Steuer- und Regeltechnik / Sachsenheim

# DC-DC CONVERTER **ACR 350**

RAILWAY CONVERTER.

## FOR WALL MOUNTING

## HIGHLIGHTS

- **Output Power up to 350 Watts***
- **Efficiency up to 90%**
- **High Power Density**
- **Wide Input Range**
- **Wide Temperature Range**
- **RoHS Compliant**
- **According to EN 50155**

## INPUT

| | |
|---|---|
| **Input Voltage Nominal** | 72 / 110 VDC (other inputs on request) |
| **Disabled Input Current** | < 20 mA |

## OUTPUT

| | |
|---|---|
| **Output Voltage** | 24 V (other voltages on request) |
| **Initial Set Accuracy** | < ± 1% |
| **Minimum Load** | No minimum load required |
| **Maximum Output Current** | 14,5 A |
| **Line and Load Regulation** | <1% (10% - 100% Load) |
| **Ripple & Noise** | <1% pk-pk, 20 MHz bandwidth |
| **Start Time** | < 100 ms |
| **Transient Response** | < ± 2% (25% / 75% Load Step)<br>Recovery Time < 500 us |
| **Max. Output Capacitance** | 500 uF x $I_{out\ max}$ |
| **Temperature Coefficient** | 0.02%/ºC |

## FEATURES

| | |
|---|---|
| **Enable (high level)** | This signal can be connected to the Vin+ level to enable the converter. |
| **Enable (low level)** | Pulled to low (<0,8V ref. to -Vin) disables the converter. Open pin enables the converter. |
| **Power Good** | An potetial-free open-collector output becomes closed if the output voltage is > 95% of the nominal output voltage. |
| **Sense + / -** | Remote sense to compensate for lead drops of the output line up to 0,5V. |
| **Share** | Up to 3 converters can be connected in parallel sharing within < 10% at 90% load. Each converter max. 90% load. |
| **Digital In- / Outputs** | On the secondary side there are a signal-Input and Output. The function on these Pins can be realized customer-specific. ( e.g. thermal warning, Input power fail,…) |

## PROTECTION

| | |
|---|---|
| **Over Voltage Protection (OVP)** | 110-120% $V_{out\ nom}$, latched |
| **Over Current Protection (OCP)** | $I_{out\ nom}$ > 105 %. The output switches off when $V_{out\ nom}$ < 70% and restarts automatically latest after 1 sec. |
| **Over Temperature Protection (OTP)** | Shutdown at +102 -107°C baseplate with 5°C hysteresis and auto recovery |

## GENERAL

| | |
|---|---|
| **Product Standard** | EN 50155:2007 |
| **Isolation** | 2200 VDC Input to Output<br>1500 VDC Input to baseplate<br>500 VDC Output to baseplate |
| **Dimensions [mm]** | 182 x 105 x 50 |
| **Weight** | approx. 1,4 kg |
| **MTBF** | tbd |

## ENVIRONMENTAL

| | |
|---|---|
| **Operating Ambient Temp.** | -40 ºC to +85 ºC* |
| **Operating Flange Temp.** | -40 ºC to +100 ºC |
| **Storage Temperature** | -40 ºC to +100 ºC |
| **Vibration / Shock / Bump** | EN 61373:1999 |

## EMC & SAFETY

| | |
|---|---|
| **EMC Standard** | EN 50121-3-2:2006 |
| **Conducted Emissions** | EN 55011:2007+A2:2007:, Class A** |
| **ESD Immunity** | EN 61000-4-2:1995+A1:1998+A2:2001,<br>level 3 (6kV/8kV), Criteria A |
| **Burst** | EN 61000-4-4:2004, level 3 (2kV), Criteria A |
| **Surge** | EN 61000-4-5:2006, level 1, ±0,5kV<br>EN 50121-3-2:2006, line to line ±1kV, 42R, and line to case ±2kV, 42R, Criteria A |
| **Conducted Immunity** | EN 61000-4-6:1996+A1:2001,<br>level 3 (10V), Criteria A |
| **Safety Approvals** | CE Mark LVD; EN 60950-1:2001 |

* Derating without additional cooling: Ta > +50°C: 2,2 %/°C
Derating with additional heatsink of < 1,2 K/W : Ta > +70°C: 3,4 %/°C
Also with heatsink, ensure that flange temperature not exceeds 100°C
** In built-in condition our devices may show different EMC properties

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Specifications subject to change without notice · 70 21 00 3002 4 a01 · 09.2008 · Preliminary