
SINGLE OUTPUT DC-DC TELE-POWERING CONVERTERS

ASX SERIES

Overview

Single output DC/DC converters, in PWM switching technology. Particularly developed to be installed in RF Power inserters for cellular repeaters and radio-base wireless applications where is required the contemporary presence of radio-frequency, DC power and remote supervising signal on the same coaxial cable. The DC/DC converter provides to supply the inserter with a stabilized voltage being supplied with a DC voltage coming from a lead acid battery. As an example, the radiofrequency field covering of a railway tunnel is provided with the use of a radiating cable and some line amplifiers: at the entrance of the tunnel the radiofrequency, coming from an antenna and one or more band selective amplifiers, is injected in parallel with DC current coming from ASX type converter and FSK carrier. Along the radiating cable, the RF power losses are compensated by the line amplifiers, supplied by the superimposed DC power and supervised by the FSK carrier.

Electrical characteristics

The most important characteristics that distinguish this type of converter are:

Input voltage	54 Vdc
Admitted tolerance	±33%
Peak superimposed ripple	less than 2% Vdc
Output voltage	66 or 110 Vdc
Warranted tolerances	
Line variations	±3%
Load variations	±3%
AC superimposed ripple	less than 0,5% RMS
Short circuit current	120% I nominal
Efficiency	more than 80%
Sustain time	about 30 mS with output voltage at -10%
Single unit MTBF	ab. 250.000 hours
Redundance	Available with the installation of a second unit

Output DC power

The product range includes the following models as a function of the output powers.

Model	Output power
ASX150	150 Watt
ASX250	250 Watt
ASX350	350 Watt

Accessories

A wide range of accessories is available to equal the converters to the more complex applications and specifications.

The ones foreseen in normal production are the following.

Input magnetothermic breaker

Input by-pass breaker

Redundant connection diode

Trimmable low output voltage relay

Output overvoltage protection

Mechanical characteristics

The mechanical construction is 19 inches SubRack type according to DIN41612 standards, with anodized aluminium structure and front side in black or natural color. The height units and modularity are a function of the supplied power. The overall dimensions are the following.

Model	Units x width	Depth
ASX150	3 x 14TE	220mm
ASX250	3 x 21TE	220mm
ASX350	3 x 42TE	220mm

Ambient compatibility

The converters are submitted to typical or production tests to warrant the ambient compatibility. The fundamental tests are the following (* identifies typical tests).

*Vibrations	5 m.s ⁻² - 0,032m
*Storage temperature	from -40 to 70 °C
*Working temperature	from -20 to 55 °C
1,2/50 µs CMP withstand	1,5 kVp
Dielectric strenght	0,5 kV RMS
Insulation resistance	100 MΩ at 500 Vcc
Damped oscillatory waves	1 kVp at 1MHz
CE mark ref. standards	EN50081-2/50082-2

Product range

Model	Input voltage 6=54 V	Input breaker	By-pass breaker	Low output volatage relay	Overvoltage protection	Output voltage	Output current
ASX150-4	6			R6	P1	66	2,3
ASX150-7	6			R6	P1	110	1,4
ASX250-4	6			R6	P1	66	3,8
ASX250-7	6			R6	P1	110	2,3
ASX350-4	6	I1	I3	R6	P1	66	5,3
ASX350-7	6	I1	I3	R6	P1	110	3,2

Mechanical dimensions

