

# Redesign DC/DC-converter for public transit vehicles

Requirements have been made tougher for electrical and electronic equipment in public transit vehicles in terms of life, reliability, freedom from faults, long-term operations and availability.

This power supply is a redesign of the original Siemens module and meets or exceeds the fundamental standards (EN 60950, UI60950). The devices are made to be pin and functionally compatible replacement for the Siemens DC/DC converter E44010-A5700-L08C. It has a modular structure.

The input modules for the galvanic separation of the input/output voltage are designed for nominal 24 DC current.

Separation voltage UE//UA 1500V.

The working ranges of the DC/DC converter modules range from 16V to 36V and the modules are also equipped with active transient protection, which safely eliminates the specified overvoltage (for 20mS) of two times the nominal input voltage of up to 48V and transients of up to 1000V//50µs.

The module has diverse voltage and current monitoring circuits which are set to low levels at the binary outlets if:

- the input voltage is  $< U_E \text{ min}$  or the output voltage is  $> I_A$
- the output voltage  $<$  or  $>$   $U_A \text{ planned}$ , the light diode will extinguish the front plate
- the load current exceeds the maximum value 4A, or the input voltage fails to reach the  $U_E$  value, the status shall be stored and issued via a binary outlet.

The MTBF of the DC/DC-converter module is  $> 350,000 \text{ h}$ , which meets the life requirements for railway equipment of 24/d for 30a.

The 19" 3HE insert meets the requirements for vehicle applications and is extremely robust and can resist a vibration load on three axels with and amplitude of 7.5mm at 5-150Hz and acceleration of 20m/s<sup>2</sup>.

Redesign of  
E44010-A5700  
L08C  
24V//24V DC 4A



Redesign

## Technical data:

Dimension	: 100x160mm
	Frontplate 12TE 3HE, Siemens, with handle
Connector	: DIN 41612 24F + 7H, z+b+d
Supply voltage	: nom. 24 DC, min. 16V DC, max. 36V DC
Power consumption	: max. 100VA
Efficiency	: ca. 85%
Temperatur range	: -40... +85°C, derating ab 60°C
Output	: 24V DC; 4A, galvanic isolation 1500V input/output
Supervision/control/	: $U_E < U_E \text{ min}$ ; $U_A < U_A \text{ soll}$ ; $U_A > U_A \text{ soll}$ ;
Signal output	$I_A > I_A \text{ max}$ , with fail store
Signal input	: $U_A \text{ off}$



**DIE ENTWICKLER**

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