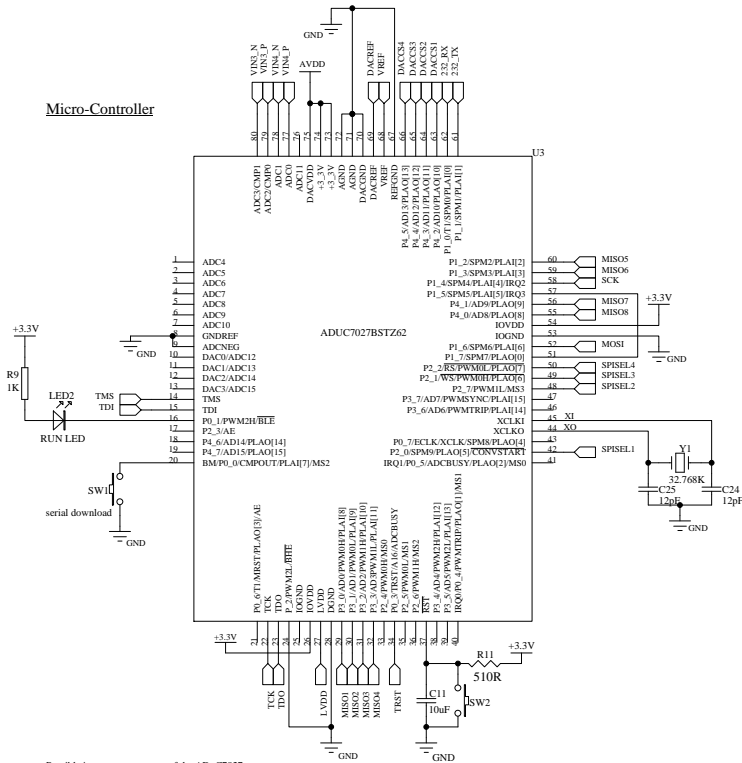
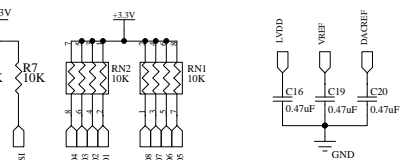


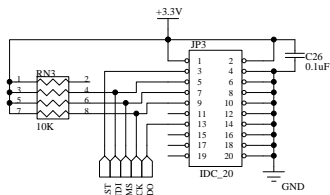
Micro-Controller



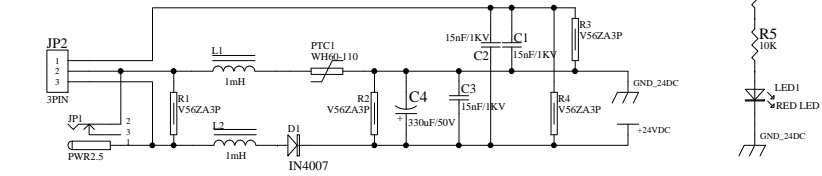
- Possible improvement to use of the ADuC7027:
1. Use the V_{EE}-input on the ADuM1401's: this enables one to connect 6 of the MISO signals to the "one" MISO input on the ADuC7027
 2. The MISO signals from the ADuM5401's can be routed through the PLA on the ADuC7027 to be connected to the same MISO PIN as above
 3. The HW SPI could then be used which could also be faster than the software-implemented protocol.



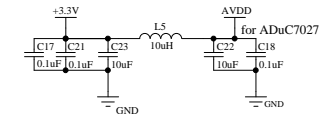
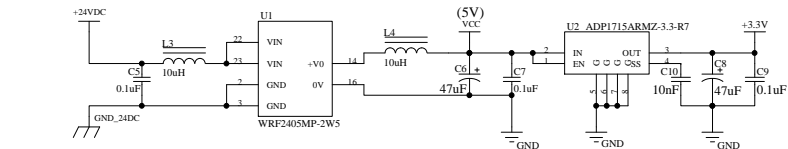
JTAG Connector



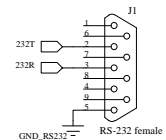
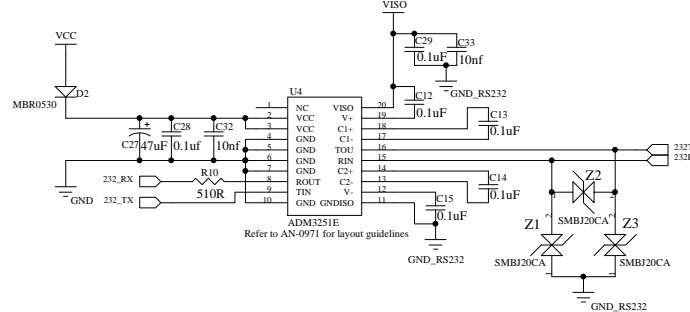
+24V input



+24V -> +5V -> +3.3V



RS232 Isolation

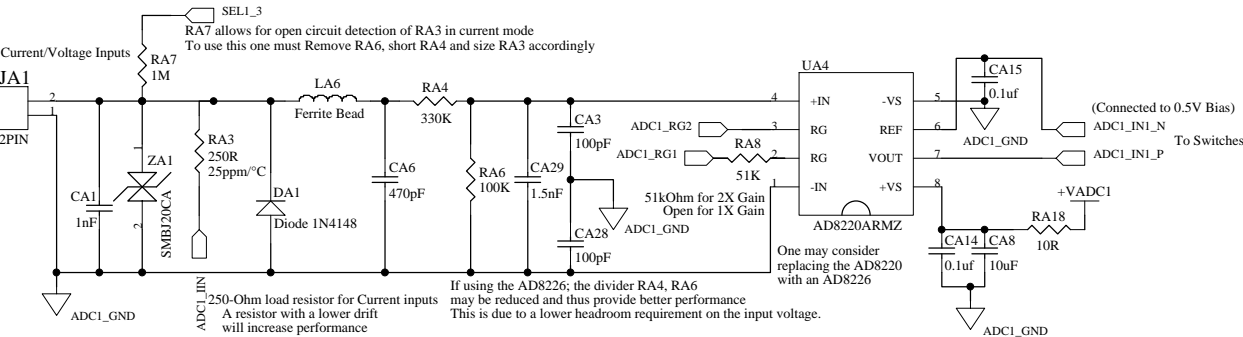


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Title: PLC Demo System Schematics		
Size	Number	Revision A
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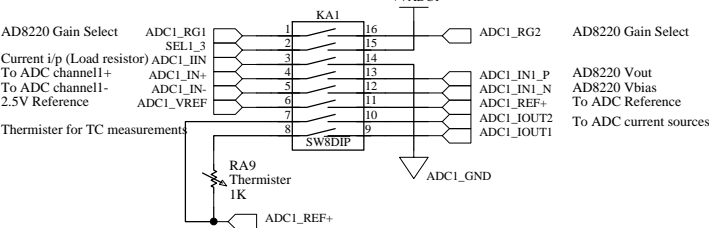
Input Channels 1 and 2 are identical

Voltage (0-5V, 0-10V) and Current (0-20mA, 4-20mA) inputs

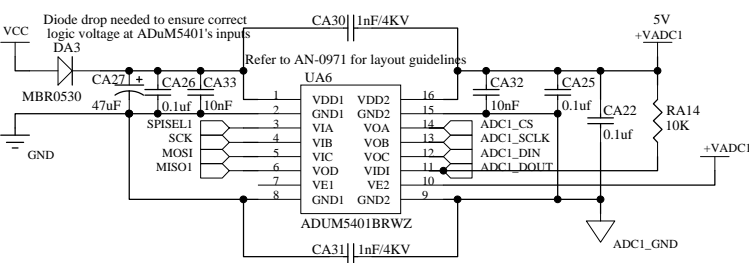


The AD7793 is specified for an AVDD of 2.7 V to 5.25 V under normal operation. For loads greater than 10mA the output voltage of the ADuM5401 is 4.75 V to 5.25 V, though for lighter loads it is 4.7 V to 5.4 V. For this reason one may wish to either ensure that the isolated circuit draws more than 10mA during operation, or else place a diode in series with the AVDD supply of the AD7793 to ensure the AVDD voltage is within the specification. This circuit draws ~4.8 mA typ.

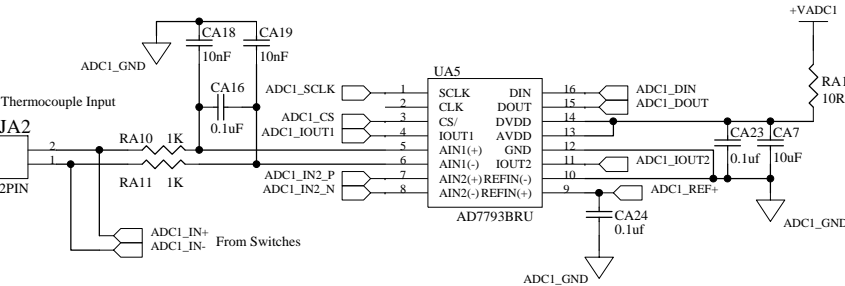
Switches for various input ranges and settings



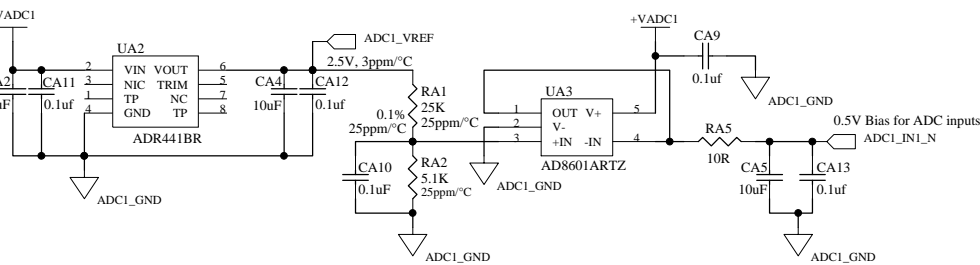
Isolated Power and data



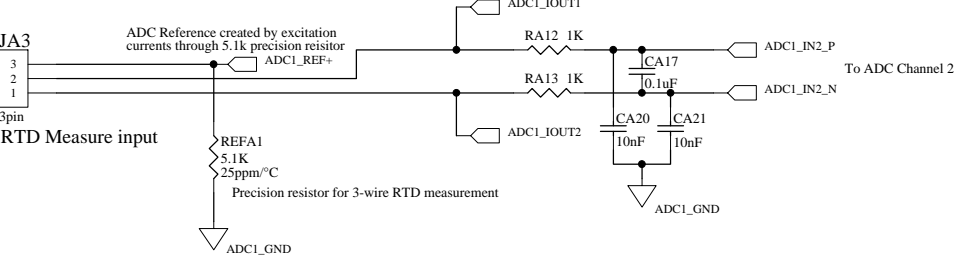
ADC (And thermocouple input)



Precision 2.5V Reference and 0.5V Input Bias



3-Wire RTD input

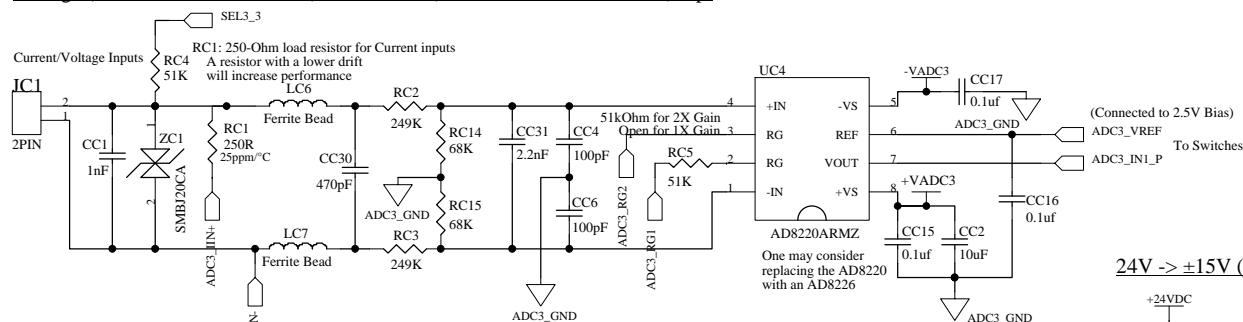


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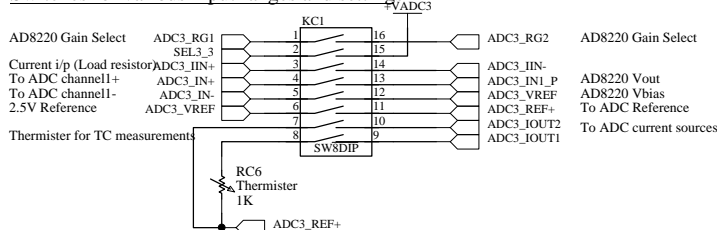
Title: PLC Demo System Schematics (ADC1)			
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Input channels 3 and 4 are identical

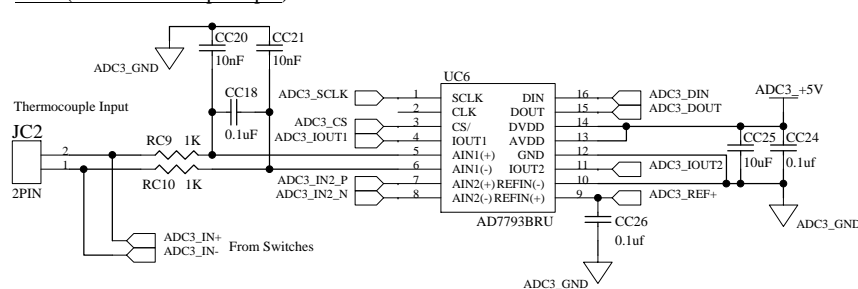
Voltage (0-5V, 0-10V, $\pm 5V$, $\pm 10V$) and Current (0-20mA, 4-20mA, $\pm 20mA$) inputs



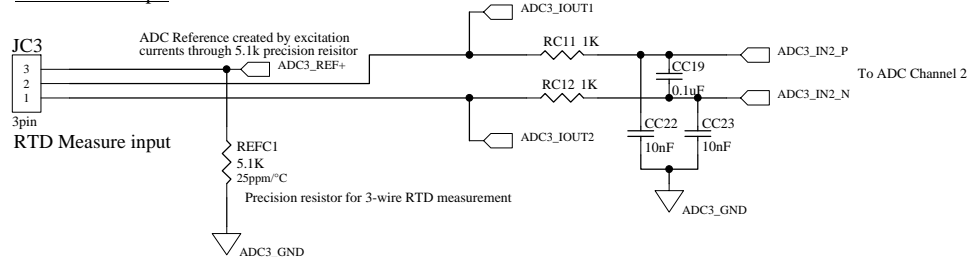
Switches for various input ranges and settings



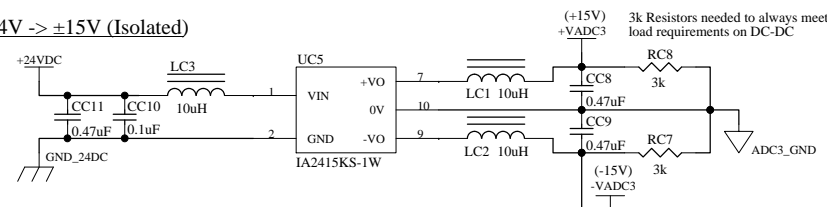
ADC (And thermocouple input)



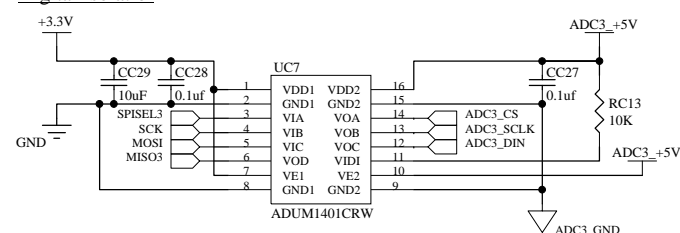
3-Wire RTD input



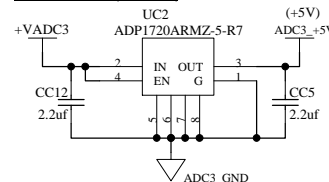
24V -> $\pm 15V$ (Isolated)



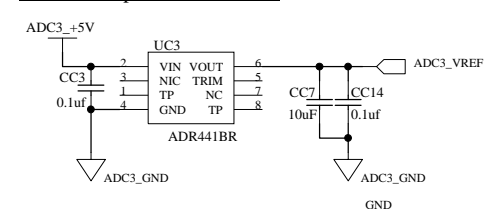
Digital Isolation



15V -> 5V (Linear)

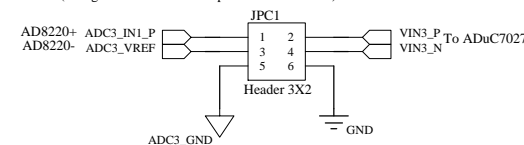


5V -> 2.5V precision reference



Header can connect to ADuC7027 ADC

(Using this feature will compromise the isolation)



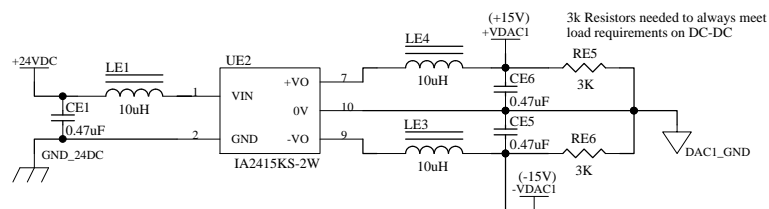
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Title: PLC Demo System Schematics (ADC3)

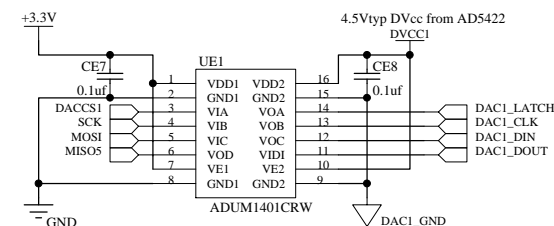
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Output channels 1 and 2 are identical

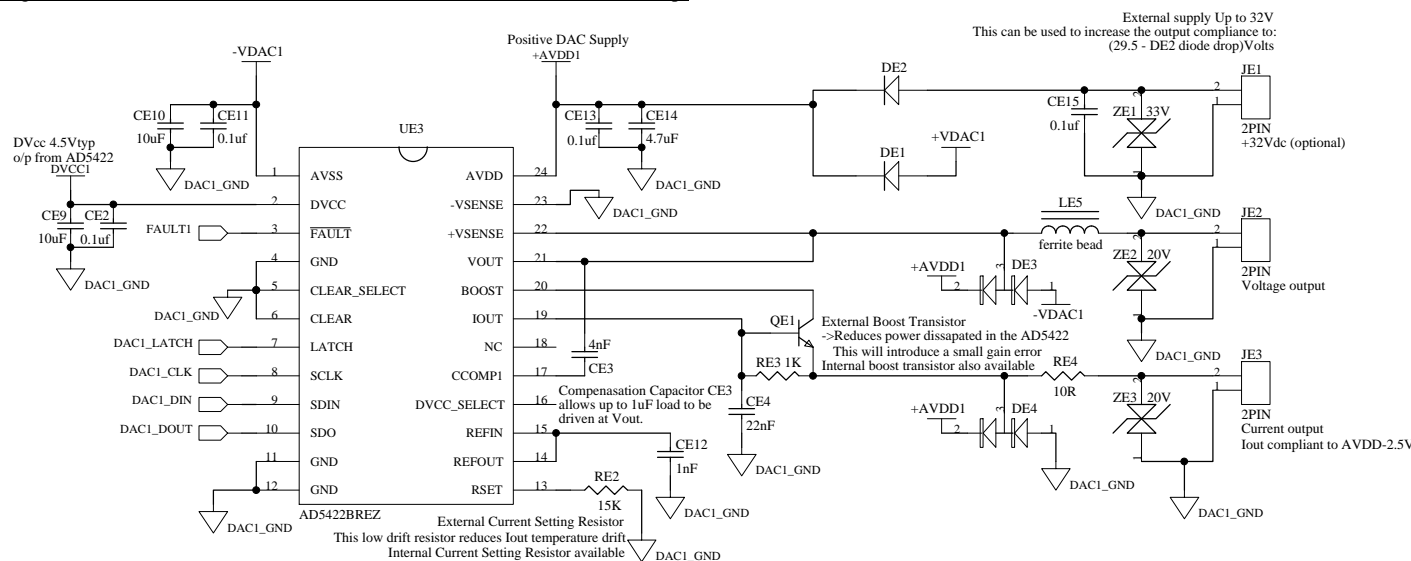
24V -> $\pm 15\text{V}$ (Isolated)



Digital Isolation



Voltage (0-5V, 0-10V, ± 5 V, ± 10 V) and Current (0-20mA, 4-20mA, 0-24mA) outputs

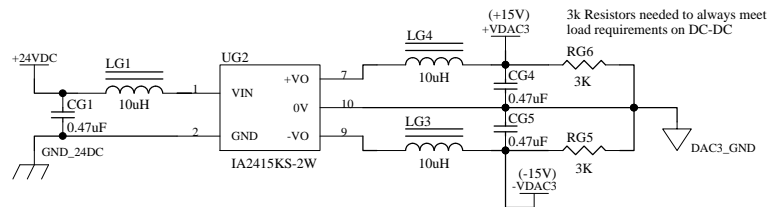


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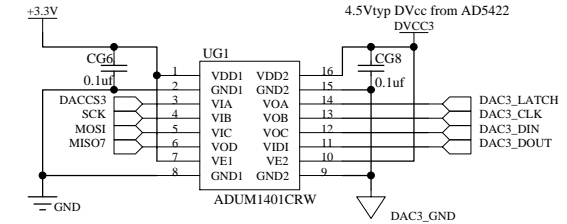
Title: PLC Demo System Schematics (DAC1)		
Size	Number	Revision
Date:	Sheet of	
File:	Drawn By:	

Output channels 3 and 4 are identical

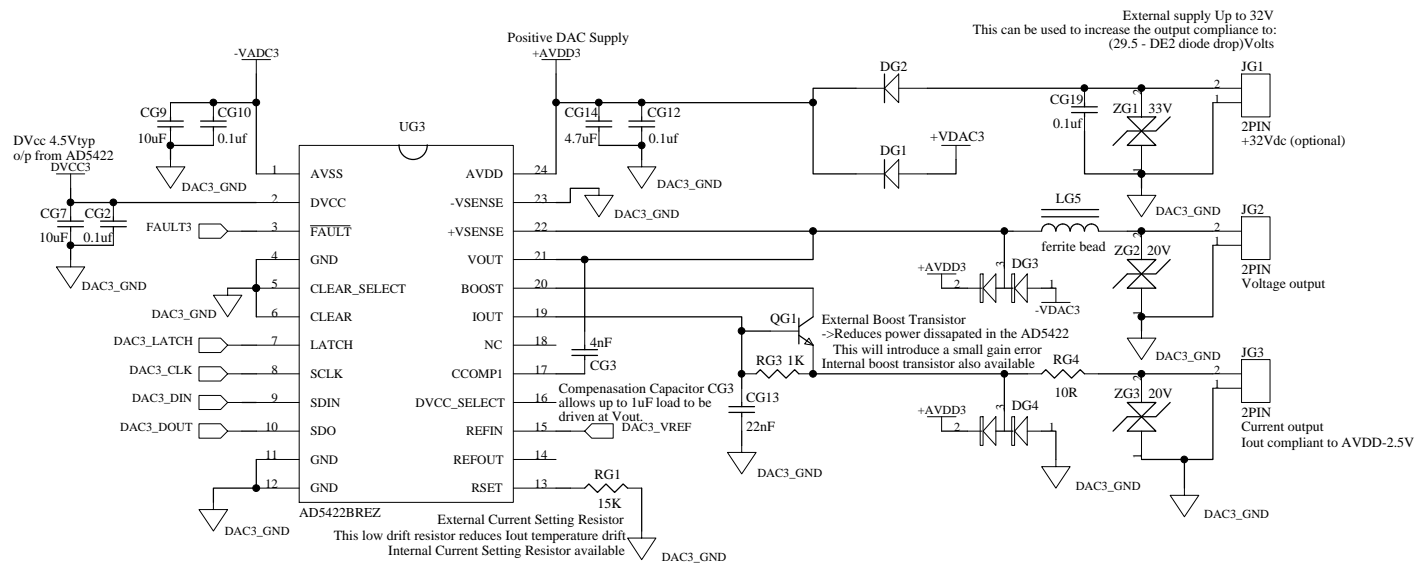
24V -> $\pm 15V$ (Isolated)



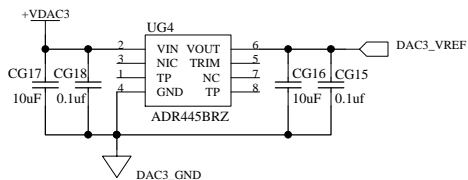
Digital Isolation



Voltage (0-5V, 0-10V, $\pm 5V$, $\pm 10V$) and Current (0-20mA, 4-20mA, 0-24mA) outputs



15V -> 2.5V precision reference



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