ACS Machine Controls

ADVANCED CONTROL SYSTEMS CORPORATION

SMC-32
Stepping Motor Controller/Driver

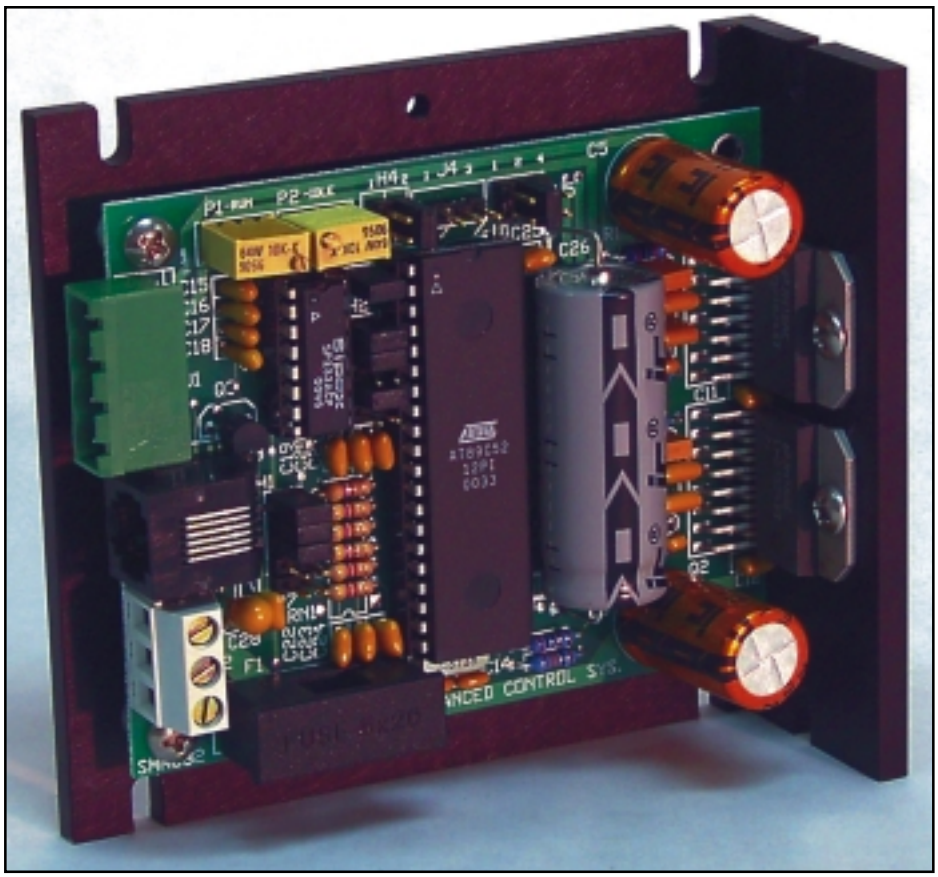
DESCRIPTION:

SMC-32 is an integrated stepping motor controller/driver unit, suitable for OEM applications. It can control any 4, 6, or 8 lead two/four phase stepping motor with continuous currents up to 3A (6A peak) and at motor supply voltages up to 48V.

The SMC-32 is available in two standard versions and customized versions for specific applications.

The SMC-32A version is an addressable controller, controlled by the host computer via RS-232 communication port.

The SMC-32B version functions as an independent intelligent controller with program stored in the controller's nonvolatile memory.



Photograph above: SMC-32 Stepping Motor Controller/Driver

FEATURES:

- ☐ Low Cost
- ☐ High reliability
- ☐ Small Size (4" x 3.65" x 1.5")
- ☐ Control of two/four phase motors to 3A/phase
- ☐ Stepping rates up to 50,000 steps/sec
- ☐ Full step and ministepping modes
- ☐ Up to 16.7 million steps per move
- ☐ Adjustable current reduction in idle
- ☐ Motor current shut-off by switch or control command
- ☐ Nonvolatile memory for motion control parameters and programs
- ☐ Manual jog control inputs
- ☐ Motor position always available
- ☐ Two limit inputs and home input
- ☐ Internal expansion communication bus for up to 32 axis control

SMC-32

SPECIFICATIONS:

ELECTRICAL:

Motor Voltage:	+12 to +48VDC/up to 2Amp Req.
Drive Current:	.125 to 3A/Phase; trim pot adjustable.
Logic Voltage:	+5VDC ±5%: 50mA.
Idle Current:	0 to 3A/Phase; trim pot adjustable.
Stepping Mode:	Full step, two phases on; full step, one phase on.
Ministepping:	Two, three, four, five, six or eight ministeps per full step.
Serial Communication:	RS232; 2400, 9600, 19200, 57600 baud.
Byte Structure:	10 bit ASCII characters; start bit, 8 data bits, stop bit, no parity.
Control Inputs:	Limit +, Limit -, Home, Jog+, Jog-, Current off.
Address Inputs:	Five – 0 to 31 address range (SMC-32A version only).
General Purpose Inputs:	Five – programmable (SMC-32B version only).
Inputs/Outputs:	Inputs TTL, Outputs TTL 20mA sink.

MECHANICAL:

Physical Dimensions:	4.0" x 3.65" x 1.5" Weight: 8.7 oz. (.25 kg.)
Heat Dissipation:	Integral heat sink, L shaped.

ENVIRONMENT:

Storage Temperature:	-40 to 250 degrees F -40 to 125 degrees C
Operating Temperature:	-20 to 140 degrees F -28 to 60 degrees C
Thermal Shutdown:	Ts = 300 degrees F 150 degrees C
Humidity:	<95% non-condensing

INSTRUCTION SET:

MOTION EXECUTE:

M±n	MOVE for "n" steps at constant stepping rate.
I±n	INDEX for "n" steps using preset rates and ramps.
G±n	GO to Absolute position using present rates and ramps.
H±	Move to HOME position at constant stepping rate.
F	FINISH Function: Motor decelerates and stops.
Q	QUIT Function: Motor stops stepping immediately.

DATA ENTER/EXAMINE:

C	Enter/Examine CONSTANT RATE OF STEPPING.
J	Enter/Examine JOG RATE OF STEPPING.
V	Enter/Examine HIGH SPEED RATE OF STEPPING.
R	Enter/Examine RAMP INDEX (Acceleration/ Deceleration) OF THE MOTOR.
D	Load DEFAULT motion parameters.
X	Examine motion status (stepping or stopped).
E	Examine limits and home inputs.
L	Enable/Disable or examine limit interrupts.
W	Turn On/Off or examine motor winding Current.
P	Examine or set absolute position.
S	Save motion indexes to NV memory.
T	Test message.

PROGRAM CONTROL: (SMC-32B VERSION ONLY):

OM	Output Message.
OL	Output Level.
OP	Output Pulse.
WM	Wait for motor to stop.
WI	Wait for Input.
JI	Jump to program line on input.
JL	Jump to program line.
RS	Repeat program loop start.
RE	Repeat loop end.
RR	Repeat loop reset.
DL	Delay

For further information on this or other products, please call our Sales Department

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