

Manufacturer:
Rail Signalling and Power Ltd

Issue : 1
Valid From : 30-11-2018
Review Date : 02-08-2022

MAGBOX CLASS II FSP SWITCHGEAR (TYPE FSP01, FSP02 & FSP03)

Product Description

Class II FSP Switchgear Assemblies Type FSP01, FSP 02 and FSP03 for Signalling Power Supplies.

Product Image



Scope of Acceptance

Full acceptance as per the User and Manufacturer's conditions detailed in the Specific Conditions section of this certificate.

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:



Tom Riley
Product Acceptance Co-ordinator



Kyle Windsor
Acting Professional Head of Power Distribution HV/LV

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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) All Class II 'MaGBox' Polyester production units shall be tested in accordance with section 9.2 of NR/L2/SIGELP/27409 (dielectric test). Test records shall be maintained for tractability of insulation tests.
- 2) In addition the Class II 'MaGBox' Polyester production units and assemblies shall be tested in accordance with Production Test Specification. All results are to be recorded and maintained.

User

The Class II 'MaGBox' Polyester product range is suitable for use as a Class II FSP Switchgear Assembly in accordance with Type FSP 01, 02 and 03 as detailed in NR/L2/SIGELP/27409.

Where Class II 'MaGBox' Polyester product is used in Class I installations the continuity of the protective conductors or bonding must be maintained.

Note: The use of Class II Switchgear Assemblies alone in Class I installations does not provide full protective measures as detailed in NR/L2/SIGELP/27410.

The following application criteria and installation constraints shall be complied with:

1. A Class II installation is satisfied if the Class II 'MaGBox' Polyester product is installed in conjunction with other system components in accordance with NR/L2/SIGELP/27410.
2. Only for use as categories FSP01, FSP02 & FSP03 in accordance with NR/L2/SIGELP/27409.
3. Use limited to a single end fed radial (FSP 01 & FSP02), manual reconfiguration dual/single end fed system (FSP02) and Automatic Reconfigurable dual end fed system (FSP03).
4. FSP Switchgear Assemblies for use with 2 core cable in accordance with NR/L2/SIGELP/27408 or unarmoured B2/D2 EPR cable to NR/PS/SIG/00005 or other legacy 2 core unarmoured cable.
5. Functional circuit protection feeding transformers shall be in accordance with approved transformer manufacturer recommendations. The use of MCB's or MCCB's over current protective devices in the switchgear assembly will require a product change request in accordance with Application For Configuration Change Or Update.
6. Not to be used in subsurface environments.
7. The Class II 'MaGBox' Polyester product shall not be installed in signalling distribution feeders, where the PSP outgoing or source feeder protection exceeds a BS 88 63A at AC22 or equivalent protective device.
8. Where Overvoltage protection is specified or fitted it shall be a Product Approved 2 Wire Overvoltage protection device in accordance with NR/L2/SIGELP/27410.
9. Only assemblies installed within a PADS approved Stainless Steel full apparatus case are suitable for installation in marine/aggressive applications.
10. For the product, depending on the requirements of the particular application, some or all of the outgoing circuits may directly exit the FSP03 Switchgear Assembly. In other arrangements, Class II Hybrid Isolating Transformers for Functional Signalling Circuits may be located in the FSP 03 Enclosure. In this latter arrangement outgoing cables will connect to the Class II Hybrid Isolating Transformers; in which case they should be terminated in accordance with the NR/L2/SIGELP/27410 and Class II Hybrid Isolating Transformers Manufacturer instructions.
11. Class II Hybrid Isolating Transformers for Functional Signalling Circuits, when installed, are to be Product Approved Class II Hybrid Transformers in accordance with NR/L2/SIGELP/30007 Product Specification for Power Transformers for Signalling Systems.

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12. Auto Reconfiguration Equipment installed in the FSP-03 shall have interconnecting cabling in accordance with NR/L2/SIGELP/27410. Only Auto reconfiguration equipment in accordance with PA certificate PA05/05289 and PA05/05376 is suitable for integration into the FSP03. Where FSP 03 Switchgear is integrated with Auto Reconfiguration Equipment a factory integration test shall be conducted by suitably qualified and experienced staff in accordance with the manufacturers requirements. Equipment in accordance with PA05/05376 is only suitable for integration into a full size Signalling Apparatus Case assembly in accordance with PADs number 054/213835.
13. Any integration of other auto reconfiguration equipment shall be subject to a product acceptance change request.
14. Internal Bonding conductors Class II FSP-03 shall be rated for connection to a.c. Traction Systems having fault current of 12KA not exceeding 0.2s. External Bonding conductors shall be adequately selected for the fault current withstand.
15. Class II 'MaGBox' Polyester product range shall only be used in apparatus housings or buildings.

Product Configuration

FSP 01/FSP02 Module Assembly

Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 01/02 Type 20 02	DLLF2P20 201-208	2	3	n/a	6	0054/213902
	Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Three switched & fused output functional supplies. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor. Compliant to NR/L2/SIGELP/27409 issue 2.					
FSP 01/02 Type 21 02	DLLF2P21 201-208	2	3	n/a	6	0054/213903
	Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Three switched & fused output functional supplies. Compliant to NR/L2/SIGELP/27409 issue 2.					
FSP 01/02 Type 22 02	DLLF2P22 201-208	2	3	n/a	6	0054/213904
	Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Three switched & fused output functional supplies. Compliant to NR/L2/SIGELP/27409 issue 2. For use with 240V systems.					

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FSP 03 Full Assembly

Part No.	Description	Catalogue No.
<p>FSP 03 Type 32 02</p>	<p>Type 32 Generic Class II Automatic Reconfigurable FSP 03 Functional Supply Point - Full Loc (Refer to PA05/05428 for full description)</p> <p>Class II power distribution unit in standard Network Rail, PADS approved, full size, mild steel Apparatus Case. Stainless Apparatus Case can be provided if specifically requested.</p> <p>The Type 30 Distribution Module Incorporates, rated at 690v, which is fitted in the front of the apparatus case to facilitate termination of incoming and outgoing mains feeder cables. These cables can be up to 120mm in copper or aluminium. The module includes the MAGplate removable gland plate. The module has an isolator for a power supply to functional unit modules and isolators and fuses for the auxiliary power supply. Within the module are facilities for the connection of a separate surge suppressor module.</p> <p>A 100Va Class II, 650/110v transformer provides power for auxiliary equipment. All circuits re protected IEC60269 rated fuse.</p> <p>The apparatus case includes a 25W, Class II, self-regulating panel heater and Class II, 11W panel light is switched on by means of micro switches, when either the front or rear doors are opened.</p> <p>Functional earth bar with dis-connect link. Cable clamp bar.</p> <p>An FSP 03 Functional Supply module will be selected from the range to switch and protect up to 4 Class II transformers, in accordance with specific project requirements. This module is fitted in the rear of the apparatus case. Class II signalling transformers not supplied.</p> <p>Space and facilities for the installation of Auto Reconfiguration equipment is provided. This equipment can either be by Camlin or Schneider. The Auto Reconfiguration equipment is not supplied unless specified. A communication termination enclosure can be mounted separately, depending on project requirement.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>	<p>0054/213905</p>

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Part No.	Description	Catalogue No.
<p>FSP 03 Type 32C 02</p>	<p>Type 32 C Compact Generic Class II Automatic Reconfigurable Functional Supply Point – Half Loc (Refer to PA05/05428 for full description)</p> <p>Class II power distribution unit in standard Network Rail, PADS approved half size mild steel, Apparatus Case. Stainless Apparatus Case can be provided if specifically requested.</p> <p>Incorporates a Type 30 Distribution Module which is fitted in the front of the apparatus case to facilitate termination of incoming and outgoing mains feeder cables. These cables can be up to 120mm in copper or aluminium. The module includes the MAGplate removable gland plate. The module has an isolator for a power supply to functional unit modules and isolators and fuses for the auxiliary power supply. Within the module are facilities for the connection of a separate surge suppressor module.</p> <p>A 100Va Class II, 650/110v transformer provides power for auxiliary equipment. All circuits re protected IEC60269 rated fuse. The apparatus case includes a 25W, Class II, self-regulating panel heater. A Class II, 11W panel light is switched on by means of micro switches, when either the front or rear doors are opened. Functional earth bar with dis-connect link. Cable clamp bar.</p> <p>An FSP 03 Functional Supply module will be selected from the range to switch and protect the separately mounted Class II transformers, in accordance with specific project requirements. This module is fitted in the rear of the apparatus.</p> <p>Space and facilities for the installation of Camlin Auto Reconfiguration equipment only. The Auto Reconfiguration equipment is not supplied unless specified. A communication termination enclosure can be mounted separately, depending on project requirement.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>	<p>0054/213906</p>

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FSP 03 Module Assembly

Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 30 02	DLLF3P30 201-208	6	0	1	2	0054/213907
	<p>Type 30 Distribution Switching Module 6 distribution switches with auxiliary supply and fuses</p> <p>The Type 30 Distribution Module has facilitates for the termination of incoming and outgoing mains feeder cables. These cables can be up to 120mm² in either copper or aluminium conductors. The module includes MAGplate removable gland plate.</p> <p>Isolating switches are provided for Auto Reconfiguration Supply and Bypass for each feeder, No.1 & No.2 plus Auto Reconfiguration bypass.</p> <p>The module has isolation for the power supply to functional circuit modules as well as isolation and fuses for the auxiliary power supply. Within the module, there are facilities for the connection of a separate surge suppressor module.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>					
FSP 03 Type 31 02	DLLF3P31 201-208	0	4	0	16	0054/213908
	<p>Type 31 Functional Circuit Supply Module</p> <p>4 functional outputs 8 primary fuses and 8 secondary fuses</p> <p>Isolation and fuse protection for up to 4 functional circuits. Protection for up to 4 secondary units.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>					
FSP 03 Type 33 02	DLLF3P33 201-208	0	4	0	8	0054/213909
	<p>Type 33 Functional Circuit Supply Module 4 functional outputs with 8 secondary fuses</p> <p>Isolation and fuse protection for up to 4 functional circuits.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>					

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Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 34 02	DLLF3P34 201-208	0	2	0	12	0054/213910
<p>Type 34 Functional Circuit Supply Module – 2 functional outputs 4 primary fuse and 8 secondary fuses</p> <p>Isolation and fuse protection for up to 2 functional circuits. Protection for up to 4 secondary units.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>						
Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 35 02	DLLF3P35 201-208	0	2	0	4	0054/213911
<p>Type 35 Functional Circuit Supply Module 2 functional outputs with 4 primary fuses</p> <p>Isolation and fuse protection for up to 2 functional circuits.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>						
Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 36 02	DLLF3P36 201-208	0	2	0	4	0054/213912
<p>Type 36 Functional Circuit Supply Module 2 functional outputs with 4 primary fuses. 650v spur supply</p> <p>Isolation and fuse protection for up to 2 functional circuits, one of which has termination facilities for s spur supply.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>						
Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 37 02	DLLF3P37 201-208	0	4	0	8	0054/213913
<p>Type 36 Functional Circuit Supply Module - Compact 4 functional circuits with 8 secondary fuses.</p> <p>Isolation and fuse protection for up to 4 functional circuits.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>						

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Part No.	Circuit Drawing Reference	Distribution Switches	Functional Switches	Auxiliary Switches	Fuses	Catalogue No.
FSP 03 Type 32 SM	DLG00248	0	0	0	2	0054/213914
<p>Type 32 SM Surge Suppressor Module.</p> <p>A Network Rail approved surge suppressor mounted in a separate enclosure. For use in conjunction with a Type 30 Distribution Module to provide protection against electrical surges.</p> <p>Compliant to NR/L2/SIGELP/27409 issue 2.</p>						

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
PA05/05428	Assessed documentation PA folders for PA05/05428 - MAGBOX CLASS II FSP SWITCHGEAR (TYPE FSP01, FSP02 & FSP03)	-	20/11/18	1
	To Whom It May Concern.PDF	-	20/11/18	1
	6126RISQSCertificate	-	20/11/18	1
	FSP 01-02 Technical File V7	-	20/11/18	1
	FSP 03 Technical File V3	-	20/11/18	1
	Network Rail SQA Audit 20181030-A-1507-RSP	-	20/11/18	1

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
	FSP 01-02 O&M	7	November 2016	1
	FSP 01-02 Flooding Statement	-	25.04.2017	1
	FSP 03 O&M	3	November 2016	1
	FSP 03 Flooding Statement	-	25.04.2017	1

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Certificate History

MGB Ltd History on PA05/05428

Issue	Date	Issue History
1	10/05/2013	First accepted for use
2	04/03/2014	Class II FSP 03 added
3	09/05/2014	Class II FSP 03 descriptions amended with additional auto-reconfiguration unit supplier added.
4	02/08/2017	Updated for specification issue 2, modules FSP 01/02 22 02 and FSP 03 37 02 added.

Rail Signalling Power Ltd History

Issue	Date	Issue History
1	30/11/2018	Accepted for use for Rail Signalling Power Ltd following liquidation of MGB Ltd (PA05/05428).

Contact Details

Manufacturer

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General Terms & Conditions

1) General

- 1) This certificate can only be amended by Network Rail Product Acceptance, the Professional 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) Upon the review date this certificate and the product it relates to is invalid and not accepted for use. Manufacturers are to make an application for a review prior to the review date.

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 Acceptance Requirements and in any deed of warranty for the relevant certificate number.
- 2) Notify Network Rail Product Acceptance:
 - 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 2011, where the specification and/or Product Acceptance Certificates specify quality assurance classifications (QA1 to QA5) 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 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:

- 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 Regulation) 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.