miControl®

Servo amplifier

mcDSA-E20

Article number: 1511097

Picture similar

Technical data

Absolute maximum rating	
Voltage (destruction limit) Up no polarity reversal protection	80 V
Continuous voltage (destruction limit) Ue no polarity reversal protection	33 V
Short term peak voltage < 1s Ue (destruction limit) no polarity reversal protection	37 V
Power	
Electronic supply voltage Ue	9..30 V
Electronic current consumption @ Ue=24V*¹	typ. 55 mA
Power supply voltage Up	9..60 V
Max. output current	50 A
Continuous output current @ Up=24V*²	30 A
Continuous output current @ Up=48V*²	21 A
Output voltage	90% Up
PWM frequency	25, 32*³, 50 kHz
Min. load inductance	200 uH
Mechanical	
Size LxWxH	111 x 100 x 30 mm
Weight	350 g
Environment	
Protection class	IP20
Operating temperature*⁴	-40..55 °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	no

Sensor supply (Encoder/Hall)	
Output voltage	5 V
Max. output current	0.2 A
Incremental encoder	
Type	incremental
Signals	A,/A,B,/B,Inx,/Inx
Max. freqency (per channel)	500 kHz
Input voltage (24V tolerant)	0..5 V
Signal type	differential, open collector, single ended
Hall sensors	
Signals	H1,/H1,H2,/H2,H3,/H3
Max. freqency (per channel)	10 kHz
Input voltage (24V tolerant)	0..5 V
Signal type	differential, open collector, single ended
Digital inputs	
Number	4 (Din0..3)
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	1 (Dout0)
Continuous output current	2.5 A
Load	resistive, inductive
Output voltage	Electronic supply voltage Ue
Signal type	positive switching
Analog inputs	
Number	1 (Ain0)
Signal type	0..10 V, 12 Bit, single ended

*¹ Power amplifier switched off, 5V output (sensor supply) is free
*² ambient temperature 40 °C, PWM frequency 25 kHz, > 40 °C derating, no guarantee, since value is determined empirical,
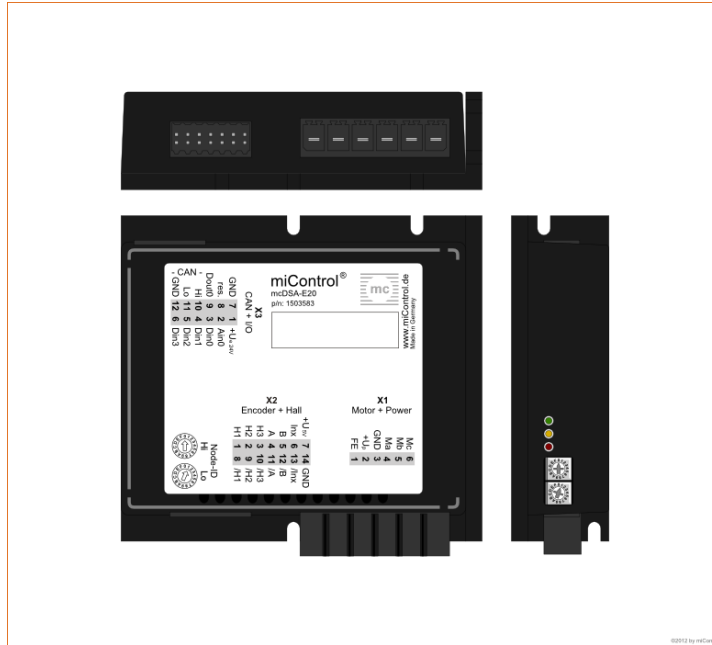   please consider the application notes to determine the continuous current
*³ default value
*⁴ < - 25°C, setting of the NodeID is only allowed by firmware parameters, because the functioning of the Hex-Switches at these temperatures
   is not longer guaranteed

Additional technical data are available in mcManual.

Scheme

Terminal assignment

X1	**Motor**	
1	FE	Functional earth
2	+Up	Power supply voltage
3	GND	Ground for power supply voltage
4	Ma	Motor phase A
5	Mb	Motor phase B
6	Mc	Motor phase C
X2	**Hall and inc. encoder**	
1	H1	Hall sensor 1
2	H2	Hall sensor 2
3	H3	Hall sensor 3
4	A	Inc. encoder, A channel
5	B	Inc. encoder, B channel
6	Inx	Inc. encoder, index channel
7	+U5V	5V auxiliary voltage (hall and encoder)
8	/H1	Hall sensor 1 inverted
9	/H2	Hall sensor 2 inverted
10	/H3	Hall sensor 3 inverted
11	/A	Inc. encoder, A channel inverted
12	/B	Inc. encoder, B channel inverted
13	/Inx	Inc. encoder, index channel inverted
14	GND	Ground for 5V auxiliary voltage (hall and encoder)
X3	**I/O's and CAN**	
1	+Ue24V	Electronic supply voltage
2	+Ain0	Analog input 0
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	res.	Reserved
9	Dout0	Digital output 0
10	CAN Hi	CAN High
11	CAN Lo	CAN Low
12	CAN GND	CAN Ground