

Certificate of Acceptance

OFFICIAL
PA05/07939

Manufacturer:
Haide Technologies

Issue : 2
Valid From : 04/09/2025
Next Scheduled Certificate Review : 05/09/2030

Off-grid Relocatable Charging Assembly (ORCA)

Product Description

Off-grid Relocatable Charging Assembly (ORCA)

The ORCA Rapid Deployment Case houses an Efoy fuel cell, 10L methanol fuel cell canister and a 100Ah Lithium battery. The full range of Efoy fuel cells can be accommodated within the ORCA case, allowing you to tailor the system to your power requirements.

The ORCA can be deployed for short term operation or for extended periods in locations difficult to access with fixed power supplies.

The ORCA case is stackable offering space saving and efficient transportation to site. It has multiple fixed handles including a two-stage retractable handle and in-built wheels. With the fuel cell canister removed, the ORCA falls within the category of single person lift. The case uses all stainless-steel hardware, including the two reinforced padlock loops. The case is constructed from impact resistant NK-7 resin, clad with LEMUR-AG15 to provide passive thermal management.

Product Image



Scope of Acceptance

Full Acceptance

A renewable power supply which is used as a temporary power source on 12 or 24 volt systems within the charging limits of the methanol fuel cell.

It is the user's responsibility to match the correct power requirement to the appropriate ORCA supply.

Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.

Reviewed by:

Authorised by:




Steve Rennolds
Product Acceptance Specialist

Jerry Morling BEng MSc CEng MIET MIRSE
Network Technical Head Signalling

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Specific Conditions

The following Conditions are specific to the approved product/s contained within this Certificate. These conditions must be adhered to in addition to the Network Rail General Conditions contained within the "General Terms and Conditions" section. Failure to adhere to these conditions may result in the withdrawal or suspension of Acceptance of some, or all of the items contained within the accepted configuration.

Manufacturer

- 1) No deviation from the equipment certificated will be allowed without further permissions. Any changes shall first be proposed to Network Rail for approval.
- 2) Warning labels required on both the inside and outside of the case.
- 3) All warning labels are required to be fixed to the assembly prior to dispatch.

User

- 1) All staff must be fully briefed on the use of the Off-Grid system prior to entering the worksite.
- 2) There are two mandatory e-learning courses available one for all involved with Off-Grid technologies (Off-Grid Power Supply for Signalling) and the other for maintainers (Maintaining Off-Grid Power Supply Systems).
- 3) Equipment Operator(s) SHALL ensure that all staff required to use the equipment are suitably trained and authorised.
- 4) The installation shall be in accordance with the Signalling Installation Handbook and the EFOY manufacturer's O&M manual.
- 5) For Fuel Cells please refer to PA05/07943.

Product Configuration

System or Complete Assembly

Part No.	Description	Catalogue No.
T3703	Portable installation. Nanuk case, Off-Grid Power Supply, EFOY 80 fuel cell, max charge 3.8A, 100Ah battery, 10L Fuel capacity	0086/002252
T3752	Portable installation. Nanuk case, Off-Grid Power Supply, EFOY 150 fuel cell, max charge 7.1A 100Ah battery, 10L Fuel capacity	0086/002253
T3753	Portable installation. Nanuk case, Off-Grid Power Supply, EFOY Pro 900 fuel cell, max charge 4.0A 100Ah battery, 10L Fuel capacity	0086/002254
T3754	Portable installation. Nanuk case, Off-Grid Power Supply, EFOY Pro 1800 fuel cell, max charge 7.8A, 100Ah battery, 10L Fuel capacity	0086/002255
T3755	Portable installation. Nanuk case, Off-Grid Power Supply, EFOY Pro 2800 fuel cell, max charge 11.9A, 100Ah battery, 10L Fuel capacity	0086/002256

Hardware (Maintenance Spares and Line Replaceable Units)

Part No.	Description	Catalogue No.
T3711	12V, 100Ah Lithium battery	0086/002257
T3712	12V, 50Ah Lithium battery	0086/002258
T3718	Replacement main vent	0086/002259

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Part No.	Description	Catalogue No.
T3719	Replacement EFOY vent	0086/002260
T3720	Empty Off-Grid case complete with all brackets and wiring (no fuel cell, fuel or battery)	0086/002261
T3756	DC Circuit Breaker: 2P 16Amp	0086/002262
T3757	Blade Fuses: 2A, 20A qty 10	0086/002263

For Methanol Fuel Cell spares please refer to certificate PA05/07943.

Accessories

Part No.	Description	Catalogue No.
T3758	IP68 2 pin plug coupler	0086/002264
T3751	IP44 anti-vandal cable box	0086/002265
T3759	Cable security seal pack of 10	0086/002266

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
BRES-86-3L-DC	Data sheet BRES-86-3L-DC	-	-	T1
Data Sheet - Cable Gland	RS PRO M20 Cable Gland with Locknut, Nylon, IP68	-	-	T1
Data sheet Wago 281	Data Sheet – Item Number:281-611	10.07.2023	10/07/2023	T1
Data sheet Wago Installation Guide	Data Sheet – Item Number:281-611	18.07.2023	18/07/2023	T1
Data sheet Wago Fused Terminal	Fused Disconnect Terminal Blocks 4mm ² /AWG 12, for Miniature Metric Fuses	-	-	T1
Data-Sheet-EFOY-80	Datasheet EFOY Fuel Cells	03/2021	03/2021	T1
Methanol+Safety+Data+Sheet	Safety Data Sheet	0004	02/10/2015	T1
RBC20A1P-Datasheet	20A Lithium-Iron Phosphate (LFP) Battery Charger	-	-	T1
Specsheet-nanuk-965-case	Nanuk Professional Protective Cases Wheeled Series 965	-	2018	T1
UM_12V 100Ah Pro Warranty	Renogy Limited Warranty	-	-	T1
120628_CertifiedSafety	SFC Fuel Cartridges	-	23/05/2012	T1
200127 SFC_Fuel Cartridge Methanol Folder_0120	SFC Fuel Cartridges – SFC Guarantees safe handling of methanol	1907 Version 01	-	T1
Cable Gland Selection Chart	Cable Gland Selection Chart	-	-	T1
D1903-P	Nanuk Assembly Guide T3703 Wiring Diagram	1	01/07/2024	T1
D1902-A	Nanuk 965 base plate design 2	2	28/06/2024	T1
TECH238	Functional Block Diagram	2	10/07/2024	T1
TECH242	Parts List – Off Grid Power Supply	1	01/07/2024	T1
TECH246	RAM Programme – Off Grid Power Supply	1	15/04/2024	T1

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Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
TECH249	Manufacturing Process	1	16/04/2024	T1
TECH251	Design FMEA – Off Grid Power Supply	1	01/07/2024	T1
TECH253	Manufacturing FMEA	1	01/07/2024	T1
TECH254	IPR Statement	1	02/07/2024	T1
Danger Label	Danger Labels	-	-	T1
Methanol warning label	Methanol	-	-	T1
Nanuk 965 mount layout + fixings	Nanuk 965 mount layout + fixings	-	-	T1
Warning Label	Warning Labels	-	-	T1
CRSA-DTSR-055	Digital TSR System Critical Review Report	0	Oct 2024	T1
D1904	T3721 ORCA LEMUR-AG15 Kit	2.0	09/06/2025	2
Branson IP44 Outdoor Cable Box	Data Sheet	-	07/2025	2
WEIPU IP68-Medium SP21	Data Sheet	-	07/2025	2
D1923	ORCA Wiring diagram	1	24/06/2025	2
TECH281	PA05-07939 PA/DfR Review	1	09/07/2025	2
Zip file Orca	Images	-	11/08/2025	2

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
User-manual-efoy-pro-all-en	EFOY O&M Manual	04/2023	04/2023	T1
efoy-pro-installation-manual-en	Safety instructions – EFOY	-	-	T1
UM_12V 100Ah Pro Series Battery_A0_Watermark	RENOLGY Pro Series Smart Lithium Iron Phosphate Battery 12.8V/100Ah	A0	2023	T1

Certificate History

Issue	Date	Issue History
T1	02/08/2024	First accepted for trial use
2	04/09/2025	First accepted for use.

Contact Details

Manufacturer

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Applicant

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Lead Reviewing Engineer

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General Terms & Conditions

1) General

- 1) This certificate can only be amended by Network Rail Product Acceptance, the relevant Network Technical Head or nominated delegate. Any alterations made by a other persons will invalidate the entire certificate.
- 2) Failure to abide by the requirements in this Certificate of Acceptance may invalidate the certificate, thereby restricting the right to operate the product and / or limiting the future supply and deployment of the product on the infrastructure.
- 3) If this is a Trial Certificate which includes a Trial Monitoring Period or Trial Expiry date, evidence should be submitted to meet the included trial criteria before the date has passed for the Lead Reviewing Engineer to assess if the product can be given Full Acceptance. If this cannot be achieved, the Product Acceptance team should be contacted via prodacc@networkrail.co.uk to seek guidance. If this is a Full Certificate and includes a review date, the Product Acceptance team should be contacted via prodacc@networkrail.co.uk to seek guidance.

2) Manufacturer

The Manufacturer shall:

- 1) Ensure that all products supplied comply with the standards defined in the Acceptance Requirements or otherwise documented as part of the assessment, including meeting the reliability requirements included in the Network Rail Design for Reliability Standard (DFR) NR-L2-RSE-0005 and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Product Acceptance in writing (email prodacc@networkrail.co.uk):
 - a. Within 48 hours, of any deficiencies affecting the quality, functionality or safety integrity of the product (including corrective action undertaken or proposed).
 - b. Of any intended change to the accepted product; changes include:
 - i. a change to the product configuration (to the actual product or its application);
 - ii. a variation to or addition of manufacturing locations or processes;
 - iii. a change in the name or ownership of the manufacturing company;
 - iv. any changes to the ability or intention to support with technical services, spares or repairs.
- 3) The Manufacturer shall provide Network Rail Product Acceptance or National Supply Chain (NSC) at least 12 (twelve) months notice of its intention to discontinue supply or to provide such notice as is reasonable if such discontinuance is outside its control and will offer the opportunity of a Last Time Buy to Network Rail together with date for last order placement and supply of the parts affected. The introduction of proposed alternative products shall be communicated to Network Rail Product Acceptance.
- 4) Provide further copies of operating and maintenance manuals to purchasers / users of the product as necessary (including certificates of conformance, calibration etc).
- 5) Provide further copies of training manuals and an appropriate level of training to purchasers or users of the product as necessary.
- 6) Where applicable, specialist technical support, repairs and servicing of the product shall be carried out by the Original Equipment Manufacturer (OEM) or authorised agent only.
- 7) Network Rail may request information from the manufacturer to prove product compliance with clauses 1 and 2 above and reserve the right to suspend and/or withdraw any application where information is not forthcoming within a reasonable timeframe.
- 8) In accordance with Network Rail's Quality Assurance Policy Statement, where the specification and/or Product Acceptance Certificates specify quality assurance classifications for the products, the manufacturer shall comply with the specified level of quality assurance for each product and allow Network Rail access to carry out its quality assurance checks.
- 9) The manufacturer shall give Network Rail's representatives access at all reasonable times to its premises and allow them to inspect its quality systems and production methods and, if requested, to inspect, examine and test the products both during and after their manufacture and the materials being used in their manufacture.

3) Conditions of Use

Specifiers, installers, operators, maintainers, etc. using the product shall:

- 1) Comply with the certificate conditions. If a condition is not understood guidance must be sought from Network Rail Product Acceptance.
- 2) Check that the application of use complies with the relevant certificate's scope of acceptance.
- 3) Report any defect if it is a design or manufacturing fault likely to affect performance and/or the safe operation of the railway in writing to Network Rail Product Acceptance.
- 4) Inform Network Rail Product Acceptance in writing of a change to the product configuration (or to the actual product or its application).
- 5) Operate, maintain and service the product in accordance with Network Rail standards and Operation and Maintenance manuals as appropriate.
- 6) Be appropriately trained and authorised for the installation, maintenance and use of the product.
- 7) Only send products for repair or reconditioning to the Original Equipment Manufacturer (OEM) or authorised agent.
- 8) Users are to be aware that Product Acceptance is not a substitute for design approval.

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4) Compliance

Railways and Other Guided Systems (ROGS) Regulations

1) Where the product is to be used in areas where Network Rail is not the Infrastructure Manager (e.g. leased stations), the sponsoring applicant shall additionally obtain formal consent from the Infrastructure Manager for the locality where the equipment is to be installed. This may include a requirement for additional safety verification. The decision of that Infrastructure Manager is binding, and cannot be overridden by Network Rail except by the escalation processes established in the ROGS regulations

2) As required in Railway Group Standard RIS-8270-RST, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:

- a. All rail vehicle types that have access rights over the area affected by the change
- b. Infrastructure managed by others
- c. Neighbours.

Railway Interoperability Regulations

3) For interoperable constituents of systems the project or group responsible for installation and commissioning shall be required to demonstrate compliance with the relevant Technical Specifications for Interoperability (TSI) where appropriate.

4) An authorisation from the national safety authority (i.e. the Railway Safety Directorate of the Office of Rail and Road) is required before the equipment is to be used in revenue earning service.

5) Supply Chain Arrangements

1) Certificates of acceptance do not imply any particular quantity of supply nor any exclusivity of supply.

2) Products may be purchased by Network Rail or its agents, suppliers or contractors.

3) Manufacturers should note that it is not necessary to enter into any exclusive supply arrangements with resellers or other suppliers.