

Synergy Series

Single Analog Output Option Card

The Synergy Series, Single Analog Output Card (PN 195084) provides either a 0-10 VDC, 0-20 mA or 4-20 mA output, proportional to the selected mode source.

See the technical manual of the indicator for complete instruction on opening the enclosure.



Manuals and additional resources are available from the Rice Lake Weighing Systems website at www.ricelake.com

Warranty information can be found on the website at www.ricelake.com/warranties



WARNING

Always disconnect power before opening the enclosure. Option card is not hot swappable.



CAUTION

A grounding wrist strap must be worn to protect components from electrostatic discharge (ESD) when working inside the indicator's enclosure.

Parts Breakdown

The below figure and table show the parts provided in the analog output option card kit:

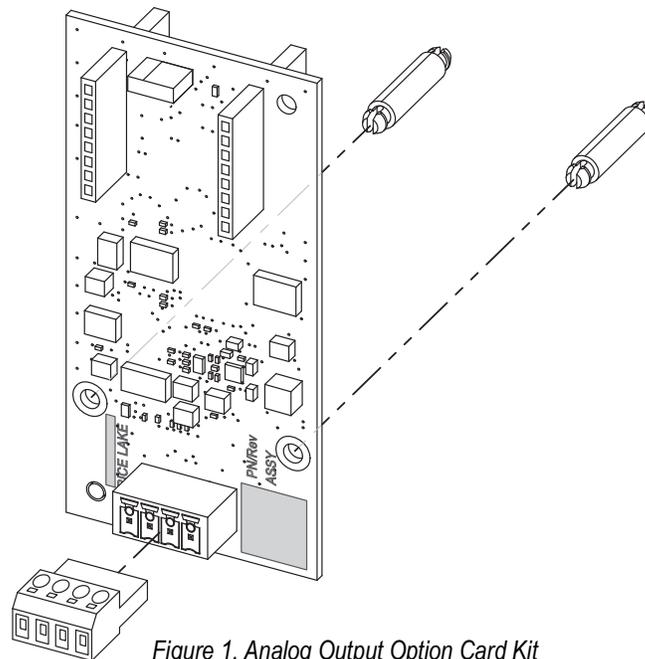


Figure 1. Analog Output Option Card Kit

Part No.	Description	Qty
191208	Board Assembly, MB, Analog Output	1
194529	Standoff, Snap-Lock 5/8	2
195995	Connector, 4 Position Screw Terminal Pluggable 3.50mm black	1
15631	Cable Tie, 3" Nylon	1
53075	Clamp, Ground Cable Shield, Radius 0.078"	1
194488	Screw, Mach M4 x 0.7 x 6 Phillips with External Tooth Washer SEMS	1

Table 1. Analog Output Option Card Kit Parts List

Installation

Follow the procedure below to install the analog output option card:

1. Disconnect power to the indicator.
2. Open the enclosure as instructed in the technical manual of the indicator.
3. Connect the two standoffs to the option card board as shown in [Figure 1](#) on the previous page.
4. Connect the option card to the J22 and J23 option slot connectors on the indicator's CPU board, making sure the two standoffs also connect to the CPU board.
5. Route cable through the cord grip and make the connection to the J7 connector of the option card board.



Note *The analog output option card will be vertical inside of the enclosure with the J7 connector at the bottom of the board.*

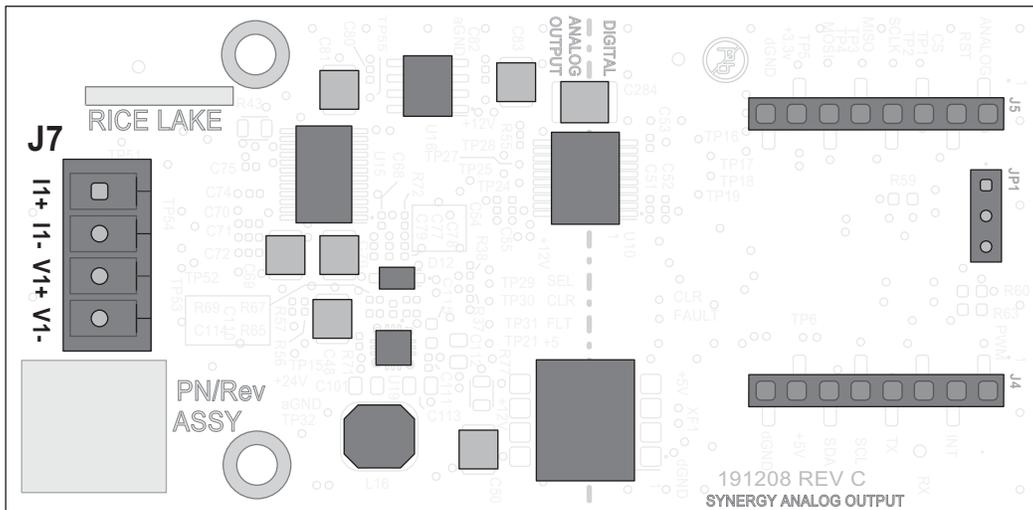


Figure 2. Analog Output Option Card (top view)

Connector	Pin	Function
J7	1	I1+
	2	I1-
	3	V1+
	4	V1-

Table 2. J7 Pin Assignments

6. Ensure no excess cable is left inside the enclosure and use the provided cable tie to secure loose cable inside the enclosure as needed.
7. Shield ground the cable using the grounding bracket on the bottom of the enclosure with the provided cable clamp and screw. See the technical manual of the indicator for additional instructions on grounding if needed.
8. Torque the cord grip dome nut around the cable to 22 in-lb (2.5 N-m).
9. Reseal the enclosure and reconnect power to the indicator.



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

Configuration

The indicator automatically detects the analog output option card. See below for the analog output menu (RLGOUT) structure, the default parameters settings and the setup instructions. The indicator must be in setup mode to access the analog output menu.

Analog Output Menu

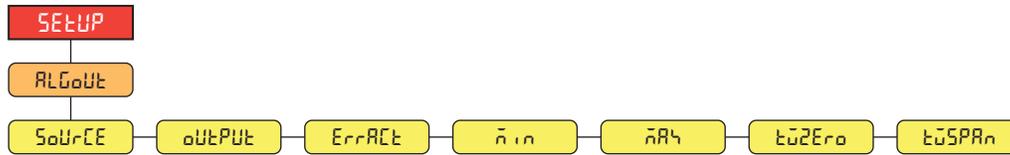


Figure 3. Analog Output Menu

Parameter	Description
SOURCE	Source – Specifies the scale tracked by the analog output; Settings: GROSS (default), NET
OUTPUT	Output – Specifies the voltage or current that is tracked by the analog output; Settings: 0-10V (default), 0-20MA, 4-20MA
ERRACT	Error Action – Specifies how the analog output responds to system error conditions; Settings: FULLSC (default) – set to full scale (10 V or 20 mA) HOLD – holds current value ZEROSC – set to zero value (0 V, 0 mA or 4 mA)
MIN	Minimum Weight – Specifies the minimum weight value tracked by the analog output; Enter value: ±9999999.0, 0.0 (default)
MAX	Maximum Weight – Specifies the maximum weight value tracked by the analog output; Enter value: ±9999999.0, 10000.0 (default)
TWEZERO	Tweak Zero – Adjusts the offset of the analog output zero value; Enter value: 0–65535, 0 (default)
TWESPAN	Tweak Span – Adjusts the offset of the analog output span value; Enter value: 0–65535, 59515 (default)

Table 3. Setup – Analog Output Menu Parameters

Analog Output Option Card Setup

- Navigate to analog output menu (RLGOUT) within the setup menu of the indicator. RLGOUT displays.
- Press . SOURCE displays.
- Press to scroll until MIN displays.
- Press to view the current value. Edit value if necessary.
- Press to accept current value or to accept the newly entered value. MAX displays.
- Repeat steps 4–5 for the maximum value. TWEZERO then displays.
- Press to view the current offset adjustment value.
- Connect a multimeter to the corresponding pins of the analog output card:
 - For 0–10 VDC output, connect the voltmeter leads to pins V+ and V-
 - For 0-20 mA or 4-20 mA output, connect the ammeter leads to pins I+ and I-
- Depending on the multimeter reading, press or to edit the offset adjustment value up or down.
For example, the multimeter should read 0V when setting the TWEZERO offset adjustment value for 0–10 VDC output.



The multimeter will instantaneously display the offset adjustment change in the displayed reading. The number keypad can be used to enter a desired number to make larger offset value changes.

- Press to accept the current displayed offset adjustment value. TWESPAN displays.
- Repeat steps 7–10 to edit the span offset adjustment value.
- Return to the TWEZERO parameter to verify the multimeter reading of the zero value has not drifted, re-adjust if needed.
- Press to return to weigh mode. Analog output function can be verified using test weights.

Specifications

Resolution 16-bit, monotonicity over temperature
Linearity $\pm 0.03\%$ of full scale input

Input Protection

Short circuit protection, 400W (peak) transient voltage suppression

Current Specifications

Current Output 0–20 mA or 4–20 mA (20% offset)
Maximum Load Resistance 1 K Ω
Power Consumption ~1.6W (max. load @ 20 mA)

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

Voltage Specifications

Voltage Output 0–10 VDC
Minimum Load Resistance 1 K Ω
Power Consumption ~1.6W (max. load @ 10 VDC)



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