

# Servo amplifier

## mcDSA-E35-PROFINET

Article number: 1514996

 Certification:  **US** \*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 ≤ 24V<br>@Up ≤ 60V       | 14.5 A<br>12.2 A |
| Continuous output current (not certified)*4<br>@Up ≤ 24V<br>@Up ≤ 48V      | 16 A<br>13 A     |
| PWM  |                  |
| Output voltage   | 90% Up           |
| PWM frequency  | 25, 32*5, 50 kHz |
| Mechanical   |                  |
| Size LxWxH   | 78 x 74 x 49 mm  |
| Weight   | 141 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           |

| PROFINET                                  |  |
|---|--|
| Type                                      | Slave                                      |
| Physical layer                            | 100 Base-Tx                                |
| Max. baudrate                             | 100 Mbit/s                                 |
| Number of ports                           | 2xRJ45 (PORT1, PORT2)                      |
| 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: 14.5 A → 12 Aeff, 12.2 A → 10 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: 16 A → 13 Aeff, 13 A → 10.6 Aeff

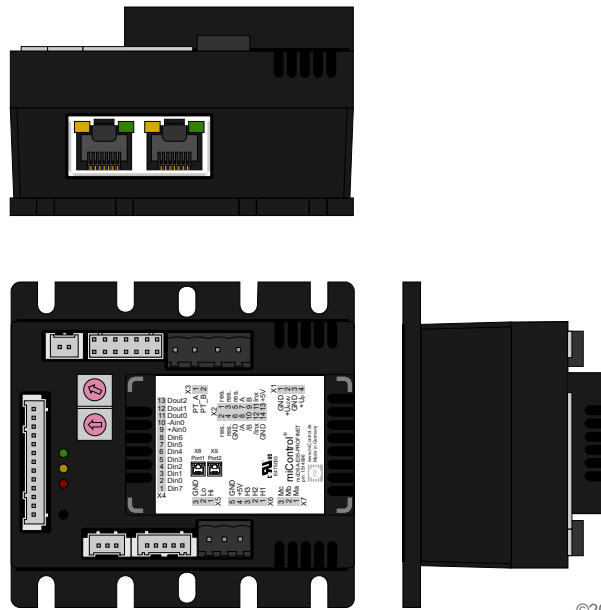
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current

\*5 default value

Additional technical data are available in mcManual.


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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<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  |

| 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<br>Sensors: hall              |
| 5                   | GND     | Ground for sensor supply<br>Notice: don't connect with system GND |
| X7 Motor            |         |   |
| 1                   | Ma      | Motor phase A   |
| 2                   | Mb      | Motor phase B   |
| 3                   | Mc      | Motor phase C   |
| X8 PROFINET - PORT1 |         |   |
| -                   | PORT1   | PORT1   |
| X9 PROFINET - PORT2 |         |   |
| -                   | PORT2   | PORT2   |