



MLT Drives

Dual Inverter Aircon Power Supply Technical Brief

Model: 7.5KVAAC-ACSME C

3rd September 2006

<u>Features</u>	
Dual output: 5kVA 3-phase & 2.5kVA 1-phase	
150% load surge capability	
Pure sine-wave output	
Advanced MLT Digital Signal Processor Control	
Robust construction	
Easy installation and maintenance	
Easy integration to Air conditioner management system	
Soft-start – no sparking	

<u>Electrical Specification</u>	
Input Voltage	65 (30Hz) -220VAC (125Hz) (Any phase rotation)
Input Current	80A (max continuous)
Output Types	1) 3-phase, with variable voltage-frequency ramp-up, for aircon compressor 2) 1-phase, for aircon controls, other auxiliaries
Output Power	1) 5 kVA, overload of 150% for 10sec 120% overload continuously. 2) 2.5 kVA, overload of 150% for 10sec 120% overload continuously.
Output Voltages	1) sine-wave 3-phase 380VAC +- 10% (after ramp-up) 2) sine-wave 1-phase 230VAC +- 10%
Output Current	1) 9A per phase (max continuous) 2) 12A
Output Frequency	1) 50 Hz, +- 0.4% (after ramp-up) 2) 50 Hz, +- 0.4%
Efficiency	>90%
Total Harmonic Distortion	<3%
Protection	Short Circuit & Over Load Over Temperature Over Voltage Under Voltage



<u>Display Parameters</u>	
LED	Inverter ON * Inverter Starting Up (Soft Start) * Inverter Fault (Overload, Over Temperature, Short Circuit, Over Voltage, Under Voltage) Inverter DSP Faulty * (LED Flashing).

<u>Control Methodology</u>	
Soft start on Loco Generator detection. Thereafter Single Phase becomes available. Three Phase Compressor (soft started) output to be available on PLC relay closing.	
Error Output	LED display.

<u>Environment Conditions</u>	
Ambient Temperature	0°C – 40°C
Relative Humidity	Max 90%
Cooling	Natural ventilation (Fans are included in prototype).

<u>Mechanical</u>	
Construct	1.6mm Mild Steel Enclosure
IP Rating	IP 55
Dimensions	Manufacturing unit to have required dimensions
Mounting	Manufacturing unit to have required mountings
Weight	Approx 80kg

<u>Notes</u>	
General functionality:	<p>This inverter requires no power from the 72V locomotive battery bank and the AC alternator. The 230V AC single phase output power is available whenever the inverter input voltage is greater than 65V line-to-line. The compressor output is available only when the locomotive compressor is running and when the input three phase voltage is greater than 80V line-to-line.</p> <p>The compressor is completely controlled from this unit. It can be started or stopped by activating a relay input to the inverter.</p>