Servo amplifier

mcDSA-F30-Lp

Article number: 1513976

Certification: *1

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. 65 mA
Power supply voltage Up	9..60 V
Max. output current	60 A
Continuous output current (certified UL/CE)*3 @Up=24V @Up=60V	 17.5 A 13.4 A
Continuous output current (not certified)*4 @Up=24V @Up=48V	 19 A 16.5 A
PWM	
Output voltage	100% Up
PWM frequency	32 kHz
Mechanical	
Size LxWxH	70 x 50 x 20 mm
Weight	50 g
Environment	
Protection class	IP00
Ambient temperature (operation) (certified UL/CE)	-40..40 °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

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	2 (Ain0..1)
Signal type - Ain	0..10 V, 12 Bit, single ended

*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: 17.5 A → 12.5 Aeff, 13.4 A → 9.5 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: 19 A → 13.4 Aeff, 16.5 A → 11.6 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

Additional technical data are available in mcManual.

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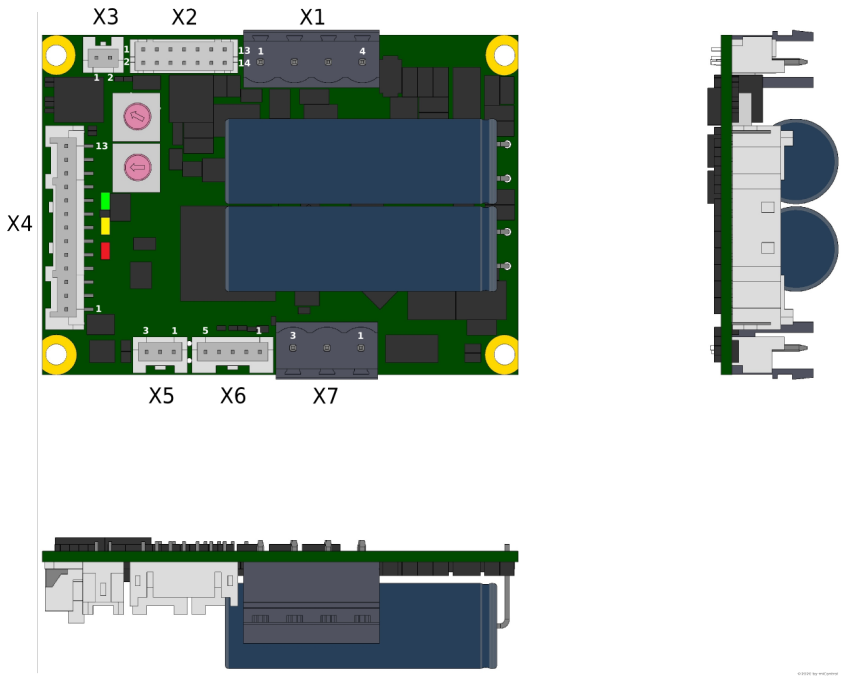
Scheme



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 0
10	Ain1	Analog input 1
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

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