

STAC5-IP-E120

AC EtherNet/IP Advanced Microstep Drive w/ Encoder Input

1pc. - 710.00
50pc. - 532.50



Product Features

- Programmable, microstepping digital step motor driver in compact package
- Advanced anti-resonance algorithm
- Torque ripple smoothing
- Microstepping to 51,200 steps/rev
- Operates from 120 VAC
- Provides motor current up to 5 A/phase (peak of sine) with idle current reduction
- Fast 10/100 Ethernet for programming and communications
- EtherNet/IP communication protocol for network communications with PLCs and other devices
- Supports all STAC5-S and STAC5-Q control modes
- UDP & TCP support
- 12 digital inputs, 6 digital outputs, all optically isolated
- 1 analog input, +/- 10 volt range
- Encoder feedback provides Stall Detection and Stall Prevention when used with a motor-mounted incremental encoder



Description

The STAC5-IP-E120 stepper drive employs sophisticated current control designed for optimal smoothness over a wide speed range. Anti-resonance, torque ripple smoothing, and microstepping work together to bring step motor performance to a new high. To complement the drive Applied Motion offers a specially matched set of low-loss NEMA 23 and 34 frame motors (see Related and Recommended Products below), all specifically designed with high voltage operation in mind. Power to the drive comes from single-phase 120 VAC, and the drive can output up to 5.0 A/phase (peak-of-sine) to the step motor. Protection features like over-voltage, over-temperature, and over-current prevent damage while running in adverse conditions.

The STAC5-IP-E120 incorporates EtherNet/IP network communications, the widely used industrial protocol for manufacturing automation applications. With EtherNet/IP users can control, configure and query the drive using an open, standards-based, industrial Ethernet connection at speeds up to 100 MBits/sec. The STAC5-IP drives run all of the same control modes as STAC5-Q drives, with the addition that all drive features can be accessed over EtherNet/IP, including more than 100 commands and 130 registers for controlling motion, I/O, configuration, polling, math, register manipulation, and Q programming.

For connecting to external devices such as limit switches, proximity or photoelectric sensors, PLC I/O, lamps, and other devices, the drive comes with 12 digital inputs, 6 digital outputs, and 1 analog input. In addition to EtherNet/IP the drive supports Ethernet TCP and UDP protocols for sending commands from Applied Motion's proprietary Serial Command Language (SCL). The same 10/100 Mbit Ethernet port on the drive is also used for configuring and programming the drive using the [ST Configurator™](#) and [Q Programmer™](#) software applications, respectively.

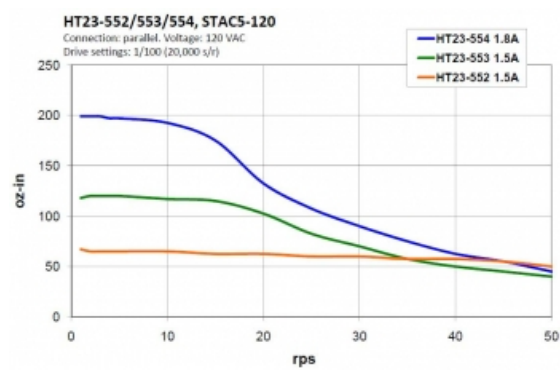
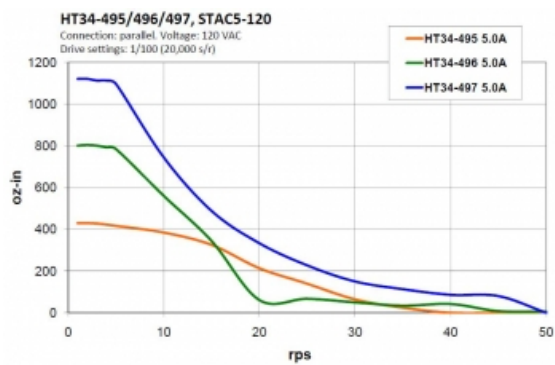
The STAC5-IP-E120 comes with an encoder feedback connector for applications that demand a higher level of position control than ordinary open-loop step motor systems can provide. Use our double-shaft step motors with incremental encoders and activate either Stall Detection or Stall Prevention in the drive. Stall Detection notifies the system as soon as the required torque is too great for the motor, which results in a loss of synchronization between the rotor and stator, also known as stalling. Stall Prevention automatically adjusts motor speed to maintain synchronization of the rotor to the stator under all conditions. This unique feature allows step motors to operate in a much broader range of applications than previously possible, such as torque-control. The Stall Prevention feature also performs static position maintenance, which maintains the position of the motor shaft when at rest. Additionally, the inclusion of the optional encoder allows the motor to be precisely homed to the index (marker) pulse.

This step motor drive is UL Recognized (File No. E332730), CE approved, and RoHS compliant.

Specifications

| | |
|-------------------------------------|-----------------------------------------------------------------------------------------------|
| Model Number: | STAC5-IP-E120 |
| Part Number: | 5000-194 |
| Supply Voltage: | 94-135 VAC |
| Supply Voltage Type: | AC |
| Control Modes: | Streaming Commands Analog Positioning Encoder Following Q Programming EtherNet/IP |
| Output Current: | 0.5-5.0 A/phase |
| Communication Ports: | Ethernet EtherNet/IP |
| Encoder Feedback: | Yes |
| Step Resolution: | Full Half Microstepping Microstep Emulation |
| Idle Current Reduction: | 0-90% |
| Setup Method: | Software setup |
| Digital Inputs: | 12 |
| Digital Outputs: | 6 |
| Analog Inputs: | 1 |
| Dimensions: | 5.5 x 4.5 x 2.0 inches |
| Weight: | 22.4 oz |
| Operating Temperature Range: | 0-70 °C |
| Ambient Temperature Range: | 0-40 °C |
| Ambient Humidity: | 90% max, non-condensing |
| Status LEDs: | 1 red, 1 green |
| Circuit Protection: | Short circuit Over-voltage Under-voltage Over-temp |

















Torque Curves



Software

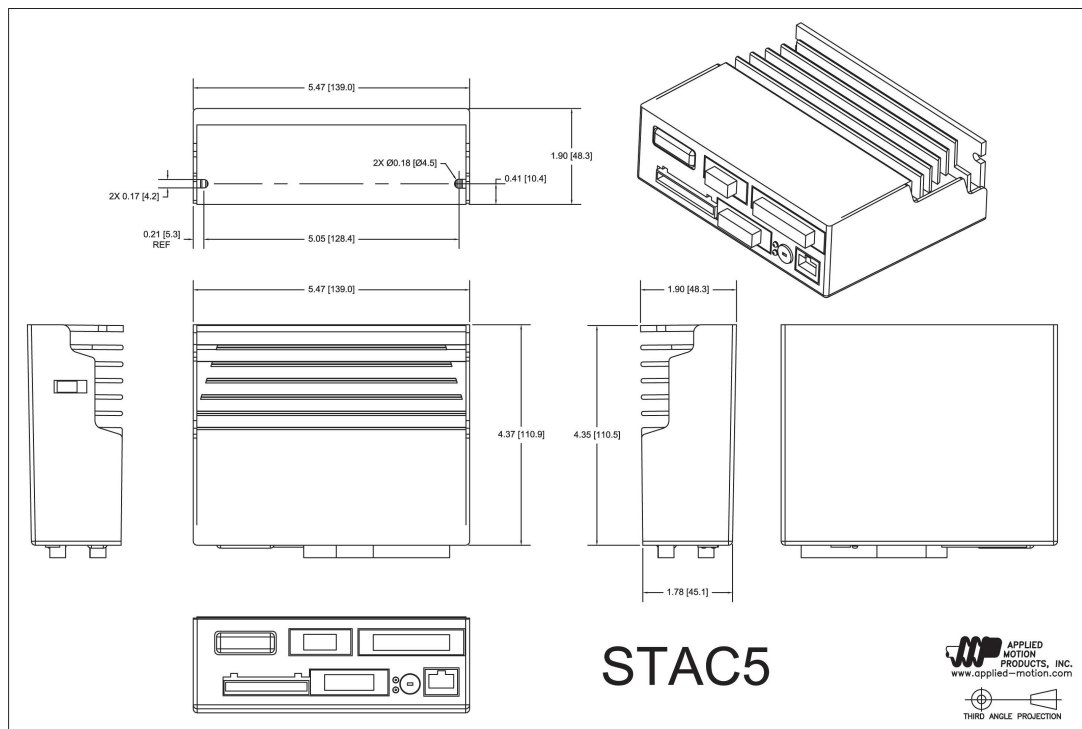
Software: [SCL Utility](#)
[ST Configurator™](#)

Downloads

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|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manuals: |  STAC5_Hardware_Manual_920-0026.pdf  STAC5_QuickSetupGuide_920-0040_.pdf  Host Command Reference Rev I.pdf |
| Datasheet: | http://s3.amazonaws.com/applied-motion-pdf/STAC5-IP-E120.pdf |
| Family Datasheet: |  STAC5_Datasheet_925-0003.pdf  EtherNet-IP-White-Paper_920-0050.pdf  EIP_EDS_FILES.zip |
| 2D Drawing: |  STAC5.dxf  STAC5-1.pdf  STAC5_simple_3D.pdf |
| 3D Drawing: |  STAC5.igs |
| Speed-Torque Curves: |  STAC5_speed-torque.pdf |
| Agency Approvals: |  STAC5_SVAC3_CE_DOC.PDF |
| Application Notes: |  APPN0024_AOIs-for-RSLogix5000.zip  APPN0023_MicroLogix-to-EtherNet-IP-drive.zip  APPN0022_CompactLogix-to-EtherNet-IP-drive.zip  APPN0016_Simple-25-pin-mating-connections.pdf |

Pricing

| | STAC5-IP-E120 Part No. 5000-194 |
|---------------|----------------------------------------------------|
| 1pc. | \$710.00 |
| 25pc. | \$610.60 |
| 50pc. | \$532.50 |
| 100pc. | Contact us for 100+ piece pricing. |



Products in the Series *EtherNet/IP Products*

| Model Number | Supply Voltage | Control Modes | Output Current | Communication Ports | Encoder Feedback | 1pc./50pc. |
|-------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-----------------------|------------------|---------------------|
| | 12-70 VDC | Step & Direction, Analog Torque / Velocity, Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Velocity Control | NA | Ethernet, EtherNet/IP | Yes | \$575.00 / \$431.25 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | No | \$551.00 / \$413.25 |
| | 12-70 VDC | Step & Direction, Analog Torque / Velocity, Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Velocity Control | NA | Ethernet, EtherNet/IP | Yes | \$585.00 / \$438.75 |
| | 12-70 VDC | Step & Direction, Analog Torque / Velocity, Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP, Velocity Control | NA | Ethernet, EtherNet/IP | Yes | \$595.00 / \$446.25 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | Yes | \$605.00 / \$453.75 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | No | \$495.00 / \$371.25 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | Yes | \$650.00 / \$487.50 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | No | \$540.00 / \$405.00 |
| | 12-70 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | Yes | \$706.00 / \$529.50 |
| ST10-IP-EE | 24-80 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.1-10.0 A/Phase | Ethernet, EtherNet/IP | Yes | \$710.00 / \$532.50 |
| ST10-IP-EN | 24-80 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.1-10.0 A/Phase | Ethernet, EtherNet/IP | No | \$659.00 / \$494.25 |
| ST5-IP-EE | 24-48 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.1-5.0 A/Phase | Ethernet, EtherNet/IP | Yes | \$655.00 / \$491.25 |
| ST5-IP-EN | 24-48 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.1-5.0 A/Phase | Ethernet, EtherNet/IP | No | \$607.00 / \$455.25 |
| STAC5-IP-E120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-5.0 A/Phase | Ethernet, EtherNet/IP | Yes | \$710.00 / \$532.50 |
| STAC5-IP-E220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-2.55 A/Phase | Ethernet, EtherNet/IP | Yes | \$710.00 / \$532.50 |
| STAC5-IP-N120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-5.0 A/Phase | Ethernet, EtherNet/IP | No | \$659.00 / \$494.25 |
| STAC5-IP-N220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-2.55 A/Phase | Ethernet, EtherNet/IP | No | \$659.00 / \$494.25 |
| SV7-IP-EE | 24-80 VDC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | NA | \$597.00 / \$447.75 |
| SVAC3-IP-E120 | 108-132 VAC | Streaming Commands, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | NA | \$710.00 / \$532.50 |
| SVAC3-IP-E220 | 108-242 VAC | Streaming Commands, Q Programming, EtherNet/IP | NA | Ethernet, EtherNet/IP | NA | \$710.00 / \$532.50 |

Products in the Series *STAC5 Stepper Drives*

| Model Number | Supply Voltage | Control Modes | Output Current | Communication Ports | Encoder Feedback | 1pc./50pc. |
|-------------------------------|----------------|---------------------------------------------------------------------------------------|------------------|-----------------------|------------------|---------------------|
| STAC5-IP-E120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-5.0 A/Phase | Ethernet, EtherNet/IP | Yes | \$710.00 / \$532.50 |
| STAC5-IP-E220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-2.55 A/Phase | Ethernet, EtherNet/IP | Yes | \$710.00 / \$532.50 |
| STAC5-IP-N120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-5.0 A/Phase | Ethernet, EtherNet/IP | No | \$659.00 / \$494.25 |
| STAC5-IP-N220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming, EtherNet/IP | 0.5-2.55 A/Phase | Ethernet, EtherNet/IP | No | \$659.00 / \$494.25 |
| STAC5-Q-E120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming | 0.5-5.0 A/Phase | Ethernet | Yes | \$726.00 / \$544.50 |
| STAC5-Q-E220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming | 0.5-2.55 A/Phase | Ethernet | Yes | \$726.00 / \$544.50 |
| STAC5-Q-N120 | 94-135 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming | 0.5-5.0 A/Phase | Ethernet | No | \$660.00 / \$495.00 |
| STAC5-Q-N220 | 94-265 VAC | Streaming Commands, Analog Positioning, Encoder Following, Q Programming | 0.5-2.55 A/Phase | Ethernet | No | \$660.00 / \$495.00 |
| STAC5-S-E120 | 94-135 VAC | Step & Direction, Velocity (Oscillator), Streaming Commands | 0.5-5.0 A/Phase | Ethernet | Yes | \$471.00 / \$353.25 |
| STAC5-S-E220 | 94-265 VAC | Step & Direction, Velocity (Oscillator), Streaming Commands | 0.5-2.55 A/Phase | Ethernet | Yes | \$471.00 / \$353.25 |
| STAC5-S-N120 | 94-135 VAC | Step & Direction, Velocity (Oscillator), Streaming Commands | 0.5-5.0 A/Phase | Ethernet | No | \$405.00 / \$303.75 |
| STAC5-S-N220 | 94-265 VAC | Step & Direction, Velocity (Oscillator), Streaming Commands | 0.5-2.55 A/Phase | Ethernet | No | \$405.00 / \$303.75 |