

Servo amplifier

mcDSA-F55-EtherCAT-HC

Article number: 1515693



Picture similar

Technical data

Absolute maximum rating (destruction limits)	
Power supply voltage U_p no polarity reversal protection	70 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. 60 mA
Power supply voltage U_p	9..60 V
Max. output current	50 A
Continuous output current @ $U_p=24V^{*2}$	14.5 A
Continuous output current @ $U_p=48V^{*3}$	13 A
PWM	
PWM frequency	32 kHz
Mechanical	
Size LxWxH	87 x 74 x 49 mm
Weight	226 g
Environment	
Protection class	IP20
Ambient temperature (operation) ^{*4}	-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
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
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	7 (Din0..6)
Number - hardware enable inputs	2 (EN-A..B)
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	4 (Dout0..3)
Continuous output current	0.3 A
Load	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 power amplifier switched off, 5V output (sensor supply) is free

*2 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C (t >40 °C derating), RMS current: 14.5 A → 10.3 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

*3 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C (t >40 °C derating), RMS current: 13 A → 9.2 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

*4 Hex-Switches should be not used at T < -25°C (setting of node ID only possible by firmware parameters)

Additional technical data are available in mcManual.



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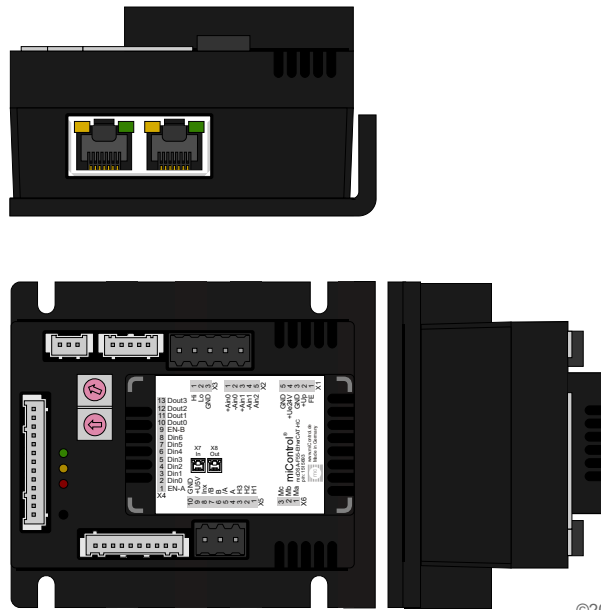
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Scheme



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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	EN-A	Hardware enable channel A
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	EN-B	Hardware enable channel B
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	
X7 EtherCAT - In port			
-	In	In	
X8 EtherCAT - Out port			
-	Out	Out	