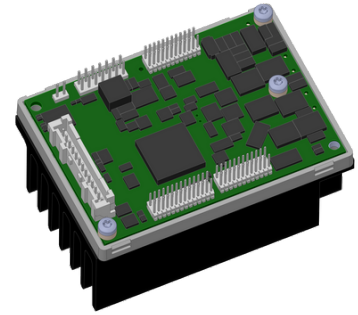


# Servo amplifier mcDSA-E35-Modul-HC

Article number: 1514516

Certification:  \*1  
E475093



Picture similar

## Technical data

| Absolute maximum rating (destruction limits)                               |                  |
|--|------------------|
| Power supply voltage Up<br>no polarity reversal protection                 | 80 V             |
| Continuous Electronic supply voltage Ue<br>no polarity reversal protection | 33 V             |
| Short term peak voltage < 1s Ue<br>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<br>@Up ≤ 60V                    | 22.6 A           |
| Continuous output current (not certified)*4<br>@Up ≤ 24V                   | 25 A             |
| @Up ≤ 48V  | 24 A             |
| PWM  |                  |
| Output voltage   | 90% Up           |
| PWM frequency  | 25, 32*5, 50 kHz |
| Mechanical   |                  |
| Size LxWxH   | 74 x 53 x 40 mm  |
| Weight   | 168 g            |
| Environment  |                  |
| Protection class   | IP00             |
| 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                                      |
| Incremental encoder                       |  |
| Type                                      | incremental                                |
| Signals                                   | A,/A,B,/B,Inx,/Inx                         |
| Max. frequency (per channel)              | 500 kHz                                    |
| Input voltage                             | 0..5 V                                     |
| Signal type                               | differential, open collector, single ended |
| 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

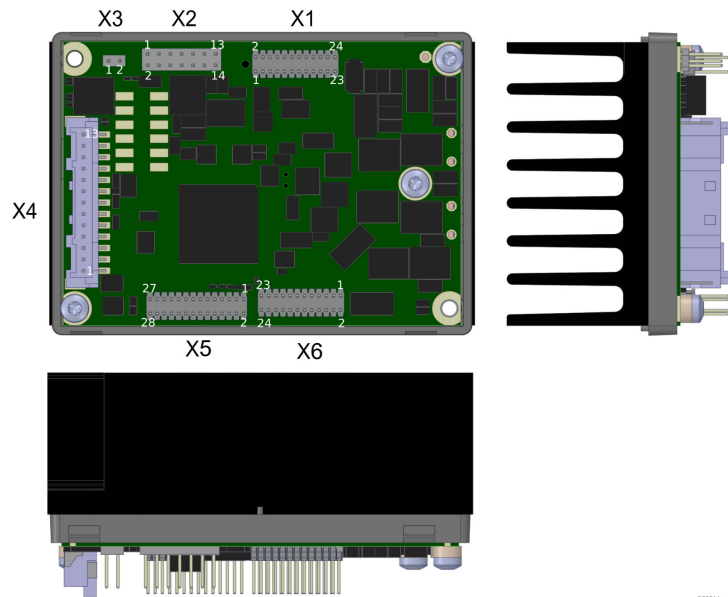
\*4 connector cable with max. possible cable cross-section, PWM frequency 32 kHz (asymmetrical), ambient temperature 40 °C, I/O's and 5V output free, RMS current: 25 A → 20.4 Aeff, 24 A → 19.5 Aeff

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.

## Scheme



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## Terminal assignment

| X1 | Supply |                                      |
|----|--------|--------------------------------------|
| 1  | GND    | Ground for electronic supply voltage |
| 2  | GND    | Ground for electronic supply voltage |
| 3  | GND    | Ground for electronic supply voltage |
| 4  | GND    | Ground for electronic supply voltage |
| 5  | +Ue24V | Electronic supply voltage            |
| 6  | +Ue24V | Electronic supply voltage            |
| 7  | +Ue24V | Electronic supply voltage            |
| 8  | +Ue24V | Electronic supply voltage            |
| 9  | GND    | Ground for power supply voltage      |
| 10 | GND    | Ground for power supply voltage      |
| 11 | GND    | Ground for power supply voltage      |
| 12 | GND    | Ground for power supply voltage      |
| 13 | GND    | Ground for power supply voltage      |
| 14 | GND    | Ground for power supply voltage      |
| 15 | GND    | Ground for power supply voltage      |
| 16 | GND    | Ground for power supply voltage      |
| 17 | +Up    | Power supply voltage                 |
| 18 | +Up    | Power supply voltage                 |
| 19 | +Up    | Power supply voltage                 |
| 20 | +Up    | Power supply voltage                 |
| 21 | +Up    | Power supply voltage                 |
| 22 | +Up    | Power supply voltage                 |
| 23 | +Up    | Power supply voltage                 |
| 24 | +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<br>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<br>Sensors: encoder, SSI      |
| 14 | GND     | Ground for sensor supply<br>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  |

## Terminal assignment

| X5 | Hall, inc. encoder, I/O's and CAN |   |
|----|-----------------------------------|---|
| 1  | /SpiSS                            | mcSPI Slave Select  |
| 2  | Erw2                              | mcSPI expansion signal 2  |
| 3  | H1                                | Hall sensor 1   |
| 4  | Erw1                              | mcSPI expansion signal 1  |
| 5  | H2                                | Hall sensor 2   |
| 6  | SpiCLK                            | mcSPI Clock   |
| 7  | H3                                | Hall sensor 3   |
| 8  | SPIMOSI                           | mcSPI Master Out  |
| 9  | +U5V                              | 5V output voltage for sensor supply<br>Sensors: hall              |
| 10 | Erw3                              | mcSPI expansion signal 3  |
| 11 | GND                               | Ground for sensor supply<br>Notice: don't connect with system GND |
| 12 | Erw4                              | mcSPI expansion signal 4  |
| 13 | SpiMISO                           | mcSPI Master In   |
| 14 | Erw5                              | mcSPI expansion signal 5  |
| 15 | /Id3                              | Node-ID Bit 3 inverted  |
| 16 | /Id5                              | Node-ID Bit 5 inverted  |
| 17 | /Id2                              | Node-ID Bit 2 inverted  |
| 18 | /Id4                              | Node-ID Bit 4 inverted  |
| 19 | /Id7                              | Node-ID Bit 7 inverted  |
| 20 | /Id1                              | Node-ID Bit 1 inverted  |
| 21 | /Id6                              | Node-ID Bit 6 inverted  |
| 22 | /Id0                              | Node-ID Bit 0 inverted  |
| 23 | CAN Hi                            | CAN High  |
| 24 | PWR LED                           | Power LED   |
| 25 | CAN Lo                            | CAN Low   |
| 26 | ERROR LED                         | Error LED   |
| 27 | CAN GND                           | CAN Ground  |
| 28 | START LED                         | Start LED   |
| X6 | Motor                             |   |
| 1  | Ma                                | Motor phase A   |
| 2  | Ma                                | Motor phase A   |
| 3  | Ma                                | Motor phase A   |
| 4  | Ma                                | Motor phase A   |
| 5  | Ma                                | Motor phase A   |
| 6  | Ma                                | Motor phase A   |
| 7  | Ma                                | Motor phase A   |
| 8  | Ma                                | Motor phase A   |
| 9  | Mb                                | Motor phase B   |
| 10 | Mb                                | Motor phase B   |
| 11 | Mb                                | Motor phase B   |
| 12 | Mb                                | Motor phase B   |
| 13 | Mb                                | Motor phase B   |
| 14 | Mb                                | Motor phase B   |
| 15 | Mb                                | Motor phase B   |
| 16 | Mb                                | Motor phase B   |
| 17 | Mc                                | Motor phase C   |
| 18 | Mc                                | Motor phase C   |
| 19 | Mc                                | Motor phase C   |
| 20 | Mc                                | Motor phase C   |
| 21 | Mc                                | Motor phase C   |
| 22 | Mc                                | Motor phase C   |
| 23 | Mc                                | Motor phase C   |
| 24 | Mc                                | Motor phase C   |