

Certificate of Authority for Product Trial

Certificate No: PA05/05402 Issue: 1
Valid from: 04/04/2012 Page 1 of 7
Monitoring Period 12 Months
Following Installation:

| | |
|---------------------|--|
| Product | Isolation transformers in enclosures manufactured by Samuel James for points heating DNO supplies. |
| Manufacturer | Forest Transformers Ltd Unit 7 Cyclo Works Lifford Lane Birmingham B30 3DY |

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

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.

This certificate can only be amended by Network Rail Engineering directorate. Any alterations made by a different person will invalidate the entire certificate.

Scope of Acceptance

Range of DNO supply isolation transformers for supplies to points heating equipment limited to the following locations:

- 230/230V 12.5kVA Isolation Transformer and Enclosure at Camden West Junction
- 230/230V 50kVA Isolation Transformer and Enclosure at Canonbury Junction
- 400/400V 200kVA Isolation Transformer and Enclosure at Channelsea Curve and Acton Diveunder
- 400/400V 110kVA Isolation Transformer and Enclosure at Lea Junction
- 400/400V 140kVA Isolation Transformer and Enclosure at Olympic Park
- 400/400V 50kVA Isolation Transformer and Enclosure at Lea Valley Station (Temple Mills)


Specific conditions

The product to be fully compliant with BS EN 60076, BR924A and NR/L2/SIG/30007. Any non compliances are to be stated.

Live terminals are to be protected by a cover with a warning label attached of the operating voltage.

Refer to the pages which follow for the product configuration and detailed conditions of use.

Authorised by


Richard Stainton
Professional Head, Electrical Power

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SPECIFIC CONDITIONS

1) Manufacturer

The Manufacturer shall:

- 1) Ensure that all products supplied under this certificate 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 Acceptance Requirements and in any deed of warranty for this certificate number.
- 2) Notify Network Rail Technology Introduction Group:
 - 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 Technology Introduction Group 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 the Network Rail Technology Introduction Group.
- 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.

2) 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 Technology Introduction Group.
- 2) Check that the application of use complies with the 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 Technology Introduction Group.
- 4) Inform Network Rail Technology Introduction Group 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 agents.

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3) 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 sponsor 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 GE/RT8270, at each use of this product the project or group responsible for installation and commissioning shall be required to demonstrate compatibility with:
 - 1) All rail vehicle types that have access rights over the area affected by the change
 - 2) Infrastructure managed by others
 - 3) 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 Regulation) is required before the equipment is to be used in revenue earning service.

4) Supply Chain Arrangements

- 1) This certificate of authority does not imply any particular quantity of supply nor any exclusivity of supply.
- 2) The product 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.

5) Trial Criteria

- 1) A Trial Report is required at end of trial, including
 - A list of locations where this product is installed.
 - Any difficulties in installation
 - Any defects encountered
 - Any hazards associated with the equipment
 - Any maintenance issues
- 2) A detailed inspection of the equipment condition to be carried out after the end of the trial period
- 3) The sponsor shall provide a critical review report to Network Rail Technology Introduction Group for review by the date specified in this certificate. The report shall include contributions from appropriate stakeholders such as the installation contractors, maintainers and the manufacturer. The critical review report shall include:

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- a. Documentary evidence to demonstrate that;
 - i. The product is as described – confirmation of the product configuration.
 - ii. The system incorporating the product performed its function as intended, verified by feedback from the operator and maintainer.
 - b. Evidence of satisfactory reliability, availability and maintainability (e.g. MTBF, MTBSAF and MTTR).
 - c. Details of the Hazard Log or other safety management system.
 - d. Confirmation that any outstanding competency requirements have been met.
- 4) Where necessary the Independent Safety Assessor (ISA) shall review the report and make recommendations. The resulting ISA report (following the guidance in the Network Rail Engineering Safety Management publication) shall accompany the trial report.
 - 5) Failure to supply an adequate and timely report may delay achievement of full product acceptance and may result in the product under trial having to be removed and the infrastructure returned to an operational condition acceptable to Network Rail.

6) Product Configuration

System or Complete Assembly

| Part No. | Description | PADS No. |
|-----------|--|---------------|
| S5282_TX1 | 230/230V 12.5kVA Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment. | N/A for Trial |
| S5282_TX2 | 230/230V 50kVA Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment | N/A for Trial |
| S5282_TX6 | 400/400V 50kVA 3 phase Delta/Star Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment | N/A for Trial |
| S5282_TX3 | 400/400V 75kVA 3 phase Delta/Star Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment | N/A for Trial |
| S5282_TX4 | 400/400V 110kVA 3 phase Delta/Star Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for | N/A for Trial |

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| Part No. | Description | PADS No. |
|-----------|---|---------------|
| | external connections. For use in DNO supplies to points heating equipment | |
| S5282_TX5 | 400/400V 140kVA 3 phase Delta/Star Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment | N/A for Trial |
| S5282_TX7 | 400/400V 200kVA 3 phase Delta/Star Isolation transformer with start-up inrush currents limited to 10x full load current installed within an IP54 enclosure including primary termination, secondary termination and earth bar for external connections. For use in DNO supplies to points heating equipment | N/A for Trial |

Note: For complex products and systems, sponsors and manufacturers may be requested to submit a more detailed configuration report to be appended to this certificate.

7) Assessed Documentation

| Reference | Title | Date and Applies to Cert. issue No. | |
|-----------|---|-------------------------------------|---|
| --- | Fast track application form | 29/03/2012 | 1 |
| --- | Forest transformers Specification sheet and type test results for 230/230V 50kVA isolation transformer | 26/11/2010 | 1 |
| --- | Forest transformers Specification sheet and type test results for 400/400V 50kVA isolation transformer | 10/02/2012 | 1 |
| --- | Forest transformers Specification sheet and type test results for 400/400V 75kVA isolation transformer | 28/10/2010 | 1 |
| --- | Forest transformers Specification sheet and type test results for 400/400V 110kVA isolation transformer | 16/03/2009 | 1 |
| --- | Forest transformers Specification sheet and type test results for 400/400V 140kVA isolation transformer | 10/01/2011 | 1 |
| --- | Forest transformers Specification sheet and type test results for 400/400V 200kVA isolation transformer | 28/03/2012 | 1 |
| --- | Forest transformers Heat Run Test Results 400/400V 50kVA | 10/02/2012 | 1 |
| --- | Forest transformers Heat Run Test Results 400/400V 200kVA | 28/03/2012 | 1 |

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| Reference | Title | Date and Applies to Cert. issue No. | |
|------------|---|-------------------------------------|---|
| FT 20962 | Forest transformers Outline Drawing 3ph 200kVA open | 21/03/2012 | 1 |
| FT 20966 | Forest transformers Terminal Panel /Wiring drawing | 21/03/2012 | 1 |
| S5021/G6-1 | GA drawing of Isolation Transformer Cubicle – external View | 16/03/2012 | 1 |
| S5021/G6-2 | GA drawing of Isolation Transformer Cubicle – Internal View | 16/03/2012 | 1 |

8) Certificate History

| Issue Number | Date | Issue History |
|--------------|------------|-------------------------------|
| 1 | 04/04/2012 | First accepted for trial use. |

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Following Installation:

9) DISTRIBUTION

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