Specifications

MODELS

Code	Interface
SB4A3042C261-00	CANbus - CANopen
SB4A3042M261-00	Serial - Modbus

POWER SUPPLY
Separated 24 V$_{DC}$ (logic) and 18÷56 V$_{AC}$ (power)

POWER STAGE
H-bridge bipolar chopper of 40 KHz

CURRENT
0 ÷ 4.2 A$_{RMS}$ (0 ÷ 6.0 A$_{PEAK}$)

STEPLESS CONTROL TECHNOLOGY
65536 position per turn

OPTOISOLATED CONTROL INTERFACES
Serial RS485 or CANbus and SCI interface for programming and real time debugging

INPUTS / OUTPUTS
4 digital optocoupled inputs
2 digital optocoupled outputs (100 mA)
2 analog optocoupled inputs (potentiometer or ±10Vdc)

DIRECT FEEDBACK INTERFACE
5V TTL/CMOS for incremental encoder (not isolated)

SAFETY PROTECTIONS
Over Current, over Temperature, closed Windings phase/phase phase/ground
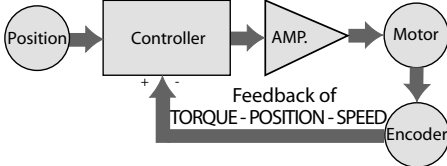
TEMPERATURE
Operating from 5°C to 40°C, storage from -25°C to 55°C
Humidity: 5%÷85% not condensed

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.

Features

Control Modes

Full Digital Programmable Drive with fieldbus
for Advanced Motion Control with reduced costs

TITANIO
VECTOR - STEPPER - DRIVES

WARRANTY 3 YEARS
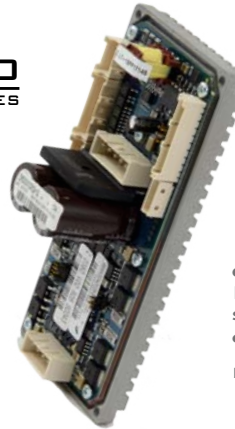
error less servo efficient **else** technology ®
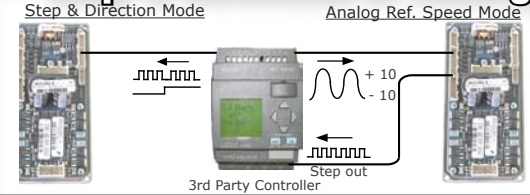by Ever Elettronica

SB4A
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   √ PLC functionality
  - √ closed loop   √ no resonance
  - √ low mechanical noise   √ high reliability
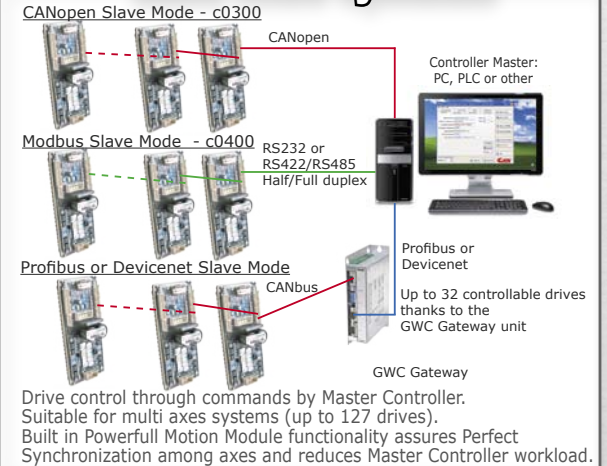 - √ AC power supply   √ high speed and torque

E ever ELETTRONICA
the clever drive

ELETTRONICA PER AUTOMAZIONE INDUSTRIALE
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Loc. S. Grato - Z.I.
26900 - LODI (LO) - Italy
Tel. 0039 0371 412318 - Fax 0039 0371 412367
email infoever@everelettronica.it
www.everelettronica.it

Step & Direction or Analog

Step & Direction Mode   Analog Ref. Speed Mode

Step out
3rd Party Controller

Multi Axes Systems

CANopen Slave Mode - c0300
CANopen
Controller Master: PC, PLC or other
Modbus Slave Mode - c0400
RS232 or RS422/RS485 Half/Full duplex
Profibus or Devicenet Slave Mode
CANbus
Profibus or Devicenet
Up to 32 controllable drives thanks to the GWC Gateway unit
GWC Gateway

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.
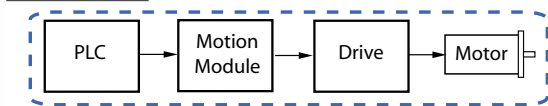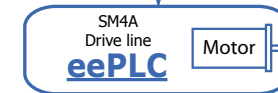
Stand Alone Mode

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

| PLC | Motion Module | Drive | Motor |

eePLC - SM4A Solution

SM4A Drive line **eePLC** | Motor

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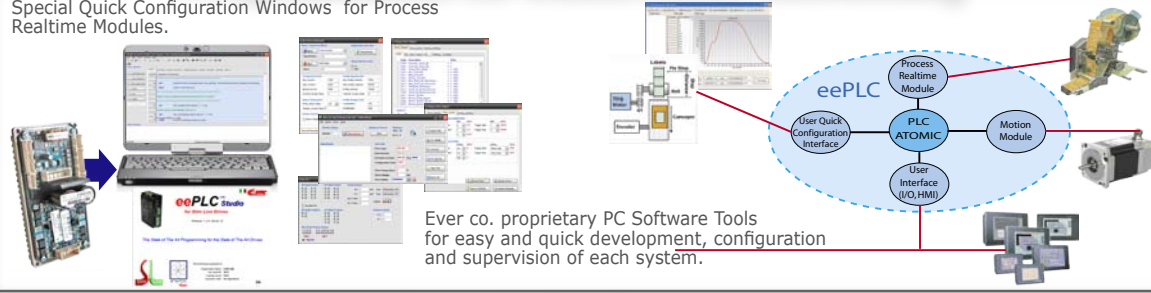
Access to all Powerful Motion functionalities
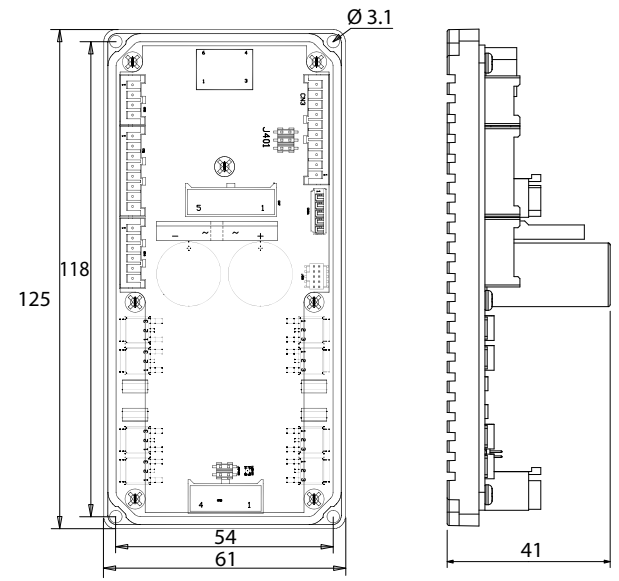Built in **Process Real Time Modules** for special applications:
- Labelling
- Labelling Premium (c2490)
- CAM (c1390 and c1490)
- Wire Processing
- User Custom Process
- ......

Programmable for Stand-Alone functioning

Special Quick Configuration Windows for Process Realtime Modules.

eePLC

- Process Realtime Module
- User Quick Configuration Interface
- PLC ATOMIC
- Motion Module
- User Interface (I/O, HMI)

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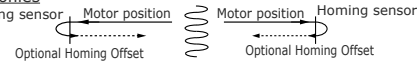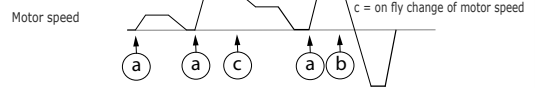
Mechanical Data

Ø 3.1

118
125
54
61
41

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
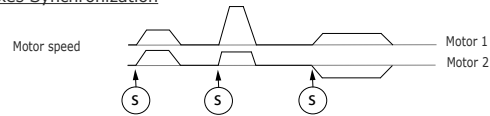- Motor Stall detection & Target Position tracking through encoder feedback

Homing Motion Profiles

Homing sensor — Motor position — Motor position — Homing sensor

Optional Homing Offset — Optional Homing Offset

a = new target position
b = on fly change of target position
c = on fly change of motor speed

Mixed Motion Profiles

Motor speed

(a) (a) (c) (a) (b)

Multi Axes Synchronization

Motor speed

Motor 1
Motor 2

(s) (s) (s)

Ordering information of SB4A open frame drives and options

Order code		Power			System Resources						
Versions	Config. (see table)	Power supply		Current	CAN	Serial	SCI	Digital Inputs	Digital Outputs	Analog Inputs	Encoder interface
		Power	Logic								
SB4A3042C261-00	c0300 c0380 c0390 c1390	18 ÷ 56 Vac	24 Vdc	0 ÷ 4,2 Arms (0 ÷ 6,0 Apeak)	CANbus (Canopen)	---	for programming and real time debug	4	2	2	1 5V TTL/CMOS
SB4A3042M261-00	c0400 c0490 c1490 c2490	18 ÷ 56 Vac	24 Vdc		---	RS485 (Modbus)					

Configuration, Control Method and Optional Software Starter Kits			
Config.	Control	Software Starter Kits Code	Description of the Software Starter Kits
c0300	Canopen Control Mode	SB4A_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	SB4A_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	SB4A_SERV00-SL	Communication kit for SCI service interface to configure the drive with SL_Monitor.
c0490	Stand Alone eePLC Studio IDE Modbus Mode	SB4A_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'		