Orion is a new line of fieldbus vector drives characterised by innovative performance; these drives allow to command stepper motors also in closed loop torque speed and position, with a drastic noise reduction, less heating and extremely smooth movements. Suitable for driving 2-phases hybrid stepper motors, they can be coupled mainly with the series of motors from Nema 8 to Nema 34. Completely digital and made using Arm Core M4 technology, Orion drives offer exceptional reliability combined with high mechanical compactness and a competitive price. These drives indeed consist of only the electronic board and are therefore installed in an electrical panel or in solutions customised by the customer. Easily configurable through serial SCI service interface in real time, these drives allow to control the applications and they are especially suitable for: labelling machines, laser cutters, pick-place devices, engraving tables, etc. or, in any case, in all applications in which not only versatility, precision and speed are required, but also smooth and silent movements.

Principal features

1   Multiple control modes
2   Equipped with advanced safety features: integrated diagnostic separated power supply for logic and power fault monitoring and Handling
3   Main characteristics of the drive: stepless control technology low motor vibrations high speed and torque low mechanical noise low heat production no resonance high reliability
4   Vector control: the sinusoidal regulation allowing smooth and silent movements
5   Closed loop
6   Compact sizes
7   Auto tuning of motor control parameters
8   High efficiency current set up

Functions

Control modes:
1   Velocity control mode
2   Wide range of Positioning Control Modes (homing, relative, absolute, target)
3   Electric Gear with programmable gear ratio to track external master reference (from fieldbus or incremental encoder) of motor Speed and Position
4   High speed I/O triggered motor start & stop to event syncronizing for fast response demanding application: labeling, nick_finder, on fly cut., etc ...
5   Multi Axis movements syncronization capabilitye
6   On fly change among any Motion Module Control Mode
7   On fly Electric Gear Enable/Disable capability
8   Closed Loop of torque, speed and position thanks to an encoder.
9   NodeID e Baud Rate configurable both via software or via dip-switches.
10 Drive control through commands by Master Controller. Suitable for multi axes systems (up to 127 drives). Integra tutte le Built in powerful Motion Module functionality that assures a perfect synchronization among axes and reduces Master Controller workload.

Technical Data

Driver Type

Stepper Motor	from Nema 8 up to Nema 34

Interface control mode

CANopen
Serial RS485 Modbus-RTU
EtherCAT CoE (DS402)
Open Loop
Close Loop

Electrical data

Operating voltage (min.)	12 [Vcc]
Operating voltage (max.)	36 [Vcc]
Separated logic power supply	24 [Vcc]
Rated Current	up to 3 [A/ph rms]
Peak Current	4.2 [A/ph peak]

Operating Mode

Step resolution	Stepless Control Technology (65536 emulated positions per turn)

Inputs

Digital inputs	4 not isolated
Analog inputs	1 for potentiometer or ±10 Vdc

Output

Digital outputs	3 not isolated digital outputs

Feedback interface

Encoder	1 incremental encoder interface

Protective functions

Over/UnderVoltage, OverCurrent, OverTemperature, Phase/Phase and Phase/Ground Short

Mechanical Data

Weight	120 g
Dimension (length)	42.0 [mm]
Dimension (width)	20.0 [mm]
Dimension (height)	61.0 [mm]
Protection class	IP20
Status monitoring	2 LED (green, red)

Ambient conditions

|	
Temperature – Operation (min.)	0 [℃]
Temperature – Operation (max.)	40 [℃]
Temperature – Storage (min.)	-25 [℃]
Temperature – Storage (max.)	55 [℃]
Humidity (non-condensing) (min.)	5 [%]
Humidity (non-condensing) (max.)	90 [%]

Software

Setup and configuration	E&D Studio
Programming	E&D Space

Version

	Power Supply Voltage	Output Current		Interface Control Mode	Open or Close Loop
	Vcc.	[A/ph rms]	[A/ph peak]		
	Min. | Max.	Min. | Max.	Max.		
SOD203C001-S200	12 | 36	0.0 | 3	4.2	CANopen (Programmable)	Open Loop or Closed Loop
SOD203C001-S402	12 | 36	0.0 | 3	4.2	CANopen (DS402)	Open Loop or Closed Loo
SOD203M001-S200	12 | 36	0.0 | 3	4.2	Serial RS485 Modbus-RTU	Open Loop or Closed Loop
SOD203E001-S402	12 | 36	0.0 | 3	4.2	EtherCAT CoE (DS402)	Open Loop or Closed Loop

SOD203C001 / SOD203M001-S200
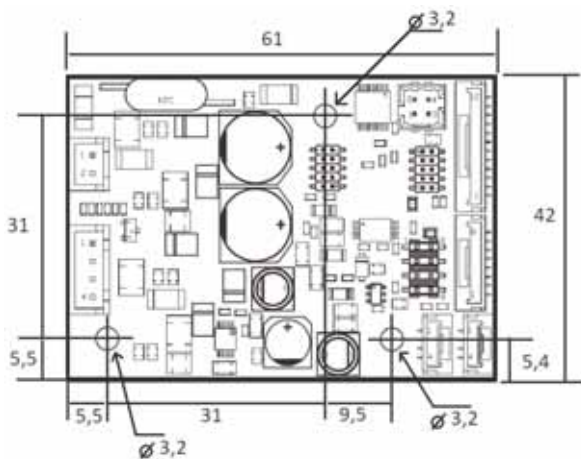
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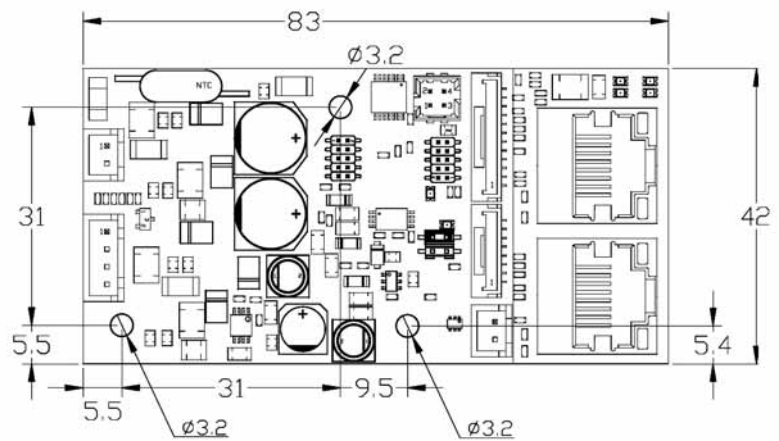
Product Combination

Code	Size (mm)	Current Phase (A)	Holding Torque (Nm)	Page
SM42058-13E4F.000	42	1,33	0,22	50
SM42064-16E4F.000	42	1,68	0,36	50
SM42072-16E4F.000	42	1,68	0,44	50
SM42084-30E4F.000	42	3	0,80	50
SM60066-28E4F.000	60	2,80	1,10	53
SM60075-28E4F.000	60	2,80	1,65	53
SM60086-28E4F.000	60	2,80	2,10	53
SM60107-28E4F.000	60	2,80	3,10	53