

TEX-WEI100

Load-cell controller



The TEX-WEI100 is the ideal controller for high-speed, high-accuracy weighing and level measurement operations.

The offset and span trim calibration functions make this controller ideally suited for tank and silo applications.

Relay and analog output options make it valuable for stand-alone control or as an interface for PLC applications. Intuitive scrolling text menus guide you step by step through the effortless setup and calibration process, making the TEX-WEI100 the world's most user-friendly and versatile load-cell controller.

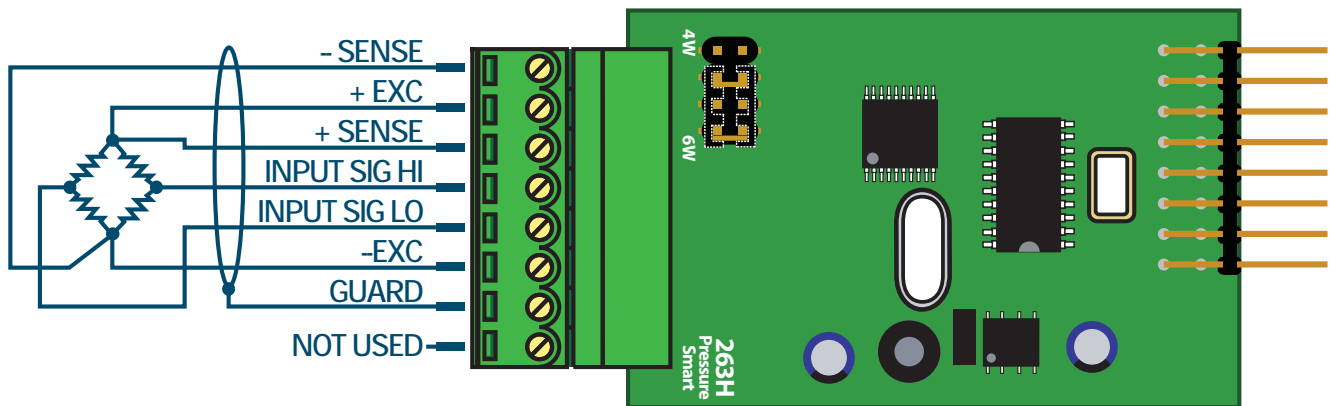
TEX-WEI100 Controller Specifications

<i>Easy setup</i>	Scrolling text prompts for intuitive, easy setup
<i>Security</i>	Calibration and set-point functions have independent security code access
<i>Strain gauge inputs</i>	4-wire or 6-wire systems: 1.0mV/V to 20mV/V
<i>Excitation</i>	5V DC provided by controller—will power up to 8x 350Ω load-cells
<i>Power supply</i>	HV - 85–265V AC/95–370V DC or LV - 15–48V AC/10–72V DC
<i>Sampling rate</i>	Up to 100Hz
<i>Resolution</i>	18-bit
<i>Accuracy</i>	0.005% of reading
<i>Controller temperature drift</i>	Typically 3ppm/°C
<i>Analog output</i>	16-bit programmable (4-20mA/0-10V output)

<i>Analog output scaling</i>	Window programmable over any range within the full scale range of the controller
<i>Relay outputs</i>	4 programmable relay outputs with hysteresis and delay on make
<i>Calibration</i>	2 point, zero and span calibration <ul style="list-style-type: none"> » mV/V and span calibration from connected load-cell test certificate » Zero/offset trim » Span trim
<i>Auto zero maintenance</i>	Programmable capture, motion and aperture window
<i>Manual zero</i>	Programmable zero limit
<i>Display TARE/RESET</i>	For filling applications
<i>Serial communications</i>	RS232/RS485 options available

ISS1 Load Cell Input Module

Connect your load cell as per the connection diagram shown below



Calibration & Analog Output Setup

Begin by pressing **[F1]**.

--- **ENTER CAL PIN NUMBER** and **0** scroll across the display. Use the **[▲]** and **[▼]** buttons to enter your security code number (factory default 1).

Then press **[P]**.

1. a. --- **INPUT SETUP** and **SKIP** scroll across the display. Press **[P]** to

skip to 2. or the \blacktriangle button to **ENTER** input setup.

Then press \square .

- b. --- **MAINS FREQUENCY** scrolls across the display. Using the \blacktriangle and \blacktriangledown buttons, select the mains frequency: either **50HZ** or **60HZ**. Then press \square .
 - c. --- **SAMPLING RATE** scrolls across the display. Using the \blacktriangle and \blacktriangledown buttons, select the sampling rate: either **1HZ**, **10HZ**, **50HZ** or **60HZ**. Then press \square .
 - d. --- **NOMINAL SENSOR GAIN IN MV/V** scrolls across the display. Using the \blacktriangle and \blacktriangledown buttons, select the gain: either **1 MV/V**, **2 MV/V**, **3 MV/V** or **20 MV/V**. Then press \square .
 - e. --- **DECIMAL POINT POSITION** scrolls across the display. Using the \blacktriangle and \blacktriangledown buttons, select the decimal point position: either **0.1234**, **0.123**, **0.12**, **0.1** or **NO DP**. Then press \square .
 - f. --- **DISPLAY ROUNDING** scrolls across the display. Using the \blacktriangle and \blacktriangledown buttons, select the display rounding: either **NONE**, **2**, **5** or **10**. Then press \square .
2. a. --- **CALIBRATION TECHNIQUE** and **SKIP** scroll across the display. Press \square to skip to 3. or, using the \blacktriangle and \blacktriangledown buttons, select either: **AUTO** (for a 2 point, zero and span calibration), **MV/V** (for calibration from load cell test certificates), **T_OFST** (for a zero or offset trim), or **T_SPAN** (for a span trim). Then press \square .
 - b. *If you selected MV/V, T_OFST or T_SPAN in 2.a., ignore this step. If you selected AUTO in 2.a.:*
 --- **REMOVE WEIGHT** --- **ENTER NO LOAD VALUE** scrolls across the display. The currently selected no-load value appears on the display. Remove any weight from the weigh platform. Using the \blacktriangle and \blacktriangledown buttons, enter your no-load value. Then press \square to accept.
 --- **ADD CAL WEIGHT** --- **ENTER DESIRED SPAN** scrolls across the display. The currently selected span value appears on the display. Apply calibration weight to the weigh platform. Using the \blacktriangle and \blacktriangledown buttons, enter your calibration weight value. Then press \square to accept and return to the operational display.
*If --- **CALIBRATION FAILED** scrolls across the display, check your input signal and connections, and repeat step 2.b.. The input signal has not changed during the calibration process.*
 - c. *If you selected AUTO, T_OFST or T_SPAN in 2.a., ignore this step. If you selected MV/V in 2.a.:*

--- ENTER TOTAL FULL SCALE WEIGHT OF LOAD CELL IN COUNTS

scrolls across the display. The currently selected full scale weight value appears on the display. Use the ▲ and ▼ buttons to enter the combined total weight of the connected load cells from the manufacturer's test certificate. Then press [P].

--- ENTER MV/V FROM LOAD CELL TEST CERTIFICATE NOTE 2-3.5 MV/V SENSORS ONLY

scrolls across the display. The currently selected mV/V value appears on the display. Use the ▲ and ▼ buttons to enter the mV/V of the connected load cell from the manufacturer's test certificate.

If you are using more than one load cell, enter the average of the values.

Then press [P].

--- SET ZERO NOW? and **NO** scroll across the display. If you are not ready to set your zero position, press [P] to return to the operational display. If you are ready to set your zero position, press the ▲ button and select **YES**. Then press [P] to accept and return to the operational display.

- d. *If you selected AUTO, MV/V or T_SPAN in 2.a., ignore this step. If you selected T_OFST in 2.a.:*

--- ENTER OFFSET WEIGHT scrolls across the display. The currently selected off-set value appears on the display. With no weight or a known (low) weight on the weigh platform, use the ▲ and ▼ buttons to adjust the value to zero or the required off-set value. Then press [P] to accept and return to the operational display.

- e. *If you selected AUTO, MV/V or T_OFST in 2.a., ignore this step. If you selected T_SPAN in 2.a.:*

--- ADD CAL WEIGHT --- ENTER DESIRED SPAN scrolls across the display. The currently selected span value appears on the display. With a known weight on the weigh platform, use the ▲ and ▼ buttons to enter the required span value. Then press [P] to accept and return to the operational display.

3. a. **--- ZERO MAINTENANCE** and **SKIP** scroll across the display. Press [P] to skip to 4. or the ▲ button to **ENTER** zero maintenance. Then press [P].
- b. **--- MODE** and the currently selected mode scroll across the display. Using the ▲ and ▼ buttons, select either: **OFF** (for no zero maintenance), **AUTO** (for automatic zero maintenance) or **MAN**

(for manual zero maintenance from the capture and common pins). Then press [P].

- c. *If you selected OFF or MAN in 3.b., ignore this step. If you selected AUTO in 3.b.:*
 - - - **CAPTURE BAND** and the currently selected auto zero capture band scroll across the display. Using the ▲ and ▼ buttons, enter the new capture band. Then press [P].
 - - - **MOTION BAND** and the currently selected auto zero motion band scroll across the display. Using the ▲ and ▼ buttons, enter the new motion band. Then press [P].
 - - - **APERTURE WINDOW** and the currently selected auto zero aperture window scroll across the display. Using the ▲ and ▼ buttons, enter the new aperture window. Then press [P].
 - d. *If you selected OFF or AUTO in 3.b., ignore this step. If you selected MAN in 3.b.:*
 - - - **APERTURE WINDOW** and the currently selected manual zero aperture window scroll across the display. Using the ▲ and ▼ buttons, enter the new aperture window. Then press [P].
4.
 - a. - - - **AVERAGING PARAMETERS** and **SKIP** scroll across the display. Press [P] to skip to 5. or the ▲ button to **ENTER** averaging parameters setup. Then press [P].
 - b. - - - **AVE SAMPLES** and the currently selected averaging scroll across the display. Using the ▲ and ▼ buttons, alter the signal averaging. Then press [P].
 - c. - - - **AVERAGING WINDOW** and the currently selected averaging window value scroll across the display. Using the ▲ and ▼ buttons, alter the signal averaging window. Then press [P].
 5.
 - a. - - - **ANALOG OUTPUT SETUP** and **SKIP** scroll across the display. Press [P] to skip to 6. or the ▲ button to **ENTER** analog output setup.
Before continuing, set the analog output board header in the correct position, (either current or voltage), and connect a mA or volt meter (depending on the output selected) across the analog output connector.
 Then press [P].
 - b. - - - **CAL LOW ANALOG OUTPUT** and a calibration number scroll across the display. Using the ▲ and ▼ buttons, calibrate your low

- analog output as required. Then press [P].
- c. --- **CAL HIGH ANALOG OUTPUT** and a calibration number scroll across the display. Using the [▲] and [▼] buttons, calibrate your high analog output as required. Then press [P].
 - d. --- **LOW SCALE VALUE FOR ANALOG OUTPUT** scrolls across the display. This is the display value where the cal low output will be (*as calibrated above in 5.b.*). Using the [▲] and [▼] buttons, select a cal low position. Then press [P].
 - e. --- **HIGH SCALE VALUE FOR ANALOG OUTPUT** scrolls across the display. This is the display value where the cal high output will be (*as calibrated above in 5.c.*). Using the [▲] and [▼] buttons, select a cal high position. Then press [P].
6.
 - a. --- **EDIT PIN NUMBER** and **SKIP** scroll across the display. Press [P] to skip and return to the operational display, or the [▲] button to **ENTER**. Then press [P].
 - b. --- **ENTER NEW CAL PIN NUMBER** and your current PIN number (factory default 1) scroll across the display. Using the [▲] and [▼] buttons, enter your new calibration entry PIN number. *Do not forget this number!* Then press [P] to **EXIT** and return to the operational display.

IF YOU LOSE YOUR PIN NUMBER: Press [▲], [▼] and [P] at the same time. If you do this correctly, a factory identification text will scroll across the display, followed by: **ALL PIN NUMBERS RESET TO 1**. This will reset the PIN numbers for both calibration and set-point entry to their factory default of 1.

Set-point Setup

Begin by pressing [F1].

--- **ENTER SETPOINT PIN NUMBER** and **0** scroll across the display. Use the [▲] and [▼] buttons to enter your security code number (factory default 1). Then press [P].

1.
 - a. --- **EDIT SETPOINT** and **SKIP** scroll across the display. Press [P] to skip to 2. or use the [▲] button to select a set-point to edit: either

- SP_1, SP_2, SP_3** or **SP_4**. Then press **[P]**.
- b. **--- SETPOINT VALUE** and the last set-point value entered scroll across the display. Using the **[▲]** and **[▼]** buttons, adjust the selected set-point value. Then press **[P]**.
 - c. **--- SP ACTIVATION** scrolls across the display. Using the **[▲]** and **[▼]** buttons, select the relay activation to operate **ABOVE** or **BELOW** the set-point value. Then press **[P]**.
 - d. **--- HYSTERESIS VALUE** and scrolls across the display. Using the **[▲]** and **[▼]** buttons, select the hysteresis value if required. Then press **[P]**.
 - e. **--- MAKE DELAY** and the last selected make delay value scroll across the display. Using the **[▲]** and **[▼]** buttons, select the set-point delay value (in tenths of a second) if required. Then press **[P]**.
 - f. **--- EDIT SETPOINT** and **SKIP** scroll across the display. To edit another set-point, use the **[▲]** and **[▼]** buttons to select the new set-point to edit. Then press **[P]** and proceed from **1.b.**. If you do not wish to edit another set-point, press **[P]** to proceed to step **2.**.
2.
 - a. **--- EDIT SP PIN NUMBER?** and **SKIP** scroll across the display. Press **[P]** to skip and return to the operational display, or the **[▲]** button to **ENTER**. Then press **[P]**.
 - b. Your current PIN number (factory default 1) will appear on the display. Using the **[▲]** and **[▼]** buttons, enter your new set-point entry PIN number. *Do not forget this number!* Press **[P]** to return to the operational display.

Appendices

Appendix A Calibration

AUTO: This is a 2 point calibration procedure which uses zero and span values to calculate the scale and offset. This method is the most accurate calibration method when calibration test weights are available.

MV/V: This calibration method uses the load cell manufacturer's test certificate for the initial calibration. From the load cell manufacturer's test certificate enter the total full scale weight of the connected load cell(s) in counts. Then enter the mV/V of the connected load cell(s). If you are using more than one load cell, enter the average of the values.

Set zero now? allows you to set your zero position when the load cells are powered up and in position. This calibration method is ideal for silo and tank applications.

T_OFST: The trim offset is used to enter an offset value other than zero, altering the zero offset does not change the span range.

T_SPAN: The trim span will change the span range and will not effect the zero or zero offset position.

Appendix B Zero maintenance

AUTO: Auto zero maintenance is used to maintain display zero. The auto zero compensates for a slow drift in the load cell output due to temperature changes, dust, time etc.. The display will be maintained at zero, provided that input conditions are within the limits set by the following three programmable parameters:

CAPTURE BAND: This is the programmable band in counts that the auto zero motion compensates within.

MOTION BAND: This is the programmable maximum rate of change (in counts/second) allowable.

APERTURE WINDOW: This is the maximum number of counts the load cell zero is allowed to drift. (Industry standard 1.9% of load cell span). If the load cell zero drifts outside this window, the auto zero maintenance will cease to function.

MAN: The manual zero option allows the zero offset value to be manually reset with a separate switch. To operate the manual zero, connect a push switch across capture and common pins.

APERTURE WINDOW: This is the maximum zero offset allowed, and is calculated from the last calibrated zero value. The zero change is held in the event of a power outage. This is used to safeguard potential overload of the load cell and possible mechanical failure of the weighing structure.

Appendix C Tare & Tare reset from the rear pins

This standard function is used to Tare the display value and reset the display to the calibrated value. There are no limits to the Tare. The controller will return to the normal operation in the event of a power outage. (This option is often used for batching applications.) To Tare the display, connect a push

button switch across pins 2 and 4 (hold and common) on terminal 2. To reset the display, connect a push button switch across pins 1 and 4 (lock and common) on terminal 2.

The right-most decimal point is illuminated when the display is in Tare mode.

CAUTION: Do not use this Tare function for crane lifting applications where potential overloads can create a dangerous situation. Always use manual zero with a window limit to prevent potential overload.

Appendix D Averaging

AVERAGING PARAMETERS: The TEX-WEI100 has windowed input signal averaging for stable measurement and fast response.

AVERAGING SAMPLES: This is the number of input samples the meter will average.

AVE WINDOW: If the input exceeds the window value it will not average. This enables fast response.

Appendix E Analog output setup

CAL LOW ANALOG OUTPUT: This is the low analog output V or mA calibration. The analog output low can be calibrated from 0V up to 10V or from 0mA up to 20mA.

CAL HIGH ANALOG OUTPUT: This is the high analog output V or mA calibration. The analog output high can be calibrated from 10V down to 0V or from 20mA down to 0mA.

LOW SCALE VALUE FOR ANALOG OUTPUT: This is the display value which corresponds to the 'cal low analog output' as calibrated above.

HIGH SCALE VALUE FOR ANALOG OUTPUT: This is the display value which corresponds to the 'cal high analog output' as calibrated above.

Appendix F Edit set-point

SETPOINT VALUE: This is the display value at which the selected set-point will activate.

SETPOINT ACTIVATION: Select **ABOVE** for relay to turn on above the set-point value and off below it. Select **BELOW** for relay to turn on below the set-point value and off above it.

HYSTERESIS: The hysteresis value is the separation value from set-point value for set-point reactivation. If **ABOVE** is selected for set-point activation, the hysteresis value determines how far the input must fall below the set-point value to deactivate the set-point. If **BELOW** is selected for set-point activation, the hysteresis value determines how far the input must rise above the set-point value to deactivate the set-point.

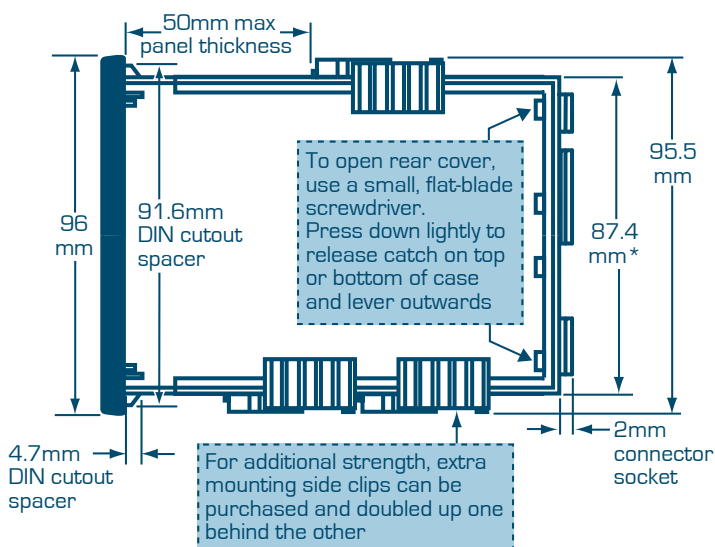
MAKE DELAY: This is the time delay between set-point activation and when the relay turns on. The time is 1/10'th second resolution.

Appendix G Display brightness

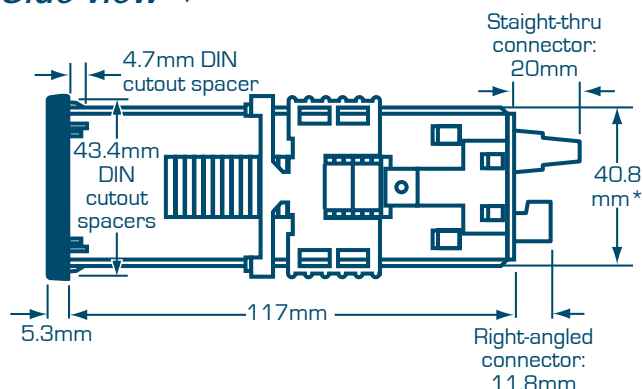
To adjust the brightness of the display, press the **[P]** and **[▲]** buttons together. The display flashes **BRI** and the current brightness setting. Use the **[▲]** and **[▼]** buttons to set the required brightness. Then press **[P]**.

Appendix H Case dimensions

Top view ▼



Side view ▼



Front view ▼

