DC-DC CONVERTER 110/24 V DC

110/24 V DC, 4,2A

PULS

QS5.241-60
PSU 110V dc I/P 24V dc 4.2A 100W O/P Railway
Compliant

- Width 40 mm
- 91,1 % efficiency
- Acc. to EN 50155 railway application standard
- 50% bonuspower for 4 seconds
- Conformal coated PC-boards

PRODUCT DESCRIPTION

The QS5.241-60 DC/DC converter is designed specifically for railway & transportation applications. It is approved according to the EN 50155 standard, which is an international standard covering electronic equipment used on rolling stock for railway applications. The standard covers aspects such as temperature, humidity, shock, vibration, EMI and other parameters. Because of these requirements, the unit is equipped with conformal coated pc-boards.

The unit features a DC-OK signal contact for remote monitoring, and quick-connect spring-clamp terminals for a reliable connection even when mechanical vibration and shock are involved. The unit also covers an extreme wide temperature range from -25°C up to +70°C with full output current.

This DC/DC converter comes in a very compact housing and requires only 40mm space on the DIN-rail due to the high efficiency and low power losses. The high efficiency is achieved by utilizing cutting edge technology and other unique design techniques.

SPECIFICATIONS

Input voltage DC	110 V
Input voltage dc min	77 V DC
Input voltage dc max	154 V DC
Inrush current	Typ. 10 A @ 110 V DC
Max entrance tripple	15 V pp
Output voltage	24 V DC
Output voltage min	24 V DC
Output voltage max	28 V DC
Output Current	4.2 A
Effect	100 W

Ripple. max	50 mV pp
Temperature Range Without Derating From	-25 °C
Temperature Range Without Derating To	60 °C
Efficiency	91.1 %
Life span	127000 h @ 24 V DC, 4,2 A, 40 °C
MTBF (IEC 61709)	127000 h @ 24 V DC, 4,2 A, 40 °C
Width	40 mm
Height	124 mm
Depth	117 mm
Weight	0.64 kg
Clamp type	Spring-clamp
Series	Dimension Q
Approvals	CE, EN 50155
DC relay output	Yes
Material Protection	Aluminium
Keep time	Typ. 42 ms @ 4,2 A
IP Class	IP20
Conformal coated	Yes

Fig. 6-1 Output voltage vs. output current, typ.
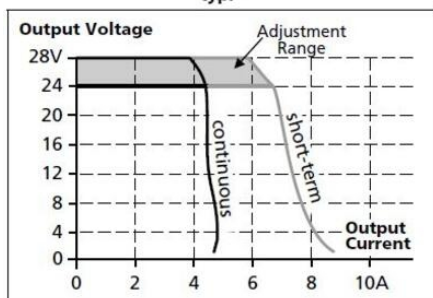
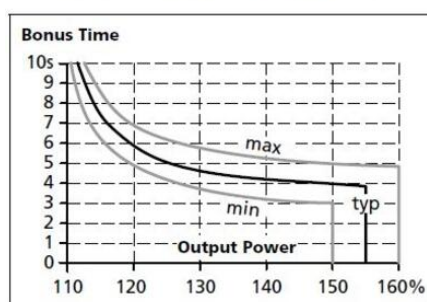Fig. 6-2 Bonus time vs. output power
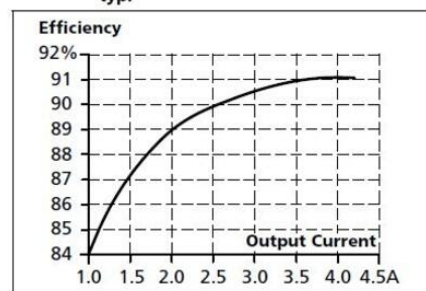
Fig. 9-1 Efficiency vs. output current, at 24V, typ.

Fig. 13-1 Front side

Fig. 22-1 Front view

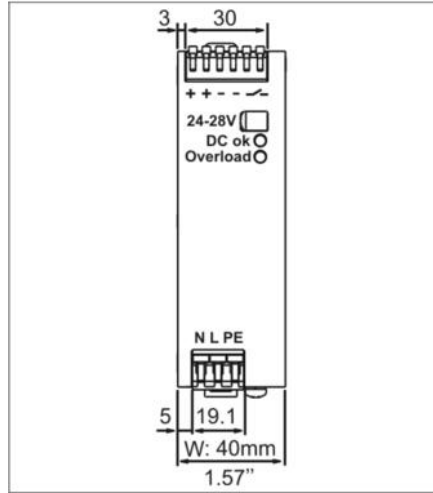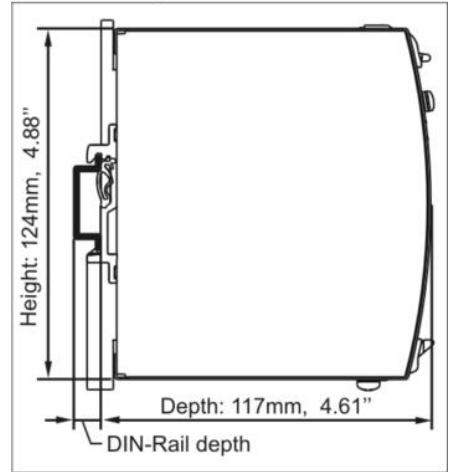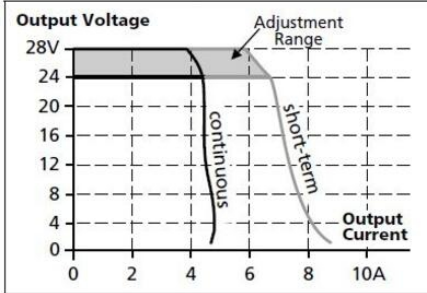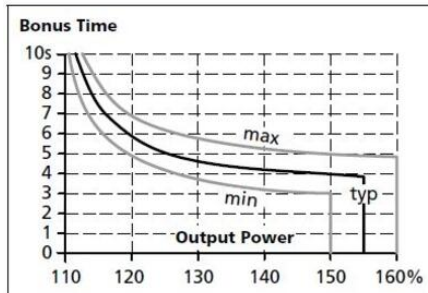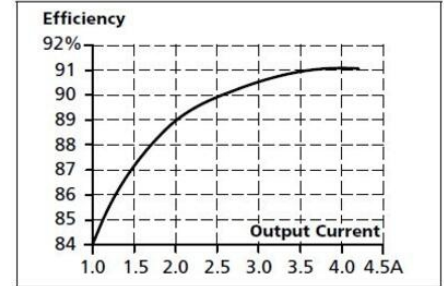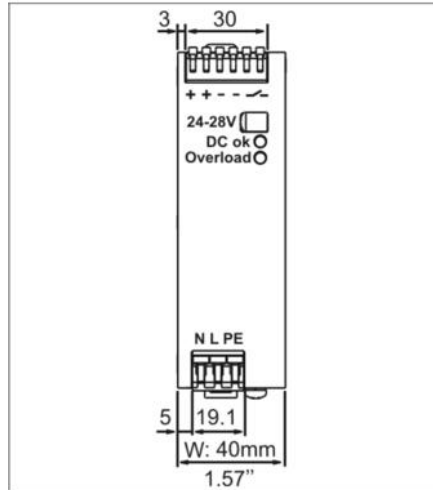**Fig. 22-2 Side view**

30

24-28V
DC ok
Overload

N L PE

5   19.1

W: 40mm

1.57"

Height: 124mm, 4.88"

Depth: 117mm, 4.61"

DIN-Rail depth

+ + − − ⌐
DC 24V 100W   13 14 DC ok

24-28V D

DC ok E

Overload F

PULS

DIMENSION

QS5
DC/DC Converter

DC 110V
+ − ⊕

A

Fig. 6-1 Output voltage vs. output current, typ.

Output Voltage

28V
24
20
16
12
8
4
0

Adjustment Range

continuous

short-term

Output Current

0   2   4   6   8   10A

Fig. 6-2 Bonus time vs. output power

Bonus Time

10s
9
8
7
6
5
4
3
2
1
0

max

min

typ

Output Power

110   120   130   140   150   160%

Fig. 9-1 Efficiency vs. output current, at 24V, typ.

Efficiency

92%
91
90
89
88
87
86
85
84

Output Current

1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5A