

PS3000R Isolated PSU 72-110 VDC to 24 VDC

*EN 50155 and AREMA Compliant
72-110 VDC to 24 VDC DC-DC Converter
for Railway Applications*

The PS3000R is a switched-mode power supply module for the PC3 Series range of programmable logic controllers. It takes a 72-110 VDC input and produces an isolated 1.4 A 24 VDC internal voltage for powering 24 VDC PC3 Series I/O Modules.

The PS3000R has been designed and proven to survive the rigors required for railway vehicles including:

- Electrical surges and transients of EN 50155 / EN 50121-3-2 and AREMA
- Shock and vibration in accordance with EN 50155 / EN 61373
- Operating temperature range of -40 °C to +70 °C and relative humidity 5 % to 95 % non-Condensing

The PS3000 also provides a 0.6 A 24 VDC auxiliary output for powering external devices to the PC3 controllers such as transducers and sensors.

Features and Benefits

- 72-110 VDC to 24 VDC 1.4 A DC-DC converter
- Supports a short circuit protected 24 VDC 0.6 A auxiliary output
- Suitable for nominal battery voltages of 72 V and 110 VDC in accordance with EN 50155
- Operating temperature range: -40 °C to +70 °C
- Connections via cage clamp plug socket connectors
- Conformal coating
- EN 50155 compliant
- AREMA compliant

Applications

- Passenger Vehicle Condition Based Monitoring
- Heating Ventilation Air Conditioning (HVAC) Control Systems
- Locomotive Performance and Condition Monitoring
- Trackside Monitoring and SCADA
- Industrial Control Systems
- Onboard controls for fire protection, power packs and doors

Ordering Information

- Part Number: 010-0358



PS3000R ISOLATED PSU

Specification

Description	The PS3000R is a switched-mode power supply module for the PC3 Series range of programmable logic controllers. It takes a 72-110 VDC input and produces an isolated 1.4 A 24 VDC internal output voltage for powering the PLC's modules that require a 24 VDC supply. The module also produces a 0.6 A 24 VDC auxiliary output voltage on a three-terminal connector that may be used to power external devices such as transducers and sensors. The auxiliary output is isolated from the input but not from the internal voltage. Any current sourced from the auxiliary output is subtracted from the current available on the internal output; the maximum total output current is 1.4 A (full load).	
Environmental	Operating Temperature Range: -40 °C to +70 °C (EN50155 Class OT4)	
	Switch-on Extended Operating Temperature Range: +85 °C (EN50155 Class ST1) for 10 min	
	Storage Temperature Range: -40 °C to +85 °C	
	Relative Humidity: 5 % to 95 % non-condensing.	
	Shock and Vibration: EN 61373:2010, Category 1 – Class B	
Input	Nominal Input Voltage	72 V, 110 VDC
	Minimum Input Voltage	43.2 VDC (EN50155 Class C1)
	Maximum Input Voltage	154 VDC
	No Load Input Current, Typical	10 mA
	Inrush Current	> 10 A, not limited by the module
	Module will not be damaged by reverse connection of power supply	
Internal Output	Output Voltage	24.4 V ± 0.5 V at 400 mA load
	Max. Output Current	1.4 A (do not exceed to avoid thermal overload)
Auxiliary Output	Output Voltage	23.7 V ± 0.5 V at 300 mA load
	Current limit, Typical	0.6 A
	Max. Capacitive Load	< 1 mF at 0.6 A load
Other	Efficiency, Nominal Input, Minimum	90 % at full load
	Dielectric Strength	1,500 VRMS 50Hz for 1 min between input & outputs 1,500 VRMS 50Hz for 1 min between input & chassis 500 VRMS 50Hz for 1 min between outputs & chassis
Mechanical	Module dimensions: 44 mm wide by 170 mm high (module mounted on 45 mm pitch)	
Weight	95 g (without plug connectors).	
MTBF	2,625,451 hrs @ 35 °C	Standard: IEC TR 62380.
Terminations	Plug/socket screw terminal connections (2.5 mm ² max.) on a 5.08 mm pitch	
Standards	EN 50155:2021	Railway Applications – Electronic Equipment used on Rolling Stock
	EN 50121-3-2:2016 + A1:2019	Railway Applications – Electromagnetic Compatibility Part 3-2: Rolling Stock – Apparatus
	AREMA:2021	Railway Applications – Communications and Signals Manual, Section 11 – Circuit Protection
	STM-E-001:C	Spécification technique matériel – Équipements électroniques utilisés sur le matériel roulant
	EN 61373:2010 + AC:2017	Railway Applications Rolling Stock Equipment Shock and Vibration Tests
	EN 45545-2:2013+A1:2015	Railway Applications – Fire Protection for Railway Vehicles Part 2: Requirements for Fire Behaviour of Materials and Components
Materials Compliance	REACH, ROHS 3, WEEE, EN45545-2	

IMS-14876_PS3000R- Isolated PSU 110VDC to 24VDC_DataSheet_3

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