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Product Datasheet

www.Applied-Motion.com

STAC5-S-E120

AC Advanced Microstep Drive w/ Encoder Input

1pc. - 471.00
50pc. - 353.25

Product Features

- *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*
- *Three pulse-based control modes: step & direction, A/B quadrature, CW/CCW pulse*
- *Velocity (oscillator) control mode with sophisticated joystick operation*
- *Streaming serial command mode (SCL) for commands sent from a host controller*
- *UDP & TCP support*
- *4 digital inputs, 2 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-S-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-S-E120 can operate in pulse & direction, velocity, and streaming serial (SCL) control modes. Selecting the control mode, setting up the motor, and configuring other drive parameters is done with the *ST Configurator™* software.

For connecting to external devices such as limit switches, proximity or photoelectric sensors, PLC I/O, lamps, and other devices, the drive comes with 4 digital inputs, 2 digital outputs, and 1 analog input. The drive also features an Ethernet port for configuration and communications. The Ethernet port is fast 10/100 Mbit, and the drive supports both TCP and UDP communication protocols.

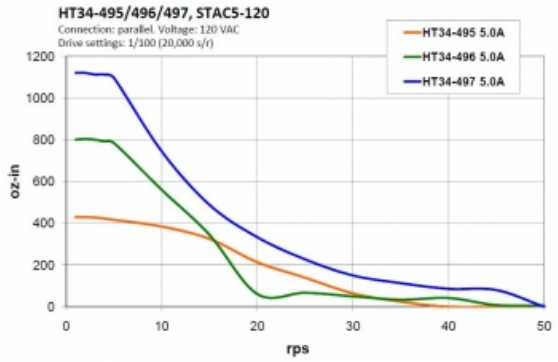
The STAC5-S-E120 comes with an encoder feedback connector for applications that demand a higher level of position control than ordinary open-loop step motor systems can provide. Use our double-shaft step motors with incremental encoders and activate either Stall Detection or Stall Prevention in the drive. 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.

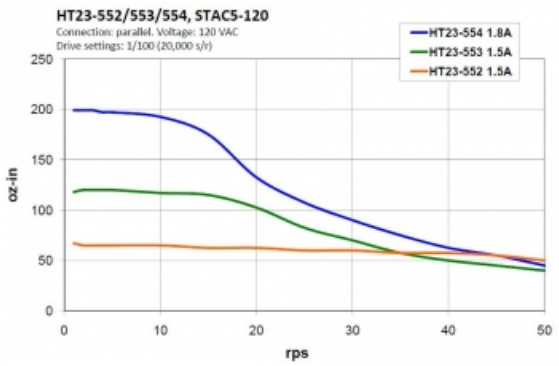
This step motor drive is UL Recognized (File No. E332730), CE approved, and RoHS compliant.

Specifications

Model Number:	STAC5-S-E120
Part Number:	5000-202
Supply Voltage:	94-135 VAC
Supply Voltage Type:	AC
Control Modes:	Step & Direction Velocity (Oscillator) Streaming Commands
Output Current:	0.5-5.0 A/phase
Communication Ports:	Ethernet
Encoder Feedback:	Yes
Step Resolution:	Full Half Microstepping Microstep Emulation
Idle Current Reduction:	0-90%
Setup Method:	Software setup
Digital Inputs:	4
Digital Outputs:	2
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™
Sample Code:	C_sharp_UDP_example.zip VB6_UDP_example.zip VB6_TCP_example.zip

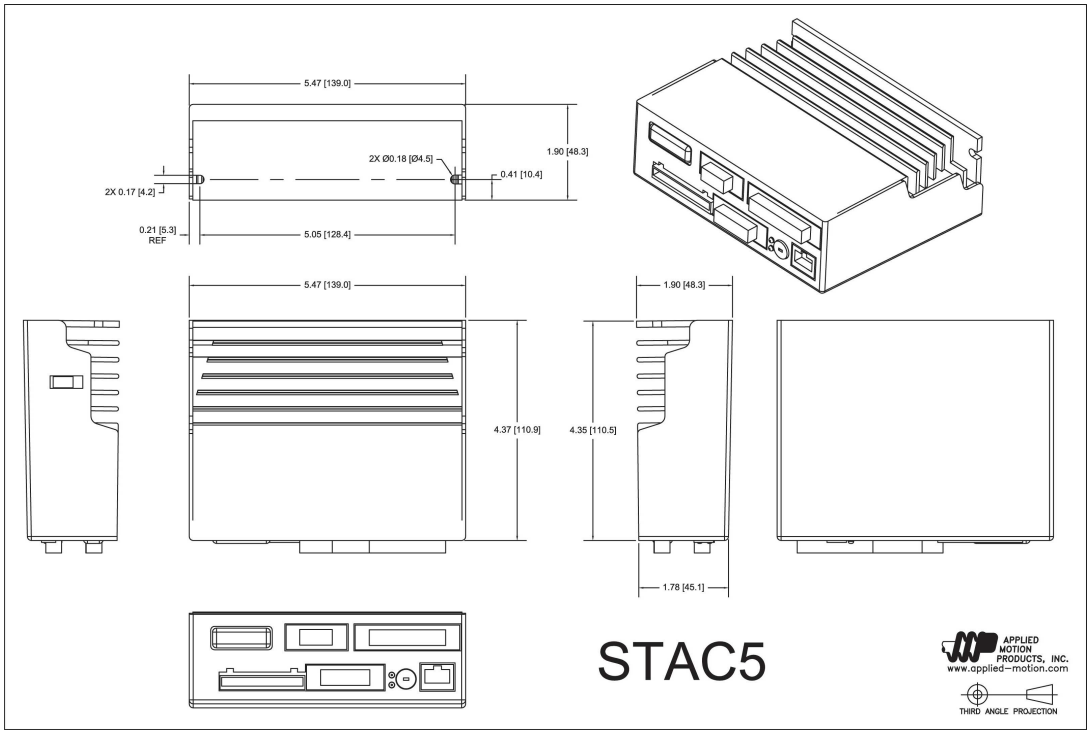
Downloads

Manuals:	STAC5_Hardware_Manual_920-0026C.pdf STAC5_QuickSetupGuide_920-0040_.pdf Host Command Reference Rev I.pdf eSCL_Comm_Reference.pdf
Datasheet:	http://s3.amazonaws.com/applied-motion-pdf/STAC5-S-E120.pdf
Family Datasheet:	STAC5_Datasheet_925-0003.pdf
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

Pricing

	STAC5-S-E120 Part No. 5000-202
1pc.	$471.00
25pc.	$405.06
50pc.	$353.25
100pc.	Contact us for 100+ piece pricing.

2D Drawings



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