Overview:

New for 2013 is a RAM Truck engineered upfitter module called the VSIM (Vehicle System Interface Module). Its sales code is “XXS” and is standard with Ambulance Prep (sales code AH2), a “must have” option with PTO Prep (sales codes LBN or LBV), and is available as a stand-alone option. It provides a multitude of useful I/O’s to increase upfitter friendliness and upfit simplification.

Specifics:

1. Ghost drawings showing the module location within the dash panel.
2. The VSIM includes an upfitter wire harness kit (part number 68211680AA or 68211680AB) consisting of four separate color coded harness bundles. Each individual color harness must only be plugged into its corresponding VSIM connector cavity, see photos below showing harness color installations.
3. A photo of the four individual color coded VSIM upfitter harness bundles. Note that in a few instances an individual wire color is duplicated within a bundle – these duplications are further identified with a paper “flag” showing its circuit number. It’s recommended that the upfitter, upon harness bundle routing direction determination(s), install additional harness bundle abrasion protection over each bundle (such as harness convolute).
4. Photos showing module installation within a vehicle and harness bundles.
5. A chart below delineates the circuits within each color harness bundle, circuit number, signal, wire insulation colors, maximum allowable amperage per circuit, and circuit function.
6. A chart below delineates the available 125 kbaud CAN bus messages. If downloadable “DBC” files are needed, they should be requested via the website rambbg@chrysler.com.
7. Note 1: Eight “pairs” of “output” circuits may require additional circuitry for proper function. These are flagged in the VSIM chart with an asterisk (*) in front of the Circuit # and yellow hi-lite in the box. If any these output circuits are being used and unless both circuits of a given pair are connected to an external load (e.g. a LED, incandescent bulb, upfitter module input, relay coil, etc.), an external resistor must be added to the one circuit of the pair that is not being used for another purpose. This requires a dedicated 1KΩ, ≥ 0.5W resistor for each individual circuit. See below for the VSIM chart delineating the “pairs” circuits that require an external resistor and the accompanying appropriate circuit diagram.
8. Note 2: six “output” circuits require “pull-up” resistors for proper function, if the circuit output is to be used. These circuits are flagged in the VSIM chart with a pound sign (#) in front of the circuit number and light blue hi-lite in the box. These circuits require a dedicated 1K-2.2KΩ, ≥ 0.5W resistor for each individual circuit. See below for the VSIM chart delineating the circuits requiring a “pull-up” resistor and the accompanying appropriate circuit diagram.
9. Note 3: PTO idle speed circuits W541, W542, W543 can only be programmed to function if the vehicle was built with PTO option sales codes LBN or LBV.
Blunt cut and heat shrinked insulations; to be cut off as necessary

Duplicate wire color circuit # tag
Note: When inserting the VSIM harness connectors an audible “click” will be heard when the connector is fully seated.
<table>
<thead>
<tr>
<th>#</th>
<th>Connector Identity</th>
<th>Circuit #</th>
<th>Upfitters Signal</th>
<th>Cavity #</th>
<th>Wire Color</th>
<th>Max. Amps</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>gray 24-cavity</td>
<td>W719</td>
<td>Hazard indicator on - HSD output</td>
<td>2</td>
<td>WT/VT</td>
<td>0.5</td>
<td>open circuit when hazard flashers are off, battery positive voltage (12V) when hazard flashers are selected</td>
</tr>
<tr>
<td>2</td>
<td>gray 24-cavity</td>
<td>*W504</td>
<td>Transmission out of &quot;Park&quot; - HSD output</td>
<td>3</td>
<td>BR</td>
<td>0.5</td>
<td>open circuit when gear selector is in Park, battery positive voltage (12V) when gear selector is in any other position</td>
</tr>
<tr>
<td>3</td>
<td>gray 24-cavity</td>
<td>W545</td>
<td>diesel Regeneration (DPF) on - HSD output</td>
<td>4</td>
<td>BR/LB</td>
<td>0.5</td>
<td>open circuit when diesel regeneration is not energized, battery positive voltage (12V) when it is energized</td>
</tr>
<tr>
<td>4</td>
<td>gray 24-cavity</td>
<td>W743</td>
<td>PTO on indicator - HSD output</td>
<td>5</td>
<td>VT/TN</td>
<td>1.0</td>
<td>open circuit when PTO circuit is not energized, battery positive voltage (12V) when PTO circuit is energized</td>
</tr>
<tr>
<td>5</td>
<td>gray 24-cavity</td>
<td>*W540</td>
<td>MIL lamp on - HSD output</td>
<td>6</td>
<td>BR/DB</td>
<td>0.5</td>
<td>open circuit when gear selector is not in Park, battery positive voltage (12V) when MIL is illuminated</td>
</tr>
<tr>
<td>6</td>
<td>gray 24-cavity</td>
<td>W700</td>
<td>Transmission &quot;Park&quot; position - LSD output</td>
<td>7</td>
<td>YL/DB</td>
<td>0.5</td>
<td>open circuit when gear selector is not in Park, battery negative voltage (0V) when in Park</td>
</tr>
</tbody>
</table>
| 7  | gray 24-cavity    | W701      | Transmission "Neutral" position - LSD output          | 8        | DG/YL     | 0.5       | open circuit when gear selector is not in Neutral, battery negative voltage (0V) when in Neutral | **NOTE: only on vehicles built prior to 5/9/2013**
| 8  | gray 24-cavity    | W652      | HVAC - A/C clutch engaged - LSD output                | 9        | LB/BR     | 0.5       | open circuit when A/C clutch is not engaged, battery negative voltage (0V) when engaged |
| 9  | gray 24-cavity    | W532      | "**CAN communication - side CAN" 125+                 | 10       | BR/DB     | --        | 125 Kbaud CAN+, use in conjunction with W534; refer to CAN spreadsheet for available messages |
| 10 | gray 24-cavity    | W534      | "**CAN communication - side CAN" 125-                 | 11       | BR/LB     | --        | 125 Kbaud CAN-, use in conjunction with W534; refer to CAN spreadsheet for available messages |
| 11 | gray 24-cavity    | W702      | Transmission "Reverse" position - LSD output          | 12       | DG/DB     | 0.5       | open circuit when gear selector is not in Reverse, battery negative voltage (0V) when in Reverse |
| 12 | gray 24-cavity    | W711      | Cargo Lamp output - LSD output                        | 15       | WT/TN     | 0.5       | this wire is included in the VSIM upfitter harness but is not used |
| 13 | gray 24-cavity    | W703      | Transmission "Drive" position - LSD output            | 16       | DG/LB     | 0.5       | activated via W506, relay driver, open circuit when W506 is "OFF", battery negative voltage (0V) when W506 is "ON", times out after 30 minutes, re-enable by cycling W506 switch |
| 14 | gray 24-cavity    | W720      | any Door Ajar - HSD output                            | 17       | VT/OR     | 0.5       | open circuit when gear selector is not in Drive, battery negative voltage (0V) when in Drive |
| 15 | gray 24-cavity    |           |                                                       |          | LB/OR     |           | this wire is included in the VSIM upfitter harness but is not used |

*W504: Available in 2013 Chassis Cab models only.*
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<tr>
<th>#</th>
<th>Connector Identity</th>
<th>Circuit #</th>
<th>Upfitters Signal</th>
<th>Cavity #</th>
<th>Wire Color</th>
<th>Max. Amps</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Black 16-cavity</td>
<td>*WS05</td>
<td>Howler Siren disable - HSD output</td>
<td>1</td>
<td>LG</td>
<td>0.25</td>
<td>open circuit when vehicle speed is below 25MPH, battery positive voltage (12V) when vehicle speed is 25MPH or above</td>
</tr>
<tr>
<td>16</td>
<td>Black 16-cavity</td>
<td>*WS13</td>
<td>Horn activation - HSD output</td>
<td>2</td>
<td>BR/GY</td>
<td>0.5</td>
<td>open circuit when horn not pressed (not energized), battery positive voltage (12V) when pressed (energized)</td>
</tr>
<tr>
<td>17</td>
<td>Black 16-cavity</td>
<td>*WS17</td>
<td>Side Airbag deployed - HSD output</td>
<td>3</td>
<td>BR/LG</td>
<td>0.5</td>
<td>open circuit when side airbags have not deployed during current key cycle, battery positive voltage (12V) upon airbag deployment during current key cycle</td>
</tr>
<tr>
<td>18</td>
<td>Black 16-cavity</td>
<td>*WS62</td>
<td>Tire Pressure Monitor active - HSD output (applicable only to RAM 2500 under 10,000 GVW)</td>
<td>4</td>
<td>VT/YL</td>
<td>0.5</td>
<td>open circuit when the Tire Pressure Monitor (TPM) indicator lamp is off, battery positive voltage (12V) when the TPM indicator lamp is active</td>
</tr>
<tr>
<td>19</td>
<td>Black 16-cavity</td>
<td>*WS35</td>
<td>Power feed, &quot;Off&quot; - HSD output</td>
<td>5</td>
<td>PK</td>
<td>0.5</td>
<td>open circuit when key position is in &quot;Accessory/Run/Start&quot;, battery positive voltage (12V) when key position is in &quot;Off&quot;</td>
</tr>
<tr>
<td>20</td>
<td>Black 16-cavity</td>
<td>*WS10</td>
<td>Driver's Seat Belt not latched - HSD output</td>
<td>6</td>
<td>LG/VT</td>
<td>0.25</td>
<td>open circuit when the drivers seat belt is latched, battery positive voltage (12V) when the drivers seat belt is not latched</td>
</tr>
<tr>
<td>21</td>
<td>Black 16-cavity</td>
<td>#WS07</td>
<td>Oil Pressure warning signal - LSD digital output</td>
<td>7</td>
<td>VT/GY</td>
<td>0.1</td>
<td>oil pressure signal: Pulse Width Modulation (PWM) between open circuit and battery negative voltage (0V), 100Hz, linear with 0% PWM =0PSI, and 100% PWM=147PSI</td>
</tr>
<tr>
<td>22</td>
<td>Black 16-cavity</td>
<td>#WS33</td>
<td>Voltage gauge - LSD digital output</td>
<td>8</td>
<td>VT</td>
<td>0.5</td>
<td>battery voltage signal: Pulse Width Modulation (PWM) between open circuit and battery negative voltage (0V), 100Hz, linear with 0% PWM =5V, and 100% PWM=18V</td>
</tr>
<tr>
<td>23</td>
<td>Black 16-cavity</td>
<td>*WS18</td>
<td>Front Airbag deployed - HSD output</td>
<td>9</td>
<td>BR/DG</td>
<td>0.5</td>
<td>open circuit when front airbags have not deployed during current key cycle, battery positive voltage (12V) upon airbag deployment during current key cycle</td>
</tr>
<tr>
<td>24</td>
<td>Black 16-cavity</td>
<td>*WS15</td>
<td>Panic Alarm activation - HSD output</td>
<td>10</td>
<td>BR/LB</td>
<td>0.5</td>
<td>open circuit when panic alarm is not active, battery positive voltage (12V) when panic alarm is active</td>
</tr>
<tr>
<td>25</td>
<td>Black 16-cavity</td>
<td>*WS26</td>
<td>Service Brake pedal depressed - HSD output</td>
<td>11</td>
<td>DG/OR</td>
<td>0.25</td>
<td>open circuit when the service brake pedal is not pressed, battery positive voltage (12V) when the brake pedal is depressed</td>
</tr>
<tr>
<td>26</td>
<td>Black 16-cavity</td>
<td>*WS34</td>
<td>Power feed, &quot;Accessory&quot; - HSD output</td>
<td>12</td>
<td>PK/GY</td>
<td>0.5</td>
<td>open circuit when key position is in &quot;Off/Run/Start&quot;, battery positive voltage (12V) when key position is in &quot;Accessory&quot;</td>
</tr>
<tr>
<td>#</td>
<td>Connector Identity</td>
<td>Circuit #</td>
<td>Upfitters Signal</td>
<td>Cavity #</td>
<td>Wire Color</td>
<td>Max. Amps</td>
<td>Function</td>
</tr>
<tr>
<td>----</td>
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</tr>
<tr>
<td>27</td>
<td>Black 16-cavity</td>
<td>*W736</td>
<td>Power feed, &quot;Run&quot; - HSD output</td>
<td>13</td>
<td>PK/YL</td>
<td>0.5</td>
<td>open circuit when key position is in &quot;Off/Accessory/Start&quot;, battery positive voltage (12V) when key position is in &quot;Run&quot;</td>
</tr>
<tr>
<td>28</td>
<td>Black 16-cavity</td>
<td>#W538</td>
<td>Fuel level signal - LSD digital output</td>
<td>14</td>
<td>BR/OR</td>
<td>0.1</td>
<td>fuel level signal: Pulse Width Modulation (PWM) between open circuit and battery negative voltage (0V), 100Hz, linear with 0% PWM = empty tank, and 100% PWM = full tank</td>
</tr>
<tr>
<td>29</td>
<td>Black 16-cavity</td>
<td>#W744</td>
<td>engine RPM signal - LSD digital output</td>
<td>15</td>
<td>BR/WT</td>
<td>0.25</td>
<td>engine RPM signal: modulation between open circuit and battery negative voltage (0V), output with 0.2Hz/RPM (12 pulses per minute per 1 RPM) @ 50% duty cycle</td>
</tr>
<tr>
<td>30</td>
<td>Black 16-cavity</td>
<td>#W524</td>
<td>vehicle MPH speed signal, LSD digital output</td>
<td>16</td>
<td>BR/YL</td>
<td>0.1</td>
<td>vehicle speed signal: modulation between open circuit and battery negative voltage (0V), output with 10Hz/MPH (600 pulses per minute per 1 MPH) 50% duty cycle</td>
</tr>
<tr>
<td>31</td>
<td>Brown 16-cavity</td>
<td>#W521</td>
<td>Cluster/Auxiliary lighting dimmer, LSD digital output</td>
<td>1</td>
<td>BR/WT</td>
<td>0.1</td>
<td>using the vehicles instrument cluster dimmer control - will dim auxiliary lighting: PWM between open circuit and battery negative voltage (0V), 100Hz, linear with 0% PWM = zero intensity, and 100% PWM = full intensity</td>
</tr>
<tr>
<td>32</td>
<td>Brown 16-cavity</td>
<td>W722</td>
<td>Door Lock double lock function - &quot;Unlock&quot; all, LSD output</td>
<td>2</td>
<td>DG/TN</td>
<td>0.5</td>
<td>relay driver, mirrors vehicle unlock request with a battery negative voltage (0V) for 500ms Note: only on vehicles built prior to 5/9/2013 the first press of the door &quot;unlock&quot; switch unlocks the vehicle, a second press sends the unlock signal to this circuit; 5/9/2013 and later vehicles will require only one switch press</td>
</tr>
<tr>
<td>33</td>
<td>Brown 16-cavity</td>
<td>W503</td>
<td>Auxiliary upfitter added flashing lights front output, LSD output</td>
<td>3</td>
<td>TN/VT</td>
<td>0.25</td>
<td>relay driver for front auxiliary light(s), open circuit when W500 is &quot;OFF&quot;, flash on/off at 80 flashes per minute (1.333Hz square wave @ 50% duty cycle) when W500 is &quot;ON&quot;</td>
</tr>
<tr>
<td>34</td>
<td>Brown 16-cavity</td>
<td>W505</td>
<td>auxiliary Cargo Lamp switch signal - digital input</td>
<td>4</td>
<td>WT</td>
<td>--</td>
<td>cargo lamp ON/OFF, use N.O. switch to ground to activate a relay via W711, times out after 30 minutes, re-enable by cycling switch</td>
</tr>
<tr>
<td>35</td>
<td>Brown 16-cavity</td>
<td>W501</td>
<td>Wig Wag switch signal rear, digital input</td>
<td>5</td>
<td>BR/VT</td>
<td>--</td>
<td>when grounded actuates Wig Wag vehicle rear stop/tail lamps, 80 flashes per minute (1.3Hz square wave @ 50% duty cycle), also actuates circuit W502</td>
</tr>
<tr>
<td>36</td>
<td>Brown 16-cavity</td>
<td></td>
<td></td>
<td>6</td>
<td>GY</td>
<td>--</td>
<td>this wire is included in the VSIM upfitter harness but is not used</td>
</tr>
<tr>
<td>#</td>
<td>Connector Identity</td>
<td>Circuit #</td>
<td>Upfitters Signal</td>
<td>Cavity</td>
<td>Wire Color</td>
<td>Max. Amps</td>
<td>Function</td>
</tr>
<tr>
<td>----</td>
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</tr>
</tbody>
</table>
| 36 | Brown 16-cavity    | W708      | PTO pressure switch - digital input | 8      | OR/BR      | --        | MANDATORY CIRCUIT FOR PTO USAGE 
When grounded via PTO pressure switch, provides feedback to the vehicle that the PTO has pressure; controls PTO actuation and vehicles dash PTO switch LED illumination status. Note: Only on vehicles built prior to 5/9/2013 the first press of the door "lock" switch locks the vehicle, a second press sends the lock signal to this circuit; 5/9/2013 and later vehicles will require only one switch press. |
<p>| 37 | Brown 16-cavity    | W721      | Door Lock double lock function - &quot;Lock&quot; all, LSD output | 9      | LG/BN      | 0.5       | relay driver, mirrors vehicle lock request with a battery negative voltage (0V) for 500ms. |
| 38 | Brown 16-cavity    | W502      | Auxiliary upfitter added flashing lights rear output, LSD output | 10     | TN/BR      | 0.25      | relay driver for rear auxiliary light(s), open circuit when W501 is &quot;OFF&quot;, flash on/off at 80 flashes per minute (1.333Hz square wave @ 50% duty cycle) when W501 is &quot;ON&quot;. |
| 39 | Brown 16-cavity    | W725      | Park Brake applied - LSD output | 11     | DG/WT      | 0.5       | relay driver, open circuit when park brake not set, battery negative voltage (0V) when park brake set. |
| 40 | Brown 16-cavity    | W500      | Wig Wag switch signal front lights, digital input | 12     | BR/OR      | --        | when grounded actuates Wig Wag vehicles front high beams, 80 flashes per minute (1.3Hz square wave @ 50% duty cycle), also actuates circuit W503. |
| 41 | Brown 16-cavity    | W537      | Panic Alarm mute switch signal - digital input | 13     | BR/OR      | --        | when grounded mutes the vehicle horns during &quot; Panic Alarm&quot; active (via vehicles CAN messaging). |
| 42 | Brown 16-cavity    | W535      | Horn switch mute - digital input | 14     | BR/YY      | --        | when grounded mutes the vehicle horns (via vehicles CAN messaging). |
| 43 | Brown 16-cavity    | W709      | Ground - ground return | 16     | BK         | --        | a source for negative battery voltage (0V) for use on VSIM switched digital inputs only. |
| 44 | Green 15-cavity    | W544      | Split Shaft PTO - digital input | 2      | GY         | --        | when grounded signals the controller it's OK to initiate split shaft PTO. |
| 45 | Green 15-cavity    | 3         | this wire is included in the VSIM upfitter harness but is not used. |
| 45 | Green 15-cavity    | 4         | this wire is included in the VSIM upfitter harness but is not used. |</p>
<table>
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<tr>
<th>#</th>
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<th>Upfitters Signal</th>
<th>Cavity #</th>
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<th>Max. Amps</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>46</td>
<td>Green 16-cavity</td>
<td>W541</td>
<td>PTO idle speed 1 - digital input</td>
<td>5</td>
<td>GY/OR</td>
<td>--</td>
<td>NOTE: vehicle must have been built with PTO option sales code LBN or LBV for the cluster to have the necessary programming software for this feature. When grounded sets the PTO Remote 1 RPM. (Set the desired RPM for this circuit by using the instrument cluster programming screen, select: PTO/Remote/RPM Preset 1 - then set the desired RPM), speed 1 trumps F425 @ 900 RPM and speeds 2 &amp; 3; RPM up/down ramp rate is 200 RPM/sec.</td>
</tr>
<tr>
<td>47</td>
<td>Green 16-cavity</td>
<td>W543</td>
<td>PTO idle speed 3 - digital input</td>
<td>6</td>
<td>GY/YL</td>
<td>--</td>
<td>NOTE: vehicle must have been built with PTO option sales code LBN or LBV for the cluster to have the necessary programming software for this feature. When grounded sets the PTO Remote 3 RPM. (Set the desired RPM for this circuit by using the instrument cluster programming screen, select: PTO/Remote/RPM Preset 3 - then set the desired RPM), speed 3 trumps F425 @ 300 RPM; is trumpped by speeds 1 or 2; RPM up/down ramp rate is 200 RPM/sec.</td>
</tr>
<tr>
<td>48</td>
<td>Green 16-cavity</td>
<td>*W742</td>
<td>Throttle Valve actuator signal - HSD output</td>
<td>7</td>
<td>BR/OR</td>
<td>0.5</td>
<td>open circuit when Electronic Throttle indicator is not illuminated, battery positive voltage (12V) when Electronic Throttle indicator is illuminated</td>
</tr>
<tr>
<td>49</td>
<td>Green 16-cavity</td>
<td>W546</td>
<td>Separated rear tail lighting - digital input</td>
<td>12</td>
<td>TN/GY</td>
<td>--</td>
<td>this wire is included in the VSIM upfitter harness but is not used when grounded rear stop/turn lamps become turn only (via CAN message)</td>
</tr>
<tr>
<td>50</td>
<td>Green 16-cavity</td>
<td>W542</td>
<td>PTO idle speed 2 - digital input</td>
<td>13</td>
<td>GY/BR</td>
<td>--</td>
<td>NOTE: vehicle must have been built with PTO option sales code LBN or LBV for the cluster to have the necessary programming software for this feature. When grounded sets the PTO Remote 2 RPM. (Set the desired RPM for this circuit by using the instrument cluster programming screen, select: PTO/Remote/RPM Preset 2 - then set the desired RPM), speed 2 trumps F425 @ 900 RPM, is trumpped by speed 1 but trumps speed 3; RPM up/down ramp rate is 200 RPM/sec.</td>
</tr>
<tr>
<td>51</td>
<td>Green 16-cavity</td>
<td>*W522</td>
<td>Engine running Hour Meter - HSD output</td>
<td>14</td>
<td>BR/VT</td>
<td>0.5</td>
<td>open circuit when engine RPM &lt; 450, battery positive voltage (12V) when RPM &gt; 450</td>
</tr>
<tr>
<td>52</td>
<td>Green 16-cavity</td>
<td>*W699</td>
<td>Park Lamp on - HSD output</td>
<td>15</td>
<td>WT/LG</td>
<td>0.5</td>
<td>open circuit when park lamps are not on, battery positive voltage (12V) when park lamps are on</td>
</tr>
</tbody>
</table>

1. LSD=low side driver  HSD=high side driver
2. Within a bundle one wire of two duplicate colors will be labeled with its circuit number, the non-labeled wire will be the other circuit number with that color
3. **readable CAN messages are delineated on the separate CAN spreadsheet; "DBC" files available via request to the rambbg@chrysler.com.
<table>
<thead>
<tr>
<th></th>
<th>Circuit No.</th>
<th>Description</th>
<th>Qty</th>
<th>Color/Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>*W504</td>
<td>Transmission out of &quot;park&quot; - HSD output</td>
<td>3</td>
<td>BR</td>
</tr>
<tr>
<td>5</td>
<td>*W540</td>
<td>MIL lamp on - HSD output</td>
<td>6</td>
<td>BR/DG</td>
</tr>
<tr>
<td>16</td>
<td>*W505</td>
<td>Howler Siren disable - HSD output</td>
<td>1</td>
<td>LG</td>
</tr>
<tr>
<td>24</td>
<td>*W518</td>
<td>Front Airbag deployed - HSD output</td>
<td>9</td>
<td>BR/DG</td>
</tr>
<tr>
<td>17</td>
<td>*W513</td>
<td>Horn activation - HSD output</td>
<td>2</td>
<td>BR/GY</td>
</tr>
<tr>
<td>25</td>
<td>*W515</td>
<td>Panic Alarm activation - HSD output</td>
<td>10</td>
<td>BR/LB</td>
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<tr>
<td>18</td>
<td>*W517</td>
<td>Side Airbag deployed - HSD output</td>
<td>3</td>
<td>BR/LG</td>
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<tr>
<td>26</td>
<td>*W728</td>
<td>Service Brake pedal depressed - HSD output</td>
<td>11</td>
<td>DG/OR</td>
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<tr>
<td>19</td>
<td>*W662</td>
<td>Tire Pressure Monitor active - HSD output (applicable only to RAM 2500 under 10,000 GVW)</td>
<td>4</td>
<td>VT/YL</td>
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<tr>
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<td>*W734</td>
<td>Power feed, &quot;Accessory&quot; - HSD output</td>
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<td>PK/GY</td>
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<td>Power feed, &quot;Off&quot; - HSD output</td>
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<td>28</td>
<td>*W736</td>
<td>Power feed, &quot;Run&quot; - HSD output</td>
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<td>PK/YL</td>
</tr>
<tr>
<td>21</td>
<td>*W710</td>
<td>Driver's Seat Belt not latched - HSD output</td>
<td>6</td>
<td>LG/VT</td>
</tr>
<tr>
<td>53</td>
<td>*W522</td>
<td>Engine running Hour Meter - HSD output</td>
<td>14</td>
<td>BR/VT</td>
</tr>
<tr>
<td>50</td>
<td>*W742</td>
<td>Throttle Valve actuator signal - HSD output</td>
<td>7</td>
<td>BR/OR</td>
</tr>
<tr>
<td>54</td>
<td>*W699</td>
<td>Park Lamp on - HSD output</td>
<td>15</td>
<td>WT/LG</td>
</tr>
</tbody>
</table>
“Pairs” Circuit Example

If either circuit of a “pair” is used, one of the circuit diagrams below must be used.

Circuit W504

Circuit W540

Circuit W504

Circuit W540

Load

Load

1k Ω, ≥0.5W

1k Ω, ≥0.5W

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<th>Color</th>
<th>Cavity</th>
<th>Part Number</th>
<th>Description</th>
<th>Wire Code</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Brown</td>
<td>32</td>
<td>#W521</td>
<td>Cluster/Auxiliary lighting dimmer, LSD digital output</td>
<td>1 BR/WT</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
<tr>
<td>Black</td>
<td>31</td>
<td>#W524</td>
<td>vehicle MPH speed signal, LSD digital output</td>
<td>16 BR/YL</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
<tr>
<td>Black</td>
<td>29</td>
<td>#W538</td>
<td>Fuel level signal LSD digital output</td>
<td>14 BR/OR</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
<tr>
<td>Black</td>
<td>22</td>
<td>#W707</td>
<td>Oil Pressure warning signal - LSD digital output</td>
<td>7 VT/GY</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
<tr>
<td>Black</td>
<td>23</td>
<td>#W733</td>
<td>Voltage gauge - LSD digital output</td>
<td>8 VT</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
<tr>
<td>Black</td>
<td>30</td>
<td>#W744</td>
<td>engine RPM signal - LSD digital output</td>
<td>15 BR/WT</td>
<td>This circuit requires a dedicated 1k-2.2kΩ, 20.5W pull-up resistor connected from this circuit's wire to a +12V source. See the &quot;Pull-Up&quot; Resistor Circuits diagram. For Chassis cabs, +12V can be obtained from splicing into circuit F665 at location &quot;D&quot; as shown in the schematic within the UPGFITTER WIRING INTERFACE INSTRUCTIONS chapter. For HD Pick-Ups, +12V can be obtained at the wiring to the cigarette lighter or another +12V source.</td>
</tr>
</tbody>
</table>

*Each circuit requiring a "Pull-Up" resistor must use a resistor dedicated only to one circuit.
“Pull - Up” Resistor Circuits

Circuit W521

Circuit W524

Circuit W538

Circuit W707

Circuit W733

Circuit W744

Load = upfitter module input

* A separate “Pull-Up” resistor must be used for each individual circuit.
<table>
<thead>
<tr>
<th>#</th>
<th>Name</th>
<th>Unit</th>
<th>Comment</th>
<th>FlexKomComment</th>
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<td>Counter for module wakeup states during sleep</td>
<td>Mode 2 of NM_Ud_Srv</td>
<td>Wakeup_VSIM</td>
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<td>3</td>
<td>VIN_MSG</td>
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<td>VIN_Information</td>
<td>VIN_INFO</td>
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