Specifications

MODELS

Code		Holding Torque
SM5A485P__	A	3.40 Nm min.
SM5A485P__	B	4.50 Nm min.
SM5A485P__	C	7.00 Nm min.
SM5A485P__	D	8.50 Nm min.
SM5A485P__	E	12.50 Nm min.

POWER SUPPLY
18÷100 Vac for power and 24 Vdc for logic (mandatory and isolated)

POWER STAGE
H-bridge bipolar 40 kHz ultrasonic chopper

CURRENT
up to 8.5 Arms (12.0 Apk)

COMMUNICATION INTERFACES
Modbus or CANbus

INPUTS / OUTPUTS
4 digital optocoupled inputs / 3 digital optocoupled output
and up to 2 analog inputs (potentiometer or ±10Vdc)

FEEDBACK
integrated incremental and absolute single turn encoder or
absolute multiturn encoder

STEP RESOLUTION
stepless control technology (65536 positions per turn)

SAFETY PROTECTIONS
Over/Under-voltage, Over Current, Over Temperature,
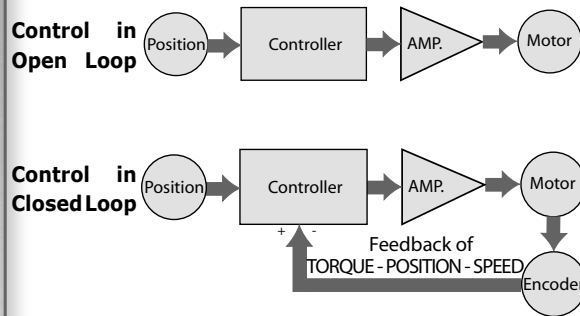Open Windings, Closed Windings Phase/Phase Phase/Ground

PROTECTION CLASS
IP65

TEMPERATURES
working: +5°C ÷ +40°C; storage: -25°C ÷ +55°C

HUMIDITY
5% ÷ 85% not condensing

Open Loop / Closed Loop

Control in Open Loop
Position → Controller → AMP. → Motor

Control in Closed Loop
Position → Controller → AMP. → Motor → Encoder
Feedback of TORQUE - POSITION - SPEED
+ -

Better control compared to both an open loop stepper solution and a servo-controlled brushless solution

Full Digital Programmable 50 Poles Motor and Drive with fieldbus
for Advanced Motion Control with reduced costs

TITANIO
VECTOR - STEPPER - DRIVES

CANopen DS402

Modbus

WARRANTY 3 YEARS

SM5A
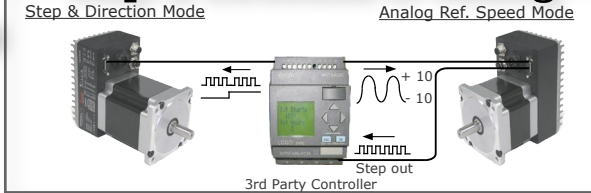## Integrated Servomotors

√ Vectorial control

√ Integrated incremental and absolute single turn encoder or absolute multiturn encoder for a closed loop control

√ Protection class IP65
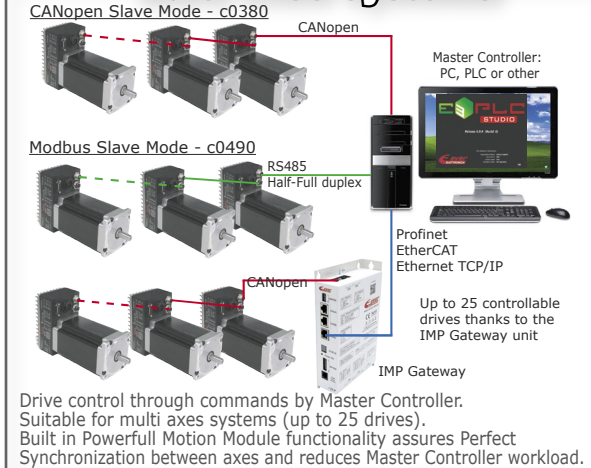
√ New e3PLC Programming Environment, easy and intuitive

E ever ELETTRONICA
the clever drive

Step & Direction or Analog

Step & Direction Mode

Analog Ref. Speed Mode
+ 10
- 10

3rd Party Controller
Step out

Multi Axes Systems

CANopen Slave Mode - c0380
CANopen

Modbus Slave Mode - c0490
RS485
Half-Full duplex

Master Controller:
PC, PLC or other

Profinet
EtherCAT
Ethernet TCP/IP

Up to 25 controllable drives thanks to the IMP Gateway unit

CANopen

IMP Gateway

Drive control through commands by Master Controller.
Suitable for multi axes systems (up to 25 drives).
Built in Powerfull Motion Module functionality assures Perfect Synchronization between axes and reduces Master Controller workload.

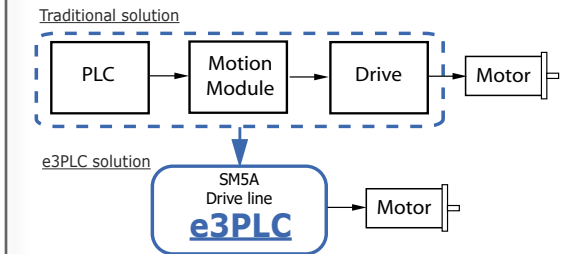## Powerful Motion Module

User Programmable - e3PLC- c390 / c0490

FIELDBUS DRIVES WITH AUTONOMOUS FUNCTIONING that, by integrating advanced PLC and motion controller functions in one single device, programmable by the user with the IDE for Windows PC and e3PLC, allows to reduce the traditional machine control solution.

Traditional solution
PLC → Motion Module → Drive → Motor

e3PLC solution
SM5A Drive line **e3PLC** → Motor

The e3PLC IDE allows the user to access all the I/O control functions and resources, provided by the drive, and to locally program its Motion Control Module, which can also be synchronized with other drives and events of the controlled process. Thanks to the advanced functionalities of the Power Motion Module, an integrated Real-time Process Module, applications can be easily created for special applications such as:
● Labelling
● Electronic cams
● Control Sequences of cable processing
● Many other user-customized processes ...

Configuration software

Fieldbus configuration (slave)

IDE e3PLC configuration (programmable)

Ever co. proprietary PC Software Tools for easy and quick configuration or programming, real time debug and supervision of each system

Autonomous management of the firmware for the execution of the *homing*, of the target movement with relative or absolute quota and for the generation of the ramp profiles

Torque mode for operation with torque limitation

Speed control thanks to digital inputs, analogue inputs or fieldbus

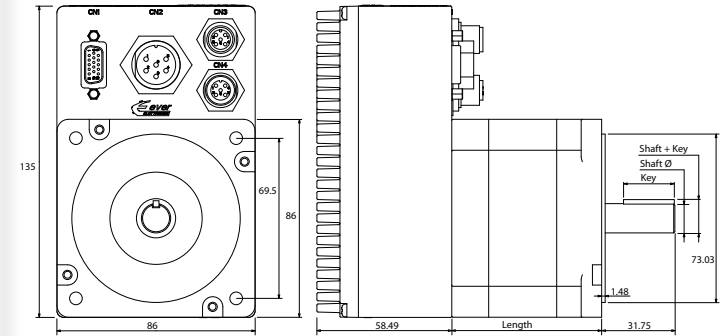*Electronic CAM* with advanced programming of internal profiles inside the drive

Electric shaft with encoder or analogue input with variable tracking ratio (Electric Gear)

Fast inputs and outputs for motor' start & stop and event synchronization for high speed response applications such as labeling, nick finder, flying saw etc.

Possibility to synchronize the movements in multi-axis systems, even without fieldbus

Enabling and on-the-fly changing of the motion control modes

Mechanical Data

Models	Dimensions (mm)				Weight (Kg. approx)
	Length	Shaft Ø	Key	Shaft + Key	
SM5A485P _ _ A _ _	67.5	9.525	(3.000x3.000) 22.00	10.752	2.70
SM5A485P _ _ B _ _	78.5	12.70	(3.175x3.175) 22.23	14.045	3.00
SM5A485P _ _ C _ _	96.5	12.70	(3.175x3.175) 22.23	14.045	3.70
SM5A485P _ _ D _ _	118.5	12.70	(3.175x3.175) 22.23	14.045	4.70
SM5A485P _ _ E _ _	159.5	15.87	(4.763x4.763) 22.23	17.907	6.20

Ordering Information for SM5A servomotors and options

Ordering code			Power				System Resources				
Versions	Config.	Connectors kit	Power supply		Current	Integrated motor data (z = A / B / C / D / E)	Interface	Digitals Inputs	Digitals Outputs	Analogues Inputs (y = 2 / 3)	Encoder for Closed Loop (w = N / M / B)
			Power	Logic							
SM5A485PC0 y 3 z w 0	c0380 c0390	SM5A4KIT-C0 (only connectors) or SM5A4KIT-100 (connectors with 1 mt. cables)	18 ÷ 100 Vac	24 Vdc (mandatory and isolated)	up to 8.5 Arms (12.0 Apeak)	A = Holding torque 3.40 Nm min. Phases resistance 0.10 ohm ±0.10 Phase inductance 0.45 mH ±20% Rotor inertia 1300 g.cm² B= Holding torque 4.50 Nm min. Phase resistance 0.20 ohm ±0.10 Phase inductance 1.60 mH ±20% Rotor inertia 1900 g.cm² C = Holding torque 7.00 Nm min. Phase resistance 0.26 ohm ±0.10 Phase inductance 1.91 mH ±20% Rotor inertia 2700 g.cm²	CANbus (Canopen DS402)	4	3	2 = no analogues inputs 3 = 2 analogues inputs	N = No encoder (Open Loop) M = Incremental encoder + absolute single turn B = BiSS C multiturn absolute encoder
SM5A485PM0 y 3 z w 0	c0490					D= Holding torque 8.50 Nm min. Phase resistance 0.30 ohm ±0.10 Phase inductance 2.80 mH ±20% Rotor inertia 3800 g.cm² E= Holding torque 12.50 Nm±10% Phase resistance 0.33 ohm ±0.10 Phase inductance 3.40 mH ±20% Rotor inertia 5700 g.cm²	RS485 (Modbus-RTU)				

Software kit

Config.	Control	Software kit code	Software kit description
c0380	Canopen (DS402) fieldbus mode.	SM5_CAN-00	USB/CAN converter, cable from converter to the drives and data stick with Ever Studio for drives configuration.
c0390	CANbus e3PLC Studio programming.	SM5_CAN-00	USB/CAN converter, cable froml converter to the drives and data stick with e3PLC Studio demo for drives programming.
c0490	Modbus-RTU e3PLC programming.	SM5_485-00	USB/CAN converter, cable froml converter to the drives and data stick with e3PLC Studio demo for drives programming.