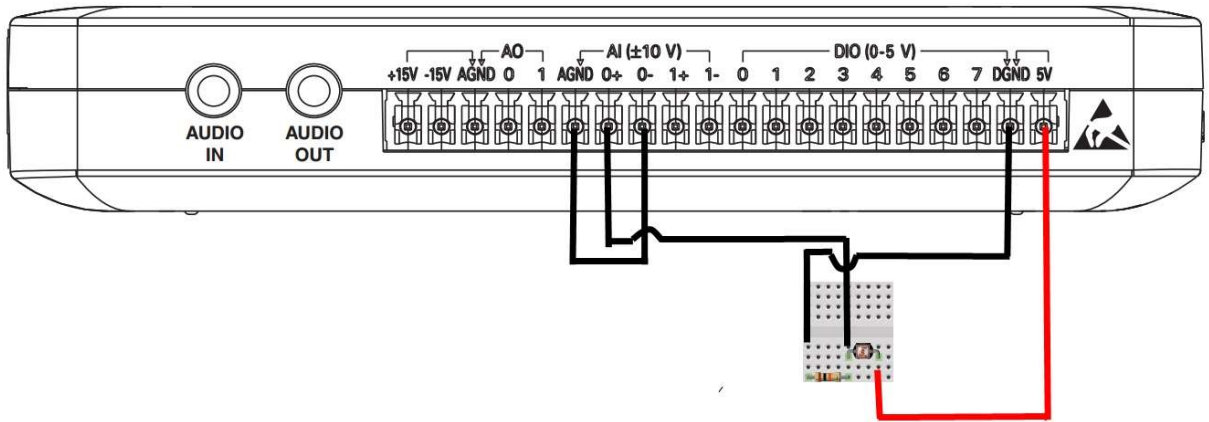


Lab 9 exercises

1. Assignment

Connect the analog inputs as shown in the picture.



Produce a VI which reads value from the AI0 analog input connected to the photoresistor. The measured signal is to be converted to illumination using the following expression:

$$Luks = \frac{500 \cdot U_{ul}}{5 \cdot R - U_{ul} \cdot R}$$

where U_{ul} represents the measured voltage and R is the *pull-down* resistor value (10k Ω). Display the calculated value using a numeric indicator (*Gauge* with a *log* scale). The *Front panel* should also contain a *Save data* switch which should enable writing the current *Luks* value to a file named *Illumination* with a rate of 4 samples per second. The log should contain the measured value and the timing (moment) information for the measured value. Logging should end when the switch is thrown.

Additional functionality is achieved pressing the *Analyze dana* button. The log dana is read and the average illumination value is calculated. The moment of maximum and lowest illumination are determined and displayed on the screen along with the values themselves. The total illumination overview is given graphically.

2. Assignment

Improve on the previous assignment by connecting a control button to one of the available digital inputs using the following schematic. Control the logging of data with the use of this button – write data only if the button is pressed.

