

Specifications

MODELS

| Code | Interface |
|-----------------|---------------|
| SB4D2030H2E1-30 | EtherCAT |
| SB4D2030E2E1-30 | Modbus TCP/IP |

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

EtherCAT interfaces 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)

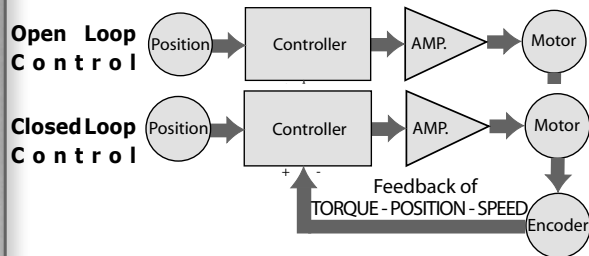
SAFETY PROTECTIONS

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

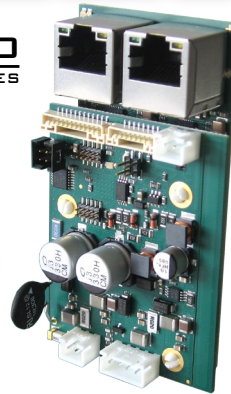


- with regard to an Open Loop Stepper Solution:
 - reliable positioning without synchronism loss;
 - keeps the original position stable and recovers it automatically in case of positioning errors caused by external factors such as mechanical vibrations;
 - 100% use of the motor torque;
 - capacity to 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.

Full Digital Programmable Drives with fieldbus EtherCAT and Modbus TCP

for Advanced Motion Control with reduced costs

TITANIO
VECTOR - STEPPER - DRIVES



EtherCAT
Modbus TCP/IP

error less servo efficient
else technology[®]
by Ever Elettronica

SB4D Open frame

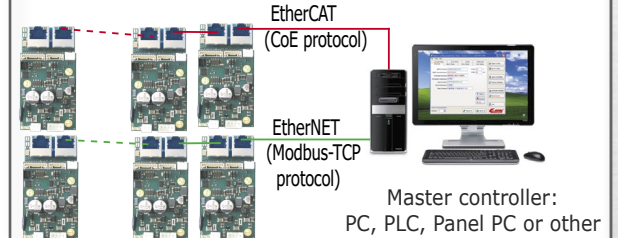
- Multiform Control Modes
- On Board Safety provisions:
 - ✓ fully tested for direct installation unit
 - ✓ built in watch dog functionality
 - ✓ fault monitoring and handling
 - ✓ on field working errors buffering
 - ✓ separated power supply for logic and power
- Drives main features:
 - ✓ Stepless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

Ever
ELETRONICA
the clever drive

ELETRONICA PER AUTOMAZIONE INDUSTRIALE
Via del Commercio, 2/4 -9/11
Loc. S. Grato - Z.I.
26900 - LODI (LO) - Italy
Tel. 0039 0371 412318 - Fax 0039 0371 412367
email infoever@everelettronica.it
www.everelettronica.it

Multi-Axes Systems

Slave Mode - c0680 EtherCAT per i sistemi SB4D2030H2E1-30
- c0890 Modbus TCP-IP per sistemi SB4D2030E2E1-30



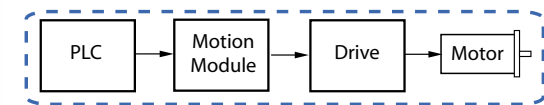
Drive control through commands by Master Controller. Suitable for multi axes systems (up to 127 drives). Built in Powerfull Motion Module functionality assures Perfect Synchronization among axes and reduces Master Controller workload.

Stand-Alone Mode

User Programmable - e3PLC- c0690 for systems SB4D2030H2E1-30
- c0890 for systems SB4D2030E2E1-30

e3PLC integrates PLC, Motion Module, Process Module and drive in One Device. e3PLC Studio PC interface is available to friendly, fast and easy custom to machine or process device programming.

Traditional Solution



e3PLC - SB4D Solution



e3PLC 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.

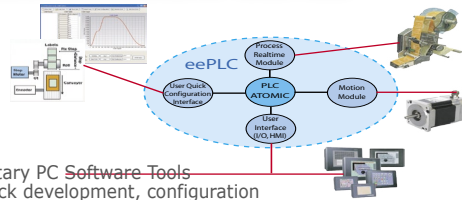
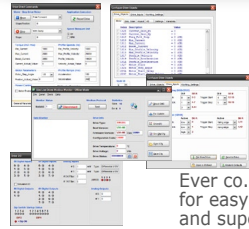
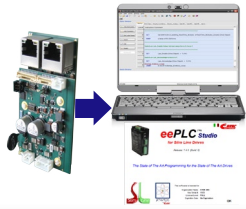
Access to all Powerful Motion functionalities

Built in **Process Real Time Modules** for special applications:

- Labelling
- CAM
- Wire Processing
- User Custom Process
- etc.

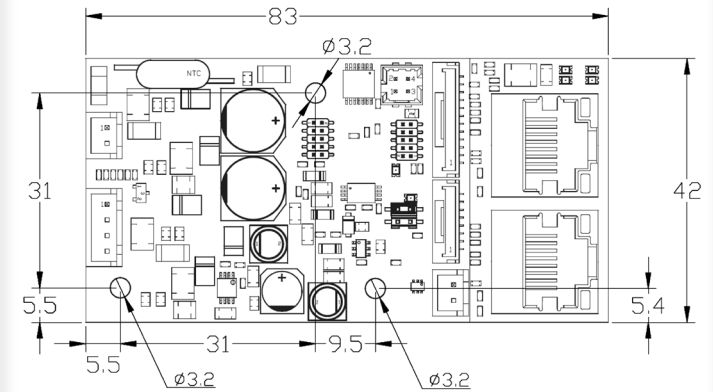
Programmable for Stand-Alone and Software eePLC

Interfaccia SCI



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

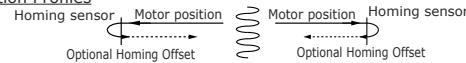
Mechanical Data



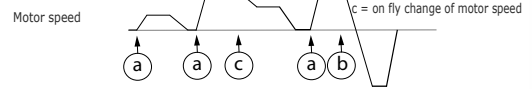
Power Motion Module

- 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 synchronizing for fast response demanding application: labeling, nick_finder, on fly cut., etc ...
- Multi Axis movements synchronization 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

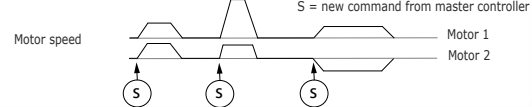
Homing Motion Profiles



Mixed Motion Profiles



Multi Axes Synchronization



Ordering information of SB4D open frame drives and options

| Order code | | Power | | | System Resources | | | | | |
|-----------------|---------------------|--------------------|--------|---------------------------------|------------------|--|----------------|-----------------|---------------|---|
| Versions | Config. (see table) | Power supply Power | Logic | Current | Interface | SCI | Digital Inputs | Digital Outputs | Analog Inputs | Encoder interface |
| SB4D2030H2E1-30 | c0680 c0690 | 12 ÷ 36 Vcc | 24 Vcc | 0 ÷ 3.0 ARMS (0 ÷ 4.2 APEAK) | EtherCAT | For configuration and/or programming and real time debug | 4 | 3 | 1 | 1 input 5V TTL/CMOS or 24 Vcc Push-Pull |
| SB4D2030E2E1-30 | c0890 | | | | Modbus TCP-IP | | | | | |

Configuration, Control Method and Optional Software Starter Kits

| Config. | Control | Kit software code | Kit Software description |
|---------|---|-------------------|---|
| c0680 | Modalità Controllo EtherCAT | SW4_SERV00-SL | Communication kit for SCI service interface to configure the drive with Ever Studio. |
| c0690 | Modalità Controllo Stand-Alone e3PLC Studio IDE EtherCAT | SW4_SERV00-EE | Communication kit for SCI service interface to program the drive with e3PLC Studio IDE. |
| c0890 | Modalità Controllo Stand-Alone e3PLC Studio IDE Modbus TCP/IP | SW4_SERV00-EE | Communication kit for SCI service interface to program the drive with e3PLC Studio IDE. |

Software

Specifications