Servo amplifier

mcDSA-F35-EtherCAT-HC

Article number: 1514232

Certification: E475093 *1

Picture similar

Technical data

Absolute maximum rating (destruction limits)	
Power supply voltage Up no polarity reversal protection	70 V
Continuous Electronic supply voltage Ue no polarity reversal protection	33 V
Short term peak voltage < 1s Ue no polarity reversal protection	37 V
Power	
Electronic supply voltage Ue	18..30 V
Electronic current consumption@ Ue=24V*2	typ. 85 mA
Power supply voltage Up	9..60 V
Max. output current	120 A
Continuous output current (certified UL/CE)*3 @Up ≤ 60V	26 A
Continuous output current (not certified)*4 @Up ≤ 48V	34 A
PWM	
PWM frequency	32 kHz
Mechanical	
Size LxWxH	87 x 74 x 49 mm
Weight	226 g
Environment	
Protection class	IP20
Installation requirements *5	IP54
Ambient temperature (operation) (certified UL)	-40..40 °C
Ambient temperature (operation) (certified CE)	-40..55 °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
RS485	
Type	2-Wire EIA-485
Signals	DATA,/DATA,CLK,/CLK

Functional safety	
Safety function refer safety manual	Safe Torque Off (STO)
Safety Integrity Level (SIL)	up to SIL 3
Performance Level (PL)	up to PL e
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 (Hall)	
Output voltage	5 V
Max. output current	0.05 A
Sensor supply (Encoder/SSI)	
Output voltage	5 V
Max. output current	0.2 A
Incremental encoder	
Type	incremental
Signals	A,/A,B,/B,Inx,/Inx
Max. freqency (per channel)	500 kHz
Input voltage	0..5 V
Signal type	differential, open collector, single ended
Hall sensors	
Signals	H1,H2,H3
Max. freqency (per channel)	10 kHz
Input voltage	0..5 V
Signal type	open collector, single ended
Digital inputs	
Number - digital inputs	6 (Din0..5)
Low voltage	0..5 V
High voltage	8..30 V
STO channels (ST0-A..B)	
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	3 (Dout0..2)
Continuous output current (certified UL/CE)	1 A
Continuous output current (not certified)	1.5 A
Load Dout0..1	resistive, low inductive
Load Dout2	resistive, inductive
Output voltage	Electronic supply voltage Ue
Signal type	positive switching
Analog inputs	
Number	1 (Ain0)
Signal type - Ain	+/- 10 V, 12 Bit, differential

*1 The certified performance data must be observed (see UL Instruction Note and Safety Manual (CE))
*2 power amplifier switched off, 5V output (sensor supply) is free, STO active
*3 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: 26 A → 18.5 Aeff
*4 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: 34 A → 24 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current
*5 or equivalent protection class (see Safety Manual (CE))

Additional technical data are available in mcManual.

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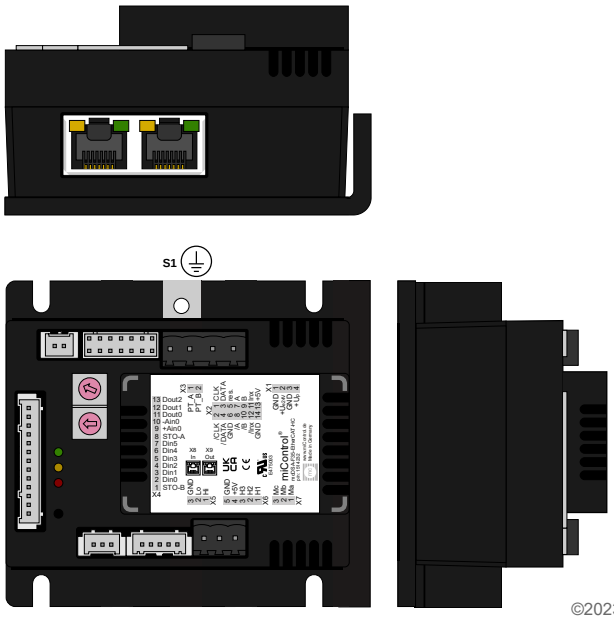
Scheme



Terminal assignment

X1	Supply	
1	GND	Ground for electronic supply voltage
2	+Ue24V	Electronic supply voltage
3	GND	Ground for power supply voltage
4	+Up	Power supply voltage
X2	Encoder	
1	CLK	SSI clk
2	/CLK	/SSI clk
3	DATA	SSI data
4	/DATA	/SSI data
5	res.	Reserved
6	GND	Ground for sensor supply Notice: don't connect with system GND
7	A	Inc. encoder, A channel
8	/A	Inc. encoder, A channel inverted
9	B	Inc. encoder, B channel
10	/B	Inc. encoder, B channel inverted
11	Inx	Inc. encoder, index channel
12	/Inx	Inc. encoder, index channel inverted
13	+5V	5V output voltage for sensor supply Sensors: encoder, SSI
14	GND	Ground for sensor supply Notice: don't connect with system GND
X3	PT1000	
1	PT_A	PT_A
2	PT_B	PT_B
X4	I/O's	
1	STO-B	STO channel B
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	STO-A	STO channel A
9	+Ain0	Analog input, plus
10	-Ain0	Analog input, minus
11	Dout0	Digital output 0
12	Dout1	Digital output 1
13	Dout2	Digital output 2

X5	CAN bus	
1	CAN Hi	CAN High
2	CAN Lo	CAN Low
3	CAN GND	CAN Ground
X6	Hall encoder	
1	H1	Hall sensor 1
2	H2	Hall sensor 2
3	H3	Hall sensor 3
4	+U5V	5V output voltage for sensor supply Sensors: hall
5	GND	Ground for sensor supply Notice: don't connect with system GND
X7	Motor	
1	Ma	Motor phase A
2	Mb	Motor phase B
3	Mc	Motor phase C
S1	Screw (M3)	
-	FE	Functional earth
X8	EtherCAT - In port	
-	In	In
X9	EtherCAT - Out port	
-	Out	Out

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