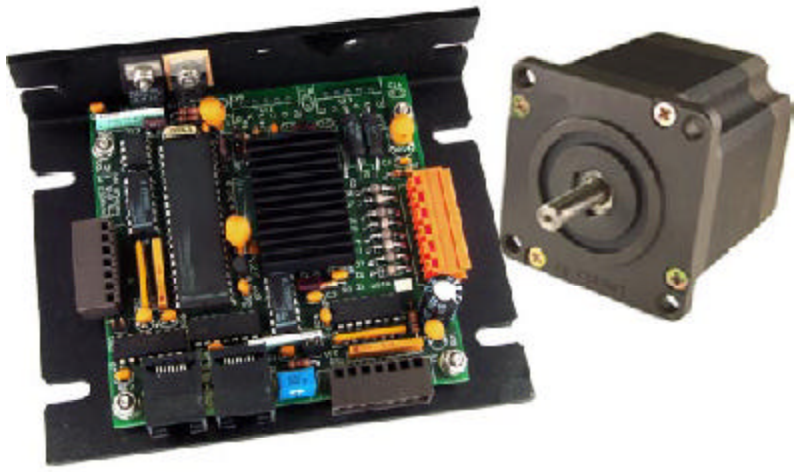
DCB-261

1 AMP MICROSTEP DRIVER WITH PROGRAMMABLE CONTROL



OVERVIEW

The **DCB-261** combines efficient bi-polar chopper drive circuitry with AMS' Award Winning (SMC-26) micro-controller on a single, heat-sink mounted board, to operate small stepping motors. It is designed for low cost O.E.M. applications yet includes many enhanced operating features found in products costing much more.

The DCB-261 has a (peak) output current rating of 1.0 amp/phase and offers microstepping resolution of 1/8, 1/4, 1/2, and full step at speeds up to 20k SPS.

FEATURES

- ***1.0 amp/phase chopper drive output***
- ***SMC-26 intelligent controller***
- ***Single 24 to 40 volt power supply input***
- ***Full, 1/2, 1/4, 1/8 microstep to 20k SPS***
- ***2k bytes of non-volatile memory***
- ***Limit, Home, Go and Stop inputs***
- ***Step, Direction and Jog inputs***
- ***Serial communication (1-32 axes)***
- ***Adjustable run current pot***
- ***Programmable hold current setback***
- ***Programmable accel and decel ramp***
- ***Constant velocity commands***
- ***Heat-sink mounted***
- ***Mating connectors included***
- ***Free demo software***

DRIVER

For maximum performance, the DCB-261 utilizes a bipolar chopper drive circuit with a 20kHz chopping rate. The input voltage range is from 24 to 40Vdc. The run current is set via a potentiometer. To eliminate excess heat generated by the motor, the hold current can be programmed to a reduced setting at the completion of a move.

CONTROLLER

The on-board controller provides powerful step and direction output signals to the driver that produce step rates up to 20,000 steps per second. A 24 bit position register tracks steps within a ±8,388,607 step range. An instruction set of over 30 commands, including: loop on port, count delays, set/clear ports, limit and home sensor inputs, provides flexibility and programming ease.

POWER SUPPLY

The DCB-261 uses a single, unregulated +24 to 40Vdc power supply. The on-board 5 volt logic power is derived from the motor power supply.

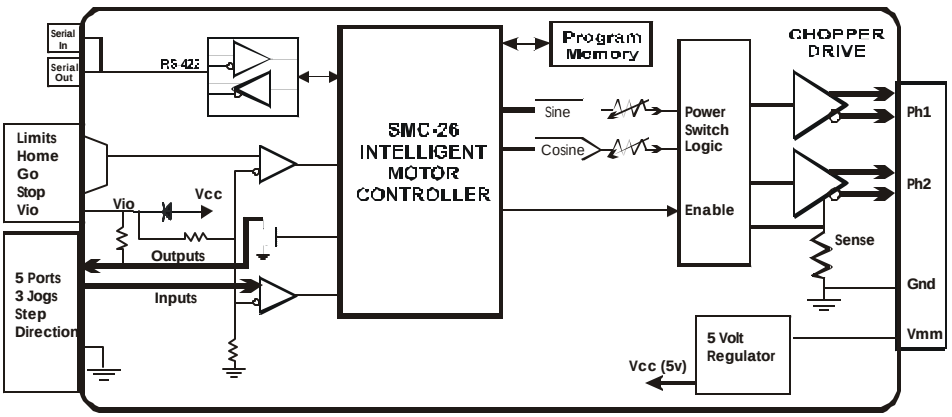
SERIAL INTERFACE

Full duplex serial communications, with an RS-422/485 "Party Line" interface, helps to ensure reliable communication in harsh industrial environments. This protocol also permits simultaneous communication (to 32 axes) with minimum command processing latency.

PROGRAMS

Using a host computer or dumb terminal, programs can be stored in non-volatile memory (2k bytes) and initiated via the serial communication port, the "GO" input or auto power-up.

BLOCK DIAGRAM



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DCB-261

INPUT SIGNALS

Input signals include: Home, Limit A, Limit B, Go, Soft Stop, Step, Direction, Jog 1, Jog 2, Jog Speed and Ground. All signals have a 5 volt range.

USER I.O.

Three input ports are available that can test and branch to multiple motion subroutines. Two programmable outputs are also available to drive solid state relays and other devices. A separate "TRIP" function provides automatic program branching when a specified position is passed.

COMMANDS

ASCII	Description
ESC	Abort/Terminate
@	Soft Stop
^C	Reset
+	Index in Plus Direction
-	Index in Minus Direction
[	Read NV Memory
]	Read Limits, Hardware
\	Write to NV Memory
I	Selective Termination
^	Read Moving Status
A	Port Read/Write
B	Set Jog Speeds
C	Restore/Initialize
D	Divide Step Rates
E	Enable Auto Power Down
F	Find Home (SPS)
G	GO from Address
H	Resolution Mode
I	Initial Velocity (SPS)
i	Restart Special Trip
J	Jump to Address
K	Ramp Slope
k	Special Trip
L	Loop on Port
l	Invert Limits/Step - Dir. Output
M	Move at a Constant Speed
O	Set Origin
P	Program Mode
Q	Query Program
R	Index to Target Position
S	Store Parameters
T	Set Trip Point
V	Slew Velocity (SPS)
W	Wait "N" Milliseconds
Y	Set Hold Current
X	Examine Parameters
Z	Display Position

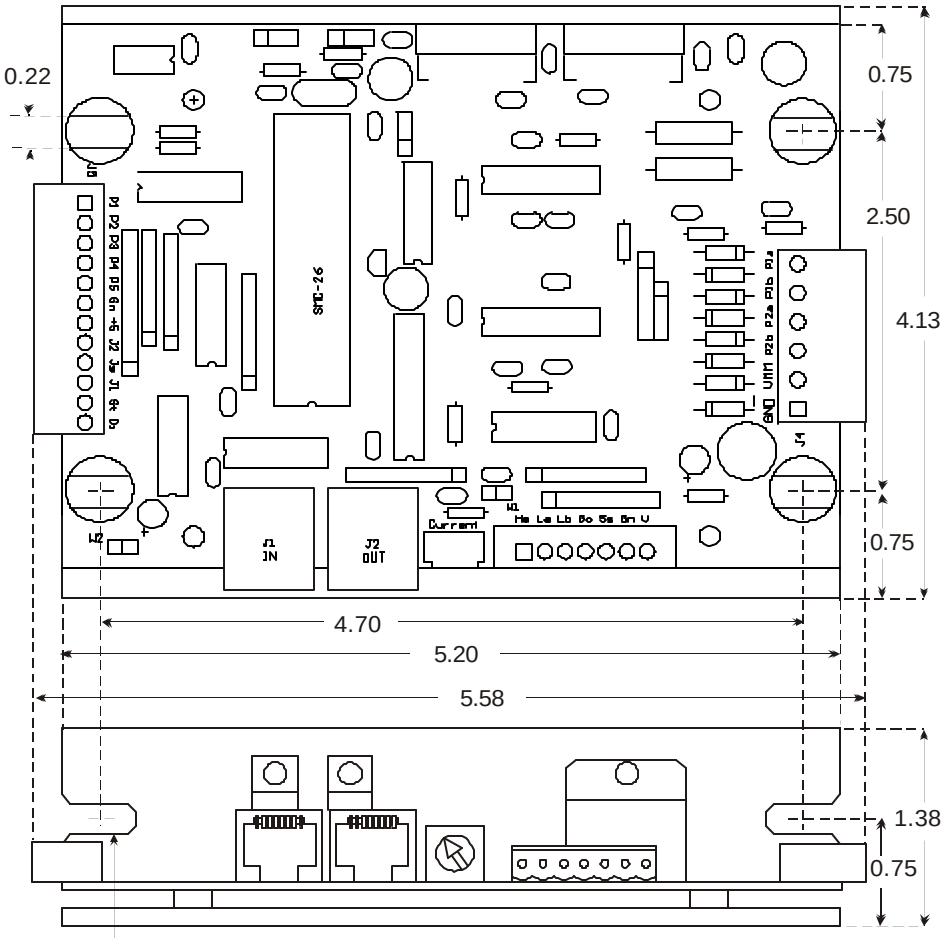
SPECIFICATIONS

Electrical

Output Current (Peak).....1.0 Amp
Input Voltage.....+24 to 40Vdc
Step Resolution.....1, 1/2, 1/4, 1/8
Chopping Frequency.....20kHz
Non-Volatile Memory.....2k Bytes
Position Counter.....$\pm$8,388,607

Physical

Operating Temperature.....0 to +50^0 C
Storage Temperature.....-40 to +125^0 C
Plate Temperature (max).....+70^0 C
Size.....4.13 x 5.58 x 1.38 in.
Weight.....8.0 oz.



SLOTS ACCOMODATE 10-32 MOUNTING HARDWARE

NOTE: ALLOW 0.5 INCH CLEARANCE ON ALL CONNECTORS FOR EXTERNAL WIRING

ACCESSORIES

SIN-7/SIN-9 .....RS-232 Serial Adapters (25 Pin and 9 Pin)
SIN-8 .....RS-232/RS-422 Serial Line Converter
SIN-10.....Intelligent Serial Line Converter