



D4228 Addendum: EZ4 Analog Output



The Analog Output Option provides an analog signal that is proportional to the scale weight. The option is normally configured with 4-20mA output. (Optional 0-5V and Sawtooth). The Analog Out option uses pin 1 and pin 8 of the Serial port on specific EZ4 models.

Setup

Your Analog Out EZ4 scale has been precision calibrated at the factory for 4-20mA operation. Changing to 0-5V or other modes requires resistor changes.

Zero balance the scale:

This should be done when the mixer is empty by holding the **ZERO** key.

Zero Output "ZEROUT" DAN 2102:

When the mixer is empty, type **2102 SELECT**, current weight is shown. Hold the **ZERO** key. This matches the minimum analog output signal with no weight on the scale to the displayed 0.

Low Weight "LOW WT" DAN 3201:

Type **3201 SELECT**. Use the keypad to enter displayed weight where the analog output is at 0-4mA. Press **ENTER** to save.

High Weight "HIGHWT" DAN 3202:

Type **3202 SELECT**. Use the keypad to enter displayed weight where the analog output is 20mA or 5V. Press **ENTER** to save.

Analog Output "ANAOUT" DAN 3203:

This selects between the 4-20mA and 0-5V output. The 0-5V output requires resistor changes.

Negative Analog Output "-ANALG" DAN 3204:

The analog output can go as low as 3mA if the weight is negative. To enable, type **3204 SELECT**, then **SELECT** and **ENTER** to enable/ disable.

Example

Scale with 10000 kg capacity, Analog Out set to 4mA at 0 kg and 20 mA at 10000 kg.

1. With the scale empty, perform a Zero/Balance.
2. With the scale empty, set "ZEROUT" DAN 2102 to zero the Analog Output.
3. Set "LOW WT" DAN 3201 to 0.
4. Set "HIGHWT" DAN 3202 to 10000.

General Information - Analog Output Signal

- The Analog Output is updated 10 times a second and reflects the “Analog Output Gross Weight” value which is derived using “ZEROUT”, “LOW WT” and “HIGHWT” values.
- The analog output will not necessarily follow the value displayed on the indicator.
- The “Analog Output Gross Weight” is not affected when the operator performs a normal “Zero/Balance” of the display.
- The “Analog Output Gross Weight” will always be gross and does not change when the operator selects the Net, Gross or Load/Unload weight to be displayed.
- If the “Analog Output Gross Weight” is less than “LOW WT”, the Analog Output Signal will be 4mA or 0V.
- If the “Analog Output Gross Weight” is greater than “HIGHWT”, the Analog Output Signal will be 20mA or 5V.
- The analog output will hold its present level when operator enters the menus to change the scale’s setup parameters.
- The analog output signal will be 4mA or 0V if “ZEROUT” has not been set.
- The analog output signal will be 4mA or 0V if “LOW WT” is larger than the “HIGHWT”.
- The analog output signal will be 4mA or 0V if the scale has an error such as overcapacity.
- The analog output will hold its present level during indicator temperature calibration process (which can take up to 3 seconds).

Analog Output Test

Test to verify operation of the Analog Output. A current meter or analog device is used to measure the output. “NORMAL” will output a 4-20mA value based on the load cell input. “MIN” will output 0mA. “MAX” will output 20mA. “SAW” will output a sawtooth waveform with a constantly increasing value which restarts at 0 after reaching the highest value.

1. Type **3209 SELECT** to enter the “Analog Output Test”.
2. Press **SELECT** to scroll through the test modes: “NORMAL”, “MIN”, “MAX”, and “SAW”.
3. Press any other key to exit the test.

Selection	Output
Normal	Normal Operation
Min	0mA
Max	20mA
Saw	0mA to 20mA saw-tooth wave

Specifications

Output Signal: 4-20mA (default) or 0 to 5V (optional with resistor changes)

4-20mA Output Load Resistance: < 350 ohm

Resolution: 16 bits, 1LSB = 0.0015% of full scale range where 1 LSB =244 nA or 7.5 mV

Nonlinearity: < +/- 0.012%

Gain plus Offset Error: +/- 0.15% max.

Temperature Drift: 50 ppm/degree C, 0.35% max.

Update rate: 10 times per second