areas and fully extend antennae.
	Check FOB transmitter battery voltage. Batteries may 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, wiring harness, and I/O module.
e-*PAD* Hints	
No response with button press	Verify power to the I/O module.
	Verify that keypad cable is connected. (rest of system will function)
Access code is not recognized	Verify that code has not been changed. Reassign keypad with instructions starting on pages 9-10.
	Confirm use of an access code, not the authority code.
Key fob works correctly, keypad beeps, but no output	Cycle power to I/O module. Check power connections.
Keypad beeps continually	Problem is detected on the communication network (CAN). Check that network is valid by confirming that other modules are plugged into network and that terminating resistors are correct value and are installed.
Unexpected operations occurs	Verify DIP switches on IO module are set to correct configuration setting.
	Verify keypad configuration is correct.

e-*ASK* I/O Module Hints	
No response in any system element. No LED flash (LED is under enclosure cover).	Verify power to the I/O module.
Unexpected operations occurs	Verify DIP switches are set to correct configuration setting.
No response in any system element. LED flashing (LED is under enclosure cover).	I/O module is detecting problem with communication network (CAN). Check that network is valid by confirming that other modules are plugged into network and that network terminating resistors are correct value and are installed.

FCC ID: TV2EFOBII

FCC Compliance and Advisory Statement

This device 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.

This equipment has been tested and found to comply with the limits for a Class B digital device, according to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try correct the interference by one or more of the following measures:

1.Reorient the receiving antenna.

2.Increase the separation between the equipment and receiver.

3.Connect the equipment into and outlet on a circuit different from that to which the receiver is connected.

4.Consult the dealer or an experienced radio/TV technician for help.

Any special accessories needed for compliance must be specified in the instruction manual.

Warning: **A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment.**

CAUSION: Any changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

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