Servo amplifier

# mcDSA-F15-PN

Article number: 1513806

Picture similar

## Technical data

| Absolute maximum rating | |
|---|---|
| Voltage (destruction limit) Up<br>no polarity reversal protection | 70 V |
| Continuous voltage (destruction limit) Ue<br>no polarity reversal protection | 33 V |
| Short term peak voltage < 1s Ue<br>(destruction limit)<br>no polarity reversal protection | 37 V |
| **Power** | |
| Electronic supply voltage Ue | 9..30 V |
| Electronic current consumption@ Ue=24V*1 | typ. 60 mA |
| Power supply voltage Up | 9..60 V |
| Max. output current | 225 A |
| Continuous output current*2 | 70 A |
| **PWM** | |
| PWM frequency | 32 kHz |
| **Mechanical** | |
| Size LxWxH | 111 x 100 x 54.4 mm |
| Weight | 584 g |
| **Environment** | |
| Protection class | IP20 |
| Ambient temperature (operation) | -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) |

| 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. freqency (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. freqency (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) |
| Number hardware enbable inputs | 2 (EN-A..B) |
| Low voltage | 0..5 V |
| High voltage | 8..30 V |
| Notice | Din5 parallel with Dout2*3 |
| **Digital outputs** | |
| Number | 3 (Dout0..2) |
| Continuous output current | 1.5 A |
| Load | resistive, inductive |
| Output voltage | Electronic supply voltage Ue |
| 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 power amplifier switched off, 5V output (sensor supply) is free
*2 connector cable with max. possible cable cross-section, PWM frequency 32 kHz, ambient temperature 40 °C (t >40 °C derating), RMS current: 70 A → 50 Aeff
no guarantee, since value is determined empirical, please consider the application notes to determine the continuous current
*3 Input voltage must not exceed Electronic supply voltage Ue

Additional technical data are available in mcManual.

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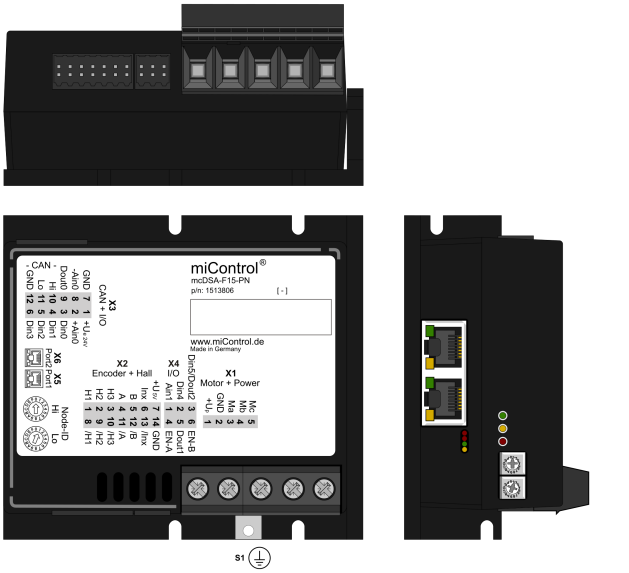
## Scheme




## 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<br>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<br>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 | EN-A | Hardware enable channel A |
| 5 | Dout1 | Digital output 1 |
| 6 | EN-B | Hardware enable channel B |
| **S1** | **Screw (M4)** | |
| - | FE | Functional earth |
| **X5** | **PROFINET - PORT1** | |
| - | PORT1 | PORT1 |
| **X6** | **PROFINET - PORT2** | |
| - | PORT2 | PORT2 |

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