2A DC Motor Phidget

The DCC1001 gives you complete control of one medium sized DC motor from one of the ports on your VINT hub. You can control motor velocity, acceleration and braking strength using commands from your software. The compact and enclosed form factor of the DCC1001 makes it easy for this Phidget to fit in smaller projects while still controlling motors with current ratings of up to 2 amps. See the “Compatible Products” tab for a list of devices with VINT ports that can connect to this Phidget.

Quadrature Encoder Input

This controller comes equipped with an encoder input that can read in the quadrature signal from an encoder attached to the shaft of your motor. Using the MotorPositionController object in our API, you can use the encoder to implement a PID control loop.

Reliability and Protection

A built in heatsink on this controller prevents it from overheating during operation.

The VINT port on this device is isolated from the rest of the board, greatly improving reliability and eliminating ground loops. Your VINT Hub and computer will also be safe in the event of a current spike coming back from the motor.

The power terminals on this device are polarity protected: if you happen to hook up the power supply backwards, the device simply won’t power up and won’t be damaged. There is also a 5A fuse included on-board to protect the controller in an over-current event.

Product Specifications

Board Properties

Controlled By	VINT
Controller Properties	
Motor Type	DC Motor
Number of Motor Ports	1
Acceleration Min	0.1 % Duty Cycle/s
Acceleration Max	100 % Duty Cycle/s
PWM Frequency	25 kHz
Sampling Interval Min	100 ms/sample
Sampling Interval Max	60 s/sample
Acceleration Resolution	0.1 Duty Cycle/s
Velocity Resolution	0.001 Duty Cycle
Current Limit Resolution	5.6 mA
Acceleration Time Min	20 ms
Acceleration Time Max	20 s
Electrical Properties	
Continuous Motor Current Max	2 A
Supply Voltage Min	8 V DC
Supply Voltage Max	30 V DC
Current Consumption (Unconfigured)	(VINT Port) 500 µA
Current Consumption Max	(VINT Port) 2 mA
Power Consumption (Unconfigured)	288 mW
Power Consumption	motor power plus 700 mW
Encoder Interface	
Number of Encoder Inputs	1
Encoder Interface Resolution	x4
Count Rate Max	400000 pulses/s
Sampling Interval Min	50 ms/sample
Sampling Interval Max	60 s/sample
Encoder Input Low Voltage Max	2.4 V DC
Encoder Input High Voltage Min	2.6 V DC
Time Resolution	1 µs
Physical Properties	
Recommended Wire Size	16 – 26 AWG
Operating Temperature Min	-40 °C
Operating Temperature Max	85 °C