Gemini is a new line of fieldbus vector drives characterised by innovative performance; these drives allow to command BLDC motor with less heating and extremely smooth movements. Suitable for driving 3-phase BLDC motors, they can be coupled mainly with the series of motors up to 400 Watt.. Completely digital and made using Arm Core M4 technology, Gemini 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 coveyors, robot arms, separators etc.

Principal features

1 Multiple control modes: analog, Ethercat, Modbus TCP, Canopen or programmable
2 Equipped with advanced safety features such as integrated diagnostic and separated power supply for logic and power fault monitoring and Handling
3 Motion controller on board
4 Vector control: the sinusoidal regulation allowing smooth and silent movements
5 Closed loop through encoder or hall sensors
6 Compact sizes
7 Auto tuning of motor control parameters
8 High efficiency current set up

Functions

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 through encoder.

Technical Data

Driver Type

Brushless DC Motors

Interface control mode

Modbus RS 485
CANopen
Ethernet ModBus TCP
Ethercat

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]
Phase Current	up to 10Arms (28 Apeak for 5 second)
Motor Power	up to 400W
Chopper Frequency:	Ultrasonic 40KHz

Operating Modes

profile position mode, velocity mode, homing mode, cyclic sync position mode, cyclic sync velocity mode, cyclic sync torque mode, clock direction mode, service SCI interface for programming and real time debugging.

Inputs

Digital inputs	6 Digital inputs: Opto-coupled
Hall sensor inputs	5V Single-Ended (TTL/CMOS) hall effects
Encoder Inputs	5V Differential (RS422) or 5V Single-Ended (TTL/CMOS) incremental encoder

Output

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

Protective functions

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

Mechanical Data

|	
Weight	150 g
Dimension (length)	84.5 [mm]
Dimension (width)	30 [mm]
Dimension (height)	139 [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.)	85 [%]

Software

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

lotax

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.		
B400B30T001-S200	12	48	0.0	10	28	Ethernet Modbus TCP	Close Loop
B400B30E001-S402	12	48	0.0	10	28	EtherCAT CoE (DS402)	Close Loop
B400B30C001-S402	12	48	0.0	10	28	CANopen (DS402)	Close Loop
B400B30C001-S200	12	48	0.0	10	28	CANopen (Programmable)	Close Loop
B400B30M001-S200	12	48	0.0	10	28	Serial RS485 Modbus-RTU	Close Loop
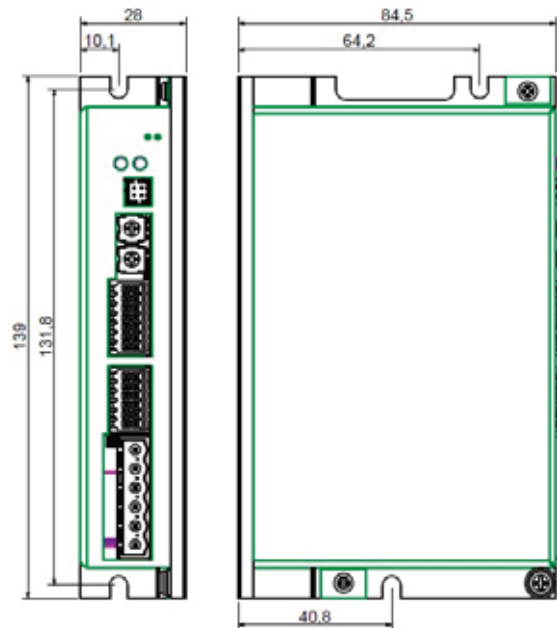
Product Combination

Code	Size (mm)	Rated Speed (rpm)	Rated Torque (Nm)	Page
BL42061-026E.000	26	4.000	0,062	32
BL42081-050E.000	50	4.000	0,125	32
BL42101-074E.000	74	4.000	0,185	32
BL42121-100E.000	100	4.000	0,250	32
BL57096-090E.000	90	3.000	0,300	34
BL57116-135E.000	135	3.000	0,450	34
BL57136-180E.000	180	3.000	0,600	34
BL86080-130E.000	130	3.000	0,400	36
BL86093-250E.000	250	3.000	0,800	36
BL86121-500E.000	500	3.000	1,600	36

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