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Invo 315 KeyFob Operations Manual

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Invo 315 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 Invo 315 KeyFob Module interfaces with the respective VRM (Vehicle Receiver Module). The KeyFob houses an RF transmitter.

Remote Keyless Entry



This hand-held radio transmitter allows you to do a number of functions. These include: closing and opening the tonneau cover, locking/unlocking the tonneau cover latch. All these within a 30meter range of the vehicle.

To Lock/Unlock Latch:

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



To Open Tonneau Cover:



Press and release the OPEN button on the Transmitter once to trigger the Open Procedure.

To Close Tonneau Cover:



Press and release the CLOSE button on the Transmitter once to trigger the Close Procedure.

Notes:

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



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KeyFob Power Supply

The KeyFob operates on a 3V Manganese Dioxide Lithium Coin Battery (**CR2032**). Minimum operating voltage is approximately 2.2V, 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.

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 Invo 315 KeyFob has three mechanical components.

1. Component Mounted PCB.
2. Elastomer Buttons.
3. Plastic Housing (Top & Bottom Halves).

RF Transmitter Wireless Specifications

The RF Transmitter is a PLL (Phase Lock Loop) style stabilized transmitter that uses a single crystal frequency for reference.

RF Transmitter -- General Wireless Specifications		
<i>Parameter</i>	<i>Specification</i>	<i>Units</i>
<i>Center Frequency, Accuracy, and Stability</i>		
Center Frequency (Carrier)	315.000	MHz
Accuracy	+/- 50	kHz
Stability	+/- 50	kHz
Polarization Ratio (between any two axes)	5 (with linearly polarized receiving antenna)	dB
Load Induced Frequency Shift	+/- 40	kHz
<i>Operating Stability with Voltage Variation / Low Battery</i>		
Output Power Stability	5	dB
Frequency Shift	+/- 20	kHz

RF Transmitter -- General Wireless Specifications		
<i>Parameter</i>	<i>Specification</i>	<i>Units</i>
Output Power Limits and Stability		
Output Power	≤ 84.0	dB μ V/m (peak) @ 3m
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		
Operational Temperature	-20°C	+70°C
Storage Temperature (ExpTemp)	-40°C	+85°C
Humidity (Operation)	<2% RH	>99% RH



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<i>Nominal System Range</i>		
<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