



## Technical Service Bulletin

**SUBJECT:** Procedure to upgrade Ford E Series to new rotary switch TIG31066 and bracket design 2.

**Products Affected:** All Ford E Series cutaway chassis used for shuttle bus

**Effective Date:** 9feb15

Telma is committed to a philosophy of continuous improvement as a way of enhancing the end-user's experience with our product.

Refer to service bulletin [TL105091](#) for details about the change from foot switch JC120102 to the new rotary switch [TIG31066](#). Telma introduced a new control module (TRCM) on E Series in March of 2011. The new rotary foot switch must have this module installed. Below are procedures to upgrade to the new rotary foot switch on Ford F550 shuttle bus chassis for both older vehicles without TRCM as well as newer vehicles already equipped with TRCM.

There are four possible configurations you may find with Ford E Series.

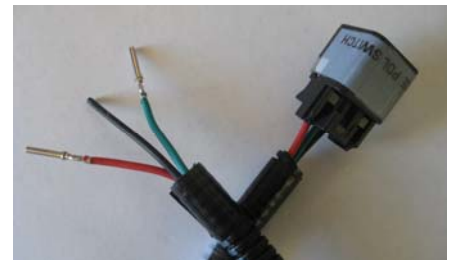
1. E series with TRCM 2011 and newer
2. E series with speed switch 2008-2011
3. E series with speed switch 2007 and older
4. E Series with rotary switch bracket design 1

The following information has details of how to upgrade to the new rotary switch for each of these possible configurations.

**3. Ford E Series shuttle bus chassis equipped with TRCM from March 2011**  
**Order kit number TIK10685**

Description	PART NUMBER	Qty
E Series rotary switch bracket design 2	TIB01041	1
Rotary switch harness for design 2	TID31004	1
M4-0.7 x 20mm DIN 933 Class 8.8 Zinc Cap Screw	TIF01067	1
M4 DIN 137 Zinc Wave Washer	TIF01068	1
Rotary Foot Switch	TIG31066	1

- 1) Remove foot switch JC120102, the brackets mounted to the pedal, and the bracket that mounts the switch under the dash.
- 2) Unplug the black and gray connectors from the TRCM and remove the orange secondary wedge lock from the end of each connector.
- 3) Plug the green wire of the rotary foot switch harness TID31004 equipped with the Deutsch terminal into position 9 of the black connector until it locks in place. Re-install the orange secondary wedge lock.
- 4) Plug the red wire of the rotary switch harness TID31004 equipped with the Deutsch terminal into position 7 of the gray connector until it locks in place. Re-install the orange secondary wedge lock.
- 5) Remove the two black wires from the old foot switch connector position "C" and splice the black wire of the rotary switch harness to the two black wires.
- 6) Remove the wires in positions 1, 2, 3, 4 of the TRCM gray connector by pulling back the primary lock with a small screwdriver as shown and discard the old foot switch connector and harness.



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- 7) Go to [TL113025 Ford E350-E450 Cutaway Installation Manual for AF50-55 with rotary switch design 2](#) to:
    - a. Install the new brackets and switch as shown in the installation procedure.
    - b. Use the [Telma Desktop Client Software](#) to change transducer set points as specified in the installation manual for use with the new rotary switch. If you have never taken advantage of using the [Telma Desktop Client Software](#) for configuration and diagnosis of the Telma system, you will need to download this free software from our website. If you do not have a 9 pin serial port on your computer you will need to order a usb-to-serial port adapter [TIG01027](#).
    - c. The voltage set points recommended in the installation manual may need to be adjusted.
      - i. Observe the transducer voltage in the diagnostics page when the brake pedal is not being applied. 1<sup>st</sup> stage voltage setting should be above this voltage.
      - ii. Observe the transducer voltage in the diagnostics page with the engine running and the brake pedal pushed with your hand until you begin to feel resistance from the brake pedal. The last Telma stage voltage setting should be below this voltage.
  - 8) Road test the vehicle to verify proper function of the Telma system with the new rotary foot switch.
2. **Model year 2008-2011 Ford E Series with CanBus communication that are equipped with Telma speed switch Order kit number TIK10685, TRCM TIG31062, and cab harness TID31002**
- 1) Remove:
    - a. The foot switch JC120102 and the brackets that mount to the pedal.
    - b. The bracket(s) that mount the speed switch and the old foot switch.
  - 2) Cut the org, blu, yel, brn wires connected to the foot switch plug or unplug the white 6-way connector marked "relay box" if equipped.
  - 3) Cut the following wires:
    - a. The red/wht wire coming from the vehicle ignition + source.
    - b. The blk wire coming from relay box ground.
    - c. The white wire coming from the ABS brake signal connection (if equipped).
    - d. The tan wire coming from the vehicle speed signal connection.
  - 4) Install TRCM, TIG31062 and cab harness TID31002.
  - 5) Plug the white relay box connector of the new TRCM cab harness into the mating connector marked "relay box". If the original harness was not equipped with a white connector labeled "relay box" splice the org, blu, yel, brn wires cut from the old foot switch plug into the org, blu, yel, brn wires of the new TRCM cab harness.
  - 6) Model year 2008 and newer Ford E Series use CanBus communication at the OBD2 connector and the Telma TRCM can read ABS, speed and throttle position information from the OBD2 connector. Remove the OEM OBD2 diagnostics connector from its attachment points under the dash and plug the mating OBD2 connector of the Telma harness into the OEM OBD2 connector. Secure together with a wire tie. Attach the OBD2 connector of the Telma harness to the OEM attaching points where the OEM OBD2 diagnostics connector was installed. There is no need to re-connect the hard wire ABS, speed signal, ignition +, or ground wires that were cut earlier. Refer to wiring diagram [TL114041](#) for final wiring configuration.
  - 7) Go to [TL113025 Ford E350-E450 Cutaway Installation Manual for AF50-55 with rotary switch design 2](#) to:
    - a. Install the new brackets and switch as shown in the installation procedure mentioned above.
    - b. Use the [Telma Desktop Client Software](#) to change transducer set points as specified in the installation manual for use with the new rotary switch. If you have never taken advantage of using the [Telma Desktop Client Software](#) for configuration and diagnosis of the Telma system, you will need to download this free software from our website. If you do not have a 9 pin serial port on your computer you will need to order a usb-to-serial port adapter [TIG01027](#).
    - c. The voltage set points recommended in the installation manual may need to be adjusted.
      - i. Observe the transducer voltage in the diagnostics page when the brake pedal is not being applied. 1<sup>st</sup> stage voltage setting should be above this voltage.
      - ii. Observe the transducer voltage in the diagnostics page with the engine running and the brake pedal pushed with your hand until you begin to feel resistance from the brake pedal. The last Telma stage voltage setting should be below this voltage.
  - 8) Road test the vehicle to verify proper function of the Telma system with the new rotary foot switch.



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**3. Model year 2007 and older Ford E Series that are equipped with Telma speed switch without CanBus communication**  
**Order kit number TIK10685, TRCM, TIG31062, and cab harness, TID31002**

- 1) Remove:
    - a. The foot switch JC120102 and the brackets that mount to the pedal.
    - b. The bracket(s) that mount the speed switch and the old foot switch.
  - 2) Cut the following wires:
    - a. The red/wht wire coming from the vehicle ignition + source.
    - b. The blk wire coming from relay box ground.
    - c. The blu/wht wire coming from the vehicle speed signal connection.
    - d. The org, blu, yel, brn wires connected to the foot switch plug
  - 3) Install TRCM, TIG31062 and cab harness TID31002 using the new mounting bracket TIB01037.
  - 4) Splice the org, blu, yel, brn wires cut from the old foot switch plug into the org, blu, yel, brn wires of the new TRCM cab harness or use male blade connectors and plug into the white 6-way connector.
  - 5) In the new TRCM harness at the OBD2 pass through, cut the red/wht, blk, red, and pink wires from the OBD2 pass through connectors.
  - 6) Connect the red/wht wire of the new TRCM cab harness to the red/wht ignition + source
  - 7) Connect the blk wire of the new TRCM cab harness to a good ground under the dash. Do not connect to the relay box ground wire.
  - 8) Remove the red wire from the TRCM blk connector position 2 by removing the orange secondary lock and pulling back the primary lock holding the pin in place (see section1) and install this wire in the gray connector position 5 and splice to the vehicle speed signal wire (formerly connected to the blu/wht Telma wire in the old harness).
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- 9) Go to [TL113025 Ford E350-E450 Cutaway Installation Manual for AF50-55 with rotary switch design 2](#) to:
    - a. Install the new brackets and switch as shown in the installation procedure mentioned above.
    - b. Use the [Telma Desktop Client Software](#) to configure the TRCM as specified in the installation manual, except that CAN should be set to "off" and speed set to approximately 15Hz. If you have never taken advantage of using the [Telma Desktop Client Software](#) for configuration and diagnosis of the Telma system, you will need to download this free software from our website. If you do not have a 9 pin serial port on your computer you will need to order a usb-to-serial port adapter [TIG01027](#).
    - c. The voltage setpoints recommended in the installation manual may need to be adjusted.
      - i. Observe the transducer voltage in the diagnostics page when the brake pedal is not being applied. 1<sup>st</sup> stage voltage setting should be above this voltage.
      - ii. Observe the transducer voltage in the diagnostics page with the engine running and the brake pedal pushed with your hand until you begin to feel resistance from the brake pedal. The last Telma stage voltage setting should be below this voltage.
  - 10) Road test the vehicle to verify proper function of the Telma system with the new rotary foot switch.

**4. Ford E Series with rotary switch bracket design 1**

If equipped with rotary switch bracket design 1 and it is desired to upgrade to bracket design 2, order bracket TIB01041 and rotary switch harness TID31004. TIK10685 is not needed. Replace the existing rotary switch harness as follows

- 1) Remove the red/wht wire of the existing harness from position 7 of the TRCM gray connector and install the red wire of the new harness in its place.
- 2) Remove the gray wire of the existing harness from position 9 of the black connector and install the green wire of the new harness in its place.
- 3) Cut the black wire going to the existing switch harness and discard the existing switch harness. Splice the black wire of the new switch harness to black wire that was cut.