

16. REMOTE THROTTLE

16.1. 60AJA — REMOTE THROTTLE CONTROL INTERLOCKED TO PARK BRAKE APPLIED — RECOVERY ONLY

FEATURE CODE DESCRIPTION: BDY INTG, THROTTLE CONTROL Accommodation for Single Customer Mounted External Engine Speed Control Switch, Programmable Mode for Various Switch Actions and Engine Speed Control Option; Useable Only While Vehicle is Stopped and the Park Brake is Applied (requires 1 Remote Power Module input)

FEATURE/BODY FUNCTION: This feature provides the operator of **Recovery** applications with external control of the engine speed with a customer-mounted switch. Activation of a customer-installed switch increases the engine speed to the first preset value. This feature utilizes one pin on the Black 23-pin Remote Power Module input connector (Use ICAP or the Diamond Logic™ Builder software to determine correct pin location). The ESC reads the voltage on this input pin and communicates the correct action to the Engine Control Module. This code is offered to add additional functionality and to provide a simpler alternative to the hardwired Remote Engine Speed Controls offered by 12VW or 12VYC. Use customer supplied single pull, double throw, center stable, momentary switch. All remote throttle switches and associated wiring should be customer supplied. Feature code 12VXU is required to program the engine for the desired mode of engine speed control. This option is only useable when Vehicle Speed is 0 Mph and Park Brake is applied.

60AJA Default Switch Action: Applying 12 volts on the Remote Power Module input ramps the engine to first preset speed. Applying ground on the Remote Power Module input returns the engine to idle.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595172

Software feature codes that must be removed: 595241, 595240, 595196, 595263

Table 119

| Off - Indicates a 0 is set in for this parameter | | | | | | | |
|--|------|--|---------|-------|------|------|------|
| On - Indicates a 1 is set for the parameter | | | | | | | |
| Parameter | ID | Description | Default | Units | Min | Max | Step |
| TEM_Ext_Eng_Speed_Control_Mode | 2035 | This parameter sets the mode of operation for the TEM External Engine Speed Control feature. | 1 | List | 0 | 3 | 1 |
| TEM_Ext_Eng_Spd_Ctrl_Active_State | 2158 | This is the active state for the external engine speed control switch. | 3 | List | List | List | List |

TEM_Ext_Eng_Spd_Control_Mode

This parameter controls the mode in which the engine speed control feature operates. The setting of this parameter depends upon the type of switch that will be controlling the engine speed and the speed control action that is desired. The mode is described in terms of what the engine will do based on what state is on the Remote Power Module Input. The valid states on an RPM input are:

- Ground – The input is connected to ground through a switch
- Floating – The input is not connected to anything
- 12 Volts – The input is connected to 12 Volts through a switch

Table 120

| Setting | Mode Explanation | Diagram |
|---------|---|---------|
| 1 | In this mode, the feature will be expecting the switch to be a center stable momentary up/down switch wired as shown in the diagram. When the remote power module input is pulled to 12 Volts (switch is in the up position on the diagram), the engine speed will ramp to engine preset 1. When the remote power module input is pulled to ground (switch is in the down position on the diagram), the engine speed will return to idle. When the switch is left in the center stable position (as it is presently shown in the diagram) no action will occur. E.g. if the engine was already ramped, it will stay ramped, and if the engine was at idle, it would stay at idle. | |

TEM_Ext_Eng_Spd_Ctrl_PTO_Ilock

*This parameter can only be used on vehicles that have an International PTO feature. If this parameter is set, the remote engine speed control will be interlocked to PTO. This means that the remote engine speed control will only be allowed to operate if the PTO is being requested to engage. If this parameter is not set, the engine speed control will operate regardless of the PTO request.

TEM_Ext_Eng_Spd_Ctrl_Active_State

This parameter tells the engine control feature what state to look for on the remote power module input. This parameter setting is only used when TEM_Ext_Eng_Spd_Control_Mode is set to 2, or 3. The valid settings for this parameter are:

Table 121

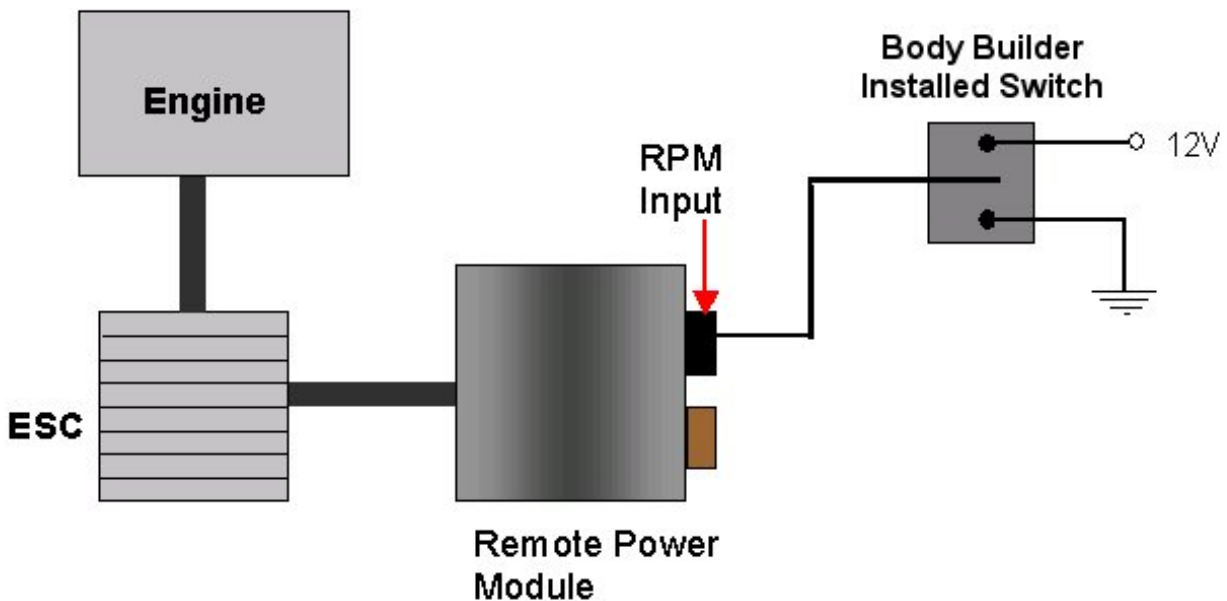
| Setting | Active State |
|---------|---|
| 0 | Floating (the plunger provides a floating input to the remote power module when depressed. This setting is not recommended) |
| 1 | Ground (the plunger provides a ground to the remote power module input when depressed) |
| 3 | 12 Volts (the plunger provides 12 Volts to the remote power module input when depressed) |

The engine speed control will only operate when the vehicle is stopped with the park brake applied and the transmission in neutral. The increased engine speed will be cancelled if any of these conditions are not met or if:

- The cruise disable switch is depressed
- The brake pedal is depressed
- The clutch is depressed (if present)

WIRING INFORMATION

- Customer provides a remote-mounted, center-stable, momentary switch that is wired into the pin labeled Remote_Engine_Speed_Sw_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin location). This switch should be 12V in one momentary position and ground in the other momentary position.

**Figure 128**

TESTING

1. Start vehicle.
2. Activate the Remote Engine Speed Control Switch (Close switch to active input condition that has been programmed, i.e. 12 volts or Ground).
3. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground as long as the switch is closed.
4. Verify that the engine ramps to the first preset speed.
5. If engine does not ramp to the first preset speed, check engine programming to verify that the correct engine speed control parameters are set.
6. Deactivate the Remote Engine Speed Control switch (Release Ground).
7. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software) is an open circuit.
8. Verify that the engine returns to idle.

HOW TO ADD THIS FEATURE:

- Select software feature code 595172 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595241, 595240, 595196, and 595263 are removed from the vehicle (See Local Dealer)
- Use ICAP or the Diamond Logic™ Builder software to determine which pin on the Black 23-pin Remote Power Module input connector has been assigned to Remote Engine Speed Control
- Customer must install a remote-mounted switch to control Engine Speed and a wire that runs from the switch to the pin labeled Remote_Engine_Speed_Sw_Input on the Remote Power Module input connector.

16.2. 60AJE — REMOTE THROTTLE CONTROL INTERLOCKED TO PARK BRAKE APPLIED

FEATURE CODE DESCRIPTION: BDY INTG, THROTTLE CONTROL Accommodation for Single Customer Mounted External Engine Speed Control Switch, Programmable Mode for Various Switch Actions and Engine Speed Control Option; Useable Only While Vehicle is Stopped and the Park Brake is Applied (requires 1 Remote Power Module input)

FEATURE/BODY FUNCTION: This feature is a general purpose Remote Throttle feature to be used on all applications. The customer can achieve temporary Remote Engine Speed Control using a pressure switch or a momentary switch. The customer can also achieve permanent engine speed control by using a latched switch. As long as the input is active, the engine will ramp up to the first engine pre-set speed. When the switch is released, the engine speed returns to normal idle. This input is interlocked with park brake so that the customer can only use this option when the park brake is applied and the vehicle is stopped. This feature utilizes one pin on the Black 23-pin Remote Power Module input connector (Use ICAP or the Diamond Logic™ Builder software to determine correct pin location). The ESC reads the voltage on this input pin and communicates the correct action to the Engine Control Module. This code is offered to add additional functionality and to provide a simpler alternative to the hardwired Remote Engine Speed Controls offered by 12VW or 12VYC. All remote throttle switches and associated wiring should be customer supplied. Feature code 12VXU is required to program the engine for the desired mode of engine speed control.

60AJE Default Switch Action: When ground is applied to the Remote Power Module input, the engine ramps to the first preset speed and maintains that speed as long as the input is held at ground. Removing ground from the Remote Power Module input returns the engine to idle.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595241

Software feature codes that must be removed: 595172, 595240, 595196, 595263

Table 122

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|-----------------------------------|------|--|---------|-------|-----|-----|------|
| TEM_Ext_Eng_Speed_Control_Mode | 2035 | This parameter sets the mode of operation for the TEM External Engine Speed Control feature. | 3 | List | 0 | 3 | 1 |
| TEM_Ext_Eng_Spd_Ctrl_Active_State | 2158 | This is the active state for the external engine speed control switch. | 1 | List | 0 | 3 | List |

The engine speed control will only operate when the vehicle is stopped with the park brake applied and the transmission in neutral. The increased engine speed will be cancelled if any of these conditions are not met or if:

- The cruise disable switch is depressed
- The brake pedal is depressed
- The clutch is depressed (if present)

TEM_Ext_Eng_Spd_Control_Mode

This parameter controls the mode in which the engine speed control feature operates. The setting of this parameter depends upon the type of switch that will be controlling the engine speed and the speed control action that is desired. The mode is described in terms of what the engine will do based on what state is on the Remote Power Module Input. The valid states on an RPM input are:

- Ground – The input is connected to ground through a switch
- Floating – The input is not connected to anything
- 12 Volts – The input is connected to 12 Volts through a switch

There are 4 different settings for this programmable mode parameter

Table 123

| Setting | Mode Explanation | Diagram |
|---------|---|---------|
| 0 | This mode disables the remote engine speed control. Use this if the feature is not desired. | NA |
| 1 | In this mode, the feature will be expecting the switch to be a center stable momentary up/down switch wired as shown in the diagram. When the remote power module input is pulled to 12 Volts (switch is in the up position on the diagram), the engine speed will ramp to engine preset 1. When the remote power module input is pulled to ground (switch is in the down position on the diagram), the engine speed will return to idle. When the switch is left in the center stable position (as it is presently shown in the diagram) no action will occur. E.g. if the engine was already ramped, it will stay ramped, and if the engine was at idle, it would stay at idle. | |

| Setting | Mode Explanation | Diagram |
|---------|---|---------|
| 2 | In this mode, the feature will be expecting a momentary (not latched) type switch. When the switch is depressed and released, the engine will ramp to engine preset 1. When the switch is depressed and released again, the engine will return to idle. There are two different connection diagrams shown for the two possible active states of the input. The selecting of the active state is done with the active state parameter explained below. | |
| 3 | THIS IS THE DEFAULT SWITCH ACTION! In this mode the feature will be expecting a momentary (not latched) type plunger switch or a momentary pressure switch. When the plunger is depressed, the engine will ramp to engine preset 1 for as long as the plunger is held. When the plunger is released, the engine speed will return to idle. There are two different connection diagrams shown for the two possible active states of the input. The selecting of the active state is done with the active state parameter explained below. | |

TEM_Ext_Eng_Spd_Ctrl_PTO_Ilock

This parameter can only be used on vehicles that have an International PTO feature.

If this parameter is set, the remote engine speed control will be interlocked to PTO. This means that the remote engine speed control will only be allowed to operate if the PTO is being requested to engage. If this parameter is not set, the engine speed control will operate regardless of the PTO request.

TEM_Ext_Eng_Spd_Ctrl_Active_State

This parameter tells the engine control feature what state to look for on the remote power module input. This parameter setting is only used when TEM_Ext_Eng_Spd_Control_Mode is set to 2, or 3. The valid settings for this parameter are:

Table 124

| Setting | Active State |
|---------|---|
| 0 | Floating (the plunger provides a floating input to the remote power module when depressed. This setting is not recommended) |
| 1 | Ground (the plunger provides a ground to the remote power module input when depressed) |
| 3 | 12 Volts (the plunger provides 12 Volts to the remote power module input when depressed) |

WIRING INFORMATION

- Customer provides a ground active switch that is wired into the pin labeled Remote_Engine_Speed_Sw_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin location).

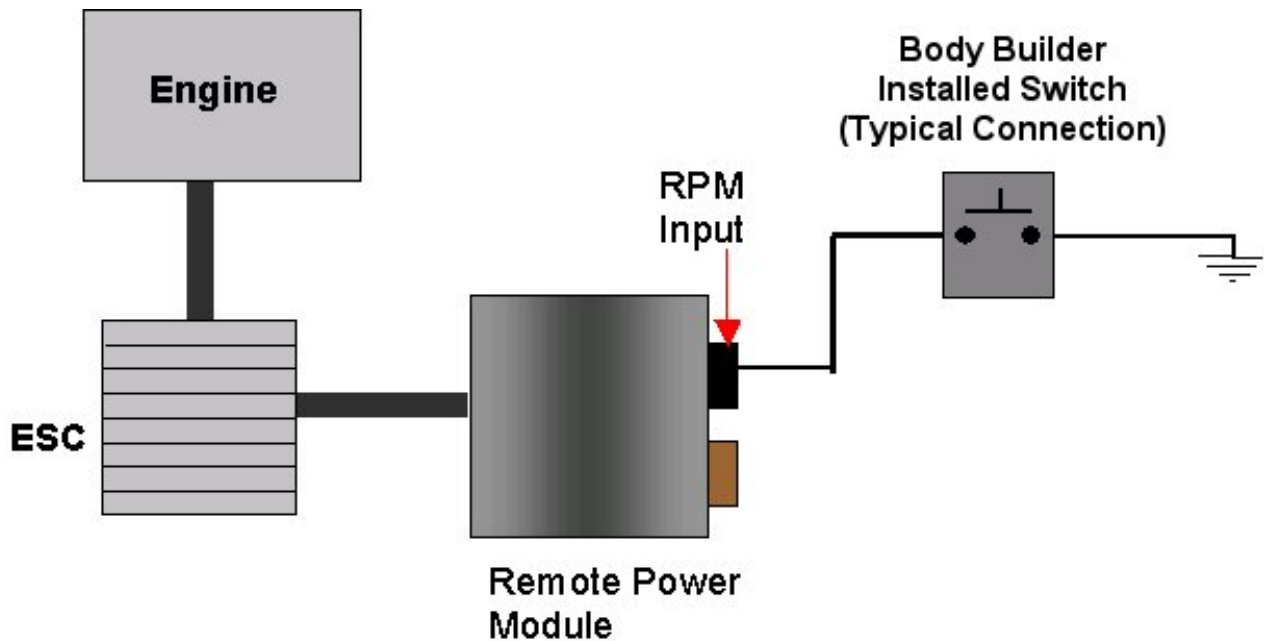


Figure 129

TESTING

1. Start vehicle.
2. Activate the Remote Engine Speed Control Switch (Close switch to active input condition that has been programmed; i.e., 12 volts or Ground).
3. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground as long as the switch is closed).
4. Verify that the engine ramps to the first preset speed.

5. If engine does not ramp to the first preset speed, check engine programming to verify that the correct engine speed control parameters are set.
6. Deactivate the Remote Engine Speed Control switch (Release Ground).
7. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software) is an open circuit.
8. Verify that the engine returns to idle.

HOW TO ADD THIS FEATURE:

- Select software feature code 595241 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595172, 595240, 595196, and 595263 are removed from the vehicle (See Local Dealer)
- Use ICAP or the Diamond Logic™ Builder software to determine which pin on the Black 23-pin Remote Power Module input connector has been assigned to Remote Engine Speed Control
- Customer must install a remote-mounted switch to control Engine Speed and a wire that runs from the switch to the pin labeled Remote_Engine_Speed_Sw_Input on the Remote Power Module input connector.

16.3. 60AJG — REMOTE THROTTLE CONTROL PROGRAMMABLE MODE FOR VARIOUS SWITCH ACTIONS

FEATURE CODE DESCRIPTION: BDY INTG, THROTTLE CONTROL Accommodation for Single Customer Mounted External Engine Speed Control Switch, for Utility Applications, Programmable Mode for Various Switch Actions and Engine Speed Control Option, Only with Vehicle Stopped and Park Brake is Applied (requires 1 Remote Power Module input)

FEATURE/BODY FUNCTION: This feature provides the operator of **Utility applications** with external control of the engine speed with a customer-mounted switch. Activation of a customer-installed switch increases the engine speed to the first preset value. This feature utilizes one pin on the Black 23-pin Remote Power Module input connector (Use ICAP or the Diamond Logic™ Builder software to determine correct pin location). The ESC reads the voltage on this input pin and communicates the correct action to the Engine Control Module. Use customer supplied single pull, double throw, center stable, momentary switch. This code is offered to add additional functionality and to provide a simpler alternative to the hardwired Remote Engine Speed Controls offered by 12VVW or 12VYC. All remote throttle switches and associated wiring should be customer supplied. Feature code 12VXU is required to program the engine for the desired mode of engine speed control. This option is only useable when Vehicle Speed is 0 Mph and Park Brake is applied.

60AJG Default Switch Action: Applying momentary ground to the Remote Power Module ramps engine to first preset speed. Applying momentary ground a second time returns engine to idle.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595240

Software feature codes that must be removed: 595241, 595172, 595196, 595263

Table 125

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|-----------------------------------|------|--|---------|-------|------|------|------|
| TEM_Ext_Eng_Speed_Control_Mode | 2035 | This parameter sets the mode of operation for the TEM External Engine Speed Control feature. | 2 | List | 0 | 3 | 1 |
| TEM_Ext_Eng_Spd_Ctrl_Active_State | 2158 | This is the active state for the external engine speed control switch. | 1 | List | List | List | List |

The engine speed control will only operate when the vehicle is stopped with the park brake applied and the transmission in neutral. The increased engine speed will be cancelled if any of these conditions are not met or if:

- The cruise disable switch is depressed
- The brake pedal is depressed
- The clutch is depressed (if present)

TEM_Ext_Eng_Spd_Control_Mode

This parameter controls the mode in which the engine speed control feature operates. The setting of this parameter depends upon the type of switch that will be controlling the engine speed and the speed control action that is desired. The mode is described in terms of what the engine will do based on what state is on the Remote Power Module Input. The valid states on an RPM input are:

- Ground – The input is connected to ground through a switch
- Floating – The input is not connected to anything
- 12 Volts – The input is connected to 12 Volts through a switch

Table 126

| Setting | Mode Explanation | Diagram |
|---------|---|---|
| 2 | In this mode, the feature will be expecting a momentary (not latched) type switch. When the switch is depressed and released, the engine will ramp to engine preset 1. When the switch is depressed and released again, the engine will return to idle. There are two different connection diagrams shown for the two possible active states of the input. The selecting of the active state is done with the active state parameter explained below. | <p>The diagram illustrates two possible active states for the Remote Power Module input. In the top configuration, the input is connected to ground, labeled 'If Active State is Ground'. In the bottom configuration, the input is connected to 12 Volts, labeled 'If Active State is 12 Volts'.</p> |

TEM_Ext_Eng_Spd_Ctrl_PTO_Ilock

This parameter can only be used on vehicles that have an International PTO feature.

If this parameter is set, the remote engine speed control will be interlocked to PTO. This means that the remote engine speed control will only be allowed to operate if the PTO is being requested to engage. If this parameter is not set, the engine speed control will operate regardless of the PTO request.

TEM_Ext_Eng_Spd_Ctrl_Active_State

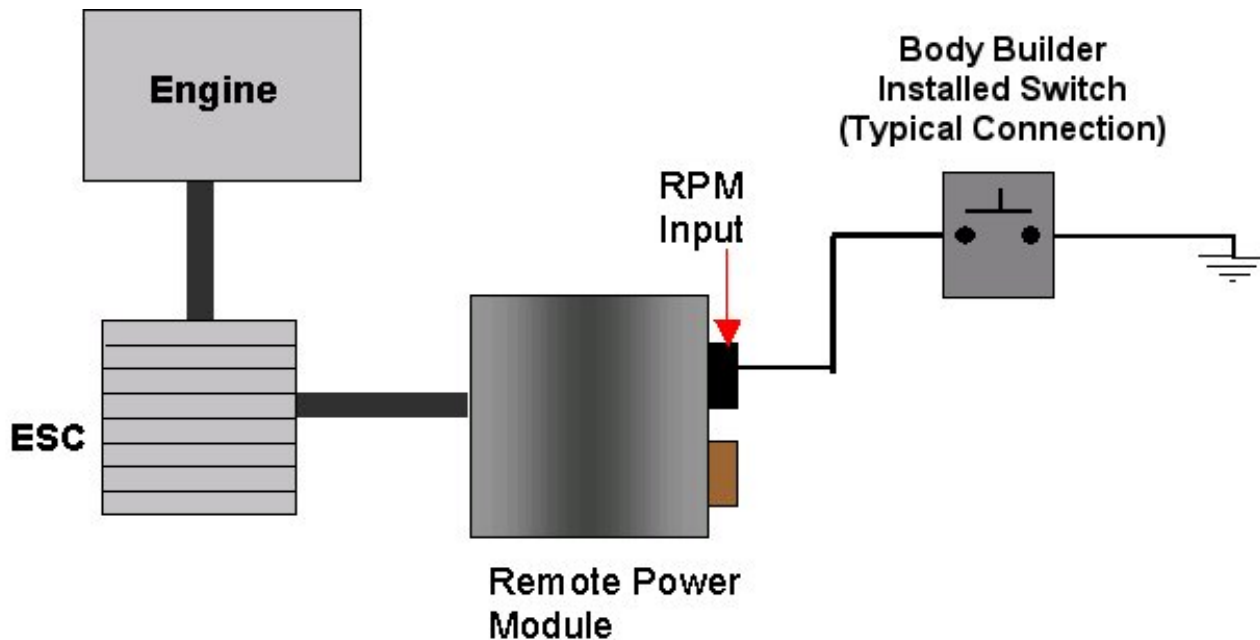
This parameter tells the engine control feature what state to look for on the remote power module input. This parameter setting is only used when TEM_Ext_Eng_Spd_Control_Mode is set to 2, or 3. The valid settings for this parameter are:

Table 127

| Setting | Active State |
|---------|---|
| 0 | Floating (the plunger provides a floating input to the remote power module when depressed. This setting is not recommended) |
| 1 | Ground (the plunger provides a ground to the remote power module input when depressed) |
| 3 | 12 Volts (the plunger provides 12 Volts to the remote power module input when depressed) |

WIRING INFORMATION

- Customer provides a ground active momentary switch that is wired into the pin labeled Remote_Engine_Speed_Sw_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin location).

**Figure 130****TESTING**

1. Start vehicle.
2. Activate the Remote Engine Speed Control Switch (Close switch to active input condition that has been programmed; i.e., 12 volts or Ground).
3. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground as long as the switch is closed).
4. Verify that the engine ramps to the first preset speed.
5. If engine does not ramp to the first preset speed, check engine programming to verify that the correct engine speed control parameters are set.
6. Deactivate the Remote Engine Speed Control switch (Release Ground).
7. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software) is an open circuit.
8. Verify that the engine returns to idle.

HOW TO ADD THIS FEATURE:

- Select software feature code 595240 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595241, 595172, 595196, and 595263 are removed from the vehicle (See Local Dealer)

- Use ICAP or the Diamond Logic™ Builder software to determine which pin on the Black 23-pin Remote Power Module input connector has been assigned to Remote Engine Speed Control
- Customer must install a remote-mounted switch to control Engine Speed and a wire that runs from the switch to the pin labeled Remote_Engine_Speed_Sw_Input on the Remote Power Module input connector.

16.4. 60AJH — REMOTE THROTTLE CONTROL FOR DUAL FUNCTION ENGINE RUNNING / EMERGENCY POWER ENGINE OFF

FEATURE CODE DESCRIPTION: BDY INTG, THROTTLE CONTROL for Dual Function Input, for Utility Applications, Remote Throttle Control When Engine is Running, and Activating an Output for Emergency Power When the Engine is Not Engaged; Useable Only When Vehicle is Stopped and Park Brake is Applied (requires 1 Remote Power Module input and 1 Remote Power Module output)

FEATURE/BODY FUNCTION: This feature allows a customer to mount a remote switch (ground active), wired into an input on the Remote Power Module for a throttle control when the engine is running, and to activate a Remote Power Module output to drive a relay that activates an emergency pump when the engine is not running. This feature is interlocked with vehicle speed and park brake so that the feature is only useable when the vehicle is stopped and the park brake is applied. **A momentary switch closure to ground ramps engine to first preset speed. Second switch closure to ground returns engine to idle. With engine off, a switch closure to ground engages an RPM output to control an emergency pump motor.**

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595196

Conflicts with Software features: 595241, 595240, 595172, 595263

The **TEM_Emergency_Pump_Fuse** parameter is the value at which the ESC will fuse the output that drives the emergency pump in combination with the Remote Engine Speed Control emergency pump feature. The ESC will shut off the Remote Power Module output if the current flowing through that output exceeds the value set by this parameter.

Table 128

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|-------------------------|------|--|---------|-------|-----|-----|------|
| TEM_Emergency_Pump_Fuse | 2060 | Fusing value for the output driving the emergency pump in the combination RESC emergency pump feature. | 20 | A | 0 | 20 | 0.1 |

WIRING INFORMATION

- Customer provides a remote-mounted switch that is wired into the pin labeled Remote_Engine_Speed_Sw_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin location).
- Customer provides the wiring from the pin labeled UTILITY_EMERGENCY_PUMP_Output on the Brown 8-pin Remote Power Module output connector, to a customer-supplied relay. From that relay, a wire runs to the emergency pump (See ICAP or the Diamond Logic™ Builder software for correct pin location).

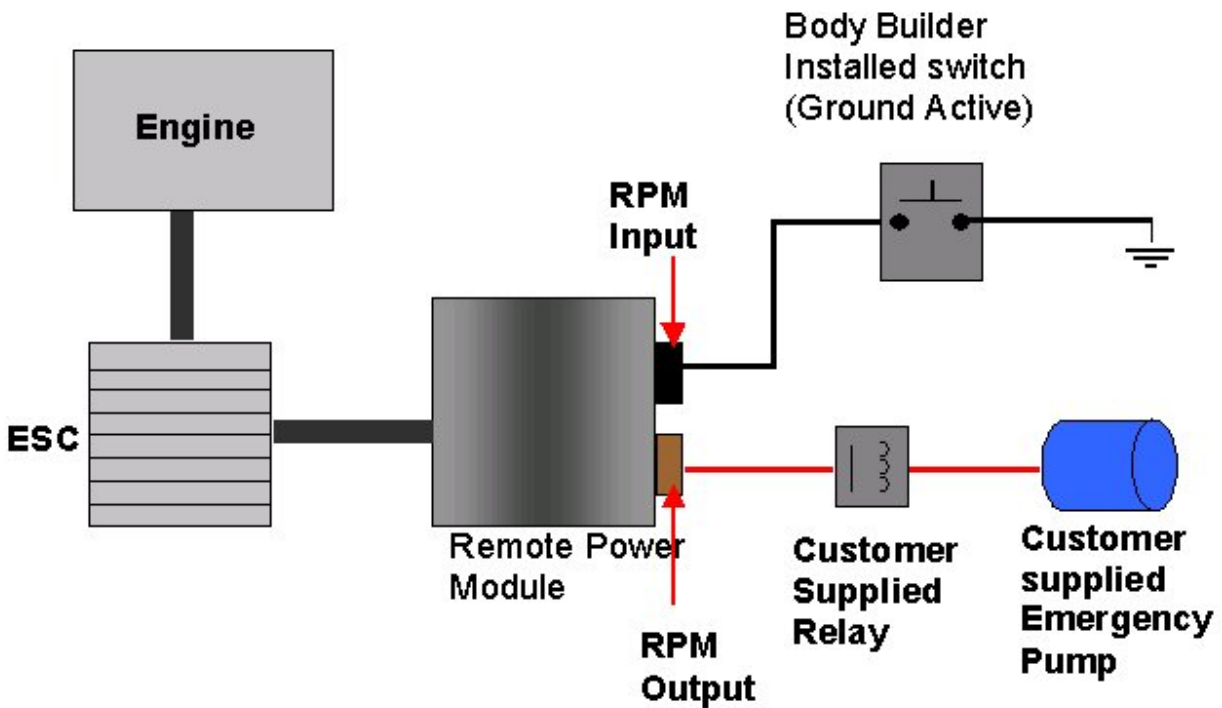


Figure 131

RPM CONNECTOR INFORMATION

HPV kits are pre-made kits that include terminals, seals, locks, and connectors for BOTH RPM connectors.

Table 129

| HPV Kits | Part Number |
|---------------------------|-------------|
| RPM Terminal Kit 12 Gauge | 2585651C91 |
| RPM Terminal Kit 14 Gauge | 2585423C91 |

Table 130 8–Way RPM Output Connector (Brown) and 23-Way RPM Input Connector (Black)

| Connector Part No. | 3548934C1 | 2585981c91 |
|---------------------|---|---|
| Description | Connector, Body, Brown 8–Way RPM Output | Connector, Body, Black 23–Way RPM Input Kit |
| Terminal Part | 3534163C1 - 12 Ga. 3535931C1 - 14 Ga. 3535930C1 - 16 & 18 Ga. | Included |
| Cable Seal Part | 3548945C1 - 12 & 14 Ga. 3535937C1 - 16 & 18 Ga. | N/A |
| Connector Lock Part | 3548943c1 | N/A |

Table 130 8-Way RPM Output Connector (Brown) and 23-Way RPM Input Connector (Black) (cont.)

| | | |
|--------------------|-----------|------------|
| Connector Part No. | 3548934C1 | 2585981c91 |
| CPA Lock | 3573833c1 | N/A |
| Cavity Plug | 3535938c1 | Included |

TESTING

1. Start vehicle.
2. Activate the Remote Engine Speed Control Switch.
3. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground).
4. Verify that the engine ramps to the first preset speed.
5. If engine does not ramp to the first preset speed, check engine programming to verify that the correct engine speed control parameters are set.
6. Deactivate the Remote Engine Speed Control switch.
7. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground).
8. Verify that the engine returns to idle.
9. Shut off engine.
10. Press and hold the Remote Engine Speed Control Switch.
11. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground).
12. Verify that the Remote Power Module output pin labeled UTILITY_EMERGENCY_PUMP_Output is providing the correct battery voltage (As set in programmable parameter).
13. Verify that the Emergency Pump works.

HOW TO ADD THIS FEATURE:

- Select software feature code 595196 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595241, 595240, 595172, and 595263 are removed from the vehicle (See Local Dealer)
- Use ICAP or the Diamond Logic™ Builder software to determine which pin on the Black 23-pin Remote Power Module input connector has been assigned to Remote Engine Speed Control switch input.
- Connect the customer-mounted switch to the specified Remote Power Module input pin.

- Check with ICAP or the Diamond Logic™ Builder software to determine what pin in the Brown 8-pin connector has been assigned to the Emergency pump output for the Remote Engine Speed Control with Emergency pump feature.
- Connect the emergency pump to the specified Remote Power Module output pin.

16.5. 60AJJ — REMOTE THROTTLE CONTROL INTERLOCKED TO PARK BRAKE APPLIED — REFUSE

FEATURE CODE DESCRIPTION: BDY INTG, THROTTLE CONTROL Accommodation for Single Customer Mounted Momentary Switch, for Refuse Applications, Programmable Mode Various Switch Actions, Useable Only While Vehicle is Stopped and the Park Brake is Applied (requires 1 Remote Power Module input).

FEATURE/BODY FUNCTION: This feature provides the operator of Refuse applications with external control of the engine speed with a customer-mounted switch. Activation of a customer-installed switch increases the engine speed to the first preset value. This feature utilizes one pin on the Black 23-pin Remote Power Module input connector (Use ICAP or the Diamond Logic™ Builder software to determine correct pin location). The ESC reads the voltage on this input pin and communicates the correct action to the Engine Control Module. This code is offered to add additional functionality and to provide a simpler alternative to the hardwired Remote Engine Speed Controls offered by 12VVW or 12VYC. Use customer supplied single pull, double throw, center stable, momentary switch. All remote throttle switches and associated wiring should be customer supplied. Feature code 12VXU is required to program the engine for the desired mode of engine speed control. This option is only useable when Vehicle Speed is 0 Mph and Park Brake is applied.

60AJJ Default Switch Action: Applying 12 volts to the Remote Power Module input ramps the engine up to the first preset speed. Engine maintains preset speed only as long as the input is held at 12 volts. Removing 12 volts from the Remote Power Module input returns the engine to idle.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595263

Software feature codes that must be removed: 595241, 595240, 595196, 595172

Table 131

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---|------|--|---------|-------|------|------|------|
| TEM_Ext_ Eng_Speed_ Control_Mode | 2035 | This parameter sets the mode of operation for the TEM External Engine Speed Control feature. | 3 | List | 0 | 3 | 1 |
| TEM_Ext_ Eng_Spd_ Ctrl_Active_State | 2158 | This is the active state for the external engine speed control switch. | 3 | List | List | List | List |

TEM_Ext_Eng_Spd_Control_Mode

This parameter controls the mode in which the engine speed control feature operates. The setting of this parameter depends upon the type of switch that will be controlling the engine speed and the speed control action that is desired. The mode is described in terms of what the engine will do based on what state is on the Remote Power Module Input. The valid states on an RPM input are:

- Ground – The input is connected to ground through a switch
- Floating – The input is not connected to anything
- 12 Volts – The input is connected to 12 Volts through a switch

Table 132

| Setting | Mode Explanation | Diagram |
|---------|---|--|
| 3 | In this mode the feature will be expecting a momentary (not latched) type plunger switch or a momentary pressure switch. When the plunger is depressed, the engine will ramp to engine preset 1 for as long as the plunger is held. When the plunger is released, the engine speed will return to idle. There are two different connection diagrams shown for the two possible active states of the input. The selecting of the active state is done with the active state parameter explained below. | <p>The diagram illustrates two possible wiring configurations for the Remote Power Module (RPM) input. In the top configuration, the RPM input is connected to a switch that, when closed, grounds the input. This is labeled 'If Active State is Ground'. In the bottom configuration, the RPM input is connected to a switch that, when closed, connects the input to a 12-volt source. This is labeled 'If Active State is 12 Volts'.</p> |

TEM_Ext_Eng_Spd_Ctrl_PTO_Ilock

This parameter can only be used on vehicles that have an International PTO feature.

If this parameter is set, the remote engine speed control will be interlocked to PTO. This means that the remote engine speed control will only be allowed to operate if the PTO is being requested to engage. If this parameter is not set, the engine speed control will operate regardless of the PTO request.

TEM_Ext_Eng_Spd_Ctrl_Active_State

This parameter tells the engine control feature what state to look for on the remote power module input. This parameter setting is only used when TEM_Ext_Eng_Spd_Control_Mode is set to 2, or 3. The valid settings for this parameter are:

Table 133

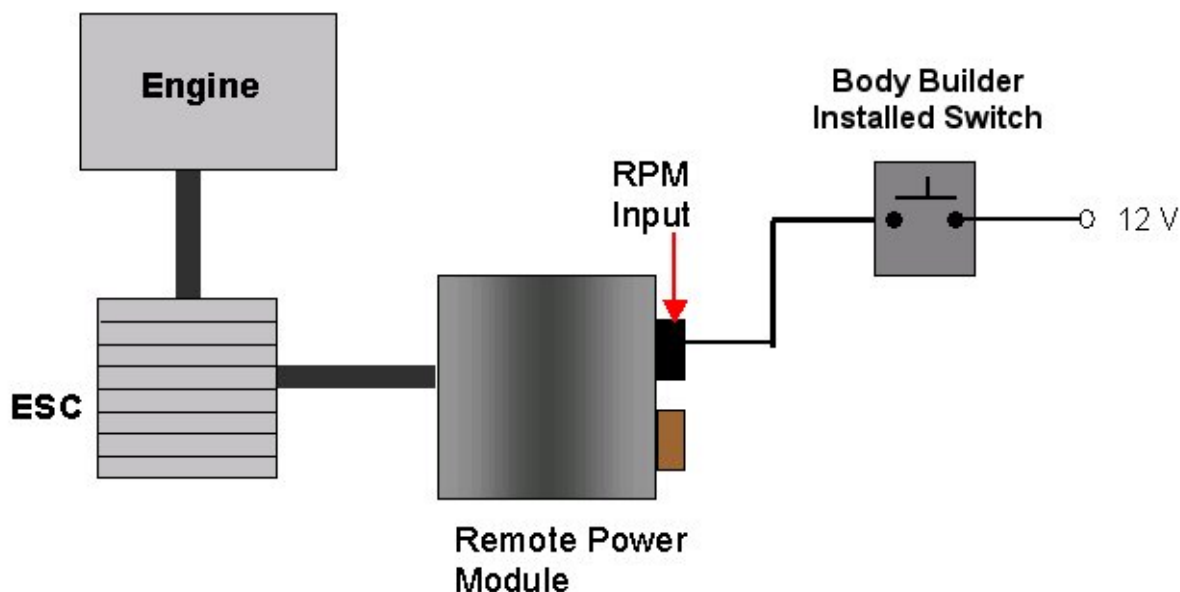
| Setting | Active State |
|---------|---|
| 0 | Floating (the plunger provides a floating input to the remote power module when depressed. This setting is not recommended) |
| 1 | Ground (the plunger provides a ground to the remote power module input when depressed) |
| 3 | 12 Volts (the plunger provides 12 Volts to the remote power module input when depressed) |

The engine speed control will only operate when the vehicle is stopped with the park brake applied and the transmission in neutral. The increased engine speed will be cancelled if any of these conditions are not met or if:

- The cruise disable switch is depressed
- The brake pedal is depressed
- The clutch is depressed (if present)

WIRING INFORMATION

- Customer provides a remote-mounted switch that is wired into the pin labeled Remote_Engine_Speed_Sw_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin location).

**Figure 132**

TESTING

1. Start vehicle.
2. Activate the Remote Engine Speed Control Switch (Close switch to active input condition that has been programmed; i.e., 12 volts or Ground).

-
3. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software is receiving Ground as long as the switch is closed).
 4. Verify that the engine ramps to the first preset speed.
 5. If engine does not ramp to the first preset speed, check engine programming to verify that the correct engine speed control parameters are set.
 6. Deactivate the Remote Engine Speed Control switch (Release Ground).
 7. Verify the Remote Power Module Input labeled Remote_Engine_Speed_Sw_Input (Pin position specified by ICAP or the Diamond Logic™ Builder software) is an open circuit.
 8. Verify that the engine returns to idle.

HOW TO ADD THIS FEATURE:

- Select software feature code 595263 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595241, 595240, 595196, and 595172 are removed from the vehicle (See Local Dealer)
- Use ICAP or the Diamond Logic™ Builder software to determine which pin on the Black 23-pin Remote Power Module input connector has been assigned to Remote Engine Speed Control
- Customer must install a remote-mounted switch to control Engine Speed and a wire that runs from the switch to the pin labeled Remote_Engine_Speed_Sw_Input on the Remote Power Module input connector.

17. REMOTE START / STOP

17.1. 60ABC — REMOTE START/STOP

Refer to the Circuit Diagram in S08285, Chapter 9, page 31.

FEATURE CODE DESCRIPTION: BDY INTG, REMOTE START/STOP To Start and Stop Vehicle Engine

FEATURE/BODY FUNCTION: The Remote Start / Stop feature provides the operator with the ability to remotely start or stop the engine from a single ground active switch closure located on the vehicle body equipment. The vehicle PARK BRAKE must be set and the hood of the vehicle MUST BE CLOSED. The vehicle must also be equipped with an automatic transmission and must be in neutral. This feature requires the customer to provide the ground active switch as well as the wiring from that switch into the Remote Start/Stop connector located in the middle of the chassis. The customer will also provide the terminals and seals for the International-provided connector.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595245

Software feature code that must be removed: 595246

If **TEM_Rem_Start_Stop_PTO_Ilock** is turned on, then the operator can only use Remote Start/Stop when the in-cab, International PTO switch is in the ON position.

Table 134

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|------------------------------|------|--|---------|---------|-----|-----|------|
| TEM_Rem_Start_Stop_PTO_Ilock | 2192 | If this parameter is set, the remote start/stop functionality will not function unless the PTO switch is in the on position. | Off | On/ Off | | | |

WIRING INFORMATION

- When 60ABC is ordered on a truck, a connector (# 9778) is provided for the TEM to wire into for Remote Start/Stop. This connector is located in the mid-chassis harness. The mid chassis harness is located approximately halfway between the rear axle (or forward rear axle for trucks with tandem rear axles) and the back of the cab, on the driver's side frame rail. The customer should wire into the circuit with the Dark Blue wire (# N104CA).
- The customer must provide a ground active momentary switch that is wired into the mid-chassis Remote Start/Stop connector.
- The customer must also order the terminals and seals (Based on their Wire Gauge) for the International-provided connector so that the customer can wire the switch into the connector.

Table 135

| Customer Wire Gauge | Terminal Part Numbers | Seal Part Numbers |
|---------------------|-----------------------|-------------------|
| 12AWG | 1673748C1 | 0589390C1 |
| 14AWG | 0587577C1 | 0589391C1 |
| 16AWG | 0587577C1 | 1652325C1 |

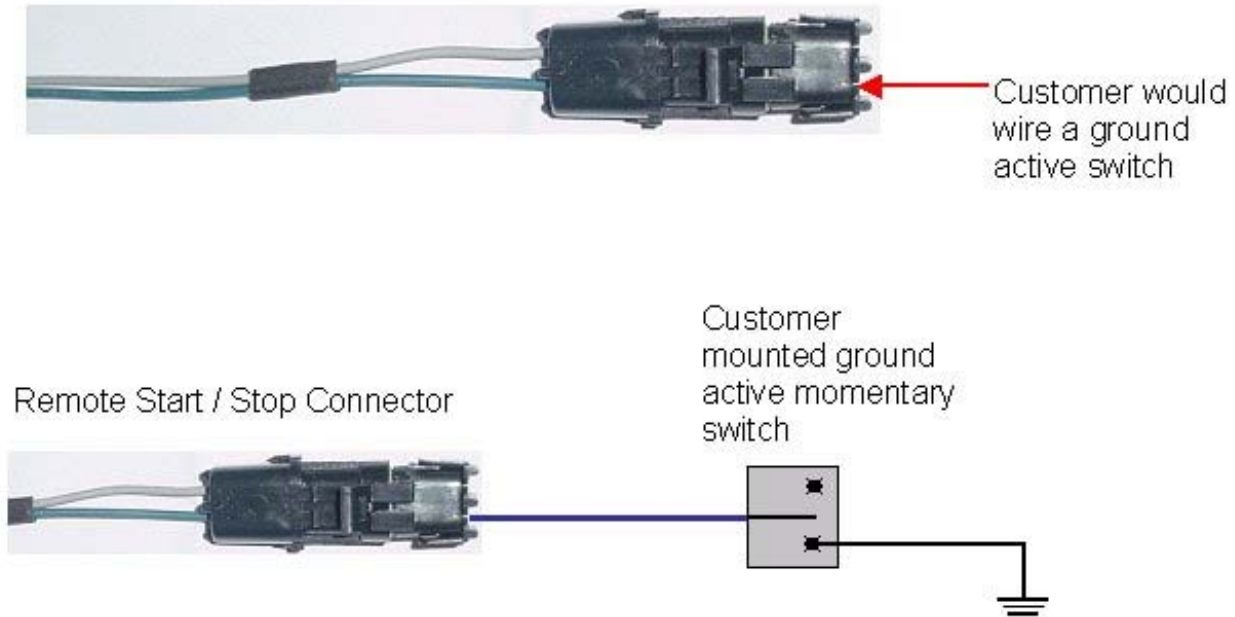


Figure 133 Remote Start Stop Connector in Mid-Chassis Harness

International does not suggest adding a remote start on vehicles with manual transmissions.

TESTING

1. When starting and stopping the engine, make sure that the Bodybuilder switch is providing a ground signal to the mid-chassis wire. The vehicle ignition key must be in the ON position and the hood must be closed.
2. If the engine is running, a momentary switch closure of the body builder supplied switch will stop the engine.
3. If the engine is stopped, push and hold the body builder supplied switch until the vehicle starts.

HOW TO ADD THIS FEATURE:

- An aftermarket solution to this feature is currently being developed by engineering.

17.2. 60ABD — REMOTE START/STOP WITH EMERGENCY PUMP

Refer to the Circuit Diagram in S08285, Chapter 9, page 31.

FEATURE CODE DESCRIPTION: BDY INTG, REMOTE START/STOP To Start and Stop Vehicle Engine, Will Start Emergency Pump Motor, Programmable Time Intervals

FEATURE/BODY FUNCTION: The Remote Start / Stop feature provides the ability to remotely start or stop the engine from a single ground active switch closure located on the vehicle body equipment. This feature operates in two modes, namely the remote start / stop mode and the emergency pump mode. The vehicle PARK BRAKE must be set and the hood of the vehicle must be closed. The vehicle must also be equipped with an automatic transmission and must be in neutral. The user may engage the same switch to control an emergency pump solenoid / motor combination, if the vehicle engine cannot be restarted.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required software feature code: 595246

Software feature code that must be removed: 595245

If **TEM_Rem_Start_Stop_PTO_Ilock** is turned on, then the operator can only use Remote Start/Stop when the in-cab, International PTO switch is in the ON position.

If the engine shuts off unexpectedly or will not start, 60ABD provides the operator with the ability to use an emergency pump solenoid / motor. The **TEM_Remote_Engine_Stop_Time** parameter sets the time that you hold the switch down for, after the engine has unexpectedly shut off, before the emergency pump activates. Also, if you stop the truck remotely and continue to hold the remote switch in the active position, the emergency pump will start if you hold the switch for the time set by the **TEM_Remote_Engine_Stop_Time** parameter.

Table 136

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|------------------------------|------|--|---------|---------|-----|-----|------|
| TEM_Rem_Start_Stop_PTO_Ilock | 2192 | If this parameter is set, the remote start/stop functionality will not function unless the PTO switch is in the on position. | Off | On/ Off | | | |
| TEM_Remote_Engine_Stop_Time | 2072 | Time allotted to stop the engine for the remote engine start stop with emergency pump feature. | 5 | s | 0 | 60 | 0.01 |

WIRING INFORMATION

- When 60ABD is ordered on a truck, two mid-chassis wires with a connector (# 9778) are provided for the TEM to wire into for Remote Start/Stop with Emergency pump. This connector is located in the mid-chassis harness. The mid chassis harness is located approximately halfway between the rear axle (or forward rear axle for trucks with tandem rear axles) and the back of the cab, on the driver's side frame rail.
 - The first wire is the wire used to stop and start the engine (# N104CA). It is a Dark Blue wire.
 - The second Gray wire is used to control an emergency pump.
- The customer must also order the terminals and seals (Based on their Wire Gauge) for the International-provided connector so that the customer can wire the switch into the connector.

Table 137

| Customer Wire Gauge | Terminal Part Numbers | Seal Part Numbers |
|---------------------|-----------------------|-------------------|
| 12AWG | 1673748C1 | 0589390C1 |
| 14AWG | 0587577C1 | 0589391C1 |
| 16AWG | 0587577C1 | 1652325C1 |

- The customer must provide a ground active momentary switch that is wired into the mid-chassis connector.
- If the customer orders 60ABD but decides not to use an emergency pump, the customer should simply use ICAP or the Diamond Logic™ Builder software to enable software feature code 595245, and remove software feature code 595246.

Remote Start Stop Connector in Mid-Chassis Harness



Customer would install a wire to a relay for an emergency pump

Customer would wire a ground active switch

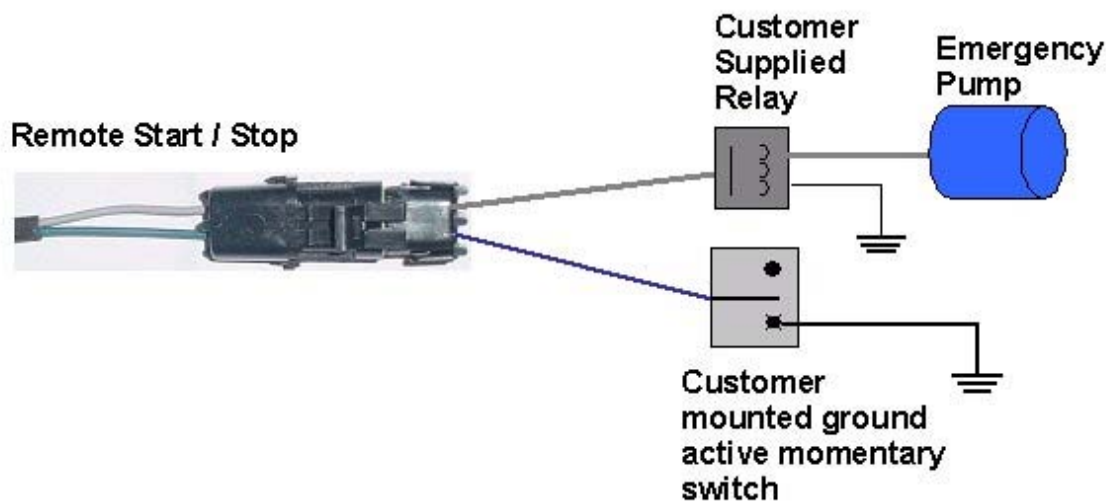


Figure 134

International does not suggest adding a remote start on vehicles with manual transmissions.

TESTING

1. When starting and stopping the engine, make sure that the Bodybuilder switch is providing a ground signal to the mid-chassis wire. The vehicle ignition key must be in the ON position and the hood must be closed.
2. If the engine is running, a momentary switch closure of the body builder supplied switch will stop the engine.
3. If the engine is stopped, push and hold the body builder supplied switch until the vehicle starts.
4. If the engine will not start, release the start/stop switch momentarily and then activate the switch again and hold it until the emergency pump control wire supplies ground to the emergency pump relay. The emergency pump will remain ON as long as the switch is active.

HOW TO ADD THIS FEATURE:

- Engineering is currently developing an aftermarket solution to this feature.

18. SPECIAL GAUGE CLUSTER INDICATORS AND ALARMS

18.1. 60AJC — TWO INDICATOR LIGHTS AND AUDIBLE ALARMS PROGRAMMABLE MODE FOR VARIOUS SWITCH ACTIONS (WASTE SOLUTION)

FEATURE CODE DESCRIPTION: BDY INTG, INDICATOR LIGHTS (2) 1 for Gate Open and 1 for Rear Alert, Includes Audible Alarm, Programmable Mode for Various Switch Action (requires 2 Remote Power Module inputs).

FEATURE/BODY FUNCTION: This feature provides a custom alarm package designed for the Refuse/Waste Applications. Provides both an audible and visual alarm for Gate Open and Rear Alert. RED indicator lights are located in prime viewing area of the driver in the gauge cluster. Audible alarm provides a second level of warning to the driver to indicate the status of these two equipment options.

The “Gate Open” Indicator light is ON constant when the Gate Open input is active with the Park Brake set. If the Park Brake is released, with the Gate Open input active, the Gate Open indicator shall flash at 0.6-second intervals, accompanied by an audible alarm. Flexibility is provided through programmable parameters to establish whether the inputs are active high (12V) or active low (ground). (See ICAP or the Diamond Logic™ Builder software to set programmable parameters).

Rear Alert provides the operator the capability to communicate from the rear of the vehicle to the cab. A customer-mounted switch is wired into the Black 23-pin Remote Power Module input connector (See ICAP or the Diamond Logic™ Builder software for pin location). The ignition switch must be in “Run” for this feature to function. Programmable Parameters allow the customer to establish whether the input is active at 12 volts or active at ground. When the operator activates the customer-mounted switch, the Rear Alert light in the gauge cluster illuminates and an audible alarm sounds.



Figure 135 Gauge Cluster Display of “Gate Open” and “Rear Alert” Indicator Lights

PROGRAMMABLE PARAMETERS:

Required software feature codes: (595197 or 595255**) and 595198

** Software feature code 595197 should be used with an automatic transmission, whereas Software feature code 595255 should be used for a truck with a manual transmission.

Software feature codes that must be removed: 595201, 595202

The **TEM_Tail_Gate_Input_Active_State** parameter sets the voltage level that determines when the Gate Open alert should be active.

0 = Input active when open circuit

1 = Input active when grounded

3 = Input active when at 12V

When the **TEM_Tail_Gate_Park_Brake_Inhibit** parameter is turned ON, the tailgate alert will only alert when the Park Brake is released.

The **TEM_Tail_Gate_Transmission_Interlock** parameter indicates the action of the tailgate alert based on transmission gear.

0 = Ignores Gear

1 = Alert will only activate if the transmission is NOT in reverse

2 = Alert will only activate if transmission is in reverse

3 = Alert will activate for the tailgate sensor or if the transmission is in reverse

The **TEM_Rear_Alert_Input_Active_State** parameter sets the voltage level that determines when the rear alert should be active.

0 = Input active when open circuit

1 = Input active when grounded

3 = Input active when at 12V

The **TEM_Tail_Gate_Alarm_Timeout** parameter determines the length of time that the audible alarm will beep continuously after the gate is opened and the park brake is released. If this parameter is set to 0, the audible alarm will beep continuously as long as the gate open indicator is illuminated. Once the audible alarm has stopped continuous beeping (as set by the **TEM_Tail_Gate_Alarm_Timeout** parameter) and the gate open indicator remains illuminated, the **TEM_Tail_Gate_Alarm_Period** parameter determines the length of time between INDIVIDUAL beeps of the audible alarm.

Table 138

| Off - Indicates a 0 is set in for this parameter | | | | | | | |
|---|------|---|---------|---------|-----|-----|------|
| On - Indicates a 1 is set for the parameter | | | | | | | |
| Parameter | ID | Description | Default | Units | Min | Max | Step |
| TEM_Tail_Gate_Input_Active_State | 2160 | This parameter is used to set the voltage level that indicates when the tail gate alert should be active. | 3 | List | 0 | 3 | |
| TEM_Tail_Gate_Park_Brake_Inhibit | 2165 | When set, the tailgate alert will only alert if the park brake is not set. | Off | On/ Off | | | |
| TEM_Tail_Gate_Transmission_Interlock | 2167 | This parameter is used to determine how the tailgate alert acts based upon the transmission. | 0 | List | | | |
| TEM_Rear_Alert_Input_Active_State | 2168 | This parameter is used to set the voltage level that indicates when the rear alert should be active. | 3 | List | 0 | 3 | |

| Off - Indicates a 0 is set in for this parameter | | | | | | | |
|--|------|--|---------|-------|-----|-----|------|
| On - Indicates a 1 is set for the parameter | | | | | | | |
| Parameter | ID | Description | Default | Units | Min | Max | Step |
| TEM_Tail_Gate_Alarm_Period | 2172 | Once the audible alarm has stopped continuous beeping and the gate open indicator remains illuminated, this parameter determines the length of time between individual beeps of the audible alarm. | 20 | s | 10 | 60 | 1 |
| TEM_Tail_Gate_Alarm_Timeout | 2175 | This parameter determines the length of time that the audible alarm will beep continuously. If this parameter is set to 0, the audible alarm will beep continuously as long as the gate open indicator is illuminated. | 10 | s | 10 | 60 | 1 |

WIRING INFORMATION

If your truck has a manual transmission and you wish to interlock your indicator lights and alarm with the transmission, you must splice a wire off of the reverse light circuit and run that wire into a pin on the Black 23-pin Remote Power Module Input connector (See ICAP or the Diamond Logic™ Builder software for correct pin and switch locations). This wire will indicate to the ESC that the truck is in reverse. **This is ONLY required if the customer wishes to interlock the functionality of the indicator lights and audible alarm with reverse (And they have a manual transmission).

- The customer must run a wire from the Tailgate switch to the pin labeled Tail_Gate_Open_input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin locations)
- The customer must run a wire from the Rear Alert switch to the pin labeled Rear_Alert_Switch_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin locations)

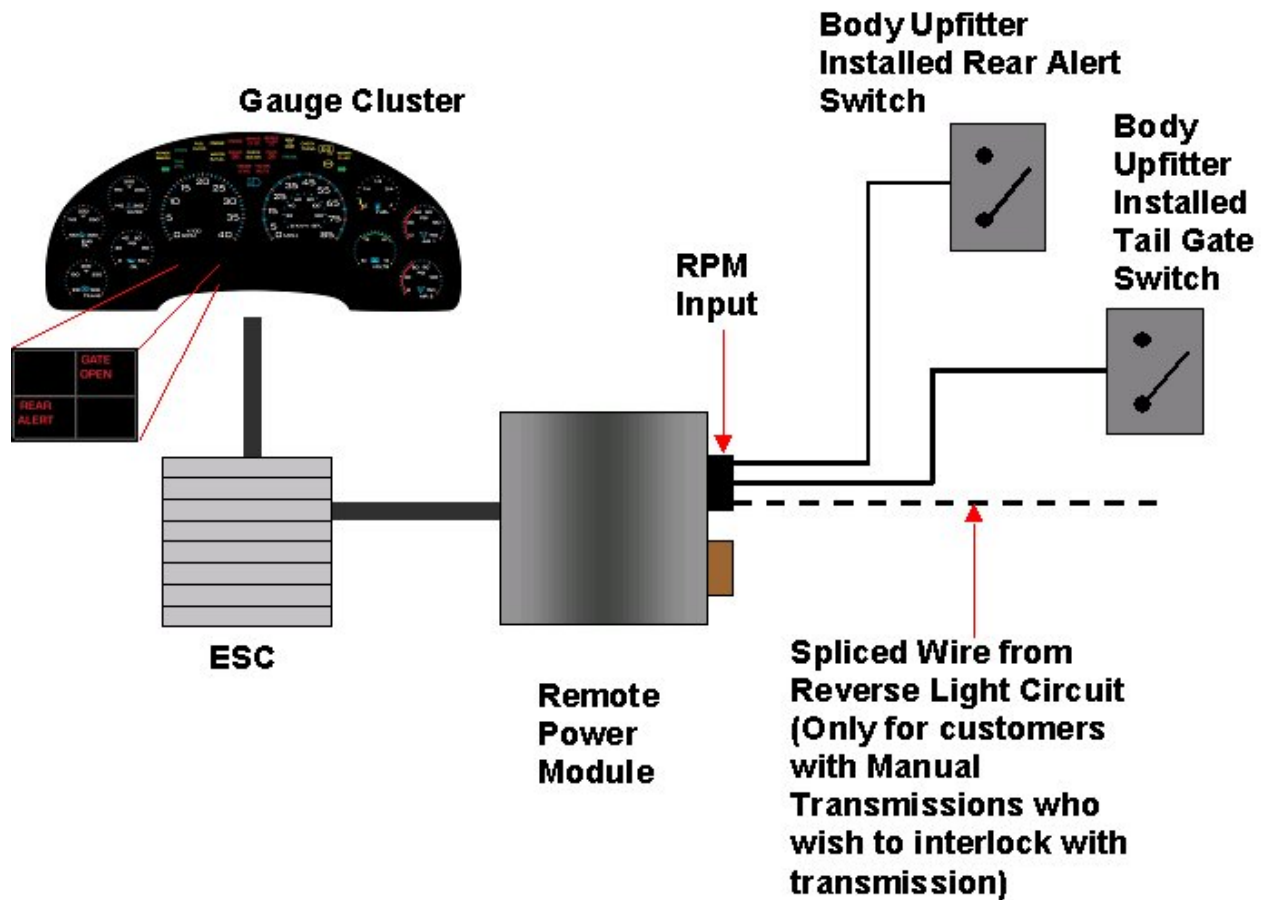


Figure 136

TESTING

1. Set park brake.
2. Open the tail gate.
3. Verify that the input labeled Tail_Gate_Open_input is receiving the correct voltage (As programmed in ICAP or the Diamond Logic™ Builder software).
4. Verify that the Red "Gate Open" indicator light in the gauge cluster comes on.
5. Release park brake.
6. Verify that indicator light flashes and audible alarm sounds and works according to the set programmable parameters seen above.
7. Close tail gate.

8. Reset park brake.
9. Activate Rear Alert switch.
10. Verify that the input labeled Rear_Alert_Switch_Input is receiving the correct voltage (As programmed in ICAP or the Diamond Logic™ Builder software).
11. Verify that the red “Rear Alert” indicator light in the gauge cluster comes on and an audible alarm sounds.

HOW TO ADD THIS FEATURE:**1) For an AUTOMATIC TRANSMISSION**

- Requires lens 3584294C1 be added to the instrument cluster if this feature is added aftermarket.
- Software feature codes 595198 and 595197 must be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that feature codes 595201 and 595202 are removed from the vehicle (See Local Dealer)
- Set programmable parameters for software feature codes using ICAP or the Diamond Logic™ Builder software (See Local Dealer).
- Install the wiring from Tailgate switch into a pin on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for pin locations).
- Install the wiring from Rear Alert switch into a pin on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for pin locations).
- Customer must install indicator light labels in gauge cluster.

2) For a MANUAL TRANSMISSION

- Requires lens 3584294C1 be added to the instrument cluster if this feature is added aftermarket.
- Software feature codes 595198 and 595255 must be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer).
- Using ICAP or the Diamond Logic™ Builder software, make sure that feature codes 595201 and 595202 are removed from the vehicle (See Local Dealer).
- Set programmable parameters for software feature codes using ICAP or the Diamond Logic™ Builder software (See Local Dealer).
- Install the wiring from Tailgate switch into a pin on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for pin locations).
- Install the wiring from Rear Alert switch into a pin on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for pin locations).
- Splice a wire into the Backup light circuit and run that wire into a pin on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for pin locations).
- Customer must install indicator light labels in gauge cluster.

18.2. 60AJD — BODY INTEGRATED, INDICATOR LIGHTS (UTILITY SOLUTIONS)

FEATURE CODE DESCRIPTION: BDY INTG, INDICATOR LIGHTS (2) 1 for Boom Out of Stow, 1 for Outriggers Deployed, Includes Audible Alarm and Interlock to Parking Brake, Programmable Mode for Various Switch Actions (requires 2 Remote Power Module inputs)

FEATURE/BODY FUNCTION: This feature provides a custom alarm package designed for the **Utility Application**. Provides both an audible and visual alarm for Boom Out Of Stow and Outriggers Not Stowed. Red indicator lights are in viewing area of the driver in the gauge cluster. Audible alarm provides a second level of warning to the driver to indicate the status of these two equipment options. Indicator lights are ON constant when either the Boom or Outrigger inputs are active with the Park Brake set. If the Park Brake is released, with either input active, the respective indicator shall flash at 0.6-second intervals, accompanied by an audible alarm.



Figure 137 Gauge Cluster Display of “Outrig Not Stowed” and “Boom Not Stowed”

PROGRAMMABLE PARAMETERS:

Required software feature codes: 595201, 595202

Conflicts with Software features: 595197, 595198, 595255

If the **TEM_Boom_Not_Stowed_Alarm_Inhibit** parameter is turned on, the audible alarm for the boom-not-stowed will be disabled.

If the **TEM_Outrig_Deploy_Alarm_Inhibit** parameter is turned on, the audible alarm for the outriggers deployed warning light will be disabled.

The **TEM_Consol_Boom_Not_Stow_Param** parameter sets the active state of the Remote Power Module Input connected to the Boom switch. This active state indicates when the Boom is out of stow.

0 = Input active when open circuit

1 = Input active when grounded

3 = Input active when at 12V

The **TEM_Consol_Outrig_Deployed_Param** parameter sets the active state of the Remote Power Module Input connected to the Outrigger switch. This active state indicates when the Outriggers are down.

0 = Input active when open circuit

1 = Input active when grounded

3 = Input active when at 12V

Table 139

| Off - Indicates a 0 is set in for this parameter | | | | | | | |
|---|------|--|---------|---------|-----|-----|------|
| On - Indicates a 1 is set for the parameter | | | | | | | |
| Parameter | ID | Description | Default | Units | Min | Max | Step |
| TEM_Boom_ Not_Stowed_ Alarm_Inhibit | 2061 | If this parameter is set, the audible alarm for the boom-not-stowed warning light will be inhibited. | Off | On/ Off | | | |
| TEM_Outrig_ Deploy_Alarm_ Inhibit | 2074 | If this parameter is set, the audible alarm for the outriggers deployed warning light will be inhibited. | Off | On/ Off | | | |
| TEM_Consol_ Boom_Not_ Stow_Param | 2150 | Active state for the RPM input connected to the Boom switch(es) | 1 | List | 0 | 3 | |
| TEM_Consol_ Outrig_Deployed_ Param | 2151 | Active state on the RPM input for the outriggers deployed warning light. | 1 | List | 0 | 3 | |

WIRING INFORMATION

- The customer must run a wire from the customer-mounted “Outriggers out of Stow” switch to the pin labeled Outrig_Not_Stow_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin locations)
- The customer must run a wire from the customer-mounted “Boom out of Stow” switch to the pin labeled Boom_Not_Stow_Input on the Black 23-pin input connector on the Remote Power Module (See ICAP or the Diamond Logic™ Builder software for correct pin locations)

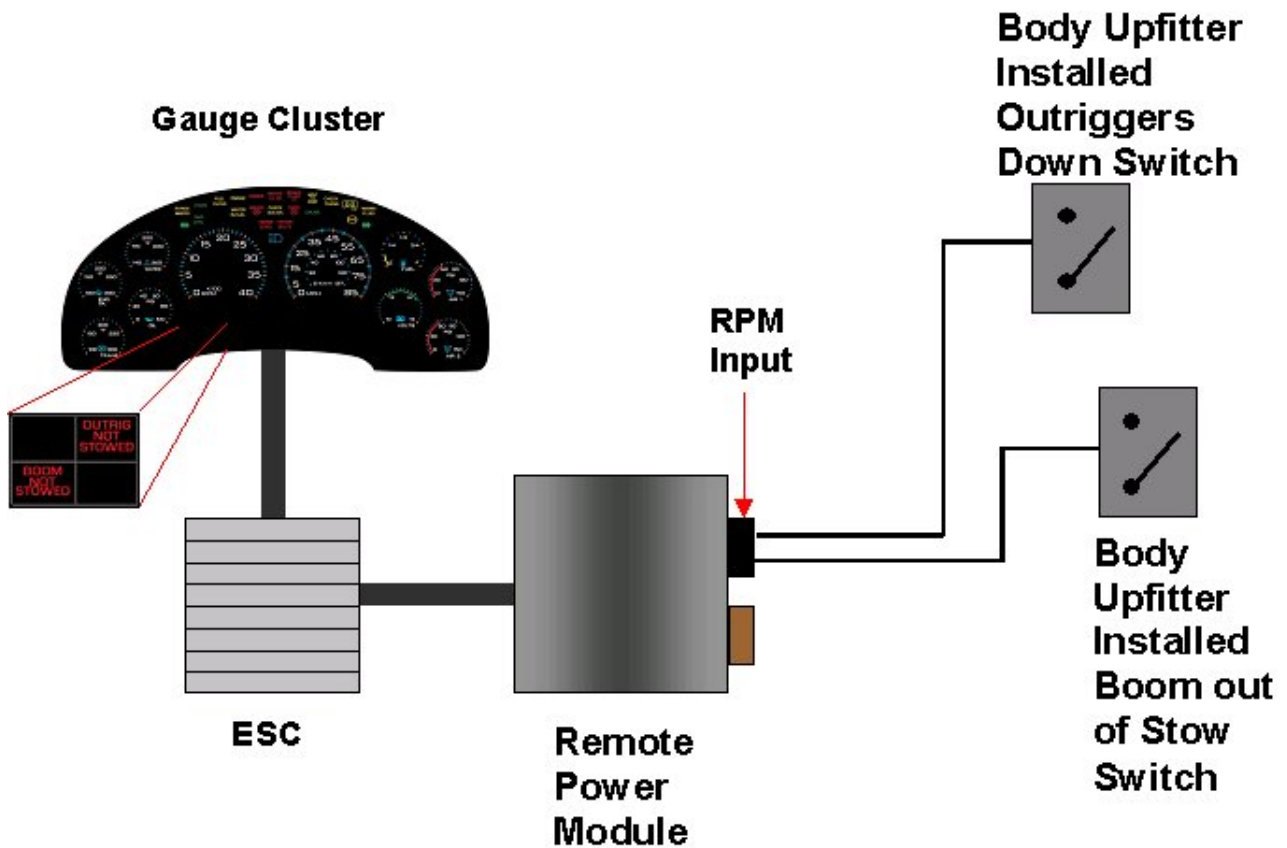


Figure 138

TESTING

1. Set the park brake.
2. Take boom out of stow.
3. Verify that the Remote Power Module input labeled Boom_Not_Stow_Input is receiving the correct active state voltage (As programmed in ICAP or the Diamond Logic™ Builder software).
4. Verify that the boom out of stow indicator light is on constantly.
5. Take off the parking brake (With boom still out of stow).
6. Verify that the boom out of stow indicator light is now flashing and the audible alarm is sounding.
7. Set park brake and put boom back in stow.
8. Put outriggers down.
9. Verify that the Remote Power Module input labeled Outrig_Not_Stow_Input is receiving the correct active state voltage (As programmed in ICAP or the Diamond Logic™ Builder software).
10. Verify that the outriggers down indicator light is on constantly.

11. Take off the parking brake (With outriggers still down).
12. Verify that the outriggers down indicator light is now flashing and the audible alarm is sounding.

HOW TO ADD THIS FEATURE:

- Requires lens 3584294C1 be added to the instrument cluster if this feature is added aftermarket.
- Software feature codes 595201 and 595202 must be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Using ICAP or the Diamond Logic™ Builder software, make sure that software feature codes 595197, 595198, and 595255 are removed from the vehicle. (See Local Dealer)
- Set the programmable parameters for the required software feature codes using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Customer must install wiring from the customer-mounted boom switch, into a pin on the Black 23-pin Remote Power Module Input Connector. (See ICAP or the Diamond Logic™ Builder software for correct pin locations)
- Customer must install wiring from the customer-mounted outriggers switch, into a pin on the Black 23-pin Remote Power Module Input Connector. (See ICAP or the Diamond Logic™ Builder software for correct pin locations)
- Customer must install indicator light labels

18.3. 60AJK — DUMP BOX INDICATOR LIGHTS AND ALARM

FEATURE CODE DESCRIPTION:

060AJK - INDICATOR LIGHTS (2), 1 for Body Up, 1 for Gate Open, Includes Audible Alarm, Programmable Mode for Various Switch Actions (Requires 2 Remote Power Module Inputs).

FEATURE / BODY FUNCTION:

This feature provides the operator of **Dump Box** applications with visual and audible warning indications for a raised dump box body and opened dump gate using Body Builder installed switches. This visual indications that are provided for this feature are a “**BODY UP**” light and a “**GATE OPEN**” light. These indications are provided within the lower left hand section of the instrument cluster, and are controlled by J1939 datalink messages received from the ESC. Similarly, a J1939 datalink message from the ESC will activate an audible alarm based on the programmable parameter that was set within the ESC for that alarm. The ESC receives a Body Builder J1939 message from a RPM (Remote Power Module) that has two inputs connected to Body Builder installed switches that indicate whe the dump box body has been raised or the box gate has been opened. Programmed parameters within the ESC allow the input active state for the installed switches to be configured for active when the input is either OPEN, GND, or 12V. These visual and audible indications will only function when the ignition key is in the RUN position.

For both the “**BODY UP**” and “**GATE OPEN**” indications, the associated light will illuminate continuously and the associated audible alarm (default of OFF) will sound when the corresponding input has entered an active state on the condition that the park brake is set and the vehicle speed is less than or equal to 10 MPH.

For both the “**BODY UP**” and “**GATE OPEN**” indications, the associated light will illuminate in a slow flashing manner and the associated audible alarm (default of 5 fast beeps) will sound when the corresponding input is in an active state and either the park brake has been released or the vehicle speed has exceeded 10 MPH.

Both the “**BODY UP**” and “**GATE OPEN**” lights will be off when the RPM input is inactive.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Required Software Feature Codes: 595299 and 595301

Software Feature Codes that must be removed: NONE

The **TEM_Body_Up_Input_Active_State** parameter indicates the state that the ESC will read as active for the customer installed switch for the dump body up function (As it goes into the RPM input). This active state will be used to tell the ESC when the dump body has been raised up.

The **TEM_Tail_Gate_Input_Active_State** parameter indicates the state that the ESC will read as active for the customer installed switch for the dump gate open function (As it goes into the RPM input). This active state will be used to tell the ESC when the dump body has been raised opened.

The **TEM_Body_Up_Alarm_Beeper** parameter allows the customer to set the alarm type for the condition when the dump body has been raised (active) and either the park brake has been released or the vehicle speed has exceeded 10 MPH. The default alarm type is five fast beeps.

The **TEM_Gate_Alarm_Beeper** parameter allows the customer to set the alarm type for the condition when the dump gate has been opened (active) and either the park brake has been released or the vehicle speed has exceeded 10 MPH. The default alarm type is five fast beeps.

The **TEM_Body_Up_Beeper** parameter allows the customer to set the alarm type for the condition when the dump body has been raised (active) and both the park brake is set and the vehicle speed is equal to or less than 10 MPH. The default alarm type is off.

The **TEM_Gate_Open_Beeper** parameter allows the customer to set the alarm type for the condition when the dump gate has been opened (active) and both the park brake is set and the vehicle speed is equal to or less than 10 MPH. The default alarm type is off.

Table 140

| Parameter | ID | Description | Units | Settings | | | | |
|----------------------------------|--------|--|-------|----------|------|--------------|--------------|------------------|
| | | | | Default | 0 | 1 | 2 | 3 |
| TEM_Body_Up_Input_Active_State | PV-275 | Determines the Input Active Status. | None | 3 | Open | GND | NA | 12 Volts |
| TEM_Tail_Gate_Input_Active_State | PV-226 | Determines the Input Active State | None | 3 | Open | GND | NA | 12 Volts |
| TEM_Body_Up_Alarm_Beeper | PV-274 | Determines the type of alarm when the Vehicle Speed is greater than 10 mph | None | 1 | Off | 5 fast beeps | 3 slow beeps | continuous beeps |
| TEM_Gate_Alarm_Beeper | PV-276 | Determines the type of alarm when the Vehicle Speed is less than 10 mph | None | 1 | Off | 5 fast beeps | 3 slow beeps | continuous beeps |
| TEM_Body_Up_Beeper | PV-273 | Determines the type of alarm when the Vehicle Speed is greater than 10 mph | None | 0 | Off | 5 fast beeps | 3 slow beeps | continuous beeps |
| TEM_Gate_Open_Beeper | PV-277 | Determines the type of alarm when the Vehicle Speed is greater than 10 mph | None | 0 | Off | 5 fast beeps | 3 slow beeps | continuous beeps |

WIRING INFORMATION:

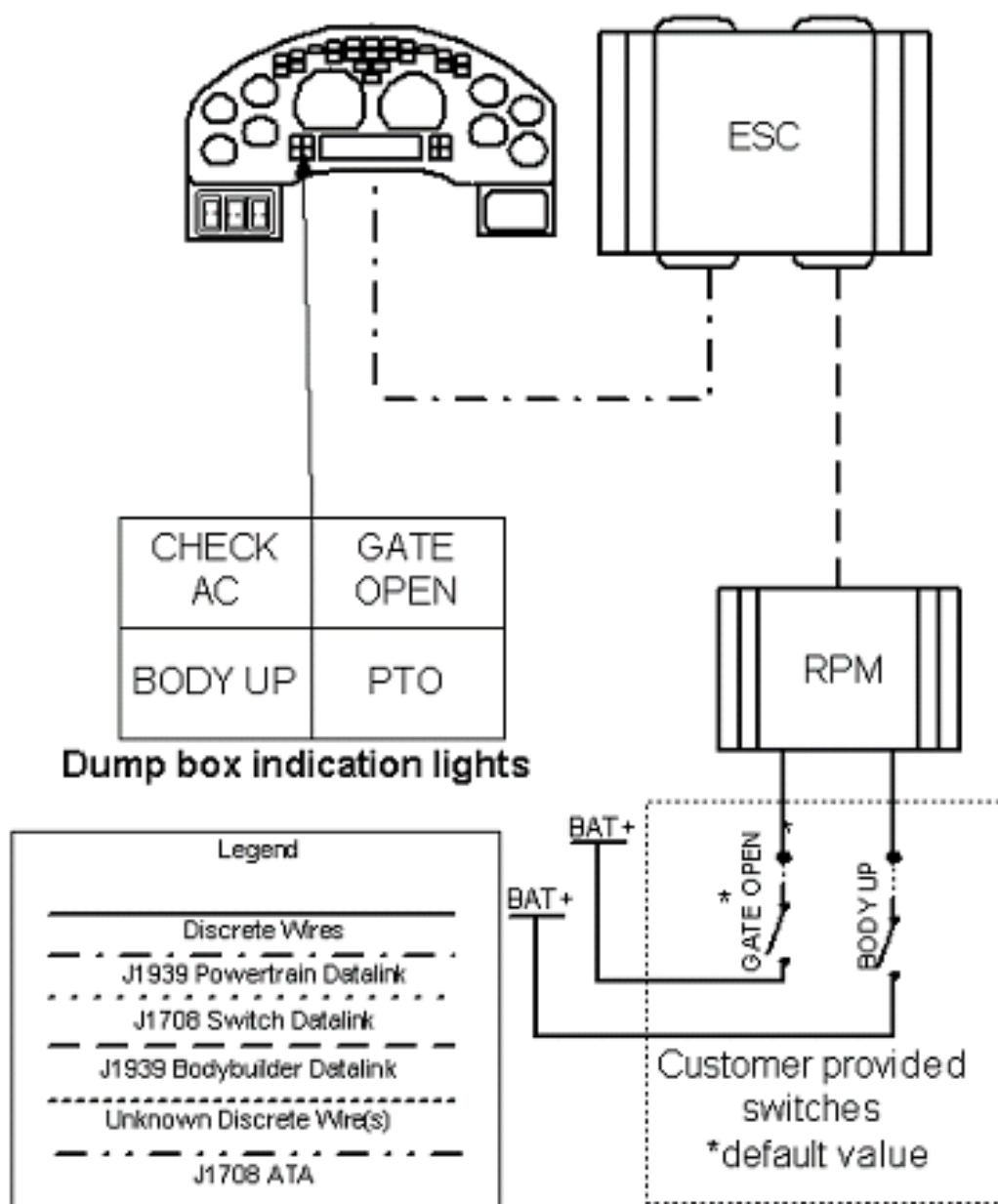


Figure 139

Connect gate open switch to RPM conn J3 input. Connector cavity is found in ICP or Diamond Logic™ Builder labeled "TEM_Tail_gate_signal".

Connect body up switch to RPM conn J3 input. Connector cavity is found in ICAP or Diamond Logic™ Builder labeled "TEM_Body_up_signal".

TESTING:

1. Raise the dump body, the light should go on.
2. Open the dump gate, the dump gate light should go on.

3. Release the park brake with raised dump body or open dump gate and the alarm should give off a continuous 5 fast beeps.

HOW DO I ADD THIS FEATURE:

- Software feature codes 595299 and 595301 must be enabled using ICAP or Diamond Logic™ Builder software (See Local Dealer).
- Set programmable parameters for software feature codes using ICAP or the Diamond Logic™ Builder software (See Local Dealer).
- If vehicle does not have Remote Power Module installed, then customer must install RPM using codes 60AAA or 60AAB.
- Connect gate open switch to RPM connector J3 input.
- Connect body up switch to RPM connector J3 input.

19. IN CAB SWITCH CONTROLS FOR BODY ACCESSORIES USING REMOTE POWER MODULES

19.1. REMOTE POWER MODULES (RPM)

FEATURE CODE DESCRIPTION:

Refer to the Circuit Diagram in S08285, Chapter 9, page 15.

08WSK – SWITCH, BODY CIRCUITS, REAR for Bodybuilder; With 6 Switches in Instrument Panel; One Power Module, With 6 Channels, 20 Amp Per Channel and 80 Amp Max Output, Switches Control the Power Modules Through Multiplex Wiring, Mounted at Rear on Frame

08WSM – SWITCH, BODY CIRCUITS, MID for Bodybuilder, With 6 Switches in Instrument Panel; One Power Module With 6 Channel, 20 Amp Max. Per Channel and 80 Amp Max Output, Switches Control the Power Module Through Multiplex Wiring, Mounted Battery Box Back of Cab

08SAJ – SWITCH, BODY CIRCUITS, MID for Body Builders; 12 Switches in Instrument Panel, With Two Power Modules With 6 Channels, 20 Amp Max. per Channel, 80 Amp Max Output, Switch Control Power Modules Through Multiplex Wiring, Mounted on Battery Box BOC

FEATURE/BODY FUNCTION:

On the 4000 models, Code 08SAJ and Code 08WSM have the remote power modules mounted at the back of the battery box.

On the 7000 models, Code 08SAJ and Code 08WSM have the remote power modules mounted under the cab, left rear.

International has developed a method of controlling loads on the vehicle, outside the cab, without running individual wires from each switch to the load. This is accomplished by an electronic device called a Remote Power Module (RPM). This module is used to distribute and control power to various devices on the vehicle from switches inside the cab. The RPM is connected to the Electrical System Controller via the Body Builder J1939 datalink (not the powertrain or ATA datalink). The only wires connected to the RPM are battery power (for driving the loads), datalink cable (which includes power and ground to operate the module), and a wire for each vehicle device operated by the RPM.

SOFTWARE FEATURE CODES AND PROGRAMMABLE PARAMETERS:

08WSK: 595119

The **PwrMod4_Fuse_Level1_Param** sets the limit (in amps) of the current flowing from Output #1 of Remote Power Module #4.

The **PwrMod4_Fuse_Level2_Param** sets the limit (in amps) of the current flowing from Output #2 of Remote Power Module #4.

The **PwrMod4_Fuse_Level3_Param** sets the limit (in amps) of the current flowing from Output #3 of Remote Power Module #4.

The **PwrMod4_Fuse_Level4_Param** sets the limit (in amps) of the current flowing from Output #4 of Remote Power Module #4.

The **PwrMod4_Fuse_Level5_Param** sets the limit (in amps) of the current flowing from Output #5 of Remote Power Module #4.

The **PwrMod4_Fuse_Level6_Param** sets the limit (in amps) of the current flowing from Output #6 of Remote Power Module #4.

The **PwrMod4_Init_State1_Param** parameter determines the initial state of RPM #4, output #1. If the parameter is set to 1, Output #1 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod4_Init_State2_Param** parameter determines the initial state of RPM #4, output #2. If the parameter is set to 1, Output #2 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod4_Init_State3_Param** parameter determines the initial state of RPM #4, output #3. If the parameter is set to 1, Output #3 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod4_Init_State4_Param** parameter determines the initial state of RPM #4, output #4. If the parameter is set to 1, Output #4 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod4_Init_State5_Param** parameter determines the initial state of RPM #4, output #5. If the parameter is set to 1, Output #5 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod4_Init_State6_Param** parameter determines the initial state of RPM #4, output #6. If the parameter is set to 1, Output #6 of Remote Power Module #4 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

Table 141

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|---|---------|-------|-----|-----|------|
| PwrMod4_Fuse_Level1_Param | 454 | Current Limit in amps for Output #1 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |
| PwrMod4_Fuse_Level2_Param | 455 | Current Limit in amps for Output #2 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |
| PwrMod4_Fuse_Level3_Param | 456 | Current Limit in amps for Output #3 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |
| PwrMod4_Fuse_Level4_Param | 457 | Current Limit in amps for Output #4 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|--|---------|----------|-----|-----|------|
| PwrMod4_Fuse_Level5_Param | 458 | Current Limit in amps for Output #5 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |
| PwrMod4_Fuse_Level6_Param | 459 | Current Limit in amps for Output #6 of Remote Power Module #4 | 20 | A | 0 | 20 | 0.1 |
| PwrMod4_Init_State1_Param | 460 | If this parameter is set to 1, Output #1 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod4_Init_State2_Param | 461 | If this parameter is set to 1, Output #2 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod4_Init_State3_Param | 462 | If this parameter is set to 1, Output #3 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod4_Init_State4_Param | 463 | If this parameter is set to 1, Output #4 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|--|---------|----------|-----|-----|------|
| PwrMod4_Init_State5_Param | 464 | If this parameter is set to 1, Output #5 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod4_Init_State6_Param | 465 | If this parameter is set to 1, Output #6 of Remote Power Module #4 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

08WSM: 595032

The **PwrMod1_Fuse_Level1_Param** sets the limit (in amps) of the current flowing from Output #1 of Remote Power Module #1.

The **PwrMod1_Fuse_Level2_Param** sets the limit (in amps) of the current flowing from Output #2 of Remote Power Module #1.

The **PwrMod1_Fuse_Level3_Param** sets the limit (in amps) of the current flowing from Output #3 of Remote Power Module #1.

The **PwrMod1_Fuse_Level4_Param** sets the limit (in amps) of the current flowing from Output #4 of Remote Power Module #1.

The **PwrMod1_Fuse_Level5_Param** sets the limit (in amps) of the current flowing from Output #5 of Remote Power Module #1.

The **PwrMod1_Fuse_Level6_Param** sets the limit (in amps) of the current flowing from Output #6 of Remote Power Module #1.

The **PwrMod1_Init_State1_Param** parameter determines the initial state of RPM #1, output #1. If the parameter is set to 1, Output #1 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State2_Param** parameter determines the initial state of RPM #1, output #2. If the parameter is set to 1, Output #2 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State3_Param** parameter determines the initial state of RPM #1, output #3. If the parameter is set to 1, Output #3 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State4_Param** parameter determines the initial state of RPM #1, output #4. If the parameter is set to 1, Output #4 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State5_Param** parameter determines the initial state of RPM #1, output #5. If the parameter is set to 1, Output #5 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State6_Param** parameter determines the initial state of RPM #1, output #6. If the parameter is set to 1, Output #6 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

Table 142

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|--|---------|----------|-----|-----|------|
| PwrMod1_Fuse_Level1_Param | 392 | Current Limit in amps for Output #1 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Fuse_Level2_Param | 393 | Current Limit in amps for Output #2 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Fuse_Level3_Param | 394 | Current Limit in amps for Output #3 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Fuse_Level4_Param | 395 | Current Limit in amps for Output #4 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Fuse_Level5_Param | 396 | Current Limit in amps for Output #5 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Fuse_Level6_Param | 397 | Current Limit in amps for Output #6 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_Init_State1_Param | 398 | If this parameter is set to 1, Output #1 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|--|---------|----------|-----|-----|------|
| PwrMod1_Init_State2_Param | 399 | If this parameter is set to 1, Output #2 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State3_Param | 400 | If this parameter is set to 1, Output #3 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State4_Param | 401 | If this parameter is set to 1, Output #4 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State5_Param | 402 | If this parameter is set to 1, Output #5 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State6_Param | 403 | If this parameter is set to 1, Output #6 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

08SAJ: 595032 and 595121

The **PwrMod2_Fuse_Level1_Param** sets the limit (in amps) of the current flowing from Output #1 of Remote Power Module #2.

The **PwrMod2_Fuse_Level2_Param** sets the limit (in amps) of the current flowing from Output #2 of Remote Power Module #2.

The **PwrMod2_Fuse_Level3_Param** sets the limit (in amps) of the current flowing from Output #3 of Remote Power Module #2.

The **PwrMod2_Fuse_Level4_Param** sets the limit (in amps) of the current flowing from Output #4 of Remote Power Module #2.

The **PwrMod2_Fuse_Level5_Param** sets the limit (in amps) of the current flowing from Output #5 of Remote Power Module #2.

The **PwrMod2_Fuse_Level6_Param** sets the limit (in amps) of the current flowing from Output #6 of Remote Power Module #2.

The **PwrMod2_Init_State1_Param** parameter determines the initial state of RPM #2, output #1. If the parameter is set to 1, Output #1 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod2_Init_State2_Param** parameter determines the initial state of RPM #2, output #2. If the parameter is set to 1, Output #2 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod2_Init_State3_Param** parameter determines the initial state of RPM #2, output #3. If the parameter is set to 1, Output #3 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod2_Init_State4_Param** parameter determines the initial state of RPM #2, output #4. If the parameter is set to 1, Output #4 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod2_Init_State5_Param** parameter determines the initial state of RPM #2, output #5. If the parameter is set to 1, Output #5 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod2_Init_State6_Param** parameter determines the initial state of RPM #2, output #6. If the parameter is set to 1, Output #6 of Remote Power Module #2 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Fuse_Level1_Param** sets the limit (in amps) of the current flowing from Output #1 of Remote Power Module #1.

The **PwrMod1_Fuse_Level2_Param** sets the limit (in amps) of the current flowing from Output #2 of Remote Power Module #1.

The **PwrMod1_Fuse_Level3_Param** sets the limit (in amps) of the current flowing from Output #3 of Remote Power Module #1.

The **PwrMod1_Fuse_Level4_Param** sets the limit (in amps) of the current flowing from Output #4 of Remote Power Module #1.

The **PwrMod1_Fuse_Level5_Param** sets the limit (in amps) of the current flowing from Output #5 of Remote Power Module #1.

The **PwrMod1_Fuse_Level6_Param** sets the limit (in amps) of the current flowing from Output #6 of Remote Power Module #1.

The **PwrMod1_Init_State1_Param** parameter determines the initial state of RPM #1, output #1. If the parameter is set to 1, Output #1 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State2_Param** parameter determines the initial state of RPM #1, output #2. If the parameter is set to 1, Output #2 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State3_Param** parameter determines the initial state of RPM #1, output #3. If the parameter is set to 1, Output #3 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State4_Param** parameter determines the initial state of RPM #1, output #4. If the parameter is set to 1, Output #4 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State5_Param** parameter determines the initial state of RPM #1, output #5. If the parameter is set to 1, Output #5 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

The **PwrMod1_Init_State6_Param** parameter determines the initial state of RPM #1, output #6. If the parameter is set to 1, Output #6 of Remote Power Module #1 will be turned ON at ignition key-on. If the parameter value is set to 0, the output will be OFF at key-on.

Table 143

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|----|---|---------|-------|-----|-----|------|
| PwrMod2_Fuse_Level1_Param | 35 | Current Limit in amps for Output #1 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |
| PwrMod2_Fuse_Level2_Param | 36 | Current Limit in amps for Output #2 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |
| PwrMod2_Fuse_Level3_Param | 37 | Current Limit in amps for Output #3 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |
| PwrMod2_Fuse_Level4_Param | 38 | Current Limit in amps for Output #4 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |
| PwrMod2_Fuse_Level5_Param | 39 | Current Limit in amps for Output #5 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|----|--|---------|----------|-----|-----|------|
| PwrMod2_Fuse_Level6_Param | 40 | Current Limit in amps for Output #6 of Remote Power Module #2 | 20 | A | 0 | 20 | 0.1 |
| PwrMod2_Init_State1_Param | 41 | If this parameter is set to 1, Output #1 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod2_Init_State2_Param | 42 | If this parameter is set to 1, Output #2 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod2_Init_State3_Param | 43 | If this parameter is set to 1, Output #3 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod2_Init_State4_Param | 44 | If this parameter is set to 1, Output #4 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod2_Init_State5_Param | 45 | If this parameter is set to 1, Output #5 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|-----------------------------|-----|--|---------|-----------|-----|-----|------|
| PwrMod2_ Init_State6_ Param | 46 | If this parameter is set to 1, Output #6 of Remote Power Module #2 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_ Units | NA | NA | NA |
| PwrMod1_ Fuse_Level1_ Param | 392 | Current Limit in amps for Output #1 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Fuse_Level2_ Param | 393 | Current Limit in amps for Output #2 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Fuse_Level3_ Param | 394 | Current Limit in amps for Output #3 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Fuse_Level4_ Param | 395 | Current Limit in amps for Output #4 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Fuse_Level5_ Param | 396 | Current Limit in amps for Output #5 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Fuse_Level6_ Param | 397 | Current Limit in amps for Output #6 of Remote Power Module #1 | 20 | A | 1 | 20 | 0.1 |
| PwrMod1_ Init_State1_ Param | 398 | If this parameter is set to 1, Output #1 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_ Units | NA | NA | NA |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|-----|--|---------|----------|-----|-----|------|
| PwrMod1_Init_State2_Param | 399 | If this parameter is set to 1, Output #2 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State3_Param | 400 | If this parameter is set to 1, Output #3 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State4_Param | 401 | If this parameter is set to 1, Output #4 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State5_Param | 402 | If this parameter is set to 1, Output #5 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |
| PwrMod1_Init_State6_Param | 403 | If this parameter is set to 1, Output #6 of Remote Power Module #1 will be turned on at ignition key-on, if set to 0 output will be off at key-on. | OFF | No_Units | NA | NA | NA |

WIRING INFORMATION

Each module receives power from a 4-gauge cable, protected by a fusible link, connected to the battery stud of the starter motor or the battery depending on the location of the RPM.

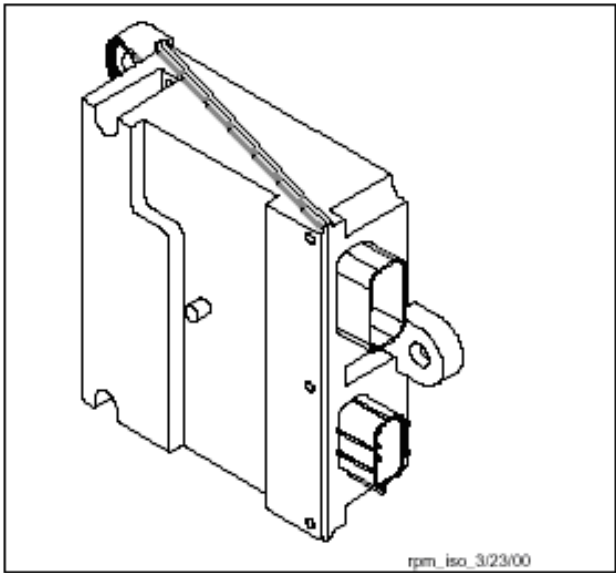


Figure 140 Remote Power Module

Each generic RPM has the ability to operate up to 6 devices of 20 amps or less not to exceed 80 amps for the entire module. Each RPM comes with a six-pack of switches that is inserted into the center section of the instrument panel. Each generic switch controls 1 output of the RPM. The switch mapping is one to one with the RPM, i.e. switch one controls output channel one on the RPM. The switch pack is connected to the switch data bus that communicates switch operation to the Electrical System Controller, which communicates that operation to the RPM. The RPM also has inputs on the module itself that can be programmed to control the outputs. This means that the RPM functions like a 3-way lamp switch in a home. Each in-cab switch is a momentary rocker switch that is stable in the center position. The upper section of each switch has an indicator light to provide the status of each power output channel. Pressing the upper section of the switch will latch the respective power output channel ON and illuminate the indicator. Pressing the lower section of the switch will latch the power output channel OFF and turn the indicator OFF. Likewise, the output channels may be controlled remotely by using a three-position momentary single pole, double throw switch on each remote switch input. Applying battery volts to the remote switch input will turn the output channel ON. Applying ground to the remote switch input will turn the output channel OFF. The lamp indicator on the instrument panel switch will always display the current status of the output channel as long as the ignition key is in the Run or Accessory position. Each RPM in-cab switch operates with the key in the Accessory or Ignition position. The RPM remote input switches operate at any time. If conflict exists between switches the OFF state always wins.

A maximum of 3 RPM's may be connected to the vehicle which allows a total of 18 devices to be controlled as long as the 80 amp per module is not exceeded. The modules can be relocated from their mounting position as long as the data link cable will reach its new mounting location without the datalink cable being modified.

Addressing Remote Power Modules

All remote power modules require jumpers to tell the system controller what remote power module it is controlling. Jumpers are to be installed in a 23-way connector in location J4 shown in the figure below.

Table 144

| Jumper Wire Color | Remote Power Module Location | Cavity Location |
|-------------------|------------------------------|-----------------|
| Red Wire | 1st Back of Cab | 1-2 |

| Jumper Wire Color | Remote Power Module Location | Cavity Location |
|-------------------|------------------------------|-----------------|
| Green Wire | 2nd Back of Cab | 3-4 |
| Blue Wire | End of Frame | 5-6 |

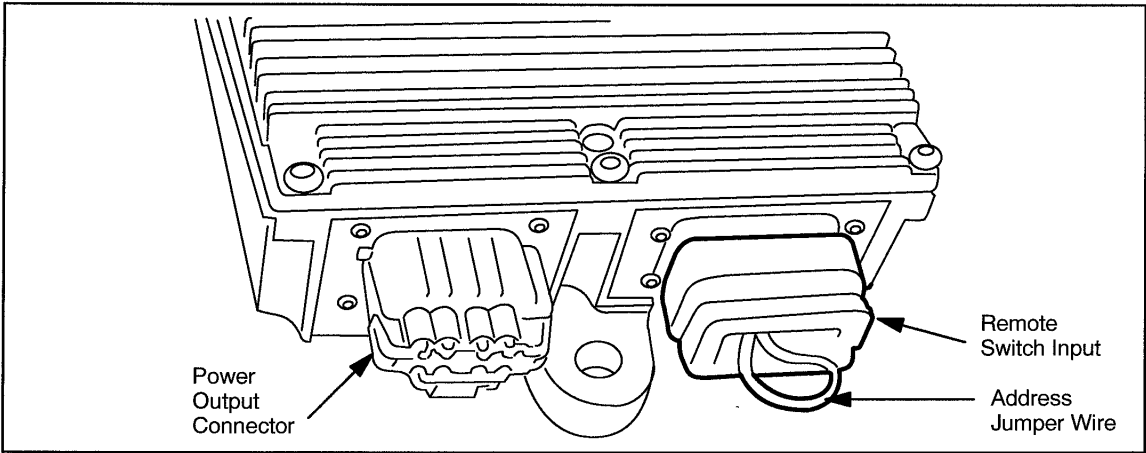


Figure 141 Remote Power Module Connections

J3 23-Way Connector

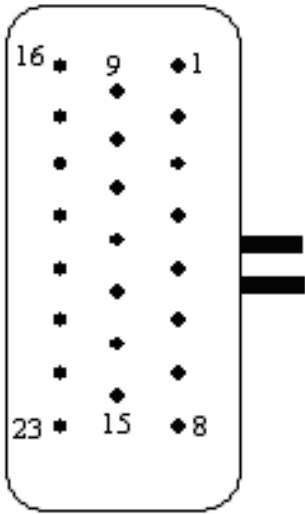


Figure 142 J3 23-Way Connector

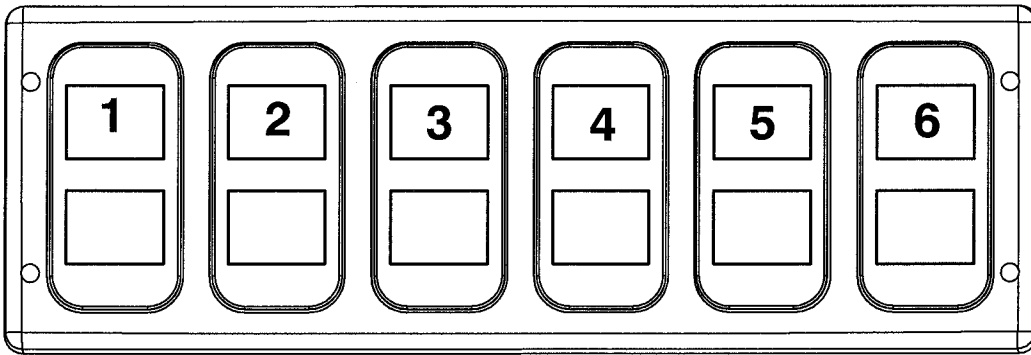


Figure 143 Instrument Panel Mounted Switch Pack

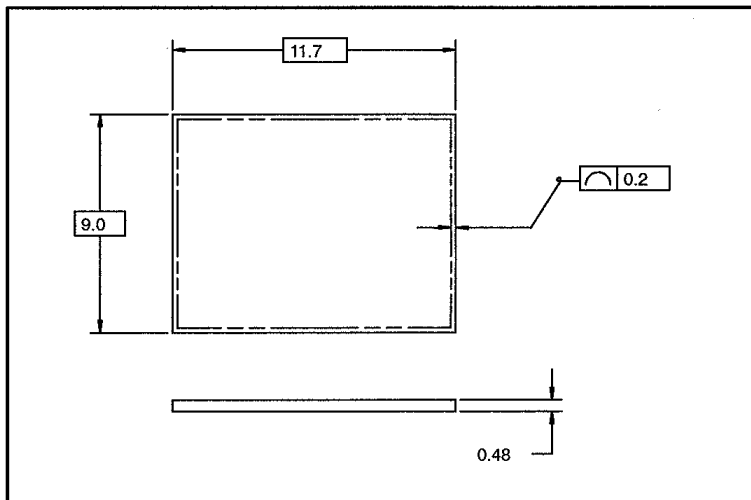


Figure 144 Switch Label Dimensions in Millimeters

Switch Labeling: Switch packs provided with the Remote Power Module Feature are general purpose “un-labeled” rocker switches. Since the functions of the rocker switches are unknown at the time of vehicle assembly, un-labeled rocker switches are provided so the body builder can customize the switches to any particular need. A package of switch labels is provided for usage by the body builder to finish the labeling of the switches. If the body builder requires a label name not already provided by International, a custom label may be designed by following the specification of the attached switch label appliqué drawing. Supply of custom labels is the responsibility of the body builder.

The suppliers for the windowed rocker labels are:

Dura-Tech

3216 Commerce

St. LaCrosse, Wisconsin 54603

Telephone: 608-781-2570

Web site: duratech.com

Pollak Switch Products Division
300 Dan Road
Canton, Mass. 02021
Telephone: 781-830-0340

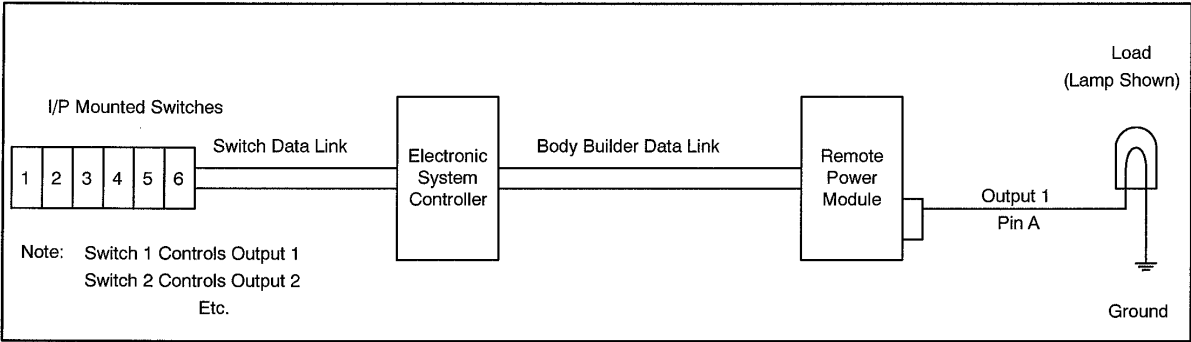


Figure 145 Example with RPM Output Controlled by Switch Inside Cab

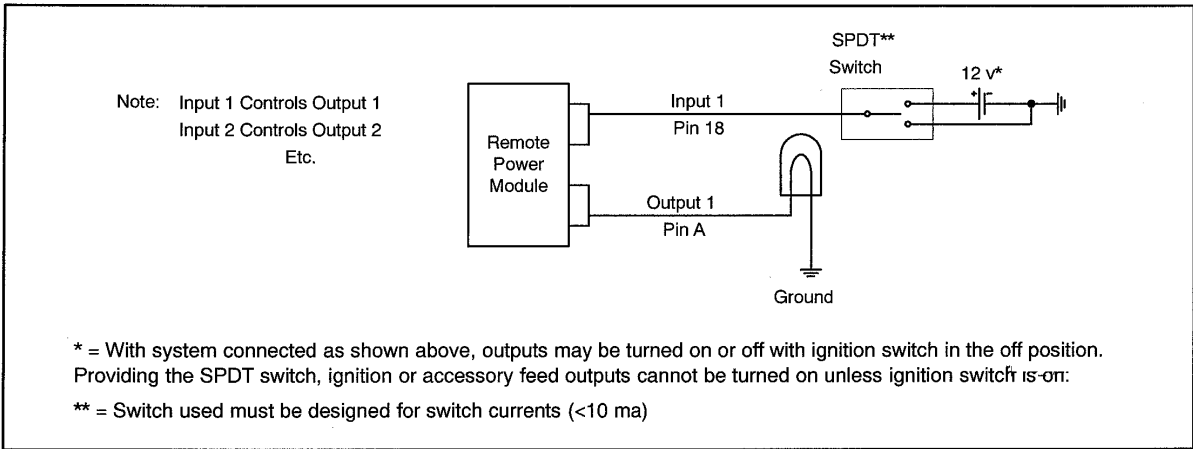


Figure 146 Example with RPM Output Controlled by Switch Located on Chassis

Table 145

| | Pin | Signal Name | Signal Direction | Rating (Amps) |
|--|----------------|-------------|------------------|---------------|
| | Body Data Link | | | |

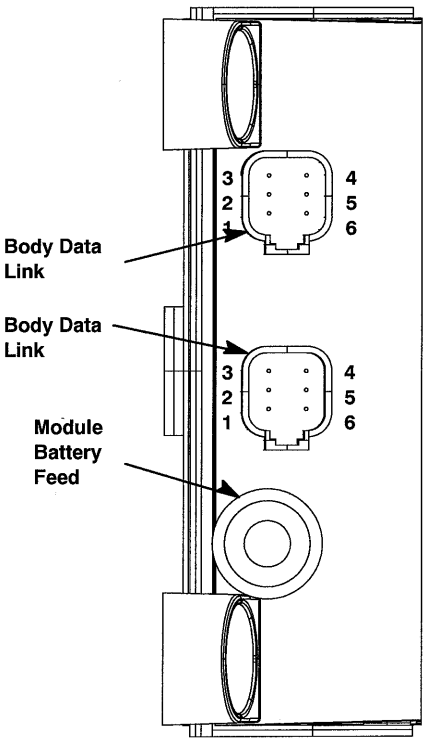
| | Pin | Signal Name | Signal Direction | Rating (Amps) |
|--|---|-----------------------|-------------------|---------------|
|  | 1 | Air Solenoid Power*** | Input/ Pass-Thru | 1 |
| | 2 | Ground | Ground/ Pass-Thru | |
| | 3 | Body Builder J1939+ | Data Link | |
| | 4 | Body Builder J1939- | Data Link | |
| | 6 | Battery | Input/ Pass-Thru | 5 |
| | Body Data Link | | | |
| | 1 | Air Solenoid Power*** | Input/ Pass-Thru | 1 |
| | 2 | Ground | Ground/ Pass-Thru | |
| | 3 | Body Builder J1939+ | Data Link | |
| | 4 | Body Builder J1939- | Data Link | |
| | 6 | Battery | Input/ Pass-Thru | 5 |
| | Module Battery Feed | | | |
| | 1 | Supply Voltage | Input | 80 |
| | <p>NOTE: Body Data Link Output is supplied with the mate to this connector which is sealed and includes a 120 ohm terminating resistor.</p> <p>NOTE: No additional circuits can be added.</p> <p>**RPM does not use air solenoid power. There is no 12V on this pin unless there is a 7-pack air solenoid module.</p> | | | |

Table 146

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|------------------|----------------------|------------------|---------------|
| Signal Connector | | | |
| 1 | Module Select Common | Ground | |
| 2 | Module Select #1 | Digital Input | 0.010 |
| 3 | Module Select Common | Ground | |
| 4 | Module Select #2 | Digital Input | 0.010 |
| 5 | Module Select Common | Ground | |
| 6 | Module Select #3 | | 0.010 |
| 7 | | | |
| 8 | | | |
| 9 | | | |
| 10 | | | |
| 11 | | | |

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|-----------------|-------------|------------------|---------------|
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | Input #1 | Switch Input | 0.010 |
| 19 | Input #2 | Switch Input | 0.010 |
| 20 | Input #3 | Switch Input | 0.010 |
| 21 | Input #4 | Switch Input | 0.010 |
| 22 | Input #5 | Switch Input | 0.010 |
| 23 | Input #6 | Switch Input | 0.010 |
| Power Connector | | | |
| A | Output #1 | Output | 20 |
| B | Output #2 | Output | 20 |
| C | Output #3 | Output | 20 |
| D | Output #4 | Output | 20 |
| E | Output #5 | Output | 20 |
| F | | | |
| G | | | |
| H | Output #6 | Output | 20 |

NOTE – Refer to the Recommended Circuit Protection in the General section when selecting wire gage and fusing.

Table 147 Mating Connector Information

| Signal Connector — 23 Way | |
|---------------------------|-------------|
| Connector | Lock |
| 770680-1 (Amp) | 1688285C1 |
| Terminal | Cable Gauge |
| 2005483C1 | 16, 18, 20 |

Table 148 Mating Connector Information

| Power Connector — 8 Way | |
|-------------------------|-----------|
| Connector | Lock |
| 3548934C1 | 3548943C1 |

Table 148 Mating Connector Information (cont.)

| Terminal | Cable Gauge |
|------------|-------------|
| 3535929C1 | 20, 22 |
| 3535930C1 | 16, 18 |
| 3534163C1 | 12 |
| 3535931C1 | 14 |
| Cable Seal | Cable Gauge |
| 3535935C1 | 20, 22 |
| 3535936C1 | 16, 18 |
| 3535937C1 | 14 |
| 3548945C1 | 12 |
| Plug | 2025431C1 |

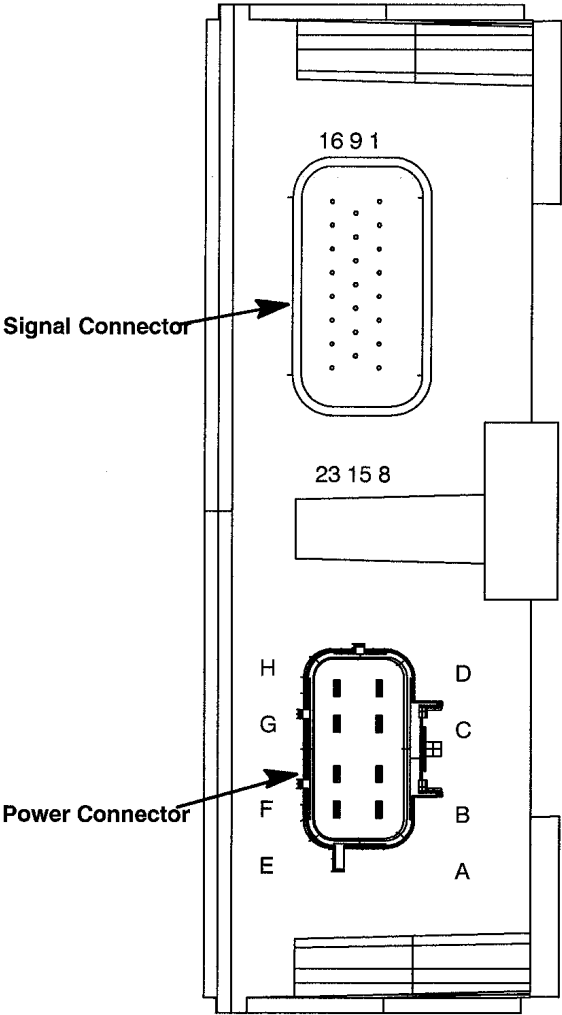


Figure 147

**** For Switch Product Graphic Label Kit order Part Number 3552005C3 ****

Here are some facts about the use of the Remote Power Module (RPM):

- Each RPM provides 6 outputs, the loads on each output are protected by virtual fuses and are programmable in 100mA (milliamp) increments, 20A max. per channel, 80A max. per module.
- A maximum of three RPMs per vehicle may be factory installed.
- Power is fed to the RPM through a fused link from the battery that controls lights, mirrors, solenoids, fans, etc.
- If higher current capacity is needed, the RPM can control a high current relay and still maintain logic and diagnostic capability without having to wire to the inside of the cab.
- The RPM outputs may be programmed to be On or Off with each key on cycle (assumes a momentary switch is used in the cab).
- There is an input connector for the bodybuilder switches.
 - A 3-way output control may be achieved by using a single pole double throw switch with the RPM inputs. The respective RPM output may be turned on by the in-cab switch and off by the remote switch, and vice versa. The in-cab switch indicator displays the status of the RPM output.
 - The switch input actually goes to ESC so that the program rules can be checked. If all of the rules checkout OK the controller will activate the channel. If the preprogrammed logic rules for this circuit are not met, the switch will flash until the desired condition is activated.
 - A 12-volt input will turn a channel on and a ground input will turn the channel off.
 - If a latching switch is used by the TEM or bodybuilder with the remote switch inputs, the channel cannot be controlled by the in-cab switch.
- RPMs have diagnostic capability.
 - As mentioned, the fusing current can be programmed, if that current is exceeded, the circuit will be “fused” and the RPM will send that message to ESC indicating which RPM and what output is over current.
 - The RPM has two 6 pin connectors.
- The last module must have a 120-ohm terminating resistor in the data link connector.
 - All power, ground and datalink signals are contained in these connectors.
 - The two identical connectors located on the power input side of the module are the data link connectors. They are pass thru connectors that allow for the daisy chaining of modules. Only one connector plugs into the chassis harness.

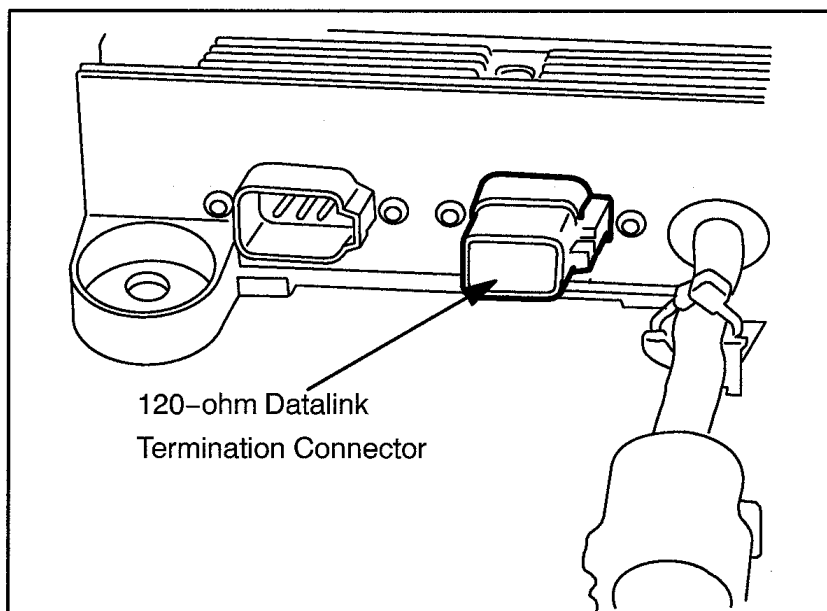


Figure 148 120-ohm Datalink Termination Connector on RPM

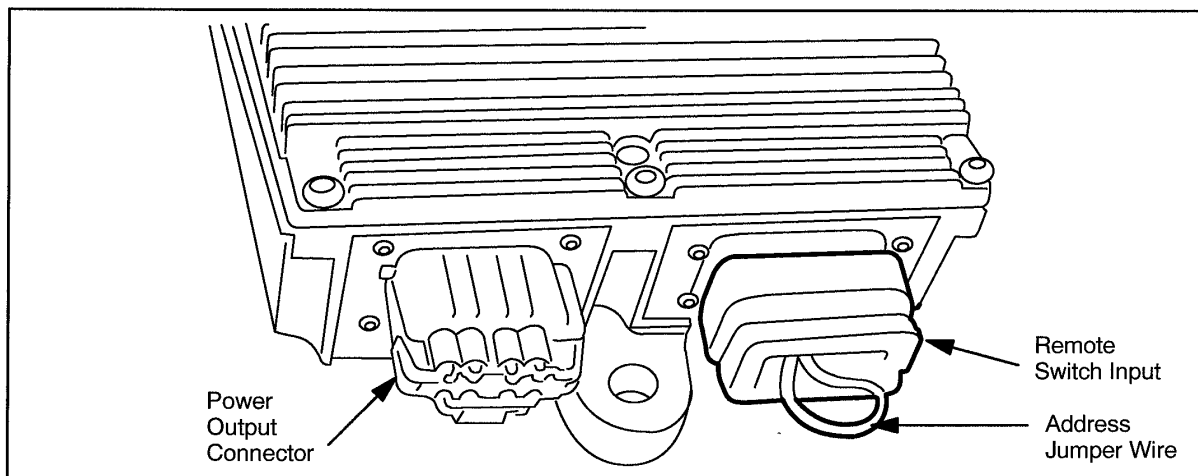


Figure 149 Remote Power Module Connectors

TESTING

1. Turn key to accessory or ignition key state.
2. Activate first in-cab switch.
3. Verify that Remote Power Module output #1 is providing battery voltage.
4. Deactivate first in-cab switch.
5. Apply 12V to Remote Power Module input #1.
6. Verify that Remote Power Module output #1 is providing battery voltage.

7. Apply ground to Remote Power Module input #1.
8. Verify that Remote Power Module output #1 shuts off.
9. Activate second in-cab switch.
10. Verify that Remote Power Module output #2 is providing battery voltage.
11. Deactivate second in-cab switch.
12. Apply 12V to Remote Power Module input #2.
13. Verify that Remote Power Module output #2 is providing battery voltage.
14. Apply ground to Remote Power Module input #2.
15. Verify that Remote Power Module output #2 shuts off.
16. Activate third in-cab switch.
17. Verify that Remote Power Module output #3 is providing battery voltage.
18. Deactivate third in-cab switch.
19. Apply 12V to Remote Power Module input #3.
20. Verify that Remote Power Module output #3 is providing battery voltage.
21. Apply ground to Remote Power Module input #3.
22. Verify that Remote Power Module output #3 shuts off.
23. Activate fourth in-cab switch.
24. Verify that Remote Power Module output #4 is providing battery voltage.
25. Deactivate fourth in-cab switch.
26. Apply 12V to Remote Power Module input #4.
27. Verify that Remote Power Module output #4 is providing battery voltage.
28. Apply ground to Remote Power Module input #4.
29. Verify that Remote Power Module output #4 shuts off.
30. Activate fifth in-cab switch.
31. Verify that Remote Power Module output #5 is providing battery voltage.
32. Deactivate fifth in-cab switch.
33. Apply 12V to Remote Power Module input #5.

34. Verify that Remote Power Module output #5 is providing battery voltage.

35. Apply ground to Remote Power Module input #5.

36. Verify that Remote Power Module output #5 shuts off.

37. Activate sixth in-cab switch.

38. Verify that Remote Power Module output #6 is providing battery voltage.

39. Deactivate sixth in-cab switch.

40. Apply 12V to Remote Power Module input #6.

41. Verify that Remote Power Module output #6 is providing battery voltage.

42. Apply ground to Remote Power Module input #6.

43. Verify that Remote Power Module output #6 shuts off.

→ If any Remote Power Module outputs have been programmed to turn ON automatically when the key is turned ON, (See Programmable Parameters) then turn the key to the ON position and verify that those outputs are providing battery voltage.

HOW TO ADD THIS FEATURE:

Three Remote Power Modules can be added to a vehicle. There are two kits available, the actual RPM kit 2585983C91 and also an Address kit 2585982C91. Shown below are the instructions that accompany the kits.

Installation of Remote Power Module address jumpers.

Table 149 Kit Contents

| | |
|---|-------------------|
| 1 | Jumper Red Wire |
| 1 | Jumper Green Wire |
| 1 | Jumper Blue Wire |

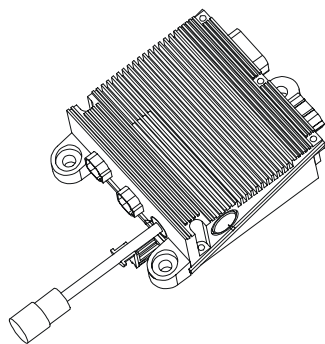


Figure 150

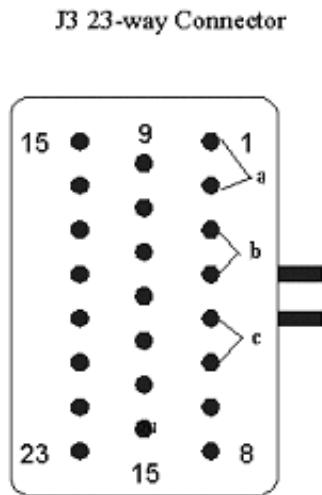


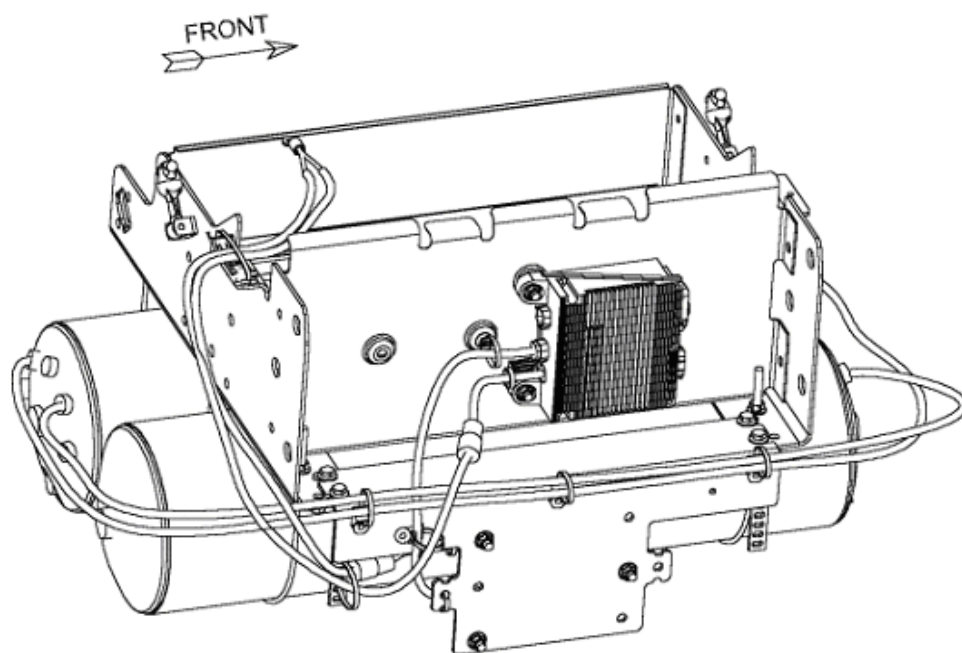
Figure 151

Addressing Remote Power Modules

All remote power modules require jumpers to tell the system controller what remote power module it is controlling. Jumpers are to be installed in a 23- way connector in location J3 shown in the Figure above.

This Kit contains

| Jumper wire color | Remote power module location | Cavity Loc. |
|--------------------------|--------------------------------|-------------|
| Red wire | 1 st back of cab | a |
| Green wire | 2 nd back of cab | b |
| Blue wire | End of frame | c |
| Red, Green and Blue wire | Forward chassis | a b c |
| Red Wire | Remote Engine Speed Controller | a |



4000 Single RPM

Figure 152 4000 Single RPM

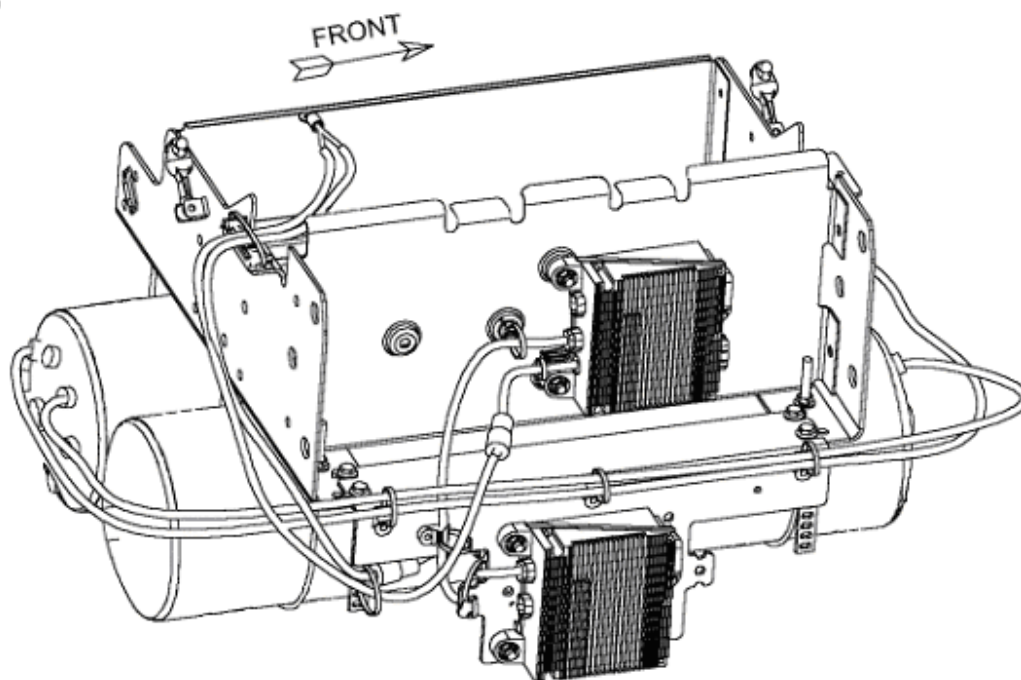


Figure 153 4000 with 2 RPMs

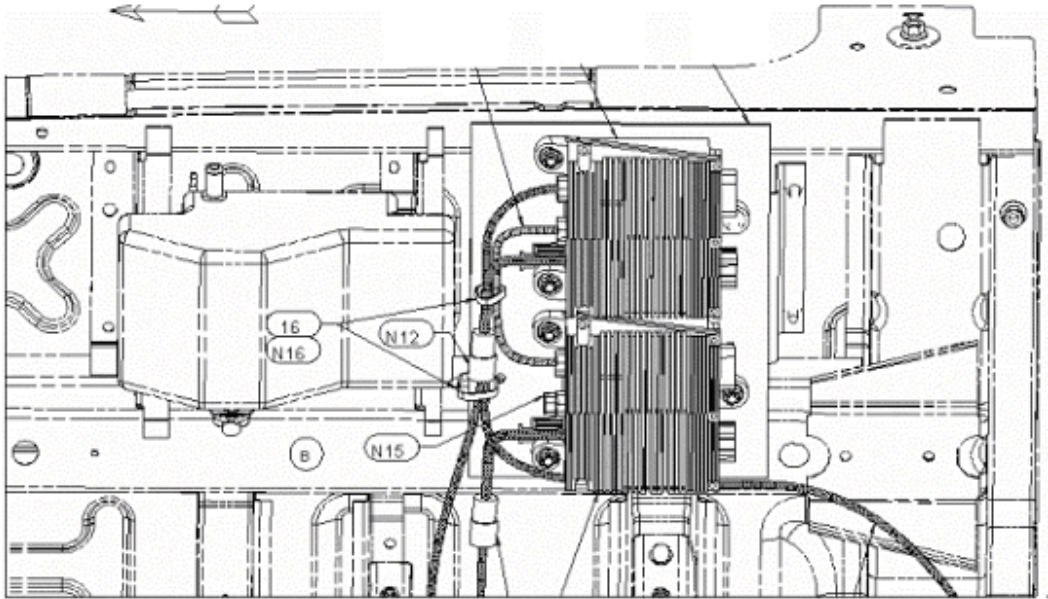


Figure 154 7000 Models Under Cab Mounting

Table 150 2585983C91 KIT, REMOTE POWER MODULE BACK OF CAB

| Part | Description | Quantity |
|------------|---------------------------------------|----------|
| 2585982C91 | KIT, REMOTE POWER MODULE JUMPER | 1 |
| 3554070C93 | HARNESS, ELEC*RPU/ RPTO BOC DATA | 1 |
| 3558934C92 | HARNESS, CHASSIS WIRING* SINGLE | 1 |
| 3572525C91 | HARN, DASH WRG, BB DLINK, PWR AND GND | 1 |
| 3574372C91 | HARN, DASH WRG, SMRT SOL PK(7/14) | 1 |
| MIN5 | FUSE 5A (3534208C1) | 1 |
| 3559775C1 | RESISTOR, ELECT* TERMINATING RES | 1 |
| 3549776C4 | HOUSING, SWITCH*6 PACK DIN MULT | 1 |
| 3578910C1 | SWITCH, BLANK RCKR-2 POS BISTAB | 6 |
| 3578733C1 | LIGHT, IND, LED ON-GREEN, BRIGHT | 6 |
| 3533928C1 | LIGHT, IND, LED AMBER BKLGT | 6 |
| 3552005C3 | KIT, LIGHT* PRODUCT GRAPHIC FOR | 1 |
| 2506418R2 | MANUAL, INST RMT PWR MOD/BOC | 1 |

How Do I Install a Back of Cab Remote Power Module Kit and Switch Pack

- Purchase a remote power module and switch pack kit, Part Number 2585983C91 from International Service Parts.

- Place all parts on a convenient workspace to locate and identify all piece parts. Read all of these instructions before beginning the installation.
- This Kit is for left mounted battery box for 4000s' and under cab for 7000's. If truck has right mounted battery box, add 3558936C91. If adding two RPM's use jumper harness 3558937C91 from first to second RPM and add 3558934C92 cable for the battery feed.
- If RPM brackets are needed, the following part numbers will need to be ordered

4000 models: RPM Bracket for second Back of Cab RPM – 3558794C1

7000 models (1 or 2 RPM's): Day Cab – 3582976C2, Crew/Extended Cab – 3582983C2

Mounted under driver side of cab for 7000 Models

3582976C2 - Day Cab Mounting Bracket

3582983C2 - Crew/Extended Cab Mounting Bracket

3558794C1 - Mounting Bracket.

- Mounted under battery box for 4000 Model
- Attach the mounting bracket the underside of the vehicle cab on 7000 models (driver's side) and the back of the battery box if a second RPM is mounted on a 4000 series. See figures above.
- Attach the remote power module to the vehicle-mounting bracket and securely tighten the fasteners.
- Install dash harness and center chassis harness as per the following instructions. The schematic diagram is provided for your assistance in the installation.
- Wrap the add-on harnesses to respective dash and center chassis harnesses with electrical tape or other harness wrap after the installation. Ensure harnesses are routed away from sharp edges and properly clipped for good wire harness support.

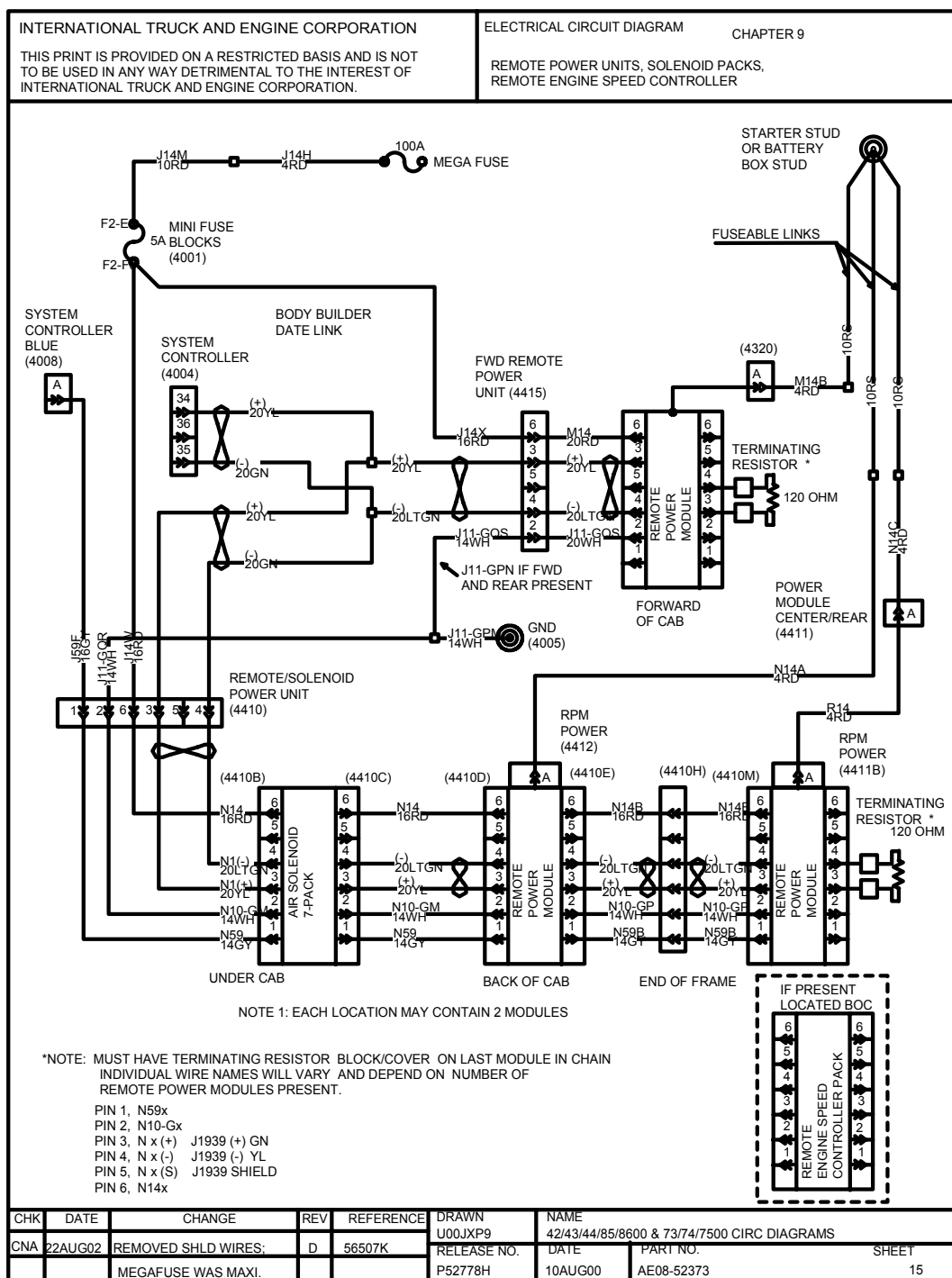


Figure 155

Installation Instructions

1. Install J11-GPN and J11-GQR to ground stud 4005 near Power Distribution Panel.
2. Insert J14W & J14X {Red} into the Power Distribution Panel (4001) cavity F2-F3.
3. Insert J5M (+) {Yellow} into Electronic System Controller (4004) cavity 34.

4. Insert J5M (-) {Green} into Electronic System Controller (4004) cavity 35.
5. Insert the Terminating Resistor into connector (4415) if not using a Forward of Cab RPM or in Forward RPM if using the Forward RPM.
6. Insert J59F {gray} into Electronic System Controller (4008) cavity A. Circuit is only required if air solenoid is being added with RPM and is not needed if air solenoid was factory installed.
7. Insert 5 amp fuse in cavity F2-F3 of the Power Distribution Panel.

NOTE – If an Air Solenoid 7-Pack is not present, plug connector into first RPM at Back of Cab.

How do I hook it up?

- The RPM has 2 pins in the black 23-pin signal connector that must be jumpered correctly to properly address the module. The first RPM should be addressed as #1 (pins 1 and 2 jumpered together) The second RPM should be addressed as #2 (pins 3 and 4 jumpered together) The RPM is available from International Service Parts with pre-installed address jumpers by separate part numbers.
- No two modules can have the same address on the same vehicle.
- The two identical 6 pin connectors located on the power input side of the module are the data link connectors. They are pass thru connectors that allow for the daisy chaining of modules. Only one connector plugs into the chassis harness.
- The last module in the chain must have a 120-ohm terminating resistor in the data link connector.
- Connect the heavy gauge battery cable to the one way connector on the remote power module and the other end to the vehicle batteries.

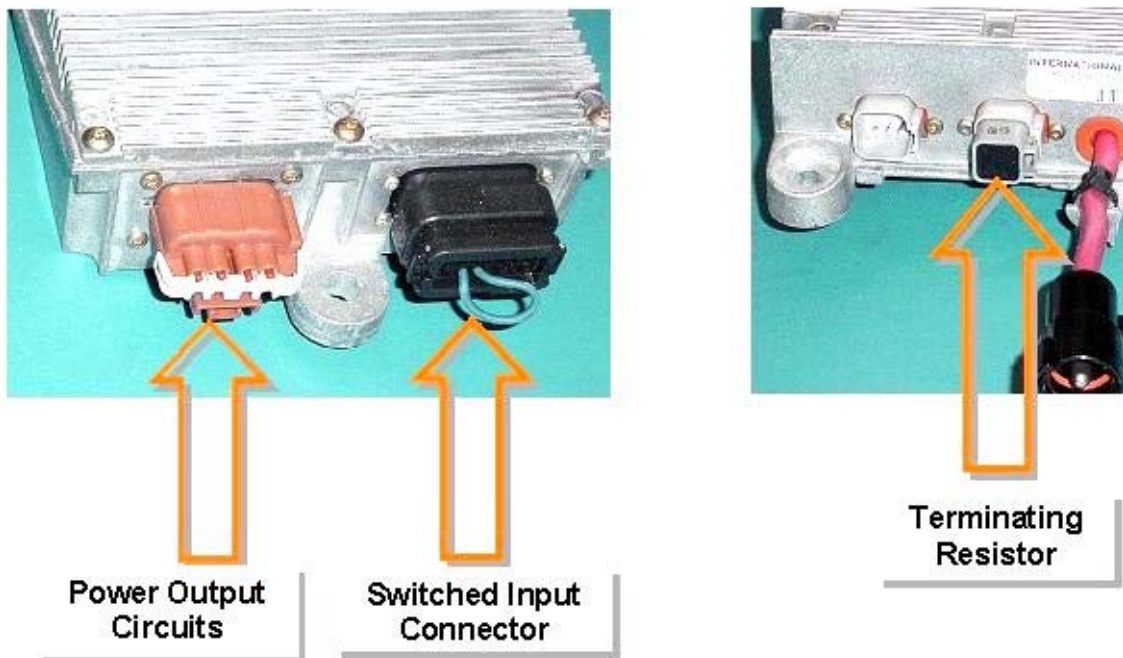


Figure 156

Installation of Switch Packs

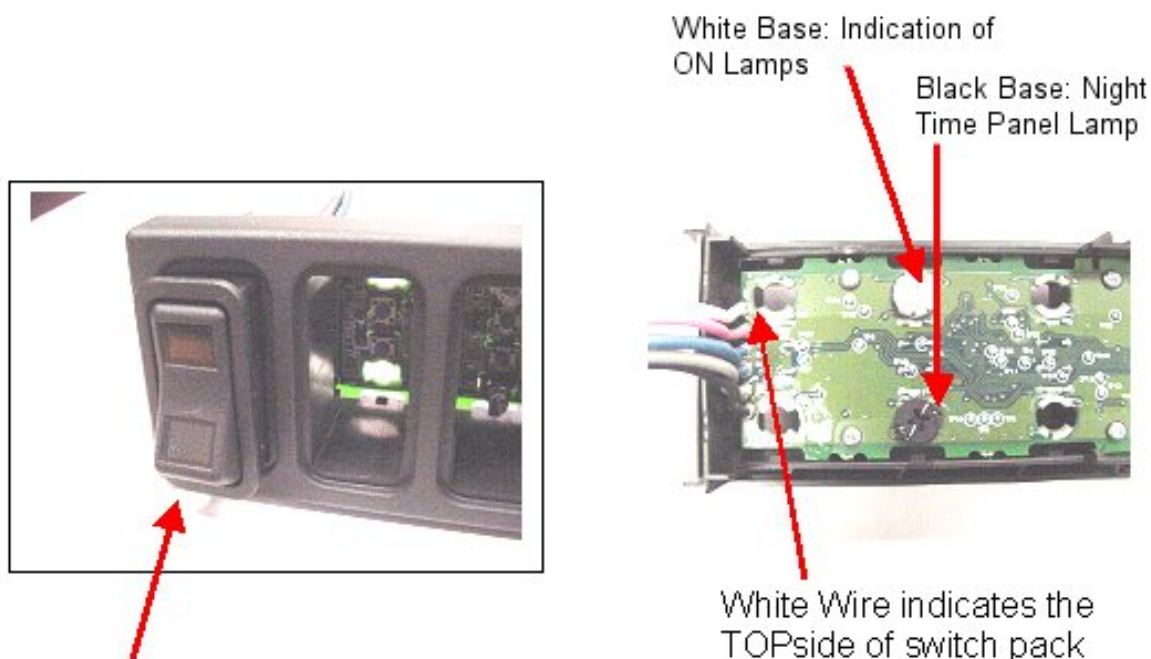


Figure 157

- Install 2 position-latched switches into each position of the switch housing. Push each switch in to the switch pack until it snaps into place. There is a keying feature so it cannot be installed upside down.
- Remove the rear cover of the switch pack. It is attached with a snap fit. See the attached pictures to determine which end is up on the switch pack. Install the LED lamps with the white base in the upper section of each switch on the switch pack housing. These are the indication of ON lamps and will glow green when activated. Note that the LED lamps have a keying feature as they are installed in the switch pack circuit board. If the lamps are forced in against the proper orientation, they will not illuminate.
- Install the LED lamps with the black base in the lower section of each switch on the switch pack housing. These are the back light lamps and will glow amber when the panel lights are on. Re-attach the rear cover and secure the wire harnesses under the cover hooks.
- Locate a free switch pack opening in the central instrument panel.
- If no switch packs are present in the vehicle, remove the switch blank below the radio space and locate the 6-pin cab harness for the switch packs. Connect the cab switch harness to the left side switch pack harness (as viewed from the front). Connectors are keyed to ensure proper connection. Ensure that the switch pack is installed in the proper orientation. The green indication of ON lamps must be on top when viewing the front of the switch pack.
- If one 6-switch pack is already present, locate the new switch pack in the lower left switch pack area.
- Connect the second harness of the first switch pack to the input cable harness of the second switch pack.
- Install the second switch pack into center instrument panel. It is secured with a snap action.
- Determine the function of each of the newly added rocker switches. Locate the set of switch labels in the parts kit. Place the labels named "ON" in the upper section of each windowed rocker switch. Place the switch name in the lower portion of the rocker switch.



Figure 158

If an additional switch pack is being installed it is connected to the multiplex system by “daisy chaining” it's connectors to the existing switch pack (or to the Cab Harness if no switch pack is currently installed). It is important to connect the switch packs in the correct order. Connecting the switch packs together and to the cab harness in the wrong order will cause switch pack addressing problems.

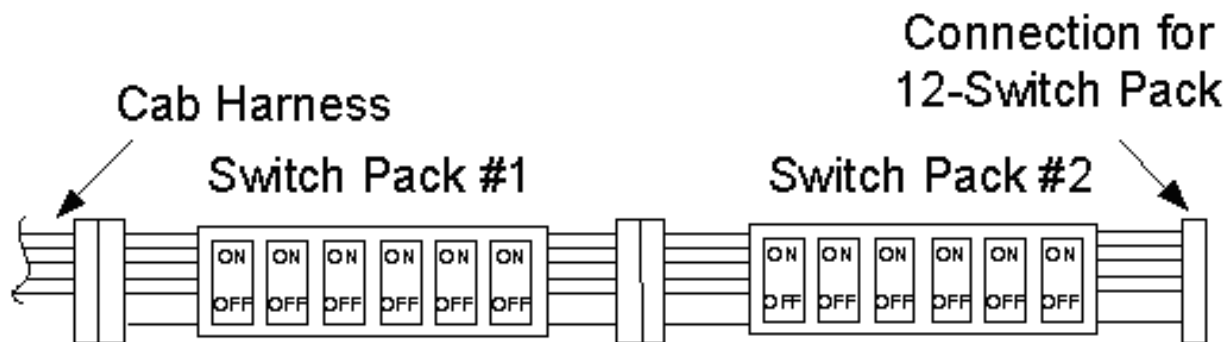
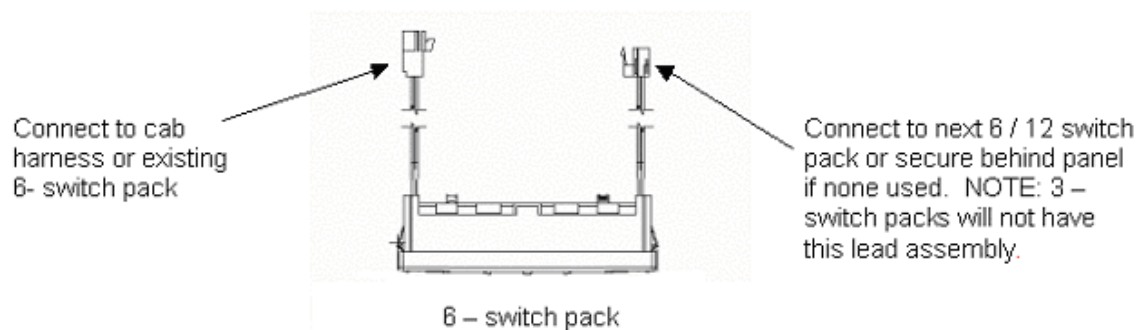
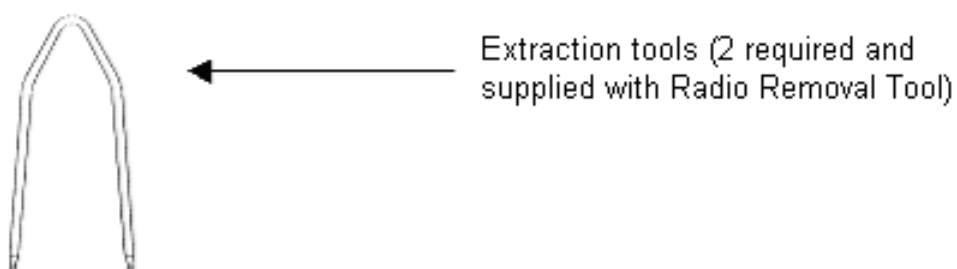


Figure 159

**Figure 160****Removal/Replacement of Switches and Switch Packs**

To remove a switch pack from the panel use the DIN Radio Removal Tool part number 2504954C1.

**Figure 161**

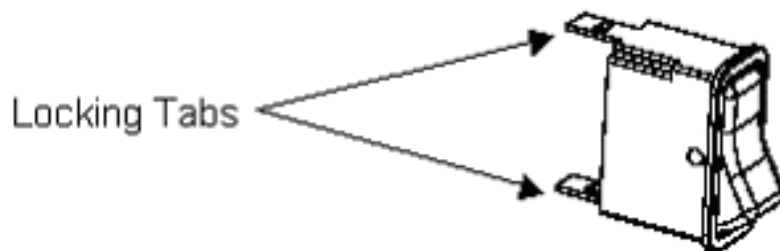
Insert the extraction tools (2) into the two holes on either side of a switch pack housing until the locking tabs are fully depressed. The switch pack can then be removed from the panel and the extraction tools removed.

**Figure 162**

To remove individual switches or blanks from a switch pack, squeeze the locking tabs on the rear of the switch or blank (top and bottom) and push it from the housing.

To install a switch pack in the panel, make the necessary connections then simply push the assembly into place until the locking tabs are fully engaged.

NOTE – The switch pack can be inadvertently installed upside down. To avoid this when no switches are present in the housing, make sure the white wire in the lead assemblies on the rear of the housing are towards the top.

**Figure 163**

To install a switch in the switch pack housing insert the switch in the proper slot and push in until the switch locking tabs are fully engaged (switches are keyed and cannot be installed upside down).

LED Installation

The LED's are installed from the rear of the switch housing (snap fit rear cover must first be removed). The amber backlight LED (part number 3533928C1) must be installed in the lower position and the green indicator LED (part number 3578733C1) in the upper position. The LED's can be identified by the color of the base – black for the amber LED and white for the green LED.

To install an LED insert it into the hole in the printed wiring board and with a small flat blade screwdriver turn the LED clockwise until locked. Replace the rear cover when complete.

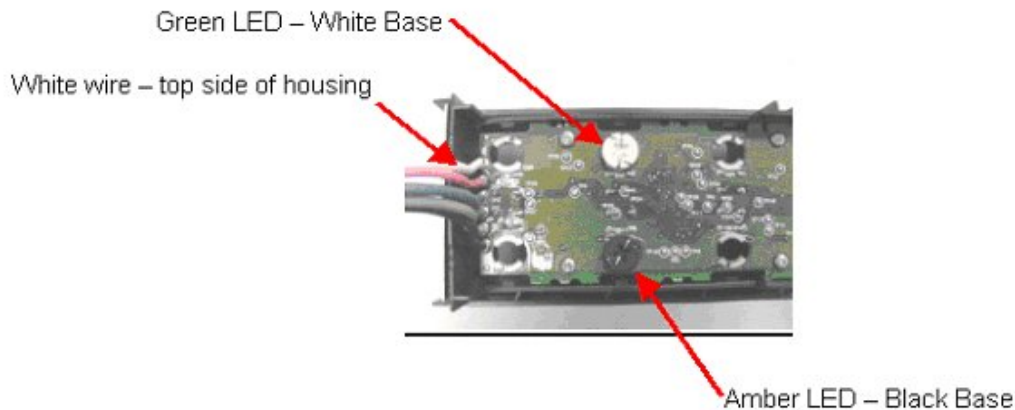


Figure 164

Programming The System

- The remote power module and switch pack system is now installed.
- The electrical system must now be programmed to recognize these new components.
- If you own either the ICAP or the Diamond Logic™ Builder software Program, enable the appropriate 595xxx software feature code as follows:
 - 595032 – Remote Power Module 1, one to one mapping between switch pack and power module
 - 595121 – Remote Power Module 2, one to one mapping between switch pack and power module
 - 595119 – Remote Power Module 4, one to one mapping between switch pack and power module
 - 595120 – Remote Power Module 7, one to one mapping between switch pack and power module
 - For body integration features, make selections from entire list of 595 software codes.
- The system may also be programmed at your nearest International Dealer Contact your dealer for details if you want to purchase either of these programs.

When other Body Integration Features are used, please refer to the **Body Integration Feature** section for further directions on installing these features.

19.2. 60AAA (ONE), 60AAB (TWO) — REMOTE POWER MODULES (RPM)

FEATURE CODE DESCRIPTION:

60AAA – BDY INTG, REMOTE POWER MODULE Mounted Under Cab; Up to 6 Outputs & 6 Inputs, Max. 20 amp. per Channel, Max. 80 amp. Total (Includes 1 Switch Pack With Latched Switches)

60AAB – BDY INTG, REMOTE POWER MODULE (2) Mounted Under Cab; Up to 6 Outputs & 6 Inputs each, Max. 20 amp. per Channel, Max. 80 amp. Total per Power Module (Includes Switch Packs With Latched Switches)

FEATURE/BODY FUNCTION: 60AAA

Provides 6 load outputs providing a maximum of 20 amps per channel and a maximum of 80 total amps per module. Also provides 6 inputs, drawing information from customer-mounted, outside of cab switches, and/or from information available along the datalink cables. The RPM is also used to distribute and control power to various devices on the vehicle from switches inside the cab.

* However many outputs you fill in the order, you get any remaining switches that would be unused out of 6. For example, if you place an order where 4 outputs are used up, you would get two more switches. If you place an order where you use up 5 outputs, you will get 1 switch. **You get as many switches as you have outputs left over.**

FEATURE/BODY FUNCTION: 60AAB

Each RPM provides 6 load outputs providing a maximum of 20 amps per channel and a maximum of 80 total amps per module. Also provides 6 inputs, drawing information from customer-mounted, outside of cab switches, and/or from information available along the datalink cables. These RPMs are used to distribute and control power to various devices on the vehicle from switches inside the cab.

* However many outputs you fill in the order, you get any remaining switches that would be unused out of 12. For example, if you place an order where 8 outputs are used up, you would get 4 more switches. **You get as many switches as you have outputs left over.**

SOFTWARE FEATURE CODES AND PROGRAMMABLE PARAMETERS:

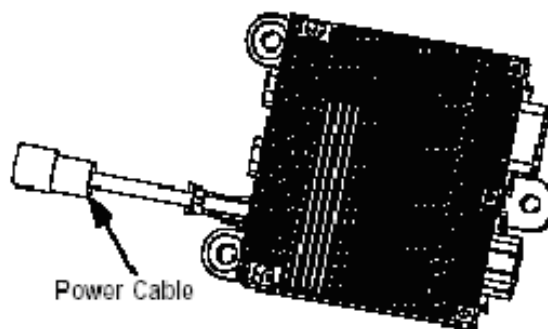
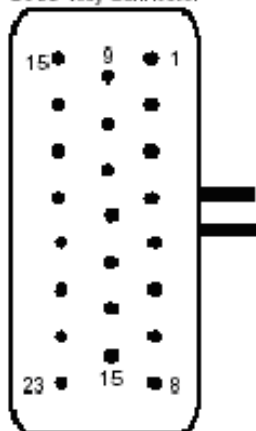
Hardware only, no 595 codes

WIRING INFORMATION

Address Jumpers:

| | |
|---|-------------------|
| 1 | Jumper Red Wire |
| 1 | Jumper Green Wire |
| 1 | Jumper Blue Wire |

J3 23-Way Connector

**Figure 165****Addressing Remote Power Modules**

All remote power modules require jumpers to tell the system controller what remote power module it is controlling. Jumpers are to be installed in a 23-way connector in location J4 shown in the figure above.

Table 151

| Jumper Wire Color | Remote Power Module Location | Cavity Location |
|-------------------|------------------------------|-----------------|
| Red Wire | 1st Back of Cab | 1–2 |
| Green Wire | 2nd Back of Cab | 3–4 |
| Blue Wire | End of Frame | 5–6 |

When adding Remote Power Modules, programming the Electronic System Controller is required.

Table 152 8-Way ESC (Brown and Blue) and RPM Connector (Brown)

| Connector Part No. | Description | Terminal Part | Seal Part | Lock Part | Connector ID |
|--------------------|---|---------------|----------------|-----------|--------------|
| 3548934C1 | Connector, Body*, 8-Way Brown Packard GT 280 Sealed Male Lock 3548943C1 | 3535931C1 | 3535937C1 | 3548943C1 | 4007 |
| 3548933C1 | Connector, Body*, 8-Way Blue Packard GT 280 Sealed Male Lock 3548943C1 | 3535931C1 | 3535937C1 | 3548943C1 | 4008 |
| 2005482C1 | Connector, Body 23-Way (remote address and external switch) | 1698937C1 | Plug 1688285C1 | N/A | 381 |

Switches

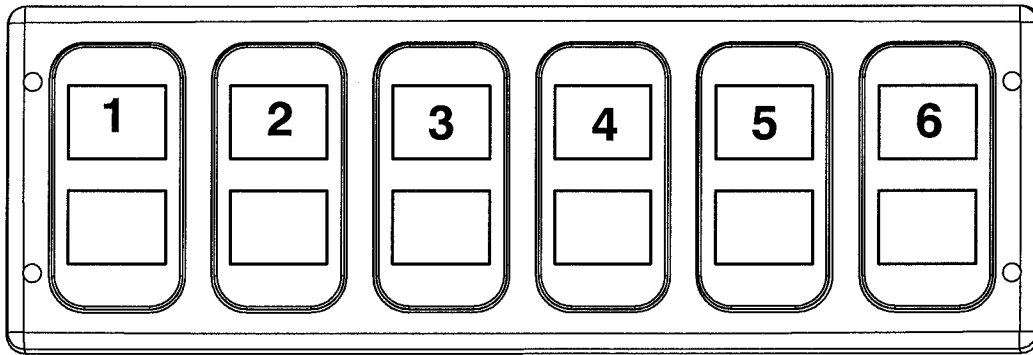


Figure 166 Instrument Panel Mounted Switch Pack

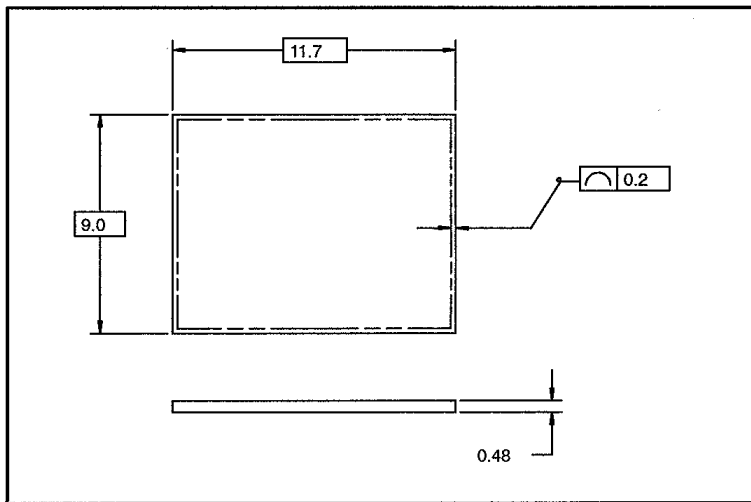


Figure 167 Switch Label Dimensions in Millimeters

Switch Labeling: Switch packs provided with the Remote Power Module Feature are general purpose “un-labeled” rocker switches. Since the functions of the rocker switches are unknown at the time of vehicle assembly, un-labeled rocker switches are provided so the body builder can customize the switches to any particular need. A package of switch labels is provided for usage by the body builder to finish the labeling of the switches. If the body builder requires a label name not already provided by International, a custom label may be designed by following the specification of the attached switch label appliqué drawing. Supply of custom labels is the responsibility of the body builder.

The suppliers for the windowed rocker labels are:

Dura-Tech

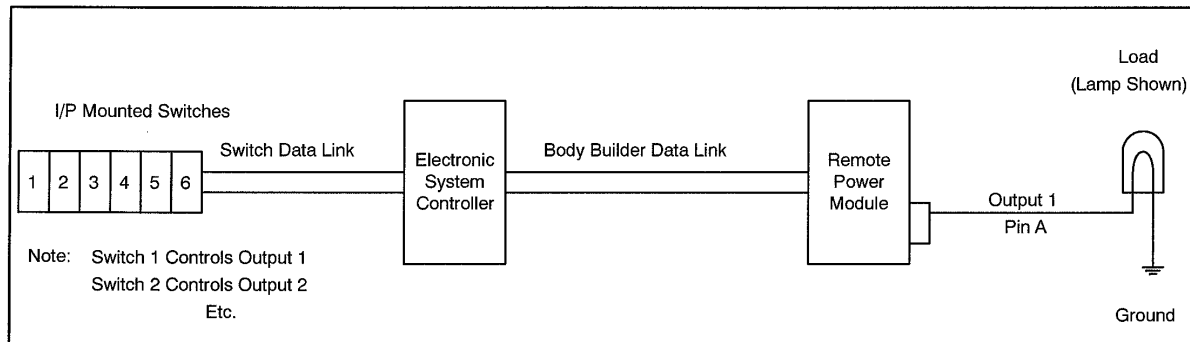
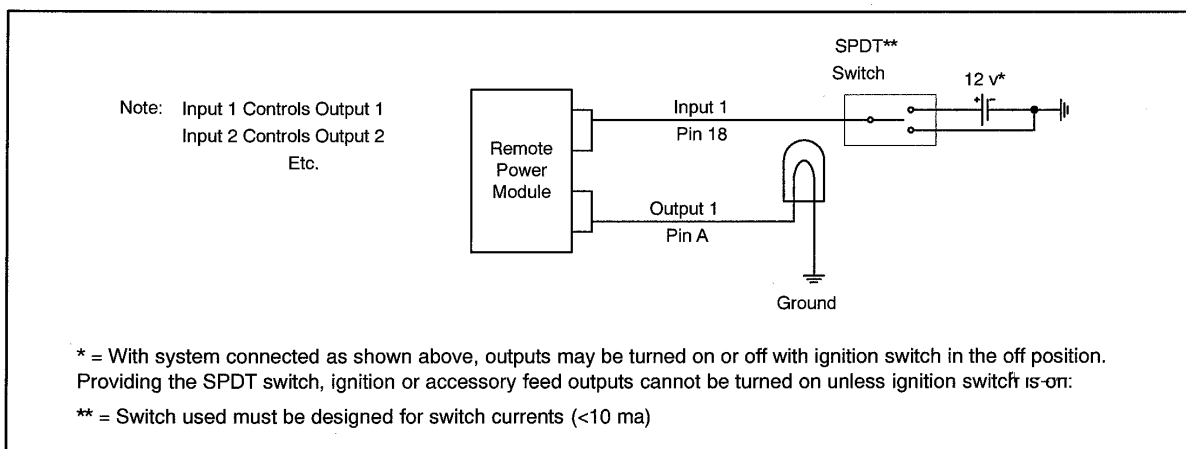
3216 Commerce
St. LaCrosse, Wisconsin 54603
Telephone: 608-781-2570
Web site: duratech.com

Pollak Switch Products Division

300 Dan Road

Canton, Mass. 02021

Telephone: 781-830-0340

**Figure 168 Example with RPM Output Controlled by Switch Inside Cab****Figure 169 Example with RPM Output Controlled by Switch Located on Chassis****Table 153**

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|------------------|----------------------|------------------|---------------|
| Signal Connector | | | |
| 1 | Module Select Common | Ground | |
| 2 | Module Select #1 | Digital Input | 0.010 |
| 3 | Module Select Common | Ground | |
| 4 | Module Select #2 | Digital Input | 0.010 |
| 5 | Module Select Common | Ground | |
| 6 | Module Select #3 | | 0.010 |
| 7 | | | |
| 8 | | | |

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|-----------------|-------------|------------------|---------------|
| 9 | | | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | | | |
| 15 | | | |
| 16 | | | |
| 17 | | | |
| 18 | Input #1 | Switch Input | 0.010 |
| 19 | Input #2 | Switch Input | 0.010 |
| 20 | Input #3 | Switch Input | 0.010 |
| 21 | Input #4 | Switch Input | 0.010 |
| 22 | Input #5 | Switch Input | 0.010 |
| 23 | Input #6 | Switch Input | 0.010 |
| Power Connector | | | |
| A | Output #1 | Output | 20 |
| B | Output #2 | Output | 20 |
| C | Output #3 | Output | 20 |
| D | Output #4 | Output | 20 |
| E | Output #5 | Output | 20 |
| F | | | |
| G | | | |
| H | Output #6 | Output | 20 |

Table 154

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|----------------|-----------------------|-------------------|---------------|
| Body Data Link | | | |
| 1 | Air Solenoid Power*** | Input/ Pass-Thru | 1 |
| 2 | Ground | Ground/ Pass-Thru | |
| 3 | Body Builder J1939+ | Data Link | |
| 4 | Body Builder J1939– | Data Link | |
| 6 | Battery | Input/ Pass-Thru | 5 |
| Body Data Link | | | |
| 1 | Air Solenoid Power*** | Input/ Pass-Thru | 1 |

| Pin | Signal Name | Signal Direction | Rating (Amps) |
|---------------------|---------------------|-------------------|---------------|
| 2 | Ground | Ground/ Pass-Thru | |
| 3 | Body Builder J1939+ | Data Link | |
| 4 | Body Builder J1939- | Data Link | |
| 6 | Battery | Input/ Pass-Thru | 5 |
| Module Battery Feed | | | |
| 1 | Supply Voltage | Input | 80 |

NOTE: Body Data Link Output is supplied with the mate to this connector which is sealed and includes a 120 ohm terminating resistor.

NOTE: No additional circuits can be added.

**RPM does not use air solenoid power. There is no 12V on this pin unless there is a 7-pack air solenoid module.

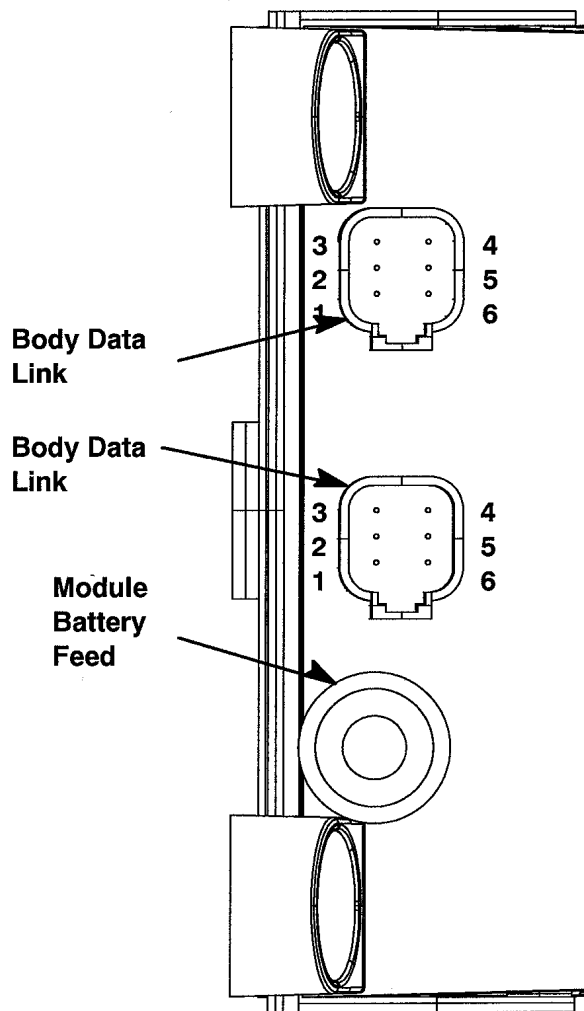


Figure 170

Table 155 Mating Connector Information

| Signal Connector — 23 Way | |
|---------------------------|-------------|
| Connector | Lock |
| 770680-1 (Amp) | 1688285C1 |
| Terminal | Cable Gauge |
| 2005483C1 | 16, 18, 20 |

Table 156 Mating Connector Information

| Power Connector — 8 Way | |
|-------------------------|-------------|
| Connector | Lock |
| 3548934C1 | 3548943C1 |
| Terminal | Cable Gauge |
| 3535929C1 | 20, 22 |
| 3535930C1 | 16, 18 |
| 3534163C1 | 12 |
| 3535931C1 | 14 |
| Cable Seal | Cable Gauge |
| 3535935C1 | 20, 22 |
| 3535936C1 | 16, 18 |
| 3535937C1 | 14 |
| 3548945C1 | 12 |
| Plug | 2025431C1 |

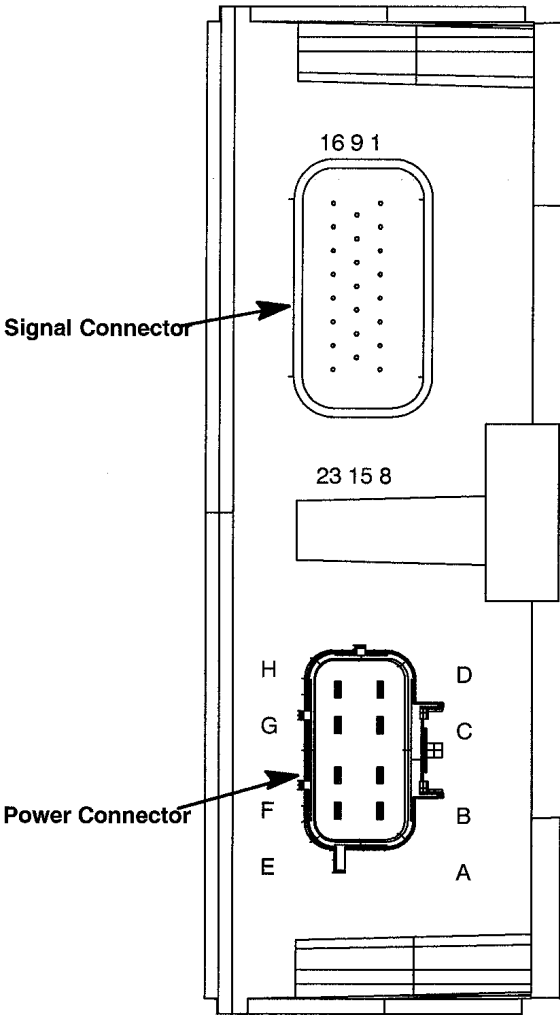


Figure 171

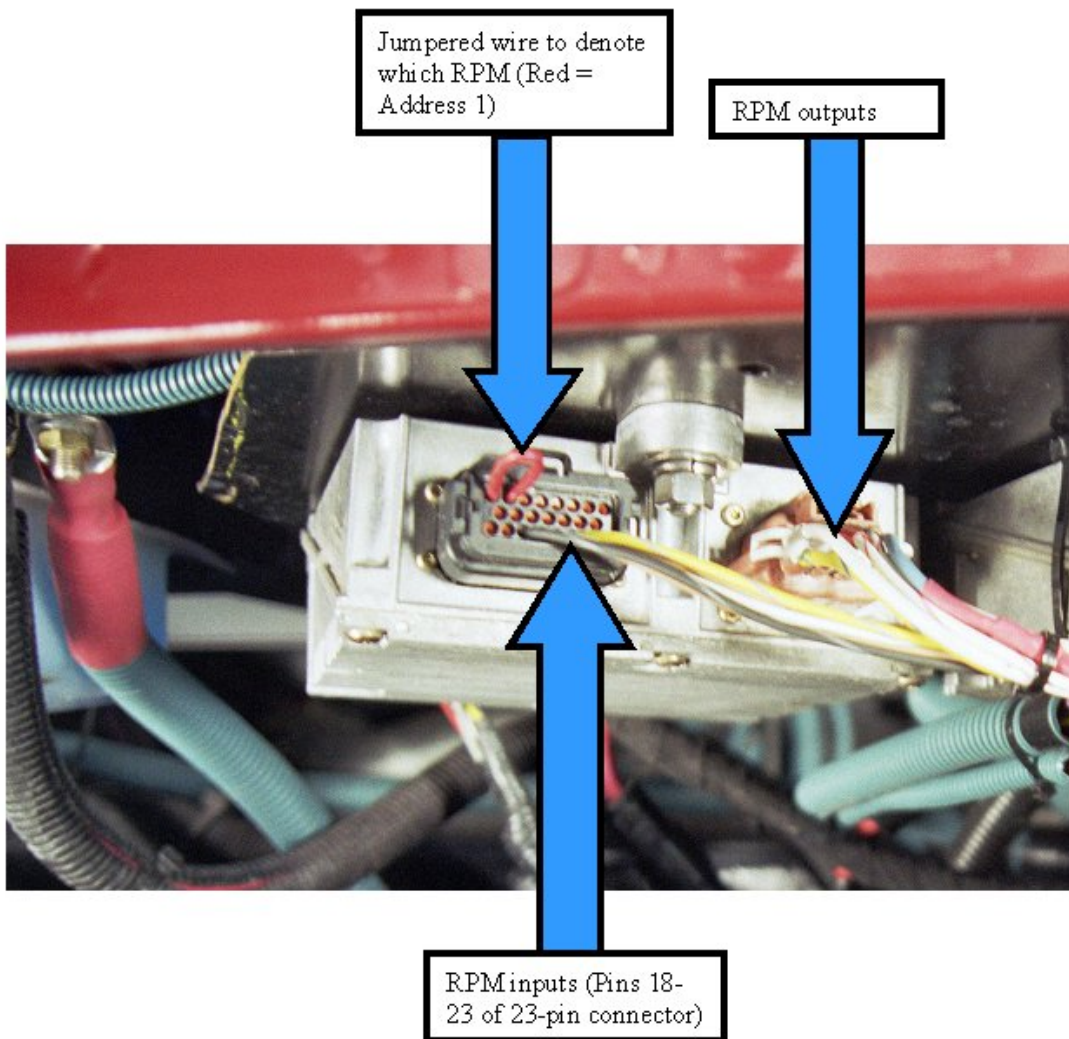


Figure 172

TESTING

1. Turn the ignition key to the accessory position.
2. If a "one to one" mapping software feature was installed, turn on the first switch.
3. The green indicator should illuminate and the first channel output of the remote power module should be at battery volts.
4. Each respective switch and power module output should operate in a similar fashion.

If a body integration feature was installed, refer to the electrical Body Builder Book for a functional description of each feature.

Circuit Diagrams: See Electrical Circuit Diagram Manual S08285 Chapter 9, Page 15.

How Do I Install a Back of Cab Remote Power Module Kit and Switch Pack

- Purchase a remote power module and switch pack kit, Part Number 2585983C91 from International Service Parts.
- Place all parts on a convenient workspace to locate and identify all piece parts. Read all of these instructions before beginning the installation.
- This Kit is for left mounted battery box for 4000s' and under cab for 7000's. If truck has right mounted battery box, add 3558936C91. If adding two RPM's use jumper harness 3558937C91 from first to second RPM and add 3558934C92 cable for the battery feed.

If RPM brackets are needed, the following part numbers will need to be ordered

4000 models: RPM Bracket for second Back of Cab RPM – 3558794C1

7000 models (1 or 2 RPM's): Day Cab – 3582976C2, Crew/Extended Cab – 3582983C2

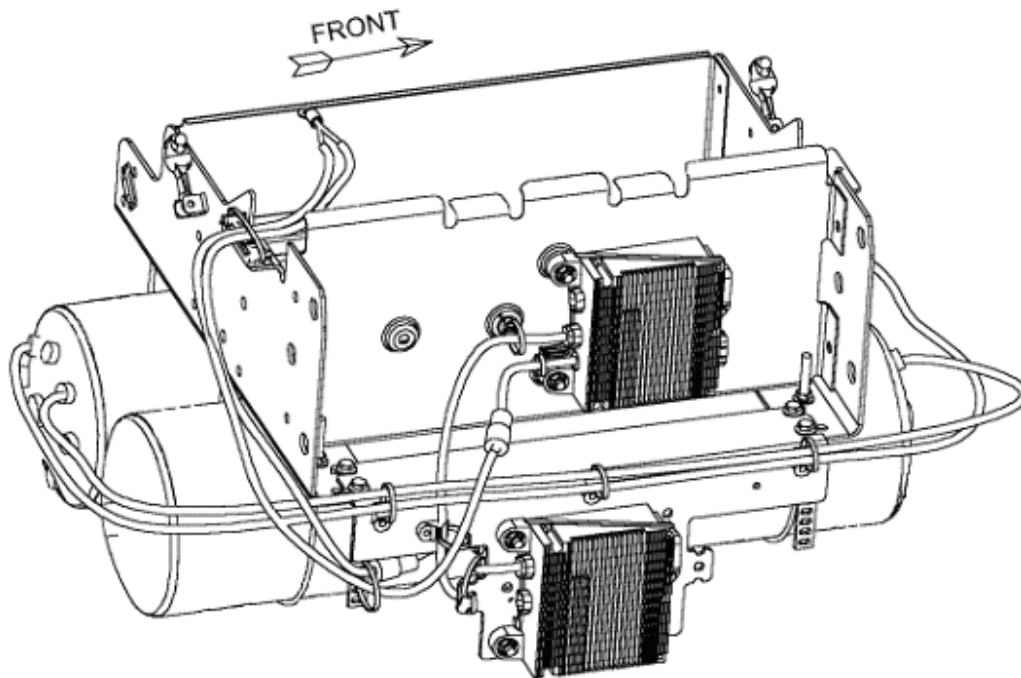


Figure 173 Mounted Under Battery Box for 4000 Model

3558794C1 - Mounting Bracket.

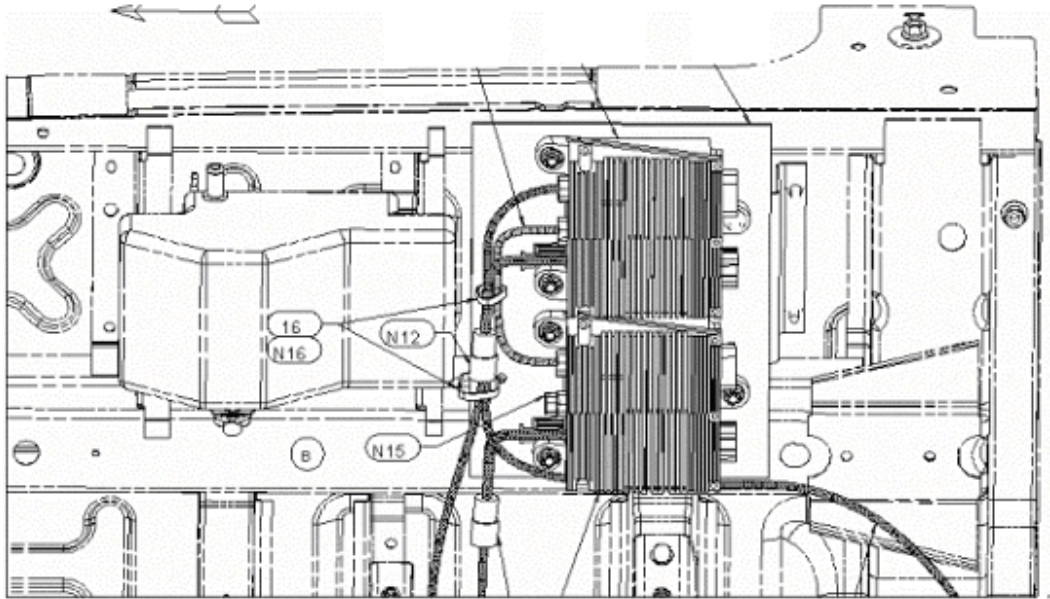


Figure 174 Mounted Under Driver Side Of Cab for 7000 Models

3582976C2 - Day Cab Mounting Bracket

3582983C2 - Crew/Extended Cab Mounting Bracket

- Attach the mounting bracket to the underside of the vehicle cab on 7000 models (driver's side) and the back of the battery box if a second RPM is mounted on a 4000 series. See figures above.
- Attach the remote power module to the vehicle-mounting bracket and securely tighten the fasteners.
- Install dash harness and center chassis harness as per the following instructions. The schematic diagram is provided for your assistance in the installation.
- Wrap the add-on harnesses to respective dash and center chassis harnesses with electrical tape or other harness wrap after the installation. Ensure harnesses are routed away from sharp edges and properly clipped for good wire harness support.

Figure 175

Installation Instructions

1. Install J11-GPN and J11-GQR to ground stud 4005 near Power Distribution Panel.
2. Insert J14W & J14X {Red} into the Power Distribution Panel (4001) cavity F2-F3.
3. Insert J5M (+) {Yellow} into Electronic System Controller (4004) cavity 34.
4. Insert J5M (-) {Green} into Electronic System Controller (4004) cavity 35.
5. Insert the Terminating Resistor into connector (4415) if not using a Forward of Cab RPM or in Forward RPM if using the Forward RPM.
6. Insert J59F {gray} into Electronic System Controller (4008) cavity A.

7. Insert 5 amp fuse in cavity F2-F3 of the Power Distribution Panel.

NOTE – If an Air Solenoid 7-Pack is not present, plug connector into first RPM at Back of Cab.

How do I hook it up?

- The RPM has 2 pins in the black 23-pin signal connector that must be jumpered correctly to properly address the module. The first RPM should be addressed as #1 (pins 1 and 2 jumpered together) The second RPM should be addressed as #2 (pins 3 and 4 jumpered together) The RPM is available from International Service Parts with pre-installed address jumpers by separate part numbers.
- No two modules can have the same address on the same vehicle.
- The two identical 6 pin connectors located on the power input side of the module are the data link connectors. They are pass thru connectors that allow for the daisy chaining of modules. Only one connector plugs into the chassis harness.
- The last module in the chain must have a 120-ohm terminating resistor in the data link connector.
- Connect the heavy gauge battery cable to the one way connector on the remote power module and the other end to the vehicle batteries.

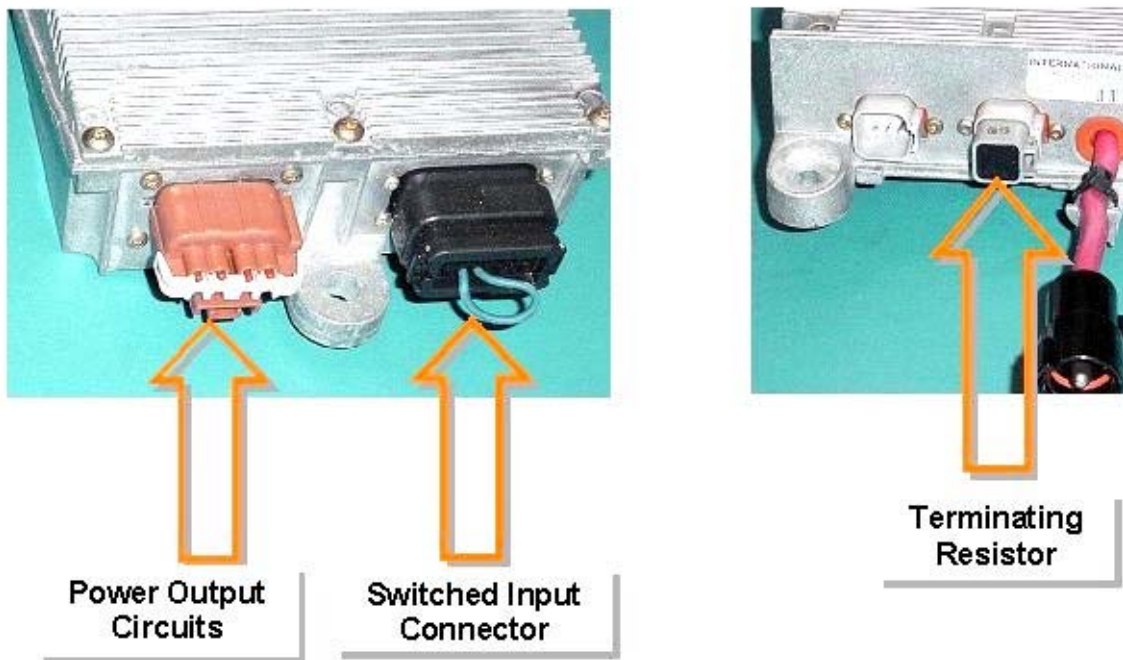


Figure 176

Installation of Switch Packs

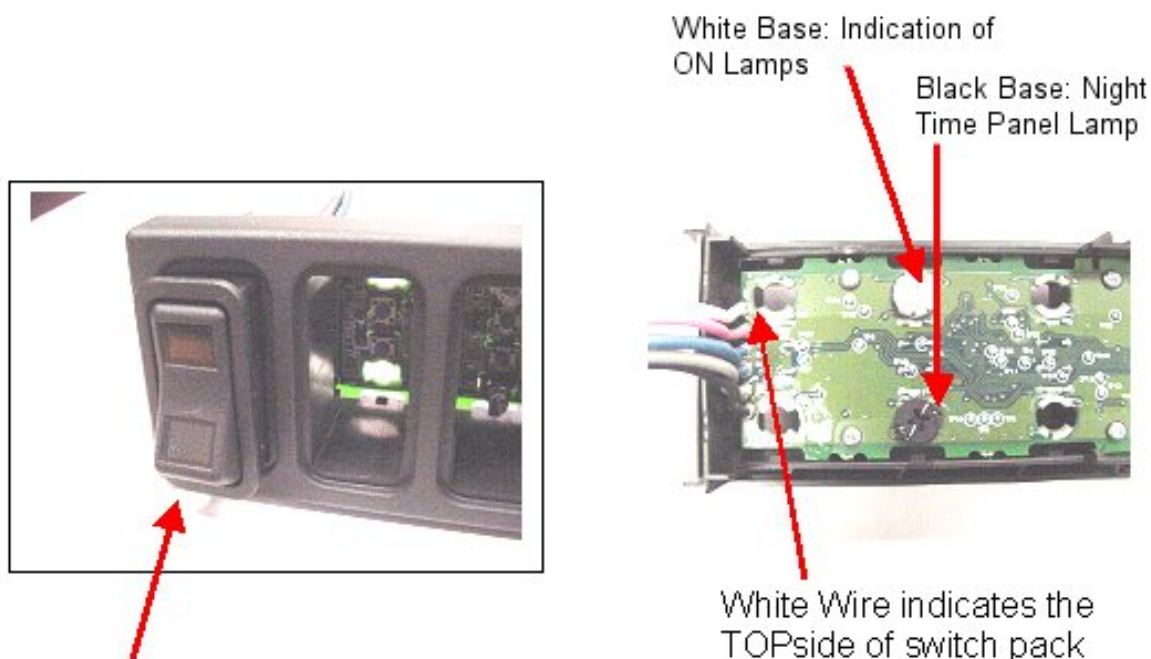


Figure 177

- Install 2 position-latched switches into each position of the switch housing. Push each switch in to the switch pack until it snaps into place. There is a keying feature so it cannot be installed upside down.
- Remove the rear cover of the switch pack. It is attached with a snap fit. See the attached pictures to determine which end is up on the switch pack. Install the LED lamps with the white base in the upper section of each switch on the switch pack housing. These are the indication of ON lamps and will glow green when activated. Note that the LED lamps have a keying feature as they are installed in the switch pack circuit board. If the lamps are forced in against the proper orientation, they will not illuminate.
- Install the LED lamps with the black base in the lower section of each switch on the switch pack housing. These are the back light lamps and will glow amber when the panel lights are on. Re-attach the rear cover and secure the wire harnesses under the cover hooks.
- Locate a free switch pack opening in the central instrument panel.
- If no switch packs are present in the vehicle, remove the switch blank below the radio space and locate the 6-pin cab harness for the switch packs. Connect the cab switch harness to the left side switch pack harness (as viewed from the front). Connectors are keyed to ensure proper connection. Ensure that the switch pack is installed in the proper orientation. The green indication of ON lamps must be on top when viewing the front of the switch pack.
- If one 6-switch pack is already present, locate the new switch pack in the lower left switch pack area.
- Connect the second harness of the first switch pack to the input cable harness of the second switch pack.
- Install the second switch pack into center instrument panel. It is secured with a snap action.
- Determine the function of each of the newly added rocker switches. Locate the set of switch labels in the parts kit. Place the labels named "ON" in the upper section of each windowed rocker switch. Place the switch name in the lower portion of the rocker switch.

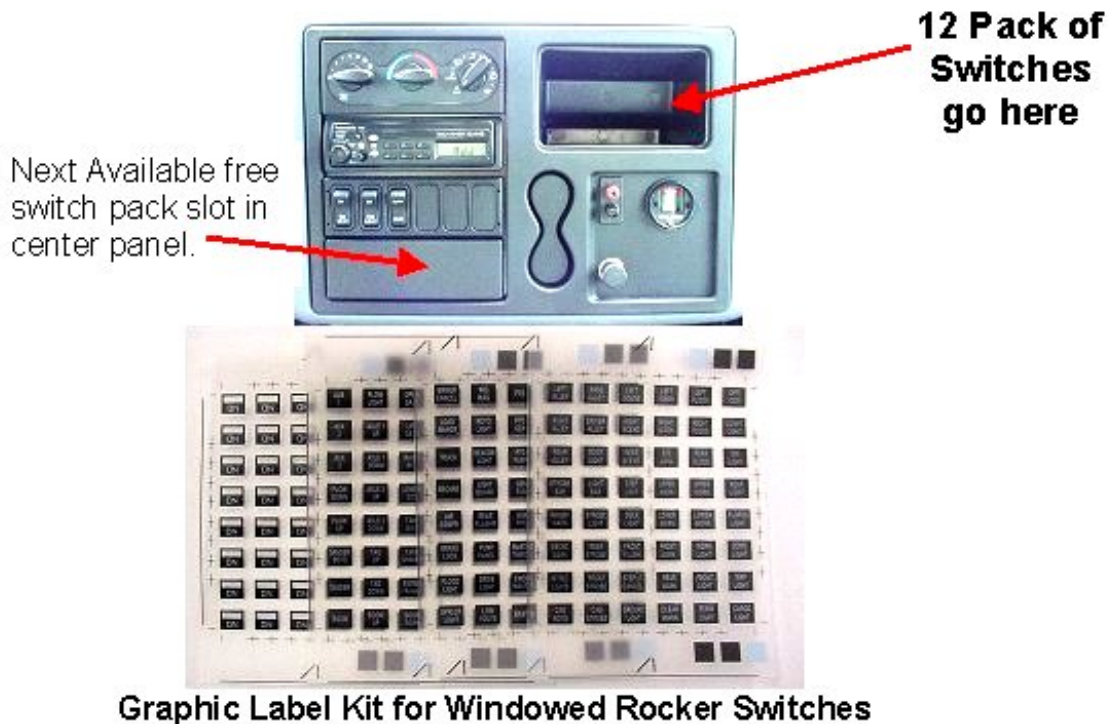


Figure 178

Programming The System

- The remote power module and switch pack system is now installed.
- 60AAA and 60AAB can be modified by using other Body Integration (60) codes. These codes can be added using ICAP or the Diamond Logic™ Builder software.
- The system may also be programmed at your nearest International Dealer Contact your dealer for details if you want to purchase either of these programs.
- When other Body Integration Features are used, please refer to the **Body Integration Feature** section for further directions on installing these features.

Testing the Remote Power Module System

- Turn the ignition key to the accessory position.
- If a “one to one” mapping software feature was installed, turn on the first switch.
- The green indicator should illuminate and the first channel output of the remote power module should be at battery volts.
- Each respective switch and power module output should operate in a similar fashion.

If a body integration feature was installed, refer to the electrical Body Builder Book for a functional description of each feature.

19.3. 08WTJ — SWITCH BODY CIRCUITS FRAME MTG REAR

FEATURE CODE DESCRIPTION:

08WTJ – SWITCH, BODY CIRCUITS, REAR for Bodybuilder with 6 switches in instrument panel (2–position switches), one power module with 6 channels, 20 amp per channel and 80 amp maximum output. Switches control the power modules through multiplex wiring, mounted at the rear of the frame.

FEATURE/BODY FUNCTION:

Feature 08WJT adds 1 RPM to the end of the frame to be used by itself or in combination with 60AAA (1 RPM BOC) or 60AAB (2 RPMs BOC). The Remote Power Module will have 6 channels, 20A per channel, and 80A maximum output. There will be 6, 2–position, switches located in the Instrument Panel, that will control the RPM through multiplex wiring.

SOFTWARE FEATURE CODES AND PROGRAMMABLE PARAMETERS:

Required software feature code: 595282

Conflicts with Software features: NONE

Table 157

| Parameter Name | ID | Description | Default Settings | Units | Min Value | Max Value | Step |
|-----------------------------|---------------|---|------------------|-------|-----------|-----------|------|
| TEM_Aux13_Output_Fuse_Param | PV-TEM-Aux-13 | Default setting for TEM_Aux13_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |
| TEM_Aux14_Output_Fuse_Param | PV-TEM-Aux-14 | Default setting for TEM_Aux14_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |
| TEM_Aux15_Output_Fuse_Param | PV-TEM-Aux-15 | Default setting for TEM_Aux15_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |
| TEM_Aux16_Output_Fuse_Param | PV-TEM-Aux-16 | Default setting for TEM_Aux16_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |
| TEM_Aux17_Output_Fuse_Param | PV-TEM-Aux-17 | Default setting for TEM_Aux17_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |
| TEM_Aux18_Output_Fuse_Param | PV-TEM-Aux-18 | Default setting for TEM_Aux18_Output_Fuse Param | 20 | Amps | 0 | 20 | 0.1 |

WIRING INFORMATION

Refer to current remote power module.

TESTING

Refer to current remote power module.

HOW TO ADD THIS FEATURE:

- Select software feature code 595282 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Refer to current remote power module for further installation instructions.

Listed below is a listing of parts that may be required depending on how the vehicle was equipped at the factory.

Table 158

| Part Number | Description |
|----------------|--|
| 3595804F91 | Consists of the following: |
| | |
| 6 of 3533928C1 | Light, Indicator, LED backlight (Amber) |
| 6 of 3578733C1 | Light, Indicator, LED on (Green) 1.0 CAN |
| 6 of 3578910C1 | Switch, Electronic, Blank Rocker — 2 POS |

20. IN CAB AND EXTERNAL SWITCH (3-WAY) CONTROLS FOR BODY ACCESSORIES

20.1. 60ACS — ONE MOMENTARY ROCKER SWITCH / REMOTE SWITCH CAPABILITY

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH MOMNTRY 3POS Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 1 Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 1 Remote Power Module input and 1 output)

FEATURE/BODY FUNCTION: This feature provides a three-way switch control function for a remote power module output. An in-cab 3-position momentary switch is connected to a remote power module (RPM) output. In addition, a customer supplied remote mounted momentary switch may be used to control the same RPM output. This switch must be active at 12 volts and must use ground to deactivate the output. Thus, a three-way switch control action may be performed with these two switch inputs. The RPM output may be turned OFF or ON from either switch, however, an OFF command from either switch takes precedence and will turn the RPM output OFF. This feature is useful when a lamp or other load requires control from both in the cab or from a remote location on the body.

The in-cab switch provides a green lamp in the top section of the switch to indicate when the RPM output is ON. The RPM provides an active high output that will source up to 20 amps at battery voltage levels. The output current level may be limited through programmable parameters between .1 and 20 amps in .1 amp increments. This virtual fusing level is controlled in software and mimics the performance of an SAE fuse.

The RPM output may be activated with the in-cab switch provided that the ignition key is in the Accessory or Ignition position. The RPM output may also be activated with the remote switch input with ignition key OFF or ON. It is important to turn off RPM outputs that have been enabled remotely before leaving a parked vehicle with the ignition key off. Otherwise, the system will remain active and drain the batteries.

60AAA or 60AAB is a prerequisite feature that must be ordered along with 60ACS. 60ACS uses a single momentary switch in place of one of the latching switches that is provided with 60AAA and 60AAB. For example, instead of the 6 latching switches that are provided with 60AAA, a vehicle with 60ACS will have a switch pack of 5 latching switches and 1 momentary switch.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section)

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595200

Conflicts with Software features: NONE

The **TEM_Aux1_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 1. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux1_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module output to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

Table 159

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|--|------|---|---------|---------|-----|-----|------|
| TEM_Aux1_ w_Ext_Sw_ Fuse_Level | 1998 | This is the level above which the RPM will fuse the TEM Auxiliary output with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux1_ w_Ext_Switch_ Init_State | 2032 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #1. | Off | On/ Off | NA | NA | NA |

WIRING INFORMATION

- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX1_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX1_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)

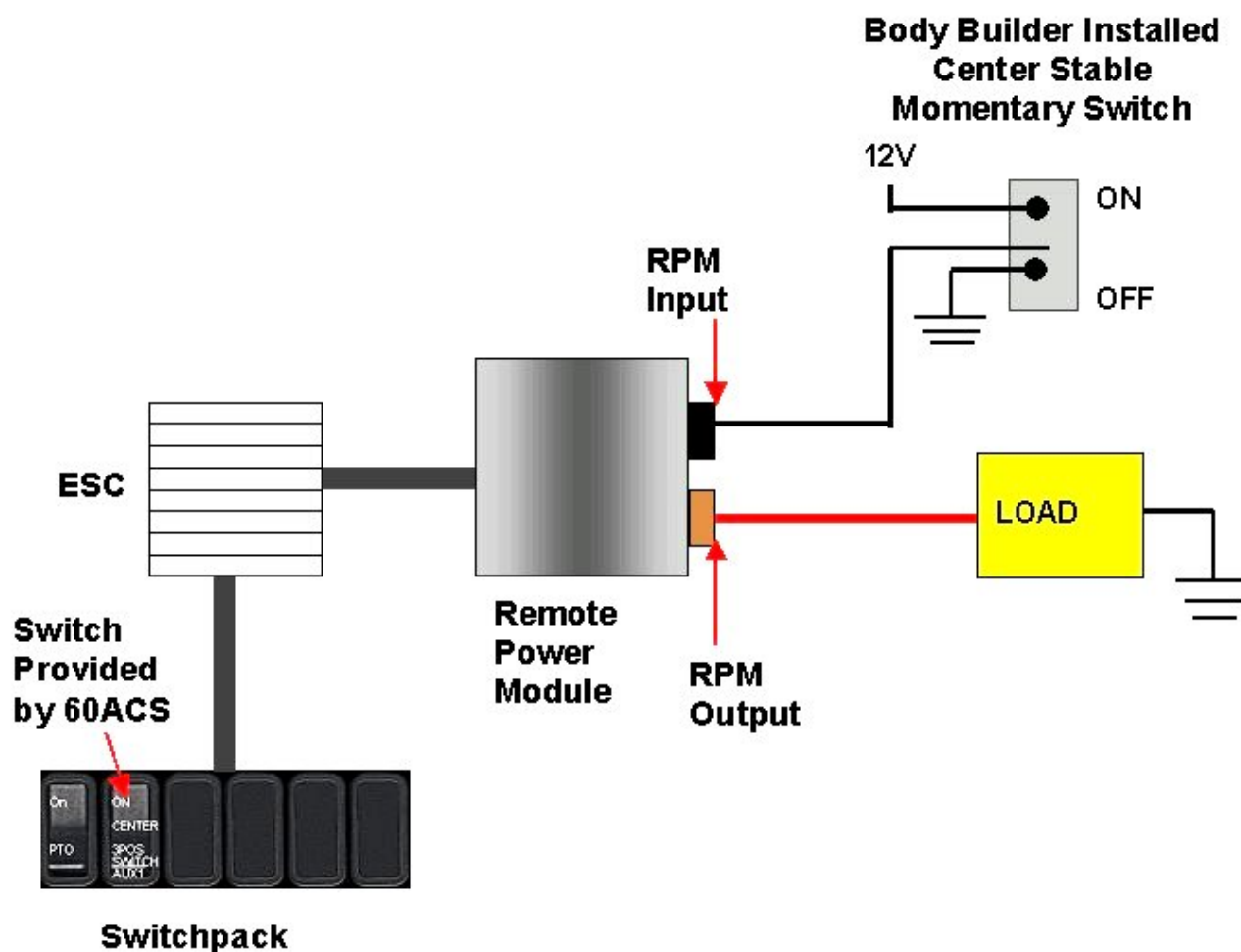


Figure 179

TESTING

1. This feature allows the customer the ability to activate the output when the ignition key is turned from OFF to ACCESSORY or IGNITION. This functionality is obtained by turning programmable parameters (TEM_Aux1_w_Ext_Switch_Init_State and TEM_Aux2_w_Ext_Switch_Init_State) ON
2. Activate the first remote Body Builder installed switch to 12 volts by using a momentary switch action.
3. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts at rated current levels. (As programmed in ICAP or the Diamond Logic™ Builder software)
4. Verify that the green switch indicator light comes on.
5. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX1_Input is receiving battery volts from the customer-mounted switch. (As programmed in ICAP or the Diamond Logic™ Builder software)
6. Deactivate the first remote Body Builder installed switch by providing a momentary switch action to ground.
7. Verify that the Remote Power Module output goes OFF.

8. Activate the first in-cab switch.
9. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts (As programmed in ICAP or the Diamond Logic™ Builder software).
10. Verify that the green switch indicator light comes on.
11. Deactivate the first in-cab switch.

HOW TO ADD THIS FEATURE:

- Select software feature code 595200 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- The 3-position momentary switch with latching software must be installed in the in-cab switch pack.
- The customer must install wiring from the RPM output
- The customer may mount a remote switch and install the wiring into the RPM input

20.2. 60ACT — TWO MOMENTARY ROCKER SWITCHES/ REMOTE SWITCH CAPABILITY

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH MOMNTRY 3POS Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 2; Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 2 Remote Power Module input and 2 outputs)

FEATURE/BODY FUNCTION: This feature provides three-way switch control function for two remote power module outputs. Each RPM output is controlled by an in-cab 3-position momentary switch, and a 3-position momentary Body Builder-installed, remote mounted switch. These customer-installed, remote-mounted switches must be active at 12 volts and must use ground to deactivate the output. Each in cab 3-position momentary switch is connected to a remote power module (RPM) output. In addition, each customer supplied, remote mounted momentary switch may be used to control the respective RPM outputs. Thus, three-way switch control action may be performed. The RPM outputs may be turned OFF or ON from either the respective in-cab switch, or the respective Body Builder switch, however, an OFF command from either switch takes precedence and will turn the RPM output OFF. This feature is useful when a lamp or other load requires control from both in the cab or from a remote location on the body.

The in-cab switches provide green lamps in the top section of the switches to indicate when the RPM outputs are ON. The RPM provides active high outputs that will source up to 20 amps at battery voltage levels. The output current level may be limited through programmable parameters between .1 and 20 amps in .1 amp increments. This virtual fusing level is controlled in software and mimics the performance of an SAE fuse.

The RPM outputs may be activated with the respective in-cab switches provided that the ignition key is in the Accessory or Ignition position. The RPM outputs may also be activated with the remote switch inputs with ignition key OFF or ON. It is important to turn off RPM outputs that have been enabled remotely OFF before leaving a parked vehicle with the ignition key off. Otherwise, the system will remain active and drain the batteries.

60AAA or 60AAB is a pre-requisite feature that must be ordered along with 60ACT. 60ACT uses two momentary switches in place of two latching switches that are provided with 60AAA and 60AAB. For example, instead of the 6 latching switches that are provided with 60AAA, a vehicle with 60ACT will have a switch pack of 4 latching switches and 2 momentary switches.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section)

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595238

Software features that must be removed: NONE

The **TEM_Aux1_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 1. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux1_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module Auxiliary output 1 to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

The **TEM_Aux2_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 2. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux2_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module Auxiliary output 2 to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

Table 160

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|----------------------------------|------|---|---------|---------|-----|-----|------|
| TEM_Aux1_w_Ext_Sw_Fuse_Level | 1998 | This is the level above which the RPM will fuse the TEM Auxiliary output with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux1_w_Ext_Switch_Init_State | 2032 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #1. | Off | On/ Off | NA | NA | NA |
| TEM_Aux2_w_Ext_Sw_Fuse_Level | 2106 | This is the level above which the RPM will fuse the TEM Auxiliary output #2 with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux2_w_Ext_Switch_Init_State | 2142 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #2. | Off | On/ Off | NA | NA | NA |

WIRING INFORMATION

- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX1_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX2_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX1_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX2_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)

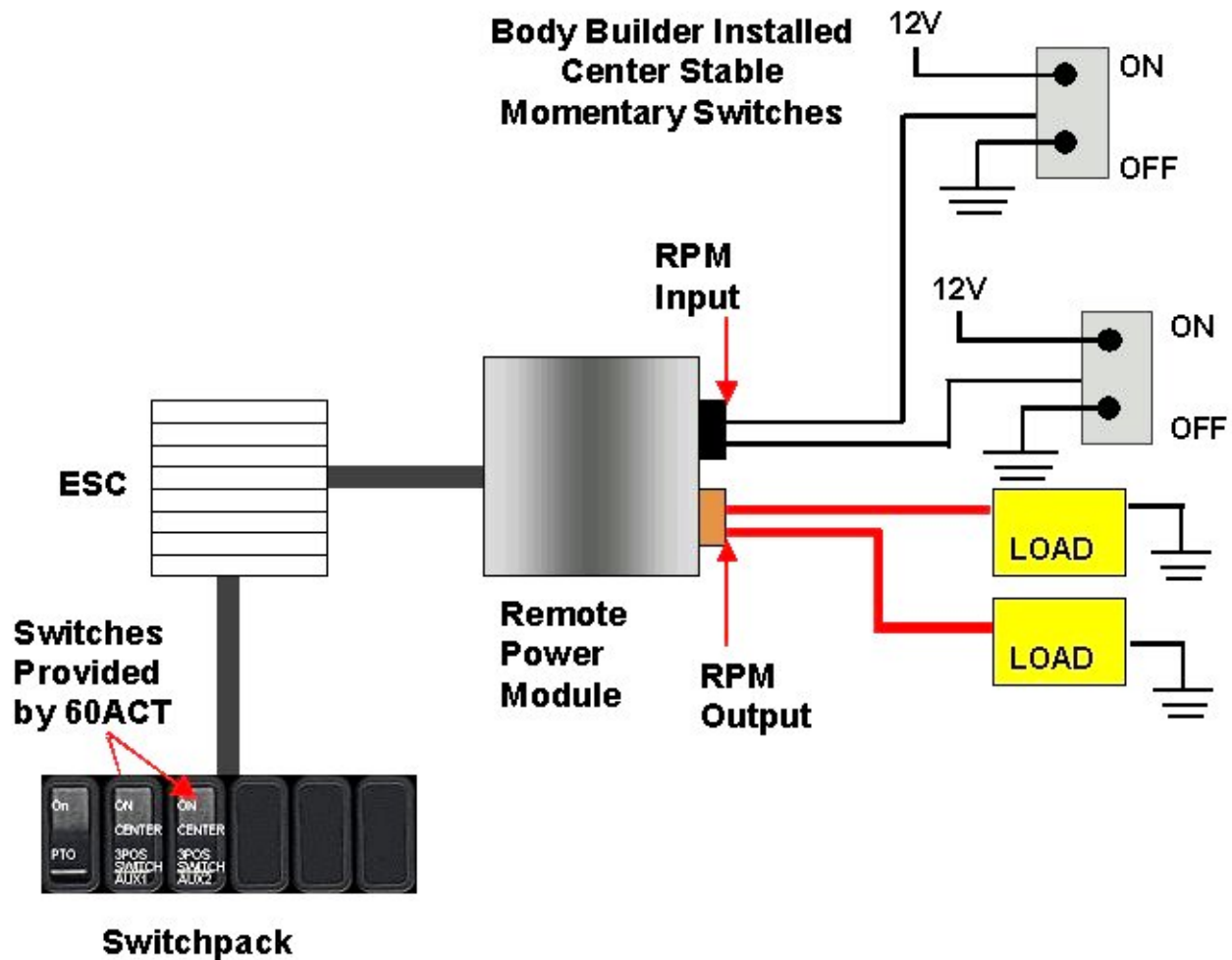


Figure 180

TESTING

1. This feature allows the customer the ability to activate the output when the ignition key is turned from OFF to ACCESSORY or IGNITION. This functionality is obtained by turning programmable parameters (TEM_Aux1_w_Ext_Switch_Init_State and TEM_Aux2_w_Ext_Switch_Init_State) ON
2. Activate the first remote Body Builder installed switch to 12 volts by using a momentary switch action.
3. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts at rated current levels. (As programmed in ICAP or the Diamond Logic™ Builder software)
4. Verify that the green switch indicator light comes on.
5. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX1_Input is receiving battery volts from the customer-mounted switch. (As programmed in ICAP or the Diamond Logic™ Builder software)
6. Deactivate the first remote Body Builder installed switch by providing a momentary switch action to ground.
7. Verify that the Remote Power Module output goes OFF.

8. Activate the first in-cab switch.
9. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts (As programmed in ICAP or the Diamond Logic™ Builder software).
10. Verify that the green switch indicator light comes on.
11. Deactivate the first in-cab switch.
12. Activate the second remote Body Builder installed switch to 12 volts by using a momentary switch action.
13. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX2_Output is providing the battery volts at rated current levels. (As programmed in ICAP or the Diamond Logic™ Builder software)
14. Verify that the green switch indicator light comes on.
15. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX2_Input is receiving battery volts from the customer-mounted switch. (As programmed in ICAP or the Diamond Logic™ Builder software)
16. Deactivate the second remote Body Builder installed switch by providing a momentary switch action to ground.
17. Verify that the Remote Power Module output goes OFF.
18. Activate the second in-cab switch.
19. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX2_Output is providing the battery volts (As programmed in ICAP or the Diamond Logic™ Builder software).
20. Verify that the green switch indicator light comes on.
21. Deactivate the second in-cab switch.

HOW TO ADD THIS FEATURE:

- Select software feature code 595238 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- The 3-position momentary switch with latching software must be installed in the in-cab switch pack.
- The customer must install wiring from the RPM outputs to the loads that are to be controlled
- The customer may mount a switch (12 volts active and Ground de-active) and install the wiring into the RPM inputs (Use ICAP or the Diamond Logic™ Builder software to determine switch and pin location assignments)

20.3. 60ACU — THREE MOMENTARY ROCKER SWITCHES/ REMOTE SWITCH CAPABILITY

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH MOMNTRY 3POS (3) Rocker, Backlit, with "ON" Indicator Mounted on Dash, Latching Software, for 3; Auxiliary Load 20 amp. Maximum; Power Available Only in "Ignition" or "Accessory" Position, Output Also Controlled by a Customer Remote Mounted Switch (requires 3 Remote Power Module inputs and 3 outputs)

FEATURE/BODY FUNCTION: This feature provides three-way switch control function for three remote power module outputs. Each RPM output is controlled by an in-cab 3-position momentary switch, and a 3-position momentary Body Builder-installed, remote mounted switch. These customer-installed, remote-mounted switches must be active at 12 volts and must use ground to deactivate the output. Each in cab 3-position momentary switch is connected to a remote power module (RPM) output. In addition, each customer supplied, remote mounted momentary switch may be used to control the respective RPM outputs. Thus, three-way switch control action may be performed. The RPM outputs may be turned OFF or ON from either the respective in-cab switch, or the respective Body Builder switch, however, an OFF command from either switch takes precedence and will turn the RPM output OFF. This feature is useful when a lamp or other load requires control from both in the cab or from a remote location on the body.

The in-cab switches provide green lamps in the top section of the switches to indicate when the RPM outputs are ON. The RPM provides active high outputs that will source up to 20 amps at battery voltage levels. The output current level may be limited through programmable parameters between .1 and 20 amps in .1 amp increments. This virtual fusing level is controlled in software and mimics the performance of an SAE fuse.

The RPM outputs may be activated with the respective in-cab switches provided that the ignition key is in the Accessory or Ignition position. The RPM outputs may also be activated with the remote switch inputs with ignition key OFF or ON. It is important to turn off RPM outputs that have been enabled remotely before leaving a parked vehicle with the ignition key off. Otherwise, the system will remain active and drain the batteries.

60AAA or 60AAB is a pre-requisite feature that must be ordered along with 60ACU. 60ACU uses three momentary switches in place of three latching switches that are provided with 60AAA and 60AAB. For example, instead of the 6 latching switches that are provided with 60AAA, a vehicle with 60ACU will have a switch pack of 3 latching switches and 3 momentary switches.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section)

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595239

Software features that must be removed: NONE

The **TEM_Aux1_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 1. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux1_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module Auxiliary output 1 to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

The **TEM_Aux2_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 2. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux2_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module Auxiliary output 2 to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

The **TEM_Aux3_w_Ext_Sw_Fuse_Level** parameter sets the amount of current that flows through Auxiliary output 3. If current rises above this level, fusing takes place and the RPM output is shut down.

By turning the **TEM_Aux3_w_Ext_Switch_Init_State** parameter ON, the ESC forces the Remote Power Module Auxiliary output 3 to be ON whenever the truck's key-state is turned from OFF to ACCESSORY or IGNITION.

Table 161

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|--|------|---|---------|---------|-----|-----|------|
| TEM_Aux1_ w_Ext_Sw_ Fuse_Level | 1998 | This is the level above which the RPM will fuse the TEM Auxiliary output with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux1_ w_Ext_Switch_ Init_State | 2032 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #1. | Off | On/ Off | NA | NA | NA |
| TEM_Aux2_ w_Ext_Sw_ Fuse_Level | 2106 | This is the level above which the RPM will fuse the TEM Auxiliary output #2 with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux2_ w_Ext_Switch_ Init_State | 2142 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #2. | Off | On/ Off | NA | NA | NA |

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|--|------|---|---------|---------|-----|-----|------|
| TEM_Aux3_ w_Ext_Sw_ Fuse_Level | 2107 | This is the level above which the RPM will fuse the TEM Auxiliary output #3 with external switch. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux3_ w_Ext_Switch_ Init_State | 2143 | This program- mable parameter sets the init state of RPM channel used with TEM Auxiliary with external switch #3. | Off | On/ Off | NA | NA | NA |

WIRING INFORMATION

- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX1_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX2_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer may mount a switch and install the wiring into the pin labeled 3POS_SWITCH_AUX3_Input in the Black 23-pin Remote Power Module input connector. Installation of the remote switch is optional with this feature. (See ICAP or the Diamond Logic™ Builder software for input pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX1_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX2_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)
- Customer must install wiring from the pin labeled 3POS_SWITCH_AUX3_Output Brown 8-pin Remote Power Module output connector to the electrical load that is to be controlled. (See ICAP or the Diamond Logic™ Builder software for output pin location)

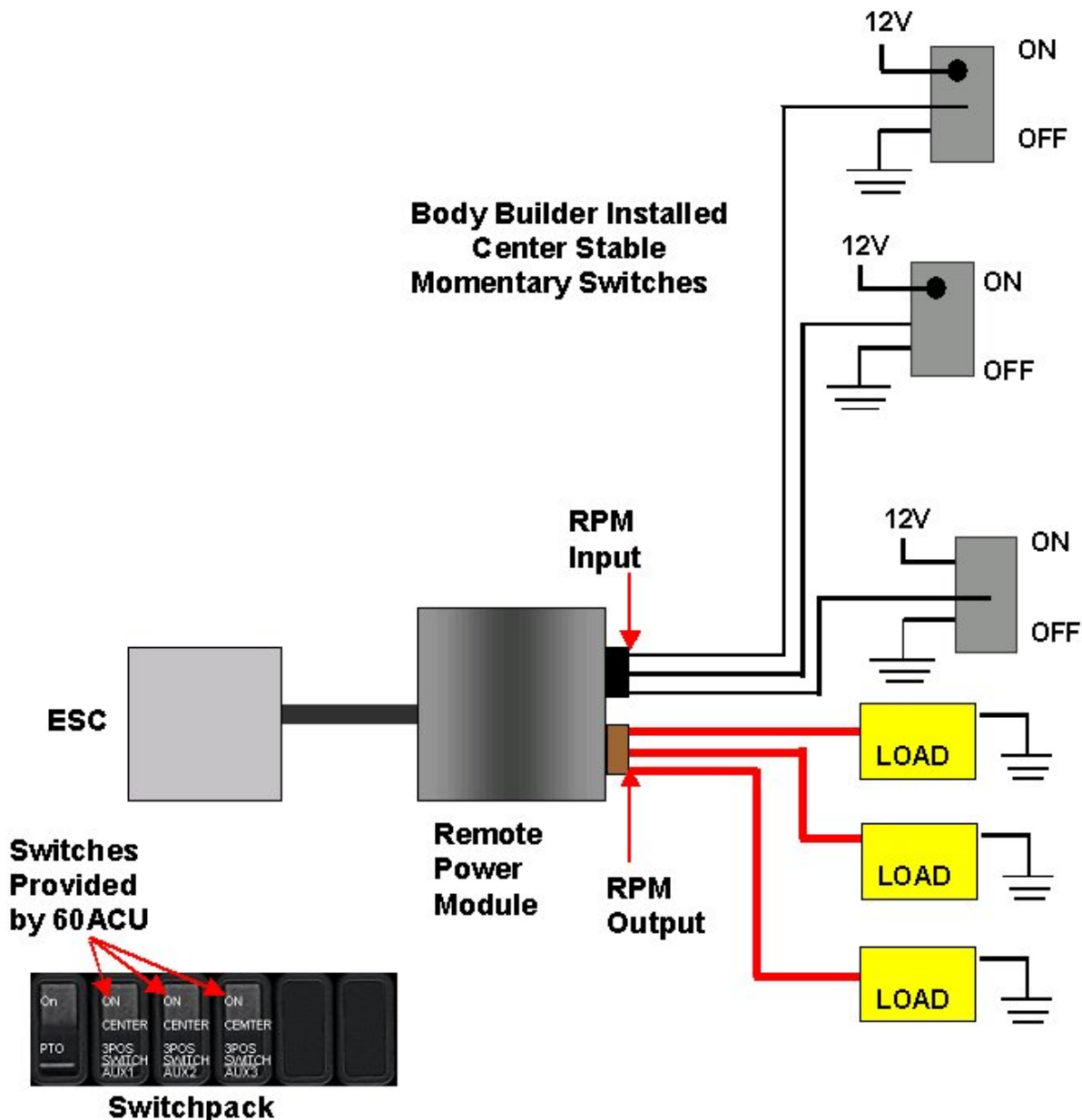


Figure 181

TESTING

1. This feature allows the customer the ability to activate the output when the ignition key is turned from OFF to ACCESSORY or IGNITION. This functionality is obtained by turning programmable parameters (TEM_Aux1_w_Ext_Switch_Init_State and TEM_Aux2_w_Ext_Switch_Init_State) ON
2. Activate the first remote Body Builder installed switch to 12 volts by using a momentary switch action.
3. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts at rated current levels (as programmed in ICAP or the Diamond Logic™ Builder software).

-
4. Verify that the green switch indicator light comes on.
 5. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX1_Input is receiving battery volts from the customer-mounted switch (as programmed in ICAP or the Diamond Logic™ Builder software).
 6. Deactivate the first remote Body Builder installed switch by providing a momentary switch action to ground.
 7. Verify that the Remote Power Module output goes OFF.
 8. Activate the first in-cab switch.
 9. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX1_Output is providing the battery volts (as programmed in ICAP or the Diamond Logic™ Builder software).
 10. Verify that the green switch indicator light comes on.
 11. Deactivate the first in-cab switch.
 12. Activate the second remote Body Builder installed switch to 12 volts by using a momentary switch action.
 13. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX2_Output is providing the battery volts at rated current levels (as programmed in ICAP or the Diamond Logic™ Builder software).
 14. Verify that the green switch indicator light comes on.
 15. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX2_Input is receiving battery volts from the customer-mounted switch (as programmed in ICAP or the Diamond Logic™ Builder software).
 16. Deactivate the second remote Body Builder installed switch by providing a momentary switch action to ground.
 17. Verify that the Remote Power Module output goes OFF.
 18. Activate the second in-cab switch.
 19. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX2_Output is providing the battery volts (as programmed in ICAP or the Diamond Logic™ Builder software).
 20. Verify that the green switch indicator light comes on.
 21. Deactivate the second in-cab switch.
 22. Activate the third remote Body Builder installed switch to 12 volts by using a momentary switch action.
 23. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX3_Output is providing the battery volts at rated current levels (as programmed in ICAP or the Diamond Logic™ Builder software).
 24. Verify that the green switch indicator light comes on.
 25. Verify that the Remote Power Module input labeled 3POS_SWITCH_AUX3_Input is receiving battery volts from the customer-mounted switch (as programmed in ICAP or the Diamond Logic™ Builder software).
 26. Deactivate the third remote Body Builder installed switch by providing a momentary switch action to ground.
-

27. Verify that the Remote Power Module output goes OFF.
28. Activate the third in-cab switch.
29. Verify that the Remote Power Module output labeled 3POS_SWITCH_AUX3_Output is providing the battery volts (as programmed in ICAP or the Diamond Logic™ Builder software).
30. Verify that the green switch indicator light comes on.
31. Deactivate the third in-cab switch.

HOW TO ADD THIS FEATURE:

- Select software feature code 595239 using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- The 3-position momentary switch with latching software must be installed in the in-cab switch pack.
- The customer must install wiring from the RPM outputs to the loads that are to be controlled
- The customer may mount a switch (12 volts active and Ground de-active) and install the wiring into the RPM inputs (use ICAP or the Diamond Logic™ Builder software to determine switch and pin location assignments).

21. HIGH CURRENT IN CAB SWITCH CONTROLS FOR BODY ACCESSORIES

21.1. 60ACE — DUAL OUTPUT LATCHED SWITCH 40 AMPS

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH DUAL OUTPUT 2 Position Latched Rocker, Backlit, with "ON" Indicator Mounted on Dash, for 1; Auxiliary Load 40 amp Maximum; Power Available Only in "Ignition" or "Accessory" Position; Controls 2 Remote Power Modules (requires 2 Remote Power Module outputs)

FEATURE/BODY FUNCTION: This feature provides one two-positioned latched rocker switch that controls 1 Auxiliary load with a 40 amp Maximum. This feature was designed for owners who have a load that requires an Remote Power Module output of greater than 20 amps. This feature requires 2 RPM outputs and power would only be available in Ignition or Accessory Key-state.

Through Programmable Parameters, the owner can send the correct amount of current he wants to the two outputs. This allows the owner to customize the amperage supplied to the RPM output based on his specific needs.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section)

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595178

Software features that must be removed: NONE

The **TEM_Dual1_Output1_Fuse_Param** is programmed to allowed a specified amount of current to go to the RPM output 1. If the current exceeds this specified amount, the virtual fusing shuts the output off.

The **TEM_Dual1_Output2_Fuse_Param** is programmed to allowed a specified amount of current to go to the RPM output 2. If the current exceeds this specified amount, the virtual fusing shuts the output off.

Table 162

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|--------------------------------------|------|--|---------|-------|-----|-----|-----|
| TEM_Dual1_ Output1_ Fuse_Param | 1988 | This is the maximum current Dual 1 Output 1 is allowed to source before the virtual fusing turns the output off. | 20 | A | 0 | 20 | 0.1 |
| TEM_Dual1_ Output2_ Fuse_Param | 1989 | This is the maximum current Dual 1 Output 2 is allowed to source before the virtual fusing turns the output off. | 20 | A | 0 | 20 | 0.1 |

WIRING INFORMATION

- This feature requires the customer to supply the wiring that runs from the pins labeled DUAL_OUTPUT_SWITCH_Output1 and DUAL_OUTPUT_SWITCH_Output2 on Brown 8-pin Remote Power Module output connector, to the customer-installed feature that requires the load.

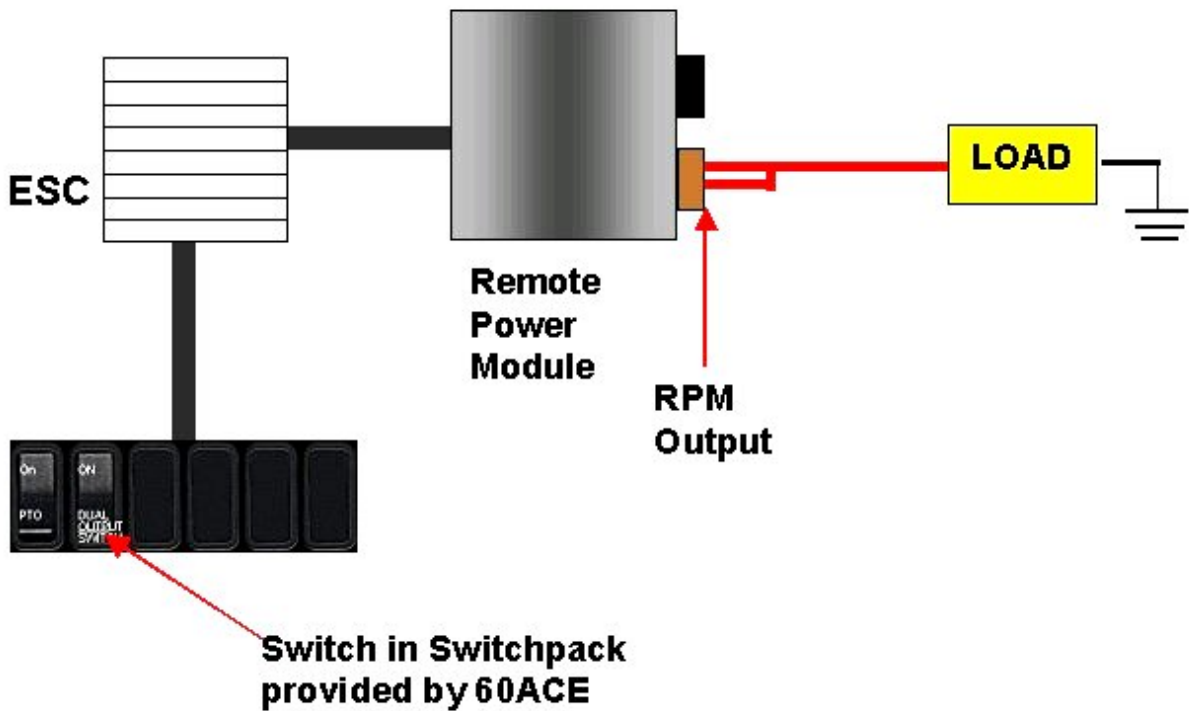


Figure 182

TESTING

1. Depress the switch.

2. Verify that you are pulling the desired voltage from the Remote Power Module outputs labeled DUAL_OUTPUT_SWITCH_Output1 and DUAL_OUTPUT_SWITCH_Output2 (as programmed by ICAP or the Diamond Logic™ Builder software).

HOW TO ADD THIS FEATURE:

- Software feature code 595178 MUST be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Install the switch in the in-cab switch pack
- Customer must supply wiring from the RPM output

21.2. 08XBK — AUXILIARY 40 AMP CIRCUIT, SWITCH CONTROLLED

Refer to the Circuit Diagram in S08285, Chapter 9, page 29.

FEATURE CODE DESCRIPTION: 08XBK – SWITCH, AUXILIARY Switch 40 amp Circuit for Customer Use; Includes Wiring Connection at PDC and Control in Cab.

FEATURE/BODY FUNCTION: Feature code 08XBK provides a 40 Amp battery feed for customer use. An in cab rocker switch controls the circuit. A blank window switch is provided with this feature along with a graphic overlay kit that allows custom labeling of the switch function.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Software Feature Codes that must be added: 595265 (TEM) ESC Prog, High Current Relay Load Output

Software Feature Codes that must be removed: NONE

WIRING INFORMATION

A blunt cut wire (Light Green) taped back to the Dash Harness near the PDC is provided for customer interface to this circuit. The battery feed to this wire is through a relay that is enabled by a ground from ESC connector 1601 when the switch is activated.

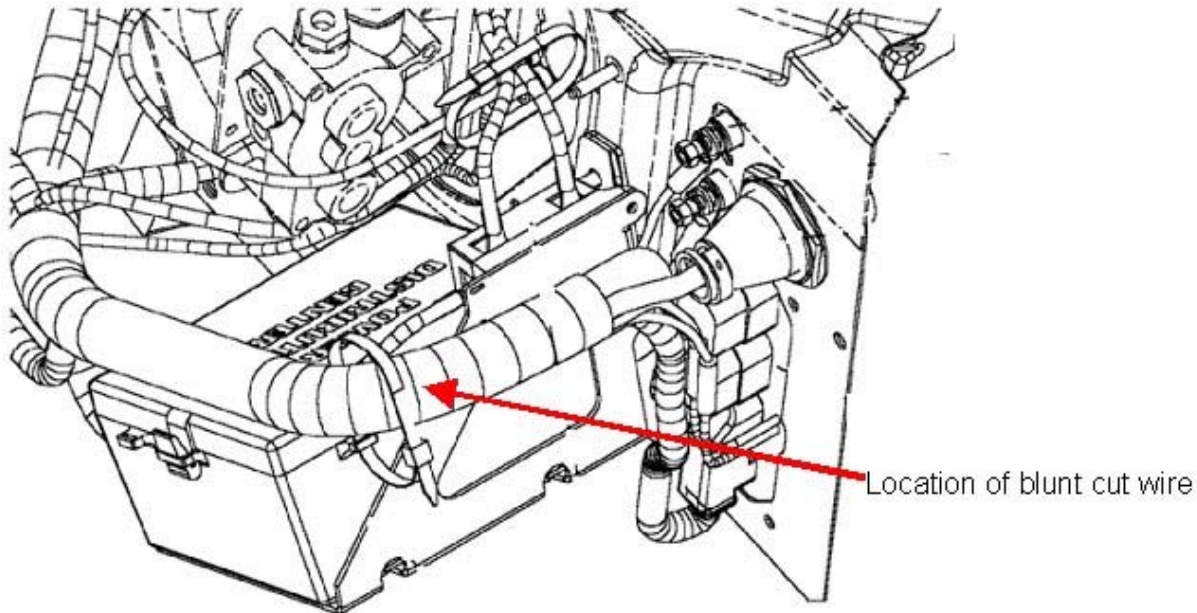


Figure 183

TESTING

To test this circuit, verify that battery voltage is present at the wire provided when the in cab switch is activated with the ignition key in the ON or ACCESSORY position. The green indicator in the rocker switch shall be illuminated when the output is ON.

HOW TO ADD THIS FEATURE:

If the vehicle was not ordered with the feature, it may be added. For information on parts and components, see "How Do I" - General Information section of the body builder book.

Use ICAP or the Diamond Logic™ Builder software to add the following software feature: **595265 (TEM) ESC Prog, High Current Relay Load Output**

Also refer to the "How Do I Add Additional Rocker Switches" section to determine the assigned location of the rocker switch for this feature.

21.3. 08WJA, 08WJB — POWER SOURCE FOR LIFT GATE

FEATURE CODE DESCRIPTION:

08WJA – POWER SOURCE, SPECIAL for Customer Installed Lift Gate; 200 Amp max, includes 2ga. power cable to end-of-frame, switch on instrument panel, with a time-out feature, battery discharge protection, controlling a mag switch which provides power.

08WJB – POWER SOURCE, for Customer Installed Lift Gate; heavy duty, includes 0ga. power cable to end-of-frame, switch on instrument panel, with a time-out feature, battery discharge protection, controlling a mag switch which provides power.

FEATURE/BODY FUNCTION:

Feature code 08WJA or 08WJB provides a factory-installed, dedicated power source for lift gate operation. This feature includes an instrument panel mounted master switch, which illuminates when the system is turned on, and an optional "AUX" button on the key fob to enable or disable the lift gate. The purpose of the in-cab master switch and the "AUX" button on the key fob is to help prevent unauthorized use of the lift gate. These switches also activate a 60 minute timer in the ESC that will disable the lift gate after 60 minutes. For continued use of the lift gate the master switch, or the aux button on the key fob, must be used to activate the system for an additional 10 minutes. A Battery Protection Module, activated by the ESC 60 minute timer, and a 200 Amp mag switch, mounted in or at the battery box, enables power to the lift gate motor. A circuit protected cable from battery to mag switch and a heavy gauge wire routed from the mag switch to the end of frame to provide power to the lift gate motor.

This feature will provide battery discharge protection for users who operate the lift gate with or without the engine running. Without the engine running, key off, the Battery Protection Module will constantly monitor battery voltage and shut down the lift gate operation before battery voltage reaches a state of charge that will not allow the vehicle to restart. With the key switch in any position except start or off, an audible alarm will also sound in the cab during certain low voltage conditions. In addition to battery voltage monitoring, this feature has timeout functionality from the ESC to automatically disable the lift gate after a selected time. The default timeout is 60 minutes. A road speed interlock from the ESC is provided that activates above approximately 2 MPH. If activated the indicator light in the switch flashes and the Lift Gate is disabled by the ESC which prevents the lift gate from being operated while the vehicle is in motion. The lift gate master switch, or the aux button on the key fob, must be activated again to continue use of the lift gate after vehicle has stopped.

The lift gate shall be activated for 60 minutes when:

Key switch is in any position and the lift gate switch is pressed to the momentary ON position (up position) or Key Fob AUX button is pressed, and the vehicle speed is lower than 2 MPH and voltage conditions are met.

The lift gate shall be deactivated when:

The lift gate switch is pressed to the momentary OFF position (down position), OR the aux button on the key fob is pressed, OR the voltage is lower than the safe voltage value and the shutdown override time expires or the vehicle speed is greater than 2 MPH, or the programmable time limit, set at 60 minutes, has been reached.

A cable accommodation is required to fit body van length of 14-26 feet and a relaxed extra cable of 40 inches for feasible connectivity.

Design accommodation for a lift gate with maximum current draw of up to 200 amps for code 08WJA and 200+ amps for code 08WJB.

This feature cannot exist with work light feature 08WLL or 08WMA. The lift gate feature will be using same cluster switch location and same ESC pin allocation as the work light feature. The body builder may power work lights from the lift gate motor power cable. This would allow the customer to have work lights in the van body and would not discharge the battery as the system shuts down after 60 minutes or if any of the other conditions listed above are met.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595293

Software features that must be removed: 595025

The **Lift_Gate_Alarm_Time** parameter is programmed to allow the operation of the lift gate for a period of 60 minutes. At the end of 60 minutes the master switch or the AUX button on the key fob must be used to reactivate the system.

The **Lift_Gate_Enable_Timeout** parameter is programmed to allow continual operation of the lift gate, in 10 minute increments, with the master switch or AUX button on the key fob after the timeout period of 60 minutes.

The **Lift_Gate_Disable_Threshold** parameter is programmed to sound a low voltage alarm if the battery voltage falls below 11.5 volts for more than 40 seconds while the lift gate is in operation. This parameter will also deactivate the lift gate if the battery voltage falls below 11.5 volts for more than 100 seconds. The lift gate cannot be reactivate until the battery voltage rises above 11.5 volts.

Table 163

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|-----------------------------|--------|--|---------|-------|------|------|-----|
| Lift_Gate_Alarm_Time | PV-268 | Lift Gate Alarm Time Value | 60 | s | 1 | 120 | 1 |
| Lift_Gate_Disable_Threshold | PV-267 | Voltage level that Lift Gate will be disabled at. | 11.5 | V | 11.5 | 13.8 | 0.1 |
| Lift_Gate_Enable_Timeout | PV-56 | Amount of time, in 10 minute increments, that the lift gate will remain enabled. | 60 | Min | 10 | 240 | 10 |

WIRING INFORMATION

For 08WJA and 08AJB:

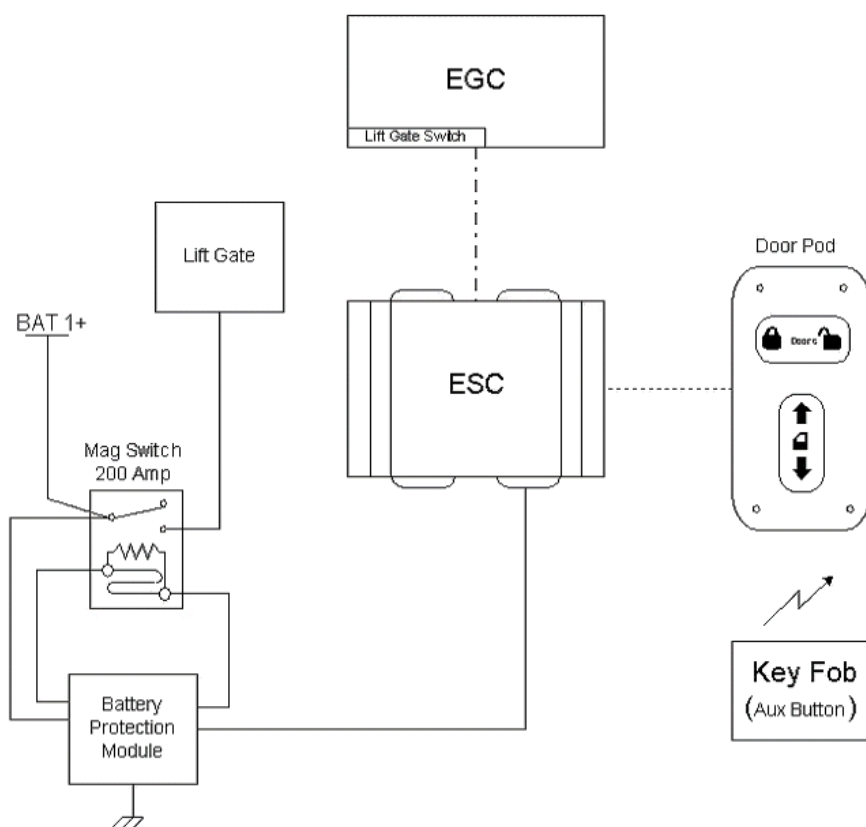


Figure 184 Lift Gate Function Diagram

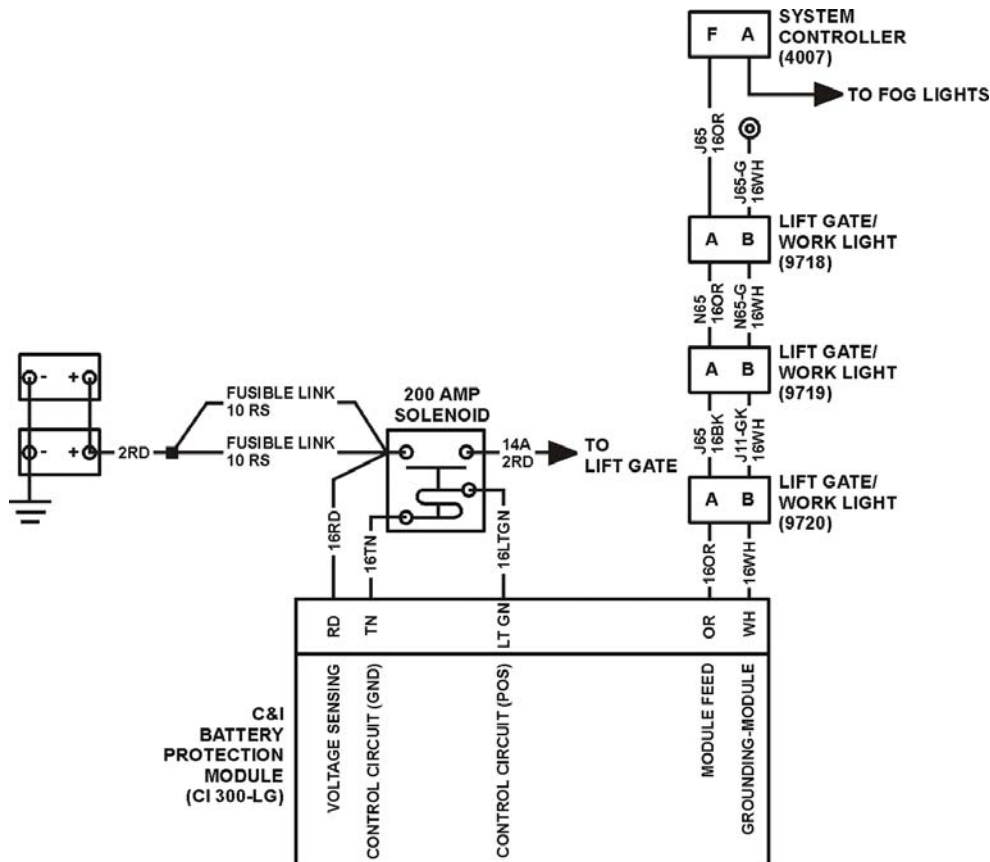


Figure 185 Lift Gate Circuit Diagram

For 08WJA::

The body builder will be required to cut the straplocks at (2) securing the power cable and route and clip the power cable to the lift gate motor. Then trim the power cable to length and add a lug terminal for securing cable to the lift gate motor. Two product graphics, from the plastic bag for body builders, need to be installed on the van body in the approximate locations shown.

For 08WJB::

The body builder will be required to route an 0 GA cable from the Mag Switch, back along the frame to the lift gate motor.

Code 08WJB is identical to code 08WJA except that the 3592398C91 Cable Assy, Lift Gate Feed with "2" gauge cable and 2 - 10 Awg fusible links are replaced with 3598246C91 Cable Assy, Lift Gate Feed with "0" gauge cable and 3 - 10 Awg fusible links and the 3592400C93-REF "2" gauge Cable Assy, Lift Gate - 33.5 feet Ref - Cut to length is changed to "0" gauge cable. The body builder will be required to route the 2 GA cable from the Mag Switch, back along the frame to the lift gate motor is changed to "0" gauge cable.

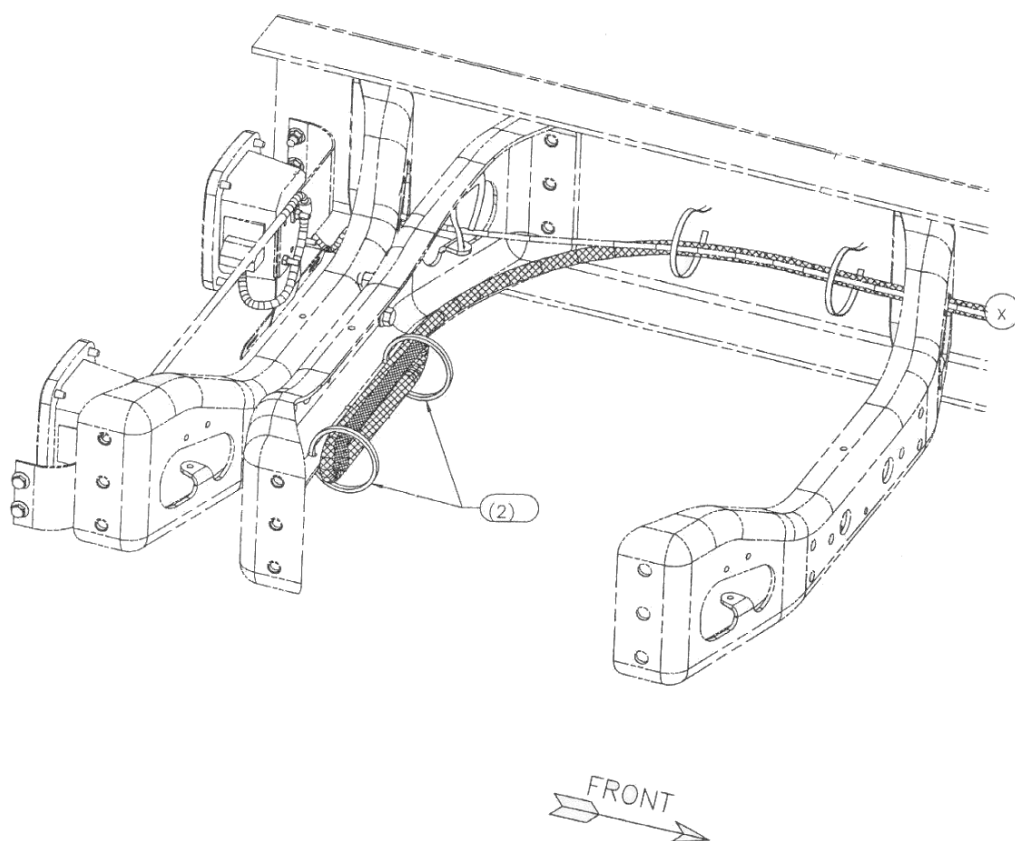


Figure 186 Harness Routing Diagram

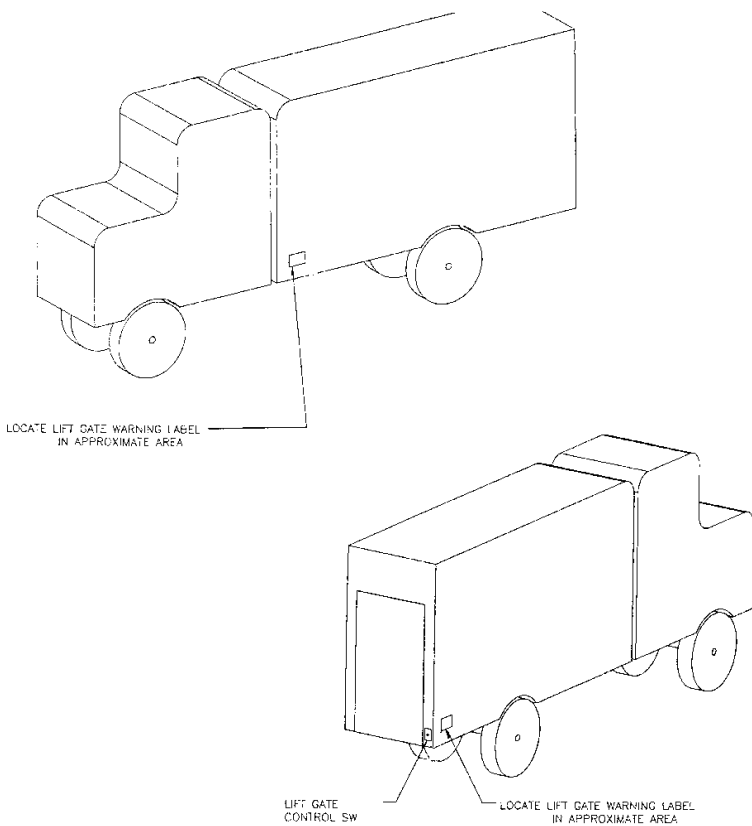


Figure 187 Warning Label Locations Diagram

TESTING

1. The body builder or lift gate installer must bring the batteries up to a full charge before trying to test the system for functionality.
2. With the batteries at a full charge, voltage in the 12.6 to 12.9 range, and the lift gate power controlled by the Battery Protection System, the system will operate as described in the above section.

HOW TO ADD THIS FEATURE:

Use ICAP or the Diamond Logic™ Builder software to add the following software feature:

Required software feature code: 595293

Software features that must be removed: 595025

Hardware:

Table 164

| Part # | Description | Quantity |
|----------------|---|----------|
| 3593177C1 | Switch, Momentary Multiplex | 1 |
| 3545544C92 | Harness, Dash — Work Light / Lift Gate Circuits | 1 |
| 3553986F92 | Harness, Center Chassis — Work Light / Lift Gate Circuits | 1 |
| 3542321C92 | Cable Assy, Work Light / Power Control | 1 |
| 3592395C3 | Mag Switch Mounting Bracket | 1 |
| 3593085C92 | Control, Battery Discharge Protection | 1 |
| 3592818C91 | 200 Amp Mag Switch, Battery Disconnect | 1 |
| 3592398C91 | Cable Assy, Lift Gate Feed W/Fusible Links | 1 |
| 3592400C93—REF | Cable Assy, Lift Gate Power — 33.5 feet Ref — Cut to length | 1 |
| 449632C1 | Conduit, Nylon 1/2 in. ID Slit | 35 feet |

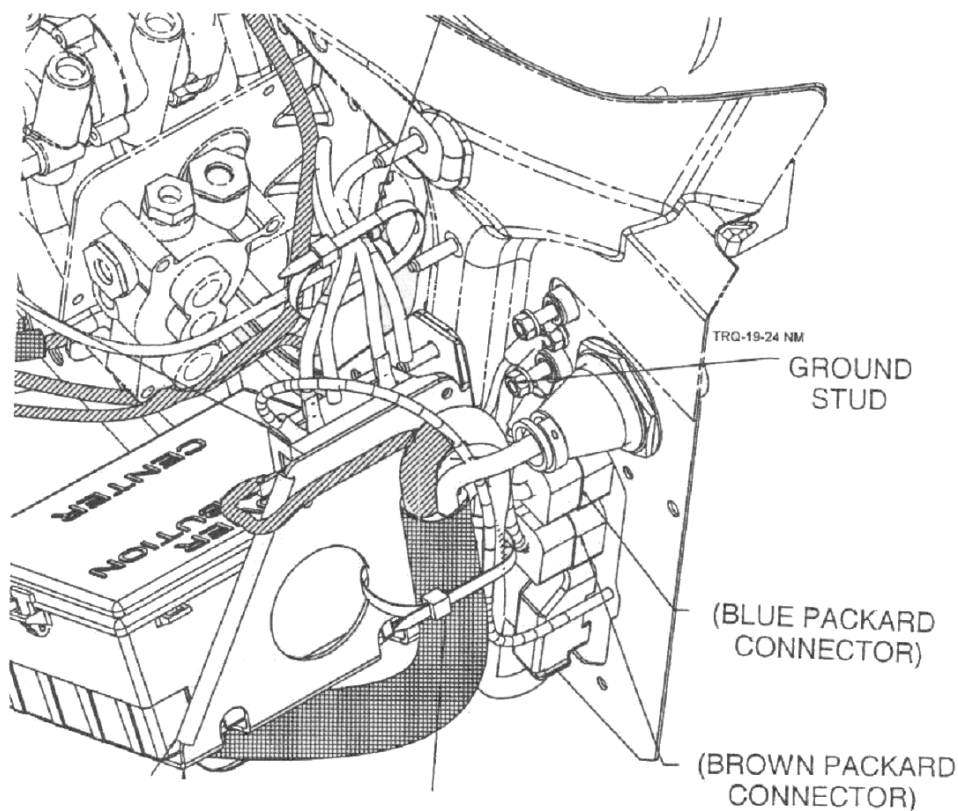


Figure 188 Connector Locations Diagram

Install the 3593177C1 switch in the lower left, inner switch location of the cluster. Harness 3545544C92, insert circuit J65 into cavity "F" of BROWN Connector. See figure above for location of brown connector and figure below for location of "F" cavity. Install an eyelet terminal for a 5/16 stud on circuit J65-G and install on the ground stud. See figure above for location. Route harness with dash harness to connection with center chassis harness. Connect to harness 3553986F92 and route this harness back to the rear cab

mounting Xmbr. Connect 3542321C92 Cable Assy and route this cable assy to the battery box and connect to the 3593085C92 Bat Discharge Control. Mount the 3593085C92 Control and the 3592818C91 200 Amp Mag Sw on bracket 3592395C3 and mount this assy in the battery box. Install 3592398C91 Cable Assy W/Fusible Links from battery "POS" terminal to Mag Switch. Install 3592400C93 2 AWG Cable Assy from mag sw to lift gate motor after installing 449632C1 conduit over this cable for protection against shorts. See Circuit Diagram for the proper Circuit connections.

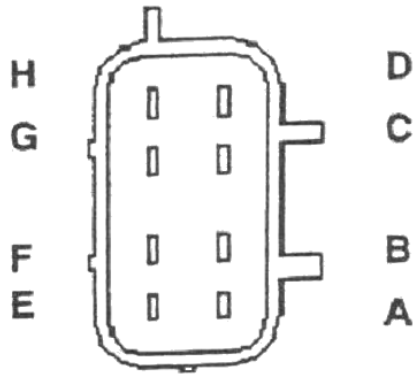


Figure 189 #4007 Connector Pin Locations Diagram

Table 165

| #4007 Brown Front End Output | | Engine Side Bottom 8-Way Connector |
|------------------------------|------------|------------------------------------|
| PIN | SOURCE | DESCRIPTION |
| A | 20 Amp FET | Fog Lamps |
| B | 10 Amp FET | Right Front Turn Signal |
| C | 10 Amp FET | Left Front Turn Signal |
| D | 20 Amp FET | Headlamp, Low Beam |
| E | 10 Amp FET | Horn, Electric |
| F | 10 Amp FET | Work Lamp/Lift Gate |
| G | 20 Amp FET | Headlamp, High Beam |
| H | 20 Amp FET | Park/Marker Lamps |

22. INTERLOCKED SWITCH CONTROLS FOR BODY ACCESSORIES

22.1. 60ACG — ONE INTERLOCKED LATCHED SWITCH DISENGAGE AT 30 MPH

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH, INTERLOCKED 2 Position Latched Rocker, Backlit, with "ON" Indicator Mounted on Dash for 1; Auxiliary Load 20 amp Maximum; Output will disengage when Vehicle Exceeds 30 MPH, Programmable; Power Available Only in "Ignition" or "Accessory Position (requires 1 Remote Power Module output)

FEATURE/BODY FUNCTION: This feature provides a 2-position Latched Rocker switch that controls 1 auxiliary load of 20 amps maximum and requires one RPM output. Output will be defaulted to turn off when vehicle speed reaches 30 miles per hour. The output will only be available in Ignition or Accessory Key-State. This feature is used for applications such as a rear shining light. If the operator forgets to turn the light off before he drives away, the light will shut off when the driver hits 30 miles per hour.

The owner can interlock the switch with certain programmable conditions. These conditions can be set as programmable parameters using ICAP or the Diamond Logic™ Builder software. These parameters are listed and explained below.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section).

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature code: 595181

Conflicts with Software features: NONE

• TEM_Aux1_Misc_Interlock_Param

This parameter (TEM_Aux1_Misc_Interlock_Param) is the master parameter for this feature. The setting for this parameter selects the interlocking condition for the output. The following table indicates which interlocking condition corresponds to which setting for the parameter. To select the interlocking condition simply set the value of this parameter to the corresponding setting on the table.

Table 166

| Setting | Interlocking Condition |
|---------|---|
| 0 | Apply no interlocks to this output |
| 1 | Activate this output when the park brake is set AND the switch is on |
| 2 | Activate this output when the park brake is not set AND the switch is on |
| 3 | Activate this output when a door is open AND the switch is on |
| 4 | Activate this output when all doors are closed AND the switch is on |
| 5 | Activate this output when the PTO is engaged AND the switch is on (Requires a PTO feature) |
| 6 | Activate this output when the PTO is not engaged AND the switch is on (Requires a PTO feature) |
| 7 | Activate this output when the engine is running AND the switch is on |
| 8 | Activate this output when the engine is not running AND the switch is on |
| 9 | Activate this output when the vehicle speed exceeds the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 10 | Activate this output when the vehicle speed is less than the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 11 | Activate this output when the vehicle is stopped AND the switch is on |
| 12 | Activate this output when the vehicle is moving AND the switch is on |
| 13 | Activate this output when the transmission gear is higher than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 14 | Activate this output when the transmission gear is lower than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 15 | Activate this output when the transmission is in neutral AND the switch is on (Requires Automatic Transmission) |
| 16 | Activate this output when the transmission is not in neutral AND the switch is on (Requires Automatic Transmission) |

| Value | Unit | Set With Template |
|--------------------------|--------|-------------------------------------|
| 0 | Number | <input type="checkbox"/> |
| <input type="checkbox"/> | On/Off | <input type="checkbox"/> |
| 10 | List | <input checked="" type="checkbox"/> |

| Value | Description |
|-------|--|
| 0 | Apply no interlocks to this output |
| 1 | Activate this output when the park brake is... |
| 2 | Activate this output when the park brake is... |
| 3 | Activate this output when a door is open AN... |
| 4 | Activate this output when all doors are clo... |
| 5 | Activate this output when the PTO is engage... |
| 6 | Activate this output when the PTO is not en... |
| 7 | Activate this output when the engine is run... |
| 8 | Activate this output when the engine is not... |
| 9 | Activate this output when the vehicle speed... |
| 10 | Activate this output when the vehicle speed... |
| 11 | Activate this output when the vehicle is st... |
| 12 | Activate this output when the vehicle is mo... |
| 13 | Activate this output when the transmission ... |
| 14 | Activate this output when the transmission ... |
| 15 | Activate this output when the transmission ... |
| 16 | Activate this output when the transmission ... |

Figure 190 Drop Down List of Possible Parameters for TEM_Aux1_Misc_Interlock_Param

• TEM_Aux1_Interlock_Latches_Off

Normally, if the output is deactivated because the interlocking condition is not met, the output will re-activate as soon as the interlocking condition is re-established as long as the switch is still on. If this behavior is not desirable, the parameter TEM_Aux1_Interlock_Latches_Off parameter can be set. When it is set and the output is deactivated because the interlocking condition is not met, the output will not reactivate when the interlocking condition is re-established even if the switch is still on. To re-activate the output in this case, the switch must be re-cycled (flipped off and then on again).

• TEM_Aux1_Speed_Interlock_Param

If TEM_Aux1_Misc_Interlock_Param is set to 9 or 10, the speed-interlock parameter (TEM_Aux1_Speed_Interlock_Param) must also be set. This parameter must be set to the actual speed to use in the condition selected by TEM_Aux1_Misc_Interlock_Param (default unit for this parameter is MPH). The speed parameter is only used if TEM_Aux1_Misc_Interlock_Param is set to 9 or 10.

Example: If you want the output to only come on when the vehicle is traveling over 15 MPH, you would set TEM_Aux1_Misc_Interlock_Param to 9 and set TEM_Aux1_Speed_Interlock_Param to 15 MPH.

• TEM_Aux1_Gear_Interlock_Param

If TEM_Aux1_Misc_Interlock_Param is set to 13 or 14 and the vehicle has an automatic transmission, the gear-interlock parameter (TEM_Aux1_Gear_Interlock_Param) must also be set. This parameter must be set to the transmission gear to use in the condition selected by TEM_Aux1_Misc_Interlock_Param. The transmission gear is set as follows:

Table 167

| Setting | Transmission Gear |
|---|---|
| 125 | Transmission in Neutral |
| 126 | Transmission is in the 1st forward gear |
| 127 | Transmission is in the 2nd forward gear |
| 128 | Transmission is in the 3rd forward gear |
| 125 + x | Transmission is in the xth forward gear |
| 124 | Transmission is in the 1st reverse gear |
| 123 | Transmission is in the 2nd reverse gear |
| 125 – y | Transmission is in the yth reverse gear |
| The transmission gear parameter is only used if TEM_Aux1_Misc_Interlock_Param is set to 13 or 14. | |

Example: if you want the output to only come on when the vehicle transmission is in a reverse gear, you would set TEM_Aux1_Misc_Interlock_Param to 10 and TEM_Aux1_Gear_Interlock_Param to 125.

• TEM_Aux1_w_Ilocks_Output_Fuse

This parameter is the value at which the output will fuse (shut off). The allowable values are from 1 to 20 Amperes.

Table 168

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|--------------------------------|------|--|---------|---------|-----|-----|-----|
| TEM_Aux1_Interlock_Latches_Off | 2006 | If this is set, when the output is turned off due to an interlock, it will remain off until the switch is recycled. | Off | On/ Off | | | |
| TEM_Aux1_Speed_Interlock_Param | 2007 | The speed parameter for the TEM Aux #1 with Interlocks feature. | 30 | Mph | 0 | 100 | 1 |
| TEM_Aux1_Gear_Interlock_Param | 2008 | The transmission gear parameter for the TEM Aux #1 with Interlocks feature (124 is reverse, 125 is neutral, 126 is 1st gear, 127 is second gear etc.). | 0 | Number | 0 | 250 | 1 |

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|---------------------------------------|------|---|---------|-------|-----|-----|-----|
| TEM_Aux1_ w_llocks_ Output_Fuse | 2009 | Fuse parameter for the TEM Single output with interlocks feature. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux1_Misc_ Interlock_Param | 2033 | Miscellaneous or control parameter used for setting the interlock for the auxiliary 1 with interlocks. | 10 | List | | | |

WIRING INFORMATION

- The wiring out of the pin labeled INTERLOCKED_SWITCH_AUX1_Output on the Brown 8-pin Remote Power Module output connector is customer supplied

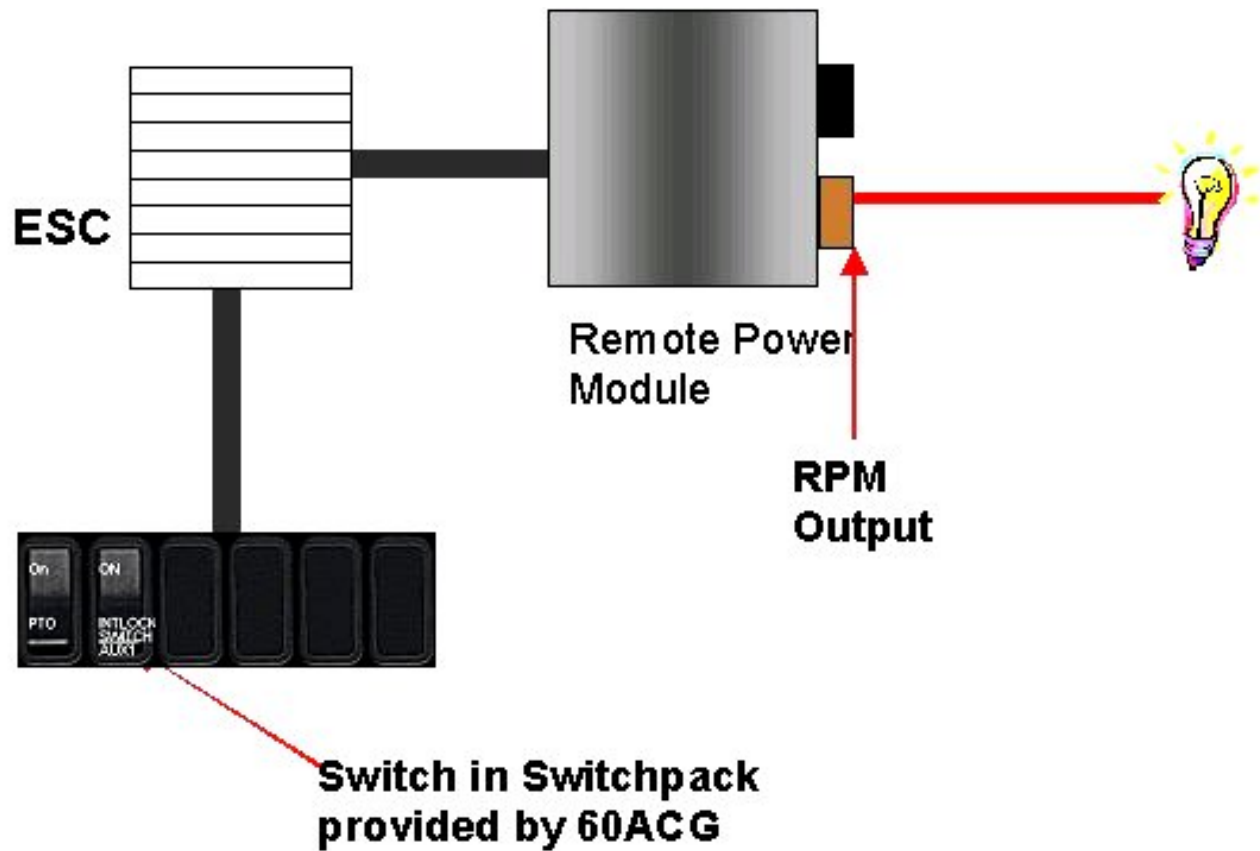


Figure 191

TESTING

1. Depress switch.
2. Verify that the RPM output labeled INTERLOCKED_SWITCH_AUX1_Output is obtaining the desired voltage (As programmed by ICAP or the Diamond Logic™ Builder software).
3. Verify the functionality of the 30 Mph interlock by violating the parameter and determine that the output shuts off.
4. Test all other interlocks can by violating the programmable parameters to see if the output shuts off

HOW TO ADD THIS FEATURE:

- Software feature code 595181 MUST be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- The 2-position latched rocker switch must be installed in the in-cab switch pack
- Customer must install the wiring from the RPM output.

22.2. 60ACH — TWO INTERLOCKED LATCHED SWITCH DISENGAGE AT 30 MPH

FEATURE CODE DESCRIPTION: BDY INTG, SWITCH, INTERLOCKED (2) 2 Position Latched Rockers, Backlit, with "ON" Indicator Mtd on Dash, for 2; Auxiliary Load each 20 amp Maximum; Outputs will Disengage when Vehicle Exceeds 30 MPH, Programmable; Power Available Only in "Ignition" or "Accessory" Position (requires 2 Remote Power Module outputs)

FEATURE/BODY FUNCTION: This feature provides TWO 2-position Latched Rocker switches that control 2 auxiliary loads, each having a 20-amp maximum, and requiring a total of 2 RPM outputs. Outputs are defaulted to disengage when vehicle speed reaches 30 miles per hour. The outputs will only be available in Ignition or Accessory Key-State. This feature is used for applications such as a rear shining light. If the operator forgets to turn the light off before he drives away, the light will shut off when the driver hits 30 miles per hour.

The owner can interlock the switch with certain programmable conditions. These conditions can be set as programmable parameters using ICAP or the Diamond Logic™ Builder software. These parameters are listed and explained below.

** This feature includes two copies of the functionality provided by 60AGC e.g. two outputs with two switches. Each one of these outputs is exactly the same as that provided by 60AGC. The two outputs in this feature are completely autonomous (independent of each other). Each of the two outputs have their own set of 5 **parameters as described in the description for 60AGC** that can be set as described in 60AGC.

→ Please use ICAP or the Diamond Logic™ Builder software to determine pin and switch locations for RPM inputs and outputs and to set programmable parameters (refer to pin and switch location section)

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

*Software feature codes can be added through ICAP or the Diamond Logic™ Builder software. Programmable Parameters are also programmable through ICAP or the Diamond Logic™ Builder software.

Required software feature codes: 595181, 595182

Conflicts with Software features: NONE

• **TEM_Aux1_Misc_Interlock_Param**

This parameter (TEM_Aux1_Misc_Interlock_Param) is the master parameter for this feature. The setting for this parameter selects the interlocking condition for the output. The following table indicates which interlocking condition corresponds to which setting for the parameter. To select the interlocking condition simply set the value of this parameter to the corresponding setting on the table.

Table 169

| Setting | Interlocking Condition |
|---------|--|
| 0 | Apply no interlocks to this output |
| 1 | Activate this output when the park brake is set AND the switch is on |
| 2 | Activate this output when the park brake is not set AND the switch is on |
| 3 | Activate this output when a door is open AND the switch is on |
| 4 | Activate this output when all doors are closed AND the switch is on |

| Setting | Interlocking Condition |
|---------|---|
| 5 | Activate this output when the PTO is engaged AND the switch is on (Requires a PTO feature) |
| 6 | Activate this output when the PTO is not engaged AND the switch is on (Requires a PTO feature) |
| 7 | Activate this output when the engine is running AND the switch is on |
| 8 | Activate this output when the engine is not running AND the switch is on |
| 9 | Activate this output when the vehicle speed exceeds the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 10 | Activate this output when the vehicle speed is less than the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 11 | Activate this output when the vehicle is stopped AND the switch is on |
| 12 | Activate this output when the vehicle is moving AND the switch is on |
| 13 | Activate this output when the transmission gear is higher than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 14 | Activate this output when the transmission gear is lower than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 15 | Activate this output when the transmission is in neutral AND the switch is on (Requires Automatic Transmission) |
| 16 | Activate this output when the transmission is not in neutral AND the switch is on (Requires Automatic Transmission) |

| Value | Unit | Set With Template |
|--------------------------|--------|-------------------------------------|
| 0 | Number | <input type="checkbox"/> |
| <input type="checkbox"/> | On/Off | <input type="checkbox"/> |
| 10 | List | <input checked="" type="checkbox"/> |

| Value | Description |
|-------|--|
| 0 | Apply no interlocks to this output |
| 1 | Activate this output when the park brake is... |
| 2 | Activate this output when the park brake is... |
| 3 | Activate this output when a door is open AN... |
| 4 | Activate this output when all doors are clo... |
| 5 | Activate this output when the PTO is engage... |
| 6 | Activate this output when the PTO is not en... |
| 7 | Activate this output when the engine is run... |
| 8 | Activate this output when the engine is not... |
| 9 | Activate this output when the vehicle speed... |
| 10 | Activate this output when the vehicle speed... |
| 11 | Activate this output when the vehicle is st... |
| 12 | Activate this output when the vehicle is mo... |
| 13 | Activate this output when the transmission ... |
| 14 | Activate this output when the transmission ... |
| 15 | Activate this output when the transmission ... |
| 16 | Activate this output when the transmission ... |

Figure 192 Drop Down List of Possible Parameters for TEM_Aux1_Misc_Interlock_Param

• TEM_Aux1_Interlock_Latches_Off

Normally, if the output is deactivated because the interlocking condition is not met, the output will re-activate as soon as the interlocking condition is re-established as long as the switch is still on. If this behavior is not desirable, the parameter TEM_Aux1_Interlock_Latches_Off parameter can be set. When it is set and the output is deactivated because the interlocking condition is not met, the output will not reactivate when the interlocking condition is re-established even if the switch is still on. To re-activate the output in this case, the switch must be re-cycled (flipped off and then on again).

• TEM_Aux1_Speed_Interlock_Param

If TEM_Aux1_Misc_Interlock_Param is set to 9 or 10, the speed-interlock parameter (TEM_Aux1_Speed_Interlock_Param) must also be set. This parameter must be set to the actual speed to use in the condition selected by TEM_Aux1_Misc_Interlock_Param (default unit for this parameter is MPH). The speed parameter is only used if TEM_Aux1_Misc_Interlock_Param is set to 9 or 10.

Example: If you want the output to only come on when the vehicle is traveling over 15 MPH, you would set TEM_Aux1_Misc_Interlock_Param to 9 and set TEM_Aux1_Speed_Interlock_Param to 15 MPH.

• TEM_Aux1_Gear_Interlock_Param

If TEM_Aux1_Misc_Interlock_Param is set to 13 or 14 and the vehicle has an automatic transmission, the gear-interlock parameter (TEM_Aux1_Gear_Interlock_Param) must also be set. This parameter must be set to the transmission gear to use in the condition selected by TEM_Aux1_Misc_Interlock_Param. The transmission gear is set as follows:

Table 170

| Setting | Transmission Gear |
|---|---|
| 125 | Transmission in Neutral |
| 126 | Transmission is in the 1st forward gear |
| 127 | Transmission is in the 2nd forward gear |
| 128 | Transmission is in the 3rd forward gear |
| 125 + x | Transmission is in the xth forward gear |
| 124 | Transmission is in the 1st reverse gear |
| 123 | Transmission is in the 2nd reverse gear |
| 125 – y | Transmission is in the yth reverse gear |
| The transmission gear parameter is only used if TEM_Aux1_Misc_Interlock_Param is set to 13 or 14. | |

Example: if you want the output to only come on when the vehicle transmission is in a reverse gear, you would set TEM_Aux1_Misc_Interlock_Param to 10 and TEM_Aux1_Gear_Interlock_Param to 125.

• TEM_Aux1_w_Ilocks_Output_Fuse

This parameter is the value at which the output will fuse (shut off). The allowable values are from 1 to 20 Amperes.

• TEM_Aux2_Misc_Interlock_Param

This parameter (TEM_Aux2_Misc_Interlock_Param) is the master parameter for this feature. The setting for this parameter selects the interlocking condition for the output. The following table indicates which interlocking condition corresponds to which setting for the parameter. To select the interlocking condition simply set the value of this parameter to the corresponding setting on the table.

Table 171

| Setting | Interlocking Condition |
|---------|--|
| 0 | Apply no interlocks to this output |
| 1 | Activate this output when the park brake is set AND the switch is on |
| 2 | Activate this output when the park brake is not set AND the switch is on |
| 3 | Activate this output when a door is open AND the switch is on |
| 4 | Activate this output when all doors are closed AND the switch is on |
| 5 | Activate this output when the PTO is engaged AND the switch is on (Requires a PTO feature) |
| 6 | Activate this output when the PTO is not engaged AND the switch is on (Requires a PTO feature) |
| 7 | Activate this output when the engine is running AND the switch is on |

| Setting | Interlocking Condition |
|---------|---|
| 8 | Activate this output when the engine is not running AND the switch is on |
| 9 | Activate this output when the vehicle speed exceeds the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 10 | Activate this output when the vehicle speed is less than the value set in TEM_Aux_1_Speed_Interlock_Param AND the switch is on |
| 11 | Activate this output when the vehicle is stopped AND the switch is on |
| 12 | Activate this output when the vehicle is moving AND the switch is on |
| 13 | Activate this output when the transmission gear is higher than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 14 | Activate this output when the transmission gear is lower than TEM_Aux1_Gear_Interlock_Param AND the switch is on (Requires Automatic Transmission) |
| 15 | Activate this output when the transmission is in neutral AND the switch is on (Requires Automatic Transmission) |
| 16 | Activate this output when the transmission is not in neutral AND the switch is on (Requires Automatic Transmission) |

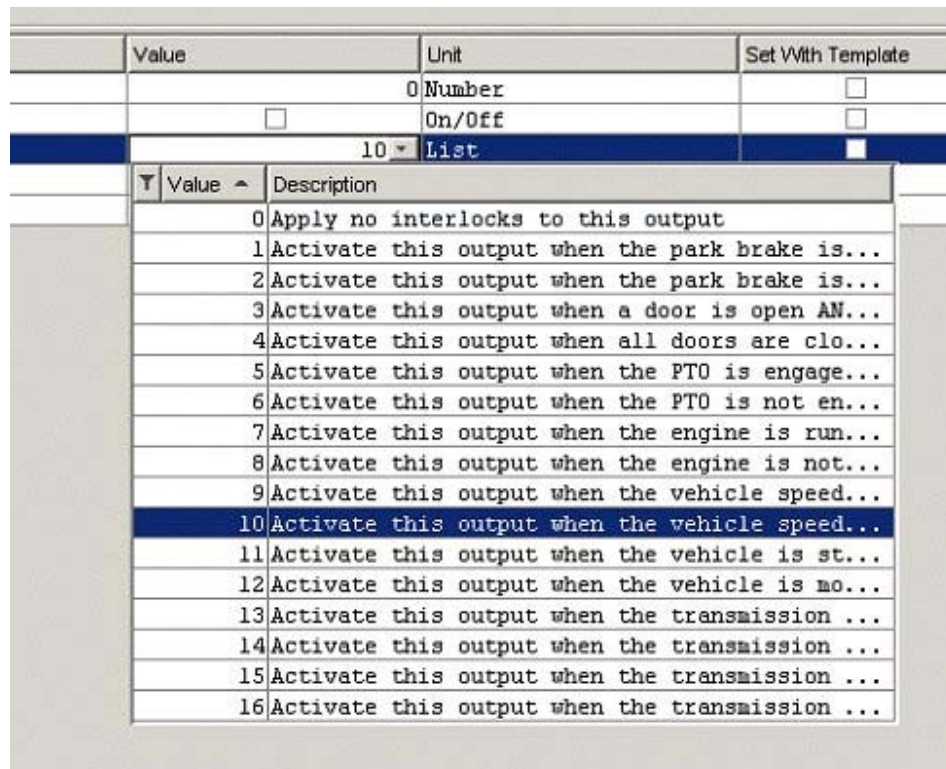


Figure 193 Drop Down List of Possible Parameters for TEM_Aux2_Misc_Interlock_Param

• TEM_Aux2_Interlock_Latches_Off

Normally, if the output is deactivated because the interlocking condition is not met, the output will re-activate as soon as the interlocking condition is re-established as long as the switch is still on. If this behavior is not desirable, the parameter TEM_Aux2_Interlock_Latches_Off parameter can be set. When it is set and the output is deactivated because the interlocking condition is not met, the output will not reactivate when the interlocking condition is re-established even if the switch is still on. To re-activate the output in this case, the switch must be re-cycled (flipped off and then on again).

• TEM_Aux2_Speed_Interlock_Param

If TEM_Aux2_Misc_Interlock_Param is set to 9 or 10, the speed-interlock parameter (TEM_Aux2_Speed_Interlock_Param) must also be set. This parameter must be set to the actual speed to use in the condition selected by TEM_Aux2_Misc_Interlock_Param (default unit for this parameter is MPH). The speed parameter is only used if TEM_Aux2_Misc_Interlock_Param is set to 9 or 10.

Example: If you want the output to only come on when the vehicle is traveling over 15 MPH, you would set TEM_Aux2_Misc_Interlock_Param to 9 and set TEM_Aux2_Speed_Interlock_Param to 15 MPH.

• TEM_Aux2_Gear_Interlock_Param

If TEM_Aux2_Misc_Interlock_Param is set to 13 or 14 and the vehicle has an automatic transmission, the gear-interlock parameter (TEM_Aux2_Gear_Interlock_Param) must also be set. This parameter must be set to the transmission gear to use in the condition selected by TEM_Aux2_Misc_Interlock_Param. The transmission gear is set as follows:

Table 172

| Setting | Transmission Gear |
|---|---|
| 125 | Transmission in Neutral |
| 126 | Transmission is in the 1st forward gear |
| 127 | Transmission is in the 2nd forward gear |
| 128 | Transmission is in the 3rd forward gear |
| 125 + x | Transmission is in the xth forward gear |
| 124 | Transmission is in the 1st reverse gear |
| 123 | Transmission is in the 2nd reverse gear |
| 125 – y | Transmission is in the yth reverse gear |
| The transmission gear parameter is only used if TEM_Aux2_Misc_Interlock_Param is set to 13 or 14. | |

Example: if you want the output to only come on when the vehicle transmission is in a reverse gear, you would set TEM_Aux2_Misc_Interlock_Param to 10 and TEM_Aux2_Gear_Interlock_Param to 125.

• TEM_Aux2_w_llocks_Output_Fuse

This parameter is the value at which the output will fuse (shut off). The allowable values are from 1 to 20 Amperes.

Table 173

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|---|------|--|---------|---------|-----|-----|-----|
| TEM_Aux1_ Interlock_ Latches_Off | 2006 | If this is set, when the output is turned off due to an interlock, it will remain off until the switch is recycled. | Off | On/ Off | | | |
| TEM_Aux1_ Speed_ Interlock_ Param | 2007 | The speed parameter for the TEM Aux #1 with Interlocks feature. | 30 | Mph | 0 | 100 | 1 |
| TEM_Aux1_ Gear_ Interlock_ Param | 2008 | The transmission gear parameter for the TEM Aux #1 with Interlocks feature (124 is reverse, 125 is neutral, 126 is 1st gear, 127 is second gear etc.). | 0 | Number | 0 | 250 | 1 |
| TEM_Aux1_ w_ llocks_ Output_Fuse | 2009 | Fuse parameter for the TEM Single output with interlocks feature. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux1_ Misc_ Interlock_ Param | 2033 | Miscellaneous or control parameter used for setting the interlock for the auxiliary 1 with interlocks. | 10 | List | | | |
| TEM_Aux2_ Interlock_ Latches_Off | 2010 | If this is set, when the output is turned off due to an interlock, it will remain off until the switch is recycled. | Off | On/ Off | | | |
| TEM_Aux2_ Speed_ Interlock_ Param | 2011 | The speed parameter for the TEM Aux #2 with Interlocks feature. | 30 | Mph | 0 | 100 | 1 |
| TEM_Aux2_ Gear_ Interlock_ Param | 2012 | The transmission gear parameter for the TEM Aux #2 with Interlocks feature (124 is reverse, 125 is neutral, 126 is 1st gear, 127 is second gear etc.). | 0 | Number | 0 | 250 | 1 |

| Parameter | ID | Description | Default | Units | Min | Max | Set |
|---------------------------------------|------|--|---------|-------|-----|-----|-----|
| TEM_Aux2_ w_llocks_ Output_Fuse | 2013 | Fuse parameter for the TEM Single output with interlocks feature. | 20 | A | 0 | 20 | 0.1 |
| TEM_Aux2_Misc_ Interlock_Param | 2034 | Miscellaneous or control parameter used for setting the interlock for the auxiliary 2 with interlocks. | 10 | List | | | |

WIRING INFORMATION

- The wiring out of the pin labeled INTERLOCKED_SWITCH_AUX1_Output on the Brown 8-pin Remote Power Module output connector is customer supplied.
- The wiring out of the pin labeled INTERLOCKED_SWITCH_AUX2_Output on the Brown 8-pin Remote Power Module output connector is customer supplied.

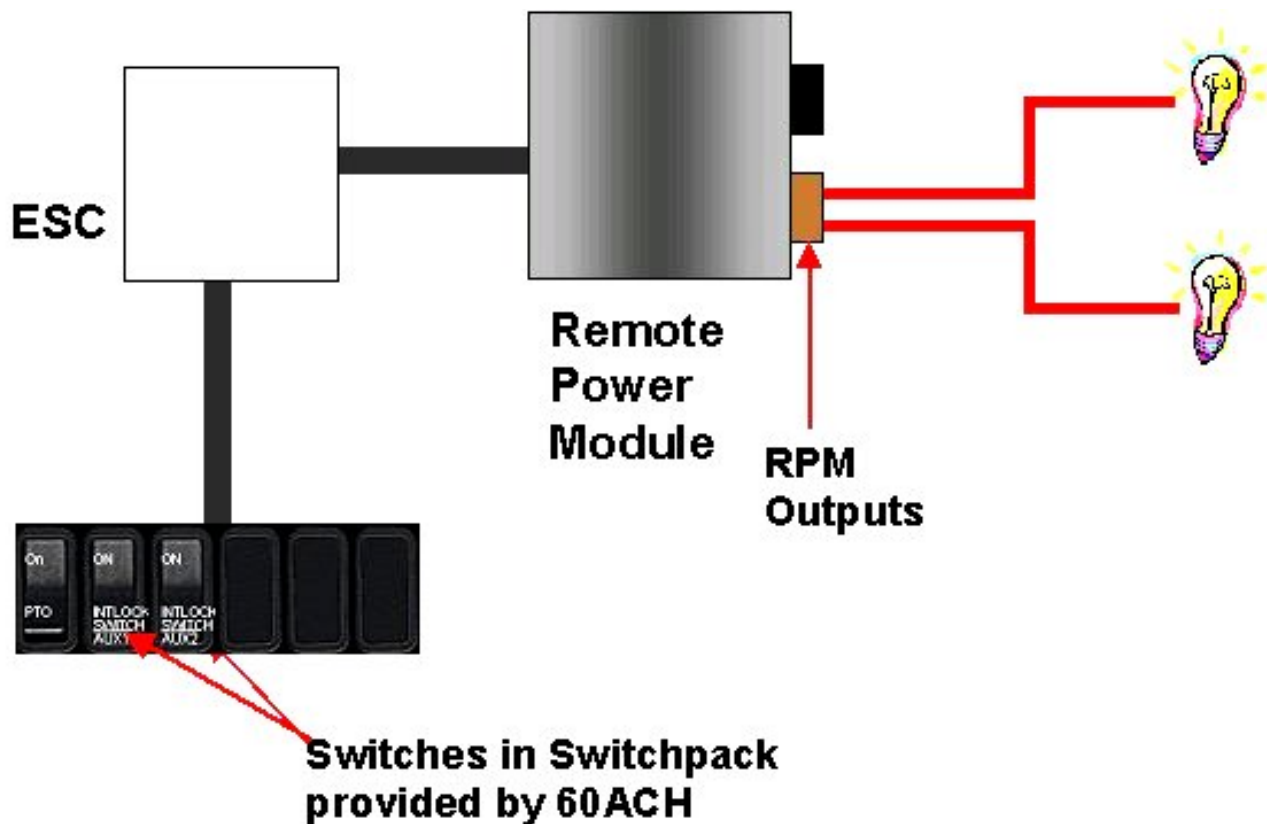


Figure 194

TESTING

1. Depress switch.
2. Verify that the RPM output labeled INTERLOCKED_SWITCH_AUX1_Output is obtaining the desired voltage (As programmed by ICAP or the Diamond Logic™ Builder software).
3. Verify the functionality of the 30 Mph interlock by violating the parameter and determine that the output shuts off.
4. Test all other interlocks can by violating the programmable parameters to see if the output shuts off
5. Depress the second switch.
6. Verify that the RPM output labeled INTERLOCKED_SWITCH_AUX2_Output is obtaining the desired voltage (as programmed by ICAP or the Diamond Logic™ Builder software).
7. Verify the functionality of the 30 Mph interlock by violating the parameter and determine that the output shuts off.
8. Test all other interlocks can by violating the programmable parameters to see if the output shuts off

HOW TO ADD THIS FEATURE:

- Software feature code 595181 and 595182 MUST be enabled using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- Programmable Parameters must be set using ICAP or the Diamond Logic™ Builder software (See Local Dealer)
- The 2-position latched rocker switch must be installed in the in-cab switch pack
- Customer must install the wiring from the RPM outputs.

23. REMOTE AIR SOLENOID MODULE

23.1. 08WGA, 08WGB, 08WGC, 08WGD, 08WGP AND 08WGR — TEM AIR SOLENOIDS

Refer to the Circuit Diagram in S08285, Chapter 9, page 14.

FEATURE CODE DESCRIPTION:

08WGA – SOLENOID, AIR for Customer Use; Provides (1) Normally Closed Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Available Only With Key in “Ignition” or “Accessory” Position; Air Will Exhaust with Key in “Off” Position

08WGB – SOLENOID, AIR for Customer Use; Provides (2) Normally Closed Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Available Only With Key in “Ignition” or “Accessory” Position; Air Will Exhaust with Key in “Off” Position

08WGC – SOLENOID, AIR for Customer Use; Provides (3) Normally Closed Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Available Only With Key in “Ignition” or “Accessory” Position; Air Will Exhaust with Key in “Off” Position

08WGD – SOLENOID, AIR for Customer Use; Provides (4) Normally Closed Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Available Only With Key in “Ignition” or “Accessory” Position; Air Will Exhaust with Key in “Off” Position

08WGP – SOLENOID, AIR for Customer Use; Provides (5) Normally Open Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Exhausted Only With Key in “Ignition” or “Accessory” Position; Air Will be Supplied with Key in “Off” Position

08WGR – SOLENOID, AIR for Customer Use; Provides (6) Normally Open Pilot Air Source, Approx. 4 CFM, Includes Switch in Cab; Air Exhausted Only With Key in “Ignition” or “Accessory” Position; Air Will be Supplied with Key in “Off” Position

FEATURE/BODY FUNCTION:

These air solenoids provide instrument panel mounted rocker switches and normally closed and/or normally closed air solenoids that allow the operator to control up to four body-mounted air accessories from the cab.

NOTE: These air solenoids are to be used as a pilot air source and are not to be used as an air supply.

Feature codes 08WGA, 08WGB, 08WGC and 08WGD include windowed latching rockers and do not include any interlock features. Product graphics are included for application to each switch window.



WARNING – The air solenoids will turn off and the air will be exhausted with the ignition key turned off. Take precautions to ensure that equipment controlled by these solenoids will not cause personal injury when the ignition key is turned off.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Software Feature Codes that must be installed: 08WGA — 595259, 595080; 08WGB — 595260, 595080; 08WGC — 595261, 595080; 08WGD — 595262, 595080; 08WGP — 595297, 595080; 08WGR — 595300, 595080

Software Feature Codes that must be not be enabled: NONE

If the current in the Air Solenoid Power circuit falls below the level set by the **Air_Solenoid_Power_Lo_Current** parameter, the ESC will register a fault code.

If the current in the Air Solenoid Power circuit exceeds the level set by the **Air_Solenoid_Power_Hi_Current** parameter, the ESC will shut off the circuit and register a fault code.

The **Air_Solenoid_Power_OC_Current** parameter should be left at its factory default of zero.

Table 174

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|-------------------------------|------|--|---------|-------|-----|-----|------|
| Air_Solenoid_Power_Lo_Current | 1874 | Air Solenoid Power Low Current Detection Level (Amps) | 0 | A | 0 | 10 | 0.1 |
| Air_Solenoid_Power_Hi_Current | 1875 | Air Solenoid Power High Current Detection Level (Amps) | 10 | A | 0 | 10 | 0.1 |
| Air_Solenoid_Power_OC_Current | 1876 | Air Solenoid Power Open Circuit Detection Level (Amps) | 0 | A | 0 | 10 | 0.1 |

WIRING INFORMATION

- Use ICAP or the Diamond Logic™ Builder software to determine switch locations of the air solenoid switches.
- Customer supplies air plumbing from the air solenoids to the desired air-controlled accessory.

There are several positions where the solenoid packs may be mounted.

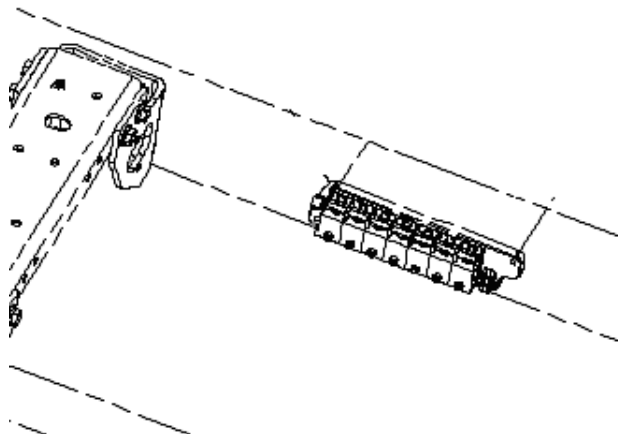


Figure 195 On Driver's Side Rail In Front Of Rear Cab Cross Member (4-Pack And First 7-Pack Are Mounted Here)

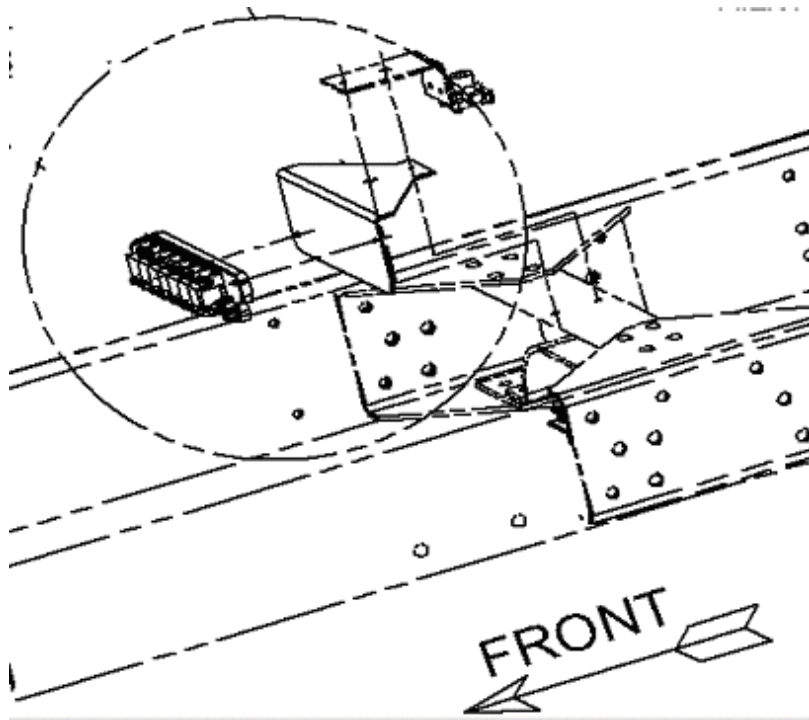


Figure 196 Located on Center Cross Member (With Hendrickson Suspension) (Second 7-pack is mounted here)

On trucks without Hendrickson Suspension, the second 7-pack is located on the passenger-side frame rail in front of the rear tandem axle

TESTING

Directions for 4-pack & 7-pack

1. Activate first in-cab auxiliary air solenoid switch.
2. Verify that the first air solenoid provides air pressure.
3. Verify that pin A of the Blue ESC output connector (# 4008) is providing voltage.
4. Deactivate first in-cab auxiliary air solenoid switch.
5. Activate second in-cab auxiliary air solenoid switch.
6. Verify that the second air solenoid provides air pressure.
7. Verify that pin A of the Blue ESC output connector (# 4008) is providing voltage.
8. Deactivate second in-cab auxiliary air solenoid switch.
9. Activate third in-cab auxiliary air solenoid switch.
10. Verify that the third air solenoid provides air pressure.
11. Verify that pin A of the Blue ESC output connector (# 4008) is providing voltage.
12. Deactivate third in-cab auxiliary air solenoid switch.
13. Activate fourth in-cab auxiliary air solenoid switch.
14. Verify that the fourth air solenoid provides air pressure.
15. Verify that pin A of the Blue ESC output connector (# 4008) is providing voltage.
16. Deactivate fourth in-cab auxiliary air solenoid switch.

Directions for 7-pack

17. Activate the fifth in-cab auxiliary air solenoid switch.
18. Verify the fifth air solenoid provides air pressure.
19. Verify the pin-A of the (blue) ESC output connector (#4008) is providing voltage.
20. De-activate fifth in-cab auxiliary air solenoid switch.
21. Activate the sixth in-cab auxiliary air solenoid switch.
22. Verify the sixth air solenoid provides air pressure.

23. Verify the pin-A of the (blue) ESC output connector (#4008) is providing voltage.
24. De-activate sixth in-cab auxiliary air solenoid switch.
25. Activate the seventh in-cab auxiliary air solenoid switch.
26. Verify the seventh air solenoid provides air pressure.
27. Verify the pin-A of the (blue) ESC output connector (#4008) is providing voltage.
28. De-activate seventh in-cab auxiliary air solenoid switch.

HOW TO ADD THESE FEATURES:

** See the “How Do I” General Information section of the body builders book.

- Electrical power is provided to the air solenoid pack from an ESC output. Wiring must be added from Pin A of the Blue ESC output connector (# 4008) to the air solenoid.
- Feature codes 595259, 595260, 595261, or 595262 must be added depending on the number of air outputs desired.
- Programmable parameters listed above can be modified or left at default settings.
- Use ICAP or the Diamond Logic™ Builder software to determine correct in-cab switch location(s) for the switches controlling the air outputs.

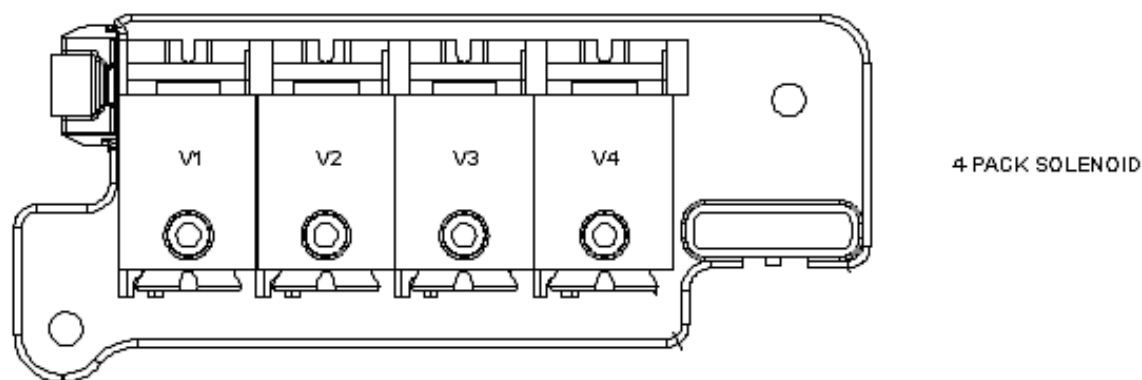
Listed below is a listing of parts that may be required depending on how the vehicle was equipped at the factory.

Table 175 Air Solenoid and Switch Modules

| Part Number | Description |
|-------------|--|
| 2505594C1 | Bracket, Solenoid Four Pack (Base) |
| 2505595C2 | Bracket, Solenoid Seven Pack (Base) No. 1 |
| 2506711C91 | Kit, Air Brake Solenoid N.C. (includes labels and O-rings) |
| 2506712C91 | Kit, Air Brake Solenoid N.O. (includes labels and O-rings) |
| 2506713C91 | Kit, Air Horn Solenoid (includes labels and O-rings) |
| 3549776C4 | Housing, Switch 6 Pack Din Multiplex |
| 3549777C4 | Housing, Switch 12 Pack Din Multiplex |
| 2507928C1 | Bracket, Solenoid Seven Pack (Base) No. 2 |

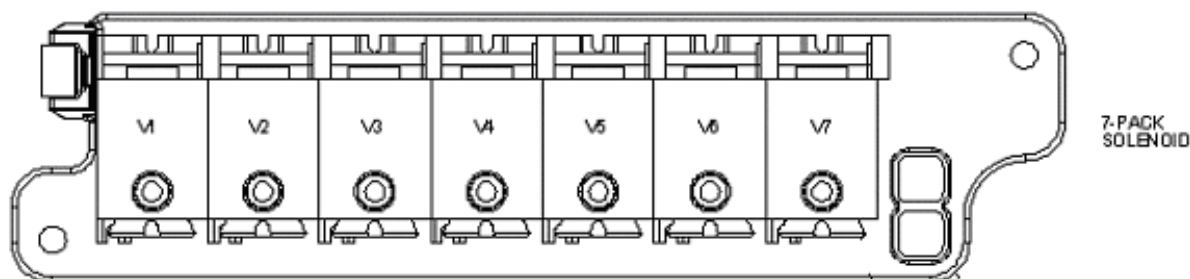
- The vehicle has a four or seven pack with unused solenoid locations.

In the above situation, simply add the solenoid to the solenoid pack, add the appropriate rocker to the switch pack – see the Switch Pack section for additional information. The ESC will have to be programmed for the additional solenoid and switch. Add solenoids per the views below.



NOTE: FILL V1 FIRST, V2 SECOND...V4 LAST

Figure 197



NOTE FILL V1 FIRST, V2 SECOND, V3 THIRD....V7 LAST

Figure 198

- The vehicle does not have any solenoid switch pack

In the above situation, a four pack and solenoid(s) will have to be added. In the case of the four pack, the solenoids are controlled by the ESC there is no multiplexing from the ESC to the solenoid pack – see the Switch Pack Section for information on switches.

Circuits will have to be added from the ESC to the four pack – See the 7-Way Socket at end of frame for general circuit addition and circuit diagram manual use.

- The vehicle has a Four Pack but it is filled up.

An additional Four Pack cannot be added. The Four Pack must be replaced with the Seven Pack. Note the order that the solenoids are positioned on the Four Pack, they must be installed in the same order on the Seven Pack.

The Seven Pack communicates with the ESC over the data link. If the vehicle is equipped with a Remote Power Module, Simply disconnect the harness 6- way connector from the remote power module and plug onto the Seven Pack. Install jumper 3558937C91 (500 mm length) or 3558936C91 (400 mm length) between Seven Pack and Remote power module.

If there is no Remote Power Module, the installation gets more difficult. Adding a remote Seven Pack is very similar to adding a remote Power Module with primary difference being the solenoid pack does not need power from the battery, addressing jumper and there is no remote control feature. Both units use the same terminating resistor and after mounting of the solenoid pack the terminating resistor must be connected to the open connector of the solenoid pack. The same harnesses used in the remote power installation can be used to connect the solenoid pack. (you will not need harness P/N 3558934C92) Do not order the complete Remote Power Module kit, only parts as needed. Refer to the Remote Power module installation for instructions.

See switch pack section for information on adding switches.

The ESC will have to be programmed for the additional base, solenoid and switch.

- The vehicle has a Seven Pack but it is full.

A second Seven Pack can be installed. The P/N for the second seven pack is 2507928C1, as indicated parts listing above, the second seven pack is different than the one if a single switch pack is used. If two of the same P/N's are used, the system will not function.

The second Seven Pack can be installed in front or behind, use same cables as used when installing with a Remote Power Module above.

See switch pack section for information on adding switches.

24. SWITCHES — GENERAL DESCRIPTION

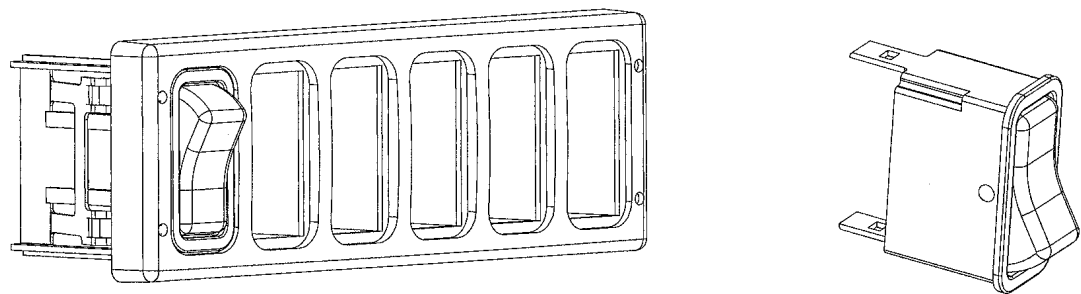


Figure 199

All switches are rocker actuators that do not require hard wiring. The switches are used in switch pack modules (6 or 12 switches) that connect to the multiplex system through the switch housing cable harnesses.

In the Switch Actuator Table below, column 2 references the part numbers of the new replacement switch and columns 3 and 4 are the replacement LED's part numbers. Column 5 is the switch description. Columns 6, 7 and 8 describe the switch functions. **Position Number** reflects the number of positions the switch can physically be placed in. **Position On** denotes the position of the switch for activation. **Switch Action** indicates whether the switch is Momentary (spring loaded, switch returns to a specific state) or if the switch is Latching (switch stays in the selected state). Items 26, 27 and 32 are blank switches with two clear square windows on them. These switches require a stick on graphic kit to identify function and allow for custom switches. The graphic kit can be purchased under part number 3552005C3. See the Switch Graphic Label Kit Table below for the graphic labels that are provided with this kit.

NOTE – Switches are no longer packaged with LED's (Light Emitting Diodes). LED's must be ordered separately. Refer to Table 1 to locate the proper LED part numbers. Each switch usually requires two LED's that are installed from the rear side of the switch pack assembly (see How Do I Add Additional Rocker Switches in this section). If the switch has an ON indicator, a green LED will be located in the upper portion. An amber LED is required in the lower portion providing for nighttime viewing. If a switch does not contain an ON indicator, then an amber LED should be installed in the upper as well as the lower section.

24.1. SWITCH ACTUATORS FOR MULTIPLEX SYSTEM

Table 176 Switch Actuators for Multiplex System

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|-----------------|---------------|----------------|-----------------------------------|-----------------|-------------|---------------|
| Part ID | New Part Number | Indicator LED | Back Light LED | Description | Position Number | Position On | Switch Action |
| 1 | 3563061C1 | | | Head Light Switch | 3 | Mid/ Up | Latching |
| 2 | 3563062C1 | | | Dimmer Switch | 2 | Up/ Down | Momentary |
| 3 | 3563063C1 | 3578733C1 | 3533928C1 | Work Light Switch | 2 | Up/ Down | Latching |
| 4 | 3563064C1 | 3578733C1 | 3533928C1 | Fog Light Switch | 2 | Up | Latching |
| 5 | 3563069C1 | 3578733C1 | 3533928C1 | Front Axle Switch | 2 | Up | Latching |
| 6 | 3563065C1 | 3578733C1 | 3533928C1 | Exhaust Brake Switch | 2 | Up | Latching |
| 7 | 3560046C1 | 3578733C1 | 3533928C1 | Engine Compression Brake On/ Off | 2 | Up | Latching |
| 8 | 3560047C1 | | 3533928C1 | Engine Compression Brake Selector | 3 | All | Latching |
| 9 | 3549930C1 | | | Ether Start Switch | 2 | Up | Momentary |
| 10 | 3563066C1 | 3578733C1 | 3533928C1 | Plow Light Switch | 2 | Up | Latching |
| 11 | 3563067C1 | 3578733C1 | 3533928C1 | Traction Disable Switch | 2 | Up | Latching |
| 12 | 3563068C1 | | 3533928C1 | 2 Speed Axle Hi/ Low | 2 | Up/ Hi | Latching |
| 13 | 3563111C1 | | 3533928C1 | Transfer Case Hi/ Low | 2 | Up/ Hi | Latching |
| 14 | 3563079C1 | 3578733C1 | 3533928C1 | PTO On/ Off | 2 | Up | Latching |

Table 176 Switch Actuators for Multiplex System (cont.)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|-----------------|---------------|----------------|----------------------------------|-----------------|-------------|---------------|
| Part ID | New Part Number | Indicator LED | Back Light LED | Description | Position Number | Position On | Switch Action |
| 15 | 3563070C1 | | 3533928C1 | Marker Interrupt | 2 | Down | Momentary |
| 16 | 3563071C1 | 3578733C1 | 3533928C1 | Mirror Heat | 2 | Up | Latching |
| 17 | 3560048C1 | 3578733C1 | 3533928C1 | Fan Override | 2 | Up | Latching |
| 18 | 3563072C1 | 3578733C1 | 3533928C1 | Auto Neutral Switch | 2 | Up | Latching |
| 19 | 3563073C1 | 3578733C1 | 3533928C1 | Power Divider Lock | 2 | Up | Latching |
| 20 | 3563074C1 | 3578733C1 | 3533928C1 | Diff Lock | 2 | Up | Latching |
| 21 | 3563075C1 | 3578733C1 | 3533928C1 | Air Suspension Dump | 2 | Up | Latching |
| 22 | 3563077C1 | 3578733C1 | 3533928C1 | Retarder On/ Off | 2 | Up | Latching |
| 23 | 3563078C1 | | 3533928C1 | Retarder Hi/ Low | 2 | Up/ Hi | Latching |
| 24 | 3563080C1 | 3578733C1 | 3533928C1 | Air Assist | 2 | Up | Momentary |
| 25 | 3559784C1 | 3578733C1 | 3533928C1 | Engine Override | 2 | Up | Momentary |
| 26* | 3564004C1 | 3578733C1 | 3533928C1 | Window Rocker Blank (3 Position) | 3 | Up | Momentary |
| 27* | 3578910C1 | 3578733C1 | 3533928C1 | Window Rocker Blank (2 Position) | 2 | Up | Latching |
| 28 | 3560961C1 | 3578733C1 | 3533928C1 | Blower Road Switch | 2 | Up/ Down | Latching |
| 29 | 3563113C1 | | 3533928C1 | Wet Tank Drain | 2 | Up | Momentary |
| 30 | 3563114C1 | | 3533928C1 | Primary Tank Drain | 2 | Up | Momentary |

Table 176 Switch Actuators for Multiplex System (cont.)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|--|-----------------|---------------|----------------|----------------------------------|-----------------|-------------|---------------|
| Part ID | New Part Number | Indicator LED | Back Light LED | Description | Position Number | Position On | Switch Action |
| 31 | 3563115C1 | | 3533928C1 | Secondary Tank Drain | 2 | Up | Momentary |
| 32* | 3579027C1 | 3578733C1 | 3533928C1 | Window Rocker Blank (2 Position) | 2 | Up | Momentary |
| * NOTE: Switch 26, 27 and 32 are to be used with remote power module. | | | | | | | |

Table 177 3552005C3 Switch Graphic Label Kit

| | Graphic | | Graphic | | Graphic |
|----|---------------|----|-------------|----|--------------|
| 1 | LEFT ALLEY | 2 | RIGHT ALLEY | 3 | REAR ALLEY |
| 4 | STROBE BAR | 5 | PRIMRY WARN | 6 | SECND WARN |
| 7 | INTSEC LIGHTS | 8 | CAB ROTO | 9 | MANGR CANCEL |
| 10 | LOAD MANGR | 11 | TRUCK | 12 | MACHINE |
| 13 | AIR COMPR | 14 | BRAKE LOCK | 15 | FLOOD LIGHT |
| 16 | SPREDR LIGHT | 17 | AUX 1 | 18 | AUX 2 |
| 19 | AUX 3 | 20 | PLOW DOWN | 21 | PLOW UP |
| 22 | SANDER ROTO | 23 | SANDER | 24 | BOOM |
| 25 | ON | 26 | ON | 27 | ON |
| 28 | ON | 29 | ON | 30 | ON |
| 31 | ON | 32 | ON | 33 | PASS ALLEY |
| 34 | DRIVER ALLEY | 35 | ROOF LIGHT | 36 | LIGHT BAR |
| 37 | STROBE LIGHT | 38 | REAR STROBE | 39 | FRONT STROBE |
| 40 | CAB STROBE | 41 | WIG WAG | 42 | ROTO LIGHT |
| 43 | BEACON LIGHT | 44 | LIGHT BOARD | 45 | REAR FLASHR |
| 46 | PUMP PANEL | 47 | DRIVE LIGHT | 48 | LOW VOLTS |
| 49 | PLOW LIGHT | 50 | AXLE 1 UP | 51 | AXLE 1 DOWN |
| 52 | AXLE 2 UP | 53 | AXLE 2 DOWN | 54 | TAG UP |
| 55 | TAG DOWN | 56 | BOOM UP | 57 | ON |
| 58 | ON | 59 | ON | 60 | ON |
| 61 | ON | 62 | ON | 63 | ON |
| 64 | ON | 65 | LEFT SCENE | 66 | RIGHT SCENE |

Table 177 3552005C3 Switch Graphic Label Kit (cont.)

| | Graphic | | Graphic | | Graphic |
|-----|--------------|-----|----------------|-----|----------------|
| 67 | REAR SCENE | 68 | STEP LIGHT | 69 | DECK LIGHT |
| 70 | FRONT FLASH | 71 | STEP LT CANCEL | 72 | GROUND LIGHT |
| 73 | PTO | 74 | PTO GEN | 75 | PTO PUMP |
| 76 | GEN RUN | 77 | AUX PTO | 78 | MASTER THROTL |
| 79 | EMERG MASTER | 80 | MASTER | 81 | OPEN GATE |
| 82 | LIFT GATE | 83 | RAISE BOX | 84 | LOWER BOX |
| 85 | TARP WIND | 86 | TARP UNWIND | 87 | EMERG PANIC |
| 88 | BOOM DOWN | 89 | ON | 90 | ON |
| 91 | ON | 92 | ON | 93 | ON |
| 94 | ON | 95 | ON | 96 | ON |
| 97 | LEFT WARN | 98 | RIGHT FLOOD | 99 | SIDE WARN |
| 100 | UPPER WARN | 101 | LOWER WARN | 102 | FRONT WARN |
| 103 | REAR WARN | 104 | CLEAR WARN | 105 | OXYGEN |
| 106 | OXYGEN LIGHT | 107 | EXHST FAN | 108 | FAN LOW |
| 109 | FAN HIGH | 110 | DO NOT MOVE | 111 | AUX WARN |
| 112 | DOOR OPEN | 113 | CAMERA LIGHT | 114 | PUMP |
| 115 | BOX UP | 116 | SHAKER | 117 | BLOWER |
| 118 | DRAIN VALVE | 119 | FILL VALVE | 120 | BOOM LEFT |
| 121 | LOCK DOOR | 122 | UNLOCK DOOR | 123 | 12 VOLT OUTLET |
| 124 | HOPPER LIGHT | 125 | FAN | 126 | ESPAR HEAT |
| 127 | A/C | 128 | A/C HEAT | 129 | LEFT FLOOD |
| 130 | COMPT LIGHT | 131 | REAR FLOOD | 132 | UPPER WORK |
| 133 | LOWER WORK | 134 | WORK LIGHT | 135 | FRONT LIGHT |
| 136 | PERIM LIGHT | 137 | CODE AMBER | 138 | CODE GREEN |
| 139 | CODE RED | 140 | CODE BLUE | 141 | PUMP AND ROLL |
| 142 | 110 V INVT | 143 | BACKUP LIGHT | 144 | AIR HORN |
| 145 | TRAP LIGHT | 146 | HIGH IDLE | 147 | BACK ALARM |
| 148 | LEFT WING | 149 | RIGHT WING | 150 | SPARE |
| 151 | SPARE | 152 | BOOM RIGHT | 153 | HIGH |
| 154 | LOW | 155 | METEOR LIGHT | 156 | ALLEY |
| 157 | OIL LEVEL | 158 | CRANE | 159 | SPOT LIGHT |
| 160 | HIGH RAIL | 161 | OPTI COM | 162 | COMPT LIGHT |
| 163 | BIN LIGHT | 164 | REAR LIGHT | 165 | FLORES LIGHT |

Table 177 3552005C3 Switch Graphic Label Kit (cont.)

| | Graphic | | Graphic | | Graphic |
|-----|-------------|-----|------------|-----|---------------|
| 166 | DOM E LIGHT | 167 | MAP LIGHT | 168 | CARGO LIGHT |
| 169 | SIREN | 170 | SIREN HORN | 171 | ELECT HORN |
| 172 | SIREN BRAKE | 173 | PUMP ENG'D | 174 | OK TO HI IDLE |
| 175 | OK TO PUMP | 176 | CITY HORN | 177 | ELECT SUCTN |
| 178 | OVER RIDE | 179 | XFER CASE | 180 | WINCH |
| 181 | OUTRIG DOWN | 182 | OUTRIG UP | 183 | CONVEYOR |
| 184 | BOOM STOW | 185 | (BLANK) | 186 | (BLANK) |
| 187 | (BLANK) | 188 | (BLANK) | 189 | (BLANK) |
| 190 | (BLANK) | 191 | (BLANK) | 192 | (BLANK) |

25. CAB FEATURES

25.1. 08WGL — WINDSHIELD WIPER SPEED CONTROL

FEATURE CODE DESCRIPTION:

08WGL – Windshield Wiper Speed Control. Forces wipers to slowest Intermittent Speed when the park brake is set and left on for a predetermined time.

FEATURE/BODY FUNCTION:

Feature 08WGL is a software feature that forces the windshield wipers to their slowest intermittent speed when the park brake is set and the wipers are left on for a programmable period of time (Wipers_To_Low_Int_Timeout).

The user may override this feature by manually moving the wiper switch to another position. The wipers will remain at this speed for the same programmable period of time and then return to their slowest intermittent speed after that time has passed.

If the ignition switch is turned off, this feature will be overridden.

There are two programmable parameters associated with this feature; Wipers_To_Low_Int_Enabled and Wipers_To_Low_Int_Timeout. These parameters can be modified by anyone with the appropriate interface tool and Fleet access or higher.

SOFTWARE FEATURE CODES / PROGRAMMABLE PARAMETERS:

Software Feature Codes that must be installed: 08WGL — 595288 (use with ESC2), 595289 (use with ESC1)

Software Feature Codes that must be not be enabled: 08WGL — 595253 (use with ESC2), 595029 (use with ESC1 if wiper with speed override functionality is requested)

The **Wipers_To_Low_Int_Enabled** parameter shall enable or disable this feature. The default setting shall be ON when this feature is ordered.

The **Wipers_To_Low_Int_Timeout** parameter shall determine the amount of time the park brake has to be set before the wipers are forced to their slowest intermittent speed. The default value for this parameter is 60 seconds. The minimum time allowed is 10 seconds and the maximum time allowed is 300 seconds with 10 second intervals.

Table 178

| Parameter | ID | Description | Default | Units | Min | Max | Step |
|---------------------------|------|---|---------|-------|-----|-----|------|
| Wipers_To_Low_Int_Enabled | 2171 | Enables or disables the wiper speed override, if it is present | 1 | None | 0 | 1 | |
| Wipers_To_Low_Int_Timeout | 2228 | Defines the amount of time the parking brake has to be set before the wiper speed is overridden | 60 | s | 10 | 300 | |

WIRING INFORMATION

This feature is software driven.

TESTING

1. Start vehicle and make sure the parking brake is engaged.
2. Turn the windshield wipers on any setting except for the slowest intermittent speed.
3. Leave the wipers on this setting for 60 seconds without adjusting the wiper speed.
4. After 60 seconds, the wipers should slow to the lowest speed.
5. Adjust the wiper speed control.
6. The wiper setting should match the user set speed.

HOW TO ADD THESE FEATURES:

Use ICAP or the Diamond Logic™ Builder software to install the appropriate software and determine correct settings for programmable parameters.

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