Purpose
The purpose of this service bulletin is to inform you of updates and corrections to the 2007 Sportster Electrical Diagnostic Manual (Part No. 99495-07).

Motorcycles Affected
All 2007 Sportster models.

Required Dealer Action

NOTES

● Figure, table and page number references in the following steps are for the English version of the 2007 Sportster Electrical Diagnostic Manual (Part No. 99495-07). For translated versions, figure, table and page numbers listed in this bulletin may differ.

● For the figures, tables and flow charts in this bulletin, you may wish to photocopy each page of this bulletin separately, cut out the items and paste them into the appropriate locations in your Electrical Diagnostic Manual.

Make the following corrections/changes to your 2007 Sportster Electrical Diagnostic Manual (Part No. 99495-07):

1. See Table 1-1, page 1-1. Change third item in left column from "Handlebar start switch" to "Handlebar start switch, clutch switch or neutral switch".

2. See Table 1-4, page 1-20. Add a row in the table and insert the following: under "ITEM", insert "ECM". Under "DRAW IN MILLIAMPS", insert "1.0".

3. See 3.7 SERVICE/EMERGENCY FUNCTIONS on page 3-14. Step 3 under TRANSPORT MODE should read as follows: "With an assigned fob within range, turn the ignition/headlamp key switch from IGNITION to ACCESS."

4. Rename "Turn Signal Error 2A" on page 3-41 to read, "Turn Signal Error 3A".

5. Replace page 3-42 (Turn Signal Error 3A (Part 1 of 4)) with "Turn Signal Error 2A" and its flow chart on page 5 of this document.

6. Replace page 3-43 (Turn Signal Error 3A (Part 2 of 4)) with "Turn Signal Error 2B (Part 1 of 3) through (Part 3 of 3)" and their flow charts on pages 6 through 8 of this document.

7. Rename "Turn Signal Error 3A (Part 3 of 4)" on page 3-44 to read, "Turn Signal Error 2C".

8. Rename "Turn Signal Error 3A (Part 4 of 4)" on page 3-45 to read, "Turn Signal Error 2D".

9. Replace page 3-47 (Turn Signal Error 5A) with "Turn Signal Error 5A" and its flow chart on page 9 of this document.

10. Replace page 3-48 (Turn Signal Error 6A) with "Turn Signal Error 6A" and its flow chart on page 10 of this document.

11. Replace Table 4-22 on page 4-69 with the table below:

<table>
<thead>
<tr>
<th>TEMP C</th>
<th>RESISTANCE</th>
<th>COLD VOLTAGE</th>
<th>HOT VOLTAGE</th>
</tr>
</thead>
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<td>-20</td>
<td>98936</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td>-10</td>
<td>56102</td>
<td>4.8</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>32957</td>
<td>4.5</td>
<td></td>
</tr>
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<td>10</td>
<td>20000</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>12511</td>
<td>3.9</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>10000</td>
<td>3.6</td>
<td></td>
</tr>
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<td>30</td>
<td>8045</td>
<td>3.4</td>
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<td>40</td>
<td>5304</td>
<td>2.9</td>
<td></td>
</tr>
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<td>3577</td>
<td>2.4</td>
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<tr>
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<td>2470</td>
<td>1.9</td>
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<td>1739</td>
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<td>1246</td>
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<td>907.7</td>
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</tr>
<tr>
<td>100</td>
<td>671.2</td>
<td>3.4</td>
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</tr>
</tbody>
</table>

Scaling changes between 80°C and 90°C.

IMPORTANT NOTE
In the interest of preserving customer safety and satisfaction, always check for outstanding recalls whenever any motorcycle is brought into your dealership for either maintenance or service.

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NOTE

Several running changes were made to the electrical system of 2007 XL models produced on or after 1/31/2007 (see service bulletin M-1203 for a detailed list of changes). One of the changes moved the Engine Temperature (ET) sensor connector [90] from the engine sub-harness to the main harness. The changes listed in the next step apply only to vehicles produced on or after 1/31/2007.

12. Make the following changes on page 4-70:
   - Replace Figure 4-40 with the figure below.
   - Delete the last row ([145] Engine Harness) from Table 4-23.

13. See Test 4.19 (Part 1 of 2) on page 4-71. Correct the last sentence in the top flow chart box to read, “Resistance between 8.0K and 20K ohms?”

14. See Test 4.19 (Part 2 of 2) on page 4-72. Correct the last sentence in the next to bottom flow chart box on the left side to read, “Again, with sensor at room temperature (60-90˚F or 16-32˚C), is resistance between 8.0K and 20K ohms?”

Figure 4-40. ET Sensor Circuit
NOTE
The change listed in the next step applies only to vehicles produced on or after 1/31/2007.

15. Change the Engine Management schematic on page 5-41 to reflect the change shown in Figure 1 below.

16. Make the following changes to the schematics in chapter 5:

- Change the description of the schematic in the bottom right corner of page 5-47 from “REAR LIGHTING” to “REAR LIGHTING, ALL EXCEPT XL 1200N”.
- Add the schematic in Figure 2 below to the schematics on page 5-47.
- Change the description of the schematic in the bottom right corner of page 5-53 from “REAR TURN SIGNALS” to “REAR TURN SIGNALS, ALL EXCEPT XL 1200N”.
- Add the schematic in Figure 3 below to the schematics on page 5-53.
17. Replace Figure 2-17 on page 2-22 with Figure 2-17 below.

![Figure 2-17: Fuel Sender Circuit](image)

**Figure 2-17: Fuel Sender Circuit**
Turn Signal Error 2A
WILL NOT FLASH, 4-WAY FLASHERS INOPERABLE: DTC: B1121, B1122, B1141

Turn ignition switch ON. Are turn signal lamps on continuously?

YES

Check for voltage on breakout box cavity 5 (gray) (left turn signals) or cavity 6 (gray) (right turn signals) with TSM disconnected from breakout box. Is battery voltage present?

YES

Unplug connectors [18] and [19] at tail lamp and turn signal converter module. Check for continuity between cavities: 12 and 6 (right, B1124) or 12 and 5 (left, B1123) of breakout box (gray). Is continuity present?

YES

Unplug connector [7] at tail lamp and turn signal converter module. Check for voltage between tail lamp and turn signal converter module and turn signal. Is voltage present?

YES

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

NO

Replace tail lamp and turn signal converter module.

6790

NO

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

6790

ALL EXCEPT XL 1200N
Locate and repair short to voltage.

6790

XL 1200N ONLY
Replace TSM. Learn password and perform setup.

6791

NO

Activate 4-way flashers. Do any lamps illuminate?

YES

STOP

Go to Turn Signal Error 2B, Part 1 of 3

NO

Is connector [30] mated fully?

YES

4

Place red meter lead at cavity 1 (gray) and black meter lead at cavity 12 (gray) of breakout box. Is battery voltage present?

YES

STOP

Go to Turn Signal Error 2C.

NO

Mate connector.

6792

NO

Go to 4.11 NO ECM POWER.

STOP

Move red meter lead to breakout box cavity 2. Is battery voltage present?

YES

Check for voltage at ignition fuse. Is battery voltage present on both terminals?

YES

Check for voltage on breakout box cavity 5 (gray) (left turn signals) or cavity 6 (gray) (right turn signals) with TSM disconnected from breakout box. Is battery voltage present?

NO

Activate 4-way flashers. Do any lamps illuminate?

YES

STOP

Go to Turn Signal Error 2B, Part 1 of 3

NO

Is connector [30] mated fully?

YES

STOP

Go to Turn Signal Error 2C.

NO

Go to 4.11 NO ECM POWER.

STOP

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

6809

Locate and repair open on gray wire between ignition fuse and TSM.

6793

Locate and repair short to voltage between tail lamp and turn signal converter module.

6809

Locate and repair short to voltage between tail lamp and turn signal converter module.

6790

Locate and repair short to voltage between tail lamp and turn signal converter module.

6790

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

6790

Locate and repair open on gray wire between ignition fuse and TSM.

6793
Turn Signal Error 2B, Part 1 of 3

WILL NOT FLASH, 4-WAY FLASHERS INOPERABLE: DTC: B1121, B1122, B1141

Continued from Turn Signal Error 2A.
Inspect light bulbs on side that will not flash.
Are the light bulbs ok?

YES
XL 1200N?

NO
Replace light bulbs as necessary.

NO
STOP
Go to Turn Signal Error 2B, Part 3 of 3

STOP
Go to Turn Signal Error 2A

STOP
Go to Turn Signal Error 2B, Part 2 of 3

NO
Check for continuity between cavity 6 of breakout box and right
front lamp housing and ground. Is continuity present?

YES
Locate and repair open between connector [30] or ground and rear lamp.

NO
Locate and repair open between connector [30] or ground and front lamp.

NO
Check for continuity between cavity 6 of breakout box and pin 2 of
connector [19A] and also between pin 2 of connector [19A] and ground. Is continuity present?

YES
Locate and repair open between connector [19B] and rear lamp.

NO
Check for continuity between cavity 6 of breakout box and pin 2 of
connector [7A] and also between pin 6 of connector [7A] and ground. Is continuity present?

YES
Replace tail lamp and turn signal converter module.

NO
Locate and repair open between connector [30] or ground and connector [7A].
Turn Signal Error 2B, Part 2 of 3
WILL NOT FLASH, 4-WAY FLASHERS INOPERABLE: DTC: B1121, B1122, B1141

Continued from Turn Signal Error 2B, Part 1 of 3.
Check for continuity between cavity 5 of breakout box and left front lamp and also between left front lamp housing and ground. Is continuity present?

- **YES**
  - Check for continuity between cavity 5 of breakout box and left rear lamp and also between left rear lamp housing and ground. Is continuity present?
    - **YES**
      - Replace TSM
      - XL 120YN?
    - **NO**
      - Locate and repair open between connector [30] or ground and front lamp.

- **NO**
  - Locate and repair open between connector [30] or ground and front lamp.

- XL 120YN?
  - **YES**
    - Check for continuity between cavity 5 of breakout box and pin 2 of connector [18A] and also between pin 2 of connector [18A] and ground. Is continuity present?
      - **YES**
        - Locate and repair open between connector [18B] and rear lamp.
      - **NO**
        - Replace tail lamp and turn signal converter module.
  - **NO**
    - Check for continuity between cavity 5 of breakout box and pin 5 of connector [7A] and also between pin 6 of connector [7A] and ground. Is continuity present?
      - **YES**
        - Locate and repair open between connector [30] or ground and connector [7A].
      - **NO**
        - Locate and repair open between connector [30] or ground and rear lamp.
Turn Signal Error 2B, Part 3 of 3

WILL NOT FLASH, 4-WAY FLASHERS INOPERABLE: DTC: B1121, B1122, B1141

Continued from Turn Signal Error 2B, Part 1 of 3.
Remove turn signal bulbs. Unplug connector [20]. Check for continuity between cavities 12 and 6 (right) or 12 and 5 (left) of breakout box (gray). Is continuity present?

Y

Unplug connector [31]. Check for continuity between cavities 12 and 6 (right) or 12 and 5 (left) of breakout box (gray). Is continuity present?

Y

Locate and repair short to ground between connector [30] and tail lamp and turn signal converter module.

N

Locate and repair short to ground between connector [31] and front turn signals.

N

Replace tail lamp and turn signal converter module.

N

Locate and repair short to ground between connector [18] and [19] at tail lamp and turn signal converter module. Check for continuity between cavities 12 and 6 (right) or 12 and 5 (left) of breakout box (gray). Is continuity present?

Y

Unplug connectors [18] and [19] at tail lamp and turn signal converter module. Check for continuity between cavities 12 and 6 (right) or 12 and 5 (left) of breakout box (gray). Is continuity present?

Y

Locate and repair short to ground between connector [31] and front turn signals.

N

Locate and repair short to ground between tail lamp and turn signal converter module and turn signal.

N

Locate and repair short to ground between connector [30] and tail lamp and turn signal converter module.
Turn Signal Error 5A
DTC: B1123 LEFT TURN SIGNAL LAMP SHORT-TO-GROUND
DTC: B1124 RIGHT TURN SIGNAL LAMP SHORT-TO-GROUND

Remove turn signal bulbs. Unplug connector [20].
Check for continuity between cavities 12 and 6 (right, B1124) or 12 and 5 (left, B1123) of breakout box (gray).
Is continuity present?

YES  NO

Unplug connector [31]. Check for continuity between cavities 12 and 6 (right, B1124) or 12 and 5 (left, B1123) of breakout box (gray).
Is continuity present?

YES  NO

Locate and repair short to ground.

Unplug connectors [18] and [19] at tail lamp and turn signal converter module. Check for continuity between cavities 12 and 6 (right, B1124) or 12 and 5 (left, B1123) of breakout box (gray).
Is continuity present?

YES  NO

Locate and repair short to ground between connector [31] and front turn signals.

Locate and repair short to ground between turn signal converter module and turn signal.

Locate and repair short to ground between connector [30] and tail lamp and turn signal converter module.

Replace tail lamp and turn signal converter module.

Learn password and perform set-up.

6791

6810

6809
Turn Signal Error 6A
DTC: B1125 LEFT TURN SIGNAL LAMP SHORT-TO-VOLTAGE
DTC: B1126 RIGHT TURN SIGNAL LAMP SHORT-TO-VOLTAGE

Unplug connector [30] from HFSM. Check for voltage between cavities 12 and 6 (right, B1126) or 12 and 5 (left, B1125) of breakout box (gray). Is voltage present?

YES

Unplug connector [31]. Check for voltage between cavities 12 and 6 (right, B1126) or 12 and 5 (left, B1125) of breakout box (gray). Is voltage present?

YES

Unplug connectors [18] and [19] at tail lamp and turn signal converter module. Check for voltage between cavities 12 and 6 (right, B1126) or 12 and 5 (left, B1125) of breakout box (gray). Is voltage present?

YES

Unplug connector [7] at tail lamp and turn signal converter module. Check for voltage between cavities 12 and 6 (right, B1126) or 12 and 5 (left, B1125) of breakout box (gray). Is voltage present?

YES

Locate and repair short to voltage between connector [31] and front turn signals.

NO

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

NO

Locate and repair short to voltage between connector [31] and front turn signals.

NO

Locate and repair short to voltage between tail lamp and turn signal converter module and turn signal.

NO

 Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

NO

Locate and repair short to voltage between connector [31] and front turn signals.

NO

Locate and repair short to voltage between tail lamp and turn signal converter module and turn signal.

NO

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

NO

Replace HFSM. Learn password and perform set-up.

NO

Locate and repair short to voltage.

NO

Locate and repair short to voltage between connector [31] and front turn signals.

NO

Locate and repair short to voltage between tail lamp and turn signal converter module and turn signal.

NO

Locate and repair short to voltage between connector [30] and tail lamp and turn signal converter module.

NO

Replace tail lamp and turn signal converter module.