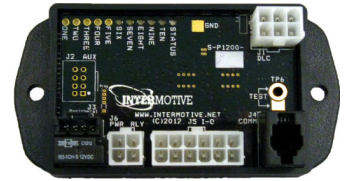


## Dump Truck Safety System

**B-DTS507-A 2017-2019 Ford F-250 - F-550**  
**A-DTS507-A 2011 - 2016 Ford F-250 - F-550**  
**A-DTS507-A 2016 - 2019 F-650 - F-750**  
**A-DTS805-A-P2G 2011 - 2015 F-650 - F-750**  
**A-DTS805-A-P2G All J1939 Medium Duty Vehicles**



### Introduction

The Dump Truck Safety (DTS) System provides an audible and visual warning when the dump body is raised, the key is in run and the vehicle is moving above a configured speed. The system provides additional dump gate and PTO active warnings.

### Installation Instructions

**Disconnect vehicle battery before proceeding with installation.**



#### **WARNING**

Disconnect the battery to prevent setting a check engine light.

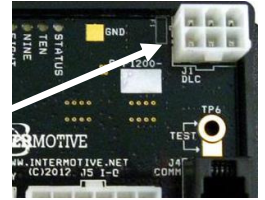
It is the installer's responsibility to route and secure all wiring harnesses where they cannot be damaged by sharp objects, mechanical moving parts and high heat sources. Failure to do so could result in damage to the system or vehicle and create possible safety concerns for the operator and passengers.

### Dump Truck Safety Module

Remove the lower dash panel below the steering column and find a suitable location to mount the module. Do not mount the module until all wire harnesses are routed and secure. The last step of the installation is to mount the module. Mount the module in an area away from any external heat sources (engine heat, heater ducts, etc.), Route the harnesses such that the tilt steering column does not contact them in the full down position. When installing the harnesses, leave several inches of take-out in order to remove the module if necessary.

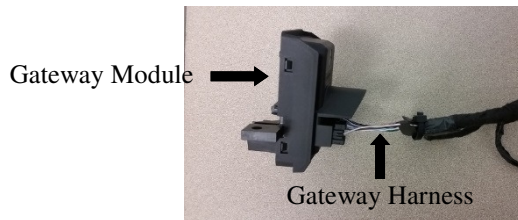
## Data Link Harness Installation (A-DTS507-A)

1. Locate the vehicle OBDII Data Link Connector. It will be mounted below the lower left dash panel.
2. Remove the mounting screws for the OBDII connector. Plug the Red connector from the DTSXXX Data Link Harness into the vehicle's OBDII connector. Ensure the connection is fully seated and secure with the supplied wire tie.
3. Mount the Black pass through connector from the DTSXXX Data Link Harness in the former location of the vehicle's OBDII connector.
4. Secure the DTSXXX Data Link harness so that it does not hang below the lower dash panel.
5. Plug the free end of the Data Link harness into the mating 6-pin connector on the DTSXXX module.



## Gateway Plug and Play Harness (B-DTS507-A)

1. Locate the vehicles Gateway Module (C2431). It will be mounted below the lower left dash panel.
2. Remove the harness behind the Gateway module by pressing the locking tab and pulling outward.
3. Plug the Female side of the InterMotive Gateway Harness into the back of the Gateway module. Ensure the connection is fully seated and secured by the locking tab.
4. Plug the Male side of the InterMotive Data Link Harness into the Gateway harness.
5. Secure the DTSXXX Gateway harness so that it does not hang below the lower dash panel.



InterMotive Plug and Play Gateway Harness

## J1939 Data Link Harness (A-DTS805-A-P2G)

- Locate the vehicle's J1939 Connector. It will be mounted below the lower left dash panel.
- Remove the J1939 Connector from the mounting bracket.
- Connect the DTSXXX Data Link harness J1939 female connector to the vehicle's J1939 connector.
- Mount the DTSXXX Data Link harness J1939 male connector to the vehicle's J1939 connector mounting bracket.
- Plug the free end of the Data Link harness into the mating 6-pin connector on the DTSXXX module.
- Secure the DTSXXX Data Link harness so that it does not hang below the lower dash panel.

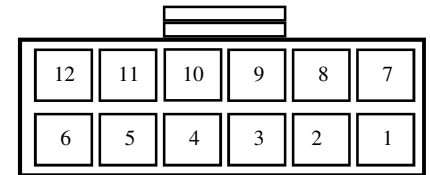


## 12-pin Input Output connector pin out definition

- Pin #1 - Ignition Input (+12V)
- Pin #2 - Dump Gate Input (Ground)
- Pin #3 - PTO2 Input (Ground)
- Pin #4 - Indicator Light
- Pin #5 - Not Used
- Pin #6 - Not Used
- Pin #7 - Not Used
- Pin #8 - Dump Body Input (Ground)
- Pin #9 - Disable Input (Analog)
- Pin #10 - Beeper
- Pin #11 - PTO1 Input (+12V)
- Pin #12 - Not Used



**12 Pin IO  
Connector**



Back of Connector

### Indicator Light

An LED is provided in the kit which illuminates when the dump body is not stowed, the dump gate is open, or a PTO input is active and the key is in the run position.

1. Drill a 19/32" hole in the desired mounting location.
2. Route the LED harness through the hole and mount the LED in the hole.
3. Slide the LED's lock nut onto the harness and snug it down onto the back of the LED.
4. Connect the Black wire to chassis ground.



### Beeper

Choose an appropriate location, usually under the dash, to mount the warning beeper. The beeper will turn on for dump body and dump gate warnings.

1. If a hole needs to be drilled, the hole size is 1-1/8 inch.
2. Connect the Black wire to chassis ground.



### Dump Body Sensor Input

Pin #8 (Brown-White Wire) of the 12 Pin Connector is the dump body sensor input. The dump body sensor input is active low. An installer supplied sensor should supply a ground to this input when the dump body is in the lowered position. If this input is in the inactive state the warning beeper and indicator light will be triggered.

## **Dump Gate Input**

Pin #2 (Purple-White Wire) of the 12 Pin Connector is an optional dump gate input. Connect this input to a ground switch that activates when the dump gate is open. This will trigger an alarm similar to the dump body alarm. The beeper will sound for five seconds after the key is turned to run and the indicator light will flash two times quickly every 1/2 second (2Hz). When the vehicle speed threshold is reached the beeper will automatically resume. The dump body warning is prioritized over the dump gate warning.

## **PTO Inputs**

Pins #3 (Blue-White Wire) & #11 (Green-White Wire) of the 12 Pin Connector are PTO active inputs. When either of these inputs are active and the key is in the run position the indicator light will turn on solid. The dump body and dump gate warnings are prioritized over PTO warnings. Pin #11 PTO1 input is active when +12V is applied and pin #3 PTO2 input is active when ground is applied.

## **Disable Input**

### **IMPORTANT: THE DISABLE INPUT SHOULD ONLY BE USED ON DUMP TRAILER APPLICATIONS**

Pin #9 (Gray-White Wire) of the 12 Pin Connector is the disable input. This input will prevent the DTS system from warning on dump trailer applications when there is no trailer connected to the fifth wheel hitch. A normally closed switch that opens when a trailer is connected must be provided by the installer. One possible solution is a pressure sensor installed in the air line to the trailer brakes. A blunt cut ground lead with a series 27k $\Omega$  resistor is provided in the kit. This lead should be attached to the normally closed contact of the switch and the eyelet secured to ground. Connect the common of the switch to J5 pin 9 gray/white wire.

## **Ignition Input (+12V)**

Pin #1 (Red-White Wire) of the 12 Pin Connector is an optional ignition input. On J1939 Medium Duty vehicles the key position is not available on the network. Ignition is inferred from other vehicle data. In some cases this may cause the dump body alarm to trigger when the key is not yet in run or has transitioned out of the run position. If this input is connected to a Hot in Run signal the DTS module will ignore vehicle network data and use this input for key position data.

## **DTS Mounting Location**

Ensure all the harnesses are properly connected and routed, and are not hanging below the dash area. Mount the module as described on page one and secure using two screws or double sided tape.

## **Reconnect the vehicle battery**

## Diagnostics

System diagnostics are provided through the on-board LED's and test button. The system has three diagnostic pages. The page to be displayed is selected by pressing and releasing the TEST button (you must have the ignition on - in normal operating mode). To select page 3 starting from normal operating mode, press and release the test button three times. The amber STATUS LED will blink the page number.

| LED    | DIAG OFF | DIAG PAGE 1:       | DIAG PAGE 2:<br>VSS | *DIAG PAGE 3:<br>VSS Threshold |
|--------|----------|--------------------|---------------------|--------------------------------|
| LED1   | OFF      | CAN1               | 2 KPH               | 2 KPH                          |
| LED2   | OFF      | DUMP BODY<br>INPUT | 4 KPH               | 4 KPH                          |
| LED3   | OFF      | -                  | 6 KPH               | 6 KPH                          |
| LED4   | OFF      | DUMP GATE<br>INPUT | 8 KPH               | 8 KPH                          |
| LED5   | OFF      | PTO INPUT          | 10 KPH              | 10 KPH                         |
| LED6   | OFF      | IGN INPUT          | 12 KPH              | 12 KPH                         |
| LED7   | OFF      | LIGHT OUTPUT       | 14 KPH              | -                              |
| LED8   | OFF      | BUZZER OUTPUT      | 16 KPH              | -                              |
| LED9   | OFF      | CAN KEY            | 18 KPH              | -                              |
| LED10  | OFF      | FAULT              | 20 KPH              | -                              |
| STATUS | OFF      | FLASH STATUS PAGE  |                     |                                |

**\*If no LED's are lit on page 3 then the vehicle speed threshold is zero**

The system allows the operator/installer to configure the vehicle speed threshold for the audible and visual warning through on board diagnostics. The speed threshold configuration mode is entered by pressing and holding the test button on the module for 3 seconds while on diagnostic Page 3. When the configuration mode is active, LED's 1-10 will be ON except for the LED that indicates the current speed threshold. See below for LED associations. Each time the Test Button is pressed, the kph will increase 2 kph. If LED's 1-10 are all ON, then the speed threshold is zero or disabled.

| LED# | LED1  | LED2  | LED3  | LED4  | LED5   | LED6   | LED7 | LED8 | LED9 | LED10 |
|------|-------|-------|-------|-------|--------|--------|------|------|------|-------|
| VSS  | 2 kph | 4 kph | 6 kph | 8 kph | 10 kph | 12 kph | -    | -    | -    | -     |

## Post Installation / Check List

**The following checks must be made after installation of the system. If any of the checks do not pass, do not deliver the vehicle. Recheck all connections as per the installation instructions.**

**Test 1.** With the dump body raised, turn the key to the run position and verify that the buzzer turns on and the indicator light flashes. If the vehicle speed threshold is not zero, the buzzer will turn off after five seconds. The buzzer automatically resumes if the vehicle threshold is exceeded.

**Test 2.** Lower the dump body and confirm the indicator light stops flashing.

**Test 3.** If a dump gate switch is installed, open the dump gate and verify the indicator light flashes twice quickly every half second. The buzzer will turn on for five seconds after the key is turned to run. The buzzer automatically resumes when the vehicle speed threshold is exceeded.

**Test 4.** Close the dump gate and confirm the indicator light stops flashing.

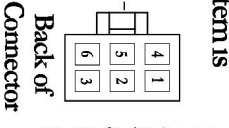
**Test 5.** If a PTO signal is connected to the DTS system, activate the input and verify the indicator light turns on solid.

**Test 6.** If a disable switch is installed, activate the switch and verify the DTS system does not activate the buzzer or indicator light.

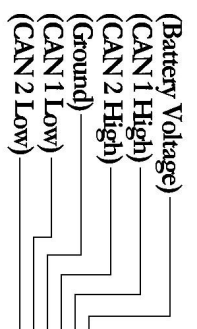
**Test 7.** Enter diagnostic page 2. This diagnostic page displays the vehicle speed. Each LED has a value of 2KPH. Drive the vehicle and verify the LEDs track the vehicle speed.

**DO NOT PUT VEHICLE IN SERVICE IF IT DOES NOT PASS ALL OF THE ABOVE TESTS  
Contact InterMotive at 530-823-1048 for technical assistance.**

\* Wire colors may differ depending on what vehicle the system is installed on.

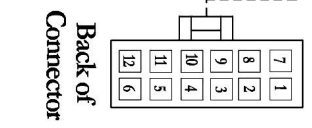
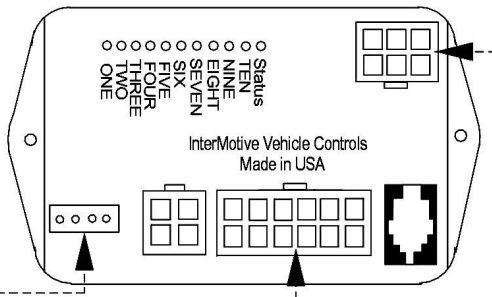
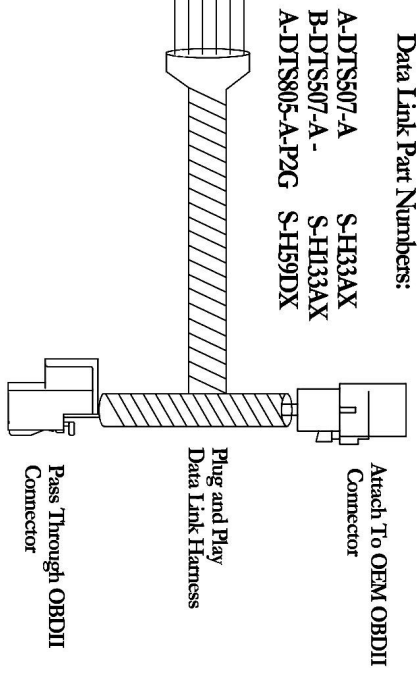


- 1 RED
- 2 YELLOW
- 3 GREEN
- 4 GRAY
- 5 BROWN
- 6 BLUE

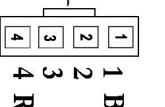
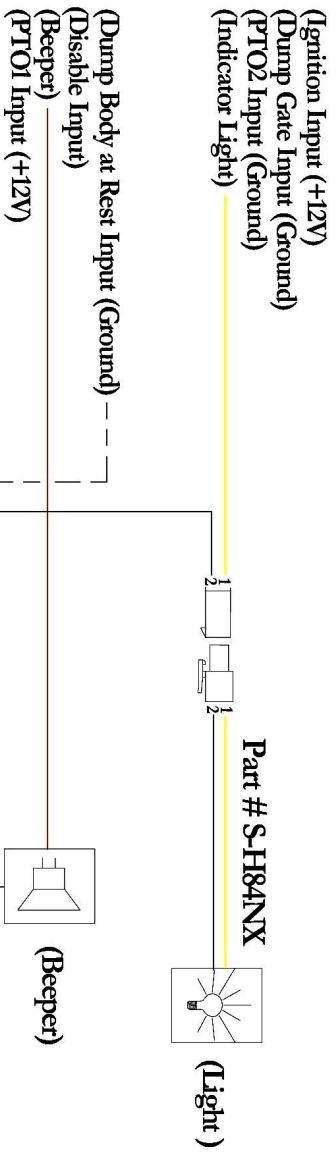


Data Link Part Numbers:

- A-DTSS07-A S-H33AX
- B-DTSS07-A S-H133AX
- A-DTSS805-A-P2G S-H59DX

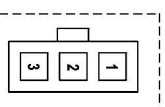
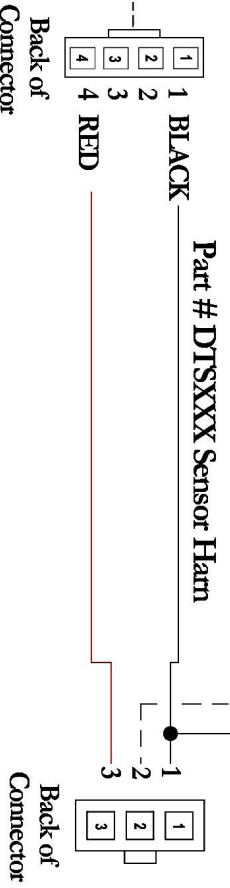


- Part # S-H60BX**
- 1 RED / WHITE (Ignition Input (+12V))
  - 2 PURPLE / WHITE (Dump Gate Input (Ground))
  - 3 BLUE / WHITE (PTO2 Input (Ground))
  - 4 YELLOW (Indicator Light)
  - 5 OPEN
  - 6 OPEN
  - 7 OPEN
  - 8 BROWN / WHITE (Dump Body at Rest Input (Ground))
  - 9 GRAY / WHITE (Disable Input (Beeper))
  - 10 ORANGE (PTO1 Input (+12V))
  - 11 GREEN / WHITE
  - 12 OPEN



- 1 BLACK
- 2
- 3
- 4 RED

**Part # DTSSXXX Sensor Harness**



- User Supplied Items**
- 3v Molex Minifit - 39-01-4030
  - 18-24 avg. Term - 39000038
  - 16 avg. Term - 39000077

**DTSSXXX**  
 A-DTSS07-A S-M1211-132  
 B-DTSS07-A S-M1211-132  
 A-DTSS805-A S-M1211-131

**Submit product registration at [www.intermotive.net](http://www.intermotive.net)**  
 If the DTSSXXX fails any step in the Post Installation Test, review the installation instructions and check all connections.  
 If necessary, call InterMotive Technical Support at (530) 823-1048.