Full Digital Programmable Drive with fieldbus

for Advanced Motion Control with reduced costs

TITANIO
VECTOR - STEPPER - DRIVES

WARRANTY 3 YEARS

error less servo efficient technology else®
by Ever Elettronica

SB4D

Open frame

- Multiform Control Modes
- On Board Safety provisions:
  - √ fully tested for direct installation unit
  - √ built in watch dog functionality
  - √ fault monitoring and handling
  - √ on field working errors buffering
  - √ separated power supply for logic and power
- Servomotors main features:
  - √ Stepless control technology
  - √ low motor vibration
  - √ closed loop
  - √ low heat production
  - √ PLC functionality
  - √ high speed and torque
  - √ no resonance
  - √ high reliability

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Features

Specifications

MODELS

Code	Interface
SB4D2030C2E1-3x	CANbus - CANopen
SB4D2030M2E1-3x	Serial - Modbus

POWER SUPPLY
Separated 24 VDC for logic (mandatory) and 12÷36 VDC for power

POWER STAGE
H-bridge bipolar chopper of 40 KHz

CURRENT
0 ÷ 3.0 ARMS (0 ÷ 4.2 APEAK)

STEPLESS CONTROL TECHNOLOGY
65536 position per turn

CONTROL INTERFACES
Serial RS485 or CANbus and SCI interface for programming and real time debugging (not isolated)

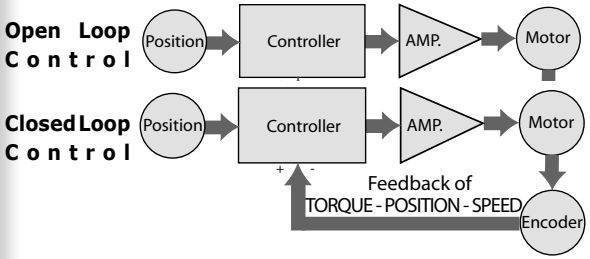
INPUTS / OUTPUTS
4 digital inputs (not isolated)
3 digital outputs (not isolated)
1 analog input (potentiometer)

DIRECT FEEDBACK INTERFACE
5V TTL/CMOS or 24VDC push-pull for incremental encoder (not isolated)

SAFETY PROTECTIONS
Over Current, over Temperature, closed Windings phase/phase phase/ground

TEMPERATURE
Operating from 5°C to 40°C, storage from -25°C to 55°C
Humidity: 5%÷85% not condensed

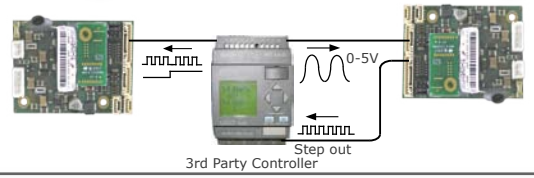
Open loop / Closed Loop



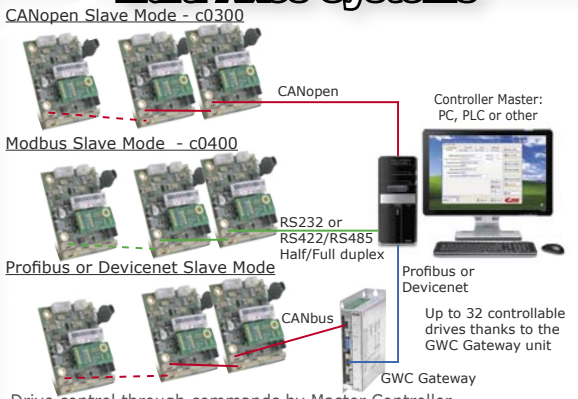
- with regard to an Open Loop Stepper Solution:
  - reliable positioning without synchronism loss;
  - keeps the original position stable and recovers it automatically in case of positioning errors caused by external factors such as mechanical vibrations:
  - 100% use of the motor torque;
  - capacity to operate at high velocity related to the current control, which is adjusted depending on the load variations, where the normal systems in open loop use a constant current control at all velocities without considering the load variations.
- compared with a brushless servo controlled solution:
  - no need to adjust the power (automatic current regulation depending on the load changes);
  - keeping the position stable without fluctuations after completing the positioning;
  - quick positioning favoured by the independent control of the integrated DSP;
  - continuous and fast execution of short stroke movements thanks to the short positioning time.

Control Modes

Step & Direction or Analog



Multi Axes Systems



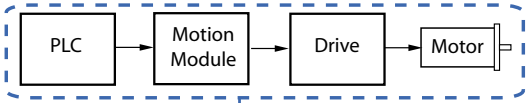
Drive control through commands by Master Controller.
Suitable for multi axes systems (up to 127 drives).
Built in Powerfull Motion Module functionality assures Perfect Synchronization among axes and reduces Master Controller workload.

Stand Alone Mode

User Programmable - eePLC- c0490

eePLC integrates PLC, Motion Module, Process Module and drive in One Device. eePLC Studio PC interface is available to friendly, fast and easy custom to machine or process device programming.

Traditional Solution



eePLC - SM4A Solution

eePLC Handler allows user to access all the functionalities and resources of the device and to manage and synchronize the motion module and other drive resources to any process' events.

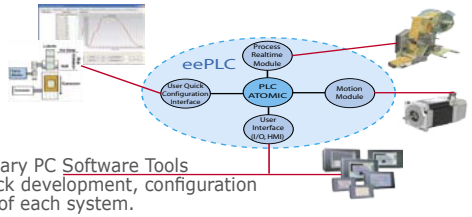
Access to all Powerful Motion functionalities
Built in **Process Real Time Modules** for special applications:
- Labelling
- Labelling Premium (c2490)
- CAM (c1390 and c1490)
- Wire Processing
- User Custom Process
- .....

Software

Programmable for Stand-Alone and Software eePLC

Easy and fast configuration with Windows systems for Realtime Process Module.

SCI interface

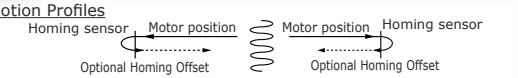


Ever co. proprietary PC Software Tools for easy and quick development, configuration and supervision of each system.

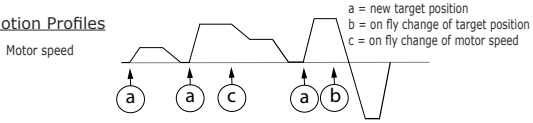
Power Motion Module

- Step & Direction Control Mode
- Velocity Control Mode
- Wide range of Positioning Control Modes (homing, relative, absolute, target)
- CAM Mode... cam profile can be programmed
- Electric Gear with programmable gear ratio to track external master reference (from fieldbus or incremental encoder) of motor Speed and Position
- High speed I/O triggered motor start & stop to event syncronizing for fast response demanding application: labeling, nick_finder, on fly cut., etc ...
- Multi Axis movements syncronization capability
- On fly change among any Motion Module Control Modes
- On fly Electric Gear Enable/Disable capability
- Motor Stall detection & Target Position tracking through encoder feedback

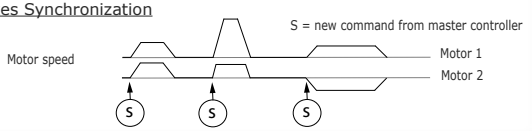
Homing Motion Profiles



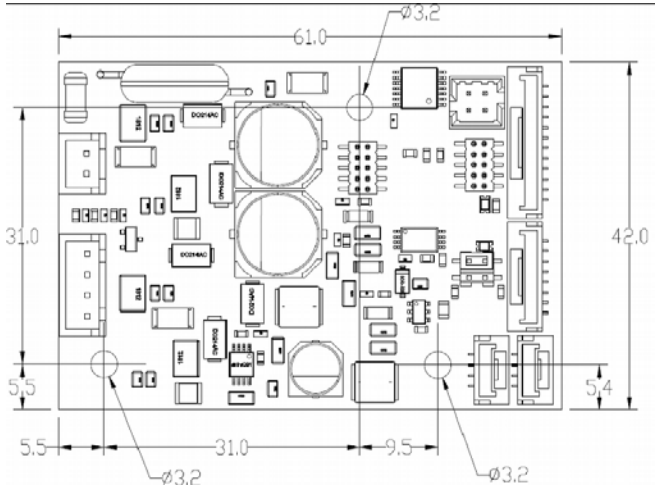
Mixed Motion Profiles



Multi Axes Synchronization



Mechanical Data



Specifications

Ordering information of SB4D open frame drives and options

Order code		Power			System Resources							
Versions	Config. (see table)	Power supply Power	Logic	Current	CAN	Serial	Dip-switches settings mode	SCI	Digital Inputs	Digital Outputs	Analog Inputs	Encoder interface
SB4D2030C2E1-30	c0300 c0380 c0390 c1390	12 ÷ 36 Vdc	24 Vdc	0 ÷ 3,0 Arms (0 ÷ 4,2 Apeak)	CANbus (Canopen)	---	None: the NodeID and the Baud Rate of interface is settable only in software mode	for programming and real time debug	4	3	1	1 5V TTL/CMOS or 24 Vcc Push-Pull
SB4D2030C2E1-31							8 dip-switches to set the NodeID and the Baud Rate of interface also in hardware mode					
SB4D2030M2E1-30	c0400 c0490 c1490 c2490				---	RS485 (Modbus)	None: the NodeID and the Baud Rate of interface is settable only in software mode					
SB4D2030M2E1-31							8 dip-switches to set the NodeID and the Baud Rate of interface also in hardware mode					

Configuration, Control Method and Optional Software Starter Kits			
Config.	Control	Software Starter Kits Code	Description of the Software Starter Kits
c0300	Canopen Control Mode	SW4_SERV00-SL	Communication kit for SCI service interface to configure the drive with SL_Monitor.
c0380	Canopen Control Mode (CiA DS402 profile)		
c0390	Stand-Alone eePLC Studio IDE Canopen Mode	SW4_SERV00-EE	Communication kit for SCI service interface to program the drive with eePLC Studio IDE.
c1390	Stand-Alone eePLC Studio IDE Canopen Mode with 'Electronic CAM'		
c0400	Modbus Control Mode	SW4_SERV00-SL	Communication kit for SCI service interface to configure the drive with SL_Monitor.
c0490	Stand Alone eePLC Studio IDE Modbus Mode	SW4_SERV00-EE	Communication kit for SCI service interface to program the drive with eePLC Studio IDE.
c1490	Stand-Alone eePLC Studio IDE Modbus Mode with 'Electronic CAM'		
c2490	Stand-Alone eePLC Studio IDE Mode with 'Labelling Premium'		