Servo amplifier

mcDSA-F17-SSI

Article number: 1515708

Certification: E475093 *1

Picture similar

Technical data

Absolute maximum rating	
Voltage (destruction limit) Up no polarity reversal protection	70 V
Continuous voltage (destruction limit) Ue no polarity reversal protection	33 V
Short term peak voltage < 1s Ue (destruction limit) no polarity reversal protection	37 V
Power	
Electronic supply voltage Ue	9..30 V
Electronic current consumption@ Ue=24V*2	typ. 90 mA
Power supply voltage Up	9..60 V
Max. output current	225 A
Continuous output current (certified UL/CE)*3 @Up ≤ 24V @Up ≤ 60V	 77 A 65 A
Continuous output current (not certified)*4 @Up ≤ 24V @Up ≤ 48V	 85 A 70 A
PWM	
PWM frequency	32 kHz
Mechanical	
Size LxWxH	111 x 100 x 56 mm
Weight	451 g
Environment	
Protection class	IP20
Ambient temperature (operation)*5 (certified UL/CE)	-40..40 °C
Ambient temperature (operation)*5 (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	yes
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 (Encoder/SSI)	
Output voltage	5 V
Max. output current	0.2 A
Encoder	
Type	sin / cos
Signals	+Sin,-Sin,+Cos,-Cos
Resolution	13 bit per sine period
Input voltage	1 V peak-peak, differential
Signal type	sine/cosine, analog, differential
STO channels (ST0-A..B)	
Low voltage	0..5 V
High voltage	8..30 V
Digital inputs	
Number - digital inputs	6 (Din0..5)
Low voltage	0..5 V
High voltage	8..30 V
Notice	Din5 parallel with Dout2*6
Digital outputs	
Number	3 (Dout0..2)
Continuous output current (certified UL/CE)	1 A
Continuous output current (not certified)	1.5 A
Load	resistive, inductive
Output voltage	Electronic supply voltage Ue
Signal type	positive switching
Notice	Dout2 parallel with Din5
Analog inputs	
Number	2 (Ain0..1)
Signal type - Ain0	+/- 10 V, 12 Bit, differential
Signal type - Ain1	+/- 10 V, 12 Bit, single ended

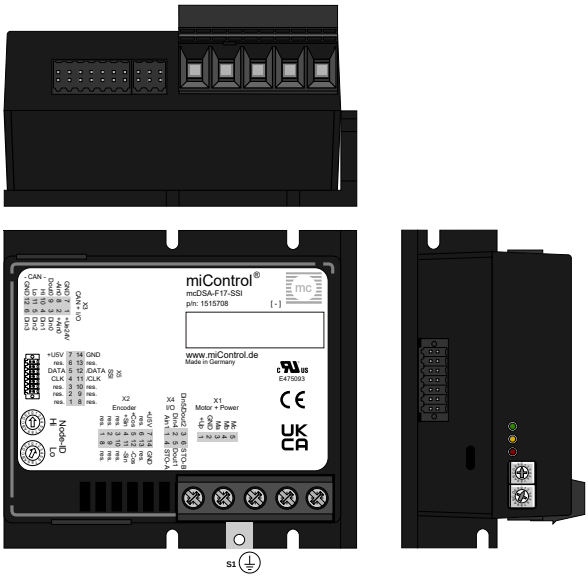
*1 The certified performance data must be observed (see UL Instruction Note and Safety Manual (CE))
*2 power amplifier switched off, 5V output (sensor supply) is free, STO active
*3 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (SVPWM), ambient temperature 40 °C, I/O's and 5V output active, RMS current: 77 A → 54 Aeff, 65 A → 45 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: 85 A → 60 Aeff, 70 A → 50 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current
*5 Hex-Switches should be not used at T < -25°C (setting of node ID only possible by firmware parameters)
*6 Input voltage must not exceed Electronic supply voltage Ue

Additional technical data are available in mcManual.

miControl® GmbH
Chausseestraße 34
14979 Großbeeren (bei Berlin)

Web: www.miControl.de e-mail: info@miControl.de Tel.:+49 (3379) 312 59-0 Fax:+49 (3379) 312 59-19

Scheme



Terminal assignment

X1	Motor	
1	+Up	Power supply voltage
2	GND	Ground for power supply voltage
3	Ma	Motor phase A
4	Mb	Motor phase B
5	Mc	Motor phase C
X2	Encoder	
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	+Sin	Encoder, plus sine signal
5	+Cos	Encoder, plus cosine signal
6	res.	Reserved
7	+U5V	5V output voltage for sensor supply Sensors: encoder
8	res.	Reserved
9	res.	Reserved
10	res.	Reserved
11	-Sin	Encoder, minus sine signal
12	-Cos	Encoder, minus cosine signal
13	res.	Reserved
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/Dout2	Digital input 5 / Digital output 2
4	STO-A	STO channel A
5	Dout1	Digital output 1
6	STO-B	STO channel B
X5	Encoder	
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	CLK	SSI clk
5	DATA	SSI data
6	res.	Reserved
7	+U5V	5V output voltage for sensor supply Sensors: encoder, SSI
8	res.	Reserved
9	res.	Reserved
10	res.	Reserved
11	/CLK	/SSI clk
12	/DATA	/SSI data
13	res.	Reserved
14	GND	Ground for sensor supply Notice: don't connect with system GND
S1	Screw (M4)	
-	FE	Functional earth

miControl® GmbH
Chausseestraße 34
14979 Großbeeren (bei Berlin)

Web: www.miControl.de *e-mail:* info@miControl.de *Tel.:*+49 (3379) 312 59-0 *Fax:*+49 (3379) 312 59-19