

# Servo amplifier

## mcDSA-E57-HC

Article number: 1513864

 Certification: 


Picture similar

### Technical data

Supply voltages	
Electronic supply voltage $U_e^{*2}$	9..30 V
Electronic current consumption @ $U_e=24V^{*3}$	typ. 40 mA
Power supply voltage $U_p^{*4}$	9..60 V
Output current	
Max. output current	50 A
Continuous output current (certified UL) <sup>*5</sup>	
@ $U_p \leq 24V$	9.5 A
@ $U_p \leq 60V$	9 A
Continuous output current (not certified) <sup>*6</sup>	
@ $U_p \leq 24V$	14.5 A
@ $U_p \leq 48V$	14.5 A
PWM	
Output voltage	100% $U_p$
PWM frequency	25, 32 <sup>*7</sup> , 50 kHz
Mechanical	
Size LxWxH	87 x 74 x 29 mm
Weight	150 g
Environment	
Protection class	IP20
Ambient temperature (operation) (certified UL)	-40..40 °C
Ambient temperature (operation) (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)	
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	8 (Din0..7)
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	4 (Dout0..3)
Continuous output current (certified UL)	0.3 A
Continuous output current (not certified)	0.3 A
Load Dout0..2	resistive, low inductive
Load Dout3	resistive, inductive
Output voltage	Electronic supply voltage $U_e$
Signal type	positive switching
Analog inputs	
Number	3 (Ain0..2)
Signal type - Ain0..1	+/- 10 V, 12 Bit, differential
Signal type - Ain2 / PT1000	0..5 V, 12 Bit, single ended / PT1000

\*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: 9.5 A → 7.8 Aeff, 9 A → 7.3 Aeff

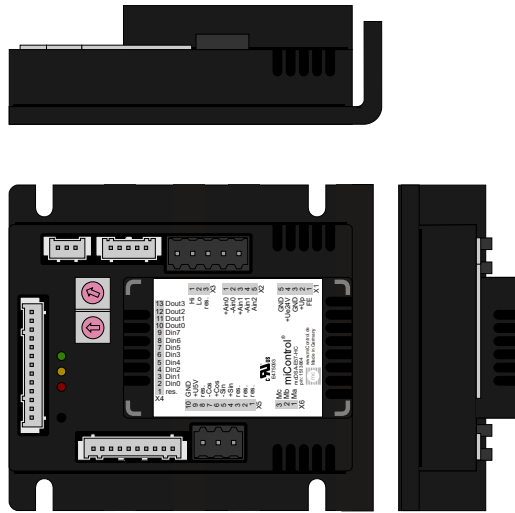
\*6 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C, I/O's and 5V output free, RMS current: 14.5 A → 11.8 Aeff, 14.5 A → 11.8 Aeff

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

\*7 default value

Additional technical data are available in mcManual.

## Scheme



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### Terminal assignment

X1 Supply		
1	FE	Functional earth
2	+Up	Power supply voltage
3	GND	Ground for power supply voltage
4	+Ue24V	Electronic supply voltage
5	GND	Ground for electronic supply voltage
X2 Analog inputs		
1	+Ain0	Analog input 0, plus
2	-Ain0	Analog input 0, minus
3	+Ain1	Analog input 1, plus
4	-Ain1	Analog input 1, minus
5	Ain2	Analog Input 2 (5V) / PT1000
X3 CAN bus		
1	CAN Hi	CAN High
2	CAN Lo	CAN Low
3	res.	Reserved
X4 Digital inputs/outputs		
1	res.	Reserved
2	Din0	Digital input 0
3	Din1	Digital input 1
4	Din2	Digital input 2
5	Din3	Digital input 3
6	Din4	Digital input 4
7	Din5	Digital input 5
8	Din6	Digital input 6
9	Din7	Digital input 7
10	Dout0	Digital output 0
11	Dout1	Digital output 1
12	Dout2	Digital output 2
13	Dout3	Digital output 3

X5 Encoder		
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	+Sin	Encoder, plus sine signal
5	-Sin	Encoder, minus sine signal
6	+Cos	Encoder, plus cosine signal
7	-Cos	Encoder, minus cosine signal
8	res.	Reserved
9	+U5V	5V output voltage for sensor supply Sensors: encoder
10	GND	Ground for sensor supply Notice: don't connect with system GND
X6 Motor		
1	Ma	Motor phase A
2	Mb	Motor phase B
3	Mc	Motor phase C