

Servo amplifier

mcDSA-F15-PROFINET

Article number: 1513853

Certification:



Picture similar

Technical data

Supply voltages	
Electronic supply voltage $U_{e^{*2}}$	9..30 V
Electronic current consumption @ $U_e=24V^{*3}$	typ. 120 mA
Power supply voltage U_p^{*4}	9..60 V
Output current	
Max. output current	225 A
Continuous output current (certified UL/CE) ^{*5}	
@ $U_p \leq 24V$	77 A
@ $U_p \leq 60V$	65 A
Continuous output current (not certified) ^{*6}	
@ $U_p \leq 24V$	75 A
@ $U_p \leq 48V$	75 A
PWM	
PWM frequency	32 kHz
Commutation type	Field Oriented Control
Mechanical	
Size LxWxH	111 x 100 x 55 mm
Weight	630 g
Environment	
Protection class	IP20
Ambient temperature (operation) (certified UL/CE)	-25..40 °C
Ambient temperature (operation) (not certified)	-25..70 °C
Ambient temperature (storage)	-25..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
PROFINET	
Type	Slave
Physical layer	100 Base-Tx
Max. baudrate	100 Mbit/s
Number of ports	2xRJ45 (PORT1, PORT2)

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/Hall)	
Output voltage	5 V
Max. output current	0.2 A
Incremental encoder	
Type	incremental
Signals	A,/A,B,/B,Inx,/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,/H1,H2,/H2,H3,/H3
Max. frequency (per channel)	10 kHz
Input voltage (24V tolerant)	0..5 V
Signal type	differential, open collector, single ended
Digital inputs	
Number - digital inputs	6 (Din0..5)
Low voltage	0..5 V
High voltage	8..30 V
Notice	Din5 parallel with Dout2 ^{*7}
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 U_e
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} No reverse polarity protection, the destruction limit is at overvoltage of $\geq 33V$ or short-term peak voltage of $37V < 1s$

^{*3} power amplifier switched off, 5V output (sensor supply) is free, STO active

^{*4} No reverse polarity protection, the destruction limit is at overvoltage of $\geq 70V$

^{*5} 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

^{*6} 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: 75 A → 53 Aeff

no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

^{*7} Input voltage must not exceed Electronic supply voltage U_e

Additional technical data are available in mcManual.



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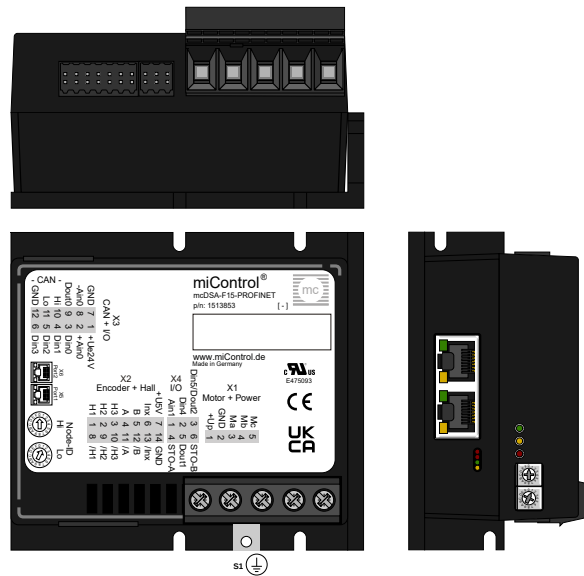
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Scheme



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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 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/Dout2	Digital input 5 / Digital output 2
4	STO-A	STO channel A
5	Dout1	Digital output 1
6	STO-B	STO channel B
S1 Screw (M4)		
-	FE	Functional earth
X5 PROFINET - PORT1		
-	PORT1	PORT1
X6 PROFINET - PORT2		
-	PORT2	PORT2