
Technical information

General

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Dimensions	166 mm x 106 mm x 56 mm (excluding connectors and feet)
Weight	0.5 kg
Protection class	IP 20
Temperature	Operation 10°C to 60°C, Storage -10°C to 85°C
Power requirements	48 Vdc \pm 5% Power supply is included.
Power consumption	48 W max.
Safety compliance	EN 61010-1-2010
EMC compliance	Emissions EN61800-3:2018, EN55032 Class B, 3m (As 61800-3:2018, Table 17, Category C1, first environment) Immunities, EN55035, basic electromagnetic environment
Motor driver	
Type	2 phase bipolar stepper motor driver for 4-lead motors
Phase current	Up to 1 A RMS, adjustable in 30 mA steps
Source voltage	67 Vdc maximum 48 Vdc supply is boosted to 67 Vdc. Boost function can be disabled if required.
Resolution	Full, 8, 16, 32, 64, 128, 256 micro-stepping Stops on full step positions only, micro-stepping is used for control of resonance and smoother step transition.
Step frequency	1 Hz to 15 kHz
Protection	Short to ground and phase to phase

Encoder (Where fitted)	
Supported types	Digital incremental and BiSS absolute
Power	5V at 250 mA max. is available to power the encoder, protected by self-resetting fuse.
Connection	Female 26 way high density D-Sub. Encoder connects via adapter cable according to encoder type. Adapter cables for supported encoders are available from AML.
Incremental encoder support	Digital (RS422) incremental encoders having differential A, B and Z signals. Single ended P and Q limits signals are supported. Maximum clock rate 1 MHz.
Absolute encoder support	26 bit BiSS-C (support for other bit depths may be added via firmware update)
Motor temperature measurement	
Type	Selectable PT100 RTD or K-Type thermocouple
Range	-200 °C to 240 °C
Accuracy	±15 °C for thermocouple, ±5 % for RTD
Fault detection	RTD: Open and short-circuit Thermocouple: Open circuit only
Operating modes	
<ul style="list-style-type: none"> • Remote – Control and configure via USB, Ethernet or Serial • Step, Direction Enable (SDE) – For connection to an external motion controller or PLC • Bake – Programmed cycle to heat the motor while stopped to drive off adsorbed gasses 	
Control interfaces	
USB	USB 2.0 Full Speed via USB-C connector Virtual COM port and firmware update interface
Ethernet	10/100 Base-T, auto MDI-X, RJ45 8P8C connector or Telnet (port 11312)

Serial communication	Selectable RS232 or RS485 mode (shared pins) Dual RJ45 8P8C connectors allow daisy chaining multiple devices in RS485 mode User selectable termination in RS485 mode 115200 default and maximum baud rate
Software	
Compatibility	Windows 10 or later
API	C# and Python APIs are available
SDE (step, direction enable) interface	
Type	Optocoupled, common cathode
Levels	3.3 Vdc to 5 Vdc maximum Higher voltages require external current limiting resistor
Maximum frequency	2 MHz at 50% duty Maximum full-step rate limited to 7.8 kHz for micro-step resolution of 256.
Limits	
Quantity	2
Compatible switch types	Mechanical NO or NC (polarity selectable)
Protection	Withstands continuous short to 12 V maximum
Joystick	
Connection	Front panel mounted 4P4C jack with auto-detection of connection state
Input type	Active low, short to ground to activate function
Miscellaneous	Open circuit voltage 3.3 V, source current < 3.5 mA

Mechanical

All dimensions are in millimetres.



Scope of delivery

Qty.	Item
1	SMD4
1	USB Type-A to USB Type-C lead
1	Power supply

Accessories

The following accessory items are available from AML.

Order Code	Item
SMD3JOY	Joystick (compatible with SMD4)
CAB-D15D9	SMD4 Motor Cable, 3m, D-Sub 15 Male to D-Sub 9 Female
CAB-D15MLF	SMD4 Motor Cable, 3m, D-Sub 15 Male to MLF18
CAB-3D15MLF	SMD4 Motor Cable, 3m, 3X D-Sub 15 Male to MLF18
CAB-D26D15	SMD4 Encoder Cable, Incremental, 3m, HD D-Sub 26 Male to D-Sub 15 Female
CAB-D26D9	SMD4 Encoder Cable, Absolute, 3m, HD D-Sub 26 Male to D-Sub 9 Female