

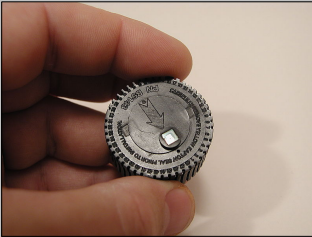


Barrett Technology® Inc.

<http://www.barrett.com>

PRELIMINARY DATA SHEET

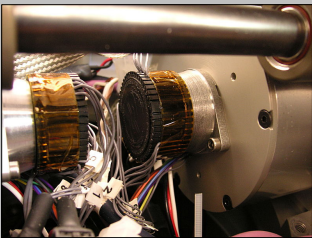
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LIGHT WEIGHT



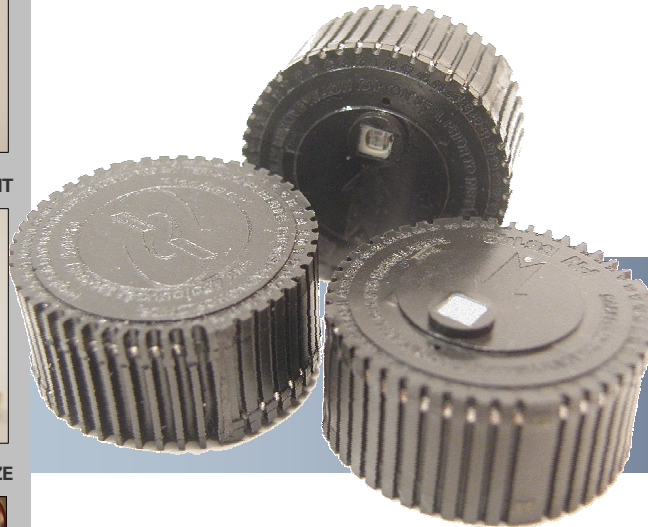
SMALL SIZE



HIGH PERFORMANCE

FEATURES

- Built-in magnetic encoder
- External encoder-capable
- 4-wire bus (2 power, 2 serial)
- Brushless or brushed motors
- Up to 7 analog inputs (12-bit)
- Up to 9 digital I/O
- 2 aux drivers
- Up to 2048 controllers/bus
- Integrated current sensing
- S-V commutation
- Digital/analog hall effect feedback
- Upgradeable firmware
- Motor temperature sensing
- Internal temperature sensing
- Built-in strain gage amplifier
- 32-bit digital signal processor
- RS-232 serial terminal
- 32kB non-volatile RAM
- 256kB Flash memory
- 1MBaud CANbus
- Very low torque ripple
- Cast in thermal epoxy
- Liquid & dust resistant
- Quiet fanless operation
- 25kHz PWM frequency



Barrett's ultra-miniature, high performance brushless motor controller is perfect for power-sensitive mobile applications

PUCK

Weight: 43 g

Diameter: 35 mm

Peak Power: 1 kW

So many features, so little size...

Deceptively feature-rich, the Barrett PUCK offers up to 7 analog inputs (12-bit), up to 9 digital I/O lines, 2 auxiliary 200mA@5V switchable power drivers, and a built-in strain gage amplifier. If you would rather not use the built-in encoder, you can attach an external one of your choice. And with digital or analog hall effect feedback, you can drive almost any motor*. Plus, its external and internal temperature sensors let you monitor the operating conditions at any time.

With 5 patents pending, the Barrett PUCK is truly a sophisticated and revolutionary motor controller which is easily integrated into any application requiring minimal power loss, low mass, and compact size.

Big Functionality, Compact Form

The Barrett PUCK (Powerful Universal Controller) is a networkable high performance motor controller with an integrated laser optical encoder, power amplifiers, and precision current sensing. It can control the torque output of brushless motors with state-of-the-art space vector commutation and very low torque ripple.

The PUCK is the product of \$2.5M and nearly 3 years of design, development, and testing. Cast in a thermal epoxy compound, it is liquid and dust resistant, and it performs quietly with a 25kHz PWM frequency and no fan.

With a volume of just 16.3 cm³ and a total weight of only 44 grams, the PUCK was designed to replace a standard motor controller with the form factor of a typical encoder. Mounted directly onto the motor body, the close proximity of the controller eliminates long "home-run" wiring problems encountered with standard motion control setups such as routing, signal degradation, EMI, I²R power losses, and cable bulk.

Up to 2048 PUCKs may be networked together on a single, easy to manage, 4-wire bus. Two wires are used for power, and two are used for the robust, industry-standard CANbus communications.

The PUCK operates at any voltage from 18VDC to 100VDC, without any reconfiguration. It was designed to command a smooth, continuous torque-even when the input voltage is rising or falling.

SPECIFICATIONS

Input voltage	Min	18 V
	Typ	48 V
	Max	100 V
Quiescent power	Typ	2.0 W
	Drive current	Continuous 1.7 A
Output power	Peak	10 A
	Continuous	170 W
Dimensions	Peak	1 kW
	Diameter	35 mm
	Height	17 mm
Mass	Total	43 g
	Encoder resolution	Rotary 4,096 cts/rev
Bus length	Max	40 m
	Operating temperature	Min
Max		85 °C

TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
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