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**Data Sheet**

August 13, 2026

## APPLIED MOTION PRODUCTS

# Applied Motion Products STAC6-S AC Advanced Microstep Drive with Encoder Input

The Applied Motion Products STAC6-S is an AC advanced microstep drive designed for precise motor control. It features encoder input for closed-loop operation, enhancing accuracy and responsiveness. Ideal for applications requiring smooth motion and high resolution, such as automation, robotics, and scientific instrumentation.



## MODEL

**Applied Motion  
Products STAC6-S**

## CALIBRATION

**Available on  
request**

## CONDITION

**Used**

## STATUS

**In stock**

## RFQ / SKU

**STAC6-S**

## LISTING

<https://aumictechlabs.com/products/stac6-s-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

## This unit

The Applied Motion Products STAC6-S is an AC advanced microstep drive with encoder feedback for closed-loop stepper motor control. It delivers up to 6.0 A/phase (peak-of-sine) output and operates from single-phase 94–135 VAC, 50/60 Hz input. The drive supports multiple control modes including Step & Direction, velocity control with joystick operation, and streaming serial commands via RS-232 or RS-485, plus multi-axis stored program capability through SiNet Hub connectivity. Technical Specifications Motor Control & Performance Microstepping resolution: selectable up to 51,200 steps/rev Current control: 4-state PWM at 10 kHz or 20 kHz Anti-resonance algorithm for smooth operation across wide speed ranges Torque ripple smoothing for enhanced performance Idle current reduction: adjustable 0–100% DC bus voltage (nominal): 165

VDC Encoder & Feedback Closed-loop operation via encoder input Stall detection with system notification on synchronization loss Stall prevention with automatic speed adjustment and static position maintenance Electrical Specifications Supply voltage: 94–135 VAC, 50/60 Hz Output current: 0.5–6.0 A/phase (peak-of-sine) Motor regeneration: built-in circuit, 25 W max Protection: over-voltage, under-voltage, over-temperature, short-circuit (phase-to-phase, phase-to-ground), internal amplifier shorts Key Features 7 optically isolated digital inputs (5–12 V, 200 ns minimum pulse width) 3 optically isolated digital outputs 2 single-ended analog inputs, configurable as 1 differential input Analog input range: software selectable (0–5V,  $\pm 5$ V, 0–10V,  $\pm 10$ V) with 10–12 bit resolution RS-232 for configuration and programming RS-485 for serial networking up to 32 axes Compatible with NEMA 23 and NEMA 34 frame step motors Control Modes Step & Direction (A/B quadrature, CW/CCW pulse) Velocity with joystick operation Streaming Serial Command (SCL) via RS-232 or RS-485 Multi-axis stored program (200 lines) via SiNet Hub connectivity Compatibility & Integration The STAC6-S integrates with NEMA 23 and NEMA 34 frame motors and operates within multi-axis systems via RS-485 serial networks supporting up to 32 axes. SiNet Hub 444 or SiNet Hub 8 enables stored program mode for coordinated multi-axis motion control.

## Features & description

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From manufacturer datasheet

### Features

- Two-phase bipolar MOSFET dual H-bridge, 4-quadrant

## STAC6S Characteristics / Specifications

| PARAMETER              | VALUE                                                                                                             |
|------------------------|-------------------------------------------------------------------------------------------------------------------|
| Model                  | STAC6-S                                                                                                           |
| Manufacturer           | Applied Motion Products                                                                                           |
| Instrument Type        | AC advanced microstep drive with encoder input                                                                    |
| Motor Type             | Two-phase bipolar step motor                                                                                      |
| AC Input Voltage       | 94-135 Vac, 50/60 Hz (STAC6 / STAC6-S)                                                                            |
| Nominal Line           | about 120 Vac                                                                                                     |
| DC Bus Voltage         | nominal about 165 Vdc                                                                                             |
| Output Current         | 0.5-6.0 A/phase peak-of-sine, 0.01 A increments                                                                   |
| Amplifier Type         | MOSFET dual H-bridge, 4-quadrant                                                                                  |
| Current Control        | 4-state PWM at 20 kHz                                                                                             |
| Microstep Resolution   | software selectable 200 to 51200 steps/rev                                                                        |
| Speed Range            | amplifier suitable up to about 133 rps (resolution dependent)                                                     |
| Control Modes          | pulse and direction; CW/CCW; velocity (oscillator); SCL streaming                                                 |
| Serial Interface       | RS-232 and RS-485                                                                                                 |
| Encoder Feedback       | yes (differential recommended; HD-15)                                                                             |
| Encoder Supply         | +5 Vdc about 200 mA class on encoder connector                                                                    |
| Digital Inputs         | 7 (two 5 V high-speed; five 12-24 V class)                                                                        |
| Digital Outputs        | 3 (30 V class)                                                                                                    |
| Analog Inputs          | 2; +/-10 V (or one differential)                                                                                  |
| Step/Dir Inputs        | optically isolated 5-12 V; min pulse width 200 ns; max about 2 MHz                                                |
| Protections            | over-voltage; under-voltage; over-temperature; phase-to-phase / phase-to-ground shorts; internal amplifier shorts |
| Idle Current Reduction | configurable percent after selectable delay                                                                       |
| Motor Regeneration     | built-in about 25 W max class                                                                                     |
| Ambient Temperature    | 0 to 55 C                                                                                                         |
| Humidity               | 90% non-condensing                                                                                                |

| PARAMETER          | VALUE                                                                                                                                                                                                                                                                                                       |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Related Model Note | STAC6-S-220 is 94-265 Vac class at lower amp rating (about 3.2 A/phase) Notes Specs from Applied Motion / Omega STAC6 and STAC6-S datasheets. Confirm STAC6-S (94-135 Vac, 6 A) vs STAC6-S-220 faceplate before applying current limits. Encoder differential wiring recommended for broken-wire detection. |

# Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

| Specifications       |                                                                   |
|----------------------|-------------------------------------------------------------------|
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| PARAMETER            | VALUE                                                             |
| Model                | STAC6-S                                                           |
| Manufacturer         | Applied Motion Products                                           |
| Instrument Type      | AC advanced microstep drive with encoder input                    |
| Specifications       |                                                                   |
| PARAMETER            | VALUE                                                             |
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| PARAMETER            | VALUE                                                             |
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| Microstep Resolution | software selectable 200 to 51200 steps/rev                        |
| Speed Range          | amplifier suitable up to about 133 rps (resolution dependent)     |
| Specifications       |                                                                   |
| PARAMETER            | VALUE                                                             |
| Control Modes        | pulse and direction; CW/CCW; velocity (oscillator); SCL streaming |
| Serial Interface     | RS-232 and RS-485                                                 |
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### Specifications

| PARAMETER       | VALUE                                          |
|-----------------|------------------------------------------------|
| Encoder Supply  | +5 Vdc about 200 mA class on encoder connector |
| Digital Inputs  | 7 (two 5 V high-speed; five 12-24 V class)     |
| Digital Outputs | 3 (30 V class)                                 |

### Specifications

| PARAMETER       | VALUE                                                                                                             |
|-----------------|-------------------------------------------------------------------------------------------------------------------|
| Analog Inputs   | 2; +/-10 V (or one differential)                                                                                  |
| Step/Dir Inputs | optically isolated 5-12 V; min pulse width 200 ns; max about 2 MHz                                                |
| Protections     | over-voltage; under-voltage; over-temperature; phase-to-phase / phase-to-ground shorts; internal amplifier shorts |

### Specifications

| PARAMETER              | VALUE                                       |
|------------------------|---------------------------------------------|
| Idle Current Reduction | configurable percent after selectable delay |
| Motor Regeneration     | built-in about 25 W max class               |
| Ambient Temperature    | 0 to 55 C                                   |

Humidity: 90% non-condensing

Related Model Note: STAC6-S-220 is 94-265 Vac class at lower amp rating (about 3.2 A/phase)

#### Notes

Specs from Applied Motion / Omega STAC6 and STAC6-S datasheets. Confirm STAC6-S (94-135 Vac, 6 A) vs STAC6-S-220 faceplate before applying current limits. Encoder differential wiring recommended for broken-wire detection.

### Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: [sales@aumictech.com](mailto:sales@aumictech.com) · +1 (484) 841-9341

#### Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.