

# Servo amplifier

## mcDSA-E45-EtherCAT-HC

Article number: 1511143



Picture similar

**Technical data**

<b>Supply voltages</b>		<b>Incremental encoder</b>	
Electronic supply voltage Ue* <sup>1</sup>	9..30 V	Type	incremental
Electronic current consumption@ Ue=24V* <sup>2</sup>	typ. 90 mA	Signals	A,/A,B,/B,Inx,/Inx
Power supply voltage Up* <sup>3</sup>	9..60 V	Max. frequency (per channel)	500 kHz
<b>Output current</b>		Input voltage (24V tolerant)	0..5 V
Max. output current	50 A	Signal type	differential, open collector, single ended
Continuous output current @ Up=24V* <sup>4</sup>	12 A	<b>Hall sensors</b>	
Continuous output current @ Up=48V* <sup>4</sup>	12 A	Signals	H1,/H1,H2,/H2,H3,/H3
<b>PWM</b>		Max. frequency (per channel)	10 kHz
Output voltage	100% Up	Input voltage (24V tolerant)	0..5 V
PWM frequency	25, 32*, 50 kHz	Signal type	differential, open collector, single ended
<b>Mechanical</b>		<b>Digital inputs</b>	
Size LxWxH	110 x 61 x 77 mm	Number - digital inputs	8 (Din0..7)
Weight	357 g	Low voltage	0..5 V
<b>Environment</b>		High voltage	8..30 V
Protection class	IP20	<b>Digital outputs</b>	
Ambient temperature (operation)	-25..70 °C	Number	2 (Dout0..1)
Ambient temperature (storage)	-25..85 °C	Continuous output current	1.5 A
Rel. humidity (non-condensing)	5..90 %	Load	resistive, inductive
<b>CAN bus</b>		Output voltage	Electronic supply voltage Ue positive switching
Protocol	DS301	<b>Analog inputs</b>	
Device profile	DS402	Number	2 (Ain0..1)
Max. baudrate	1 Mbit/s	Signal type - Ain0	+/- 10 V, 12 Bit, differential
CAN specification	2.0B	Signal type - Ain1	+/- 10 V, 12 Bit, single ended
Galvanically isolated	no		
<b>EtherCAT</b>			
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)		
<b>Sensor supply (Encoder/Hall)</b>			
Output voltage	5 V		
Max. output current	0.2 A		

\*<sup>1</sup> No reverse polarity protection, the destruction limit is at overvoltage of >= 33V or short-term peak voltage of 37V < 1s\*<sup>2</sup> power amplifier switched off, 5V output (sensor supply) is free, bus not connected\*<sup>3</sup> No reverse polarity protection, the destruction limit is at overvoltage of >= 80V\*<sup>4</sup> connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C (t > 40 °C derating), RMS current: 12 A → 9.8 Aeff no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current\*<sup>5</sup> default value

Additional technical data are available in mcManual.



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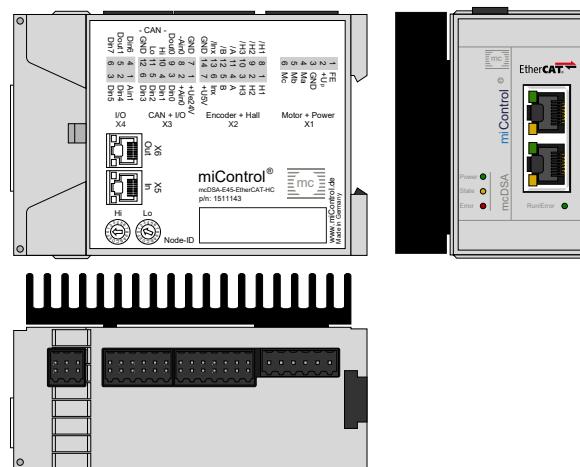
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mcDSA-E45-EtherCAT-HC - PV1.13.00.00 / DV1.00.00.04

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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, 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

X4 I/O's		
1	Ain1	Analog input 1
2	Din4	Digital input 4
3	Din5	Digital input 5
4	Din6	Digital input 6
5	Dout1	Digital output 1
6	Din7	Digital input 7
X5 EtherCAT - In port		
-	In	In
X6 EtherCAT - Out port		
-	Out	Out