880 Performance™ Series

Digital I/O Option Card Installation

The Digital I/O Option Card (Kit 197343) provides 24 additional digital I/O connections that are able to be configured as either inputs or outputs. The first eight digital I/O connections can be accessed with a pluggable connector through J1 on the option card. To use all 24 digital I/O connections, a 60 pin ribbon cable can be plugged into the J2 header on the option card (ribbon cable sold separately). The Digital I/O Option Card attaches to the J8 connector on the 880 CPU board and appears as SLOT 1 for 880 configuration.

📝 Note | *An 880 must be running firmware version 4.00 or higher to use the Digital I/O Option Card.*

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**

Parts Breakdown

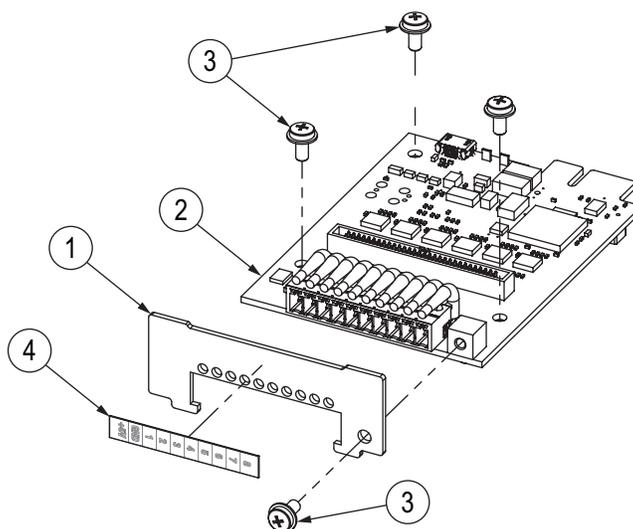The option card kit contains the necessary items used for installation of the card.

Figure 1. Digital I/O Option Card Parts Breakdown

Item No.	Part No.	Description	Qty
1	200481	Faceplate, Digital I/O Option 880	1
2	160761	PCB Assembly, X80 DIO Option Card	1
3	14822	Screw, Mach 4-40 NC x 1/4 Phillips with Internal Tooth Lock Washer SEMS	4
4	167193	Label, Digital I/O Option	1
–	164918	Connector, 10 Position Screw Terminal	1

Table 1. Digital I/O Option Card Parts List

Installation Procedure

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

⚠️ **WARNING** *Always disconnect power before opening an 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 an enclosure or controller assembly.*

Use the following instructions to install and configure the Digital I/O option card.

1. Disconnect power to the indicator.

📝 **Note** *Disconnect the display cable on an 880 panel mount after disconnecting the power.*

2. Remove the backplate of the enclosure as instructed in the 880 technical manual.

3. Carefully align the J5 connector on the bottom of the option card board with the J8 connector on the 880 CPU board.

4. Press down on the option card board until it is seated on the 880 CPU board connector.

5. Use three of the screws provided in the option card kit to secure the option card board to the threaded standoffs on the 880 CPU board.

6. Use the remaining screw provided in the option card kit to secure the option card faceplate to the backplate of the 880 panel mount.

📝 **Note** *The provided faceplate is not needed when installing the option card inside of the 880 Universal enclosure.*

7. Route the cable using one of the following connections (see Connection Pin Assignments on page 3):

   Connection to J1:
   - Cable 14-30 AWG

   Connection to J2:
   - Flat Ribbon Cable (PN 170008), 24 inch
   - Round Ribbon Cable, (PN 170009) 60 inch

📝 **Note** *Connection cables for J2 include a 60 to 50 pin adapter for relay rack connection.*
For an 880 panel mount, the ribbon cable is fed into the controller assembly by feeding the cable through the top indent of the faceplate (see Figure 2).
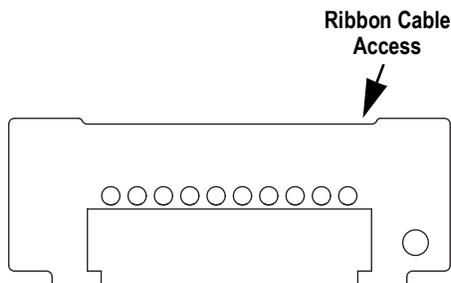

Figure 2. Ribbon Cable Access

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8. Make connections to the option card. See Figure 3 and Table 2 for pin assignment information.
9. Shield ground the cables:
   - Ground the cable shielding using the grounding stud on the enclosure
   - The round ribbon cable includes a grounding wire that attaches to the grounding stud on the enclosure

Note | *See the 880 technical manual (PN 158387) for additional information on shield grounding.*

10. Reassemble and then reconnect power to the indicator.
11. If needed, see the 880 technical manual (PN 158387) for additional information on Digital I/O configuration.
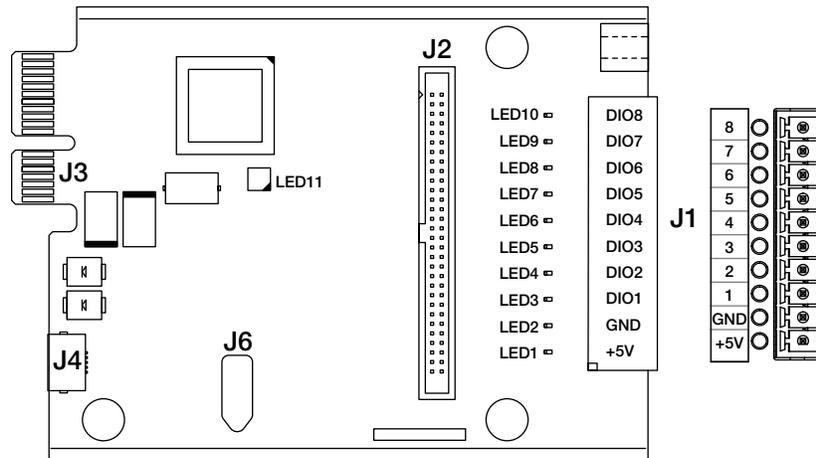
Connection Pin Assignments

Figure 3. Digital I/O Option Card Board

J2 Pin	Signal	J2 Pin	Signal	J1 Pin	Signal
1	DIO24	27	DIO11	10	DIO8
3	DIO23	29	DIO10	9	DIO7
5	DIO22	31	DIO9	8	DIO6
7	DIO21	33	DIO8	7	DIO5
9	DIO20	35	DIO7	6	DIO4
11	DIO19	37	DIO6	5	DIO3
13	DIO18	39	DIO5	4	DIO2
15	DIO17	41	DIO4	3	DIO1
17	DIO16	43	DIO3	2	GND
19	DIO15	45	DIO2	1	+5V
21	DIO14	47	DIO1		
23	DIO13	49, 51-60	+5V		
25	DIO12	Even Pins (2-50)	GND		

Table 2. Pin Assignments

LED Status Indicators
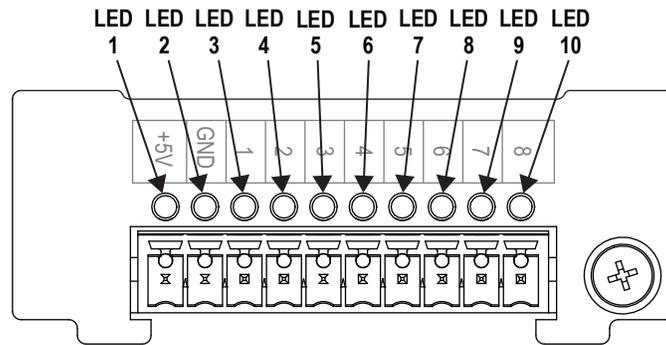
Figure 4. Digital I/O Option Card Faceplate

LED	Status
1	Green flashing indicates the card is working; Red indicates the card is faulty
2	LED not used
3 -10	Green indicates the input or output is active

Table 3. LED Status Descriptions

Specifications

I/O Channels	Up to 24, 5V/TTL, each configurable as input or output
Relay Supply Voltage	5 VDC, 500 mA, PTC Fuse 750 mA
Input Voltage	0–5.5V maximum
Digital Outputs	24 mA balanced outputs with sink/source capability
Input Protection	10-screw terminal: 600W transient voltage suppression 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
	Remaining I/O: 2KV HBM, 200V machine model
I/O Connection	60-pin ribbon connector, 10-screw terminal connector

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