

# Servo amplifier

## mcDSA-E20XC

Article number: 1512409

Certification:  \*1

Picture similar

### Technical data

Absolute maximum rating (destruction limits)	
Power supply voltage Up no polarity reversal protection	80 V
Continuous Electronic supply voltage Ue no polarity reversal protection	33 V
Short term peak voltage < 1s Ue no polarity reversal protection	37 V
Power	
Electronic supply voltage Ue	9..30 V
Electronic current consumption@ Ue=24V*2	typ. 70 mA
Power supply voltage Up	9..60 V
Max. output current	160 A
Continuous output current @ Up=24V*3	60 A
Continuous output current @ Up=48V*3	59 A
Continuous output current (certified UL)*4 @Up=24V	44 A
@Up=60V	40 A
Continuous output current (not certified)*5 @Up=24V	70 A
@Up=48V	63 A
with Heatsink (Art.No. 1511832)	
PWM	
Output voltage	90% Up
PWM frequency	25, 32*6, 50 kHz
Mechanical	
Size LxWxH	111 x 100 x 40 mm
Weight	400 g
Environment	
Protection class	IP20
Ambient temperature (operation)*7	-40..55 °C
Ambient temperature (storage)	-40..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	no

Sensor supply (Encoder/Hall)	
Output voltage	5 V
Max. output current	0.2 A
Incremental encoder	
Type	incremental
Signals	A <sub>+</sub> /A <sub>-</sub> , B <sub>+</sub> /B <sub>-</sub> , Inx <sub>+</sub> /Inx <sub>-</sub>
Max. frequency (per channel)	100 kHz
Input voltage	0..5 V
Signal type	differential, open collector, single ended
Hall sensors	
Signals	H1 <sub>+</sub> /H1 <sub>-</sub> , H2 <sub>+</sub> /H2 <sub>-</sub> , H3 <sub>+</sub> /H3 <sub>-</sub>
Max. frequency (per channel)	10 kHz
Input voltage	0..5 V
Signal type	open collector, single ended
Digital inputs	
Number - digital inputs	4 (Din0..3)
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	1 (Dout0)
Continuous output current (certified UL)	1.5 A
Load	resistive, inductive
Output voltage	Electronic supply voltage Ue
Signal type	positive switching
Analog inputs	
Number	1 (Ain0)
Signal type - Ain	+/- 10 V, 12 Bit, differential

\*1 The certified performance data must be observed (see UL Instruction Note)

\*2 power amplifier switched off, 5V output (sensor supply) is free

\*3 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C (t &gt; 40 °C derating) no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

\*4 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: 44 A → 36 Aeff, 40 A → 33 Aeff

\*5 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: 70 A → 57 Aeff, 63 A → 51 Aeff

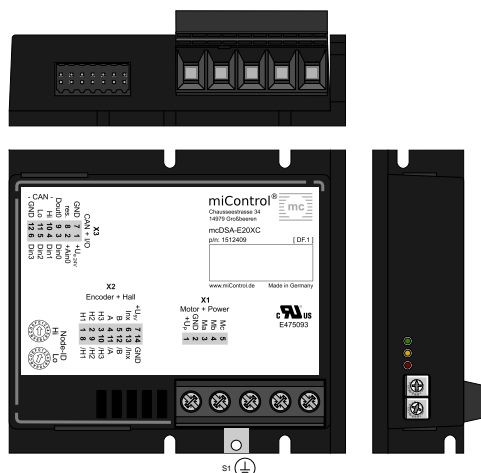
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

\*6 default value

\*7 Hex-Switches should be not used at T &lt; -25°C(setting of node ID only possible by firmware parameters)

Additional technical data are available in mcManual.

## Scheme



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## 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 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 output voltage for sensor supply Sensors: encoder, hall
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 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
S1 Screw (M4)		
-	FE	Functional earth