<table>
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<tr>
<th>Depart</th>
<th>Arrive</th>
<th>Miles</th>
<th>Jny Time</th>
<th>Stop Time</th>
<th>End Temps</th>
<th>End Weight</th>
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<td>00:32</td>
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<tr>
<td>07:00</td>
<td>08:13</td>
<td>54.7</td>
<td>01:13</td>
<td>00:23</td>
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<td>15,056 Kgs</td>
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<tr>
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<td>09:08</td>
<td>13.6</td>
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<td>00:34</td>
<td>-23°C, -13.9°C</td>
<td>12,978 Kgs</td>
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<tr>
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<td>01:01</td>
<td>00:03</td>
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<td>11,088 Kgs</td>
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<tr>
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<td>10:52</td>
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<td>00:06</td>
<td>00:41</td>
<td>-24.1°C, -11.9°C</td>
<td>11,088 Kgs</td>
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<tr>
<td>11:33</td>
<td>12:01</td>
<td>14.6</td>
<td>00:27</td>
<td>-</td>
<td>-14.4°C, -8.1°C</td>
<td>5,418 Kgs</td>
</tr>
<tr>
<td>12:11</td>
<td>12:18</td>
<td>2.6</td>
<td>00:07</td>
<td>00:46</td>
<td>-9.7°C, -7.1°C</td>
<td>5,418 Kgs</td>
</tr>
<tr>
<td>13:04</td>
<td>14:29</td>
<td>61.9</td>
<td>01:26</td>
<td>-</td>
<td>-7.9°C, -7.3°C</td>
<td>5,418 Kgs</td>
</tr>
</tbody>
</table>

Location:
- 117-119 Biggar Rd, Midlothian
- Newbridge, City of Edinburgh
- Loanhead, Midlothian
- 70 Biggar Road, Edinburgh, City of Edinburgh
- B7076, Dumfries and Galloway
- 1 Newbridge Road, Newbridge, City of Edinburgh
- 7 Claylands Road, Newbridge, City of Edinburgh
- 35 Edgefield Rd, Loanhead, Midlothian
- B7076, Dumfries and Galloway
- M6, Orton, Cumbria
- Birmingham Depot
- Bellshill, Strathclyde Business Park, Bellshill, North Lanarkshire
- Lauder Street, Glasgow, Glasgow City
- A74(M), Lockerbie, Dumfries and Galloway
- 15 James Street, Bellshill, North Lanarkshire
- Lauder Street, Glasgow, Glasgow City
- 2 Chariot Drive, Newbridge, Midlothian

Temperature (°C):
- FRONT
- REAR

Pneumatic Supply Pressure:
- Sufficient: Yes
- 166 kPa

ABS Activations:
- None

Electrical Supply Sufficient:
- Yes

Amber warning light activations:
- None

Red warning light activations:
- None

Distance: 383 Miles
Utilisation: 51% (12 Hrs 20 Mins)

A Guide to Trailer EBS and CANbus

Seven Telematics Ltd.
sales@seven-telematics.com
+44 (0)1636 550320
# A Guide to Trailer EBS and CANbus

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For further information on the products and services offered by Seven Telematics please visit [www.seventelematics.com](http://www.seventelematics.com)

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1.0 Introduction
This document explains Seven Telematics’ capability for retrieving and presenting data read from a trailer’s EBS CANbus, and transmitted to the SevenEye® system via Seven Telematics’ trackers.

2.0 CANbus Information
The CANbus information that’s available and which is of use within SevenEye®, is categorised as follows:

2.1 Operational
- Trailer weight
  - A single value that represents the static vertical load of the whole trailer and its load (e.g. 10,500 KGs)

2.2 Maintenance
- Electrical Supply Sufficient/Insufficient
  - Indicates whether the actual supply voltage is sufficient or insufficient for proper function of the brake
- Automatic Braking Active
  - Indicates whether the trailer’s pneumatic service brakes have failed and that the spring brakes have automatically been applied
- Amber Warning Light Request
  - Indicates whether the trailer has activated the amber trailer fault warning light in the cab (EBS manufacturer specific)
- Red Warning Light Request
  - Indicates whether the trailer has activated the red trailer fault warning light in the cab (EBS manufacturer specific)
- Pneumatic Supply Pressure
  - The supply pressure of the compressed air in the brake system, (e.g. 870 kPa)
- Pneumatic Supply Pressure Sufficient/Insufficient
  - Whether the EBS thinks the supply pressure (above) is sufficient or sufficient to run the brakes properly
2.3 Driver Style
- **ABS Active**
  - The number of times the ABS has been activated can be counted, indicating how often the driver has braked hard enough to lock the wheels

3.0 Supported EBS’s
The following EBS’s can be considered for interfacing to via Seven Telematics’ trackers:

- Haldex EB+ Gen 2 (2011 onwards) or Gen 3
- Wabco Type E
- Knorr-Bremse TEBS G2

4.0 EBS Port
For this solution to work, there needs to be a spare port supplying CANbus on the EBS system, to plug a tracker connection into. Typically there is only one suitable port and it’s possible that for any given trailer it is already in use.

An example of a CANbus port (with blanking plug inserted) on a Haldex EB+ Gen 2 EBS is circled in red here:
5.0 EBS Configuration
For Haldex EBS systems, an EBS system parameter that is off by default needs to be turned on for this solution to work. A Haldex technician can do this. This may also be the case with Wabco and Knorr-Bremse systems.

6.0 Integration within SevenEye®

6.1 SevenEye® Sensor Data
EBS weight data can be seen on the SevenEye® Sensor Data page:

A threshold line is shown for the 24 Tonne limit for trailers.

An over-weight email or SMS alert can be set up if required.
6.2 SevenEye® Daily Trailer Activity Report
Other EBS data is presented within the SevenEye® Daily Trailer Activity Report, in conjunction with GPS data and TranScan® data:

Daily Trailer Activity

Distance: 383 Miles
Utilisation: 51% (12 Hrs 20 Mins)

EBS Monitoring

Amber warning light activations:
Red warning light activations:
Electrical supply sufficient:

Temperature (°C)

Weight (Kgs)

Depart Location | Arrive Location | Miles | Jny Time | Stop Time | End Temps | End Weight
--- | --- | --- | --- | --- | --- | ---
02:09 Birmingham Depot | 04:57 M6, Orton, Cumbria | 147.1 | 02:48 | 00:14 | -22°C, -14.9°C | 15,056 Kgs
05:11 M6, Orton, Cumbria | 06:28 A74(M), Lockerbie, Dumfries and Galloway | 67.6 | 01:17 | 00:32 | -23.4°C, -15.4°C | 15,056 Kgs
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13:04 117-119 Biggar Rd, Midlothian | 14:29 B7076, Dumfries and Galloway | 61.9 | 01:26 | | -7.9°C, -7.3°C | 5,418 Kgs
7.0 Explanatory Notes

Distance
This is the total distance travelled by the trailer for the day, as measured by GPS calculations.

Utilisation
This is the duration between the first Journey Start of the day and the last Journey End of the day, divided into 24 hours, and expressed as a percentage.

Empty Running
This is calculated using the total trailer weight value provided via the tracker’s CANbus connection to trailer’s EBS.

All weight readings are used from when the trailer was in journeys, and the number of weight readings greater than 6,000 Kgs (=> loaded) is divided into the total number of weight readings.

The resulting percentage is %Loaded, and 100 minus that figure is %Unloaded.

Temperature
All readings from TranScan® temperature probes for the day are shown here.

Weight
All trailer weight readings from the tracker’s CANbus connection to the trailer’s EBS are shown here.

Journey Log
This lists all journeys for the day that were at least 1 mile long. The latest temperatures and weight at the time of each Journey End are included.
**EBS Monitoring**
This section shows the most meaningful data available via the tracker’s CANbus connection to the trailer’s EBS (i.e. in addition to weight). It is understood that this data is available for each of the latest Haldex, Wabco & Knorr-Bremse EBSs.

The EBS Monitoring values are colour-coded green, amber & red, to indicate whether a value implies: normal running (green), a warning situation (amber) or a definite problem (red).

**Amber Warning Light Activations**
EBS systems have the ability to signal an amber warning light in the towing tractor unit. This value counts the number of amber warning light activations for the day.

**Red Warning Light Activations**
EBS systems have the ability to signal a red warning light in the towing tractor unit. This value counts the number of red warning light activations for the day.

**Electrical Supply Sufficient**
This value indicates whether the EBS thinks the electrical supply voltage to the EBS is sufficient to operate the trailer’s brakes correctly.

**Pneumatic Supply Pressure**
This is the average pneumatic supply pressure reading read from the EBS whilst the trailer was in journeys.

**Pneumatic Supply Pressure Sufficient**
This value indicates whether the EBS thinks pneumatic supply pressure is sufficient to operate the trailer’s brakes correctly.

**ABS Activations**
This value counts the number of times the anti-lock brakes were engaged during the day, to prevent its wheels from locking whilst braking.

Note that the first 5 metrics above are maintenance related, whereas the last is an indication of driver style.