

### STEPPER MOTOR CONTROL DEVICE SMCD10

### Additional information

The SMCD10 is a 1/4 width 19" rack mounting unit (3U height)

### Application

The SMCD10 Stepper Motor Control Device is designed for controlling the low power stepper motors in applications where high speed and high torque is not very important. The SMCD10 device is mainly recommended for precision transfer systems, e.g. manipulators, sample transfer systems etc.

Specification	
Supply voltage	110V or 230V, 50 - 60Hz, specify at order
Stepper Motor	Two-phase hybrid stepper motor unipolar or bipolar control standard stepper motor 200 step/revolution. Other resolutions of steps available on request. Programmable motor current 0 - 2,5A at 24V per motor coil for "Stop" and "Run" State. Programmable full and half step mode (default half step)
Encoder	Standard 400 pulses/revolution. Incremental encoder used for standard motors with 200 steps/revolution in full step mode, or 400 steps/revolution in half step mode. Other step resolutions available on request
Pogrammable Inputs	10 programmable inputs can be used as limit switches, reference sensors or other safety switches. The inouts signals can immediately affect the control of the stepper motor (limit the maximum movement range, setting the reference position for encoder), or can be read transparently by the computer
Stepper motor control functions	Programmable Velocity, Acceleration and Deceleration time, Programmable Motor coil current for "Stop" and "Run" state, Programmable Half or full steps mode. Programmable and control the motor system backlash offset. Advanced motor movement tracing with external encoder.
Communication Interface	2 wire EIA-485 - Half duplex serial interface and communication protocol with CRC check redundancy sum, allows for connecting a few devices together using one 2 wire cable and controlling them with a computer program
Dimensions	116 x 133 x 240mm (W x H x D) (1/4 width, 3 units height) mounted in the 19" rack
Weight, approx	2,2 kg



## STEPPER MOTOR CONTROL DEVICE SMCD20

### Additional information

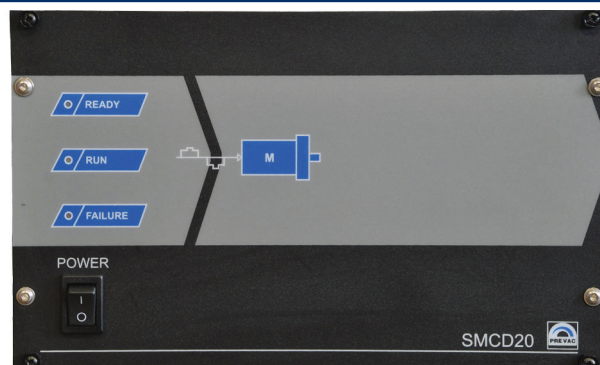
The SMCD20 is a 1/2 width 19" rack mounting unit (3U height)

### Description

The SMCD20 Stepper Motor Control Device is designed for controlling the higher power stepper motors in applications where either higher speeds and/or higher torques than can be delivered by the SMCD10 are required. The SMCD20 device is mainly recommended for precision transfer systems, e.g. manipulators, sample transfer systems etc.

#### Specification

Supply voltage	110V or 230V, 50 - 60Hz, specify at order
Stepper Motor	Two-phase hybrid stepper motor unipolar or bipolar control standard stepper motor 200 step/revolution. Other resolutions of steps available on request. Programmable motor current 2,5 - 6A at 48V per motor coil for "Stop" and "Run" State. Programmable full and half step mode (default half step)
Encoder	Standard 400 pulses/revolution. Incremental encoder used for standard motors with 200 steps/revolution in full step mode, or 400 steps/revolution in half step mode. Other step resolutions of available on request
Programmable Inputs	10 programmable inputs can be used as limit switches, reference sensors or other safety switches. The inputs signals can immediately affect the control of the stepper motor (limit the maximum movement range, setting the reference position for encoder), or can be read transparently by the computer.
Stepper motor control functions	Programmable Velocity, Acceleration and Deceleration time, Programmable Motor coil current for "Stop" and "Run" state, Programmable Half or full steps mode. Programmable and control the motor system backlash offset. Advanced motor movement tracing with external encoder.
Communication Interface	2 wire EIA-485 - Half duplex serial interface and communication protocol with CRC check redundancy sum, allows for connecting a few devices together using one 2 wire cable and controlling them with a computer program
Dimensions	212 x 133 x 240mm (W x H x D) (1/4 width, 3 units height) mounted in the 19" rack
Weight, approx	4,5 kg



### TITANIUM SUBLIMATION PUMP POWER SUPPLY TSP01-PS

#### Description

The TSP01-PS Titanium Sublimation Pump Power Supply is configured for constant filament current operation and features a thyristor and phase-control circuit for long-term and trouble-free TSP operation.

The unit is also fully **software controlled** and **web-enabled** so that it can be operated over any network, including the internet.

Only one communication interface can be chosen at time of order (please refer to table) but this can be easily changed in the future via simple rear panel plugin connection modules, without ever having to access the internals of the unit.

#### Application

The Titanium Sublimation Pump Controller regulates the quantity of material sublimated from the filaments, compensating for changing conditions and eliminating the need for operator attendance or adjustment. Four filaments can be connected simultaneously, but only one at the time can be operated. To avoid the fracture of the Ti filament due to the thermal stress or the structural change of Ti, ramp time and max. current for each filament can be set. All parameters of each filament can be set individually (max current, ramp time, filament number etc.).

#### Additional information

4 filament outputs with common ground connection. Low cost. Simple, robust and reliable design, easy to service. All output switching is by semiconductor de-

vices.

Low-noise: Complies with EC EMC and LV Directives. Sublimation current settable over the range 5 to 50 A in increments of 1A. Vacuum interlock input. The TSP01-PS is a 19" rack mounted unit (full-width, 3U height).

#### Software

Full dedicated software application or library module.

\* Only one communications interface can be used at once. Please specify at time of order.

Specification	
Operating temp:	10 to 50°C for rated performance
Supply voltage	230V, 50Hz or 60Hz
Power consumption	600W max with max current 50A
Output current	Regulated at 5 to 50A RMS x 0,5A in sublimation 5 to 25A RMS x 5A in degas
Output voltage	Determined by the lead - max 10V at 50A
Timing	Sublimation period: 1s to 15min x 1s Delay interval: 1min to 99h x 1min Degas time: 1s to 15min x 1s
Communication Interface*	RS232/485/422, USB, Profibus DPV1, Modbus, EtherNet/IP, Bluetooth
Dimensions	483 x 133 x 365,2mm (W x H x D)
Weight, approx	10kg

