PENKO Engineering B.V.

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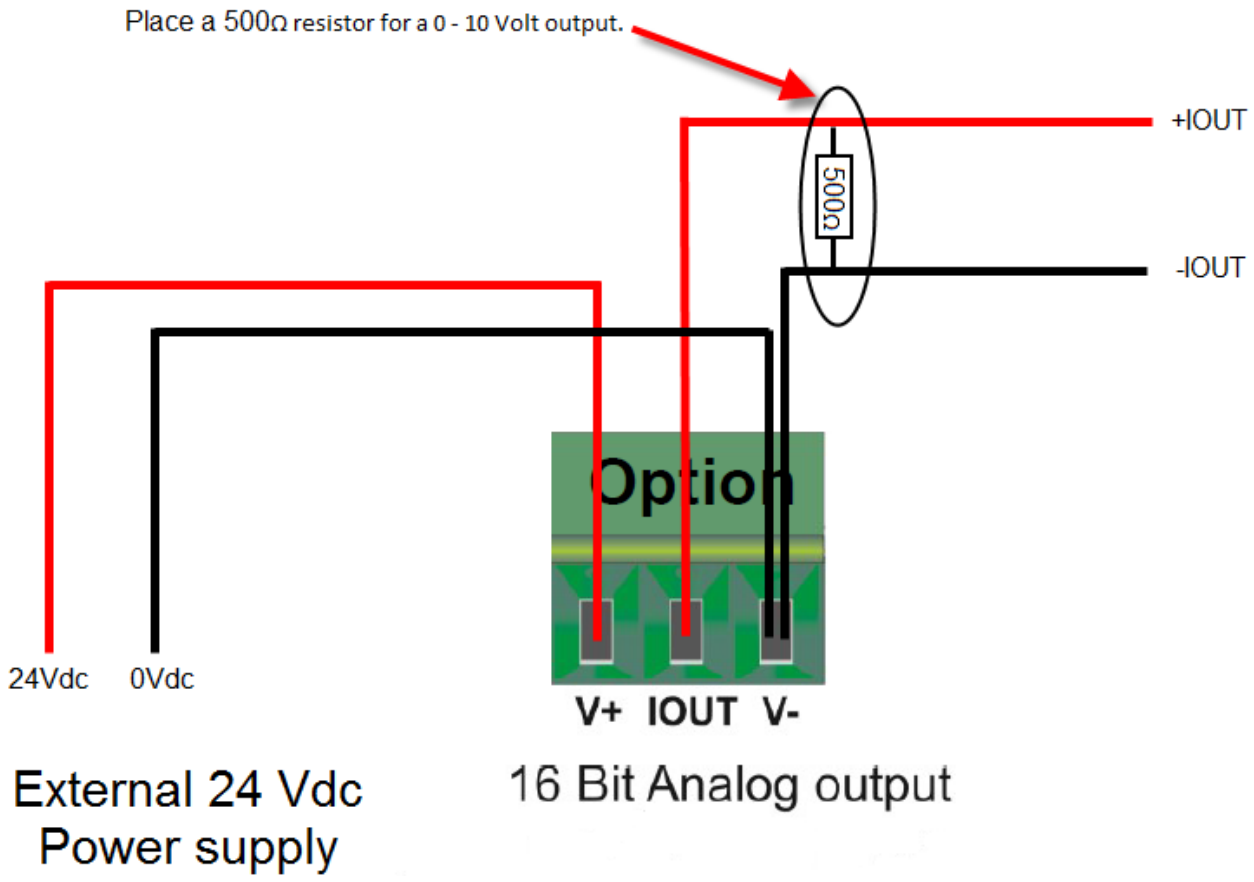
How to…

Calibrate the analog output on a FLEX 2100

PENKO
an ETC Company

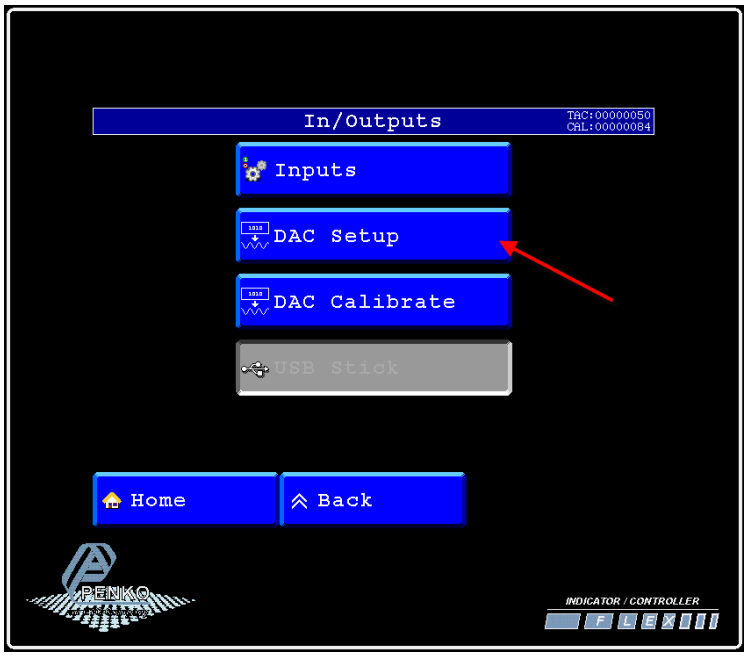
The analog output is an option for the 2100 and is an passive output.

In normal configuration the 2100 will give out a mA signal but it is also possible to have a Volt output. This can be done by placing a resistor of 500Ω parallel between IOUT and V–. If the **Range** is set to 0 – 20 mA the output will be 0,45 – 10 Volt.

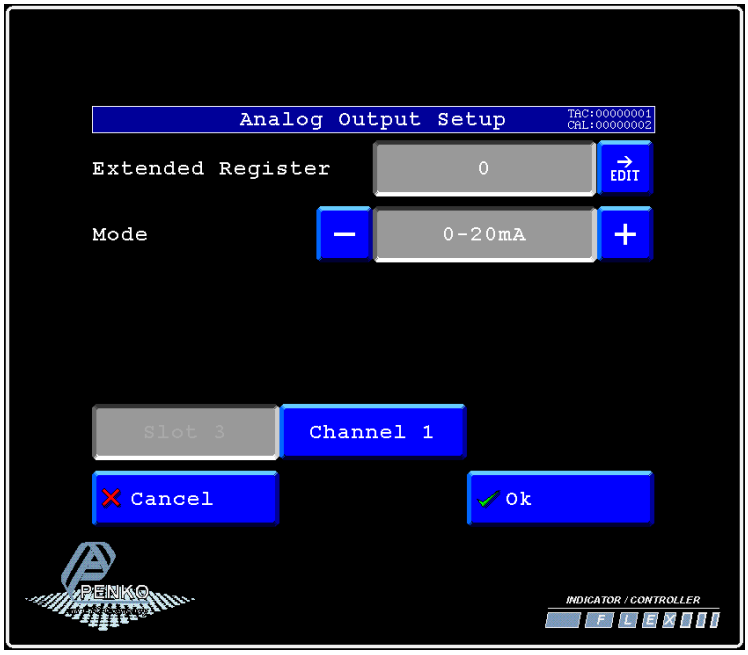


Analog output:

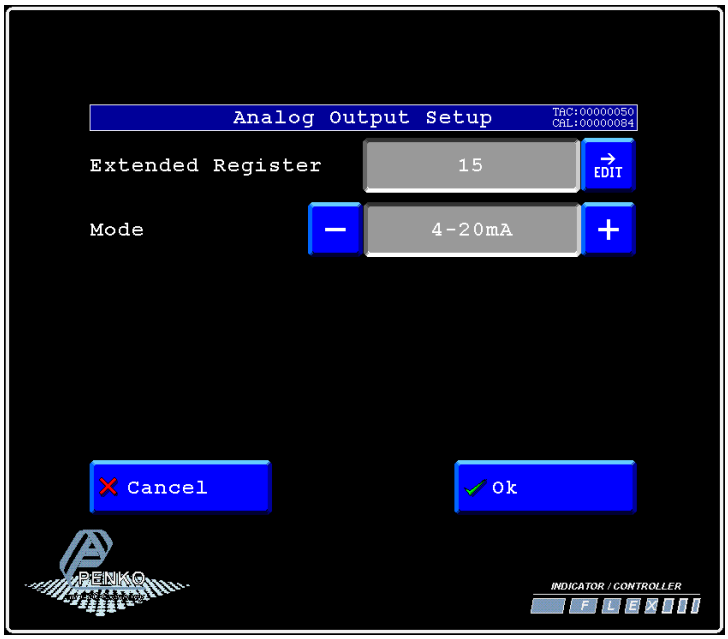
Go to **Menu → System Setup → In/Output → DAC Setup**.



Set the **Extended Register** (register 0 – 100) and **Mode** to you desired settings.



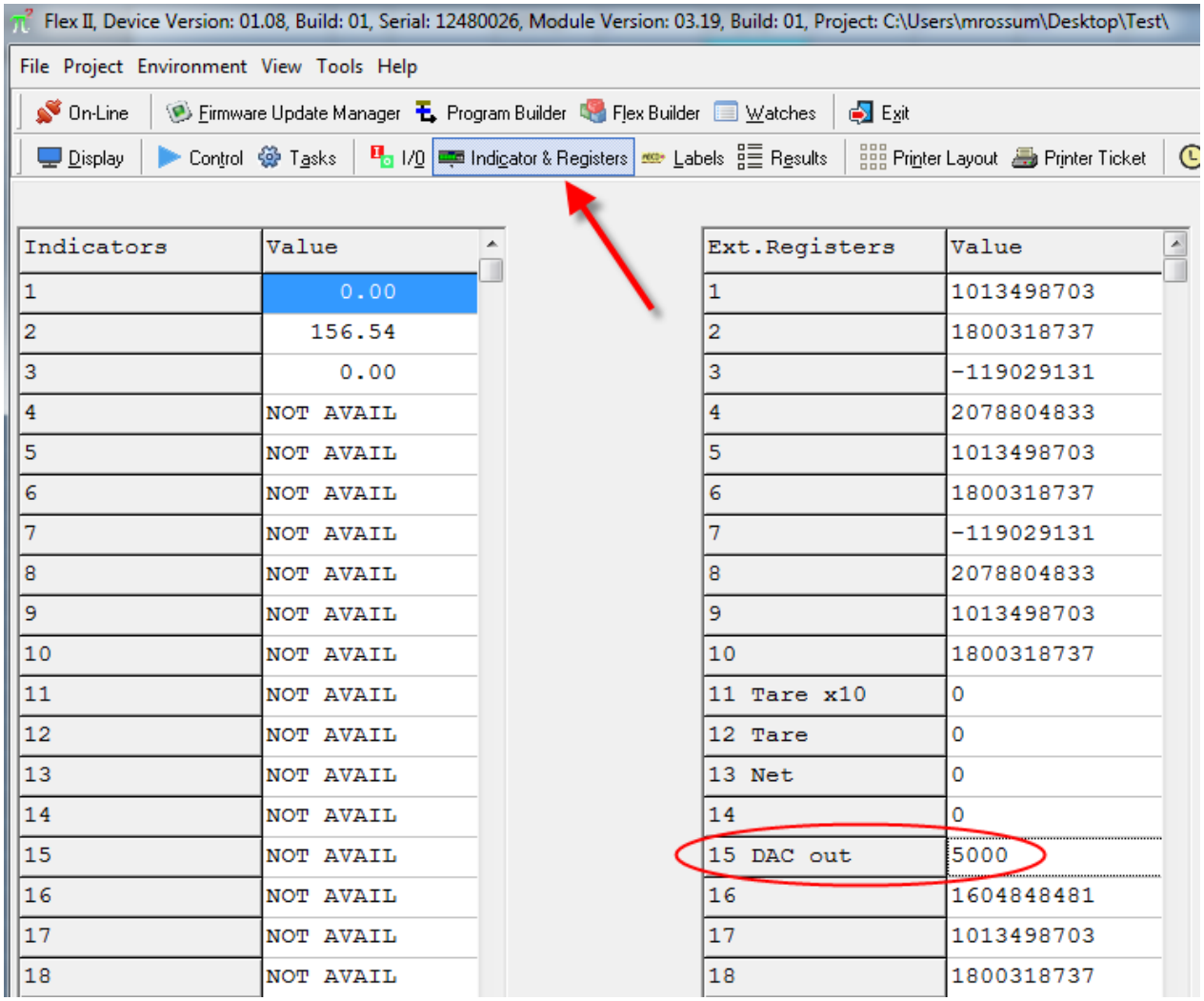
Mode	Description
RAW	16 bit DAC value. For a custom calibration (controller version only)
0 – 20 mA	The minimum and maximum output of the analog output.
0 – 24 mA	The minimum and maximum output of the analog output.
4 – 20 mA	The minimum and maximum output of the analog output.
4 – 24 mA	The minimum and maximum output of the analog output.



In the example above the **Extended Register** is set to Register 15 and the **Mode** is 4 – 20mA.

Open **Pi Mach II** and go to **Indicator & Registers**. Now you can fill in the value of the ADC output at extended register 15. The value you fill in is in percentage(0% = 0 and 100,00% = 10000). In the example below 5000 (50,00%) is filled in, the analog output will give out 12mA.

*If the mode is set to **RAW**, fill in the 16 bit ADC value (0% = 0 and 100% is 65535).*



Indicators	Value
1	0.00
2	156.54
3	0.00
4	NOT AVAIL
5	NOT AVAIL
6	NOT AVAIL
7	NOT AVAIL
8	NOT AVAIL
9	NOT AVAIL
10	NOT AVAIL
11	NOT AVAIL
12	NOT AVAIL
13	NOT AVAIL
14	NOT AVAIL
15	NOT AVAIL
16	NOT AVAIL
17	NOT AVAIL
18	NOT AVAIL

Ext.Registers	Value
1	1013498703
2	1800318737
3	-119029131
4	2078804833
5	1013498703
6	1800318737
7	-119029131
8	2078804833
9	1013498703
10	1800318737
11 Tare x10	0
12 Tare	0
13 Net	0
14	0
15 DAC out	5000
16	1604848481
17	1013498703
18	1800318737

About PENKO

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:
http://penko.com/nl/publications_certificates.html

PENKO Professional Services

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: **www.penko.com/training**

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