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Hamsar Keyless Entry System Overview

The keyless entry system is composed of three modules. The system is powered off of the vehicle's battery circuit; therefore the operation of the system will function at all times while battery power is available, but is still capable of storing the password even though the system is powered off.

1) MAIN RECEIVER CONTROL MODULE (MRCM)

Located in the door that will be controlled or locked/unlocked. The module provides 2 connectors for wiring interface.

The first connector includes:

- A) + Power connection.
- B) N/C (Not connected).
- C) - Ground connection.
- D) - Switched ground connection (Light).
- E) + Exterior timed light output.
- F) Actuator switch (normally open)
- G) Actuator switch (normally closed)
- H) Actuator switch common.
- J) + Actuator motor.
- K) - Actuator motor.

The second connector interfaces to the touch pad and includes:

- 1) Switch LED + Power
- 2) Ground
- 3) Switch Analog voltage

The connector that provides the touch pad switch interface will communicate the condition of the keys that have been depressed. The signal will be an analog voltage. Each key will have a precise voltage that relates back to a specific switch. It will also provide power to the LEDs on the touch pad. The LEDs on the touch pad will remain illuminated for a period of 1 minute after a key has been depressed or the remote transmitter signal has been received.

The MRCM will provide the following functions:

*Standby mode will be awaiting a signal from either the touch pad or the transmitter.

*Decode mode will be initiated after the receipt of either a 5 digit sequence password through entry on the touch pad or wireless receipt of a serial transmission code via the transmitter.

*Once the decode mode has been authenticated by the module, the actuator motor circuit will be enabled for a period of 0.2 second. Pending the position of the integral actuator switch, the motor polarity will be either activated to lock or activated to be unlocked. If the integral actuator switch is not detected to have changed state, the module will enable the actuator motor circuit for a second time. If the switch continues not to change state, the touch pad keys will flash and the internal beeper will continue to sound until the switch has been mechanically corrected or the condition has been fixed. The beeper will automatically shut off after 30 seconds.

*Simultaneously the built in LEDs on the touch pad will be illuminated for a period of one minute and the exterior timed light output will also be activated for the same time period.

*The depression and receipt of a touchpad key switch or the receipt of the transmitter signal will be audibly annunciated by a quick chirp via the internal buzzer.

*Programming a new personal password is conducted as follows: Depress and hold the unlock transmitter key for a period of 5 seconds followed by a 0.25 second beep. Then within 1 sec depress and hold the lock transmitter key for a period of 5 seconds followed by a 1 sec beep. Enter the five digit password by depressing the appropriate buttons providing the desired numbers with an approximate gap of 1 second but not more than 10 seconds between the key depressions. The beeper will beep five times for a period of quarter of a second on successfully learning the password. This means that the new password has been accepted and programmed. If the gap between entering the new password is more than 10 seconds, the internal buzzer will beep in a fast mode for 3 seconds and system will exit the programming mode. Programming of a new password can be initiated again by depressing the unlock key. To test the new password simply depress the new password in sequence and note the correct lock/unlock operation.

*Upon shipment of the new keyless entry system, there will be a password programmed reflecting the Hamsar batch code number. Since the password is generic, it is highly advised that a new personal password is programmed upon installation.

2) TOUCH PAD SWITCH (TPS)

Mounted on the door that will be controlled or locked/unlocked by the keyless entry system. It is mechanically secured in place by the three 8/32 bolts from inside the door assembly. It is connected to the MRCM via a three conductor

cable. The TPS offers a 5 button array. The numbers printed on the buttons include: 0/1, 2/3, 4/5, 6/7 and 8/9. Although only five buttons are provided, the 10 available digits allow multiple translations.

The buttons are back lit by LEDs. Once any button is depressed, the LEDs remain illuminated for a period of 1 minute.

3)REMOTE CONTROL TRANSMITTER (RCT)

Two remote control transmitter key fobs are included with each system. Each key fob has been factory programmed so that a matched pair has been created. The transmitters and receiver use rolling code technology. The code changes with each depression and transmission.

In the event that the transmitters are lost, previously programmed transmitters can be cancelled and new transmitters can be programmed. Programming is done by accessing the program switch that is built internally on every MRCM. Access to the switch on the module will require that the controlled door be disassembled. To enter the program mode simply depress the switch for approximately 1 sec, at this stage programming mode will be activated for 15 seconds. Within that 15 second depress the transmitter unlock button for approximately 1 sec. Multiple transmitters can be programmed while the programming mode is active. Once the programming mode has ended the transmitter(s) will become operational.

Note: If the programming switch on the module has been depressed and held down for more than 15 seconds, it will cancel all the previously programmed transmitter key fob(s), just in case if someone losses the key fob(s) and wants to cancel it.

The transmitters are battery operated. The battery will require replacement. The battery type is engraved in the plastic on the back of the transmitter key fob. Battery replacement will require removal of the retaining screw and back plastic cover. Battery polarity must be observed when re-installing the new battery.