

**Addendum to TI-2100 Setup/Operation Manual**  
**Rev 8.95P**  
**Covering Versions 11.97 and higher**

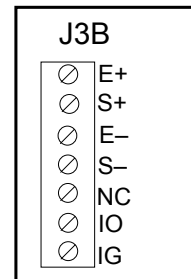
**OVERVIEW OF CHANGES**

1. Load Cell connection has been changed to accommodate optional DAC (Digital to Analog Converter) for 4 to 20 mA analog output.
2. F2 now contains two sub-menus: F2U1 "Span Gain" and F2U2 "DAC Enable". Selections for F2U1 are 25 through 200. Factory default setting for F2U1 is 100. Selections for F2U2 are 0 and 1. Factory default setting for F2U2 is 0.
3. Added a sub-menu F21 to the Setup Menu Chart which restores all parameters in the User ("A") Menu and Setup ("F") Menu to the factory default settings. PLEASE USE CAREFULLY AS YOU MAY LOOSE VITAL SETUP PARAMETERS!!!
4. Update Appendix C.
5. Update Specifications section for new ADC (Analog to Digital Converter).

**CHANGES TO "Installation and Wiring" SECTION**

**CONNECTING THE LOAD CELL OR JUNCTION BOX**

Shown at right is a close-up of terminal block J3B which is the main load cell feed to the circuit board. To connect the load cell or junction box, simply make the appropriate connections to this terminal block. Terminals labeled "IO" and "IG" are for the optional 4-20 mA analog output. "IO" is the current loop output pin and "IG" is the current loop return.



**CHANGES TO "SETUP MENU DESCRIPTIONS" SECTION**

<b>F2</b> Span Gain / DAC Enable	Sets the indicator's internal resolution and enables or disables the optional 4-20 mA output. This menu selection has two sub-menus; "F2U1" (Span Gain) and "F2U2" (DAC enable).  F2U1: " <b>25</b> " lowest resolution / fastest update rate " <b>200</b> " indicates highest resolution / slowest update rate F2U2: " <b>0</b> " indicates disabled      " <b>1</b> " indicates enabled	<b>F2U1:</b> 25, 50, 75, <b>100</b> √, 150, 200  <b>F2U2:</b> <b>0</b> √    1
<b>F21</b> Factory Reset	This sub-menu will reset all parameters in the "F" and "A" menus to the default settings. USE WITH CAUTION!!!!	Press the <b>ZERO</b> key twice to execute.

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**CHANGES TO “Appendix A: Specifications” SECTION**

***ANALOG SPECIFICATIONS***

Input Impedance	10 G $\Omega$ typical
Internal Resolution	275,000 counts max
Measurement Rate	Up to 15 meas/sec

***POWER***

Line In	110 VAC/60 Hz or 220 VAC/50 Hz, selectable
Power Consumption	10 VA for 1-350 $\Omega$ Load Cell 15 VA for 4-350 $\Omega$ Load Cells 19 VA for 8-350 $\Omega$ Load Cells

**APPENDIX C: Determining Proper Span Gain**

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The Span Gain parameter specified in the setup menu is directly related to the A/D integration time. Therefore, the lower the number, the higher the measurements per second. Disregarding digital filter length, a span gain of **25** produces about 20 to 25 measurements per second, while a span gain of **200** produces only about 3 or 4 measurements per second.

There are two steps to determining the proper span gain value to use: The first involves looking up a value in the table below, saving that value, then calibrating the system. If the first step does not yield a successful calibration, then the second step allows the technician to view the actual internal count to determine the proper value for the span gain and check the system for linearity.

***To determine the initial value for span gain in the setup menu:***

1. Determine the number of desired external graduations and choose the corresponding value under the number closest to your full scale input range in millivolts.
2. Enter the setup menu and save this number for the Span Gain parameter.
3. Perform a complete calibration. If the calibration proves unsuccessful, or you wish to view the internal count, proceed to the next set of instructions.

***To view the internal count during the calibration procedure:***

1. Enter the Zero Calibration procedure (F16) in the Setup menu.
2. After pressing **ZERO** to zero the offset, you may place the test weight(s) on the weighing mechanism.
3. The displayed count is the internal count. At full scale, the displayed count should be a minimum of 2 times the desired external graduations. However, for maximum stability, a factor of 6:1 or higher is recommended.
4. If the displayed count is large enough, remove the test weight(s), re-zero the indicator if necessary, and proceed with the calibration. If the displayed number is *not* large enough, increase the Span Gain to the next highest choice in the Setup Menu and re-calibrate.

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**APPENDIX C: Determining Proper Span Gain / Continued**

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# of External Grads	Full Scale Input Range (mV/V)														
	0.2	0.4	0.6	0.8	1.0	1.2	1.4	1.6	1.8	2.0	2.2	2.4	2.6	2.8	3.0
500	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
1,000	50	25	25	25	25	25	25	25	25	25	25	25	25	25	25
1,500	75	50	25	25	25	25	25	25	25	25	25	25	25	25	25
2,000	100	50	50	25	25	25	25	25	25	25	25	25	25	25	25
2,500	150	75	50	50	25	25	25	25	25	25	25	25	25	25	25
3,000	150	75	50	50	50	25	25	25	25	25	25	25	25	25	25
4,000	200	100	75	50	50	50	50	25	25	25	25	25	25	25	25
5,000	–	150	100	75	50	50	50	50	50	25	25	25	25	25	25
6,000	–	150	100	75	75	50	50	50	50	50	25	25	25	25	25
8,000	–	200	150	100	75	75	75	50	50	50	50	50	50	50	25
<b>10,000</b>	–	–	<b>200</b>	<b>150</b>	<b>100</b>	<b>100</b>	<b>75</b>	<b>75</b>	<b>75</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>	<b>50</b>
12,000	–	–	200	150	150	100	100	75	75	75	50	50	50	50	50
15,000	–	–	–	200	150	150	100	100	100	75	75	75	75	50	50
20,000	–	–	–	–	200	200	150	150	150	100	100	100	75	75	75
30,000	–	–	–	–	–	–	200	200	200	150	150	150	150	100	100
40,000	–	–	–	–	–	–	–	–	–	200	–	–	150	150	–

*Recommended Minimum (6:1) Span Gain Table*