

Specifications

MODELS

Code		Holding Torque
SM4A	B	1,10 Nm ±10%
SM4A	C	1,65 Nm ±10%
SM4A	D	2,10 Nm ±10%
SM4A	E	3,30 Nm ±10%

POWER SUPPLY

Separated 24 Vdc (logic) and 18÷56 Vac (power)

POWER STAGE

H-bridge bipolar chopper of 40 KHz

CURRENT

0 ÷ 4.2 ARMS (0 ÷ 6.0 APEAK)

STEPLESS CONTROL TECHNOLOGY

65536 position per turn

OPTOISOLATED CONTROL INTERFACES

Modbus or CANbus and SCI interface for programming and real time debugging

INPUTS / OUTPUTS

4 digital optocoupled inputs
2 digital optocoupled outputs (100 mA)
1 analog optocoupled input (potentiometer or ±10Vdc) (optional)

FEEDBACK CONTROL POSITION

Incremental encoder 400, 1000 or 2000 pulse/turn (optional)

SAFETY PROTECTIONS

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

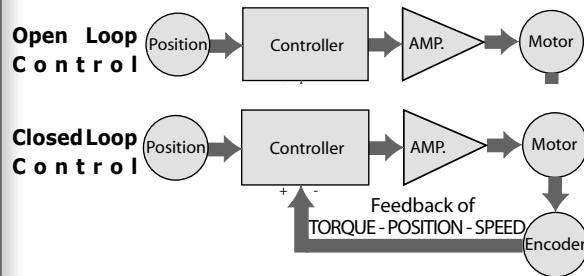
TEMPERATURE

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

PROTECTION CLASS

IP65

Open loop / Closed Loop



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

Motor and Full digital drive with fieldbus or programmable

TITANIO
VECTOR - STEPPER - DRIVES



SM4A

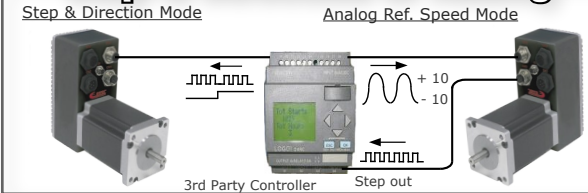
Integrated Servomotors

- Stepless control technology
- Closed loop of torque, speed and position
- IP65 Protection

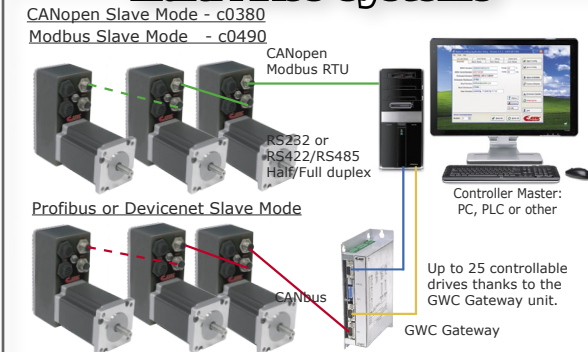


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Step & Direction or Analog



Multi Axes Systems



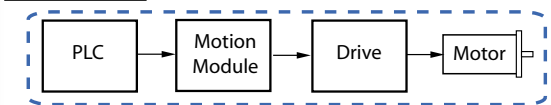
Drive control through commands by Master Controller. Suitable for multi axes systems. Built in Powerful Motion Module functionality assures Perfect Synchronization among axes and reduces Master Controller workload.

Stand Alone Mode

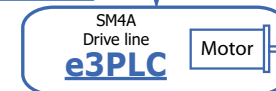
User Programmable - e3PLC- c0390 / c0490

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



e3PLC - SM4A Solution



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 and programming

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

Fieldbus configuration (slave)



IDE e3PLC configuration (programmable)



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)

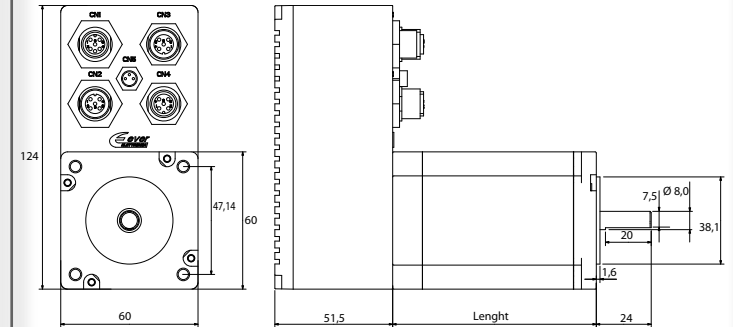
Fast inputs and outputs for motor' start & stop and event synchronization for high speed response applications such as labeling, nick finder, flying saw etc.

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	Lenght (mm)	Weight (kg.)
SM4A_B	49,0	1,450
SM4A_C	59,0	1,620
SM4A_D	69,0	2,050
SM4A_E	89,0	2,250



Ordering Information of SM4A Integrated Servomotors and Options

Order code		Power			System Resources						
Versions	Config. (see table)	Power supply Power	Logic	Current	Data of the Integrated Motor (z = B / C / D / E)	Interface	SCI	Digital Inputs	Digital Outputs	Analog Inputs	Encoder (w = N - 4 - 5 - 6)
SM4A342PC242zw0	c0380 c0390	18 ÷ 56 Vac	24 Vdc	0 ÷ 4.2 ARMS (0 ÷ 6.0 APEAK)	B = Holding torque 1.10 Nm±10% Phase resistance 0.44 ohm ±10% Phase inductance 2.54 mH ±10% Detent torque 0.05 Nm Rotor inertia 275 g.cm ²	CANbus (Canopen)	For configuration and/or programming and real time debug	4	2	---	N=No encoder 4=Bidirectional incremental encoder 400 pulse 5=Bidirectional incremental encoder 1000 pulse 6=Bidirectional incremental encoder 2000 pulse
SM4A342PC272zw0					C = Holding torque 1.65 Nm±10% Phase resistance 0.19 ohm ±10% Phase inductance 1.70 mH ±10% Detent torque 0.07 Nm Rotor inertia 300 g.cm ²						
SM4A342PM242zw0	c0490	18 ÷ 56 Vac	24 Vdc		D = Holding torque 2.10 Nm±10% Phase resistance 0.27 ohm ±10% Phase inductance 3.00 mH ±10% Detent torque 0.09 Nm Rotor inertia 570 g.cm ²	Serial Modbus RTU				---	
SM4A342PM272zw0					E = Holding torque 3.30 Nm±10% Phase resistance 0.65 ohm ±10% Phase inductance 3.20 mH ±10% Detent torque 0.10 Nm Rotor inertia 840 g.cm ²						

Configuration, Control Method and Optional Software Starter Kits

Config.	Control	Software Starter Kits Code	Description of the Software Starter Kits
c0380	Canopen Control Mode (CiA DS402 profile)	SM4A_SERV00-SL	Communication kit for SCI service interface to configure the drive with Ever Studio.
c0390	Stand-Alone e3PLC Studio IDE Canopen Mode	SM4A_SERV00-EE	Communication kit for SCI service interface to program the drive with e3PLC Studio IDE.
c0490	Stand Alone e3PLC Studio IDE Modbus Mode	SM4A_SERV00-EE	Communication kit for SCI service interface to program the drive with e3PLC Studio IDE.