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Find the *ACS Motion Control / Tech80 SB1292* at our website: ***Click HERE***

ACS Tech80

REDEFINING MOTION CONTROL



The SB1292 Universal Motion Control Module

Motion Control Module with Digital 500W Drive offers Dual-Axis Control for Brush, Brushless and AC Induction Motors

DC Brush DC Brushless AC Induction

Standalone and Fully Programmable Operation

Powerful I/O handling with advanced PLC capabilities

Advanced Real-Time Position Event Generator-PEG

Optional CANbus Interface with CANOPEN Protocol

Optional Resolver Feedback

Integrated Digital Drive with Advanced 20/40kHz PWM Power bridge

Comprehensive Safety, Diagnostics, and Protection

Full Interactive Application Development Suite

Comprehensive C, C++, and Visual Basic libraries for DOS, Windows 3.x/95/98/NT and Linux

The SB1292 is a powerful and cost effective combination of an advanced programmable controller, two all-digital drives, and a power supply (with a separate, backup input for the control section). The universal drives are software configurable for the following motor types: DC brushless (with sinusoidal s/w commutation), AC induction, DC brush, and stepper (with 256 micro-step resolution). The drive is suitable for motors rated up to 500W (60VDC, 7.5A continuous, and 15A peak).

The SB1292 supports encoder (+ Hall) or resolver (12 bit resolution) as primary feedback. In addition to dedicated safety inputs, it has sixteen inputs, sixteen outputs, two analog inputs, and two analog outputs.

ACS control modules are based on state of the art, proprietary technology that is used in thousands of demanding systems, such as, semiconductor assembly and testing, electronic assembly and inspection, digital printing, medical imaging, and packaging. Built-in capabilities simplify programming common applications, such as, advanced pick & place, master/slave, and electronic gearing and cam.

The modules can be programmed to handle motion, time, and I/O events. They can operate standalone, without a PLC or a PC. RS-232/422/485 serial communications is standard and CANbus with CANOPEN protocol is optional. Every module meets stringent safety and EMC standards and is CE compliant.

Windows tools are provided for setting up and tuning the modules and for developing application programs. Libraries for Microsoft C/C++, Borland C/C++ and Visual Basic are available for DOS, Windows 3.11/95/98/NT and Linux. The libraries support multithreading in Windows 95/98/NT and Linux.

ACS Tech80

Main Features

Standalone and Fully Programmable Operation

- Easy to program using ACSPL, a powerful, high level language that is generic for all ACS motion control modules.
- 32k user program memory
- General purpose I/O: 16 inputs and 16 outputs, all opto-isolated
- Two 12 bit analog inputs that can be used for feedback, such as, force and position control
- Two 10 bit analog outputs for monitoring and additional control functions
- Powerful I/O handling with advanced PLC capabilities
- Teach & go for up to 1,024 XY points
- Built-in smart XY joystick interface
- RS-232/422/485 high speed serial communications interface, up to 57600 baud rate
- Optional CAN interface with CANOPEN protocol

Special Features for Demanding Applications

- Master/slave, electronic gearing, and electronic cam operation
- PEG (Position Event Generator) for real-time position compare
- High-speed registration mark input with 1 count accuracy position capture
- Advanced “search for contact” motion mode for pick & place applications

Universal Digital Drive

- 7.5A continous, 15A peak, 24VDC to 60VDC (18VAC to 45VAC)
- Software configurable for DC brushless, AC induction, DC brush, and step motors
- High performance digital current control
- State of the art 20kHz/40kHz PWM power bridge with optimized current ripple and efficiency
- Sinusoidal commutation with automatic setup for three-phase motors

Outstanding Performance and Capabilities

- Fully digital position, velocity, and current control at 20kHz sampling rate, for excellent dynamic and tracking performance
- Special built-in features and support for DC brushless linear motor applications
- Dual loop capability supports two encoders (per axis), one mounted on the motor and one on the load, for accurate belt-driven and lead-screw based applications
- State of the art, proprietary Servo Processor technology

Comprehensive Safety, Diagnostics, and Protection

- Programmable automatic routine for each fault, error, and exception
- Real-time data collection of one or two variables, programmable sampling rate up to 1kHz.
- Two separate power supplies: 24VDC backup supply for the control logic section, 24VDC to 60VDC (18VAC to 45VAC) for the power section
- 7-segment display for error, status, and programmable messages
- CE marked, meets European safety standard EN60204-1 and EMC standards EN50081-2 (emission) and EN50082-2 (immunity)

Powerful Programming and Support Tools

ACS Adjuster for Windows: Interactive tool for setting up and tuning
ACS Debugger for Windows: Development environment for ACSPL applications
ACS Saver/Loader for Windows: Tool for copying system setup and application data from one controller to another
ACSLIB C Libraries: Comprehensive C, C++, and Visual Basic libraries for DOS, Windows 3.11/ 95/ 98/ NT and Linux; Full multithreading support for Windows 95 and NT

SB1292

Specifications

Position Control

Sampling Rate: 20kHz
Control Algorithms: Pgain, acceleration feed-forward, automatic velocity feed-forward, anti-reset windup
Trajectory Calculation Rate: 1kHz
Position Range: ±999,999,999 counts
Position Accuracy: ±1 encoder count
Position Feedback:
Primary: Incremental encoder (+ Hall) or resolver
Secondary: Incremental encoder only
Encoder: Incremental, 3 channel (A, B, I), differential line drivers, 0V to 5V
Supply Voltage: 5V
Maximum current consumption from onboard supply: 100mA per encoder (400mA total) (Use external supply if higher current is needed.)
Hall: 3 channel, 0V to 5V or equivalent commutation tracks
Resolver (must be specified with order):
Onboard RDC: 12 bit resolution (4096 counts/rev), 1kHz bandwidth
Frequency: 5 to 7kHz
Reference Voltage: 4V±20% rms
Reference Current (@5kHz): <25mA rms
Transformation Ratio: 0.5
DC Resistance: rotor >15Ω, stator >40Ω
Pole Pairs: 1

Dual Loop Support:
Primary feedback (encoder only) for velocity and commutation; secondary feedback (encoder only) for position
Position Registration Delay: <1µsecond
Position Event Generator (PEG™):
Output: Differential line driver, 0V to 5V
Delay: <0.2µsecond
Position Compare Accuracy: ±1 count at up to 5,000,000 count/second
Repetition Rate:
Random Mode: 5 events/0.001 second
Incremental Mode: up to 1MHz

Velocity Control

Sampling Rate: 20kHz
Control Algorithm: PI + second order low pass filter
Range: Up to 128,000,000 count/second
Resolution: 1 count/second
Incremental Encoder Count Rate: Up to 32,000,000 count/second
Velocity Accuracy:
Long Term: 0.005%
Short Term: 0.01% - 0.5% (system-dependent)
Acceleration Range: Up to 2,000,000,000 count/second^2

Power Supplies

Separate Supplies: Drive and control. (For I/O, see I/O section)
Drive: 24 to 60VDC (18 to 45VAC)
Control (Backup): 24VDC ±20% or 18VAC ±20%, 20W
Regeneration: R = 100Ω, 30W

Drive

Type: PWM, digital current control
PWM Frequency: 20kHz/40kHz, programmable
Motor Types: DC brushless, AC induction, DC brush
Current Loop Sampling Rate: 20kHz
Control Algorithm: PI
Current Resolution: 12 bit
Bus Voltage: 24 to 60VDC (18 to 45VAC)
Phase Current (Sine Wave Amplitude): 7.5A continuous, 15A peak for 1 second
Minimum Inductance: 0.25mH
Current Ripple (60VDC, 6A, L=2mH): <0.1A

I/O

Safety Inputs: Left and right limit per axis. E-stop
General Purpose Inputs: 16
General Purpose Outputs: 16, 50mA/output, maximum total current 350mA
Features Common to Safety and General I/O:
Type: Source Opto-isolated (contact factory for other configurations)
Fed by common external supply via the I/O connector
Response Time: <1msecond
External Supply Range: 5VDC (10%) or 24VDC (20%), detected automatically
Analog Inputs: One per axis. Differential, ±10V, 12 bit resolution
Analog Outputs: One per axis. Single ended, ±10V, 10 bit resolution

Communication

Standard: RS-232/422/485, up to 57,600 baud.
Optional: CANbus with CANOPEN protocol, up to 1 Mbit/second

Processors

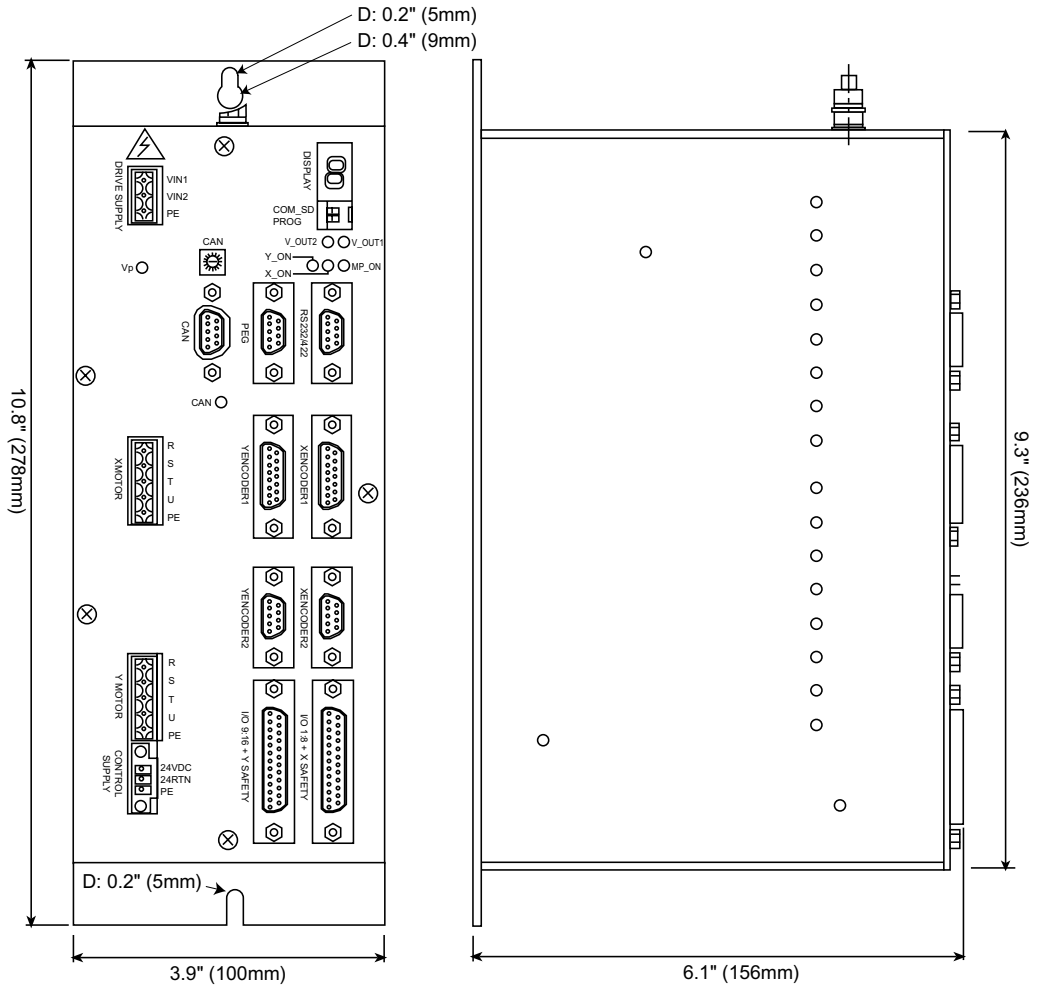
Dual Processor Architecture:
20MHz Intel 80C196KD for high level tasks and management
80MHz SB2500 ACS Servo Processor for each axis for real-time control tasks

Memory

Firmware: 256k
RAM: 256k
Nonvolatile Memory: 128k, 100,000 write cycles
User Program Memory: 32k

Dimensions

Unit Size: 11” H x 3.9” W x 6.1” D (278mm x 100mm x 156mm)



Need more information on the SB1292? Please visit: http://www.acs-tech80.com/products/sb1292/

How To Order

EXAMPLE **SB1291 - A - E - R - A**

B 18-45VAC, 7.5A or 24-60VDC, 7.5A

E Encoder Feedback
R Resolver Feedback

R RS232/422/485
C CANBus (CANOPEN Protocol)

A All Firmware Options Included

(Documentation and ACSPL software tools are included)

1291SUP Power Supply
ACSLIB ACSPL C Libraries and documentation

Warranty

This product is warranted according to the Terms and Conditions of Sale and is effective for one year after shipment from ACS-Tech80. For further warranty information, please consult the hardware manual.

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ACS Tech80
REDEFINING MOTION CONTROL

ACS-Tech80 Inc. 658 Mendelssohn Avenue North, Minneapolis, Minnesota 55427 USA
763-542-9545 Fax: 763-542-9785

ACS-Tech80 Ltd. Ramat Gabriel Industrial Park, POB 5668, Migdal Ha'Emek, 10500 ISRAEL
+972 6-6546440 Fax: +972 6-6546443

www.acs-tech80.com info@acs-tech80.com support@acs-tech80.com

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