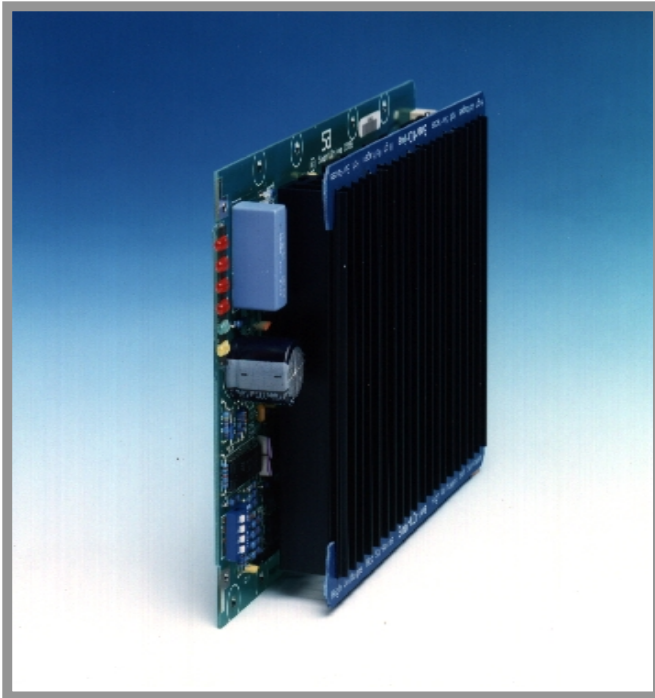




SmartDrive

• DRIVES AND CONTROLS •



SmartDrive D Series

Half Step Drive Family

Advanced Design

The advanced design of the D series drives using MOSFET technology enables continuous motor winding currents up to 16.5A peak (2 phase on) from an 85V supply. A compact high efficiency heat sink allows mounting at 9HP (1.8") pitch in the popular Euromodule 3Ux160mm format; this enables 6 drives and a power supply module to be mounted in a standard 84HP wide rack. Natural free air convection cooling is sufficient for normal operation in most applications.

Rugged MOSFET Power

High efficiency, reliability and fault tolerance is achieved by the use of rugged MOSFET output power devices. Two chopper regulated current switching bridge circuits are optimised for driving 2 or 4 phase hybrid stepper motors with 4, 6 or 8 lead winding configuration.

Comprehensive Dynamic Protection

D series drives will protect themselves against all motor winding faults, including winding short to winding, winding short to ground and low inductance winding. In addition there is protection against high or low motor supply voltage, low logic supply voltage and overtemperature conditions.

Flexible Current Setting

Winding current can either be set by a backplane mounted resistor or in 0.5A steps by a DIL switch bank, easily accessible from the front. Adjustments can be made whilst the drive is operating to match the motor characteristics to the load. In addition there is a boost input which increases current output by 30%, useful for rapid acceleration. Boost can be continuously used if required.

Reliability

Conservatively rated components are combined with thorough production testing of all units under simulated fault conditions, and for correct thermal performance. This ensures that each D series drive provides a long life of trouble free operation, even during adverse operating conditions.

Integrated Product Range

SmartDrive Ltd. designs and manufactures a comprehensive range of stepper controllers, drives and power supplies to suit a wide variety of applications. These are supplied as individual OEM units, an SA fully cased stand alone package or a 3U 19" rack custom built to your exact specification.

- Rugged chopped MOSFET outputs
- Comprehensive Dynamic Protection
- Easy current setting during operation
- Natural convection cooling
- Overtemperature protection
- High efficiency compact design
- Euromodule 3Ux160mm format
- Range from 1 to 16.5A

Specification Summary

	Motor Winding Output*		Electrical Supply		Mechanical	
	Maximum Peak/RMS(A)	Minimum Peak/RMS(A)	Motor (Standby) Min/Max(V) @ (mA)	Logic Min/Max(V) @ (mA)	Module Width (inch/HP)	Cooling Requirement
D28/6	2.8 / 2.0	0.88 / 0.62	27/94 @ 150	18/30 @ 80	1.2 / 6	Convect
D28/9	2.8 / 2.0	0.88 / 0.62	27/94 @ 150	18/30 @ 80	1.8 / 9	Convect
D55/6	5.5 / 3.9	1.8 / 1.2	27/94 @ 180	18/30 @ 80	1.2 / 6	Fan
D55/9	5.5 / 3.9	1.8 / 1.2	27/94 @ 180	18/30 @ 80	1.8 / 9	Convect
D110	11.0 / 7.8	3.5 / 2.5	27/94 @ 250	18/30 @ 80	1.8 / 9	Convect
D165	16.5 / 11.7	5.3 / 3.7	27/94 @ 330	18/30 @ 80	1.8 / 9	Fan

* reduces to 50% one second after motor stops

LED Status Indicators

Comprehensive Dynamic Protection

Supply Fault	Motor winding supply greater than 94V Logic supply less than 15V
Overtemp	Heatsinks are above maximum operating temperature of 100°C
W1 fault	Winding 1 short to ground or interwinding short, winding inductance below 0.5 mH, or motor supply less than 27V
W2 fault	Winding 2 short to ground or interwinding short, or winding inductance below 0.5 mH
Other	
Energised	Motor windings are energised
Phase 0	Equal positive currents flowing out from 1A and 2B (occurs 50 times/rev)

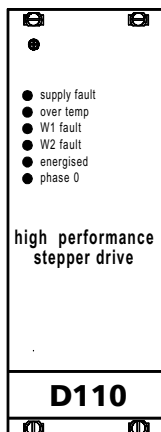
Mechanical

Dimensions

PCB	160 x 112mm
6HP Drive	172 x 25 x 112mm
9HP Drive	172 x 42 x 112mm
Mounting	In 3U high Eurorack or pcb posts DIN41612 type D 32 way connector

Front Panels

Standard



Drive Control Signals

Inputs	(Open Collector NPN 24V 10mA)
Reset	Clears CDP shutdown and Phase 0
Boost	Increase motor current 30%
Direction	Motor shaft direction CW/CCW
Sync	Synchronise chopper frequency
Clock	Step motor (500kHz max)
Energise	Motor current ON/OFF
Set Current	External current control resistor
Outputs	(Open Collector NPN 24V 10mA)
Fault	Indicates CDP shutdown condition
Phase 0	Indicates Phase 0 condition
Sync	Synchronise chopper frequency

Designed and built in the UK by

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Technical Data