

MOTION CONTROL SOLUTIONS



2022

**our solutions
make yours easy**

Ever
ELETRONICA
the clever drive

Welcome to **EVER ELETTRONICA**



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"Our history



Ever snc is founded,
the first company of
the group

1977

Ever Group is chosen as
a supplier of custom dri-
ves for stepper motors
by important Italian
customers



1984



Ever Snc is
associated
with Can In
Automation "CIA"
receiving the
vendor ID "4Bh"

1992

1983



Ever Snc is supported
by Ever Elettronica Srl,
the company's stepper
drives production branch
in Italy

1986

"SMC", the first stepper
drive on the market
programmable and
controlled by
microprocessor, awar-
ded for its innovation



2003



Ever Elettronica Srl moves
to its new 2000 sqm
building, implementing new
SMD and THT production
lines and ICT and functio-
nal testing

2007



Changzhou Ever Electronics
Motion Control Technology
Co., created to provide
technical and commercial
support to active customers in
the Asian market

eePLC, visual programming environment for SW1 drives Series, the new generation of the historical line of Ever's programmable drives with embedded PLC

eePLC Studio

2008

CIA ETG membership and first SW1 Ethercat drive

EtherCAT

2012

Release of High efficiency stepper motors line



2013

2015

Design and production of AC brushless motors and drives



2016

Design and production of DC brushless motors and drives

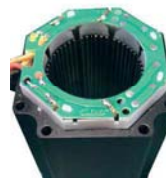


2019



Ever Elettronica is among the first servo drives manufacturers to implement Profinet protocol

2021



The first assembly line for stepper motors is installed in Lodi

**our solutions
make yours easy**

Reasons to choosing **EVER** Elettronica

We design, manufacture and implement cutting-edge motion control systems with synchronous and custom motors



WE DESIGN *drives and motors*

" A team of expert engineers
develops hardware, firmware,
application software and mechanics
of highly efficient drives and motors,
with standard or custom versions.

Customer payback

" We invest heavily every year
in R&D and in improving
the design and production processes
to offer our customers
the best partnership possible.



WE PRODUCE *them in lean mode*



" Our production departments work with LEAN processes on a daily basis with minimal waste to provide customers with products that live up to their expectations in terms of quality and delivery.

Tailor made products for the customer

" We do not just sell one of our products, we design it with the customer, if necessary.

The perfect synergy between internal design and production guarantees the manufacture of quality products, with attention to details, at a competitive price.

WE IMPLEMENT *the applications*

" More than forty years' experience in industrial automation make Ever Elettronica the ideal partner for the motion control of machine manufacturers.

Quality customer support'

" Thanks to our knowledge of the motion control problems, we provide the customer with complete ready-to-use solutions for the control of automatic machines through motors and drives with stepper and brushless technology, offering excellent support for implementation.



Ever Studio



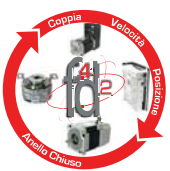
Cutting-edge technology at the customer's service



For the very best digital control and high switching frequency of brushless motors, Ever Elettronica has, for many years, implemented f^4d^2 (Fast Forward Feed Full Digital Drive) technology in its drives controlled by Digital Signal Processor. This technology, based on an innovative, proprietary and patented microstep phase current algorithm regulation, in particular, allowed to control the torque of stepper motors, in a closed or open loop, which generates a silent, fluid and smooth motor rotation without resonances even at low speed.



The ELSE (Error Less Servo Efficient) technology, integrated in the latest ServoStep drives generation of the new Titanio series by means of ARM Cortex microprocessors, has been developed by Ever Elettronica to improve the performances of its F^4D^2 technology in stepper motor control. The added improvement of the shape of the phase current, made perfectly sinusoidal through “step-less” excitation, has also been applied by Ever Elettronica as a closed loop vectorial algorithm, with or without shaft feedback sensor, to the control of torque, velocity and position of the other types of synchronous, brushless DC and AC motors respectively, in the new Platino and Vanadio drive series.



Thanks to the F^4D^2 and ELSE technologies, the new Ever Elettronica drives can power synchronous motors, closed loop stepper or brushless, providing an even higher performance than the one possible with field orientation control techniques (FOC). With this control mode, the stepper motor, thanks to the 50 polar torques with which it is equipped, can be considered a brushless synchronous servo motor, ideal for use with direct coupling to the load without the costs and performance limitations of the gearbox. With the closing of the torque loop, the resonance limit of the potential motor due to step loss is exceeded, and the increase in the working temperature due to heat dissipation is limited, supplying only the current required by the torque loop to the phases, so vibrations and thus, motor noise are eliminated. The stepper motor will never lose synchronism of movement by adapting its speed profile to the drive torque required by the shaft, even with high inertial loads.

Controlling the stepper motor in a closed loop of torque, velocity and position offers the following advantages compared to:

- 1) its open-loop drive
 - safe positioning and stable maintenance of the final position with automatic error recovery;
 - full exploitation of the torque delivered by the motor;
 - ability to constantly operate at the maximum speed allowed by the driving torque delivered by the motor;
- 2) the use of brushless motors with low poles number
 - stable hold of the idle position without risk of fluctuations and rapid repositioning;
 - rapid execution of short strokes;
 - lower solution cost due to the greater simplicity of the feedback and no need of a gearbox in low speed torque applications.



Programmability with PLC functionality

The new **TITANIO**, **PLATINO** and **VANADIO** series drives, in the IDE e3PLC programmable versions, make it easier for the manufacturer to design, produce, integrate and start up the machine by eliminating the hardware and software problems which must be resolved to connect the PLC and drive. e3PLC, the user-friendly and intuitive Windows programming environment, makes it easier to solve problems related to drive programming and allows the implementation of complex application programs as well, without the user having to learn to use the languages and control methods of proprietary drives or set up interfacing tasks between distributed units.



Functionality and communication for industry 4.0.

The drives of the new **TITANIO**, **PLATINO** and **VANADIO** series make it easier for the manufacturer to design, produce, integrate and start up the machine and for the system operator to use in the production process. Controlled by the latest generation and fully digital DSPC, the drives of the three series have communication interfaces dedicated to commissioning and field control with which they can communicate real-time messages about operating parameters, events, operating conditions, energy performance and useful information for maintenance, including predictive maintenance, as required in industry 4.0.



The Modbus TCP/IP protocol uses Ethernet, resulting in greater speed, reliability and robustness, making it the preferred bus in the field for communicating messages, typically used by applications for industry 4.0. The Modbus TCP/IP is also a valid and economic alternative to the ProfiNet bus for connecting Ever Elettronica programmable drives to Siemens PLCs.



Implemented by Ever as slave of most EtherCAT master PLCs on the market by adopting the CoE standard and supporting multiple:

- control modes: Profile Position Mode, Velocity Mode, Profile Velocity Mode, Homing Mode, Interpolated Position Mode, Cyclic Synchronous Position Mode, Cyclic Synchronous Velocity Mode;
- Homing mode according to standards 1,2,17,18,19,20,21,22,35,37;
- synchronisation modes: Free Run, Synchronous with SM Event, Distributed Clock;
- diagnostic services: EMCY, Diagnostics;

as well as:

- 500 microseconds minimum cycle time;
- 'Touch Probe' function (no. 2 Touch Probes managed at the same time);
- Factor Groups;
- Availability of at least 4 x 24 Vdc inputs and 2 outputs;
- Dynamic PDO mapping;

Ever Elettronica's EtherCAT implementation passed the Beckhoff ET9400 Conformance Test.



The drives developed by Ever Elettronica to be controlled according to the profiNet RT and IRT standard by Siemens master drives, also have four or more inputs and at least two 24 Vdc outputs with which they can also act as local I/O modules.



The communication interface, still widely used for its low cost in industrial automation with embedded systems, developed by Ever according to the CANopen standard DS301 and DS402. The numerical value 77 (4Bh), assigned by the CanInAutomation organisation as supplier identifier when it joined forces with Ever Elettronica, certifies its experience in the use of this simple and inexpensive bus.



It is the entry level fieldbus in embedded automation systems and still widely used for its cost savings and simplicity despite its limitations of use.



High efficiency stepper motors resulting from the company's decades of experience in stepper technology. Viewed as brushless synchronous motors with a high poles number suitable for direct drive, HE motors are built with innovative design and construction techniques.

**MASTERS
COMPATIBLE**

SIEMENS

ESN

OMRON



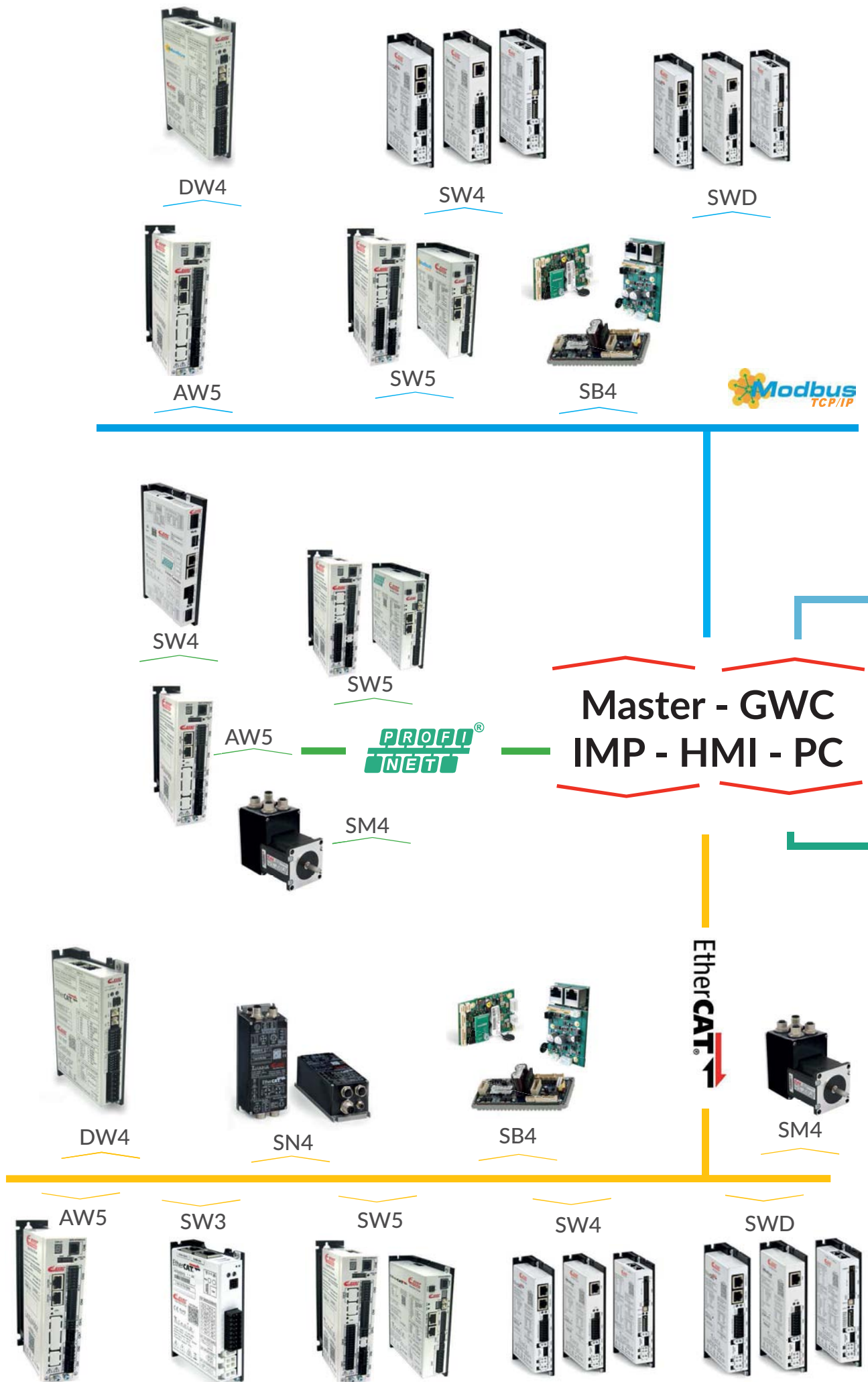
Allen-Bradley

**Schneider
Electric**

BECKHOFF

CERTIFICATIONS







AW5



DW4



SB4



SW5



SM5



DM4



SW4



SM4



SWD



to drive

CANopen
DS402

SB4



AW5



SM5



DW4



SW4



SWD



DM4



SW5



SM4



VANADIO

AC - SERVO - DRIVES

Range of vectorial drives with innovative features, designed to control AC brushless motors up to 1.5 KW. **VANADIO** drives use Arm Core M4 technology and are completely digital, reliable, compact, programmable and available with multiple fieldbuses, such as EtherCat, ProfiNet, Modbus TCP, Canopen or ModBus RTU. **VANADIO** drives can control the brushless motor with feedback from an incremental or absolute single- or multi-turn encoder and are equipped with the Safety Torque Off (STO) (Sil 3/PLe) function. They are intended for use in various applications: packaging industry including labelling machines, electric cylinders, logistics systems, automotive lines, orientation automation solutions, CNC machining centers and screen printing. The quality of **VANADIO** drives is further guaranteed by UL certification, which certifies their reliability and safety of use for potential risks of fire, electric shock and mechanical hazards.



The drive functions include:

- Velocity control mode
- Torque Mode
- Function programmability, including stand alone
- Different positioning control modes (homing, relative, absolute, target)
- Electric shaft management with programmable reduction ratio to track an external master reference from fieldbus or encoder in speed and/or position
- Fast I/O that can be triggered on motor start & stop events in applications that require high response speeds
- Certified STO Safety Torque Off (Sil 3/PLe)
- UL recognized

AC BRUSHLESS DRIVES

Fieldbus and/or programmable drives



Control devices for AC brushless motors through fieldbus commands (slave) in multi-axle systems or programmable with the e3PLC Studio environment. Featuring inputs and outputs for autonomous operation, AW5 drives are also programmable and configurable in real time by means of the SCI service serial port.

Family characteristics	Format	Power supply	Power	Fieldbus	Feedback	Features	
AW5	Wall mounting	100 ÷ 240 VAC	0,75 ÷ 1,50 KW	EtherCAT Profinet Modbus TCP/IP CANbus Canopen Seriale Modbus RTU	Hall effect, incremental or absolute encoder	UL STO	Page 13

AW5

 **VANADIO**_AC SERVO DRIVES

 FREQ/DIR/VRIF

 MODBUS TCP/IP

 MODBUS RTU

 E3PLC

 PROFINET

 ENCODER INCR/ABSOL

 ETHERCAT

 CANBUS

 STO



Characteristics:

- Controllable versions with Step & Direction signals, analog voltage, fieldbus or programmables with the e3PLC Studio environment (PLC functionality)
- Vectorial control with sinusoidal regulation of the high efficiency current with "Else" technology that maximizes the driving torque with smooth and silent rotation
- Feedback with incremental and absolute encoder
- Available with different fieldbuses
- Equipped with service serial connections for configuration, programming and real-time debugging
- Safe Torque Off (STO) inputs Sil3/PLe
- Integrated oscilloscope
- Separated power supply for logic and power
- Internal or external braking resistor
- Integrated diagnostics

Model coding:

AW5A vwwwb2i1-oo-ayyyy

v	voltage
w	power
b	connection bus
i	i/o number
o	options
yyyy	embedded firmware version

Technical data

AW5A6750:

Power supply: from 100 Vac to 120 Vac monophas (with internal voltage doubler)

Current: nominal 3.0 Arms

Fieldbus: EtherCAT, Canbus, Modbus RTU Modbus TCP/IP, Profinet

Dimensions: 180.7 x 138.5 x 50.0 mm

AW5A9750:

Power supply: da rete 100 Vac ÷ 240 Vac monophas

Current: nominal 3.0 Arms

Fieldbus: EtherCAT, Canbus, Modbus RTU Modbus TCP/IP, Profinet

Dimensions: 180.7 x 138.5 x 50.0 mm

AW5A91K5:

Power supply: from 85 Vac to 265 Vac

Logic Power supply: 24 Vdc isolated

Current: nominal 5.2 Arms

Fieldbus: EtherCAT, Modbus TCP/IP, Profinet, Canbus, Modbus RTU

Dimensions: 196.6 x 136.6 x 47.0 mm

Common line features:

Switching frequency: 40 kHz

Digital inputs: fino a 16 optoisolated

Digital outputs: fino a 12 optoisolated

Analog inputs: fino a 2 isolated

Analog outputs: fino a 2 isolated

Safe Torque Off inputs: STO Sil3/PLe

Feedback: incremental encoder, multturn absolute encoder, Hall sensor

Encoder output: 5V differential

Max braking internal resistance power: 50 Watt

(SCI) Serial service interface

Safety protections: over/under voltage, over current,

over temperature, short circuit phase/phase and phase/ground

Status monitoring: led segments

Temperature: working from 5°C to 40°C; storage from -25°C to 55°C

Humidity: from 5% ÷ 85%

Protection class: IP20

Platino

BLDC - SERVO - DRIVES



Series of vectorial drives with innovative features, designed for the control of three-phase brushless DC motors up to 400 Watt. The

PLATINO drives are fully digital thanks to Arm technology, and are exceptionally reliable, compact, programmable, available with multiple fieldbus based on Ethernet, Modbus RTU or CanOpen, or with frequency or analogue controllable source. In addition to the Hall sensors, the current control via encoder allows **PLATINO** drives to control the motor in closed loop ensuring extremely smooth movements. For the use on machines controlled by one of the most commonly used bus masters on the automation market, **PLATINO** drives have advanced safety features, such as integrated diagnostics for monitoring faults, which is also convenient for remote machine support, and power supplies for separate logic and power. They are intended for use in various control applications: conveyor belts, distributors, electric cylinders, marking machines, dosing devices, fabric reel rotation, winders, separators and robotic arms.

The drive functions also include:

- Velocity control mode
- Torque Mode
- Function programmability, including stand alone
- Different positioning control modes (homing, relative, absolute, target)
- Electric shaft management with programmable reduction ratio to track an external master reference in speed and position from fieldbus or encoder
- Fast I/O that can be triggered on motor start & stop events in applications that require high response speeds

BRUSHLESS DC DRIVES

Fieldbus and/or programmable drives



Devices for the control of brushless DC motors through fieldbus commands (slave) in multi-axle systems or systems which can be programmed with the e3PLC Studio environment. Featuring inputs and outputs for autonomous operation, Platino series drives are also programmable and configurable in real time by means of the SCI service serial port.


Family characteristics	Format	Power supply	Power/size	Fieldbus	Feedback	Characteristics	
DW4	Wall mounting	DC	400 W	EtherCAT Modbus TCP/IP CANbus Canopen Serial Modbus RTU	Hall sensor and incremental encoder		Page 15
DM4	Motor with integrated drives	DC	NEMA 17 from 26 to 104W NEMA 23 from 46 to 184W	CANbus Canopen Serial Modbus RTU	Hall sensor Or magnetic incremental or absolute single-turn encoder		Page 16

DW4

 **PLATINO**_BLDC SERVO DRIVES

 **FREQ/DIR/VRIF**

 **MODBUS TCP/IP**

 **MODBUS RTU**

 **E3PLC**

 **HALL EFFECT**

 **INCREMENTAL ENCODER**

 **ETHERCAT**

 **CANBUS**



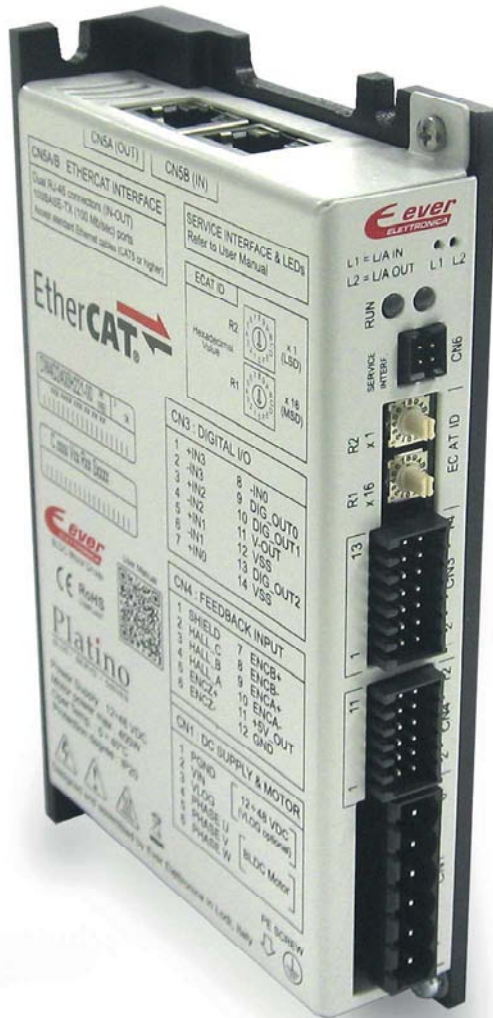
Characteristics:

- Controllable versions with Step & Direction signals, analog voltage, fieldbus or programmables with the e3PLC Studio environment (PLC functionality)
- Vectorial control with sinusoidal regulation of the high efficiency current with "Else" technology that maximizes the driving torque with smooth and silent rotation
- Feedback including incremental encoder
- Available with different fieldbuses
- Equipped with service serial connections for configuration, programming and real-time debugging
- Integrated oscilloscope
- Separated power supply for logic and power optional
- Integrated diagnostics

Model coding:

DW4 Dvwwwb2i1-oo-dyyyy

v	voltage
w	power
b	connection bus
i	i/o number
o	options
yyyy	embedded firmware version



Technical data

Power supply: 12÷48 Vdc
Logic power supply: 12÷48 Vdc (optional and non-isolated)
Phase current: 10 Arms (28 Apeak for 5s)
Motor power: up to 400 W
chopper frequency: 40 kHz ultrasonic
Fieldbus: EtherCAT, Modbus TCP/IP, Modbus RTU, CANbus
Feedback: 5V RS422 differential non-isolated incremental encoder or single-ended (TTL/CMOS), 5V single-ended Hall sensor (TTL/CMOS) non-isolated
SCI interface: service serial for real time configuration, programming and debugging

Digital inputs: up to 6 opto-isolated

Outputs: 3 digital opto-isolated

Analog inputs: 2 inputs for DW4D2400M2P1-00 and DW4D2400C2P1-00 models

Safety protections: over/undervoltage, overcurrent, over-temperature, phase to phase and phase to earth short circuit

Working temperature: from 5°C to 40°C, storage from -25°C to 55°C

Humidity: 5%÷85% non condensing

Protection class: IP20 Category C3 EN61800-3

Dimensions: 139X84.5X28 mm

DM4

Drives with integrated motor

 **PLATINO**_BLDC SERVO DRIVES



 FREQ/DIR/VRIF

 E3PLC



 MODBUS RTU

 HALL EFFECT

 CANBUS



 ENCODER
INCR/ABSOL



Characteristics:

- speed control with step and direction inputs or analog reference
- feedback with Hall effects or incremental encoder – single turn absolute encoder
- Canopen DS402 or Modbus RTU interfaces
- Service serial connections for configuration, programming and real-time debugging
- digital and analog inputs
- digital outputs
- programmable with e3PLC programming environment
- Available with NEMA 17 and NEMA 23 size motors
- Compact sizes

Model coding:

DM4D1wwwb2ixxfo-dyyyy

w	power
b	connection bus
i	i/o number
xx	size and depth of motor
f	feedback
o	options
yyyy	embedded firmware version

Technical data

Power:

NEMA 17 motors: from 26 W to 104 W

NEMA 23 motors: from 46 W to 184 W

Power supply:

NEMA 17 motors: 24 Vdc

NEMA 23 motors: 36 Vdc

Maximum speed: 4000 rpm

Feedback: with Hall sensor or magnetic incremental encoder or absolute single-turn encoder

Fieldbus: Modbus or CANbus

Digital inputs: 3 inputs

Digital outputs: 2 outputs

Analog inputs: 1 input 0 ÷ 10 Vdc

Temperatures: working from 5°C to 40°C, storage from -25°C to 55°C

Humidity: 5%÷85% non condensing

Protection class: IP20

Dimensions: according to the motor size

TITANIO

VECTOR - STEPPER - DRIVES



The innovative vectorial drives of the **TITANIO** range, designed to control two- and three-phase stepper motors of various sizes, from Nema 08 to Nema 42, are compact, completely digital as they are controlled by Cores ARM M4, programmable or available for multiple fieldbus. Thanks to the “ELSE - Error Less Servo Efficient” technology, they control the stepper motor in open loop with stepless excitation, or in closed loop of torque, velocity and position, ensuring less overheating and smooth and silent motor rotation. They can communicate with the most popular master controllers in the automation market through various fieldbus, complying with the requirements of Industry 4.0. The **TITANIO** drives have advanced safety features, such as integrated diagnostics for fault monitoring and separate power supply for logic and power. They are intended for use in various applications, especially packaging, labelling and laser cutting machines, peristaltic pumps, pick & place devices, engraving tables and medical devices. The drive functions also include:

- Motor stall detection, even without encoder
- Closed loop of torque, velocity and position
- Function programmability, including stand alone
- Different positioning control modes (homing, relative, absolute, target)
- Electric shaft function with programmable transmission ratio to track a master reference in speed and position from fieldbus or encoder
- Fast I/O that can be triggered on motor start & stop events in applications that require high response speeds

STEPPER DRIVES

Step and direction drives



Devices for controlling stepper motors via step and direction inputs

Family characteristics	Format	Number of phases	Power supply	Power	Open loop Closed loop	Configuration	Characteristics	
LW3	Wall mounting	2	DC	from 12 Vdc to 80 Vdc up to 7,1 A/ph	Open	Roto-Switch		Page 19
LWC	Wall mounting	3	DC	from 24 Vdc to 80 Vdc up to 7,1 A/ph	Open	Roto-Switch		Page 19
LW3A	Wall mounting	2	AC	from 100 Vac to 240 Vac up to 3,0 A/ph rms	Open	SCI Serial interface		Page 20

Fieldbus and/or programmable drives



Two- or three-phase stepper motor control devices controlled by fieldbus in multi-axle (slave) systems, or programmable with Windows e3PLC Studio environment. The drives are equipped with digital and analog inputs and outputs for independent operation programmable and configurable in real time via the SCI serial service.

Family characteristics	Format	Number of phases	Power supply	Power	Fieldbus	Programmable models	Open loop Closed loop	Characteristics	
SW3 SW3A	Wall mounting	2	DC / AC	from 12 Vdc to 48 Vdc up to 4,2 A/ph rms	EtherCAT	NO	Open		Page 21
SN4	Boxed Nearby IP65	2	DC	from 12 Vdc to 48 Vdc up to 4 A/ph rms	EtherCAT	YES	Open and Closed	IP65	Page 22
SB4	Open frame	2	DC	from 12 Vdc to 36 Vdc up to 3 A/ph rms	EtherCAT Modbus TCP/IP CANbus Canopen Modbus RTU	YES	Open and Closed		Page 23
SW4	Wall mounting	2	DC / AC	from 12 Vdc to 48 Vdc da 18 Vac a 56 Vac up to 7,1 A/ph	EtherCAT Modbus TCP/IP CANbus Modbus RTU Profinet	YES	Open and Closed also with absolute encoder		Page 24
SW5	Wall mounting	2	AC	from 18 Vac to 265 Vac up to 8,0 A/ph rms	EtherCAT Modbus TCP/IP Profinet CANbus Canopen Modbus RTU	YES	Open and Closed also with absolute encoder	UL STO	Page 25
SWD	Wall mounting	3 fasi	DC	from 18 Vac to 56 Vdc up to 7,1 A/ph	CANbus Canopen Modbus RTU	YES	Open and Closed		Page 26
SM4	Drives with integrated motor	2	DC / AC	from 12 Vdc to 48 Vdc up to 6,0 rms A/ph from 24 Vdc to 56 Vac up to 4,2 A/ph	CANbus Modbus RTU EtherCAT Modbus TCP/IP	YES	Open and Closed also with absolute encoder		Page 27
SM5	Drives with integrated motor	2	AC	from 18 Vac to 100 Vac motor NEMA34 and torque 3,4 Nm a 12,2 Nm	CANbus Canopen Modbus RTU	YES	Open and Closed	IP65	Page 28

LW3/LWC

 TITANIO_STEPLESS STEPPER DRIVES

 FREQ/DIR



Characteristics:

- Vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant, allowing smooth and silent movements
- Motor stall detection, without encoder (sensorless)
- Compact size
- Software resonance damping
- Auto-tuning of the motor control parameters
- Integrated diagnostics
- High efficiency current set up and torque filter for noise reduction



Model coding:

LW3DvxxxN0A1-oo
LWCDvxxxN0A1-oo

v	voltage
xxx	current
oo	options

Technical data

Drives for two phases (LW3) and three phases (LWC) stepper motors.

LW_D2030:

Power supply: from 12 to 36 Vdc

Current: 3.0 Arms

Dimensions: 95 x 73 x 23 mm

LW_D3070:

Power supply: from 24 to 80 Vdc

Current: 7.1 Arms

Dimensions: 128 x 74 x 30 mm

Common line features:

Switching frequency: 40kHz

Digital inputs: 4 optoisolated

Digital outputs: 1 optoisolated for status monitoring
Emulated step resolution: from full step up to 1/256 step

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Status monitoring: 3 leds with guiding light

Temperature: working from 0°C to 40°C, storage from -25°C to 55°C

Humidity: from 5% ÷ 85% not condensed

Protection class: IP20

LW3A

 TITANIO_STEPLESS STEPPER DRIVES

 FREQ/DIR



Characteristics:

- 230 Vac mains power supply
- Service Serial connections for configuration and real time debugging
- Vectorial control: the sinusoidal regulation with “Else” technology keeps the motor torque constant, allowing smooth and silent movements
- Motor stall detection, without encoder (sensorless)
- Compact size
- Software resonance damping
- Auto-tuning of the motor control parameters
- Integrated diagnostics
- High efficiency current set up

Model coding:

LW3AvwwwN2A1-oo-cyyyy

v	voltage
www	current
oo	options
yyyy	embedded firmware version

Technical data

LW3A9030:

Power supply: from 100 to 240 Vac

Current: 3.0 Arms

Switching frequency: 40kHz

Digital inputs: 4 optoisolated

Digital outputs: 1 optoisolated for status monitoring

(SCI) Serial service interface

Emulated step resolution: from full step up to 1/10 step or 1/256 step and other resolution defined by software

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Status monitoring: 3 leds with guiding light

Temperature: working from 0°C to 40°C, storage from -25°C to 55°C

Humidity: from 5% ÷ 85% not condensed

Protection class: IP20

Dimensions: 152 x 130 x 46 mm

SW3

 TITANIO_STEPLESS STEPPER DRIVES



 ETHERCAT



Characteristics:

- EtherCAT (CoE) drive with DS402 functionalities for 2-phase bipolar stepper motors
- Service serial connections for configuration and real-time debugging
- Tested with the most common master controllers on the market
- Integrated oscilloscope
- Vectorial, stepless control of the phase current which ensures smooth and silent movements
- Monitoring and alarm history
- Auto-tuning of the electric motor parameters



Model coding:

SW3Dvwwwb2i1-oo-cyyyy
SW3Avwwwb2i1-oo-cyyyy

v	voltage
www	current
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

Technical data

SW3D2042:

Power supply: from 12 to 48 Vdc
Logic power supply: from 12 to 48 Vdc
 (optional, not isolated)
Current: 4.2 Arms
Dimensions: 104.8 x 62.5 x 23.5 mm

SW3A9030:

Power supply: from 100 to 240 Vac
Current: 3.0 Arms
Dimensions: 180.7 x 130 x 50 mm

Common line features:

Switching frequency: 40kHz

Digital inputs: 4 optoisolated

Digital outputs: 2 optoisolated

Fieldbus: EtherCAT

(SCI) Serial service interface

Emulated step resolution: stepless control technology (65536 positions per turn)

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Status monitoring: 3 leds with guiding light

Temperature: working from 5°C to 40°C; storage from -25°C to 55°C

Humidity: from 5% ÷ 85% not condensed

Protection class: IP20

SN4

 TITANIO_STEPLESS STEPPER DRIVES



E3PLC

 ETHERCAT



INCREMENTAL
ENCODER

Characteristics:

- EtherCAT (CoE) drive with DS402 functionalities for 2-phase bipolar stepper motors
- Service serial connections for configuration and real-time debugging
- Tested with the most common master controllers on the market
- Integrated oscilloscope
- Separate power supply for logic and power
- Monitoring and alarm history
- Auto-tuning of the electric motor parameters
- Vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant, allowing smooth and silent movements
- Closed loop of torque, velocity and position
- IP65 protection class
- Separate power supply for logic and power



Model coding:

SN4Dvwwwb2i1-oo-cyyyy

v	voltage
www	power
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

Technical data

Power supply: from 12 to 48 Vdc
Logic power supply: from 12 to 48 Vdc optional and not isolated
Max current: 4.0 Arms (5.6 Apk)
Switching frequency: 40kHz
Fieldbus: EtherCAT
Feedback: with incremental encoder not isolated 5V single ended (TTL/CMOS)
Inputs: 2 optoisolated 2-24 Vdc NPN, PNP or Line-Driver
Outputs: 2 optoisolated 24 Vdc - 100 mA


Service interface: SCI serial
Emulated step resolution: Stepless Control Technology (65536 positions per turn)
Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground
Temperature: working from 5°C to 40°C, storage from -25°C to 55°C
Humidity: from 5% ÷ 85% not condensed
Protection class: IP65
Dimensions: 145 x 56 x 50 mm

SB4

 **TITANIO_STEPLESS STEPPER DRIVES**

 FREQ./DIR./VRIF

 MODBUS TCP/IP

 MODBUS RTU

 E3PLC

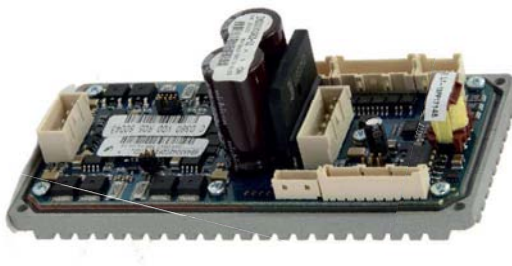
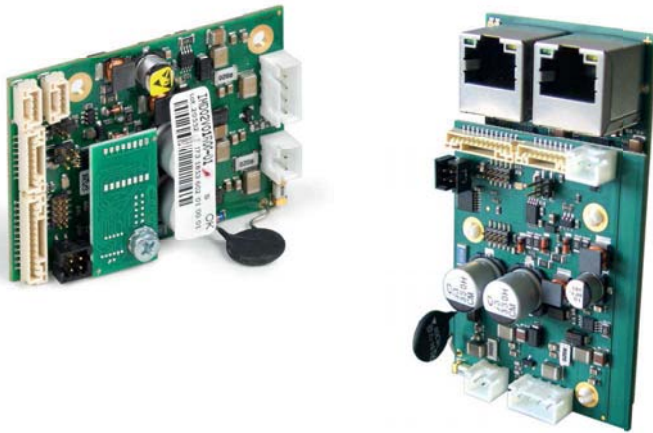


 INCREMENTAL ENCODER

 ETHERCAT

 CANBUS





Characteristics:

- Drives for 2-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with “Else” technology keeps the motor torque constant allowing smooth and silent movements
- Multiple fieldbus depending on the models: EtherCAT, Modbus TCP/IP, CANbus, Modbus RTU
- Service serial connections for configuration and real-time debugging
- Open frame format (board only)
- Separate power supply for logic and power
- Monitoring and alarm history
- Auto-tuning of the motor control parameters
- Closed loop of torque, velocity and position

Model coding:

SB4xvwwwb2i1-oo-cyyyy

x	AC or DC Power Supply
v	voltage
www	current
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

Technical data

Power supply SB4D: from 12 to 36 Vdc

Power supply SB4A: from 18 to 56 Vac

Logic power supply: 24 Vdc not isolated

Max current: 3.0 Arms (4.2 Apk)

Switching frequency: 40kHz

Fieldbus: Canbus, Modbus RTU, EtherCAT, Modbus TCP/IP

Feedback: with incremental encoder not isolated

5V single ended (TTL/CMOS) or 24 Vdc push-pull

Inputs: 4 digitals not isolated

Outputs: 3 digitals not isolated

Analog input: analog not isolated for potentiometer

Service interface: SCI serial

Emulated step resolution: Stepless Control Technology (65536 positions per turn)

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Temperature: working from 5°C to 40°C, storage from -25°C to 55°C

Humidity: 5% ÷ 85%

Protection class: IP20

Dimensions: with modbus/canbus: 61 x 42 mm, with EtherCAT/modbus TCP/IP: 83 x 42 mm

SW4



TITANIO_STEPLESS STEPPER DRIVES



FREQ./DIR./VRIF



MODBUS TCP/IP



MODBUS RTU



E3PLC



PROFINET



ENCODER
INCR/ABSOL



ETHERCAT



CANBUS



Characteristics:

- Drives for 2-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant allowing smooth and silent movements
- Available in versions with closed loop of torque, velocity and position with input for incremental or absolute multi-turn encoder
- Available with different fieldbus
- Equipped with service serial connections for configuration and real-time debugging
- Integrated oscilloscope
- Separate power supply for logic and power
- Auto-tuning of the electric motor control parameters
- Integrated diagnostics
- High efficiency current set up



Technical data

SW4D2070:

Power supply: from 12 to 48 Vdc

Logic power supply: from 12 to 48 Vdc (optional not isolated)

Current: 7.1 Arms

Fieldbus: Canbus, Modbus RTU

Digital inputs: 4 optoisolated

Digital outputs: 3 optoisolated

Analog inputs: 2

Feedback: incremental encoder

Dimensions: 123.2 x 74 x 26 mm

SW4D2070T/SW4D2070T4S2 version with two independent axes drives

Power supply: from 12 to 48 Vdc

Logic power supply: from 12 to 48 Vdc (optional, not isolated)

Current: 7.0 Arms

Fieldbus: Profinet

Digital inputs: 4 optoisolated (8 for SW4D2070T4S2)

Digital outputs: 2 optoisolated (4 for SW4D2070T4S2)

Feedback: incremental encoder (or absolute multiturn encoder only for SW4D2070T)

Dimensions: 150.2 x 79.5 x 27 mm SW4D2070T
194,0 x 112,0 x 32,0 SW4D2070T4S2

SW4A3070:

Power supply: from 18 to 56 Vac

Logic power supply: from 24 to 80 Vdc

Current: 7.1 Arms

Fieldbus: Canbus, Modbus RTU

Digital inputs: 4 optoisolated

Digital outputs: 2 optoisolated

Analog inputs: 2

Feedback: incremental encoder or absolute multiturn encoder and encoder output

Dimensions: 146.8 x 74 x 30 mm

Model coding:

SW4xvwwwb2i1-oo-cyyy

x	AC or DC Power Supply
v	voltage
www	current
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

SW4A4085:

Power supply: from 18 to 100 Vac

Current: 8.5 Arms

Fieldbus: Canbus, Modbus RTU

Digital inputs: 4 optoisolated

Digital outputs: 2 optoisolated

Analog inputs: 2

Dimensions: 154.4 x 123.5 x 46.0 mm

Common line features:

Switching frequency: 40kHz

(SCI) Serial service interface

Emulated step resolution: stepless control technology (65536 positions per turn)

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Status monitoring: 3 leds with guiding light

Temperature: working from 5°C to 40°C. storage from -25°C to 55°C

Humidity: from 5% ÷ 85% not condensed

Protection class: IP20

SW5

 **TITANIO**_STEPLESS STEPPER DRIVES

 FREQ./DIR./VRIF

 MODBUS TCP/IP

 MODBUS RTU

 E3PLC

 PROFINET

 ENCODER INCR/ABSOL

 ETHERCAT

 CANBUS

 UL-STO

Characteristics:

- AC mains power supply models
- Drives for 2-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant, allowing smooth and silent movements
- Available in closed loop of torque, velocity and position
- Feedback with incremental or absolute multi-turn encoder
- Various models with different fieldbus
- UL Recognized for SW5A9052/SW5A5080 models
- Service serial connections for configuration and real-time debugging
- Versions with Safe Torque Off (STO) SIL3/PLe inputs
- Integrated oscilloscope
- Separate power supply for logic and power
- Auto-tuning of the motor control parameters
- Integrated diagnostics
- High efficiency current set up

Model coding:

SW5Avwwwb2i1-oo-cyyyy

v	voltage
www	current
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

Technical data

SW5A4085:

Power supply: from 18 to 100 Vac monophase

Logic power supply: from 18 to 100 Vac (optional, not isolated)

Current: 8.5 Arms

Fieldbus: Ethercat, Profinet, Modbus,TCP/IP, Canbus, Modbus RTU

Feedback: incremental encoder

Dimensions: 165 x 120 x 48 mm

SW5A5080:

Power supply: from 85 to 120 Vac

Logic power supply: 24 Vdc (mandatory)

Current: 8.0 Arms

Fieldbus: Ethercat, Profinet, Modbus TCP/IP, Canbus, Modbus RTU

Safe Torque Off: STO Sil3/PLe

Feedback: incremental encoder or absolute multturn encoder and encoder output

Dimensions: 196 x 136 x 47 mm

SW5A9030:

Power supply: from 100 to 240 Vac

Current: 3.0 Arms

Fieldbus: EtherCAT, Canbus, Modbus RTU, Modbus TCP/IP, Profinet

Safe Torque Off: STO Sil3/PLe

Feedback: incremental encoder or absolute multturn encoder

Dimensions: 180.7 x 138.5 x 50 mm

SW5A9052:

Power supply: from 85 to 265 Vac

Logic power supply: 24 Vdc (mandatory)

Current: 5.2 Arms

Fieldbus: Ethercat, Profinet, Modbus TCP/IP, Canbus, Modbus RTU

Safe Torque Off: STO Sil3/PLe

Feedback: incremental encoder or absolute multturn encoder and

encoder output

Dimensions: 196 x 136 x 47 mm

Common line features:

Switching frequency: 40kHz

Digital inputs: up to 16 optoisolated

Digital outputs: up to 12 optoisolated

Analog inputs: up to 2

Analog outputs: up to 2

(SCI) Serial service interface

Emulated step resolution: stepless control technology (65536 positions per turn)

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground
Status monitoring: leds segments

Temperature: working from 5°C to 40°C; storage from -25°C to 55°C

Humidity: from 5% ÷ 85% not condensed

Protection class: IP20

SWD

TITANIO_STEPLESS STEPPER DRIVES

FREQ./DIR./VRIF

MODBUS TCP/IP

MODBUS RTU

E3PLC

ENCODER

INCR/ABSOL

ETHERCAT

CANBUS

Characteristics:

- Drives for 3-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant allowing smooth and silent movements
- Available in versions with closed loop of torque, velocity and position with input for incremental or absolute multi-turn encoder
- Available with different fieldbus
- Equipped with service serial connections for configuration and real-time debugging
- Integrated oscilloscope
- Separate power supply for logic and power
- Auto-tuning of the electric motor control parameters
- Integrated diagnostics
- High efficiency current set up

Model coding:

SWDxvwwwwb2i1-oo-cyyyy

x	AC or DC Power Supply
v	voltage
www	current
b	connection bus
i	i/o number
oo	options
yyyy	embedded firmware version

Technical data

DC versions: SWD2wwwb241-oo

Power supply: from 12 Vdc to 48 Vdc

Logic power supply: from 12 Vdc to 48 Vdc, optional, not isolated

Dimensions: 121 x 74 x 26 mm

AC versions: SWDA3wwwb261-oo

Power supply: from 18 Vac to 56 Vac

Logic power supply: 24 Vdc optional, not isolated

Analog inputs: 2 inputs for potentiometer ± 10 Vdc

Dimensions: 148.8 x 82 x 30 mm

DC and AC versions

Max current: 7.1 Arms

Switching frequency: 40kHz

Fieldbus: EtherCAT, Modbus TCP/ IP, Canbus, Modbus RTU

Inputs: 4 digitals optoisolated 2-24 Vcc NPN, PNP or Line-Driver

Outputs: 2 digitals optoisolated PNP, 24 Vdc - 100 mA

Feedback: with incremental encoder not isolated 5 V Differential or Single-Ended (TTL/CMOS), multi turn absolute encoder 5V BiSS-C or SSI

Encoder output: 5 V differential

Service interface: SCI serial for real time configuration and debug

Emulated step resolution: Stepless Control Technology (65536 positions per turn)

Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground

Status monitoring: leds segments

Temperature: working from 5°C to 40°C, storage from -25°C to 55°C

Humidity: 5% ÷ 85% not condensed

Protection class: IP20

SM4

 **TITANIO**_STEPLESS STEPPER DRIVES

 FREQ./DIR./VRIF

 MODBUS TCP/IP (*)  MODBUS RTU

 E3PLC

 PROFINET (*)

 ENCODER INCR/ABSOL

 ETHERCAT (*)

 CANBUS





Characteristics:

- Drives with integrated 2-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with “Else” technology keeps the motor torque constant allowing smooth and silent movements
- Closed loop of torque, velocity and position in models with encoder
- Motor: NEMA24 size with torque from 1.1 Nm up to to 3.3Nm
- Available with different fieldbus
- Equipped with service serial connections for configuration and real-time debugging
- Separate power supply for logic and power
- Auto-tuning of the motor control parameters
- Integrated diagnostics
- IP65 protection class

Model coding:

SM4Avwwmb2i2pf
SM4Dvwwmb2i2pf

v	voltage
ww	current
m	motor winding
b	connection bus
i	i/o number
p	depth
f	feedback

Technical data

SM4A:

Power supply: from 18 to 56 Vac
Logic power supply: 12 Vdc (optional)
Current: up to 4.2 Arms
Fieldbus: Canbus, Modbus RTU - (Ethercat, Profinet and Modbus TCP/IP through IMP)
Integrated feedback: optional with incremental encoder
Dimensions massime: 124 x 142 x 60 mm

SM4D:

Power supply: from 12 to 48 Vdc
Logic power supply: 24 Vdc (mandatory)
Current: up to 6.0 Arms
Fieldbus: Ethercat, Modbus,TCP/IP, Canbus, Modbus RTU - (Profinet through IMP)
Integrated feedback: optional with incremental encoder or with absolute multiturn encoder
Dimensions: 83 x 135 x 60 mm

Common line features:

Switching frequency: 40kHz
Digital inputs: 4 optoisolated
Digital outputs: 2 optoisolated
Analog input: 1
(SCI) Serial service interface
Emulated step resolution: stepless control technology (65536 positions per turn)
Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground
Temperature: working from 5°C to 40°C, storage from -25°C to 55°C
Humidity: from 5% ÷ 85% not condensed
Protection class: IP65

SM5

 **TITANIO**_STEPLESS STEPPER DRIVES

 **FREQ./DIR VREF**

 **MODBUS TCP/IP^(*)**

 **MODBUS RTU**

 **E3PLC**

 **PROFINET^(*)**

 **ENCODER
INCR/ABSOL**

 **ETHERCAT^(*)**

 **CANBUS**



Characteristics:

- Drives with integrated 2-phase bipolar stepper motors with vectorial control: the sinusoidal regulation with "Else" technology keeps the motor torque constant allowing smooth and silent movements
- Closed loop of torque, velocity and position in models with encoder
- Motor: NEMA34 size with torque from 3.4 Nm up to 12.5 Nm
- Available with different fieldbus
- Equipped with service serial connections for configuration and real-time debugging
- Separate power supply for logic and power
- Auto-tuning of the motor control parameters
- Integrated diagnostics
- IP65 protection class



Model coding:

SM5Avwwmb2i2pf

v	voltage
ww	current
m	motor winding
b	connection bus
i	i/o number
p	depth
f	feedback

Technical data

Logic power supply: 24 Vcc
Max current: 8.5 Arms
Switching frequency: 40kHz
Fieldbus: Canbus and Modbus RTU
(*)Through GWC: Ethernet TCP/IP, EtherCAT, Profinet
Inputs: 4 digitals optoisolated
Outputs: 2 digitals optoisolated
Analog inputs: 2 for potentiometer ± 10 Vdc
Emulated step resolution: Stepless Control Technology (65536 positions per turn)

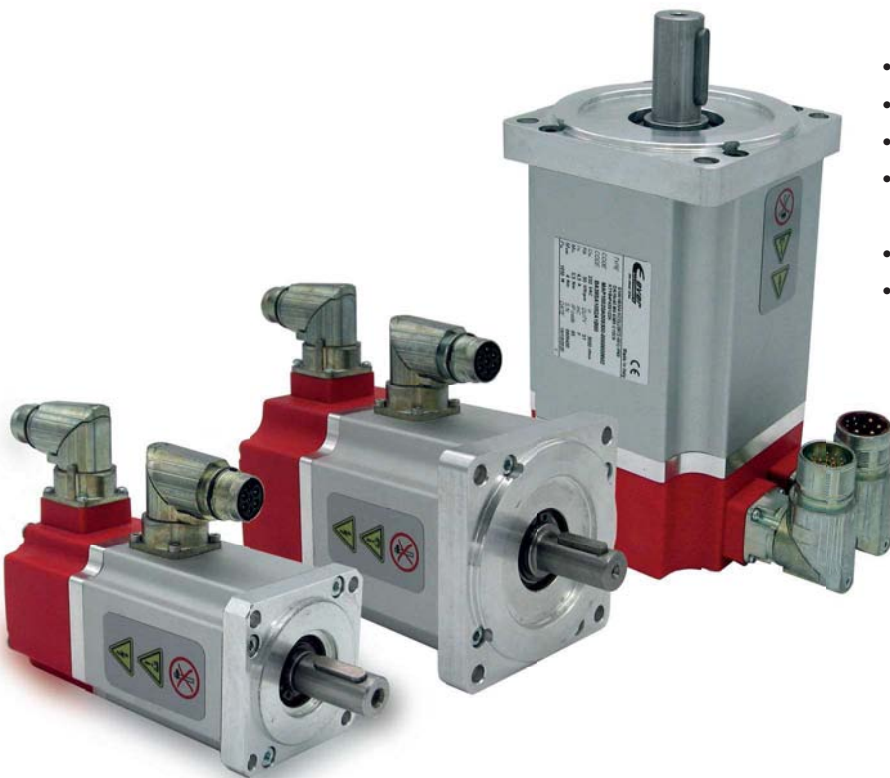
Integrated feedback: optional with incremental encoder or with absolute multturn encoder
Safety protections: over/under voltage, over current, over temperature, short circuit phase/phase and phase/ground
Temperature: working from 5°C to 40°C, storage from -25°C to 55°C
Humidity: 5% ÷ 85% not condensed
Protection class: IP65
Max dimensions: 135 x 86 x 242 mm

Ever Elettronica brushless AC motors are high-performance actuators equipped with the best features and all the other options of the standard specifications.

AC BRUSHLESS MOTORS

Main Characteristics:

- Flange dimensions available: 60, 80, 100 and 140mm
- IP65 protection
- F class windings
- Integrated incremental 2048 PPR encoder
- High-capacity, dynamic and long-lasting bearings
- Motors with integrated brake
- Motors with absolute multi-turn encoder



Technical data

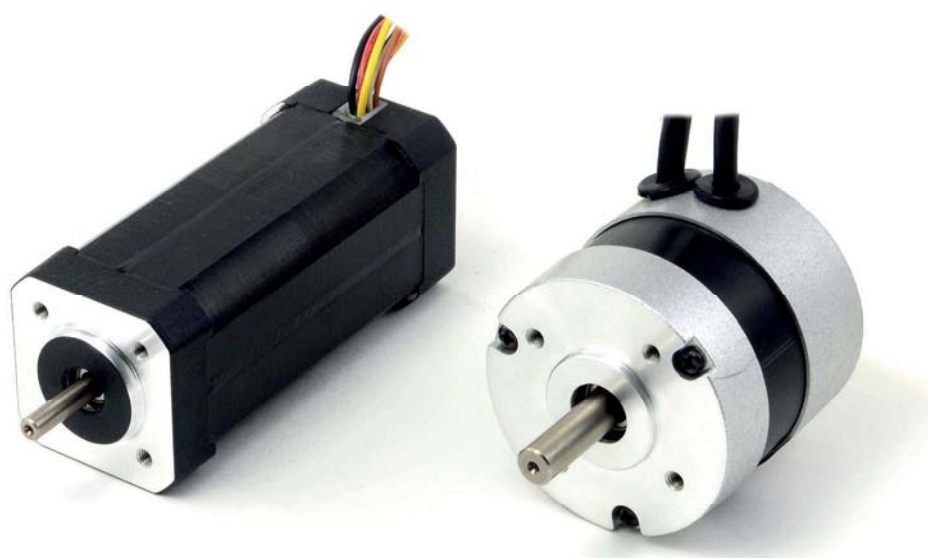
Series characteristics: 6 or 8 poles
Power: from 220 Watts to 1400 Watts
Insulation class: F, 155°C
Protection class: IP65
Shaft max radial force: from 250 to 1200 N
Shaft max axial force: from 80 N to 500 N
Dimensions: BA24SA = 60 x 60 x 128.5 mm (60 x 60 x 173 mm brake version)
 BA24SA = 60 x 60 x 163.5 mm (60 x 60 x 208 mm brake version)
 BA32SA = 80 x 80 x 160 mm (80 x 80 x 209 mm brake version)
 BA39SA = 98 x 98 x 175 mm (98 x 98 x 225 mm brake version)
 BA55SA = 139 x 139 x 166 mm (139 x 139 x 166 mm brake version)



The new series of brushless DC motors has been designed not only to be more efficient and save energy, but also to optimize overall size and operating costs. The brushless DC motors, which are more powerful compared to asynchronous induction motors, are ideally suited to use for textile, packaging and food-related machinery.



DC BRUSHLESS MOTORS



Main Characteristics:

- Dimensions available from 42 mm with square flange (NEMA 17) and from 57 mm with round flange (NEMA 23)
- Hall sensor included
- Customizable for both mechanic and cabling

Technical data

Main features:

Power: from 26 Watts to 104 Watts (NEMA 17)
and from 46 Watts to 184 Watts (NEMA 23)

Rated voltage: 24 Vdc (NEMA 17) and 36 Vdc (NEMA 23)

Rated speed: 4000 rpm



Ever Elettronica high-efficiency stepper motors are the result of the company's extensive experience in stepper motors. Viewed as brushless synchronous motors with a high poles number and created by developing new design and construction techniques, HE motors:

- on average, provide 40% more torque compared to a "standard" stepper motor of the same size showing less mechanical torque fluctuation
- undergo less mechanical torque fluctuation thanks to optimised magnetic fluxes and greater precision in the gap between rotor and stator;
- are built with the best class F magnetic materials to ensure performance stability in the long term and with regard to operating temperature;
- use heavy-duty, high-precision bearings for reliability and durability even with unfavourable shaft load conditions;
- can be customized both mechanically and electrically with the fine tuning of performances also required for small production batches;
- have a three-year warranty thanks to the high quality of the manufacturing materials and the techniques used.



STEPPER MOTORS





STANDARD MOTORS

- Dimensions available from NEMA08 to NEMA42 in various depths
- Torques from 0.017 Nm to 28 Nm
- Class B and Class F insulation
- High-capacity, dynamic and long-lasting bearings
- IP20 protection



WATERPROOF MOTORS

- Dimensions available from NEMA11 to NEMA34 in various depths
- Torques from 0.15 Nm to 12.2 Nm
- Cable outputs with IP65 connector or with flying lead and PG IP65 cable gland
- IP65 or higher protection on request



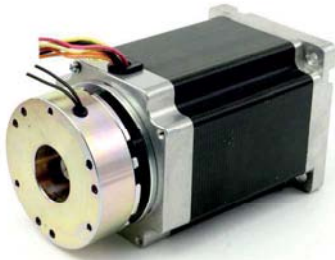
MOTORS WITH GEARBOX

- Different types of gearbox available: planetary, spur gear, etc.
- Motors for gearbox coupling from NEMA17 to NEMA34 with various depths
- Motor output torques from 0.15 Nm to 12.2 Nm
- Customizable reduction ratios
- Protection class from IP20 to IP65



MOTORS WITH INCREMENTAL OR ABSOLUTE ENCODER

- Different types of encoders available both incremental and absolute multi-turn
- Available with motors from sizes NEMA08 to NEMA42
- Incremental encoders with resolutions from 400 ppr to 2000 ppr and differential (5Vdc) or single ended (24Vdc) outputs
- Absolute multi-turn encoders with 17 Bit resolution on single turn and 16 Bit multi-turn resolution with BISS-C or SSI interface
- IP65 protection



MOTORS WITH BRAKE

- Brakes can be applied with customized voltages and torques
- Motor dimensions available from NEMA24 to NEMA42 with various depths



HOLLOW-SHAFT MOTORS

- Customizable with special machining on hollow shafts
- Motor dimensions available from NEMA17 to NEMA42 with various depths



UL CERTIFIED MOTORS

- Available motor size: NEMA23



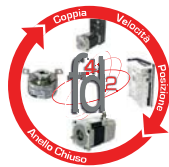
MOTORS WITH SHAFTS FOR LINEAR ACTUATIONS

- NEMA17, NEMA23 and NEMA24 motor sizes available
- Screw parameters on the motor shaft can be customized according to the application



MOTORS WITH MULTIPLE CHARACTERISTICS

- Availability of motors with multiple characteristics (e.g. High Efficiency motors with gearbox, encoder and IP65 protection)
- Further customization on request



The optical rotary encoders offered by Ever Elettronica are both incremental quadrature and absolute multi-turn encoders and have been designed for the most common applications for closing the loop of our motors. Incremental encoders have differential or single-ended control interfaces and are available with resolutions of 400, 1000 or 2000 ppr. Absolute encoders, are connected via BISS-C and have a 17-bit single-turn or 16-bit multi-turn resolution. Both types of encoders can be easily connected with Ever Elettronica's drives to control all types of motors both in terms of positioning and torque control.



ENCODERS

ABSOLUTE ENCODERS

- Type: multiturn absolute encoder
- Single turn resolution: 17 bits
- Multiturn resolution: 16 bits
- Power supply: 5 Vdc
- Connection interface: BISS-C or SSI

SE INCREMENTAL OPTICAL ENCODERS

- Interface type: Incremental in quadrature
- Fastening: 2 screws (M2.5 or 2-56 UNC) Ø46mm
- Input shaft: length 10~20 mm Ø 6.35 mm G6
- Resolution: from 400 ppr to 2000 ppr depending on model
- Power supply voltage: 5 Vdc $\pm 10\%$ or 10~30 Vdc $\pm 10\%$
- Output type: differential 5Vdc or single-ended 24Vdc
- Output current: ± 20 mA
- Feedback signals: A, B, Z. or A, A/, B, B/, Z, Z/.
- Phasing: 90° electrical between phases A and B
- Max number of turns: 6000 [rpm]
- Protection class: IP30
- Axial load: 10 N
- Radial load: 20 N
- Body material: metal encoder
- Vibration resistance: 100 m/s², 10...200Hz
- Impact resistance: 1,000 m/s², 6 ms
- Standard cable length: 300mm
- Weight 80 g.





INDUSTRY 4.0

Ever Elettronica's control units are developed to guarantee three functions: programmable logic controller (PLC), motion controller and communication protocol converter (gateway). The programmable logic controller and motion controller functions allow the user to control a process through fieldbus, serial interface and inputs/outputs, according to a customized user program. The communication converter function allows the data exchange between the different fieldbus: Ethercat, Modbus TCP/IP, CANbus (CANopen master/slave), Profinet, DeviceNet (slave), Profibus (Profibus-DP slave) and Serial (Modbus master/slave). The three functions in a single unit allow you to simplify the automation of a wide range of industrial applications in a simple, cost-saving way.



CONTROLLERS AND GATEWAYS

IMP

GWC



Characteristics:

- Easy to program
- Local control of connected devices
- Real-time axle control
- Data exchange between fieldbus
- High reliability and versatility
- Control of other manufacturers' devices

Technical data

IMP

CPU processor: ARM® CORTEX® M7 32bit MCU

Interfaces: CANbus: 2 electrically isolated, 1 Mbit/s, ISO11898

Ethernet: 1 porta 100BASE-TX Modbus TCP/IP

Profinet: 1 depending on the version

Ethercat: 1 depending on the version

Serial: 1 RS485, full or half-duplex Modbus RTU

Dimensions: 194 x 120 x 45 mm

GWC

CPU processor: CISC 16 bit 40MHz

Interface: CANbus: 1 electrically isolated, 1 Mbit/s, ISO11898 - protocollo CANopen (CAN1)

DeviceNet: 1 electrically isolated

Profibus-DP: 1 electrically isolated

Serials: 2 electrically isolated RS232 / RS485, full or half-duplex Modbus RTU

Dimensions: 194 x 116 x 40 mm

Common line features:

Power supply voltage: 24 Vdc

PLC and Motion Controller programming:

TR.I.P.O.S.GW operating Windows system conform to (EN61131-3-ST)

User program memory: 1 Mb flash and 512 Kb high speed ram

Inputs: 8 electrically isolated

Outputs: 8 electrically isolated

Dip switches: 8 for user configuration

Display: 7 leds segments for unit status monitoring

Temperature: working from 5°C to 40°C; storage from 0°C to 55°C.

Humidity: 0% ÷ 90%

Protection class: IP20



In the HMI range are included models with 16.7M colours TFT LCD Backlight touch screens with sizes from 4.3" to 10.1" with Modbus RS232/485 or Ethernet communication port. All units can be programmed via USB or Ethernet bus and can be supplied with the programming required to manage the applications controlled with Ever Elettronica drives and motion controllers.



HMI TOUCH SCREENS

VTHMI



Characteristics:

- Easy to connect to our drives
- Integrated watch dog function
- Power failure detection
- Easy to program
- EC, EMI and UL compliant
- Optional remote support
- Fanless cooling system
- High reliability and versatility
- IP65 protection
- Compact sizes

Technical data

Power supply: 24Vdc $\pm 20\%$

Touch screen: 4 wires analog resistive at continue resolution

Light transmission: about 80%

Working life: 1 million activations min.

Display: backlighted LCD

Display sizes: from 4.3" to 10.1" and resolution up to 1024x600 dpi, 16.7 M colours, contrast

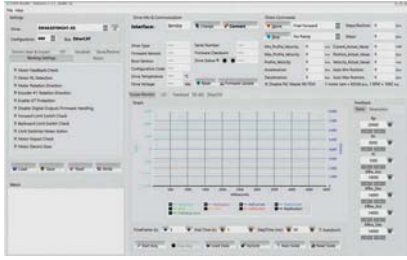
500:1, lightness 400 cd/m²

Front membrane NEMA4 - IP65 - 4H surface

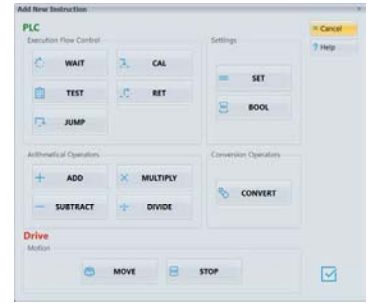
Processor: 32 bits RISC Cortex-A8 600MHz

Memories: Flash 128 MB, EEPROM recipes 50 MB, RAM DDR2 128 MB

Communication interfaces: serial, USB and Ethernet on all models



The drives of the Titanio, Platino and Vanadio lines are equipped with a service interface to configure work parameters and/or to program the customer's application cycle using special software, also equipped with real-time functions useful for setting up the application. The configuration of the drives can also be done through CANbus, Ethernet or other communication interfaces available in the drive model.



CONFIGURATION SOFTWARES APPLICATION DEVELOPMENT ENVIRONMENTS



- e3PLC Studio is the latest evolution of PC development environment (IDE) supplied by Ever Elettronica included with its programmable drives which can manage real-time inputs and outputs, by integrating a real PLC, and simultaneously control the movement of the motor. e3PLC Studio means the user does not have to learn specific programming languages in order to use the functions of the PLC integrated in the programmable drives of Ever Elettronica. Despite the simple, graphic-based and guided programming, it is possible to create complex automations, reducing wiring and installation times having a single device for the logic and motor control. e3PLC Studio is the ideal IDE both for automatic machines with a few axes and for more complex machines allowing the allocation of part of the machine control locally, thus offloading the main PLC and delegating partial or total control of the operating cycle to programmable drives. e3PLC Studio offers advanced graphics and features, in particular the debugging and multitasking management have been enhanced, integrating a real digital oscilloscope for the calibration and diagnostics of the drives. e3PLC Studio is compatible with the Titanio range (for stepper motors), Platino range (brushless DC motors) and Vanadio range (for AC brushless motors), allowing the application program to migrate from one line to another according to the torque dynamic required by the controlled axle.

Main characteristics:

- Intuitive and easy to use: it does not require any particular languages to be studied;
- Developed to create multitasking applications;
- Available for brushless AC, DC or stepper drives;
- Integrates all PLC functions of all the hardware resources of the drive;
- Integrates the module for the management of the electronic cams;
- Integrates the Realtime Labelling Wizard module for the complete advanced management of a labelling head;
- Integrated oscilloscope for the calibration of the Feedback;
- Equipped with software tools for the fast debugging of the application;
- Support and training by Ever Elettronica team.



Ever Studio

Ever Studio is a software package for Windows PCs useful for a simple and rapid drive configuration and monitoring.

Main characteristics:

- Simple windows, intuitive to use and wizards for entering the parameters required to integrate the drive and motor in the application;
- Useful real-time functions for simulating working cycles and fine-tuning customized solutions on-site;
- Advanced Module Motion: possibility to integrate it with the CANbus DS402 protocol for drives with CANbus interface, with a wide range of functions and tools for configuring the drive.
- Features for updating the drive firmware.
- Software utility for testing the customer's application.

The drives of the new EVER ELETTRONICA TITANIO, PLATINO and VANADIO series have been designed to facilitate the design, production, integration and commissioning of the machine by the manufacturer and its use by the system operator in the production process. Controlled by the latest generation and fully digital DSP, the drives of the three series are equipped with communication interfaces dedicated to commissioning and field control with which they can communicate real-time messages about operating parameters, events, operating conditions, energy performance and useful maintenance information, as requested for drives used in industry 4.0.

The use of Ever Elettronica drives in various industrial automation applications is simple and quick thanks to the versatility of the control and communication resources made available to the user. Whether it is a single-axe 'stand-alone' system or sophisticated multi-axis system, Ever Elettronica drives are compatible with the most common control devices available on the market.



AUTOMATION SOLUTIONS FOR INDUSTRY 4.0

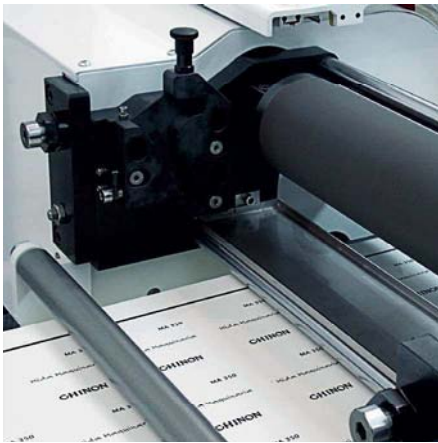
The evolution required by Industry 4.0 has led Ever Elettronica to develop useful technology for its drives to facilitate human-machine interfacing with numerous practical benefits for the user, such as the remote support service through which Ever Elettronica's support team can communicate with the client's application machine if there is an internet connection available.

There is a virtually no limit to the number of applications that can be developed with Ever Elettronica systems; the following are the most common in the field of industrial automation and for which the company can provide everything you need to implement them quickly and easily.



SOLUTIONS FOR PACKAGING MACHINES

- Single-head labelling machine
- Rotary labelling machine
- Hot melt labelling machine
- Conveyor belt control for product orientation
- Conveyor belt control for product synchronisation
- Horizontal and vertical packaging machines
- Bottling machines and capping machines
- Thermoforming packaging machines
- Palletizers
- Long pasta packaging
- Cap orientation
- Pod production machines
- Die-cutters for labels
- Automatic bagging machines

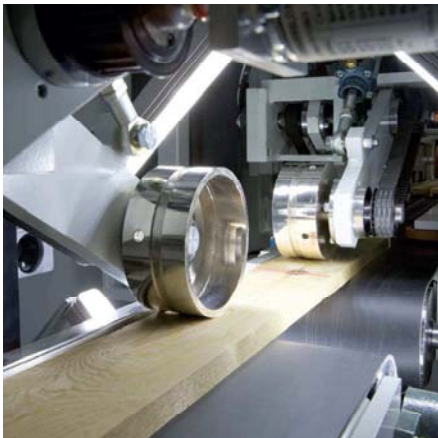


SOLUTIONS FOR PRINTING MACHINES AND CERAMIC DECORATION

- Self-adhesive label printing
- Screen printing for ceramic or glass tiles
- Tile cutting machines
- Control of flexographic printing regulators
- Automatic roll change for printing machines
- Automatic cutters
- Automatic creasing machines
- Post-cutter edge compactor
- Pre-tensioner for printing on plastic film

SOLUTIONS FOR MARBLE AND GLASS PROCESSING MACHINES

- Axle control for shaping marble machines
- Control of grinding wheels for glass processing
 - Axle control for contouring machines



SOLUTIONS FOR MACHINE TOOLS AND WOODWORKING

- Tools and wood
- Electric axles for CNC
- Solution for tool change control
- Format change
- Axles for machines for processing and cutting metal sheets
- Automation for electrical wiring
- Movement of axles of machines for doors and windows
- Bending machines
- Automatic tool sharpening machines
- Electronic grinders for springs

SOLUTIONS FOR AUTOMATED MEDICAL MACHINES

- Radiographic equipment
 - Collimators
- Blister packaging machines
 - Peristaltic pumps
- Automated lines for clinical laboratories
 - Inspection machines





AUTOMATIC WAREHOUSES

- Canbus and Ethercat interfacing with relative DS402 communication protocol.
- Stepless and closed loop torque.
- High precision and repeatability of positioning.
- Additional parking brake for vertical axles.
- Management of homing and limit switch sensors directly from the drive.

SOLUTIONS FOR DISPENSING MACHINES AND FOOD PROCESSING

- Dispensing
 - Mixers
 - Mincing machines
- Ice cream production machines



SOLUTIONS FOR OFFICE AND VIDEO SURVEILLANCE

- Printers
- Control for CC cameras

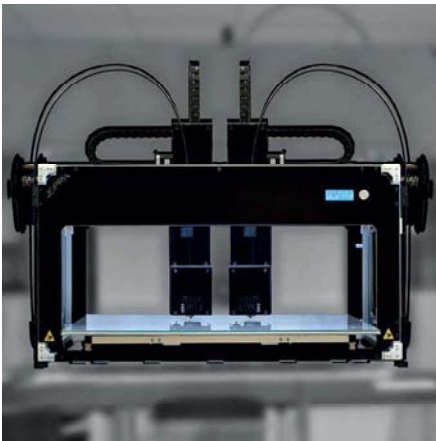
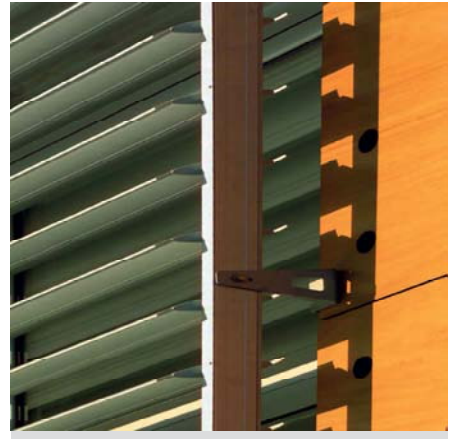
SOLUTIONS FOR TEXTILE AND FOOTWEAR MACHINERY

- Thread Winding for winders
 - Winding machines
 - Industrial staplers
- Machines for buttons
- Footwear machinery
 - LetOff and TakeUp



HOME AUTOMATION SOLUTIONS

- Kinetic sculptures
- Control of sunscreen blades



SOLUTIONS FOR 3D PRINTERS AND 3D SCANNERS

- 3D Printers
- 3D Scanners

SOLUTIONS FOR VENDING MACHINES

- Control of axes for collecting products in automatic warehouses
- Control of opening and closing of vending machine doors

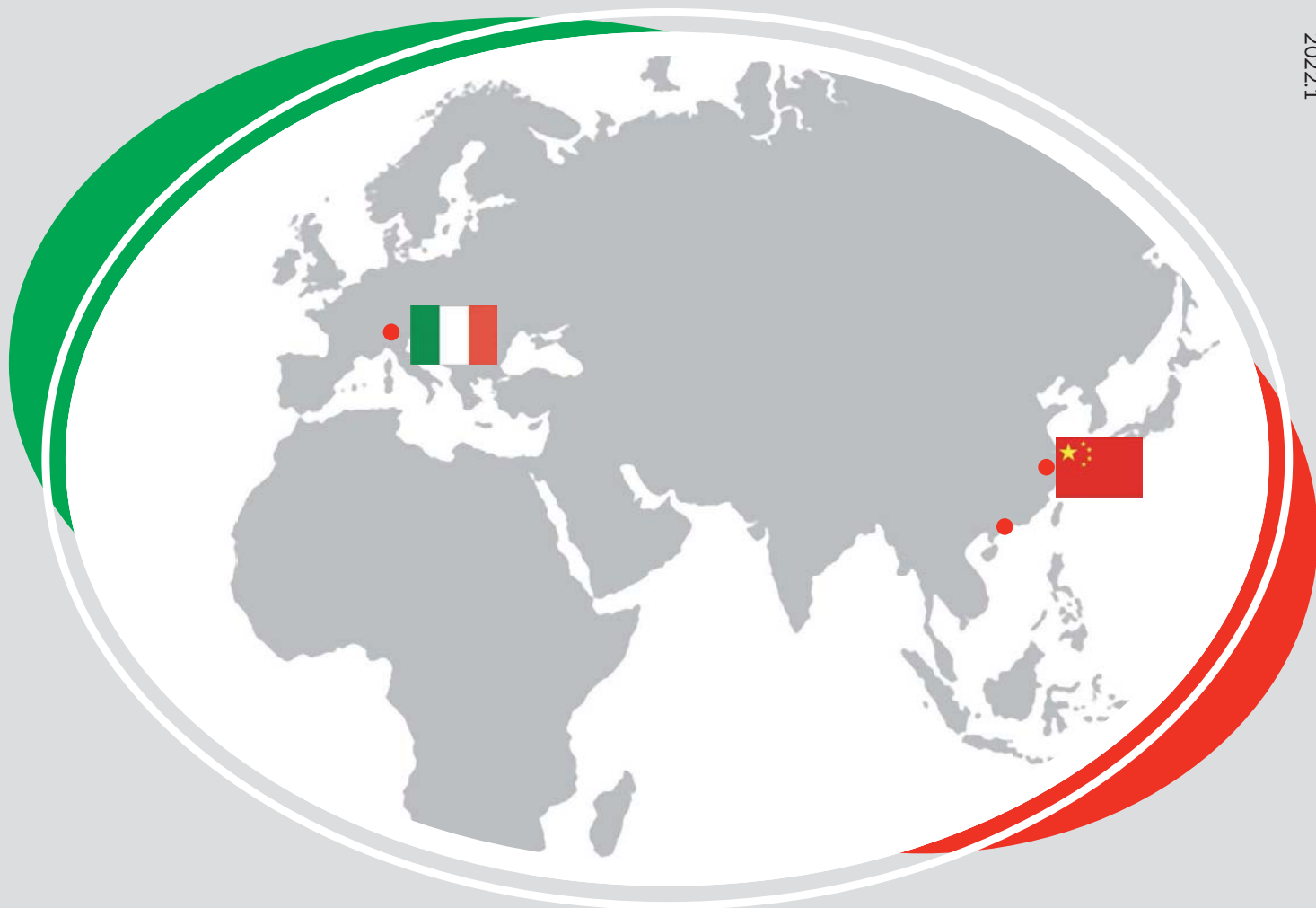


SOLUTIONS FOR AUTOMATION AND AUTOMATED PRODUCTION IN GENERAL

- Electric cylinders
- Linear guides
- Rotary tables
- Automatic warehouses
- Laser pointers for automatic warehouses
- Automatic assembly (Pick & Place)







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