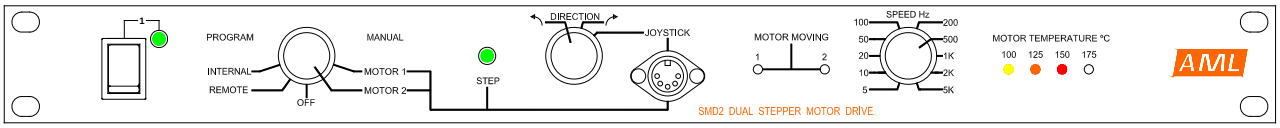
DUAL UHV STEPPER MOTOR DRIVE MODEL: SMD2

AML's SMD2 Vacuum-Compatible Stepper Motor Drive is designed to match AML motors. Two motors may be driven sequentially either under host computer control, by an internally stored program, from the front panel switches or a hand-held joystick. This drive is also economical for use with compatible air-side motors.



- **1U high full-width, steel-cased instrument for easy rack-mounting.**
- **Drives 2 UHV stepper motors sequentially.**
- **Automatic transition between drive modes (step ÷8, ÷4, half and full) at user-selected speeds to control resonances.**
- **Phase currents can be set from 0.1 to 1A in increments of 0.1A.**
- **Advanced low-power drive techniques for minimum motor temperature rise and outgassing and maximum operating time.**
- **Holding torque can be controlled independently of dynamic torque under program control, to reduce power.**
- **Thermocouple amplifiers (type K) for motor temperature indication, protection and control of motor bakeout.**
- **RS232C interface for host computer control. Drive programs can be developed and run from the computer console (Remote Program Control) or downloaded for stand-alone operation (Internal Program Control).**
- **Motors may be operated manually with the front panel 'STEP' and 'DIRECTION' switches or with the joystick. Single-step or multiple-step operation with smooth acceleration to the selected speed.**
- **3 user inputs for interaction with program execution, in addition to two "End of travel" inputs for each motor.**
- **3 user outputs for switching under program control.**
- **Simple control language has many powerful commands which allow control of all aspects of motion or position. Conditional operation, loops and jumps are possible. All commands consist of single characters, followed by numbers, where appropriate. Summary overleaf.**
- **Program development is simplified by improved development software with on-line help and debugging facilities.**
- **Displays temperature of the motor being driven or baked.**
- **Supplied with all connectors, mains lead, fuses, joystick, comprehensive manual, interface cable and software for program development on any IBM-compatible PC.**
- **Simplified connection with MLF18 bakeable lead, feedthrough and connection kit. (Not included.)**
- **Economical with standard stepper motors e.g. with motorised motion feedthroughs.**
- **Operates on any supply from 100 to 240V, 50/60 Hz without adjustment.**

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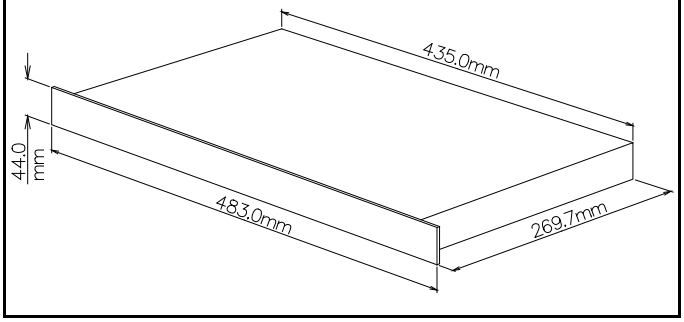
SPECIFICATION

DIMENSIONS	
Nett Weight	**4 kg**
Shipping Weight	**6 kg**
Carton Dimensions	**60 x 40 x 13cm**



Host Computer Command Summary:

Ax	Set user output x.
Bx	Select motor x.
b	Bakeout selected motor. (175ºC).
Cx	Clear user output x.
Dx	Delay x milliseconds, where x is 1 to 65535.
E	Start execution of a downloaded program.
F	Status request. (Busy, ready or error condition.)
fx	Preset position counter to x. (Sets a reference location at x=0)
G±x	Go to a defined location x steps from a reference location.
g±	Rotate at preset speed indefinitely in the direction specified by the sign.
H±	Go to a location 8 steps inside the specified (EOT+ or EOT-) limit switch.
hx,x	Set the power reduction parameters (time and phase current after hold time).
In	Initialise user output or position counter, as defined by n.
J,j	Jump to another part of the program. Conditional jumps are determined by user inputs.
K	Abort program execution.
Ln	Loop through a sequence n times, where n is 1 to 255.
M	Set the step rates for automatic ministep mode transition.
P	Enter or exit the programming mode of operation.
Q	Read the program resident in memory back via RS232C.
Tx	Define the current slew speed in steps per second, where x is between 10 and the maximum rate defined by the X command (<6000).
Ux	Until. Continue executing the saved program until user input x is "low".
Vx	Status request (Position, user inputs, temperature, software version, dynamic parameters).
Wx	Wait for user input p to go "low" before executing the next instruction.
Xx,y,z,	Define the acceleration / retardation parameters, where x is the start speed, y is the maximum slew speed and z is the number of steps in the acceleration or retardation ramp.
Z	Reduce speed to zero with the defined retardation.
±x	Rotate xx steps in the defined direction, where x is between 1 and 10^6.

The above is given for information purposes only and is not intended to be a rigorous specification for programming purposes.
AML pursues a policy of continuous product improvement and reserves the right to make detail changes to specifications without consultation. E and OE.

Ordering information:	**SMD2**	Dual UHV-Compatible Stepper Motor Drive
Related products:	**C14.1, C17.1, C17.2, B23.2**	UHV-Compatible Stepper Motors
	MLF18F	Feedthrough
	MLF18NBL	Lead, SMD2 to MLF18F Feedthrough

Arun Microelectronics Ltd.
Fitzalan Road, Arundel,
West Sussex BN18 9JP, England.
Tel: 01903 884141 Fax: 01903 884119
International Tel: +44 1903 884141
www.arunmicro.com