

Manufacturer:
Henry Williams Ltd

Issue : 2
Valid From : 15-12-2017
Review Date: 15-12-2022

SafeBox – Class II FSP Switchgear Assemblies

Product Description

Class II FSP Type 01, 02 and 04 Switchgear in accordance with NR/L2/SIGELP/27409 Issue 2 – Product Specification for Functional Supply Points for use in radial feeder configurations.

Products consists of a range of switchgear configurations.

Product Image



Scope of Acceptance

Full Acceptance

Class II FSP Type 01, 02 and 04 switchgear assemblies in accordance with NR/L2/SIGELP/27409 Issue 2 – Product Specification for Functional Supply Points; for use in Signalling Power Distribution Systems with radial and manual reconfigurable topology.

Switchgear type FSP04 suitable for use as a direct replacement for Class I switchgear and for use in radial circuits where asset plans do not exist for enhancements to manually reconfigurable systems.

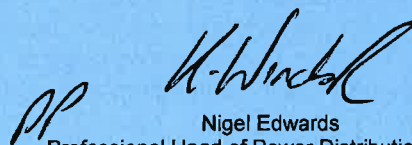
Includes models suitable for connection with Aluminium cable. Where applicable, connectors shall be in accordance with NR/L2/SIGELP/27243 - Product Specification for Connectors and joints for Signalling Power Cables

Refer to Manufacturers and Users Conditions for further information and constraints of use.

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.
Authorised by:



Tom Riley
Process & change Specialist



Nigel Edwards
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 '**SafeBox Compact**' production units **shall** be tested in accordance with section 9.2 Insulating materials or coatings, of NR/L2/SIGELP/27409 Issue 2 (Class II Dielectric Test). Test records and photographs of each production unit **shall** be maintained for traceability of Class II tests.
- 2) Class II Dielectric testing **shall** be performed for a minimum of 60 seconds on every production assembly.
- 3) All Class II '**SafeBox Compact**' production units **shall** be inspected and tested in accordance with Henry Williams Ltd product specific Standard Operating Procedures (SOP).
- 4) Test records for Mechanical and Electrical testing of each production unit **shall** be maintained for traceability.
- 5) Each production unit **shall** be individually serial numbered and **shall** be accompanied by a certificate of conformity.
- 6) Henry Williams **shall** facilitate the audit of the EIC coating process by Network Rail before the end of January 2016.

User

- 1) Units within the Class II '**SafeBox Compact and Legacy**' product range are suitable for use as FSP Switchgear Assemblies in accordance with NR/L2/SIGELP/27409 Issue 2.
- 2) Where a Class II '**SafeBox Compact and Legacy**' product is used in a Class I installation, it **shall** be in accordance with NR/L2/SIGELP/27410 Issue 2.
- 3) A Class II installation is satisfied if the Class II '**SafeBox Compact and Legacy**' is installed with other system components in accordance with NR/L2/SIGELP/27410 Issue 2. The use of Class II switchgear alone in a Class I installation does **not** provide full protective measures.
- 4) '**SafeBox Compact and Legacy**' assemblies are suitable for use with two core cable in accordance with NR/L2/SIGELP/27408 issue 2, unarmoured B2/D2 EPR cable in accordance with NR/PS/SIG/00005 or other legacy two core unarmoured cable.
- 5) Functional circuit protection, feeding transformers **shall** be in accordance with approved transformer manufacturer's recommendations. The use of MCB's, MCCB's or other overcurrent devices in the switchgear assemblies will require a product change request in accordance with Network Rail policy.
- 6) Not to be used in subsurface environments in accordance with section 12 stations and locations.
- 7) The '**SafeBox Compact and Legacy**' assemblies **shall** not be installed in signalling power distribution systems where the upstream protection exceeds a BS 88 80A at AC22 or equivalent protective device.
- 8) '**SafeBox Compact and Legacy**' assemblies are not suitable for installation in marine/aggressive areas.
- 9) Where Class II '**SafeBox Compact and Legacy**' assemblies are damaged externally and require repair in accordance with Manufacturers O & M manual, such repairs may only be undertaken by the original manufacturer.
- 10) Class II '**SafeBox Compact and Legacy**' assemblies **shall** not be drilled/machined on site. Brass glands (metallic) **shall** only be used in conjunction with a fully insulated; product approved Adapter Reducer, with a dielectric strength exceeding 3.5kV in accordance with NR/L2/SIGELP/27410 Issue 2.
- 11) Class II '**SafeBox Compact and Legacy**' assemblies utilising ABB E90 series IEC 60269 fuse carriers **shall** only be used in conjunction with Signalling Transformers in accordance with NR/L2/SIGELP/30007 Issue 3.
- 12) Aluminium (Al) cabling is permitted for use with '**SafeBox Compact and Legacy**' assemblies **on condition** that the cable is terminated with appropriately sized and rated Product Approved Bi-Metallic connectors in accordance with NR/L2/SIGELP/27243.




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- 13) Aluminium (Al) cabling is **not** permitted for use with assembly Part Number '**Safebox Legacy SL11/A**'.
- 14) Class II '**SafeBox Compact**' shall interface with flexible conduits and glands in accordance with NR/L2/SIGELP/27421 and NR/L2/SIGELP/27422.
- 15) Installed terminals within the Class II **SafeBox** product range are suitable for 2 core feeder cables in the range 10 to 150mm² in Al or Cu depending on model selected. 150mm² is the maximum cable cross sectional area **permitted**.
- 16) Class II '**SafeBox Compact**' assemblies Part number '**Safebox Compact C22/SA and C32/SA**' are the only models fitted with Product Approved 2 wire Overvoltage Device in accordance with NR/L2/SIGELP/27410 Issue 2.






Product Configuration

SafeBox Assemblies

Part No.	Distribution Switches	Functional Switches	Fuses	FSP	Catalogue No.
SafeBox Compact C22/SA	2	2*	4	FSP01/02	091/019319
Drawing Reference	Class II distribution unit rated to 690V fitted with Power IN and OUT Isolators. One switched & fused output functional supply. *One output functional switch & two fuses supplying integral 2 wire product approved overvoltage device. Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ² .				
23380-C22/SA-II-W-B HWE-SAFEBOX-C22SA					
Part No.	2	3	6	FSP01/02	Catalogue No. 091/019320
SafeBox Compact C32	Class II distribution unit rated to 690V fitted with Power IN and OUT Isolators. Three switched & fused output functional supplies. Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ² .				
Drawing Reference					
23380-C32-II-W-B HWE-SAFEBOX-C32					
Part No.	2	3*	6	FSP01/02	Catalogue No. 091/019321
SafeBox Compact C32/SA	Class II distribution unit rated to 690V fitted with Power IN and OUT Isolators. Two switched & fused output functional supplies. *One output functional switch & two fuses supplying integral 2 wire product approved overvoltage device. Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ² .				
Drawing Reference					
23380-C32/SA-II-W-B HWE-SAFEBOX-C32SA					


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Part No.	Distribution Switches	Functional Switches	Fuses	FSP	Catalogue No.
SafeBox Legacy SL11/C	1	1	2	FSP04	091/019322
Drawing Reference	Class II distribution unit rated to 690V fitted with Power OUT Isolator. One switched & fused output functional supply.				
23380-SL11/C-II-W-A HWE-SAFEBOX-SL11C	Fuse carriers to be BS88 (CAMaster). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ² .				
Part No.	1	1	2	FSP04	Catalogue No. 091/019323
SafeBox Legacy SL11/A	Class II distribution unit rated to 690V fitted with Power OUT Isolator. One switched & fused output functional supply.				
Drawing Reference	Fuse carriers to be BS88-2. Suitable for Copper (Cu) 2C Feeder Cables 10 – 35mm ²				
23380-SL11/A-II-W-A HWE-SAFEBOX-SL11A					
Part No.	1	1	2	FSP04	Catalogue No. 091/019324
SafeBox Compact C11	Class II distribution unit rated to 690V fitted with Power OUT Isolator. One switched & fused output functional supply.				
Drawing Reference	Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ²				
23380-C11-II-W-B HWE-SAFEBOX-C11					
Part No.	2	1	2	FSP01/02	Catalogue No. 091/019325
SafeBox Compact C12	Class II distribution unit rated to 690V fitted with Power IN and OUT Isolators. One switched & fused output functional supply.				
Drawing Reference	Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ² .				
23380-C12-II-W-B HWE-SAFEBOX-C12					
Part No.	1	1	2	FSP04	Catalogue No. 091/019326
SafeBox Compact C13	Class II distribution unit rated to 690V fitted with Power IN Isolator. One switched & fused output functional supply.				
Drawing Reference	Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm				
23380-C13-II-W-B HWE-SAFEBOX-C13					

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Part No.	Distribution Switches	Functional Switches	Fuses	FSP	Catalogue No.
Part No.	2	2	4	FSP01/02	091/019327
SafeBox Compact C22	Class II distribution unit rated to 690V fitted with Power IN and OUT Isolators. Two switched & fused output functional supplies. Fuse carriers to be IEC 60269 (ABB). Suitable for Copper (Cu) or Aluminium (Al) 2C Feeder Cables 10 – 120mm ²				
Drawing Reference					
23380-C22-II-W-C HWE-SAFEBOX-C22					

SafeBox SIN119 FSP02/04 Model Range

Part No.	Description	Catalogue No.
SafeBox SIN119/1SW50	Class II enclosure with Power IN/OUT Terminals and 1 Functional Output [FSP04] Legacy Circuit Terminals: KE61 Tunnel Type Power Cable Conductor Size (mm ²): 2.5(Cu)/6.0(Al) to 50.0	091/001915 
HxWxD (mm)	240 x 380 x 149	
Design Reference	D2017-007	
SafeBox SIN119/2SW50	Class II enclosure with Power IN/OUT Terminals and 2 Functional Outputs [FSP04] Legacy Circuit Terminals: KE61 Tunnel Type Power Cable Conductor Size (mm ²): 2.5(Cu)/6.0(Al) to 50.0	091/001916 
HxWxD (mm)	320 x 380 x 149	
Design Reference	D2017-008	
SafeBox SIN119/1SW50R	Class II enclosure with Power IN/OUT Terminals and Isolators and 1 Functional Output [FSP02] Ring Circuit Terminals: KE61 Tunnel Type Power Cable Conductor Size (mm ²): 2.5(Cu)/6.0(Al) to 50.0	091/001917 
HxWxD (mm)	320 x 380 x 149	
Design Reference	D2017-014	
SafeBox SIN119/1SW95	Class II enclosure with Power IN/OUT Terminals and 1 Functional Output [FSP04] Legacy Circuit Terminals: KE62 Tunnel Type Power Cable Conductor Size (mm ²): 16.0 to 95.0 (Al) [May not be suitable for >50mm² Cu]	091/001918 
HxWxD (mm)	240 x 420 x 149	
Design Reference	D2017-006	

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Part No.	Description	Catalogue No.
SafeBox SIN119/2SW95	Class II enclosure with Power IN/OUT Terminals and 2 Functional Outputs [FSP04] Legacy Circuit Terminals: KE62 Tunnel Type Power Cable Conductor Size (mm ²): 16.0 to 95.0 (Cu/Al)	0091/001919 
HxWxD (mm)	317 x 420 x 149	
Design Reference	D2017-005	
SafeBox SIN119/1SW95R	Class II enclosure with Power IN/OUT Terminals and Isolators and 1 Functional Output [FSP02] Ring Circuit Terminals: KE62 Tunnel Type Power Cable Conductor Size (mm ²): 16.0 to 95.0 (Cu/Al)	0091/001920 
HxWxD (mm)	317 x 420 x 149	
Design Reference	D2017-015	
SafeBox SIN119/1SW120	Class II enclosure with Power IN/OUT Terminals and 1 Functional Output [FSP04] Legacy Circuit Terminals: KE63 Tunnel Type Power Cable Conductor Size (mm ²): 35.0 to 150 (Cu/Al) [May not be suitable for >70mm² Cu]	0091/001921 
HxWxD (mm)	302 x 460 x 149	
Design Reference	D2017-009	
SafeBox SIN119/2SW120	Class II enclosure with Power IN/OUT Terminals and 2 Functional Outputs [FSP04] Legacy Circuit Terminals: KE63 Tunnel Type Power Cable Conductor Size (mm ²): 35.0 to 150 (Cu/Al) [May not be suitable for >120mm² Cu]	0091/001922 
HxWxD (mm)	320 x 460 x 149	
Design Reference	D2017-010	
SafeBox SIN119/1SW120R	Class II enclosure with Power IN/OUT Terminals and Isolators and 1 Functional Output [FSP02] Ring Circuit Terminals: KE63 Tunnel Type Power Cable Conductor Size (mm ²): 35.0 to 150 (Cu/Al)	0091/001923 
HxWxD (mm)	320 x 460 x 149	
Design Reference	D2017-016	

Hardware (Maintenance Spares and Line Replaceable Units)

Part No.	Description	Catalogue No.
HWE-SAFEBOX-001	Isolating Switch Red/Yellow Handle & Yellow Shroud [SIN119 Range]	0091/001946
HWE-SINBOX-004	Terminal Covers (SIN119/50mm ² Range)	0091/001947
HWE-SINBOX-002	Terminal Covers (SIN119/95mm ² Range)	0091/001948

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Part No.	Description	Catalogue No.
HWE-SINBOX-006	Terminal Covers (SIN119/120mm ² Range)	0091/001949
HWE-SAFEBOX-031	25mm Hole Blanking Plug	0091/001950
HWE-SAFEBOX-032	25mm Blanking Plug Locknut	0091/001951
086/43556	BRSSM440 M4 Rail Fixing Kit	086/43556

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
Compliance Matrix PA05_06439	PA05_06439 Product Acceptance Compliance	V2	13/11/15	1
Acceptance Document PA05_06439	PA05_06439 Product Acceptance Document	V2	13/11/15	1
6.2	Evidence of Cable Sizes installed by Model Type	V1	13/11/15	1
6.5	Evidence of Clamp on wires	V1	13/11/15	1
7.16	IP21 Test Points Finger Testing		13/11/15	1
7.4	Ferraz IEC Fuse Information		13/11/15	1
Appendix A	Henry Williams Ltd. Quality Certificate to BSEN ISO 9001.		13/11/15	1
Appendix B	Henry Williams Ltd. <ul style="list-style-type: none"> B1 – Standard Operating Procedure SafeBox Production Dielectric Strength testing (Class II) B2 – Standard Operating Form SafeBox test and Inspection Report (Class II) B3 – Complete Standard Operating Form example 		13/11/15	1
Appendix C	Maintenance Spares as Line Replaceable Units		13/11/15	1
Appendix D	General Arrangement & Circuit Schematic Drawings		13/11/15	1
Appendix E	SafeBox Compact Model Range Introduction with descriptions and Table of Models		13/11/15	1
Appendix F	Product Datasheets		13/11/15	1
Appendix G	O&M Manual		13/11/15	1
Appendix H	Asset Life Declaration		13/11/15	1
Appendix J	SafeBox General Product Photographs		13/11/15	1
Appendix K	Mechanical Cable Support Photographs & Testing Results		13/11/15	1
Appendix L	Mechanical Impact testing photographs & results		13/11/15	1
Appendix M	Thermal stability testing certificate		13/11/15	1
Appendix N	ERA – Electrical testing, independent testing & report		13/11/15	1
Appendix P	HW report into SafeBox environmental conditions		13/11/15	1

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Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
Appendix R	Environmental testing – independent testing IP rating & vibration <ul style="list-style-type: none"> R1 – SafeBox Compact C11 test report R2 – SafeBox Compact C32/SA test report 		13/11/15	1
Appendix T	CE Marking Information <ul style="list-style-type: none"> T1 – Henry Williams CE Declaration T2 – Laidler Associates Declaration 		13/11/15	1
Appendix U	Product Labelling		13/11/15	1
	Asset Life Declaration	1		2
	Design Risk Assessment		21/03/2017	2
	Environmental Conditions Report	1.0	Aug 2015	2
	HW COMPLETED ES – Initial Generic Acceptance Requirements v2.4			2
	ISO 14001 – BSI Cert 552330		12/07/2017	2
	ISO 9001 – BSI Cert Q06189		20/11/2015	2
	RISQS Audit Certificate		27/10/2017	2
	RISQS Certificate and Product Codes 2018		Exp. 14/04/2018	2
	SafeBox – Henry Williams CE Declaration	9.0	Sept 2017	2
SRL01Sept2017	SafeBox Reference List – SRL01Sept2017		Sept 2017	2
	SafeBox SIN119 Model Range Table		27/09/2017	2
PS01Sept2017	SafeBox SIN119 Priced Spares List		Sept 2017	2
	SafeBox SIN119 Schematic Drawings	B	Sept 2017	2
SOU01Sept2017	SafeBox SIN119 Statement of Use – SOU01Sept2017		Sept 2017	2
	SIN119 GA Drawings	Var.	July 2017	2

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
HWC2SafeBoxCMP Issue: 01	SafeBox Class II Compact Range Operation & Maintenance Manual	V1.0	13/11/15	1
HWC2SafeBoxSIN119	SafeBox Class II SIN119 Range Operation & Maintenance Manual	1.0	03/10/17	1

Certificate History

Issue	Date	Issue History
1	13/11/2015	First accepted for use
2	15/12/2017	Addition of compact FSP02/04 SIN119 range

Certificate of Acceptance

PA05/06439

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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.