

# Servo amplifier mcDSA-E20-EtherCAT

Article number: 1511098



Picture similar

## Technical data

Absolute maximum rating (destruction limits)	
Power supply voltage $U_p$ no polarity reversal protection	80 V
Continuous Electronic supply voltage $U_e$ no polarity reversal protection	33 V
Short term peak voltage < 1s $U_e$ no polarity reversal protection	37 V
Power	
Electronic supply voltage $U_e$	9..30 V
Electronic current consumption@ $U_e=24V^{*1}$	typ. 85 mA
Power supply voltage $U_p$	9..60 V
Max. output current	50 A
Continuous output current @ $U_p=24V^{*2}$	30 A
Continuous output current @ $U_p=48V^{*2}$	21 A
PWM	
Output voltage	90% $U_p$
PWM frequency	25, 32 <sup>*3</sup> , 50 kHz
Mechanical	
Size LxWxH	111 x 100 x 54 mm
Weight	580 g
Environment	
Protection class	IP20
Ambient temperature (operation)	-25..70 °C
Ambient temperature (storage)	-25..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

EtherCAT	
Type	EtherCAT Slave
Physical layer	100 Base-Tx EtherCAT
Bus controller	ET1100
Max. baudrate	100 Mbit/s
Number of ports	2xRJ45 (In,Out)
Protocol	CoE (CANopen over EtherCAT)
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	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 power amplifier switched off, 5V output (sensor supply) is free

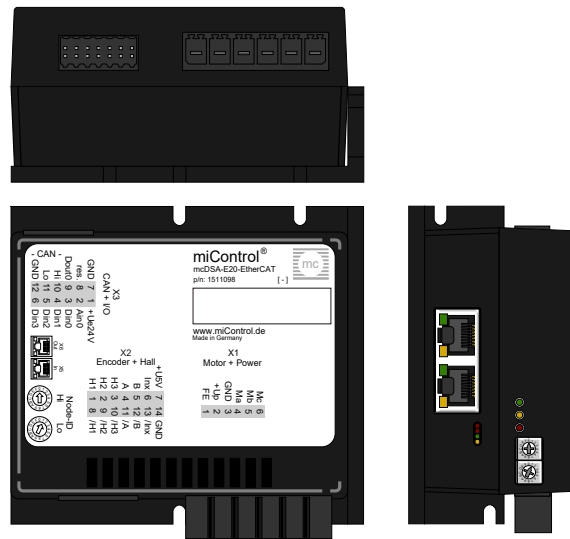
\*2 connector cable with max. possible cable cross-section, PWM frequency 25 kHz, ambient temperature 40 °C (t >40 °C derating), RMS current: 30 A → 24.5 Aeff, 21 A → 17.1 Aeff

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

\*3 default value

Additional technical data are available in mcManual.

## Scheme



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## Terminal assignment

<b>X1 Motor</b>		
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
<b>X2 Hall and inc. encoder</b>		
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
<b>X3 I/O's and CAN</b>		
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
<b>X5 EtherCAT - In port</b>		
-	In	In
<b>X6 EtherCAT - Out port</b>		
-	Out	Out