HELLO
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TECNICAL SPECIFICATIONS

SIZE
260mm x 190mm x 70mm

WEIGHT
1.2 Kg

HELP MESSAGES
Context sensitive help messages in 10 languages
Long messages are scrolled

TRANSUDER EXCITATION
8 volts D.C. Nominal
Capable of driving ten 350 Ohms transducers
Short circuit proof

TRANSUDER SIGNAL
Compatible with transducers having full scale indicator transfer characteristics greater than 0.25 mv/v

“AUTO RANGE”
(Selectable) To increase display counts at weight values of 300 and 600 display counts.

CONNECTOR
AMP plastic weather resistant circular connector. Gold contacts.

POWER REQUIREMENTS
10.5 to 16.0 V.D.C.
160 mA nominal with four 350Ω L.C.

SET UP AND CALIBRATION
Via front panel

GROSS RANGE
999,999 max.display

LOW BATTERY WARNING
Enabled at 10.5V nominal

POUND/KILOGRAM
Selectable

DISPLAY
LCD 6 characters 43mm

DISPLAY RESOLUTION
.01, .02, .05, .1, .2, .5, 1, 2, 5, 10, 20, 50, 100

DISPLAY UPDATE RATE
Selectable: 1, 2, 3, 4 times/sec.

MAX. DISPLAY RESOLUTION
Adjustable to 40,000 counts max.

ZERO TRACKING
Selectable, On/Off

SPAN ACCURACY
±(.1% + .005%/ °F) or (.1% + 0.009% °C) full scale ± 1 output count

MOTION DETECTION
Selectable, On/Off

ZERO ACCURACY
(.005%/ °F.) or (0.009% °C) full scale ±1 output count for 0.5 mv/v transducer

ENVIRONMENTAL ENCLOSURE
IP65, IEC 529

WEIGH ALGORITHM
4 internally selectable digital filters to optimize performance
(General, Slow, Fast and Lock-on)

HOLD MODE
Used in mobile applications to stabilize displayed weight while moving the scale

NON-VOLATILE MEMORY
EEPROM for balance

OPERATING TEMP
-29°C to 60°C
-20°F to 140°F
SAFETY DURING USE

Caution

Check system before use
Before you are going to use the Digi-Star weighing system you need to check the proper working of the system by charging all weighing points with a known weight. Digi-Star cannot be held responsible for deviations and problems arising from incorrect use of the weighing indicator, incorrect calibration or settings. Furthermore Digi-Star cannot be held responsible for deviations and problems arising from technical problems to the system.

During welding you need to remove the weighing bars to avoid damaging. If this is not possible, you need to place the “ground” clip as close to the welding point as possible, in order to avoid that current can flow through the weighing bars. Digi-Star cannot be held responsible for problems arising from welding or charging of the battery.

Cleaning
Do not use running water (high pressure cleaners, hoses) to clean the indicator.

Charging battery and welding
During welding you need to remove the weighing bars to avoid damaging. If this is not possible, you need to place the “ground” clip as close to the welding point as possible, in order to avoid that current can flow through the weighing bars. Digi-Star cannot be held responsible for problems arising from welding or charging of the battery.
OVERVIEW WEIGHING INDICATOR

1. **ZERO** – press and hold for 3 seconds to zero balance the weighing indicator.
2. **HOLD** – to hold displayed weight when moving the machine.
3. **ON/OFF** – to switch weighing indicator ON/OFF
4. **TARE** – to temporarily zero the weighing indicator [Net mode].
5. **PRINT** – to register or print the displayed weight.
6. **NET/GROSS** – to toggle between net and gross weights.
7. **Display** – to display current value and setting.
8. **FUNCTION** – to perform the selected task.
9. **SELECT** – to display extra tasks.
10. **Serial port/printer port** – communication with inputs and outputs of the computer and other digital devices (optional).

11. **Port for remote display** – to connect the remote display (optional).

12. **Load cell port** – to connect the J-Box cable.

13. **Power supply port** – to connect the power supply cable.

14. **Serial number**

>>See pages 16, 17 and 18 for installation instructions.
OPERATION

Switching on the weighing indicator

Press \( \text{ON} \) to activate the weighing indicator.

Zero balancing the weighing indicator

Press and hold \( \text{TARE} \) for 3 seconds to zero balance the weighing indicator.

Loading weights using Tare and Net/Gross

If you want to load more amounts, use \( \text{TARE} \) to set the system temporarily to zero. Press \( \text{NET/GROSS} \) to display the total weight of all individual amounts already loaded.

1. After the first product amount has been loaded, press \( \text{TARE} \) to set the weighing indicator temporarily to zero.
2. The value 0 is displayed. In the upper right of the display a flashing arrow points towards NET (net weight).

3. Add the next amount to be loaded.

4. Press \[ \text{GROSS} \] to display the total amount already loaded. In this example: 2350 kg + 300 kg = 2650 kg. In the lower right of the display a flashing arrow points towards GROSS (gross weight).

5. Press \[ \text{NET} \] again to return to Net mode. In the upper right of the display a flashing arrow points towards NET (net weight).

6. To add more individual loads repeat steps 1 thru 5.
**Print key**

ATTENTION! An optional serial (printer) port is required for printing.

7. Press \[PRINT\]. The weighing indicator sends data to the printer or PC. A sample output format is shown below:

![Sample output format](image)

**Timer option**

The timer option can be used to set a mixing time. After mixing (timer reaches zero) the weighing indicator gives a loud alarm.

1. Repeatedly press \[SELECT\] until \(\text{TIMER}\) is displayed.

2. Press \[FUNCTION\] to display hours, minutes and seconds (hh:mm:ss).

![Timer option](image)
3. Use to move to the section (hours, minutes or seconds) to be changed. The selected digit starts flashing.
4. Repeatedly press to select the required digit.
5. Press to start the timer.
6. When timer reaches zero, press to stop the alarm signal and function.

Using M+, RM and CM options

Use these options to weigh, for example, the axles of a truck or wagon one at a time.

1. Put the first weight on the weighing platform. For example: 500 kg.
2. Repeatedly press until M+ is displayed.
3. Press . 500 KG and RM are briefly displayed. 500 Kg will be added to the memory and the weighing indicator returns to gross weighing mode.
4. Put the next weight on the weighing platform. For example: 1000 kg.

5. Repeatedly press \( \Delta \), until \( M+ \) is displayed.

6. Press \( \downarrow \). The weighing indicator adds 1000 kg to 500 kg in the memory. \( RM \) flashes on the display and the weighing indicator returns to gross weighing mode.

7. Repeatedly press \( \Delta \), until \( RM \) is displayed.

8. Press \( \downarrow \).

9. The total of both weights, 1500 kg, is displayed. The weighing indicator is in gross weight mode.
Printing weight from memory

ATTENTION! An optional serial (printer) port is required for printing.

1. Repeatedly press \( \text{select} \), until \( \text{RM} \) is displayed.

2. Press \( \text{function} \) to display the weight in the memory. For example: 1500 kg.

3. Press \( \text{print} \) when the weight is displayed.

Determining average weight

1. Repeatedly press \( \text{select} \), until \( \text{RM} \) is displayed.

2. Press \( \text{function} \) twice within three seconds to perform a weight average.

3. \( \text{COUNT 2} \) is displayed to indicate that the weight average is calculated from two individual weights. In this example, the weighing indicator calculates the average from 1000 kg and 500 kg.
4. **AVERAG** (average) is displayed.

5. The display shows the calculated average of these two weights. After displaying the average weight, the weighing indicator returns to gross weighing mode.

### Printing average weight

1. Press 🖀 when the average weight is displayed.

   A sample output format is shown below:

   ![Sample output format]

   - **Number of individual weights**: 2
   - **Average weight**: 750 KG
OTHER FUNCTIONS

Holding the displayed amount

In Hold mode the displayed weight remains on the display while moving the feed mixer.

1. Press  to hold the displayed weight.
2. Press  to return to normal weighing mode.

If an amount is loaded while the weighing indicator is in Hold mode, press  to exit hold mode.

PRINTING

Note: The serial port (optional) must be installed to print data.


Backlight intensity

1. Press  until DIMMER appears on the display.
2. Press   to reduce the backlight intensity by 60%.
   Press   again to return to full intensity.
Function and Select keys

1. Repeatedly press \( \text{△} \) to select following options:
   - **Timer**: Stopwatch for mixing time
   - **M+**: Adding new weigh to total weight in memory.
   - **RM**: Displaying weight in memory
   - **CM**: Clearing total weight in memory
   - **Dimmer**: Decreasing intensity of the background light
   - **Menu**: Viewing menus 1,2,3 and 4 and calibrating. See pages 14 and 15.
   - **Setup**: Changing setup and calibration numbers See page 20.
   - **Help**: Explains the function of the last key pressed.

2. When the required option is displayed, press \( \text{△} \) to activate this option.
**MENUS 1 THRU 4 AND CALIBRATION**

1. Repeatedly press \( \Delta \text{SELECT} \), until \( \text{MENU} \) is displayed.
2. Press and hold \( \Delta \text{SELECT} \) for 3 seconds.
3. Repeatedly press \( \Delta \text{SELECT} \) to select Menu 1, 2, 3, 4 or to calibrate.
4. Press \( \Delta \text{ON} \) to access the selected menu and display the first menu setting.
5. a) Press \( \Delta \text{ON} \) to move to the next setting without making any changes or,
   b) Press \( \Delta \text{SELECT} \) to select the required options for each setting.
6. Press \( \Delta \text{ON} \) to save the edited setting and to select the next setting in the menu.

**Note:** Press and hold \( \Delta \text{TABS} \). Then press \( \Delta \text{ON} \) to exit the menu.

<table>
<thead>
<tr>
<th>Setting [display]</th>
<th>Access Nº</th>
<th>Options [displayed] [bold=default]</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LANGUAGE [LANGAG]</td>
<td>101</td>
<td>[ENGLISH] [NEDERL] [FRANC] [DEUTSH] [ITAL] [PORT] [ESPA] [DANSK] [MAGYAR] [VESTA]</td>
<td>Settings and texts will appear in this language on the display.</td>
</tr>
<tr>
<td>DISPLAY RATE [0 RATE]</td>
<td>102</td>
<td>1.2.3.4</td>
<td>Update display times per second.</td>
</tr>
<tr>
<td>ZERO TRACK [ZTRACK]</td>
<td>104</td>
<td>ON/OFF</td>
<td>If ON -zero track adjust balance for buildup of snow &amp; mud.</td>
</tr>
<tr>
<td>WEIGH METHOD [W thod]</td>
<td>105</td>
<td>1=General, 2=Fast, 3=Slow, 4=Lock-On</td>
<td>Select weigh method</td>
</tr>
<tr>
<td>SCALE ID SETUP [SCALID]</td>
<td>108</td>
<td>NEW EZ</td>
<td>Identity of scale location (truck id or Mixer number).</td>
</tr>
<tr>
<td>1 PRESS ZERO [I ZERO]</td>
<td>115</td>
<td>ON/OFF</td>
<td>If ON -press and hold Zero key to Zero/Balance scale.</td>
</tr>
<tr>
<td>Setting [display]</td>
<td>Access Nº</td>
<td>Options [displayed] (bold=default)</td>
<td>Description</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------</td>
<td>------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MENU 2. TIME, PRINT, COMMUNICATION &amp; WEIGHING FUNCTIONS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TARE AUTO PRINT (tareap)</td>
<td>211</td>
<td>ON/OFF</td>
<td>If ON -tare auto-prints displayed weight.</td>
</tr>
<tr>
<td>ONE LINE PRINT (I1 pt)</td>
<td>212</td>
<td>ON/OFF</td>
<td>If ON -indicator data prints on one line.</td>
</tr>
<tr>
<td>AUTO PRINT (aprint)</td>
<td>214</td>
<td>ON/OFF</td>
<td>If ON -pressing keys auto-prints weight values.</td>
</tr>
<tr>
<td>PRINT FORMAT (prtfmb)</td>
<td>216</td>
<td></td>
<td>Select alternate &amp; comma (CSV) formats.</td>
</tr>
<tr>
<td>REMOTE (REMOTE)</td>
<td>218</td>
<td>ON/OFF</td>
<td>If ON indicator communicates with cab control display.</td>
</tr>
<tr>
<td>ZERO OUTPUT (zerout)</td>
<td>219</td>
<td></td>
<td>Perform Zero/Balance for SCOREM #11 weight output and analog output (4-20mA)</td>
</tr>
<tr>
<td>SCALE NUMBER (scl no)</td>
<td>231</td>
<td></td>
<td>Select scale number for cab control communication</td>
</tr>
<tr>
<td>REMOTE DISPLAY (rmdisp)</td>
<td>234</td>
<td>EZ3MUX E22 COG</td>
<td>Select type of remote display</td>
</tr>
<tr>
<td>MENU 3. CALIBRATION SETTINGS WEIGHING INDICATOR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DISPLAY UNIT [LB-KG]</td>
<td>303</td>
<td>LB/KG</td>
<td>Display in lb or kg.</td>
</tr>
<tr>
<td>CAPACITY (cap)</td>
<td>303</td>
<td></td>
<td>Enter MAXIMUM weight measurable on scale</td>
</tr>
<tr>
<td>MENU 4. PRESET, RECIPE &amp; COUNTER FUNCTIONS</td>
<td></td>
<td></td>
<td>NOT USED WITH EZ2500</td>
</tr>
<tr>
<td>CALIBRATION</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SETUP NUMBER [SETUP]</td>
<td>871</td>
<td></td>
<td>The unit of weight (1-4lbs or 5-8 kg), the gain (1-9), the sensitivity (display counts 1-9) and the capacity * 1000 can be entered using direct number entry.</td>
</tr>
<tr>
<td>CALIBRATION NUMBER [CAL]</td>
<td>872</td>
<td></td>
<td>Displayed amount at 0.4mV/V for these load cells.</td>
</tr>
</tbody>
</table>
INSTALLATION

Mounting weighing indicator

Rail mounting standard included.
Wing mount optional. RAM mount (option); included with RAM mounting kit.

Load cell direction

Observe direction of arrow when installing load cell.
Connecting the cables

Figure 2: Connection diagram of weighing indicator

<table>
<thead>
<tr>
<th>Pin</th>
<th>to 12Vdc power supply**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Red                     + 12VDC</td>
</tr>
<tr>
<td>2</td>
<td>Black                   Earth/Mass</td>
</tr>
<tr>
<td>3</td>
<td>Orange                  Relay output</td>
</tr>
<tr>
<td>4</td>
<td>Blue                    External tare</td>
</tr>
</tbody>
</table>

**The wire colours in this table only apply for the standard Digi-Star cable.

Figure 3: Bottom panel cable connections

Figure 4: J-Box connections
Connecting load cells to J-Box

Connection of wires from load cell cable to terminals.

Changing setup and calibration numbers

\[ \text{[SETUP]} & \text{[CAL]} \]

1. Repeatedly press \( \text{SELECT} \), until \( \text{SETUP} \) is displayed.
2. Press and hold \( \text{FUNCTION} \) for 3 seconds.
3. The six digit setup number (\( \text{SETUP} \)) is displayed. Use \( \text{FUNCTION} \) to select the digit to be changed. Press \( \text{SELECT} \) to change the digit.
4. Press \( \text{SELECT} \) to save the setup number. The calibration number (\( \text{CAL} \)) appears on the display. Use keys \( \text{SELECT} \) and \( \text{FUNCTION} \) to change the calibration number (\( \text{CAL} \)).
5. Press \( \text{SELECT} \) to save the calibration number and to return to gross weighing mode.
TROUBLE SHOOTING

START

Does the weighing indicator switch on?

YES

Is the value displayed on the weighing indicator?

NO

Put your weight on each load cell. Does the weighing indicator respond to your weight?

YES

Check all J-Box and load cell cables for loose contacts, cuts or pinched, flat spots.

NO

The weighing indicator is probably defective. Test another weighing indicator to be sure.

Note: Be aware of electrical interference that might affect the weighing indicator, such as mobile phones, CB radios, radio towers, electrical motors etc. Make sure load cell cables are not attached to hydraulic lines or reservoirs.

YES

The weighing indicator is probably defective. Check the decal on the bottom of the weighing indicator. It shows the type of load cells, for which the weighing indicator was calibrated. By pressing the ON key while the weighing indicator is switched on, the setup (SETUP) and calibration number (CAL) will appear successively on the display. Ensure these numbers correspond with the numbers on the decal on the bottom of the weighing indicator. Contact your dealer for additional information.

NO

Does the J-Box have a bad connection or loose wires?

YES

Dry out the J-Box (use a hairdryer). Check cable strain reliefs for tightness. Do cables have drip loops? Is lid gasket damaged?

NO

Remove the cover from the J-Box.

YES

Is there moisture inside the J-Box?

NO

Check for loose connections. Watch your indicator display while moving cables and wires and pressing on the circuit board inside the J-Box. You will see if there is a loose connection or bad solder joint.

YES

Is the value still unstable?

NO

If the value is unstable or, \[±\text{RANGE}\] flashes on the display, disconnect the J-Box cable from the weighing indicator. Is the value still unstable?

NO

Put your weight on each load cell. Does the weighing indicator respond to your weight?

YES

Check all J-Box and load cell cables for loose contacts, cuts or pinched, flat spots.

NO

The weighing indicator is probably defective. Test another weighing indicator to be sure.

Note: Be aware of electrical interference that might affect the weighing indicator, such as mobile phones, CB radios, radio towers, electrical motors etc. Make sure load cell cables are not attached to hydraulic lines or reservoirs.

YES

The weighing indicator is probably defective. Check the decal on the bottom of the weighing indicator. It shows the type of load cells, for which the weighing indicator was calibrated. By pressing the ON key while the weighing indicator is switched on, the setup (SETUP) and calibration number (CAL) will appear successively on the display. Ensure these numbers correspond with the numbers on the decal on the bottom of the weighing indicator. Contact your dealer for additional information.

NO

Does the J-Box have a bad connection or loose wires?

YES

Dry out the J-Box (use a hairdryer). Check cable strain reliefs for tightness. Do cables have drip loops? Is lid gasket damaged?

NO

See next page
Trouble shooting

CONTINUED

Disconnect all wires of the load cell cables from the terminals in the J-Box;
Leave the weighing indicator switched on while disconnecting and reconnecting the wires. It will not damage the load cells and weighing indicator if wires are shorted during this step. Is the value displayed on the weighing indicator stable?

YES

Zero balance the weighing indicator. (press and hold ZERO for 3 seconds).
The value 0 appears on the display of the weighing indicator.

NO

Replace the J-Box;
Be aware of electrical interference that might affect the weighing indicator, such as mobile phones, CB radios, radio towers, electrical motors etc.

Note: Connect the load cells to the J-Box one at a time; only one load cell connected at a time.
This will get a reading for each load cell. While performing this test, watch for any other symptoms such as erratic/unstable readout, flashing of [± RANGE] on the display, negative value, etc.
If the readout appears abnormal with any load cell connected, this load cell is probably bad.

Reconnect one load cell to the terminals in the J-Box; the displayed value of each load cell depends on the type of load cell and the weight over the load cell. Usually this value should be positive and stable.

Note: If the weighing indicator responded to your weight, the J-Box is OK. If the weighing indicator did not respond, either the load cell or the J-Box is bad. Try the other load cells.
If the weighing indicator still shows no response, the J-Box is bad.
Replace the J-Box.

Repeat previous steps for the other load cells. Remember to note all readouts of these load cells.

Disconnect the first load cell and zero balance the weighing indicator.
Connect the second load cell. Note the displayed value.
Zero balance the weighing indicator and stand or hang your weight over the connected load cell. Note the weight increase.

If you hang your weight over a connected load cell after zero balancing the weighing indicator, the displayed value is probably three or four times your weight. The readout values of your weight over each load cell should be similar.
Bad load cells give an unstable readout. [± RANGE] flashes on the display or the displayed value is lower or higher than three times the average of the other load cells.
Any difference could be an indication of a bad load cell or a structural problem.

Do not expect that all load cells give the same readout at the moment you connect them. Usually load cells give readout values that vary by hundreds, even thousands. Especially when there is more weight on one load cell.
APPENDIX A1: EC DECLARATION OF CONFORMITY


Manufacturer's Name Digi-Star, LLC
Manufacturer's Address W5527 State Hwy 106, Fort Atkinson, WI 53538
European Representative Name Digi-Star Europe B.V.
European Representative Address J.F. Kennedylaan 235, 5981 WX Panningen (NL)

Model name EZ2500, RD2500

Conformance to:

- EN 61326 - electrical equipment for measurement, control and laboratory use (see Report Number C-1136 311072.)
- EN 55011 - for Class B ISM equipment for industrial, scientific, and medical equipment (see Report Number C-1136 311072).

Beginning serial N°: 1001
Year of Manufacture: 2012

We, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s).

Manufacturer Legal representative in Europe

Signature
Name: Doug Evenson Name: Wim de Wit
Position: Director of Engineering Position: Managing Director
Place: Fort Atkinson, WI U.S.A. Place: Panningen, the Netherlands
Date: 12 April 2012 Date: 12 April 2012