825-DAC
Digital to Analog Converter
Analog Output Option
Installation Guide

825-DAC DIGITAL TO ANALOG CONVERTER CARD

The 825-DAC is an option card for the 825 that outputs an analog 0-10V or 0-24mA. The user can control the output voltage or current using the DAC interface in the 825. The DAC has sense jumpers that allow the user to connect the 825-DAC card voltage lines long distances.

The DAC card can be placed in any slot and the 825 will number the DAC depending on which slot it is in. If the Voltage lines need to go long distances the user will need to connect the polarized sense lines as close to the other end connections as possible and remove sense jumpers J1 and J2 (see Figure No. 1). If the sense lines are not needed the jumpers need to be installed.

Specifications

FUNCTION:	Outputs an analog signal that the 825 can control voltage and current
VOLTAGE RANGE:	0-10V
CURRENT RANGE:	0-24mA
TEMPERATURE RANGE	14 to 104 F (-10 to 40 C)
0-5V:	Min. Impedance: 300 Ω
0-10V:	Min. Impedance: 1.1k Ω
0-20mA and 4-20mA:	Max. Impedance: 500 Ω
0-24mA:	Max. Impedance: 390 Ω

Figure No. 1

INSTALLATION

Ground Lug

I/O (Serial, Isolated Inputs/Outputs) or Additional Scales

Scale

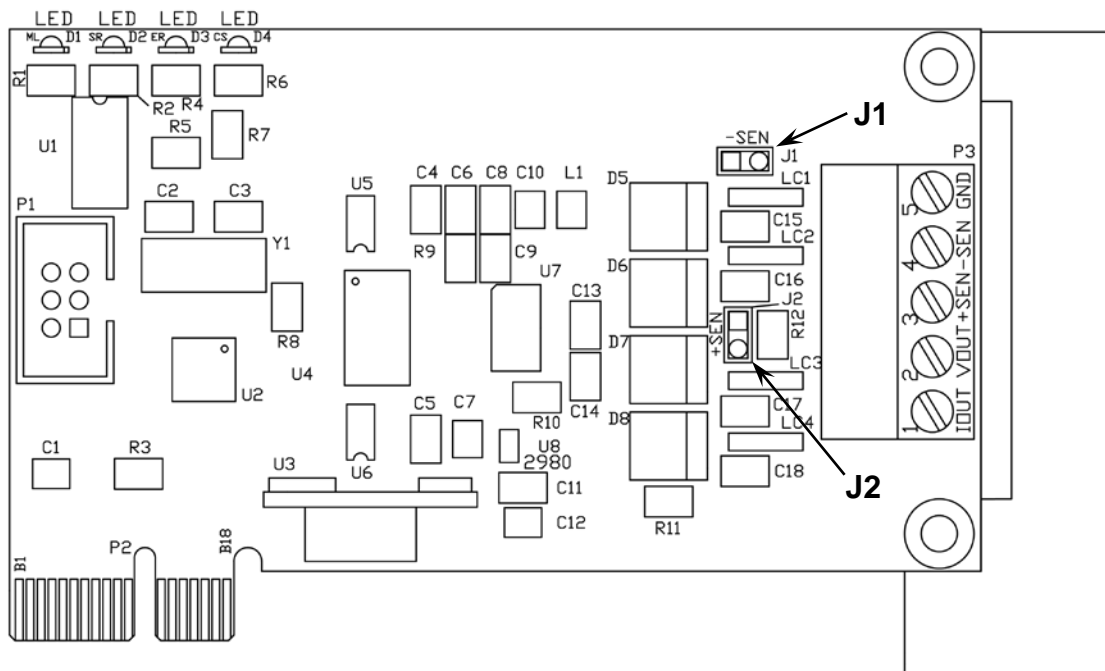**Figure No. 2**

1. Remove the 14 acorn nuts securing the rear panel to the main housing.

2. Referring to Figure No. 2, choose a gland connector for the DAC cable.

3. Loosen and remove the gland connector nut and remove the plastic plug.

4. Slip the cable through the gland connector and into the enclosure.

5. Referring to Figure No. 3, remove 3 inches of the outer insulation jacket.

6. Next, remove 1/4 inch of insulation from each of the wires.
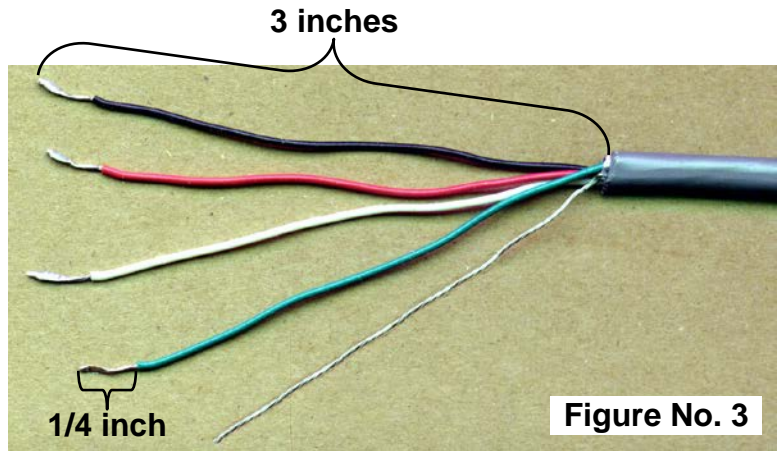
7. Remove the 5-connector terminal from the 825-DAC (hold the board in place and grasp the terminal block connector and lift straight up away from the board.

3 inches

1/4 inch

Figure No. 3

8. Referring to the table below and the labels on the circuit board for terminal connections, connect each wire to the terminal block.

825-DAC Wiring Table

Pin No.	Board Label	Function
1	IOUT	0 to 24 mA current output
2	VOUT	0 to 10 volt output
3	+SEN	+ SENSE
4	–SEN	– SENSE
5	GND	GROUND

INSTALLATION, CONT.

9. To terminate a wire, loosen the screws in the terminal block and then insert the wire into the terminal opening. Tighten the screw to secure the wire in place.

10. Repeat the procedure until all wires are in place.

11. After all terminations have been made, remove the excess cable from the enclosure.

Re-Installing the Rear Panel

After all terminations have been made;

1. Reinstall the 825-DAC into the enclosure.

2. Secure the 825-DAC to the main PC board with the screw removed earlier.

3. Remove any excess cable from the indicator enclosure and securely tighten the cable gland connector.

   • Do not over-tighten the connector but make certain they are snug.

   • **DO NOT USE TOOLS!** Finger-tighten only!

4. Secure the rear panel with the 14 acorn nuts removed earlier.

5. Follow a diagonal pattern when tightening the acorn nuts.

CALIBRATION OF ANALOG OUTPUT

Power on the indicator and select option **3. Legal metrology information / Setup** from the bootloader screen.

```
CARDINAL 825  Loader: 1.08s
              OS: 10.10.21
Mainboard       ver: 1.17 status: good
Option cards:   4 slots: ⅡⅡⅡⅡ⅂⅂⅂⅂⅂⅂
Slot:  1 SIB    ver: 0.06 status: good
Slot:  2 DAC    ver: 0.01 status: good
Slot:  3 DIO    ver: 0.02 status: good
Slot:  4 DIO    ver: 0.02 status: good




Press:

1. Application program

2. Standard indicator

3. Legal metrology information / Setup

MAC Address: 00:CF:53:29:CF:01
```

Select option **3. Setup menu**.

```
Legal metrology information / Setup

Press:

1. View event counters

2. View certifications / ID information

3. Setup menu










MAC Address: 00:CF:53:29:CF:01
```

CALIBRATION OF ANALOG OUTPUT, CONT.

Select option **3. Calibration**.

```
Setup Menu
Press:
1. Date/Time
2. Communication
3. Calibration
4. Update software menu
5. Preferences
6. Diagnostics
7. Operators



MAC Address: 00:CF:53:29:CF:01
```

Select the <u>scale</u> that is to be associated with the DAC output.

```
Setup Scale Number

1. Scale 1            T. Total
```

CALIBRATION OF ANALOG OUTPUT, CONT.

Select option **5. DAC (Analog Output)**. **NOTE:** If you do not see this menu option, check to ensure that the 825DAC option card is installed properly.

```
Scale 1 - Calibration Options
Press:


1. Parameters
2. Calibrate
3. Fine span
4. Review
5. DAC (Analog Output)



```

Select the **DAC Card:** to associate with the scale.

```
Scale 1 DAC output


DAC Card:     1









Press SPACE to select DAC card

```

CALIBRATION OF ANALOG OUTPUT, CONT.

Setup the 825DAC output as desired. See below for a description of the parameters.

```
Scale 1 DAC 1 output


Weighing Mode: Net

Output Range:  0 - 10 volt

Low Weight:    4

High Weight:   100000

Max Output:    3



Press SPACE to select wt mode
```

Weighing Mode:
This sets the analog output to track either the current net or current gross weight

Output Range:
Press <SPACE> on the indicator keypad to toggle between the desired outputs and ranges. Note that voltage and current outputs use different terminals on the 825DAC card.

Low Weight:
This is the weight value at which the minimum DAC output will occur.

High Weight:
This is the weight value at which the maximum DAC output will occur.

Max Output:
This is the maximum output level of the DAC.

Example: If the output range is set to "0 – 10 volt" and max output is set to "3" then the range of the DAC output would be 0 – 3 volts. For the full range, set this to the maximum value found in the output range parameter.

CALIBRATION OF DAC OUTPUT

To setup the output range and test the minimum and maximum output swing of the 825DAC, select **Output Range:** and then press **ENTER** on the setup screen. **NOTE:** Although the 825 has a fixed out for all ranges the calibration is used to calibrate the PLC or analog meter it attaches to.

```
Manual Control of DAC output

1. DAC High

2. DAC Low

3. Quit
```

There are 3 options that can be selected:

1. DAC High
Depending on the settings from the setup screen, this will set the DAC output to the maximum value.

2. DAC Low
Also depending on the settings from the setup screen, this will set the DAC output to the minimum value.

3. Quit
Exit DAC setup.