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INVOTRONICS

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DCX KeyFob

Operations Manual

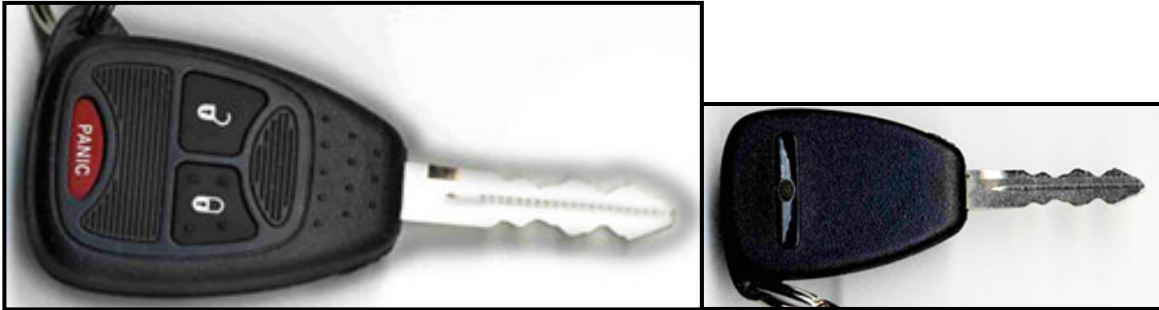
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DCX KeyFob Module Operations Manual

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Notice to User

Caution: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Information to Users:

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.

Purpose

The DCX KeyFob Module interfaces with the vehicle WCM (Wireless Control Module). The KeyFob houses a RKE (Remote Keyless Entry) transmitter and SKIM (Sentry Key Immobilizer Module) transceiver.

SKIM Immobilizer

The SKIM Immobilizer Key prevents unauthorized operation of a vehicle by disabling the engine. This system utilizes ignition keys which have an embedded electronic chip (transponder). The vehicle can only be started and operated by keys that have been programmed to the vehicle. Once a key has been programmed to a vehicle, it cannot be programmed to any other vehicle.

Operation of the SKIM Immobilizer system is automatic and does not require user activation.

The SKIM Immobilizer communicates with the WCM via an inductive coupled link at a frequency of 125Khz.

Remote Keyless Entry

This hand-held radio transmitter allows you to lock/unlock the doors, remotely start and activate the panic alarm within a 30meter range of the vehicle.

To Unlock doors:



Press and release the UNLOCK button on the RKE Transmitter once to unlock.

To Lock doors:



Press and release the LOCK button on the RKE Transmitter once to lock.

Panic Alarm:



Press and release the PANIC button on the RKE Transmitter once to turn the Panic Alarm On and Off.

Remote Start:



Press and release the REMOTE START button on the RKE Transmitter twice to remotely start the vehicle.

Notes:

If any of the buttons are pressed and not released within a 30 second duration the RKE Transmitter will stop transmitting and shut down to prevent battery drainage.

KeyFob Power Supply

The KeyFob operates on a 3V Manganese Dioxide Lithium Coin Battery (**CR2032**). Minimum operating voltage is approximately 2.6V, if the voltage drops below this level the transmitter will cease operation, and the battery will need to be replaced. Please replace battery with the aforementioned part number.

With the transmitter buttons facing down, use a thin coin to pry the two halves of the transmitter apart. Use care to ensure that the rubber gasket is not damaged during removal.

Remove and replace the batteries. Avoid touching the new batteries with your fingers. Skin oils may cause battery deterioration.

Do not touch the printed circuit board or the battery terminals that are on the back housing.

To reassemble the transmitter case, snap two halves together. Make sure there is an even 'gap' between the two halves.

Test Transmitter operation.

Technical Specifications

KeyFob Mechanical Design

The KeyFob has six mechanical components.

1. Component Mounted PCB.
2. Elastomer Buttons.
3. Battery Clip.
4. Plastic Housing (Top & Bottom Halves).
5. Metal Key-Blade.
6. Key Ring.

RKE Wireless Specifications

Stabilized by a SAW resonator, the resonant frequency is generated by an oscillator transmitting on a frequency of 315MHZ, within an accuracy of +/-75kHz.

RKE Transmitter -- General Wireless Specifications		
<i>Parameter</i>	<i>Specification</i>	<i>Units</i>
Center Frequency, Accuracy, and Stability		
Center Frequency (Carrier)	315.000	MHz
Accuracy	+/- 75	kHz
Stability	+/- 75	kHz
Polarization Ratio (between any two axes)	5 (with linearly polarized receiving antenna)	dB
Load Induced Frequency Shift	+/- 40	kHz
Operating Stability with Voltage Variation / Low Battery		
Output Power Stability	5	dB
Frequency Shift	+/- 20	kHz

RKE Transmitter -- General Wireless Specifications		
<i>Parameter</i>	<i>Specification</i>	<i>Units</i>
Output Power Limits and Stability		
Output Power	≤ 81.0	dB μ V/m (peak)
Output Power Stability	+/- 3	dB
Modulation Index (ASK Mode)		
ON-OFF Ratio	40	dB
Intra-Transmission Stability		
Output Power	1 (bit-wise peak power across packet)	dB
Center Frequency	+/- 10	kHz
Timing	+/- 1	%
Carrier Attack / Close Time		
Attack Time	25	μ sec
Close Time	50	μ sec

KeyFob Operating Temperatures		
<i>Parameter</i>	<i>Minimum</i>	<i>Maximum</i>
Physical Device Classification		
RKE Feature OpTemp	-20°C	+70°C
SKIM Feature OpTemp	-40°C	+85°C
Storage Temperature (ExpTemp)	-40°C	+85°C
Humidity (Operation)	<2% RH	>99% RH

Nominal System Range Requirement		
<i>Reliability</i>	<i>Distance</i>	<i>Units</i>
100% (0% Failure)	20	m
> 90% (<10% Failure)	25	m
> 75% (<25% Failure)	30	m
> 25% (<75% Failure)	40	m

