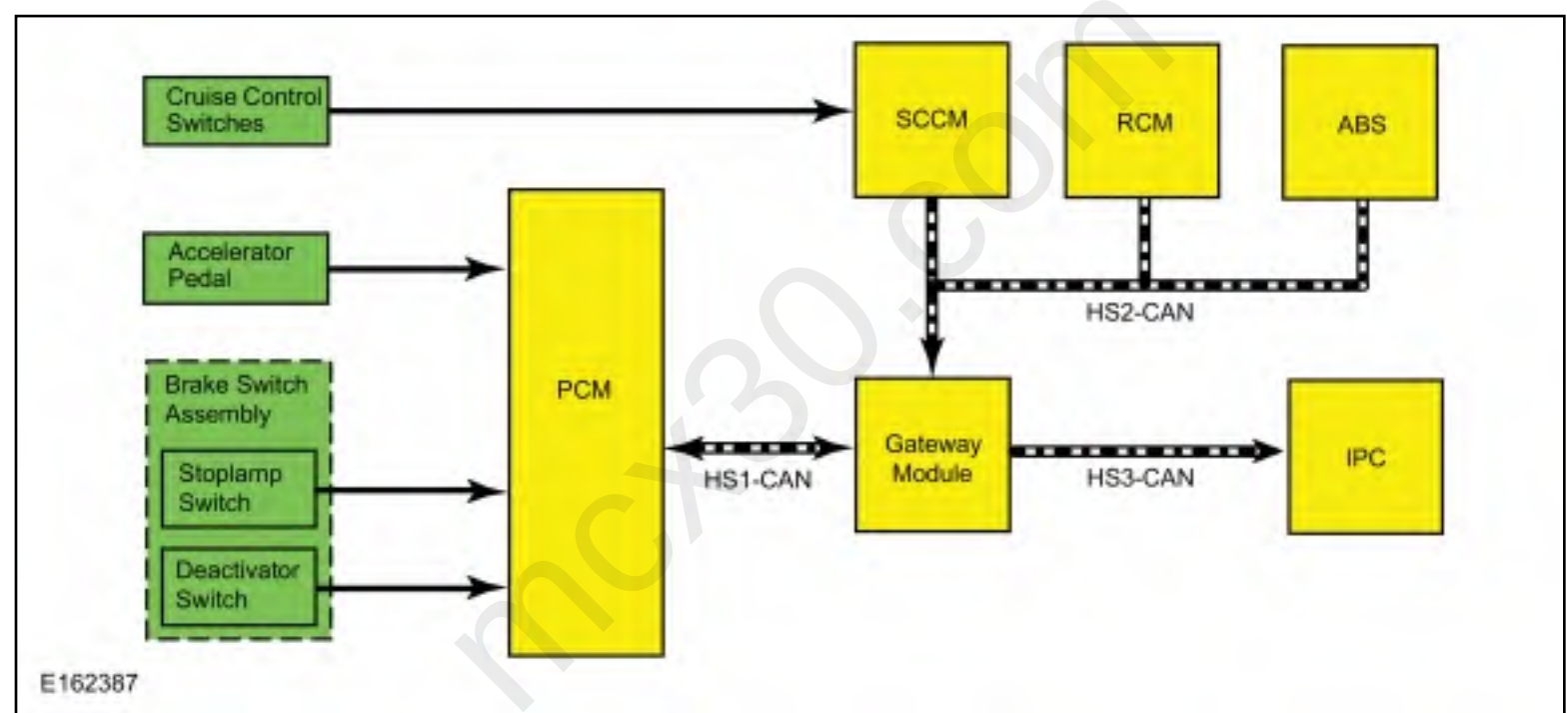


Cruise Control - System Operation and Component Description

System Operation

Non-Adaptive Cruise Control



Network Message Chart

Network Input Messages - IPC

Broadcast Message	Originating Module	Message Purpose
Cruise control override	PCM	Driver overriding cruise control with accelerator pedal.
Cruise control status	PCM	Data used for speed control indicator status.

Network Input Messages - PCM

Broadcast Message	Originating Module	Message Purpose
Steering wheel switch speed control	SCCM	Used for cruise control enable/disable and operating mode request.
Stability control event in progress	ABS module	Deactivates speed control when requested.
Traction control event in progress		
Vehicle yaw rate		
Vehicle lateral acceleration	RCM	Deactivates speed control when requested.
Vehicle longitudinal acceleration		

Cruise Control Operation

The cruise control functions include:

- turning on the cruise control system.
- setting and maintaining the desired vehicle speed.
- accelerating the vehicle speed.
- coasting down to a lower speed.
- resuming the prior vehicle speed.
- turning off the cruise control system.

The cruise control system maintains a selected vehicle speed within a range between 32 km/h (20 mph), or 30 km/h (18 mph) if equipped with a metric cluster, and the maximum limited vehicle speed. When a MyKey® restricted key is in use, the vehicle speed does not exceed the MyKey® maximum limited speed. During normal driving conditions, the vehicle speed can fluctuate slightly from the selected set speed due to road conditions. The vehicle speed can fluctuate more noticeably when driving up and down steep hills.

Certain conditions cause the cruise control system to deactivate:

- Application of the parking brake
- Transmission gear selector is placed into a position other than D or OD
- Cruise control set speed is overridden with the accelerator pedal for a period longer than 5 minutes
- Cruise control switch is pressed or stuck longer than 2 minutes

- Vehicle speed decreases more than 16 km/h (10 mph) below the set speed
- ABS fault

The BPP switch assembly (contains the stoplamp switch and cruise control deactivator switch) and APP sensor are hardwired inputs to the PCM.

Electronic Throttle Body (ETB) command is a hardwired output of the PCM.

The vehicle speed is controlled by the PCM through the Electronic Throttle Control (ETC) subsystem.

The cruise control system provides self-diagnostics. Cruise control is disabled anytime an error is detected in the system. No IPC indicator or message center messages are displayed when faults occur. Fault codes are logged by the PCM or SCCM.

An Electronic Throttle Control (ETC) system fault also causes the cruise control system to be disabled. In this case, an Electronic Throttle Control (ETC) system powertrain malfunction (wrench) warning indicator is displayed.

Cruise Control Indicator

The cruise control indicator, located in the IPC, illuminates to indicate the cruise control system is active.

Steering Wheel Switch Function

Cruise control switch inputs are received by the SCCM and sent to the PCM through the GWM to the HS-CAN1.

Pressing (ON) and releasing the ON/OFF switch turns the cruise control system on. Pressing (SET+) or (SET-) on the SET switch while the vehicle is traveling at the desired speed activates the cruise control system.

Pressing up or down on the SET switch while in the active mode increases or decreases the maintained vehicle speed by 2 kmh per press when displayed units are "kmh" and 1 mph per press when displayed units are "mph". If the respective switch is pressed and held, the vehicle speed continues to accelerate or decelerate until the switch is released.

Pressing (OFF) and releasing the ON/OFF switch, or turning the ignition switch to the OFF position, turns the cruise control system off. While the cruise control system is active, applying the brake pedal or pressing the CNCL (CANCEL) switch puts the cruise control system into standby mode. Pressing the RES (RESUME) switch when the cruise control system is in standby mode causes the vehicle to accelerate to the last speed. Resume does not function if the OFF switch is pressed, the ignition switch is cycled OFF, or if the current vehicle speed is below the minimum operational speed.

Steering Wheel Switches

The cruise control steering wheel mounted switches are momentary contact switches that toggle up and down for the switch state. The switches are an input to the SCCM.

Brake Switch

When the brake pedal is applied, an electrical signal from the stoplamp circuit to the PCM deactivates the system. Under increased brake pedal effort, the cruise control deactivator switch opens and removes the ground signal from the PCM input circuit releasing the throttle, immediately deactivating the system.

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