

# Servo amplifier

## mcDSA-E37-HC

Article number: 1514518

 Certification:  **US** \*1  
E475093


Picture similar

### Technical data

Absolute maximum rating (destruction limits)	
Power supply voltage Up no polarity reversal protection	80 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. 45 mA
Power supply voltage Up	9..60 V
Max. output current	80 A
Continuous output current (certified UL)*3 @Up ≤ 60V	22.6 A
Continuous output current (not certified)*4 @Up ≤ 24V	25 A
@Up ≤ 48V	24 A
PWM	
Output voltage	90% Up
PWM frequency	25, 32*5, 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 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)

\*2 power amplifier switched off, 5V output (sensor supply) is free

\*3 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

\*4 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 empirical, please consider the application notes to determine the continuous current

\*5 default value

Additional technical data are available in mcManual.



miControl® GmbH

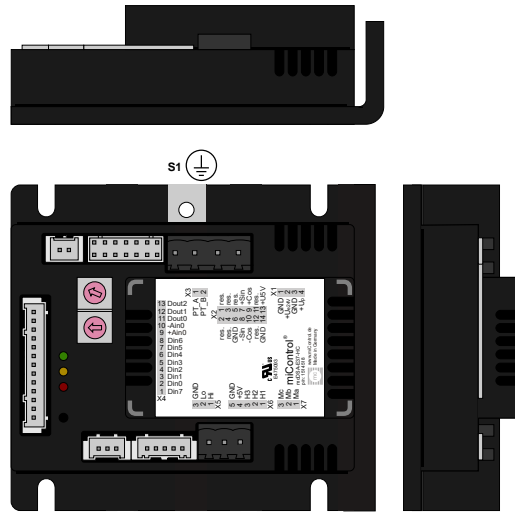
Chausseestraße 34

14979 Großbeeren (bei Berlin)

Copyright 2023 by miControl® - Modifications and errors excepted  
mcDSA-E37-HC - PV1.11.00.00 / DV1.00.01.05

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

## Scheme



©2023 by miControl

## Terminal assignment

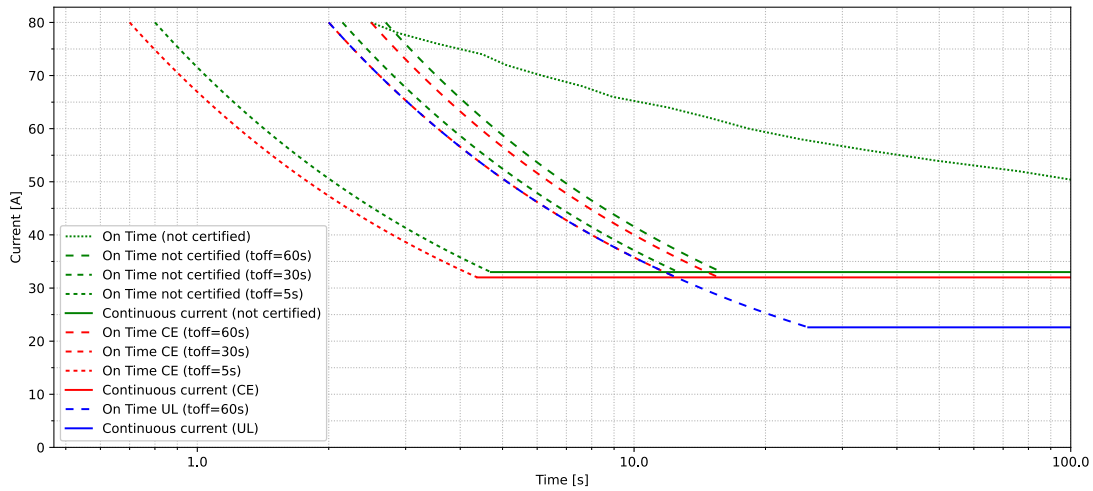
X1 Supply		
1	GND	Ground for electronic supply voltage
2	+Ue24V	Electronic supply voltage
3	GND	Ground for power supply voltage
4	+Up	Power supply voltage
X2 Encoder		
1	res.	Reserved
2	res.	Reserved
3	res.	Reserved
4	res.	Reserved
5	res.	Reserved
6	GND	Ground for sensor supply Notice: don't connect 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

miControl®

mcDSA-E37-HC Rev.A1

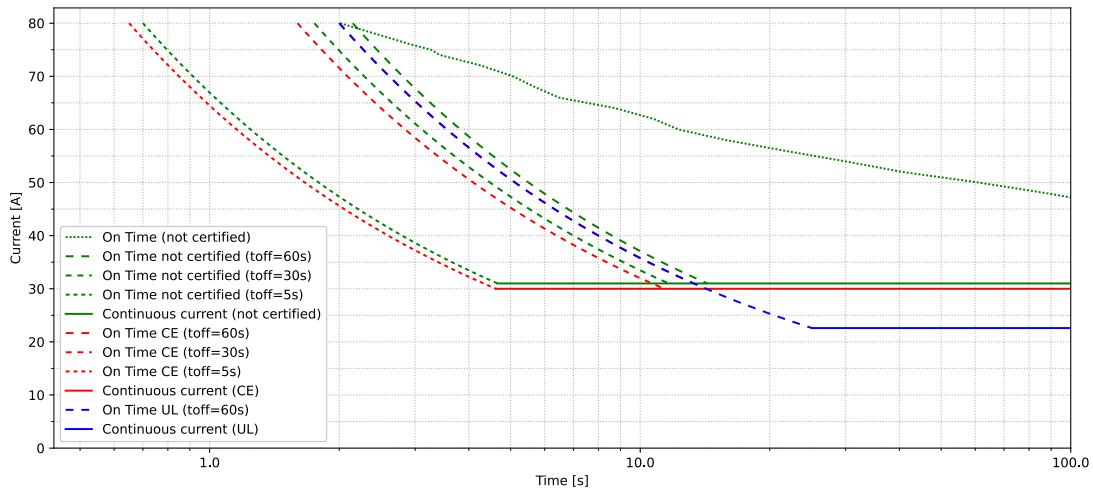


ambient temperature 40°C  
 power supply voltage Up 24V  
 PWM frequency 32kHz  
 PWM mode asymmetric  
 inductance per motor phase 150µH  
 continuous current 33A

Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03

miControl®

mcDSA-E37-HC Rev.A1



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

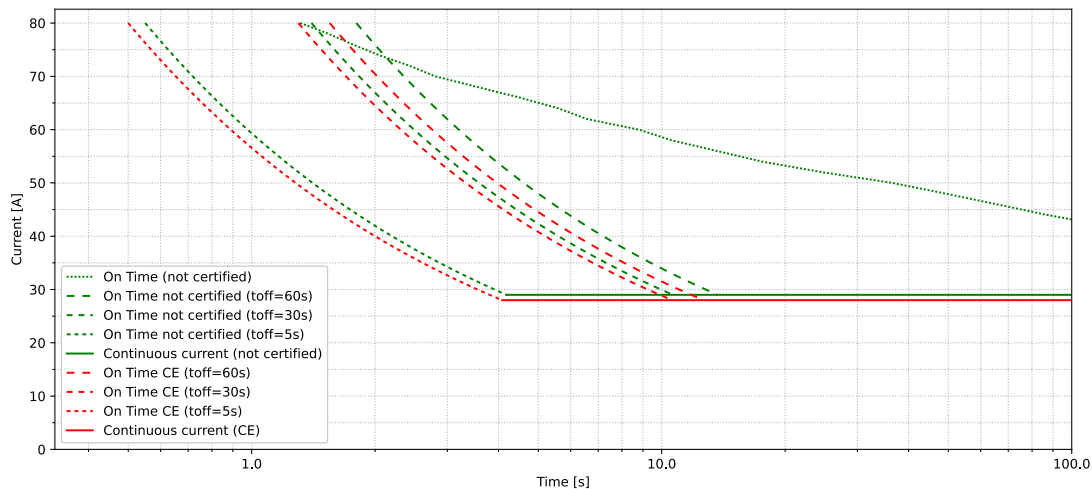
Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03



Diagrams

miControl®

mcDSA-E37-HC Rev.A1

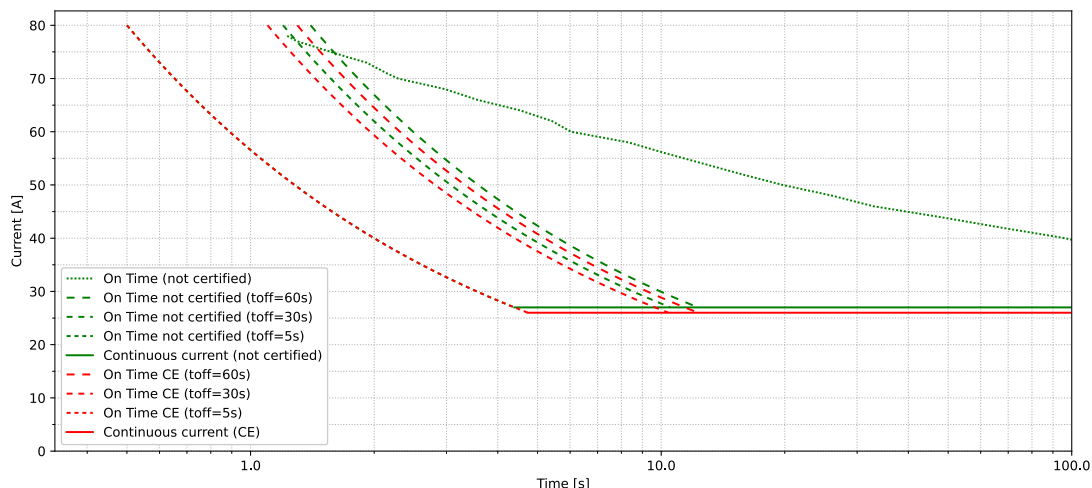


ambient temperature 55°C  
 power supply voltage Up 24V  
 PWM frequency 32kHz  
 PWM mode asymmetric  
 inductance per motor phase 150µH  
 continuous current 29A

Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03

miControl®

mcDSA-E37-HC Rev.A1



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

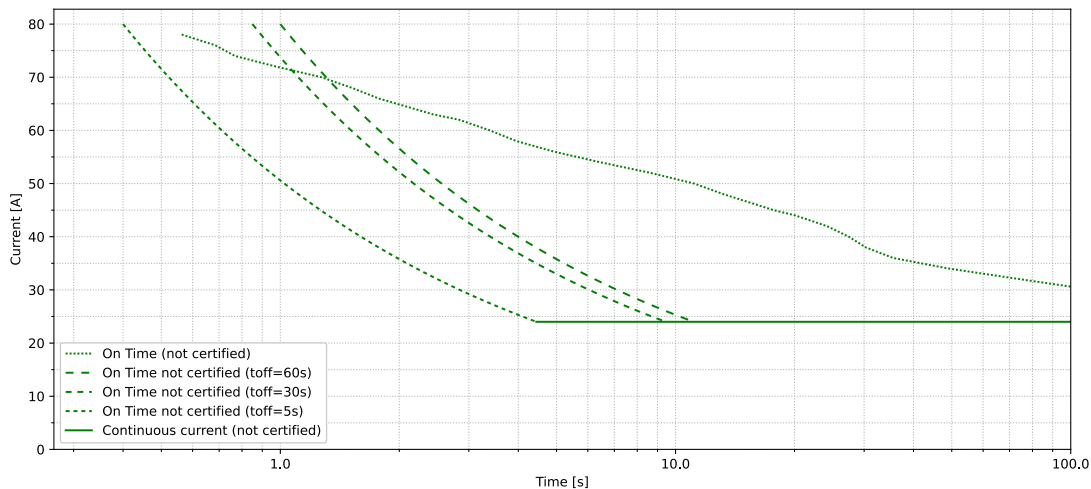
Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03



Diagrams

miControl®

mcDSA-E37-HC Rev.A1

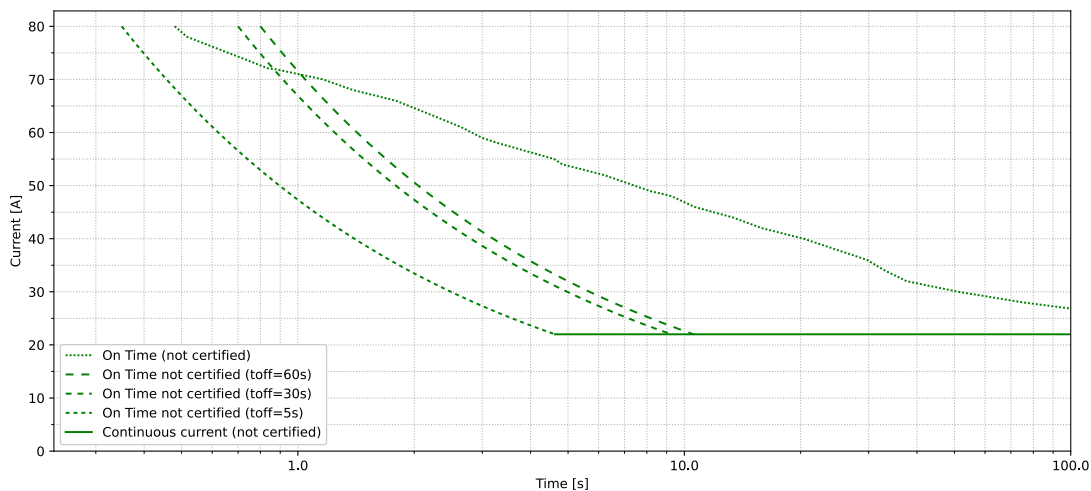


ambient temperature 70°C  
 power supply voltage Up 24V  
 PWM frequency 32kHz  
 PWM mode asymmetric  
 inductance per motor phase 150µH  
 continuous current 24A

Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03

miControl®

mcDSA-E37-HC Rev.A1



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

Copyright 2023© by miControl® - Modifications and errors excepted - 1.00.00.03

