

General Features

The i012 is an intelligent DC/DC converter for the ionia™ system. It supplies the central units (e. g. i101, i102, i103) and all additional communication and I/O modules via the backplane.

The i012 can supply up to 20 W. Any ionia™ system configuration is supported by one of these two DC/DC converters.

The module is connected directly to the train battery and supports all voltage types from 24 to 110 Vdc. Voltage variations down to 14.4 Vdc and up to 154 Vdc are fully supported according to EN 50155. A built-in supervisory mechanism can detect any overcurrent.

The i012 is designed for harsh rolling stock environments and is fully compliant to EN 50155.

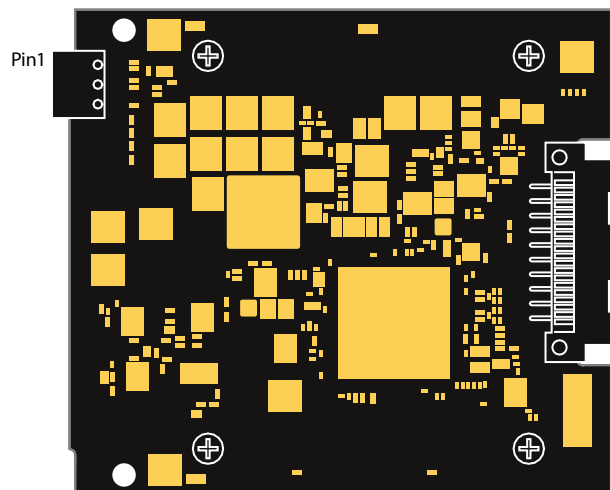
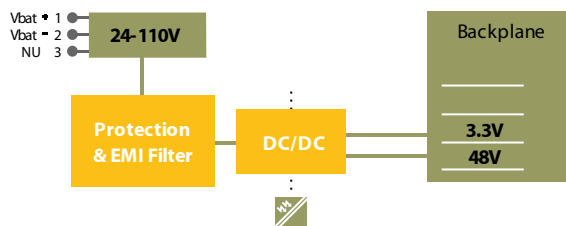
Key Benefits

- One single device, no need for additional external DC/DC converters
- No capacitor replacement necessary
- Complies with EN 50155, EN 50121, IEC 61373

Application Examples

- Any input/output/communication system
- PoE Switch without an additional external DC/DC -converter
- WTB Gateway including fritting option without any additional DC/DC converter
- All kinds of communication gateways

i012 Hardware Architecture



Life Cycle Cost

The i012 has been strictly designed without electrolytic capacitor to avoid service costs for changing capacitors. An active overvoltage sensing circuit protects the device against

damage through excessive overvoltage. Moreover, the internal overcurrent protection enhances the life cycle of these power modules.

Technical Data

Input Voltage

- 24 Vdc to 110 Vdc (see order options)
- Reverse polarity, short term / transient overvoltage and overtemperature safe
- 1000 V_{RMS,ac} galvanic isolation between train battery and the secondary side

Output Voltage / Power

- Delivering 48 Vdc to all communication and I/O modules
- Sourcing the 3.3 V backplane
- Active overcurrent protection
- i012 P_{max} = 20 W
- Interruption class S2 with ceramic capacitors for internal control and 3.3V backplane

Power Consumption

- P_{max} control: < 3W

Operating Conditions

- Ambient temperature: -40 to +85°C (EN 50155)
- Relative humidity: 75%, max 95% for 30 days per year (conformal coating) EN 60068
- Shock and vibration: According to IEC 61373 category 1, class B
- EMI: According to EN 50121 and EN 50155

Dimensions/ Weight

- 4TE x 92 x 86 mm, fitting the ionia™ housing
- <200g

Cabling

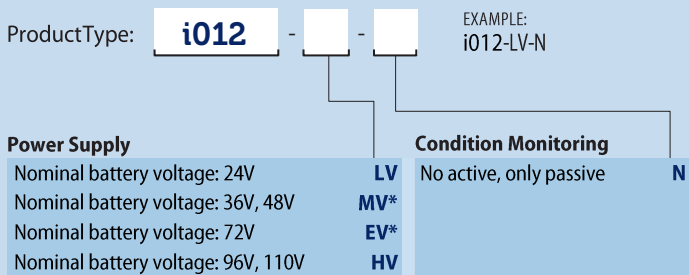
- Connector type: FMC 1,5/ 3-STF-3,5 or similar
- Wire cross section: 0.2mm² to 1.5mm²

Environment

- Fully compliant to RoHS and REACH


d-012231-041707

Order Code and Hardware Options



* contact duagon for lead times and availability

Related Documents

Data Sheet i012  i012_DS.pdf
available at www.duagon.com

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