

Redesign DC/DC-converter for railway applications

in compliance with IEC571-EN50155-RIA12

In Europe the requirements for electric and electronic equipment in railway applications are regulated by 2 international standards: The IEC571, EN50155, (GBR) RIA12.

The RIA12 (GBR) requires, in addition to the European standards, a special protection against surges.

The present power supply reaches and surpasses all underlying standards.

The device has been developed as a pin- and function compatible redesign that serves as a plug-and-play replacement of the power supply type SV STN24249/H and is built fully unitized.

The input modules for the galvanic isolation of input and output voltage are designed for an input voltage of nominally 110V DC.

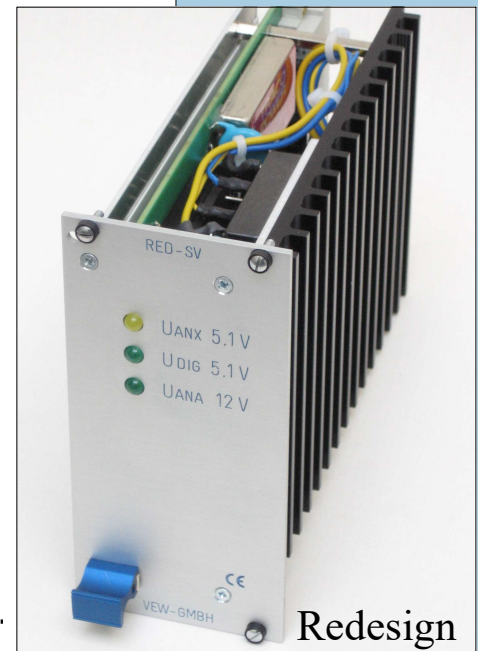
The by EN50155 required input voltage range is $0,7...1,25 \times U_N = 77...137V$. The under- and overvoltage range is required with 66 or 154V, respectively.

The applied modules are built for 66 to 154V and are additionally equipped with an active transient protection that safely eliminates the overvoltages - specified by RIA12 (for 20ms) - of the nominal input voltage 3,5V-fold up to 385V, as well as peaks up to 1800V/50µs.

The MTBF of the modules is > 250.000h, which complies with the life of 24h/d for 30a, required for railway equipment.

The assembly cassette is built mechanically robust in accordance with the requirements for railway applications and resists a vibrational load in three axes with an amplitude of 7,5mm with 5-150Hz and an acceleration of 20m/s².

**VEW-Redesign
of
STN24249/H**



Technical data:

PCB-card	: 100 x 160mm, Frontplate 12TE 3HE
Plug-in	: DIN 41612 F32
Supply voltage	: nom. 110V DC, min. 66V DC, max. 154V DC
Power	: max. 140VA
Efficiency	: approx. 85%
Temp. range	: -25...+70°C
Output	: 24V 3A; 12V 0,5A; +-12V 0,25A; 5V 3A; 5V 1,2A



DIE ENTWICKLER

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