

---

# Technical information

## General

General	
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 supply	48 Vdc $\pm$ 5% power supply required. <u>Power supply included.</u>
Power consumption	48 W maximum
Safety compliance	EN 61010-1-2010
EMC compliance	Emissions EN61800-3:2018, EN55032 Class B, 3m (as per 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

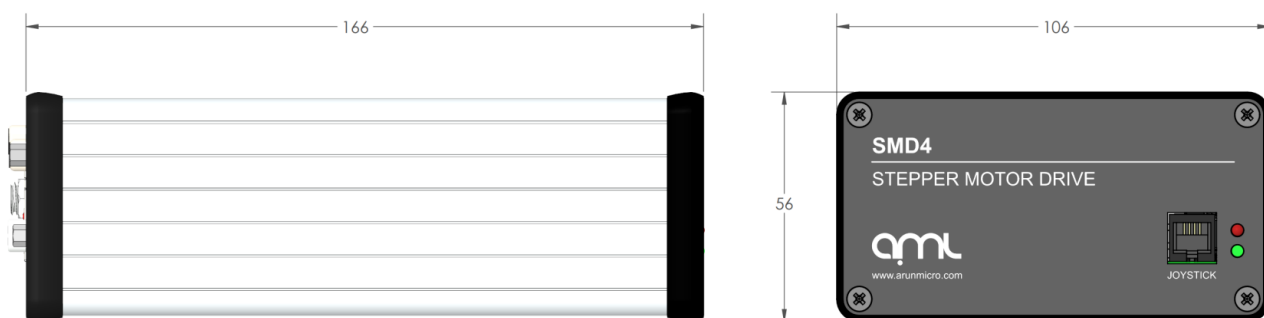
Motor temperature measurement	
Type	Selectable PT100 RTD or K-Type thermocouple
Range	-200 °C to 240 °C
Accuracy	±15 °C for thermocouple, ±5 % for RTD
Fault detection	RTD: Open and short-circuit Thermocouple: Open circuit only
Operating modes	
<ul style="list-style-type: none"> <li>• Remote – Control and configure via USB, Ethernet or Serial</li> <li>• Step, Direction Enable (SDE) – For connection to an external motion controller or PLC</li> <li>• Joystick – Single-step and continuous movement triggered via a joystick (supplied separately)</li> <li>• Bake – Programmed cycle to heat the motor while stopped to drive off adsorbed gasses</li> </ul>	
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 Telnet (port 11312), Modbus TCP (port 502)
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# API is 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.
<b>Limits</b>	
Quantity	2
Compatible switch types	Mechanical NO or NC (polarity selectable)
Protection	Withstands continuous short to 12 V maximum
<b>Joystick</b>	
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

Order Code	Item
SMD3JOY	Joystick (compatible with SMD4)
CAB-D15D9	SMD4 Cable, 3m, D-Sub 15 Male to D-Sub 9 Female
CAB-D15MLF	SMD4 Cable, 3m, D-Sub 15 Male to MLF18
CAB-3D15MLF	SMD4 Cable, 3m, 3X D-Sub 15 Male to MLF18

## 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.

---