Analog Output Card Installation

PN 179156

Use the following procedures to install the analog output card in the *880* panel mount and universal desktop model indicators.

Manuals can be viewed and downloaded from the Rice Lake Weighing Systems website at **www.rlws.com**

WARNING

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

Procedures requiring work inside the indicator must be performed by qualified service personnel only.

The supply cord serves as the power disconnect for the 880 Analog Output Installation. The power receptacle to the indicator must be easily accessible.

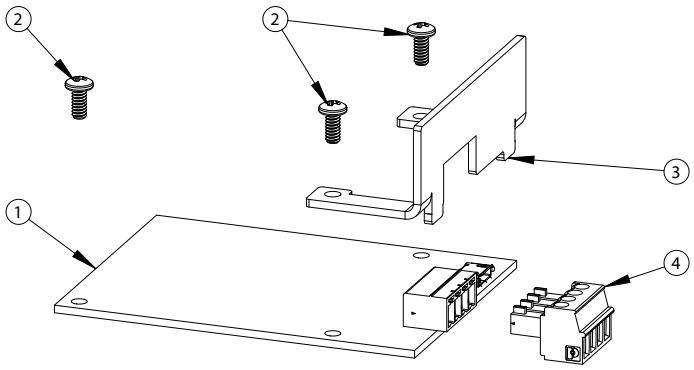

Figure 1. Analog Output Card Kit

Item No.	Part Number	Description	Qty
1	131601	Board Assembly, Analog Output	1
2	14825	Screw, Machine 4-40 NC x 1/4	3
3	181007	Face Plate (Panel Mount Models Only)	1
4	76513	Connector, 4 position Screw Terminal	1

Table 1-1. Analog Output Card Kit Parts List

880 Panel Mount Instructions

1. Disconnect power to the indicator.
2. Unplug all connectors from the backplate.

Connector Type	Header Designation
Load Cell	J1
Digital I/O	J2
Comm 1	J3
USB Micro Device	J4
USB Host	J5
EtherNet TCP/IP	J6

Table 2. 880 Connectors

3. Unhook the indicator assembly from the DIN rail by inserting a flat blade screwdriver into the bottom tab and sliding the mounting plate down (Figure 1 on page 2). Due to the angle of the hook portion of the DIN bracket, it may be a little tight as it is disconnected.

4. Carefully remove the indicator box from the DIN rail.

Important ***The display cable harness is still connected to the front panel.***

5. Disconnect the display cable harness (Figure 1).

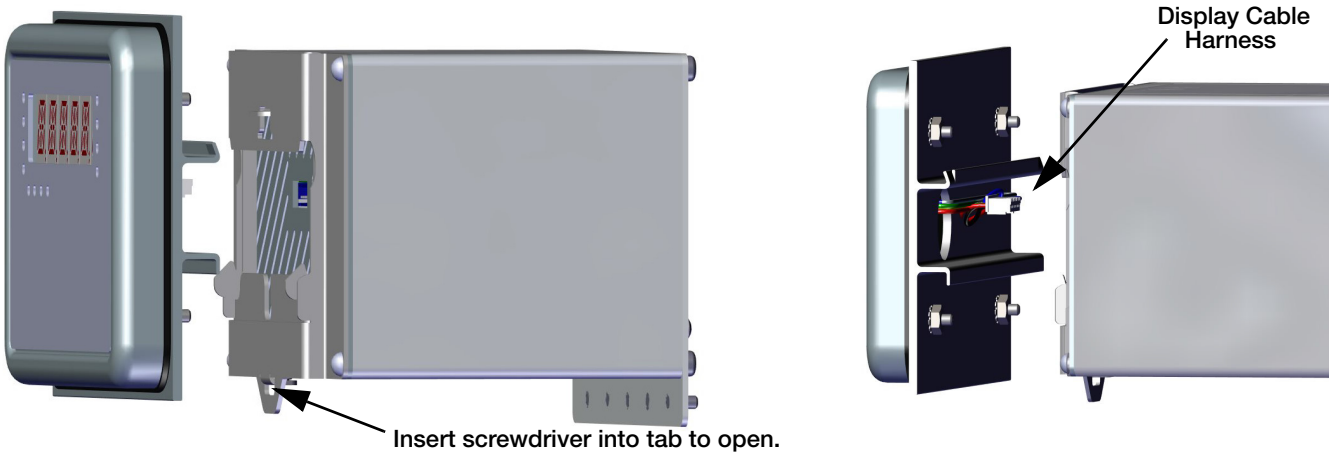

Figure 1. Remove Indicator Assembly From Din Rail

6. Remove the four screws to detach the backplate from the indicator enclosure and carefully pull the backplate straight out from the indicator enclosure. If the display is not connected via the display cable harness, the boards slide out of the enclosure, still attached to the backplate.

Figure 2. Remove Backplate With Boards

Note ***Removing the backplate from the enclosure voids the Legal for Trade status if sealing kit is installed.***

7. Remove the screws from the power supply board and the CPU board to detach the backplate from the boards and retain them for installing the boards.

Note ***Prior to installing the analog output card, turn the SW2 switch to the ON position if installing onto the blue CPU board (PN 175109) or to the OFF position if installing onto the green CPU board (PN 131597), which is located on the backside of the analog output card.***

Also ensure SW1 located on the front of the card is in the OFF position and SW3 and SW4 located on the back of the board are in the OFF positions.

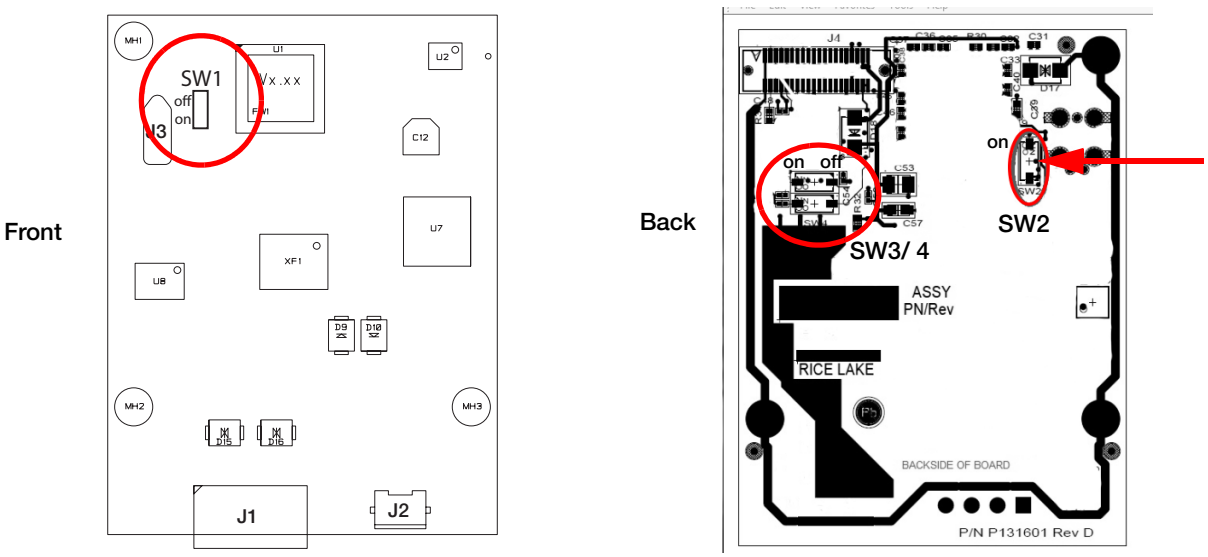

Figure 3. Switch Locations on Analog Output Card

8. Install the Analog Output card on the CPU board standoffs, plugging it into the J8 connector on the CPU board (Figure 4).
9. Use screws to secure the option card and face plate to the supporting standoffs (Figure 4).

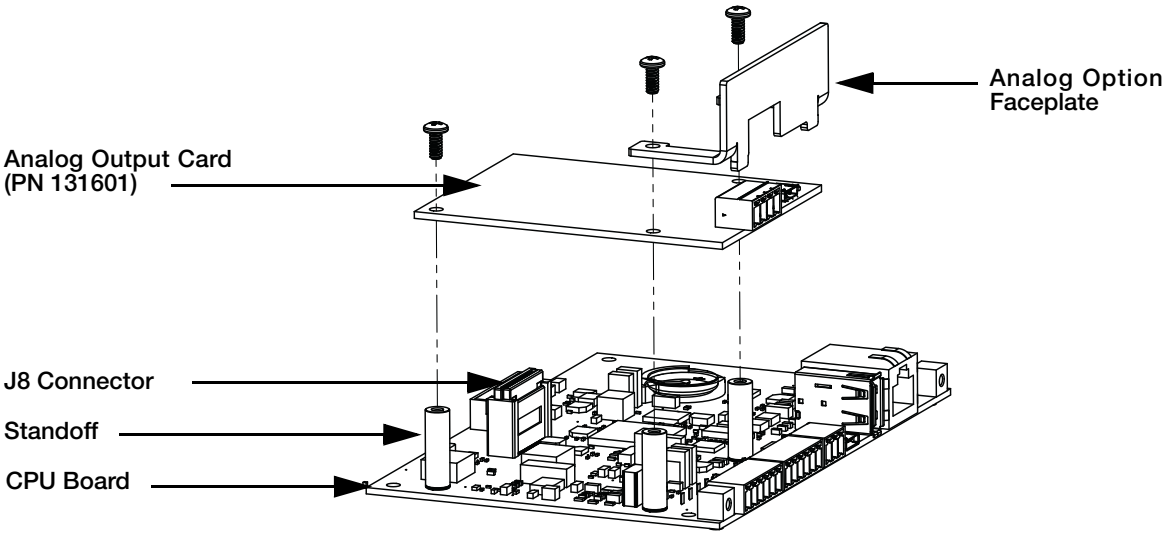

Figure 4. Install Analog Output Card

10. Connect the CPU board and the power supply board to the backplate.

11. Connect the cable assembly to CPU board and power supply board.

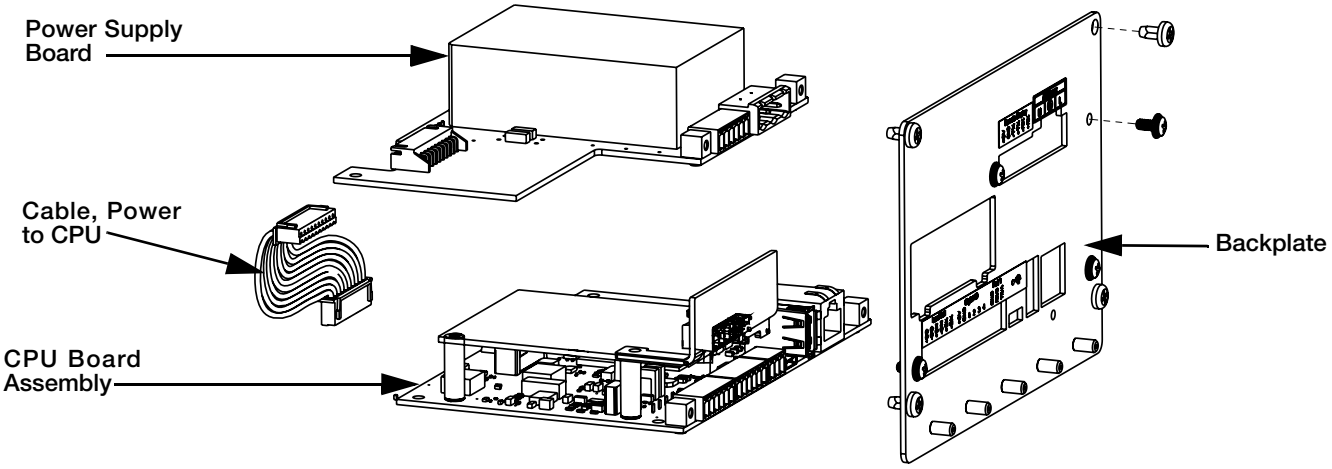

Figure 5. Install Boards to New Backplate

12. Slide backplate with boards into enclosure, ensure that each board is seated correctly in the grooves of the enclosure.
13. Secure backplate with retained corner screws.

Note ***Ensure the enclosure is in the upright position, otherwise the connector for the display will not align with the front cutout. Before securing the backplate, verify the display connector aligns properly with the front cutout. If not, remove the boards and backplate and re-insert with the enclosure in another position so that everything does line up.***

Figure 6. Boards Installed in Indicator Assembly Enclosure

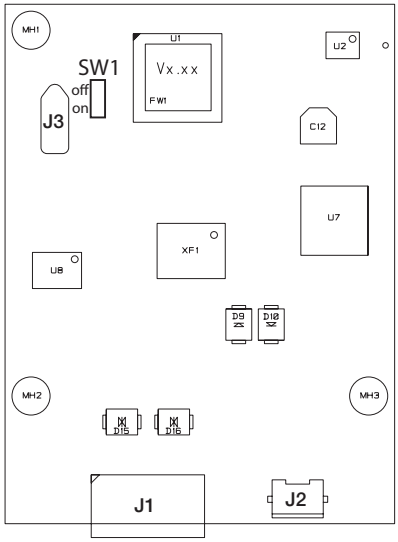

Figure 7. Analog Output Card Installation

Connector J1	
Pin	**Signal**
1	– Current Out
2	+ Current Out
3	– Voltage Out
4	+ Voltage Out

Table 2. Analog Output Card Pin Assignments

14. Connect to the analog output card as shown in Table 2. Voltage or current output is configured via software.
15. Reconnect the display cable hardness to the front connection of the controller assembly (if applicable), then reassemble the controller to the DIN rail.
16. Reconnect all connectors to the back of the indicator assembly.
17. Reconnect power to the indicator.

Note ***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.***

880 Universal Instructions

1. Disconnect power to the indicator.
2. Open the indicator enclosure to access the CPU board.
3. Carefully align the large connector on the bottom of the analog output option card with the option card slot J8, on the CPU board.
4. Press down carefully on the option card until it is seated on the CPU board connector.
5. Use the screws provided in the option kit to secure the option card to the threaded standoffs on the CPU board.

Analog Output Calibration

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

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

1. Enter setup mode and go to the ALGOUT menu (Figure 8):
   - Set ***SOURCE*** to specify if the scale is tracked by analog output or if analog output is under iRite program control
   - Set ***MODE*** to track either gross or net weight from that scale
   - Set ***OUTPUT*** for 0–10 V, 0–20 mA or 4–20 mA output
   - Set ***ERRACT*** to specify how the analog output will respond to system error conditions
   - Set ***MIN*** to the lowest weight value to be tracked by the analog output
   - ***MIN NEG*** – set to ***on*** to specify the minimum weight (MIN parameter) is a negative value
   - Set ***MAX*** to the highest weight value to be tracked by the analog output
   - ***MAX NEG*** – set to ***on*** to specify the maximum weight (MAX parameter) is a negative value
   - ***TWZERO*** – perform the analog output zero calibration
   - ***TWSPAN*** – perform the analog output span calibration

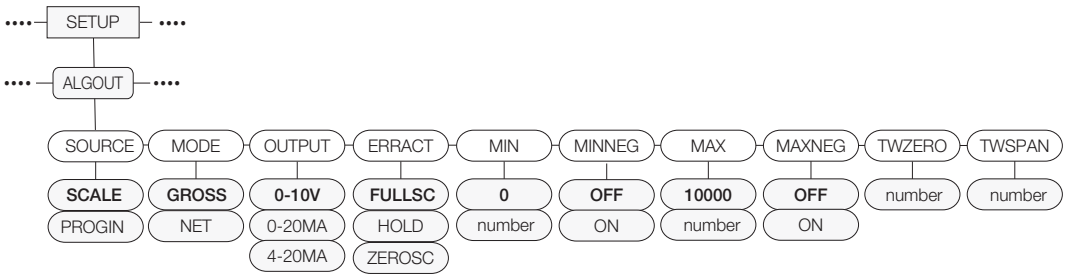

Figure 8. Analog Output Menu

2. 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 (+)
3. Adjust zero calibration: Scroll to the ***TWZERO*** parameter. Press ▽ to view zero value, then check voltage or current reading on multimeter. Enter this reading as follows:
   - Press ◁ or ▷ to select the digit
   - Press △ or ▽ to increment or decrement the value
   - Press TARE when the value is correct

   Example: If multimeter reads 0.15 mV at this point, edit the TWZERO value to read 0.15 and press TARE. The indicator uses the entry to adjust the output for exactly 0.0 mV. The process may be repeated if necessary.
4. Adjust span calibration: Scroll to the ***TWSPAN*** parameter. Press ▽ to view span value, then check voltage or current reading on multimeter. Enter this reading as follows:
   - Press ◁ or ▷ to select the digit
   - Press △ or ▽ to increment or decrement the value
   - Press TARE when the value is correct
5. Verify zero calibration: Return to the ***TWZERO*** parameter and verify that the zero calibration has not changed. If the zero value read on the multimeter is correct, press **MENU** to cancel the re-calibration. Otherwise, re-calibrate as in Step 3 above.
   - Press ◁ or ▷ to select the digit
   - Press △ or ▽ to increment or decrement the value
   - Press TARE when the value is correct

If recalibrating the zero point, also re-check the span point and calibrate if needed. Repeat until both readings are correct.

6. Return to weigh mode. Analog output function can be verified using test weights.

See the *880 Technical Manual* (PN 158387) for more configuration information.

Specifications

Resolution:	16-bit, monotonicity
Linearity	±0.01% of full scale input, Drift +/-10ppm/degree C Maximum
Current Output	0–20 mA or 4–20 mA
Maximum Load Resistance	667
Voltage Output	0–10 VDC
Minimum Load Resistance	1 K
Input Protection	Short circuit protection, 600W 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

RICE LAKE®
WEIGHING SYSTEMS

230 W. Coleman St. • Rice Lake, WI 54868 • USA
U.S. 800-472-6703 • Canada/Mexico 800-321-6703 • International 715-234-9171 • Europe +31 (0)26 472 1319

www.ricelake.com

4/10/2017 PN 156858 Rev A