

FUNCTIONAL DESCRIPTION

1. System Components:

The DaimlerChrysler SKREES (Sentry Key Remote Entry System) is a vehicle immobilization and Remote Keyless Entry (RKE) system. This system consists of a module or base station called the SKREEM (Sentry Key Remote Entry Module Wireless Control Module) with a RKE Fob and a Sentry Key.

System Operation:

The DaimlerChrysler Sentry Key Remote Entry System (SKREES) combines two sub-systems: an Immobilizer Module and a Remote Keyless Entry Module into one system that performs the functions of both modules. Therefore, the SKREES can be divided into two major sub-systems: a Sentry Key Immobilizer and a Remote Keyless Entry.

Remote keyless entry function is provided by the RF sub-system of the SKREEM and the RKE fob. On the other hand, the immobilizer function is provided by the LF sub-system of the SKREEM and the Sentry Key. The operation of these functions are as follows:

Immobilizer:

The Sentry Key communicates encoded 125kHz ASK data to the SKREEM via Absorption or Load Modulation. The Sentry Key transponder sinks, dependant on its internal impedance, current out of the field that's generated by the SKREEM Base station antenna. The base station self senses the voltage drop that's caused on the internal resistance of the transmitter stage by the impedance (load) of the transponder. The data that the SKREEM sees (or receives) is Manchester encoded at 125kHz based on the Philips HITAG2+ protocol and encryption algorithm.

The Sentry Key Immobilizer sub-system authenticates an electronically coded Sentry Key when placed into the ignition and sends a valid/invalid key message to the engine controller based on the results. The authentication of the Sentry Key is performed using Philips HITAG2 protocol and Philips HITAG2 encryption algorithm. The "valid/invalid key" message communication is performed using a DaimlerChrysler proprietary rolling code algorithm via a J1850 bus. A "valid key" message must be sent to the engine controller within 2 seconds of ignition ON to free the engine from immobilization.

The RF sub-system of SKREEM receives an encrypted RF signal from a RKE fob. SKREEM then decrypts the signal and broadcasts the requested remote commands to the appropriate control modules in the vehicle through J1850 bus. The RF data is encrypted using Philips HITAG2 encryption algorithm. A valid RKE fob ID must be incorporated into the RF signal in order for the SKREEM to pass the message to the control modules.

Automatic RKE fob synchronization is done by SKREEM if valid RKE Fob is detected when message is received. This provides a maximum operation window for RKE functions.

2. List of SKREEM system components

5WY7385	SKREEM KJ Auto Locate TPM, RKE, Immobilizer
5WY7389	SKREEM KJ Base TPM, RKE, Immobilizer