UM 37

Instructions and Proper Use

Peak Polar – CANIS 3 Pro
Remote Keyless Entry
System

TriMark® DOOR SYSTEMS
Access to Excellence

500-1050 e-*ASK* System (Sealed, CAN)

41718-03 RKE Controller and Fob Kit

41718-04 RKE Controller

41717-01 XMTR, 2 BTN, Peak Polar

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Tri*Mark* makes every attempt to assure that information contained in the User Manual is correct and accurate; however, changes in design, dimension and specifications may occur at any time and without notice. Please verify the revision level of this manual (see cover page) by referring to Tri*Mark*'s website under Product Code 500-1050.

Note: Product photos and illustrations may vary from your specific part numbers.

Introduction

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

- **e-ASK Sealed Controller:** Keyless entry controller
- **e-FOB Transmitter:** Key Fob transmitter

The **e-ASK** controller and **e-FOBS** are sync'd together prior to shipping. After making all necessary wiring connections the **e-ASK** System will function as indicated in this manual.

Component Overview and Operating Procedures

e-FOB

- 4-button RKE fob
- RF transceiver that can reach 50 meters through open air
- Control lock and unlock, plus auxiliary functions via CAN messages

41717-01

Button	Function
Lock	**Locks All Doors, Sends CAN Msg**
Unlock	**Unlocks All Doors, Sends CAN Msg**
Blank Left button	**Sends CAN Msg**
Blank Right button	**Sends CAN Msg**

e-Controller

- Enables distributed functionality, communicates with other controllers via SAE J1939
- Uses internal relays to control the main lock and unlock function

Pairing Fobs

- To enter Fob Learn Mode, connect J2P3 to ground for .5 to 3 seconds, repeat this three times in a row within 15 seconds
- The Lock relay clicks indicating the controller is in learn mode
- Pressing any button of a fob adds that fob's serial number to the Authorized Fob List
    - When the first fob is added after entering Fob Learn Mode, the Authorized Fob List is first cleared, then the new fob serial number is added
- Successfully adding a fob to the Authorized Fob List will cause the Lock relay to click as confirmation of adding a fob
- Clearing a single fob from the Authorized Fob List is not possible
- Fob Learn Mode stays active for 60 seconds past the last fob button press

Note: Programming new fobs clears all programmed fobs previously stored. You may learn up to 20 fobs. Make sure you have all the fobs that you wish to program before starting this process.

e-ASK Fob Guidelines

The e-ASK fob is designed to use commonly available CR2032 batteries. Estimated normal use should have an expected life of 2 years for the fob battery. Variances across commercial battery manufacturers and operating environment conditions may result in deviations from the expected battery life. The following guidelines should be followed to optimize fob battery life and system performance.

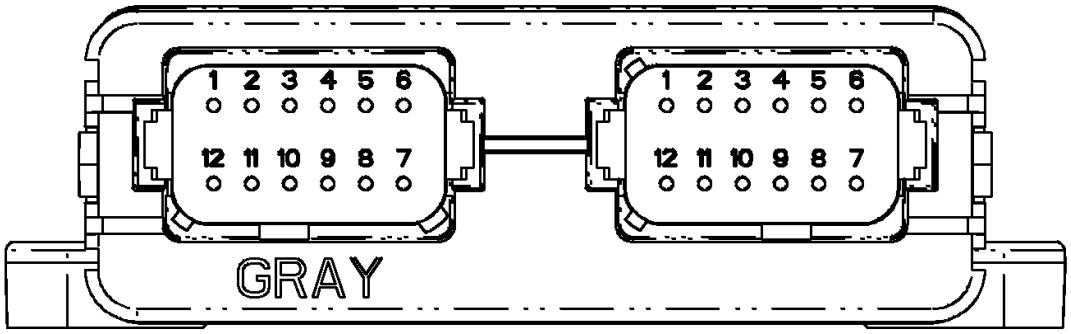
Due to the chemical process inherent in batteries, the performance of the e-FOB may be degraded at extreme temperatures. Operating temperature ranges vary across batteries from different manufacturers. For commercially available CR2032 batteries the typical operating temperatures ranges from –0C to +60C.

At cold temperatures, the battery's chemical process is slowed down and can result in reduced fob range performance or an inoperative fob. When the battery is returned to warmer temperatures, normal performance will return. Extreme cold temperatures, below –20C, can cause a battery to freeze and fail due to expansion of internal plastic components. Simply replacing the battery allows the fob to function normally.

At extreme hot temperatures, the battery's chemical process is accelerated. This may result in a reduced life expectancy of the battery. Normal fob range performance can be expected at higher temperatures if manufacturer limits are not exceeded.

Module Operation and Features (41718-04)

Module Connectors and Functions



Note: Most fuses are based on wire gauges. Fuses should be gauged accordingly.

The following wires must use twisted pair wires per industry standards:

- Follow SAE J1939/CAN protocol

J1-GRAY

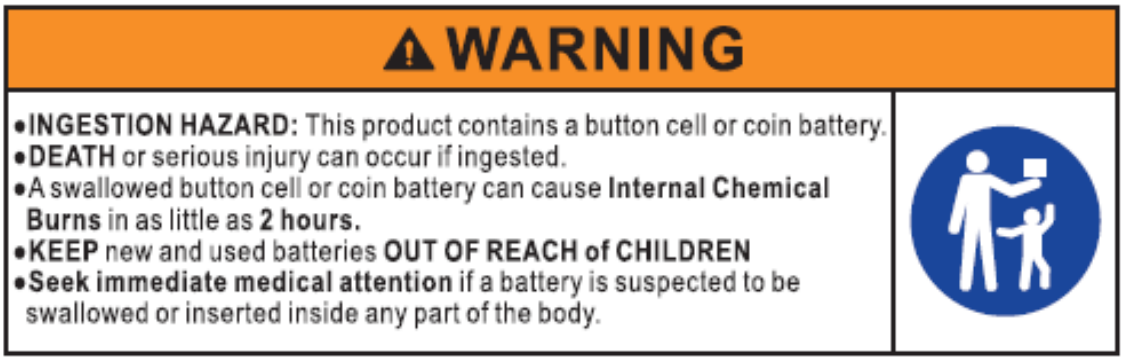
Pin	Input/Output	Function
J1P1	Output	(Unused Pin)
J1P2	Antenna	RF Antenna. See Appendix A: RF Antenna Guidelines
J1P3	CAN Low	CAN Low. Connected to system's CAN bus. See Appendix B: CAN Requirements
J1P4	Output	Lock Output. +12 V to lock GND to unlock via internal relay (20A max)
J1P5	CAN High	CAN High. Connected to system's CAN bus. See Appendix B: CAN Requirements
J1P6	Ground	System Ground (usually connected to battery ground)
J1P7	System Power	System Battery (usually connected to + battery post)
J1P8	Output	Unlock Output. GND to lock +12 to unlock via internal relay (20A max)
J1P9		(Unused Pin)
J1P10		(Unused Pin)
J1P11		(Unused Pin)
J1P12		(Unused Pin)

J2-Black

Pin	Input/ Output	Function
J2P1	Ground	System Ground (usually connected to battery ground)
J2P2		(Unused Pin)
J2P3	Input	Fob Learn input. See Pairing Fobs.
J2P4		(Unused Pin)
J2P5		(Unused Pin)
J2P6		(Unused Pin)
J2P7		(Unused Pin)
J2P8		(Unused Pin)
J2P9		(Unused Pin)
J2P10		(Unused Pin)
J2P11		(Unused Pin)
J2P12	System Power	System Battery (usually connected to + battery post)

Appendix A: Coin Cell Battery Warning

WARNING: TriMark Keyless Entry Fobs contain a lithium button/coin cell battery. Keep coin cell batteries out of reach of children.



1. Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
2. Even used batteries may cause severe injury or death.
3. **Call the National Battery Ingestion Hotline (800-498-8666) or the Poison Help Line (800-222-1222) immediately for treatment information if you suspect a child has swallowed or is exposed to button cell or coin batteries.**
4. The compatible battery type is CR2032.
5. The nominal battery voltage is 3V.
6. Non-rechargeable batteries such as the CR2032 are not to be recharged.
7. Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.
8. Ensure the batteries are installed correctly according to polarity (+ and -).
9. Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
10. Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
11. Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

Appendix B: Installing e-*ASK* Components

This system uses low-voltage circuitry and wireless communication. To protect these components and to ensure the device operates as expected, these application notes must be followed.

RF Antenna Guidelines

Typical RF antenna implementation consists of a single wire from the control module. To ensure optimal reception the RF antenna wire should be designed to the following specifications:

Wire Length:	107.5cm +/- 1cm
Wire Type:	22AWG, Braided tinned

The tip of the antenna wire should also be covered with heat shrink tube or plastic dip to prevent the possibility of bare wire contacting vehicle chassis locations and grounding the antenna.

The RF antenna 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 or chassis body panels that could act as a ground plane.

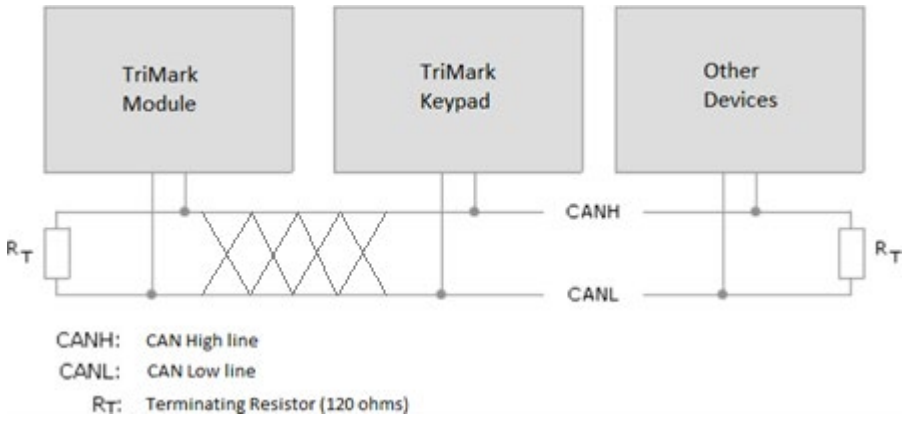
Looping the antenna, wrapping the antenna around a metallic object, or grouping the antenna wire in with another wire harness may affect the operating range of the remote key fobs. Routing of the antenna wire near wires with large or rapid voltage fluctuations may also have a detrimental effect on fob communication. If the antenna wire must be routed with other wires due to vehicle design constraints, care should be taken in harness manufacturing to ensure the antenna wire is routed on the outside of the wire harness bundle and away from wires that have large or rapid voltage fluctuations.

Controller Mounting

The module-Controller contains several internal mechanical relays. If a relay is exposed to excessive G-force loads (greater than 30 G), it could toggle unexpectedly. It is important that the control module be mounted in a suitable location to prevent exposure to excessive G-force loads. Examples of poor mounting locations include on or inside doors, near chassis suspension features, or near internal-combustion engines.

CAN Wiring and Requirements

- There must be at least two CAN devices on the CANH and CANL wires
- Terminating resistors are needed at each end of the CAN network (total of two)
- With everything unplugged, the harness must be 60 ohms between CANH and CANL
- Highly recommended that CANH and CANL wires are twisted together



Appendix C: Warranty

Tri*Mark* warrants that the products manufactured and sold shall be in accordance with specifications and free from defects in materials and workmanship for a period up to 18 (eighteen) months following the date of delivery to Tri*Mark*'s customer or 12 (twelve) months from the original O.E.M. sale (in-service) date. Where Tri*Mark* does not have design control regarding customer supplied products, materials or specifications, the warranty is limited to non-conforming products.

This warranty is expressly limited to persons who purchase Tri*Mark*'s products for the purpose of resale or use in the ordinary course of the buyer's business. This warranty does not cover any product that if Tri*Mark* Corporation determines (in its sole discretion) that a product's failure or malfunction is due to one or more of the following conditions, such failure or malfunction is EXCLUDED from the warranty provided hereunder: (1) used in a manner that exceeds published engineering specifications; (2) has been abused, misused, disassembled/opened, altered/modified, or improperly installed; (3) is used in an application not previously approved by Tri*Mark*; (4) is used in a manner inconsistent with any instructions and good industry practices regarding its use; (5) wear or deterioration due to environmental conditions; (6) unusual mechanical, physical or electrical stress or (7) is destroyed/damaged by fire, lightning or an act of God. In addition to the above, Tri*Mark* will not warrant any electrical/electronic products with (8) burned or broken traces on the printed circuit board; (9) burned or damaged components; (10) dirt or water residue on the printed circuit board or inside the case; (11) motor failure due to thermal failure; (12) or dead batteries.

This warranty is exclusive, and Tri*Mark* makes no other warranty of any kind whatsoever, expressed, or implied, with respect to the products manufactured and sold by it, whether as to merchantability, fitness for a particular purpose or any other matter. Without prior written authorization from the Board of Directors, no agent, employee, or representative of Tri*Mark* has any authority to bind Tri*Mark* to any affirmation, representation or warranty concerning Tri*Mark* products or parts, except as stated herein.

If any product supplied by Tri*Mark* is found to be defective by Tri*Mark* in its sole discretion, Tri*Mark* reserves the right to replace, rework, repair, or give credit for defective product. Upon confirmation of the defective condition of the subject part either with return of subject part and/or proper documentation, Tri*Mark* will replace such defective product exclusive of any labor, shipping, transportation, or delivery cost associated with the replacement. Tri*Mark* will not be responsible for the cost of removal of a defective product. This remedy shall be the exclusive remedy available for any defects in the products manufactured and sold by Tri*Mark* or for damages resulting from any other cause whatsoever, including without limitation, Tri*Mark*'s negligence. The purpose of this exclusive remedy shall be to provide the buyer with replacement of products or parts sold by Tri*Mark* found to be defective in materials or workmanship or negligently manufactured. This exclusive remedy shall not be deemed to have failed in its essential purpose so long as Tri*Mark* is willing and able to replace said defective products or parts in the prescribed manner.

WITHOUT LIMITING THE FOREGOING, TRIMARK SHALL NOT BE LIABLE FOR CONSEQUENTIAL OR INDIRECT DAMAGES, ECONOMIC LOSSES, LOSS OF USE, LOST PROFITS, DOWN TIME, OR DAMAGES DUE TO DELAY, WHETHER BY REASON OF BREACH OF WARRANTY, BREACH OF CONTRACT, NEGLIGENCE, STRICT LIABILITY OR OTHERWISE.

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.

Appendix D: Regulatory Information

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.

Le manuel d'utilisation des appareils radio exempts de licence doit contenir l'énoncé qui suit, ou l'équivalent, à un endroit bien en vue et/ou sur les appareils :

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications (moving the LF antenna for example) not expressly approved by the manufacture could avoid the user's authority to operate the equipment.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Appendix E: RF Exposure Statement

The device shall be used in such a manner that the potential for human contact normal operation is minimized. This equipment complies with RSS-102 radiation exposure limits. This equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Le dispositif doit être utilisé de manière à minimiser le potentiel de fonctionnement normal par contact humain. Cet équipement est conforme aux limites d'exposition au rayonnement RSS-102. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps. Cet appareil et son (ses) antenne (s) ne doivent pas être co-localisés ou utilisés conjointement avec une autre antenne ou un autre émetteur

Appendix F: Trademark Statement

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