

# Servo amplifier

## mcDSA-E40

Article number: 1512704

 Certification:  **US** \*1  
E475093


Picture similar

### Technical data

Supply voltages	
Electronic supply voltage $U_e^{*2}$	9..30 V
Electronic current consumption @ $U_e=24V^{*3}$	typ. 50 mA
Power supply voltage $U_p^{*4}$	9..60 V
Output current	
Max. output current	30 A
Continuous output current (certified UL) <sup>*5</sup>	
@ $U_p \leq 24V$	10 A
@ $U_p \leq 60V$	8 A
Continuous output current (not certified) <sup>*6</sup>	
@ $U_p \leq 24V$	10 A
@ $U_p \leq 48V$	8.5 A
PWM	
Output voltage	90% $U_p$
PWM frequency	25, 32 <sup>*7</sup> , 50 kHz
Mechanical	
Size LxWxH	110 x 23 x 77 mm
Weight	110 g
Environment	
Protection class	IP20
Ambient temperature (operation) <sup>*8</sup> (certified UL)	-40..40 °C
Ambient temperature (operation) <sup>*8</sup> (not certified)	-40..70 °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,/A,B,/B,Inx,/Inx
Max. frequency (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. frequency (per channel)	10 kHz
Input voltage (24V tolerant)	0..5 V
Signal type	differential, 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)	0.75 A
Continuous output current (not certified)	1.5 A
Load	resistive, inductive
Output voltage	Electronic supply voltage $U_e$
Signal type	positive switching
Analog inputs	
Number	1 (Ain0)
Signal type	0..10 V, 12 Bit, single ended

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

\*2 No reverse polarity protection, the destruction limit is at overvoltage of  $\geq 33V$  or short-term peak voltage of  $37V < 1s$ 

\*3 power amplifier switched off, 5V output (sensor supply) is free

\*4 No reverse polarity protection, the destruction limit is at overvoltage of  $\geq 80V$ \*5 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C, I/O's and 5V output active, RMS current: 10 A  $\rightarrow$  8.2 Aeff, 8 A  $\rightarrow$  6.5 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: 10 A  $\rightarrow$  8.2 Aeff, 8.5 A  $\rightarrow$  6.9 Aeff

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

\*7 default value

\*8 Hex-Switches should be not used at  $T < -25^\circ C$  (setting of node ID only possible by firmware parameters)

Additional technical data are available in mcManual.



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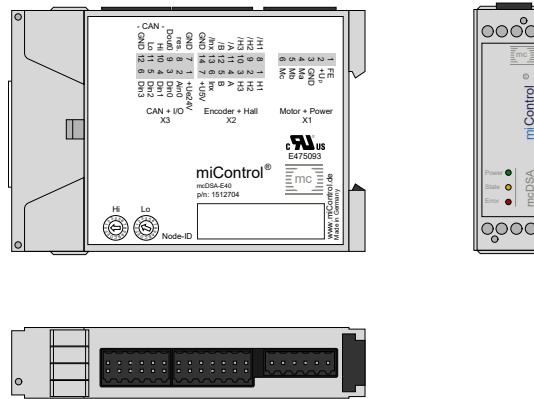
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## Scheme



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## 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 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
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