


Servo amplifier

mcDSA-E37-HC

Article number: 1514518

 Certification: 


Picture similar

Technical data

Supply voltages	
Electronic supply voltage U_e^{*2}	18..30 V
Electronic current consumption @ $U_e=24V^{*3}$	typ. 45 mA
Power supply voltage U_p^{*4}	9..60 V
Output current	
Max. output current	80 A
Continuous output current (certified UL) ^{*5} @ $U_p \leq 24V$ @ $U_p \leq 60V$	22.6 A
Continuous output current (not certified) ^{*6} @ $U_p \leq 24V$ @ $U_p \leq 48V$	25 A 24 A
PWM	
Output voltage	90% U_p
PWM frequency	25, 32 ^{*7} , 50 kHz
Mechanical	
Size LxWxH	87 x 74 x 29 mm
Weight	155 g
Environment	
Protection class	IP20
Ambient temperature (operation) (certified UL)	-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

Sensor supply (Hall)	
Output voltage	5 V
Max. output current	0.05 A
Sensor supply (Encoder)	
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
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	8 (Din0..7)
Low voltage	0..5 V
High voltage	8..30 V
Digital outputs	
Number	3 (Dout0..2)
Continuous output current (certified UL)	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
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)

*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

*4 No reverse polarity protection, the destruction limit is at overvoltage of $\geq 80V$

*5 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (asymmetrical), ambient temperature 40 °C, I/O's and 5V output active, RMS current: 22.6 A → 18.5 Aeff

*6 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (asymmetrical), ambient temperature 40 °C, I/O's and 5V output free, RMS current: 25 A → 20.4 Aeff, 24 A → 19.5 Aeff

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

*7 default value

Additional technical data are available in mcManual.



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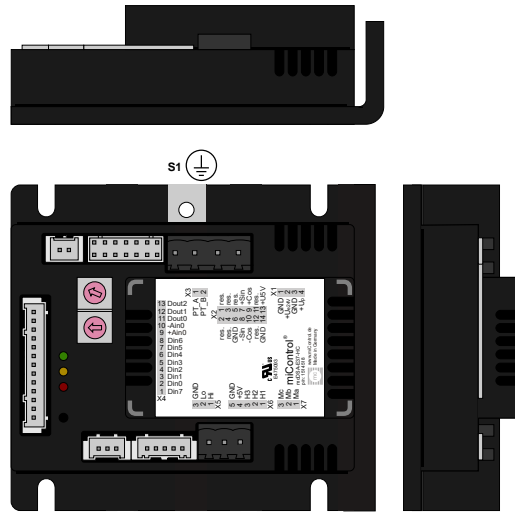
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Scheme



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Terminal assignment

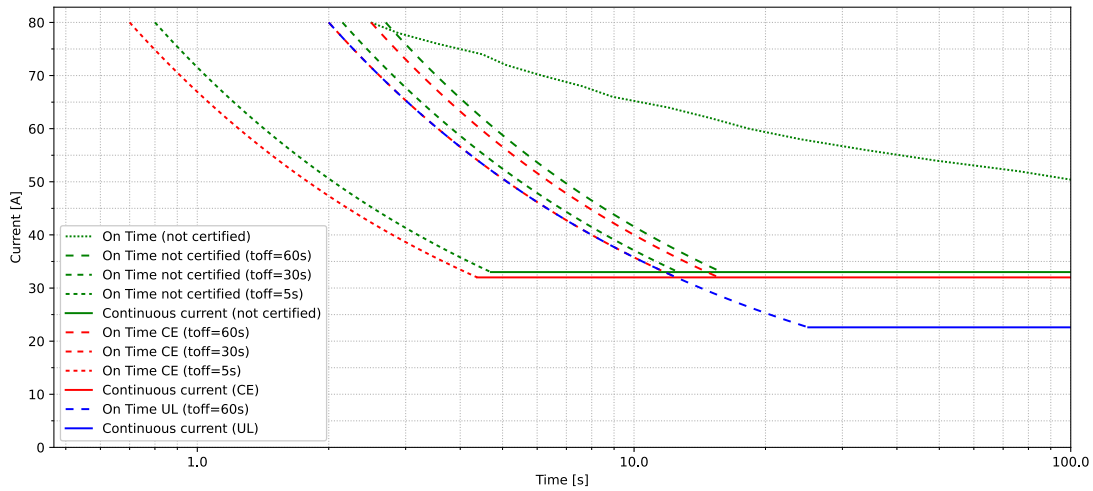
X1 Supply		
1	GND	Ground for electronic supply voltage
2	+Ue24V	Electronic supply voltage
3	GND	Ground for power supply voltage
4	+Up	Power supply voltage
X2 Encoder		
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	res.	Reserved
5	res.	Reserved
6	GND	Ground for sensor supply Notice: don't connect with system GND
7	+Sin	Encoder, plus sine signal
8	-Sin	Encoder, minus sine signal
9	+Cos	Encoder, plus cosine signal
10	-Cos	Encoder, minus cosine signal
11	res.	Reserved
12	res.	Reserved
13	+U5V	5V output voltage for sensor supply Sensors: encoder
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	Din7	Digital input 7
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	+Ain0	Analog input 0, plus
10	-Ain0	Analog input 0, 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

Diagrams

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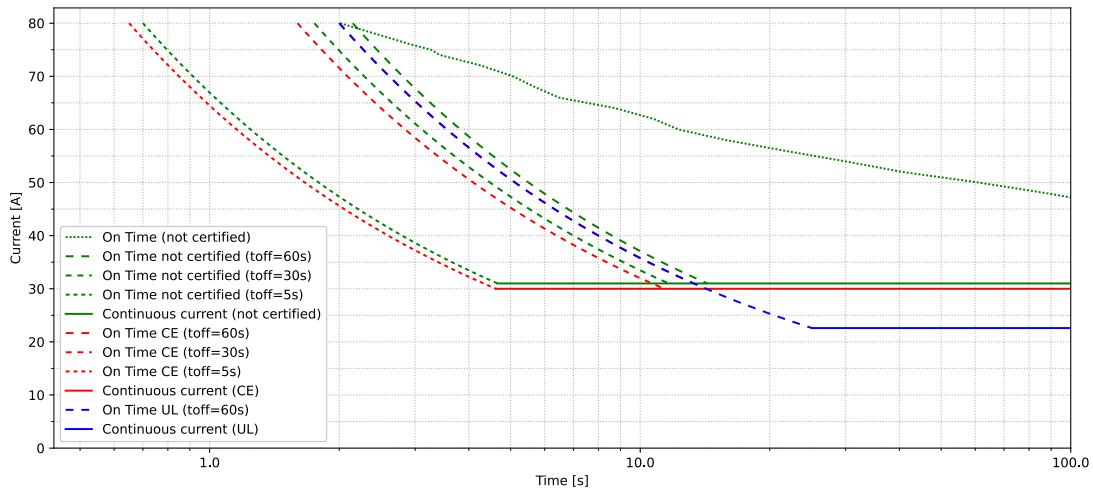


ambient temperature 40°C
 power supply voltage Up 24V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 33A

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ambient temperature 40°C
 power supply voltage Up 60V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 31A

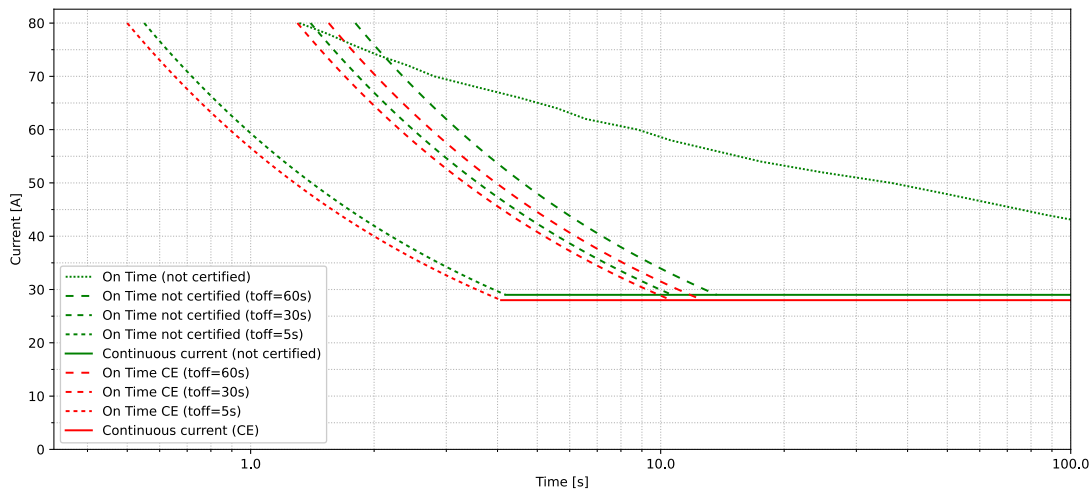
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Diagrams

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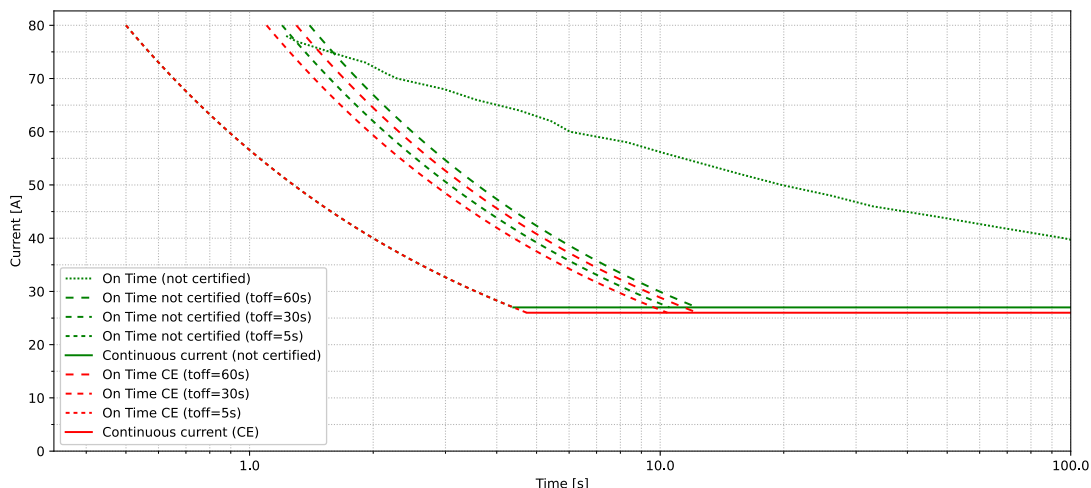


ambient temperature 55°C
 power supply voltage Up 24V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 29A

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ambient temperature 55°C
 power supply voltage Up 60V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 27A

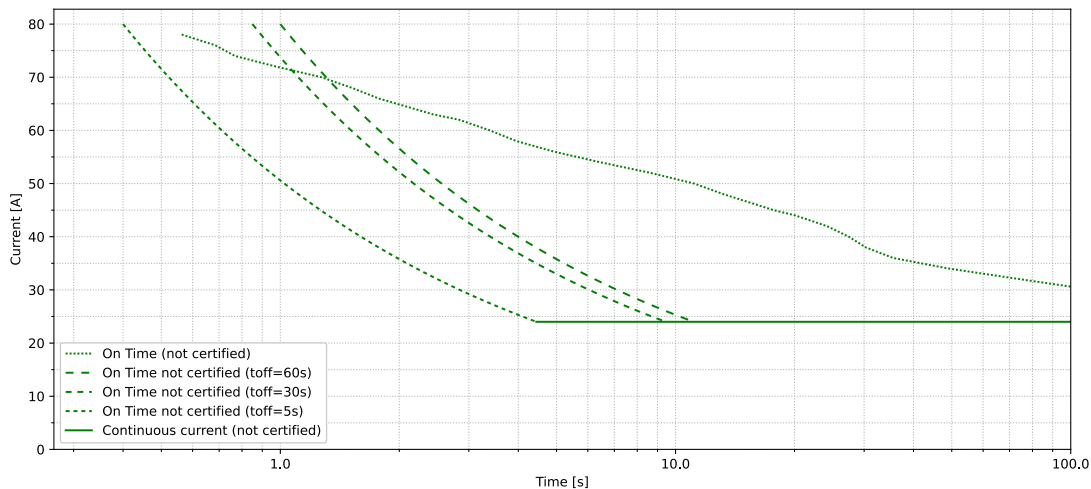
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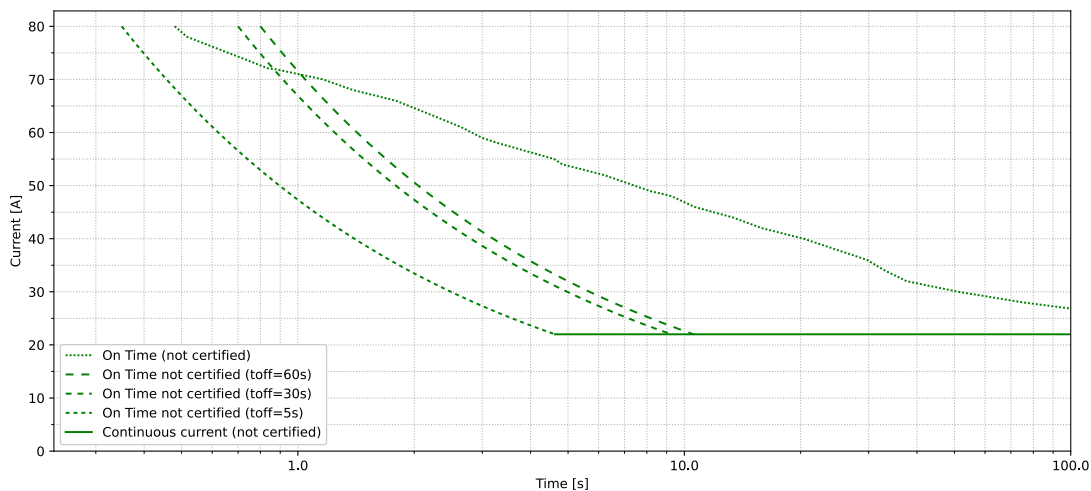


ambient temperature 70°C
 power supply voltage Up 24V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 24A

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ambient temperature 70°C
 power supply voltage Up 60V
 PWM frequency 32kHz
 PWM mode asymmetric
 inductance per motor phase 150µH
 continuous current 22A

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