

720i/820i/920i® Programmable Weight Indicator and Controller

Analog Output Card Installation



WARNING Disconnect power before removing indicator backplate.

Use anti-static protection for grounding and to protect components from electrostatic discharge (ESD) when working inside the indicator enclosure.



Manuals can be viewed or downloaded from the Rice Lake Weighing Systems website at www.ricelake.com/manuals

Use the following procedure to install analog output cards in 720i, 820i and 920i indicators:

1. Disconnect indicator from power source.
2. Open the indicator enclosure to access the CPU board (expansion board slots in the 920i).
3. Carefully align the large connector on the bottom of the option card with the option card slot in the indicator, outlined in red in Figure , or .

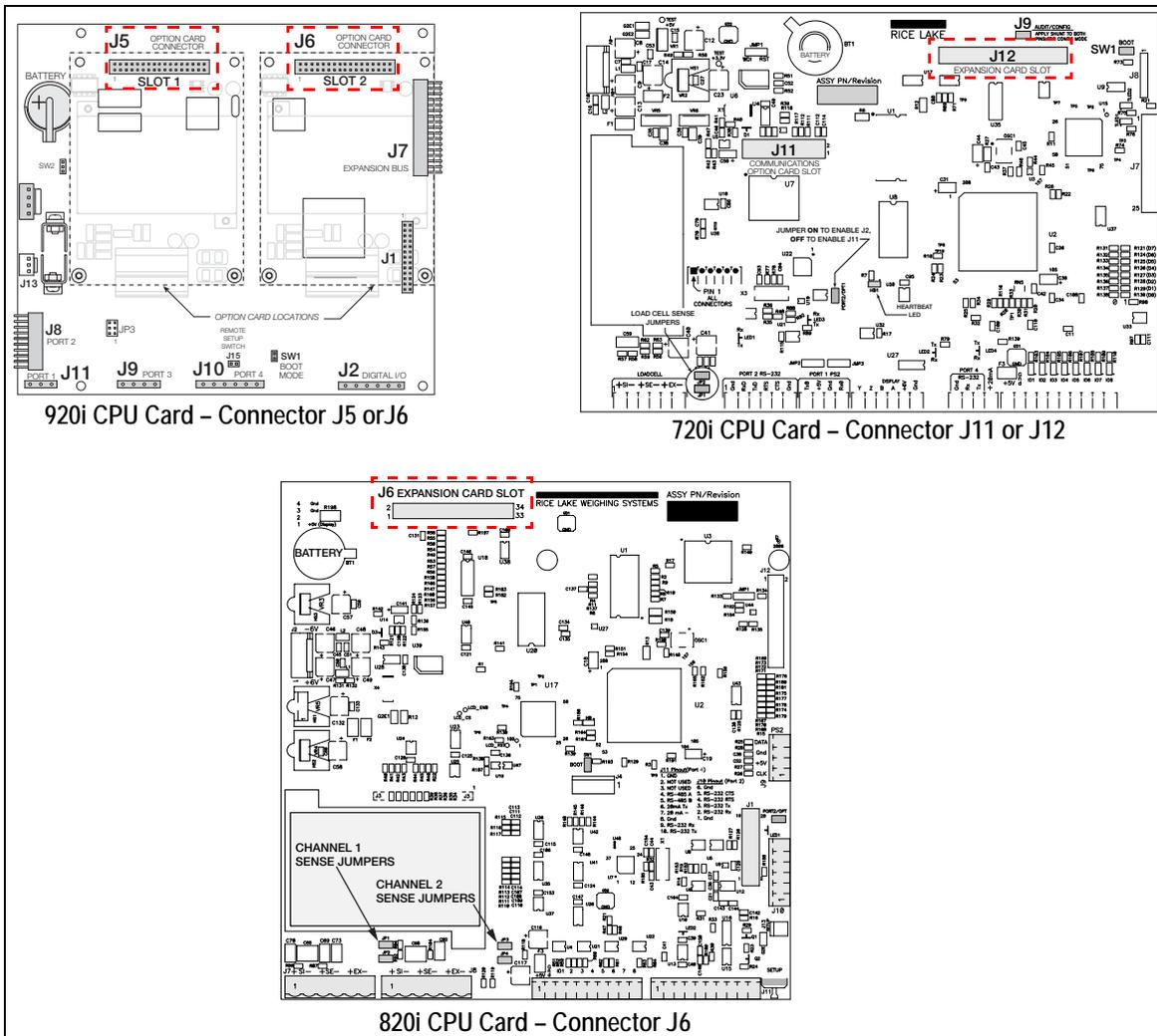


Figure 1. CPU Card Connections



4. Press down carefully on the option card until it is seated on the CPU board connector.
5. Use the screws and lock washers provided in the option kit to secure the option card to the threaded standoffs on the CPU board.
6. Make connections to the option card as required. See Figure 2 for wiring 0-20 or 4-20 mA current or 0-10 VDC voltage.
7. Use cable ties to secure loose cables inside the enclosure.
8. Set the mode selection jumper (Figure 2) for voltage or current output.
9. Close the indicator according to the indicator manual.
10. Ensure no excess cable is left inside the enclosure and tighten cord grips.
11. Reconnect power to the indicator.
12. Configure the analog output card as described on page 3.

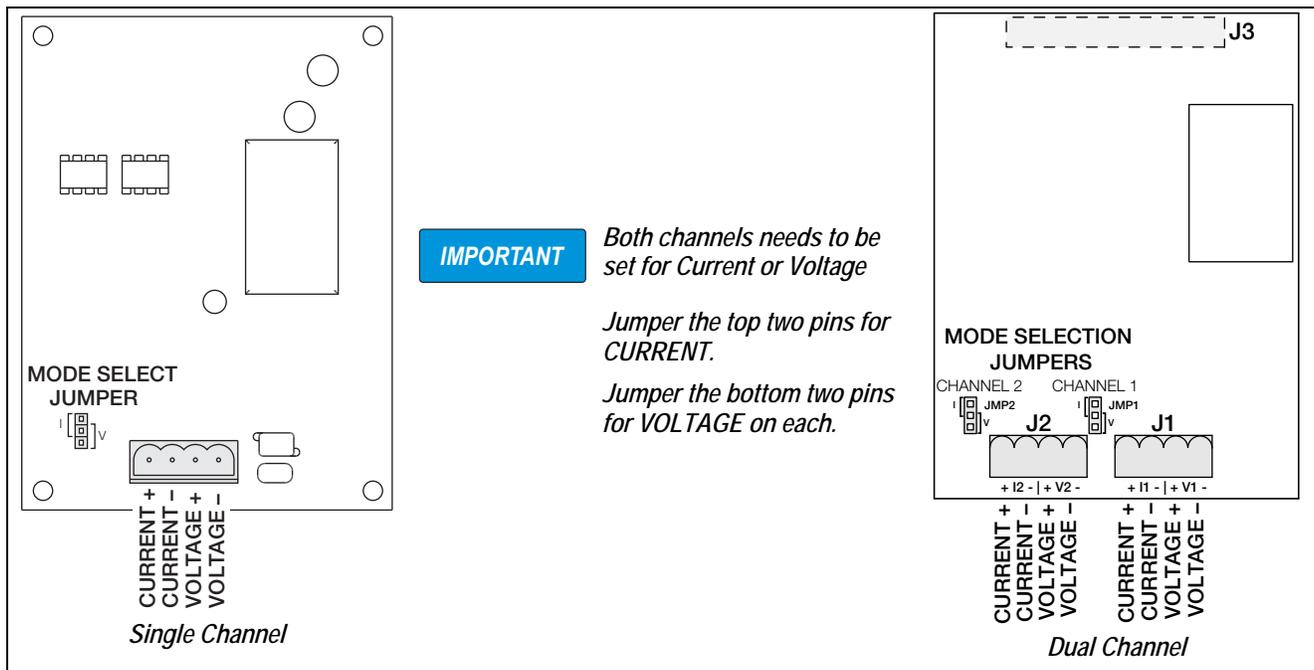


Figure 2. Analog Output Cards

IMPORTANT Connection to PLC Analog Input Module

If the PLC analog input uses a common ground (negative input of the analog card) and both PLC channels are connected to the same option card, there is crosstalk and the values of the 2 inputs will be merged.

Example: If one is inputting 6 mA and the other is inputting 12 mA they will merge and each looks like it is inputting 9 mA.

$$6 + 12 / 2 = 9 \text{ mA}$$

To prevent this cross talk, the PLC must have isolated grounds on the input channels.

The indicator automatically recognizes all installed option cards when the unit is powered on. No hardware-specific configuration is required to identify the newly-installed card to the system.

Indicator	Single-Channel Card	Dual-Channel Card	
		Channel 1	Channel 2
920i *	ALGOUTn	ALGOUTn	ALGOUTn+14
820i	ALGOUT2	ALGOUT2	ALGOUT4
720i	ALGOUT2	N/A	N/A

Table 1-1. Analog Output Card Configuration Assignments

**Note**

For 920i only:
 *n = slot number (J5=slot 1, J6=slot 2).

*Dual-channel cards use the same assignment for channel 1; channel 2 is assigned ALGOUTn+14

Example:

Channel 2 of a dual-channel analog output card installed in Slot 3 (expansion board) of a 920i is assigned as ALGOUT17.

Analog Output Calibration

The following calibration procedure requires a multimeter to measure voltage or current output from the analog output module.



Note *The analog output must be calibrated after the indicator itself has been configured and calibrated.*

- Enter setup mode and go to the ALGOUT menu (see Figure 3):
 - Set SOURCE1 for the number of the scale channel used as the source for the analog output
 - Set MODE1 to track either gross or net weight from that scale
 - Set OFFSET to 0% for 0–10 V or 0–20 mA output; set to 20% for 4–20 mA output
 - Set ERRACT to specify how the analog output will respond to system error conditions
 - Set MIN to lowest weight value to be tracked by the analog output
 - Set MAX to highest weight value to be tracked by the analog output
 - MIN NEG and MAX NEG parameters allow tracking of negative weight values.
 - MIN NEG - set to on to specify the minimum weight (MIN parameter) is a negative value.
 - MAX NEG - set to on to specify the maximum weight (MAX parameter) is a negative value.

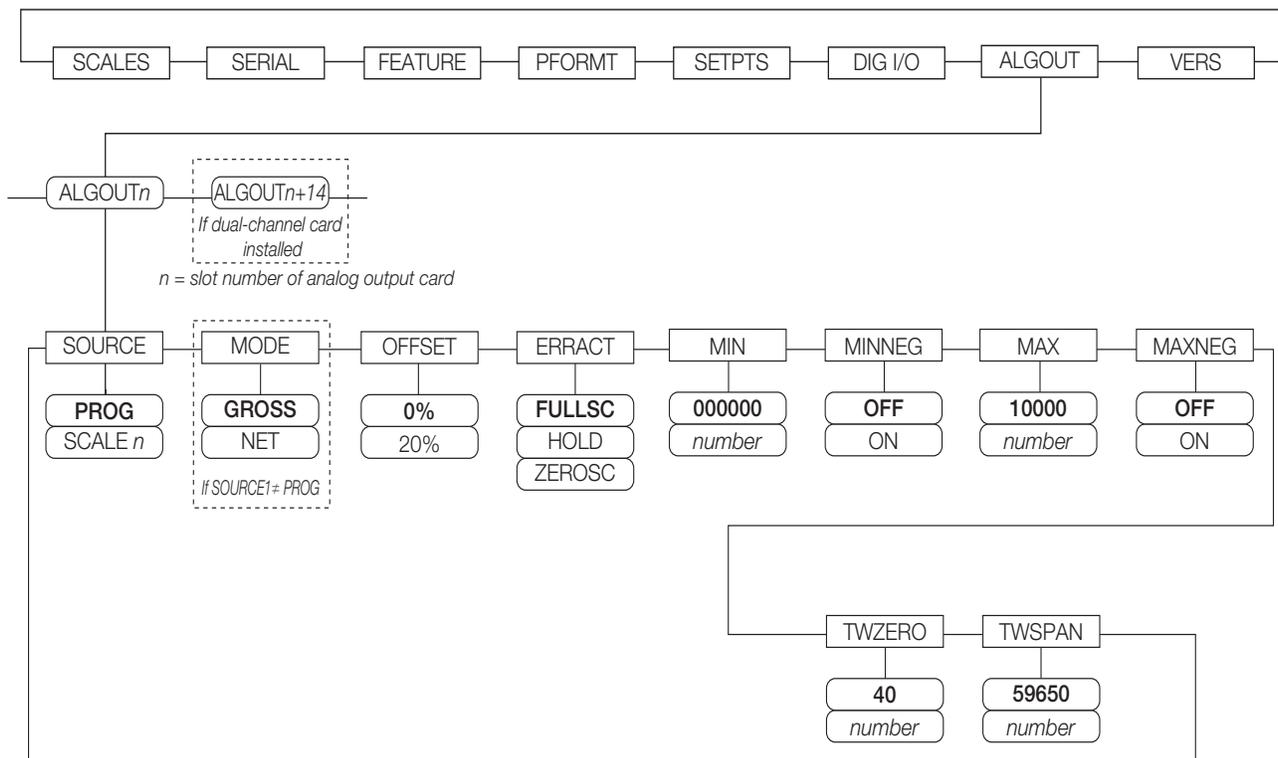


Figure 3. Analog Output Menu

- Connect multimeter to connector J1 on the analog output card:
 - For voltage output, connect voltmeter leads to pins 3 and 4
 - For current output, connect ammeter leads to pins 1 and 2
- Adjust zero calibration: Scroll to the *TWZERO* parameter. Press ∇ to view zero value, then check voltage or current reading on multimeter. Use the numeric keypad to adjust the zero value up or down.

4. Adjust span calibration: Scroll to the *TWSPAN* parameter. Press ∇ to view span value, then check voltage or current reading on multimeter. Use the numeric keypad to adjust the span value up or down.
5. Final zero calibration: Return to the *TWZERO* parameter and verify that the zero calibration has not drifted. Use the numeric keypad to adjust the zero value as required.
6. Return to normal mode.

Analog output function can be verified using test weights.

For dual-channel cards, repeat calibration steps for the second (J2) connector.

See the indicator manuals for more configuration information.

920i Manual (PN 67887)

820i Manual (PN 93018)

720i Manual (PN 103121)

Specifications

Resolution 16-bit, monotonicity over temperature

Linearity $\pm 0.03\%$ of full scale input

Current Output 0–20 mA or 4–20 mA (20% offset)

Maximum Load Resistance 840 Ω

Power Consumption 3.9W (max. load @ 20 mA)

Voltage Output 0–10 VDC

Minimum Load Resistance 1.1 K Ω

Input Protection Short circuit protection, 300W transient voltage suppression
Protection for ESD, EFT (electrical fast transients), tertiary lightning, and system-generated transients per IEC 60001-4-2, 60001-4-4, and 60001-4-5; European Standards EN50082 and EN61000-4



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