e-*ASK*

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

CAN Multiplex System
Installation & Instructions

(UM27 ~ 24324-03)

TriMark®

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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

Cargo e-*FOB* Operation and Features

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

Note:

- The FOB transmitters and receiver are shipped programmed. After making all necessary wiring connections (see page 9 for wiring information), the **e-*FOB*** system will function upon providing power.

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) 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 7 for information on setting 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 Configurations

DIP Switches 1-3:

The settings of DIP switches 1-3 define CAN address of the I/O RF receiver module. The setting of 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 I/O RF receiver module. Different configurations 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/Porch 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 7 for further information on teaching keypad a new authority code.

Status LED

LED flashes at power-up and can provide other troubleshooting diagnostics codes. Status LED is on PCB of I/O module so enclosure needs to be removed to clearly see LED.

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. Keypad will provide a sustained beep.
3. Press and 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 lock FOB button for 0.5-2.0 seconds. Do not attempt to synch subsequent FOBs until minimum of 3 second pause occurs.
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. See Figure 2.

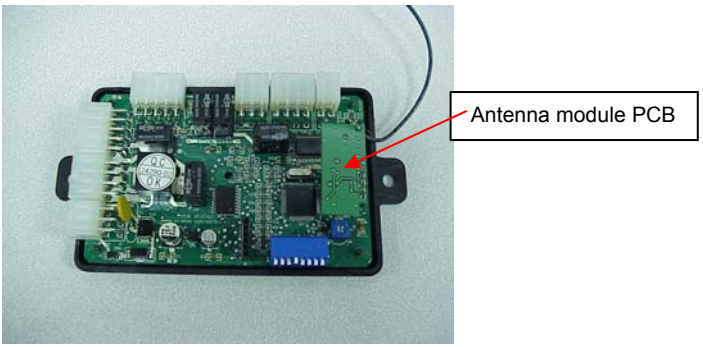


Figure 2: Antenna module PCB installation.

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 the LED will continue to flash.
7. Press lock FOB button until LED pattern changes (longer ~0.5 second flash), then release. This synchs the first FOB transmitter.
8. Press lock FOB button of 2nd FOB, LED pattern changes immediately. This synchs the 2nd FOB transmitter.
9. Repeat 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 on page 3.
12. Reassemble enclosure.
13. Reconnect power to door module.
14. Verify that FOBs are synched to the door module and that range of RF transmission is acceptable. Door module needs to be connected to a valid CAN network (2+ modules on network) in order to 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 a 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 page 7), 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 page 7). 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.

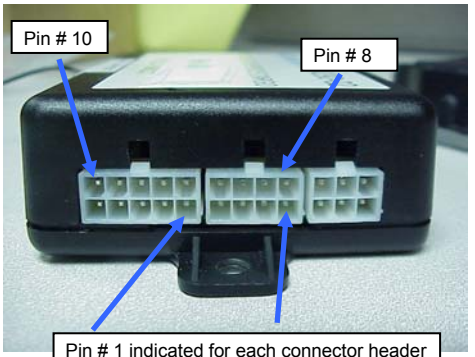
Access #	User Name	Digit 1	Digit 2	Digit 3	Digit 4	Digit 5
1						
2						
3						
4						
5						

Wiring Assignments

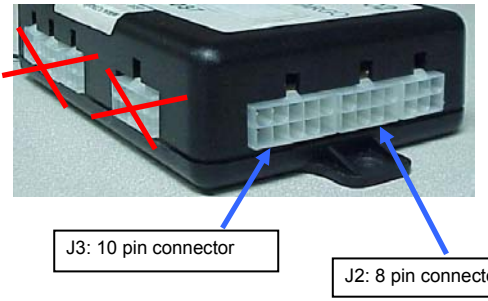
J3: 10 position connector									
Pin	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**
10	Dome light (ground output)	9	Door ajar input	8	CAN low	7	Entry lock output	6	CAN high
5	Entry lock input (5)	4	Lock cargo input (1)	3	Unlock cargo input (2)	2	Entry unlock input (6)	1	Entry unlock output

J2: 8 position connector to use 2 circuits per connection							
Pin	**Description**	**Pin**	**Description**	**Pin**	**Description**	**Pin**	**Description**
8	Power	7	Cargo unlock output	6	Cargo lock output	5	Ground
4	Power	3	Cargo unlock output	2	Cargo lock output	1	Ground

Note: Pin # assignment is based on AMP-DUAC product family.



Do not connect plugs into long side of controller or damage may result.



Spartan only would use the 8 and 10 pin header on the short edge of enclosure. Other connections are not needed for Spartan installation.

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.
Check 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 access code with instructions on pages 7-8.
	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 operation occurs	Verify DIP switches on I/O module are set to correct configuration setting.
	Verify keypad configuration is correct.

Problem Description	Possible Solution
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.

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