

QUANTUMDRIVE -2000 SERVO AMPLIFIER



LOW COST
COMPACT YET POWERFUL
SELF-PROTECT FEATURES

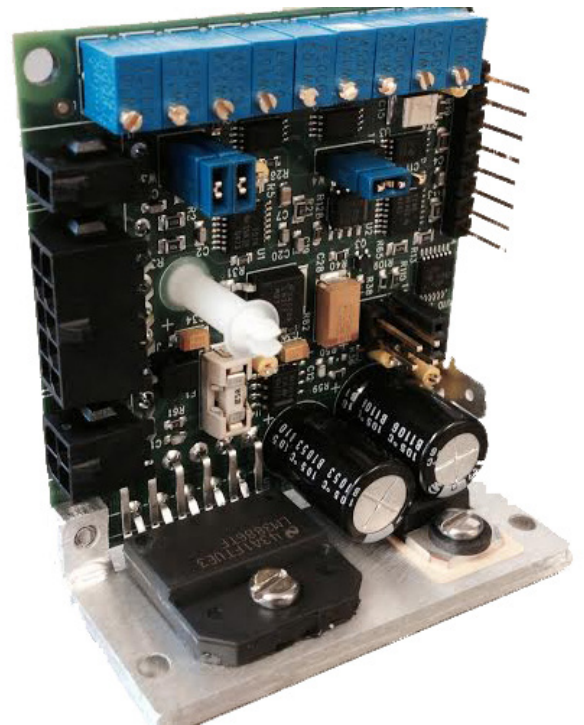
SINGLE AXIS DRIVER
CLASS 0 SERVO
REMOTE ENABLE

Nutfield Technology's QuantumDrive-2000 Servo Amplifier is a compact, powerful galvanometer amplifier, giving greater performance at the most cost effective price. As the smallest class-0 servo amplifier available, the QD-2000 features a single output power amp configured for maximum performance and electrical efficiency. Quiescent current is little over half that's needed for the high power, push/pull QD-4000 amplifier. The QD-2000 leverages lower component count and higher signal-to-noise for high accuracy positioning and good temperature stability.

Exceptional performance is achieved with PID servo architecture plus advanced terms for extra stability, speed and control. As with traditional systems, a notch filter is selected and tuned for each unique mirror-galvo combination to maximum system bandwidth. The result is faster, more accurate scanning.

Lower cost and optimized for high volume OEM applications, the design of the QD-2000 does not sacrifice on performance or features. Onboard status LEDs provide servo status and fault indications. A diagnostic port is available for test, development, and monitoring needs. Circuit elements include soft start/stop operation, open circuit AGC monitor and under-voltage power supply protection. The QD-2000 also features TTL compatible remote enable and status I/O.

QD-2000 Servo Amplifiers are tested and tuned with serial number matched galvanometer and mirror to customer specifications. Together, Nutfield Technology's galvanometer-based scanning solutions are the strongest and most affordable in their class.



FEATURES:

// DIAGNOSTIC PORT:

- POSITION
- VELOCITY
- CURRENT
- POSITION ERROR
- AGC VOLTAGE
- READY STATUS

// OPTIONAL DIAGNOSTIC CABLES AVAILABLE

// DUAL PUSH/PULL OUTPUT

// ANALOG INPUT (± 5)

// INTEGRATES WITH ALL NUTFIELD GALVOS

// SINGLE AXIS AND OPEN-FRAME CONFIGURATIONS

// ADJUSTABLE SLEW RATE LIMIT (FACTORY SET)

// DIRECTION INVERT JUMPER

// UP TO 30W OUTPUT POWER

SPECIFICATIONS

POWER REQUIREMENTS*	QD-2000
Input Voltage	±15 VDC < 100mV Ripple < 0.5% DC to 30 MHz Noise
Maximum Drive Current:	
Peak	10 Amperes
RMS	3 Amperes
Quiescent Current	220mA (servo enabled, galvo resting)
Gain Drift	up to 20 ppm/°C (3 sigma)
Offset Drift	up to 26 µrad/°C (3 sigma)
Inputs:	
Command Input Range	±5 Volts (factory configured)
Command Input Scale Factor	1:1
For ±10V @ ±20°	0.5V/degree
Command Input Impedance	200K ohms (Differential) 100K ohms (Single Ended)
External Enable	TTL (pull low to disable drive)
Servo Ready	TTL
Diagnostics Outputs:	
Position	Analog (1V/V)
Position Error	Analog (1V/V)
Velocity	Analog
AGC Voltage	Analog (DC)
Coil Current	Analog (1V/A)
Environmental:	
Operating Temperature	0°C to + 45°C (with appropriate cooling)
Storage Temperature	-10°C to +60°C
Humidity	non-condensing
Mechanical:	
Weight	49 g (1.7 oz.)

Note: Specifications are in degrees optical (2 x mechanical degrees) after a 2-minute warm-up period.
*Specifications subject to change without notice.