Electronics&Drive
a DELTA LINE Brand

ARIES is a new line of fieldbus vector drives characterised by innovative performance; these drives allow to command stepper motors with a drastic noise reduction, less heating and extremely smooth movements. Suitable for driving 2-phase 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, ARIES drives offer exceptional reliability combined with mechanical compactness and a competitive price. They can be used in many types of machines where there is already a fieldbus master controller to control single or multi-axle systems. Their use is of the 'general purpose' type and they are particularly suitable in 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 as in the medical field.

EtherCAT.

Principal Features

1   EtherCAT (CoE) with integrated DS402 functionalities
2   Service serial for real time configuration and debugging
3   Conformity with the most common PLC masters on the market
4   Integrated oscilloscope
5   Vectorial control, which ensures smooth and silent movements
6   Separate power supply for logic and power
7   Monitoring and alarms records
8   Auto tuning of motors' control parameters

Function

Control Mode

1   Supported Modes: profile position mode, velocity mode, homing mode, interpolated position mode, cyclic synchronous position mode, cyclic synchronous velocity mode
2   Multiple supported homing mode: 1, 2, 17, 18, 19, 20, 21, 22, 35, 37.
3   Synchronization mode: free run, synchronous with SM event, distributed clocks
4   Diagnostic services: EMCY, diagnostics.
5   Minimum cycle time: 500 microseconds
6   PDO dynamic mapping
7   Touch Probe function
8   Factor Group
9   Storable PDO mapping inside drive

Technical Data

Driver Type

Stepper Motor	from Nema 8 up to Nema 34

Interface control mode

EtherCAT CoE (DS402)	
Open Loop	

Electrical data

Operating voltage (min.)	12 [Vcc]
Operating voltage (max.)	48 [Vdc]
Separated logic power supply (min.)	12 [Vcc]
Separated logic power supply (max.)	48 [Vdc]
Rated Current	0.0 [A/ph rms] ÷ 4.2 [A/ph rms]
Peak Current	6.0 [A/ph peak]
Power stage	40 kHz ultrasonic chopper frequency

Operating Mode

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

Inputs

Digital inputs	4 optoisolated: 5-24 Vdc NPN, PNP or Line-Driver 5 MHz

Output

Digital outputs	2 optoisolated: PNP, 24 Vdc - 100 mA - 1kHz

Protective functions

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

Mechanical Data

Weight	150 g
Dimension (length)	62.5 [mm]
Dimension (width)	23.5 [mm]
Dimension (height)	104.8 [mm]
Protection class	IP20
Status monitoring	4 LED (green, blue,yellow and red)

Ambient conditions

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

Software

Setup and configuration	E&D Studio

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.		
SBD204E001-S402	12 | 48		0.0 | 4.2	6.0	EtherCAT CoE (DS402)	Open Loop