# Belt Scale Trouble Shooting Guide

**MCR Technologies Group, Inc.**  
PO Box 1016 Sterling, IL 61081  
815.622.3181 fax 815.622.0819  
www.weighshark.com sales@weighshark.com

<table>
<thead>
<tr>
<th>Customer Name</th>
<th>Date</th>
<th>Company Name</th>
<th>Phone</th>
<th>Address</th>
<th>Fax</th>
<th>State &amp; Zip</th>
<th>e-mail</th>
</tr>
</thead>
</table>

**Nature of Call**

<table>
<thead>
<tr>
<th>Control Box Serial Number:</th>
<th>Display Number</th>
</tr>
</thead>
</table>

1. **Scale designation:**  
   - Conveyor  
   - Product:  
   - Other:  

2. **Scale Model #:**  
   
   *(IE Model 100-250 or 500)*

3. **Does this scale have an Angle Compensator**  
   - Yes  
   - No

4. **What is your RATE reading?**  
   - EMPTY Belt  
   - LOADED Belt

5. **What is the belt speed?**  
   
   FPM

6. **Is the belt speed reasonable?**  
   - Yes  
   - No

7. **If not, what would be reasonable?**  
   
   FPM

8. **What is your ZERO reading**

9. **What is your SPAN reading?**

10. **What is your ZERO Cutoff #**

11. **Belt Length stored in integrator**

12. **Idler Span stored in integrator**

13. **Angle number shown (if applicable)**
Belt Scale Trouble Shooting Guide.

14 What is the LOAD % under EMPTY LOAD? 

15 What is the LOAD % under 'NORMAL' LOAD? 

16 What is your LOAD CELL AD reading? 
   (With Both Load Cells Plugged In) 
   EMPTY BELT 
   LOADED BELT 

17 Load Cell AD: Reading Load Cell #1 Only Empty Belt 
   "Un-Plug Load Cell #2"

18 Load Cell AD: Reading Load Cell #2 Only Empty Belt 
   "Un-Plug Load Cell #1"

18 What are the belt dimensions? 
   Length 
   Feet 
   Width 
   Inches

19 What is your idler center distance? 
   (idler to next idler) 

20 Were the idlers string lined during installation? 
   Yes No

21 Was scale calibrated using Weights & Bar? 
   Yes No 
   Total of weights & bar?

22 Did you feel comfortable performing the ZERO & SPAN tests? 
   Yes No 
   If no, what difficulties did you have?

23 Did you perform the ZERO & SPAN test with the belt running empty? 
   Yes No

24 Have you extended the cable length? 
   Yes No 
   If yes, how did you do this?

NOTE: Make sure that the Scale Weight (Misc Screen Line 3) matches up with your test bar and weights with the conveyor EMPTY and STOPPED.

25 Additional Information and Notes:

26 Problem resolution and recommendations:
**SYMPTOM:**

<table>
<thead>
<tr>
<th>No Belt Speed</th>
<th>CHECK</th>
<th>ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a. Check</td>
<td>1a. Correctly wire</td>
<td>control Box to Proximity Switch according to manual.</td>
</tr>
<tr>
<td>1b. Check for loose</td>
<td>1b. Tighten wire or wire to control Box connector if loose or loose connection</td>
<td></td>
</tr>
<tr>
<td>1c. Slowly turn speed sensor wheel And observe the LED on the The proximity switch to ensure an Even pace.</td>
<td>1c. If LED lights on an irregular basis, check to make sure it prox switch Is lined up with gear tooth. Also check the gear itself to Ensure that it is aligned close to the switch, so that every Tooth is picked up and it is not rubbing into the switch. This will cause damage to the connection found.</td>
<td></td>
</tr>
<tr>
<td>1d. Perform pervious test, but check LED on circuit board labeled SPD1.</td>
<td>1d. If the LED is lighting at at irregular intervals, check for loose connection on either cable end, loose wire or cable damage. If a loose connection or wire correct the problem. If cable is damaged, repair or replace.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Low Belt Speed</th>
<th>2a. Check speed sensor according to 1c and 1d</th>
<th>2a. Perform the specified action as described in 1c and 1d.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1c. If LED lights on an irregular basis, check to make sure it prox switch Is lined up with gear tooth. Also check the gear itself to Ensure that it is aligned close to the switch, so that every Tooth is picked up and it is not rubbing into the switch. This will cause damage to the connection found.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** If you have an erratic belt speed, this is typically caused by interference due to VFD’s or motors. We suggest you ground the electronics to the conveyor frame. Take a wire from the GND terminal at the 12-24 VDC (2 pin) terminal located to the immediate right of the OFF/ON switch. Run your wire to your conveyor frame.

<table>
<thead>
<tr>
<th>No Accumulation Of Weight or Rate</th>
<th>3a. Check belt speed</th>
<th>3a. If there is no belt speed or if belt speed seems too fast or slow, check speed sensor according to 1. &amp; 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3b. Check ZERO and SPAN Number. Both are found on the CALIB. Screen.</td>
<td>3b. If either number is 0, first check load cell wiring to ensure it is correct. If wired incorrectly…. Correct. If either number is 0, you will need to go to the CALIB. Select ZERO or SPAN and Press ENTER. You must Manually enter in a number (approx. 2000) so that you can calibrate the scale. If wiring is correct, go to 3c and 3d.</td>
<td></td>
</tr>
<tr>
<td>3c. Check load cell cables for damage.</td>
<td>3c. Repair or replace damage.</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** If you have extended your cables, it is imperative you use a junction box. A splice area is a prime location of problems.

**Note:** Load cell tests, Zero Tests and Span Tests must be Performed with the belt running EMPTY.

**Note:** A load cell provides a positive mV signal to our processor. We convert this signal to a number. This number is found as LOAD CELL AD on our MISC. screen. If the load cell is bent UP we will show a 0 since we cannot show a negative number.
**CHECK**

**Scale is reading Light.**

4a. Check belt speed.

4b. Check rate with belt running empty.

**Action**

4a. If belt speed seems wrong check according to 1c and 1d.

4b. If rate is fluctuating near 0, this is perfectly normal this occurs because the scale is seeing the lighter and heavier portions of the belt.

If the rate is a steady negative number, then check load cell According to 3d

If they check out OK, then go to the Calibration Screen and Run both the ZERO test and SPAN test.

Are idlers in alignment ?

Perform a string test as is described in the manual.

**Note:** To verify that the calibration was performed correctly, do the following. When the ZERO test and SPAN test are complete, leave the test weights on the empty belt and go to the MISC. screen. The SCALE WEIGHT value should match the total amount of your weights and bar.

**Scale is reading Heavy.**

5a. Check Load Cell AD Numbers according to 3d.

5b. Check rate with belt Running empty.

**Action**

5a. Perform required action in 3d.

5b. If rate is significantly above 0 then perform both ZERO and SPAN tests.

**Note:** if rate fluctuates slightly above and below 0 this is perfectly normal, Provided there is no accumulation of weight

5c. Check idlers for Alignment

**Action**

5c. Perform string test as Explained in the manual To ensure proper idler Alignment

**Note:** To verify the calibration was performed correctly, do the following. When the ZERO and SPAN test are completed, leave the test weights and bar on the scale and leave the test weights on the empty belt. Go to the MISC. screen and look at your SCALE WEIGHT. This value should match the total amount of weight of your test weights and bar.

**Scale does not turn ON:**

6a. Check to ensure that Proper power is being supplied to the correct location on the board.

6b. Check to make sure Scale is turned on.

6c. Check fuse located in upper left corner of Board.

6d. Check to make sure display is properly connected to circuit board.

**Action**

6a. Scale will operate on 110 or 220 VAC or 12-24 VDC. Verify power is wired correctly.

6b. Flip switch in control box to turn on scale

6c. If blown… replace.

6d. Inspect connection and condition of cable between circuit board and display.

**Nothing happens When a keypad Button is pressed.**

7a. Check to ensure control box is turned on.

7b. Check to ensure that keybap is plugged in.

7c. Is display readable ?

7a. Perform checks in Section 6

7b. Look behind door of control panel to ensure that display is connected to the keypad.

7c. If display has readable info. Replace keypad. If display has nonsense, replace display.