Servo amplifier

mcDSA-E27XC-EtherCAT

Article number: 1513203

Certification: cULus E475093, CE, UKCA *1

Picture similar

Technical data

Supply voltages	
Electronic supply voltage Ue*2	9..30 V
Electronic current consumption@ Ue=24V*3	typ. 100 mA
Power supply voltage Up*4	9..60 V
Output current	
Max. output current	160 A
Continuous output current (certified UL/CE)*5 @Up=24V @Up=60V	 54 A 49 A
Continuous output current (not certified)*6 @Up=24V with Heatsink (Art.No. 1511832)	65 A 75 A
Continuous output current (not certified)*6 @Up=48V with Heatsink (Art.No. 1511832)	55 A 65 A
PWM	
Output voltage	100% Up
PWM frequency	25, 32*7, 50 kHz
Mechanical	
Size LxWxH	111 x 100 x 55 mm
Weight	630 g
Environment	
Protection class	IP20
Ambient temperature (operation) (certified UL/CE)	-25..40 °C
Ambient temperature (operation) (not certified)	-25..70 °C
Ambient temperature (storage)	-25..85 °C
Rel. humidity (non-condensing)	5..90 %
CAN bus	
Protocol	DS301
Device profile	DS402
Max. baudrate	1 Mbit/s
CAN specification	2.0B
Galvanically isolated	yes
EtherCAT	
Type	EtherCAT Slave
Physical layer	100 Base-Tx EtherCAT
Bus controller	ET1100
Max. baudrate	100 Mbit/s
Number of ports	2xRJ45 (In,Out)
Protocol	CoE (CANopen over EtherCAT)

Functional safety	
Safety function refer safety manual	Safe Torque Off (STO)
Safety Integrity Level (SIL)	up to SIL 3
Performance Level (PL)	up to PL e
Sensor supply (Encoder)	
Output voltage	5 V
Max. output current	0.2 A
Encoder	
Type	sin / cos
Signals	+Sin,-Sin,+Cos,-Cos
Resolution	13 bit per sine period
Input voltage	1 V peak-peak, differential
Signal type	sine/cosine, analog, differential
Digital inputs	
Number - digital inputs	6 (Din0..5)
Low voltage	0..5 V
High voltage	8..30 V
Notice	Din5 parallel with Dout2*8
STO channels (ST0-A..B)	
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	3 (Dout0..2)
Continuous output current (certified UL/CE)	1 A
Continuous output current (not certified)	1.5 A
Load Dout0..1	resistive, low inductive
Load Dout2	resistive, inductive
Output voltage	Electronic supply voltage Ue
Signal type	positive switching
Notice	Dout2 parallel with Din5
Analog inputs	
Number	2 (Ain0..1)
Signal type - Ain0	+/- 10 V, 12 Bit, differential
Signal type - Ain1	+/- 10 V, 12 Bit, single ended

*1 The certified performance data must be observed (see UL Instruction Note and Safety Manual (CE))
*2 No reverse polarity protection, the destruction limit is at overvoltage of >= 33V or short-term peak voltage of 37V < 1s
*3 power amplifier switched off, 5V output (sensor supply) is free, STO active
*4 No reverse polarity protection, the destruction limit is at overvoltage of >= 80V
*5 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (asymmetrical), ambient temperature 40 °C, I/O's and 5V output active, RMS current: 54 A → 44 Aeff, 49 A → 40 Aeff
*6 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (asymmetrical), ambient temperature 40 °C, I/O's and 5V output free, RMS current: 55 A → 45 Aeff, 65 A → 53 Aeff, 75 A → 61 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current
*7 default value
*8 Input voltage must not exceed Electronic supply voltage Ue

Additional technical data are available in mcManual.

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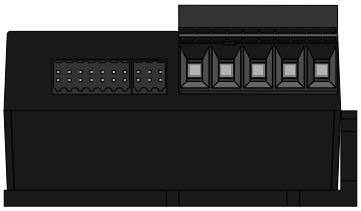
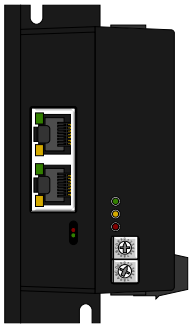
Scheme





Terminal assignment

X1	Motor	
1	+Up	Power supply voltage
2	GND	Ground for power supply voltage
3	Ma	Motor phase A
4	Mb	Motor phase B
5	Mc	Motor phase C
X2	Encoder	
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	+Sin	Encoder, plus sine signal
5	+Cos	Encoder, plus cosine signal
6	res.	Reserved
7	+U5V	5V output voltage for sensor supply Sensors: encoder
8	res.	Reserved
9	res.	Reserved
10	res.	Reserved
11	-Sin	Encoder, minus sine signal
12	-Cos	Encoder, minus cosine signal
13	res.	Reserved
14	GND	Ground for sensor supply Notice: don't connect with system GND
X3	I/O's and CAN	
1	+Ue24V	Electronic supply voltage
2	+Ain0	Analog input 0, plus
3	Din0	Digital input 0
4	Din1	Digital input 1
5	Din2	Digital input 2
6	Din3	Digital input 3
7	GND	Ground for electronic supply voltage
8	-Ain0	Analog input 0, minus
9	Dout0	Digital output 0
10	CAN Hi	CAN High
11	CAN Lo	CAN Low
12	CAN GND	CAN Ground

X4	I/O's	
1	Ain1	Analog input 1
2	Din4	Digital input 4
3	Din5/Dout2	Digital input 5 / Digital output 2
4	STO-A	STO channel A
5	Dout1	Digital output 1
6	STO-B	STO channel B
S1	Screw (M4)	
-	FE	Functional earth
X5	EtherCAT - In port	
-	In	In
X6	EtherCAT - Out port	
-	Out	Out

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