



AUSTRALIAN RAIL TRACK CORPORATION

Certificate No.: **S-09-06-39**

## NEW EQUIPMENT & SYSTEM APPROVAL CERTIFICATE

**Approval date:** 10<sup>th</sup> October 2012

**Approved by:** T. Moore

**Report no.:** TAS 09-06-39

**Report date:** 29<sup>th</sup> June 2012

This certificate is issued to:

**Supplier:** **M-Power**

In respect of:

**Manufacturer:** **Powernet Oy**  
Martinkyläntie 43  
01720 Vantaa  
Finland

**Product description:** **ADC5000 DC POWER SUPPLY**

**Item identification:**

**Application:** Typically used to supply Microlok II computer based interlocking. However they can be used for any application where a stable DC power supply is needed.

**Relevant Standards:**

ARTC Standards:

ESD 09-01 – 'Signalling Power Systems';

SPS 02 – 'Environmental Conditions';

SPS 05 – 'Electrical & Electronic Components (Ratings & Construction Requirements)';

SPS 22 – 'Power Supply Units for Signalling Equipment- General Requirements';

SPS 28 – 'Power Supply Units for Signalling Equipment - DC (Filtered) Units'.

AS/NZS 60950.1:2003 : Information technology equipment - Safety - General requirements

AS/NZS CISPR 22:2009 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

And these international Standards;

Mechanical:

ETS 300 019-2-4, class 4M5,

Vibration, sine, IEC60068-2-6, 2gn 9-200m/s<sup>2</sup>, Vibration, broad-band random, IEC60068-2-64

Safety:

EN 60950-1 class 1; UL60950-1 class 1

UL508 industrial control equipment

EMC Emissions:

EN61000-6-3

EN 55022 class B conducted and radiated emissions  
EN61000-3-2 harmonics  
EN61000-3-3 Flickering  
EMC Immunity:  
EN61000-6-2  
EN 61000-4-2 Electrostatic Discharge  
EN 61000-4-3 Radiated Immunity  
EN 61000-4-4 Fast Transients  
EN 61000-4-5 Surge  
EN 61000-4-6 Conducted Immunity  
EN 61000-4-8 Power frequency magnetic field immunity  
EN 61000-4-11 Voltage dips and interruptions, immunity

**Conditions of Approval:**

1. Full type approval has been given for the use of the 'Powernet Oy' ADC5000 DC power supplies, where the output power has been properly de-rated to align with the specifications set forth in the ARTC standards. De-rating curves can be found in both the product datasheet and the type approval report.
2. For use in accordance with ARTC signals construction standards and standard typical circuits only.
3. Only units from the list may be utilised.
4. Any changes to the design or materials are not covered by this approval certificate and are to be submitted to ARTC to be re-approved.

*A general condition of approval is that the supplier remains accredited to ISO 9001 specifically for these products and ARTC is advised on a 2 yearly basis that accreditation is current. ARTC reserves the right to conduct its own audit of the manufacture and supply of these components to AS 19011.*

*Any subsequent change to the design, materials or manufacturing process is not covered by this approval. The manufacturer should notify ARTC of any modification or changes in order to obtain a valid certificate.*

**Note/Comments:**

None

**Issue date:**

**Expiry date:**

**Page:**

2 of 3

**Issued by:**



John Furness  
ARTC Manager Standards



## NEW EQUIPMENT & SYSTEM APPROVAL - APPROVED ITEM LIST

Reference no.: **TAS-09-06-AD39**

Date:

Product description: **ADC5000 DC POWER SUPPLY**

Certificate no.: **S-09-06-39**

The following lists the individual items (by catalogue number) are approved for use on ARTC infrastructure under the above referenced New Equipment & System Approval Certificate number, subject to any conditions shown on that Certificate and the Conditions of Use shown against individual items.

Catalogue / Part No.	Item Type	Description	Conditions of Use (including Version number if applicable)
ADC5021	PSU	12V 10A	De-rated power = 90W
ADC5081	Battery Charger/PSU	12V 10A, no diode	De-rated power = 102.75W
ADC5083	Battery Charger/PSU	12V 10A	De-rated power = 102.75W
ADC5121	PSU	24V 5A PSU	De-rated power = 90W
ADC5183	Battery Charger/PSU	24V 5A	De-rated power = 102.75W
ADC5283	Battery Charger/PSU	48V 2.5A	De-rated power = 102.75W
ADC5381	Battery Charger/PSU	12V 18A, no diode	De-rated power = 137W
ADC5383	Battery Charger/PSU	12V 18A	De-rated power = 137W
ADC5323	PSU	12V 18A PSU	De-rated power = 120W
ADC5483	Battery Charger/PSU	24V 10A	De-rated power = 205.5W
ADC5521	PSU	48V 5A PSU	De-rated power = 180W
ADC5583	Battery Charger/PSU	48V 5A	De-rated power = 205.5W
ADC5621	PSU	12V 5A PSU	De-rated power = 45W
ADC5683	Battery Charger/PSU	12V 4.4A	De-rated power = 45W
ADC5783	Battery Charger/PSU	24V 2.2A	De-rated power = 45W
ADC5823	PSU	48V 1.25 A PSU	De-rated power = 45W
ADC5883	Battery Charger/PSU	48V 1.1 A	De-rated power = 45W
ADC5983	Battery Charger/PSU	36V 1.5A	De-rated power = 45W

Legend:	
PSU	Refers to Power Supply Unit.
Catalogue number ends with 1	Includes module failure alarm relay and output over voltage protection
Catalogue number ends with 3	Includes module failure alarm relay and output over voltage protection and output in series diode to prevent back feed when multiple PSU's are implemented in parallel, typically in an N+1 configuration.
De-rated Power	It is a requirement of this Type Approval to de-rate the power output as to align with ARTC Standard SPS02 which requires the equipment to operate to a temperature of 60°C. the de-rating curve given in the specification was used
Model number ADC53XX	These 12V 18A modules must be de-rated using the alternative curve specifically for this model range.
-	If not marked as this then it is a battery charger.
-	Please note that the Power supply units can only be used as power supplier however the battery charger models can be used as power supplier or battery chargers. Because of this we tend to stock the battery charger models (those ending in "81" or "83").