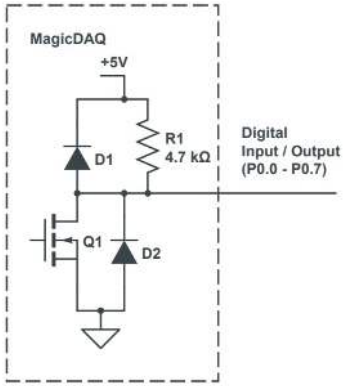
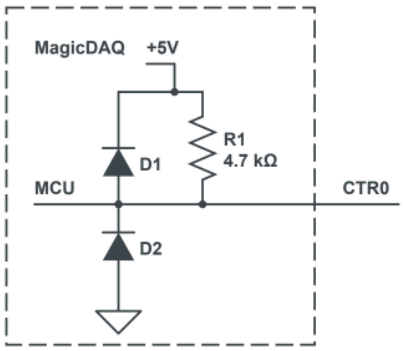
MagicDAQ USB DAQ

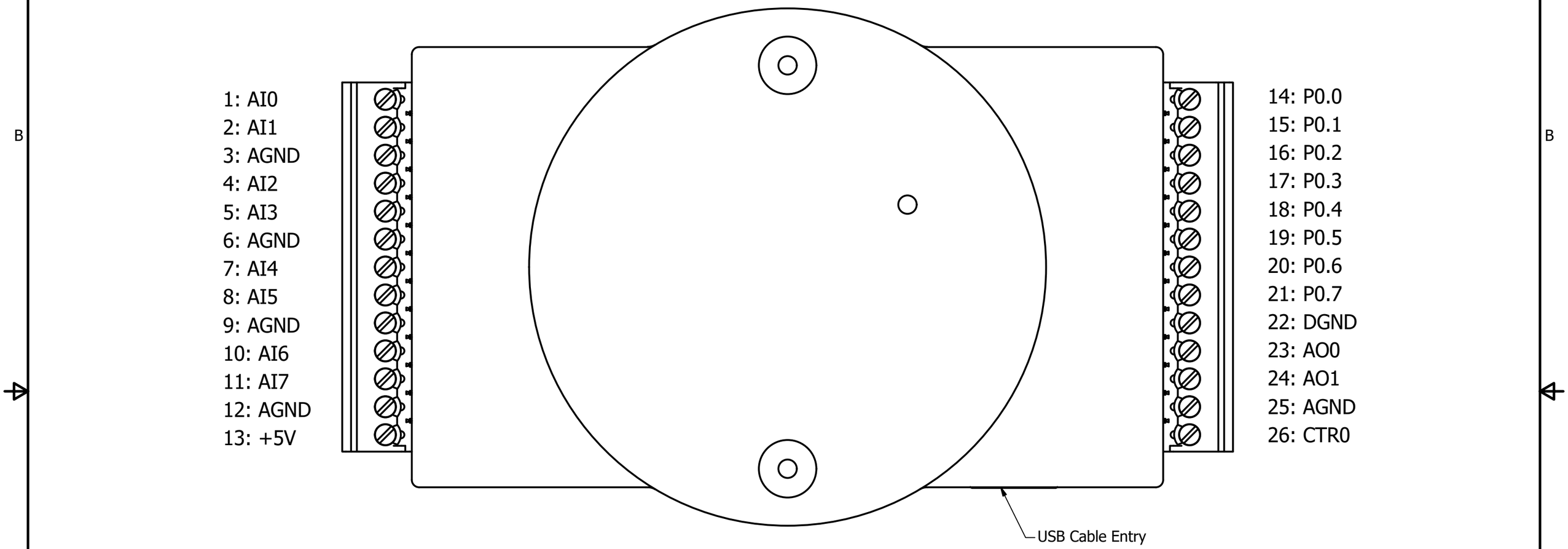
Benchtop automation and testing has never been this easy. Use stand alone or seamlessly integrate with the MagicDAQ off-the-shelf test jig to access a comprehensive suite of testing capabilities.

- ➔ Easy to use Python API (www.magicdaq.com)
- ➔ 8 Analog Inputs (14 bit, 48KS/s, -/+10V)
- ➔ 8 Digital Input / Ouputs (0 - 5V)
- ➔ 2 Analog Outputs / PWM (0 - 5V)
- ➔ 1 Counter / PWM (0 - 3.3V)
- ➔ USB powered
- ➔ USB cable and optional DIN rail mount included
- ➔ Compatible with MagicDAQ off-the-shelf test jig

Technical Specifications

Analog Input – 8 Channels (8 Single Ended or 4 Differential)	
Pins	AI0 - AI7
Voltage Measurement Range	-10V to + 10V
Maximum Measurement Frequency	48 K Samples / Sec
ADC Resolution	14 bit
Typical Voltage Resolution	0.01 V
Measurement Type	Single Ended (AI0 to AGND) or Differential (AI0 to AI1)
Single Ended Input Impedance (AI0 to AGND)	75K Ohm
Differential Input Impedance (AI0 to AI1)	150K Ohm
Maximum Applied Voltage	-14V to + 24V (relative to AGND)
Digital Input or Output – 8 Channels	
Pins	P0.0 – P0.7
High Output Voltage	5V
Maximum Current Output	1mA
Low Output Voltage	0V (DGND)
Maximum Current Sink	20mA
Input Low Voltage Measurement Threshold	<= 1.15V
Input High Voltage Measurement Threshold	>=1.55V
Maximum Applied Voltage	-0.3V to 7.3V (relative to DGND)
Overvoltage / Undervoltage Protection	Diode protected
Pin Type	Open Drain with Pull Up Resistor 

Analog Output – 2 Channels	
Pins	AO0 - AO1
Voltage Output Range	0V to 5V
Configurable Output Types	Single Voltage or Sine Wave or PWM Wave (see API docs.)
Maximum Output Current	15 mA
Maximum Output Wave Frequency	31.25 kHz
DAC Resolution	12 bit
Maximum Applied Voltage	-0.3V to 5.3V (relative to DGND)
Counter or PWM Output – 1 Channel	
Pin	CTR0
Pulse Count Range	0 to 65,535 Pulses
Maximum Frequency of Pulses Being Counted	5 MHz
Pulse Edge Detection	Falling Edge or Rising Edge (configurable, see API docs.)
Pin Type	Pull Up Resistor Connect CTR0 to DGND to Count 1 Pulse 
PWM Output High Voltage	3.3V (when CTR0 configured as PWM, see API docs.)
PWM Output Low Voltage	0V
Maximum Frequency of PWM Output Wave	65.535 KHz
Maximum PWM Output Current	20 mA
Maximum Applied Voltage	-0.3V to 7.3V (relative to DGND)
Overvoltage / Undervoltage Protection	Diode protected
5V Output – 1 Channel	
Pin	+5V
Maximum Output Current	250 mA
Other Specifications	
Note on DGND and AGND	DGND and AGND are electrically connected within the MagicDAQ. DGND and AGND are electrically connected to the the USB power supply GND. Consider using a USB to USB optical isolator if you require GND isolation between the DAQ and your computer.
Note on 5V Output	The maximum voltage the MagicDAQ can output is limited by the voltage supplied by the USB cable (4.9V supplied = 4.9V max output). Consider using a powered USB hub if needed.
Included Accessories	USB Cable (USB A Male to USB B Male – 1.5 Meters Length) Optional DIN Rail MagicDAQ Mount and Mounting Screws



TYPE	PINS
Analog Input	AI0 - AI7
Analog Ground	AGND
5V Output	+5V
Digital Input / Output	P0.0 - P0.7
Digital Ground	DGND
Analog Output	AO0 - AO1
Counter / PWM	CTR0

MAGICDAQ

SIZE	TITLE	REV
B	MDAQ300 - Pin Out	1.0

DIMENSIONS mm | WEB www.magicdaq.com | SHEET 1 OF 1