

Servo amplifier

mcDSA-F50-HC

Article number: 1514122

Certification:



Picture similar

Technical data

Supply voltages	
Electronic supply voltage Ue*2	9..30 V
Electronic current consumption@ Ue=24V*3	typ. 60 mA
Power supply voltage Up*4	9..60 V
Output current	
Max. output current	25 A
Continuous output current (certified UL)*5	
@Up ≤ 24V	9.5 A
@Up ≤ 60V	9.0 A
Continuous output current (not certified)*6	
@Up ≤ 24V	14.5 A
@Up ≤ 48V	14.5 A
PWM	
PWM frequency	32 kHz
Commutation type	Field Oriented Control
Mechanical	
Size LxWxH	87 x 74 x 29 mm
Weight	95 g
Environment	
Protection class	IP20
Ambient temperature (operation)*7 (certified UL)	-40..40 °C
Ambient temperature (operation)*7 (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	yes

Sensor supply (Encoder/Hall)	
Output voltage	5 V
Max. output current	0.2 A
Incremental encoder	
Type	incremental
Signals	A,/A,B,/B,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,H2,H3
Max. frequency (per channel)	10 kHz
Input voltage	0..5 V
Signal type	open collector, single ended
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
Load	resistive, inductive
Output voltage	Electronic supply voltage Ue
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 $\geq 70V$

*5 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (SVPWM), ambient temperature 40 °C, I/O's and 5V output active, RMS current:

9.5 A $\rightarrow$ 6.7 Aeff, 9.0 A $\rightarrow$ 6.4 Aeff

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

A $\rightarrow$ 10.3 Aeff, 14.5 A $\rightarrow$ 10.3 Aeff

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

*7 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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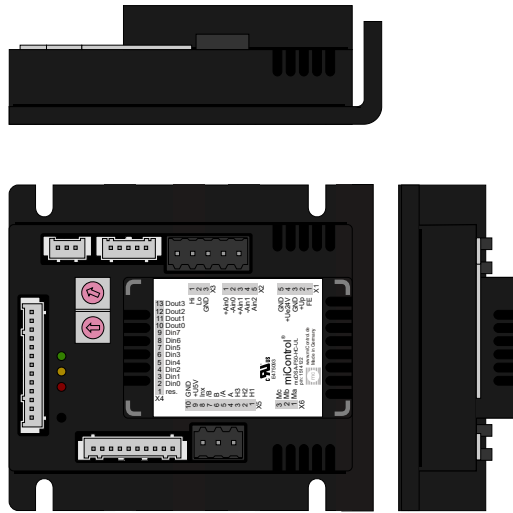
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Scheme



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Terminal assignment

X1 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	CAN GND	CAN Ground
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 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	/A	Inc. encoder, A channel inverted
6	B	Inc. encoder, B channel
7	/B	Inc. encoder, B channel inverted
8	Inx	Inc. encoder, index channel
9	+U5V	5V output voltage for sensor supply Sensors: encoder, hall
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