

Functional description
5WK4 9005

Siemens VDO Automotive AG

SV C BC S7 CN

FCC ID:KR55WK49005

IC:267T-5WK49005

User Manual

for

Siemens VDO

MAZDA IMMO

Type 5WK49005

GENERAL DESCRIPTION OF THE RF TRANSMITTER

The Mazda Immobilizer Module is base lined from Ford PATS for the hardware, which was developed and manufactured by Siemens VDO. The Mazda Immobilizer is the interface between the transponder inside the key and the control module.

- When the vehicle's ignition is started the control module signals the MIM to energize the transponder inside the key head or key fob for PASE systems. The transponder conforms to the Texas Instruments (TIRIS) protocol.
- The MIM amplifies signal that is coupled from the MIM's antenna to the transponder's coil which charges the transponder.
- After charging, control module sends via the MIM a 40 bit random number to the transponder. The data written into the transponder is encoded in a pulse width modulated (PWM) format and modulated in an ASK format at the desired frequency (134.2 KHz).
- The MIM modulates the PWM data sent by the Control Module on the TX input pin. The MIM modulates the data on the TX input only while the TX input is active. The MIM does not send any signal while the TX input is inactive. The transponder discriminates between the off times of the MIM's PWM encoded, ASK modulated signal to distinguish low bits and high bits. During the on-times the MIM is restoring energy to the transponder.
- The MIM also receives the LF signal transmitted by the transponder. The MIM will demodulate the transponder's FSK signal and transmit it to the control module over an asynchronous serial communication interface (SCI). The SCI protocol is one start bit, one stop bit and no parity at 15.625 Kbaud with the Most Significant Byte first and the least significant Bit of each Byte first. The SCI (and transponder) message includes a start byte, eight data bytes, two block check character bytes, a stop byte and two end bytes. The value of the Start Byte is either 7E or FE hexadecimal. The value of the Stop Byte is either 7E or FE hexadecimal. The value of both the End Bytes is 00 hexadecimal.
- The MIM also has limited diagnostic capability. After the MIM has begun charging the transponder, the MIM will send a diagnostic byte to the SKE module over the SCI.
- The LED for the Illumination Ring is controlled by the SKE module. SKE module will provide battery feed power and a low side control transistor.

2. POWER SUPPLY

Voltage for guaranteed function and performance:

Minimum Operating Voltage= 6V

Siemens VDO Automotive AG

SV C BC S7 CN

FCC ID:KR55WK49005

IC:267T-5WK49005

Nominal Operating Voltage=13.5V
Maximum Operating Voltage = 16V

List of variants

5WK49001	IMMO without illumination function
5WK49003	IMMO without illumination function
5WK49005	IMMO with illumination function

TECHNICAL DATA

Carrier frequency: 134.0⁺⁶₋₃ kHz
Type of modulation: ASK / FSK
Nominal Operating Voltage: 13.5V

Siemens VDO Automotive AG

SV C BC S7 CN

FCC ID:KR55WK49005

IC:267T-5WK49005

LABEL DESIGN

Siemens VDO
5WK49005
FCC ID:KR55WK49005
IC:267T-5WK49005



Entry Owners Manual:

NOTE

This device complies with part 15 of the FCC Rules and with RSS -210 of Industry Canada. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept interference received, including interference that may cause undesired operation.

CAUTION

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment