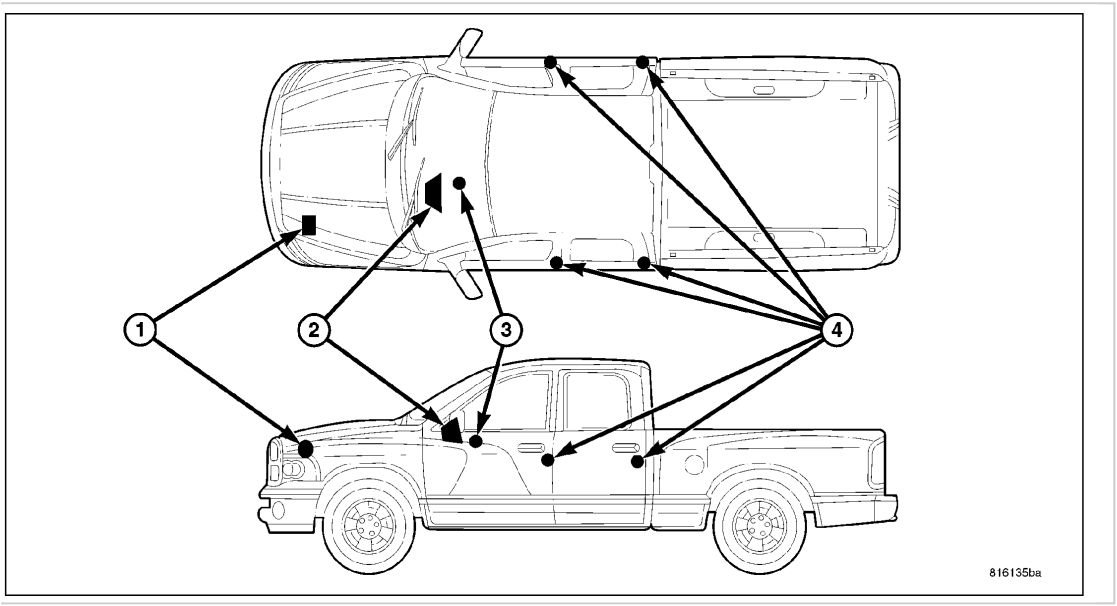
COMPONENTS



The Vehicle Theft Security System (VTSS) is designed to provide perimeter protection against unauthorized use or tampering by monitoring the vehicle door ajar circuits, the power lock and unlock circuits, and the ignition switch circuit. If unauthorized use or tampering is detected, the system responds by pulsing the horn for up to about **three minutes** and flashing the hazard warning lamps for up to about **eighteen minutes**.

The VTSS includes the following major components, which are described in further detail elsewhere:
- **Door Ajar Switches (4)** - A door ajar switch is integral to the door latch mechanism of each front as well as the rear doors on quad cab and mega cab models.
- **Front Control Module (1)** - The Totally Integrated Power Module (TIPM) is located in the engine compartment, nea the battery.
- **Ignition Switch (3)** - The ignition switch is located on the steering column in the passenger compartment.
- **Instrument Cluster (2)** - The ElectroMechanical Instrument Cluster (EMIC) is also known as the Cab Control Node (CCN) in this vehicle. The EMIC/CCN is located in the instrument panel above the steering column opening, directly in front of the driver.
- **Security Indicator** - The security indicator is integral to the instrument cluster.

Hard wired circuitry connects the VTSS components to the electrical system of the vehicle. These hard wired circuits are integral to several wire harnesses, which are routed throughout the vehicle and retained by many different methods. These circuits may be connected to each other, to the vehicle electrical system and to the VTSS components through the use of a combination of soldered splices, splice block connectors, and many different types of wire harness terminal connectors and insulators. Refer to the appropriate wiring information. The wiring information includes wiring diagrams, proper wire and connector repair procedures, further details on wire harness routing and retention, as well as pin-out and location views for the various wire harness connectors, splices and grounds.

The ElectroMechanical Instrument Cluster (EMIC) is used on this model to control and integrate many of the

functions and features included in the Vehicle Theft Security System (VTSS). In the VTSS, the EMIC receives inputs indicating the status of the door ajar switches and the ignition switch. The EMIC will process the information from all of these inputs, internally control the security indicator as appropriate, and send electronic messages to the Totally Integrated Power Module (TIPM) over the Controller Area Network (CAN) data bus. The TIPM internally controls the outputs to the hazard warning lamps and the horn(s) as appropriate.

Following are paragraphs describing the operation of each of the VTSS features.

ENABLING
The EMIC must have the VTSS function electronically enabled in order for the VTSS to perform as designed. The logic in the EMIC keeps its VTSS function dormant until it is enabled using a diagnostic scan tool. The VTSS function of the EMIC is enabled on vehicles equipped with the VTSS option at the factory, but a service replacement EMIC must be VTSS-enabled by the dealer using a diagnostic scan tool.

ARMING
Passive arming of the VTSS occurs when the vehicle is exited with the key removed from the ignition switch, the headlamps are turned off, and the doors are locked while they are open using the power lock switch. Active arming occurs when the "Lock" button on the Remote Keyless Entry (RKE) transmitter is depressed to lock the vehicle. For active arming to occur, the doors must be closed and the ignition switch must be in the Off position when the RKE transmitter "Lock" button is depressed. The power lock switch will not function if the key is in the ignition switch or the headlamps are turned on with the driver side front door open.

Pre-arming of the VTSS is initiated when a door is open when the vehicle is locked using a power door lock switch or when the RKE transmitter "Lock" button is depressed. Pre-arming will not occur if the key is in the ignition switch or the headlamps are turned on with the driver side front door open. When the VTSS is pre-armed, the arming sequence is delayed until all of the doors have been closed. The VTSS will remain in "Pre-Armed" mode until after all doors have been closed, or until the interior lighting load shed threshold is surpassed (about **eight minutes**).

Once the VTSS begins the passive or active arming sequence, the security indicator in the instrument cluster will flash rapidly for about **seventeen seconds**. This indicates that VTSS arming is in progress. If the ignition switch is turned to the On position, a door is opened, a door is unlocked by any means, or the RKE "Panic" button is depressed during the **seventeen seconds** arming process, the security indicator will stop flashing and the arming process will abort. Once the **seventeen seconds** arming sequence is successfully completed, the security indicator will flash at a slower rate, indicating that the VTSS is armed.

DISARMING
Since this model is not equipped with lock cylinder switches, passive disarming of the VTSS is only possible if the vehicle is equipped with the optional Sentry Key Immobilizer System (SKIS). On vehicles with SKIS, turning the ignition switch to the On position using a valid SKIS key will passively disarm VTSS. Active disarming of the VTSS occurs when the vehicle is unlocked by depressing the Unlock button of the RKE transmitter. Once the alarm has been activated, either disarming method will also deactivate the alarm. Depressing the "Panic" button on the RKE transmitter will not disarm the VTSS.

POWER-UP MODE
When the armed VTSS senses that the battery has been disconnected and reconnected, it enters its power-up mode In the power-up mode the alarm system remains armed following a battery failure or disconnect. If the VTSS was armed prior to a battery disconnect or failure, the technician or vehicle operator will have to actively or passively disarm the alarm system after the battery is reconnected. The power-up mode will also apply if the battery goes dead while the system is armed, and battery jump-starting is attempted. The VTSS will be armed until the technician

or vehicle operator has actively or passively disarmed the alarm system. If the VTSS is in the disarmed mode prior to a battery disconnect or failure, it will remain disarmed after the battery is reconnected or replaced, or if jump-starting is attempted.

TAMPER ALERT

The VTSS tamper alert feature will sound the horn three times upon disarming, if the alarm was triggered and has since timed-out (about **eighteen minutes**) or if the battery has been disconnected and reconnected. This feature alerts the vehicle operator that the VTSS alarm was activated while the vehicle was unattended.