

Certificate of Acceptance

PA05/05297

Manufacturer:
Henry Williams Ltd

Issue : 9
Valid From : 18/10/2021
Review Date : 18/10/2026

Class II FSP Switchgear Assembly (FSP01/FSP02 and FSP03)

Product Description

Henry Williams 'Safebox' Class II FSP Switchgear Assemblies and Class II Functional Supply Points.

Product Image



Scope of Acceptance

Full Acceptance

The Class II "Safebox" product range is suitable for use as a Class II FSP Switchgear Assembly in accordance with NR/L2/ELP/27409.

Where "Safebox" is used in Class I installations the continuity of the protective conductors or bonding must be maintained.

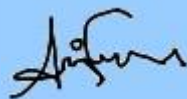
Note: The use of Class II Switchgear Assemblies alone in Class I installations does not provide full protective measures as detailed in NR/L2/ELP/27410.

The user and manufacturer conditions must be adhered to.

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:



Aamir Malik
Product Acceptance Coordinator



Felix Langley
Network Technical 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" production units shall be tested in accordance with section 4.5.2 of NR/L2/ELP/27409 (dielectric test). Test records shall be maintained for tractability of insulation tests.
- 2) The Class II "Safebox" production units shall be tested in accordance with SAFEBOX Test & Inspection Report, Ref HWEP/C2SafeBox/1.3 and Standard Operating Procedure SOPEP003 – Production Dielectric Strength Test- Safebox-Testing Schedule.
- 3) Class II equipment. Changes to this equipment or its use will require product approval by application to Technology Group via Network Rail's website.
- 4) Henry Williams may not use ATL's T2852 Full Class II Transformer for Non-Critical Auxiliary Circuits in conjunction with any other of Henry Williams Class II Switchgear assemblies constructed for NR. ATL's T2852 is specifically designed for exclusive use with Henry Williams "Safebox 3004 and 3008" FSP 03, it is an integral component. As such it must not be used in any other switchgear.

User

- 1) A Class II installation is satisfied if the "Safebox" is installed in conjunction with other system components in accordance with NR/L2/ELP/27410.
- 2) FSP 01 / 02, use limited to a single end fed radial or manual reconfiguration, dual/single end fed system. SafeBox 100 + 5 is only suitable for single end fed radial sub-distribution feeders.
- 3) Use as categories FSP01 / FSP02 and FSP 03 in accordance with NR/L2/ELP/27409.
- 4) Only for use with 2 core cable in accordance with NR/L2/ELP/27408 or unarmoured B2/D2 EPR cable to NR/PS/SIG/00005.
- 5) Functional circuit protection feeding transformers shall be in accordance with approved transformer manufacturer recommendations. The use of MCB's or MCCB's as 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 in accordance with section 12 stations and locations.
- 7) The Class II "Safebox" shall not be installed in signalling distribution feeders, where the PSP outgoing or source feeder protection exceeds a BS 88 80A or equivalent protective device. The energy let through shall not exceed 1.63kA for 1 second at the FSP.
- 8) Where Overvoltage protection is specified or fitted it shall be a Product Approved 2 Wire Overvoltage protection device in accordance with NR/L2/ELP/27410.
- 9) For coastal applications use 316 Grade Stainless Steel (Class II – EIC Coated) as provided by the M Series of Class II "SafeBox", unless installed within REB or Relay Room.
- 10) FSP 03 Peak withstand current 6kA for 1 sec with constraint that the design uses upstream fusing to limit the fault energy.
- 11) ATL's T2852 Full Class II Auxiliary Transformer for Non-Critical Auxiliary Circuits used in Henry Williams FSP03 Class II Switchgear assembly is specifically designed for exclusive use with Henry Williams FSP03 in PA05/05297. It has been dielectrically tested iaw NR/L2/ELP/27410 as an integral component and must not be used in any other switchgear.

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- 12) The Class II Safebox 115/SA is only to be installed on the GSSR Renewal Project between the following ELR's;
- GBK 5m 31ch to 1m 19ch
 - MEN2 0m 0ch to 0m 19ch
 - MEN1 0m 19ch to 0m 70ch
 - EKE 7m 60ch to 0m 40ch
 - LFS2 1m 19ch to 0m 61ch
 - LFS1 101m 17ch to 101m 01ch
 - TSS 0m 4ch to 0m 40ch
 - CTC 5m 19ch to 0m 0ch
 - NNH 108m 45ch to 100m 77ch
 - KHL 96m 74ch to 100m 77ch
 - CNC 0m 45ch to 0m 0ch
- 13) Where Class II – EIC Coating is damaged and requires repair in accordance with the O&M manual, this shall be undertaken by the original manufacturer.
- 14) Class II FSP Switchgear Assemblies shall not be drilled on site. Brass glands (Metallic) shall only be used with fully insulated adaptor/reducer (e.g. PA certificate PA05/05575), with a dielectric strength exceeding 3.5KV, in accordance with NR/L2/ELP/27410 issue 1.

Product Configuration

System or Complete Assembly

PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002039	Safebox 12	22190-12-II-w	2	1	2
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. One switched & fused output functional supply.			
092/002040	Safebox M/12	22190-12-II-w	2	1	2
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. One switched & fused output functional supply. Marine Version for costal/aggressive areas.			
092/002041	Safebox 12/SA	22190-12-II-w	2	2	4
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. One switched & fused output functional supply. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor.			
092/002042	Safebox M/12/SA	22190-12-II-w	2	1	2
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. One switched & fused output functional supply. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor. Marine Version for costal/aggressive areas.			
092/002043	Safebox 22	22190-22-II-w	2	2	4
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies.			
092/002044	Safebox M/22	22190-22-II-w	2	2	4
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. Marine Version for costal/aggressive areas.			
092/002045	Safebox 22/SA	22190-22-II-w	2	2	4
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002046	Safebox M/22/SA	22190-22-II-w	2	2	4
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. Marine Version for costal/aggressive areas. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor.			
092/002047	Safebox 32	22190-32-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Three switched & fused output functional supplies.			
092/002048	Safebox M/32	22190-32-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Three switched & fused output functional supplies. Marine Version for costal/aggressive areas.			
092/002049	Safebox 32/SA	22190-32-II-w	2	3	6
		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.			
092/002050	Safebox M/32/SA	22190-32-II-w	2	3	6
		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. Marine Version for costal/aggressive areas.			
092/002051	Safebox 35	22190-35-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. One switched & fused internal supply.			
092/002052	Safebox M/35	22190-35-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. One switched & fused internal supply. Marine Version for costal/aggressive areas.			
092/002053	Safebox 35/SA	22190-35/SA-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor.			
092/002054	Safebox M/35/SA	22190-35/SA-II-w	2	3	6
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Two switched & fused output functional supplies. One switched & fused internal supply to Surge Arrestor. Built-in Surge Arrestor. Marine Version for costal/aggressive areas.			
092/002055	Safebox 13	22190-13-II-w	1	1	2
		Class II distribution unit rated to 690V fitted with Supply Power IN Isolator. One switched & fused output functional supply.			
092/002056	Safebox M/13	22190-13-II-w	1	1	2
		Class II distribution unit rated to 690V fitted with Supply Power IN Isolator. One switched & fused output functional supply. Marine Version for costal/aggressive areas.			
092/002057	Safebox 13/SA	22190-13-II-w	1	1	2
		Class II distribution unit rated to 690V fitted with Supply Power IN Isolator. One switched & fused output functional supply. Built-in Surge Arrestor.			
092/002058	Safebox M/13/SA	22190-13-II-w	1	1	2
		Class II distribution unit rated to 690V fitted with Supply Power IN Isolator. One switched & fused output functional supply. Marine Version for costal/aggressive areas. Built-in Surge Arrestor.			
092/001358	SafeBox 105	22190-105-II-w	3	5	10
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Five switched & fused output transformer supplies.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/001359	SafeBox M/105	22190-105-II-w	3	5	10
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Five switched & fused output transformer supplies. Marine Version for costal/aggressive areas.			
092/001360	SafeBox 105/SA	22190-105/SA-II-w	3	5	12
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Five switched & fused output transformer supplies. Includes switched & fused Surge Arrestor.			
092/001361	SafeBox M/105/SA	22190-105/SA-II-w	3	5	12
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Five switched & fused output transformer supplies. Includes switched & fused Surge Arrestor. Marine Version for costal/aggressive areas.			
092/001362	SafeBox 100+5	22190-100+5-II-w	0	5	10
		Class II distribution add-on unit rated to 690V fitted with five switched & fused output transformer supplies.			
092/001363	SafeBox M/100+5	22190-100+5-II-w	0	5	10
		Class II distribution add-on unit rated to 690V fitted with five switched & fused output transformer supplies. Marine Version for costal/aggressive areas.			
092/002085	SafeBox 3004	22531-3004-II-w	5	4	14
		SafeBox 3004 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Half Loc. Class II FSP03 distribution unit rated to 690V in a half location size apparatus housing manufactured from Ferritic Stainless Steel (4003). The front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm ² (Al or Cu). It incorporates 5 (125A rated) switches for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable isolation. The front side has sufficient space and pre-installed wiring to house a Auto Reconfiguration unit. The rear-mounted Distribution Module includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses to provide power to the apparatus housings auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. It also houses the SafeBox Output Module which can supply 4 functional supply outputs (each max 32A) to external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.			
092/002086	SafeBox M/3004	22531-3004-II-w	2	4	14
		SafeBox 3004 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Half Loc. <u>Marine version enclosure</u> manufactured from Stainless Steel (Grade 316) for coastal/aggressive areas. Class II FSP03 distribution unit is rated to 690V in a half location size apparatus housing. The front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm ² (Al or Cu). It incorporates 5 (125A rated) switches for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable isolation. The front side has sufficient space and pre-installed wiring to house a Camlin Rail Auto Reconfiguration unit. The rear-mounted Distribution Module includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses to provide power to the apparatus housing auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. It also houses the SafeBox Output Module which can supply 4 functional supply outputs (each max 32A) to external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002087	SafeBox 3004/SA	22531-3004/SA-II-w	5	4	16
		<p>SafeBox 3004 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Half Loc. <u>Surge Arrestor version</u> comes complete with a switched and fused approved 2-wire Surge Arrestor Unit. Class II FSP03 distribution unit rated to 690V in a half location size apparatus housing manufactured from Ferritic Stainless Steel (4003). The front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). It incorporates 5 (125A rated) switches for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable isolation. The front side has sufficient space and pre-installed wiring to house a Camlin Rail Auto Reconfiguration unit. The rear-mounted Distribution Module includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses to provide power to the apparatus housing auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. It also houses the SafeBox Output Module which can supply 4 functional supply outputs (each max 32A) to external loads Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			
092/02088	SafeBox M/3004/SA	22531-3004/SA-II-w	5	4	16
		<p>SafeBox 3004 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Half Loc. <u>Marine version enclosure</u> manufactured from Stainless Steel (Grade 316) for costal/aggressive areas. <u>Surge Arrestor version</u> comes complete with a switched and fused approved 2-wire Surge Arrestor Unit. Class II FSP03 distribution unit rated to 690V in a half location size apparatus housing. The front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). It incorporates 5 (125A rated) switches for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable isolation. The front side has sufficient space and pre-installed wiring to house a Camlin Rail Auto Reconfiguration unit. The rear-mounted Distribution Module includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses to provide power to the apparatus housing auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. It also houses the SafeBox Output Module which can supply 4 functional supply outputs (each max 32A) to external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			
092/002089	SafeBox 3008	22531-3008-II-w	5	8	22
		<p>SafeBox 3008 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Full Loc. Class II FSP03 distribution unit rated to 690V in a location plus size apparatus housing manufactured from Ferritic Stainless Steel (4003). The 3008 front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). The front-side Distribution Module incorporates 5 switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable. The front side has sufficient space and pre-installed wiring to house an Auto Reconfiguration unit. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This provides the power to the apparatus housings auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. The rear of the apparatus housing contains the SafeBox Output Module which can supply 4 or 8 functional supply outputs (each max 32A) to transformers and/or external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002090	SafeBox M/3008	22531-3008-II-w	5	8	22
		<p>SafeBox 3008 Class II Automatic Reconfigurable FSP03 Functional Supply Point – Full Loc. Marine Version <u>Marine version enclosure</u> manufactured from Stainless Steel (Grade 316) for coastal/aggressive areas. Class II FSP03 distribution unit (690VAC Rated) in a location plus size apparatus housing. The 3008 front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). The front-side Distribution Module incorporates 5 switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable. The front side has sufficient space and pre-installed wiring to house an Auto Reconfiguration unit. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This provides the power to the apparatus housing auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. The rear of the apparatus housing contains the SafeBox Output Module which can supply 4 or 8 functional supply outputs (each max 32A) to transformers and/or external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			
092/002091	SafeBox 3008/SA	22531-3008/SA-II-w	5	8	24
		<p>SafeBox 3008/SA Class II Automatic Reconfigurable FSP03 Functional Supply Point – Full Loc. Surge Arrestor <u>Surge Arrestor version</u> comes complete with a switched and fused approved 2-wire Surge Arrestor Unit. Class II FSP03 distribution unit (690VAC Rated) in a location plus size apparatus housing manufactured from Ferritic Stainless Steel (4003). The 3008 front-side Distribution Module incorporates two terminal enclosures for termination of incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). The front-side Distribution Module incorporates 5 switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable. The front side has sufficient space and pre-installed wiring to house an Auto Reconfiguration unit. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This provides the power to the location case auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. The rear of the apparatus housing contains the SafeBox Output Module which can supply 4 or 8 functional supply outputs (each max 32A) to transformers and/or external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002092	SafeBox M/3008/SA	22531-3008/SA-II-w	5	8	24
		<p>SafeBox M/3008/SA Class II Automatic Reconfigurable FSP03 Functional Supply Point – Full Loc. Surge Arrestor & Marine Version <u>Marine version enclosure</u> manufactured from Stainless Steel (Grade 316) for coastal/aggressive areas. <u>Surge Arrestor version</u> comes complete with a switched and fused approved 2-wire Surge Arrestor Unit. Class II FSP03 distribution unit (690VAC Rated) in a location plus size apparatus housing. The 3008 front-side Distribution Module incorporates two terminal enclosures for termination of the incoming and outgoing mains feeder cables up to 120mm² (Al or Cu) and 5 switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and feeder cable isolation. The front side has sufficient space and pre-installed wiring to house an Auto Reconfiguration unit. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This provides the power to the apparatus housings auxiliary equipment which consists of a 20W Anti-condensation heater and two 11W wander lights. The rear of the apparatus housing contains the SafeBox Output Module. This module can supply 4 or 8 functional supply outputs (each max 32A) to transformers and/or external loads. Installed in the housing is an earth bar with disconnect link, cable clamping rails, and fuse carriers for outgoing load cables.</p>			
092/002445	FSP (with ARS Support) Front Module (Siemens Switchgear)	24014-FSPFARS	5	N/a	N/a
		24014-FSPFS 2018.011-A1-001			
<p>FSP Class II – 650V Distribution (Front) Module (with ARS Support) Class II FSP03 distribution module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. The front-side Distribution Module incorporates two large terminal enclosures with removable gland plates for termination of the incoming and outgoing mains feeder cables up to 120mm² (Al or Cu). The front-side Distribution Module incorporates 5 off switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and signalling supplies isolation. Test Points are also incorporated to aid in diagnostics and maintenance. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This is used to provide the power to the railway equipment case auxiliary equipment which usually consists of an anti-condensation heater and work lighting. A separately switched and fused 650V Surge Arrestor is also contained within this distribution module. A separate telecoms terminal compartment is also contained within this distribution module. This module is internally completely fitted out, pre-wired, and tested. It is designed to bolt directly onto the upright vertical rails installed in a standard railway equipment case. The module has pre-wired (in conduit) outputs to connect it to an ARS unit or terminal box (if ARS to be fitted later). The power supply wiring which connects to the (rear-mounted) output functional modules is also pre-wired in conduit ready for termination once the modules are fitted into the rear of the railway equipment case.</p>					

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002446	FSP (without ARS Support) Front Module (Siemens Switchgear)	24014-FSPF 24014-FSPFS 2018.011-A1-500	3	N/a	N/a
		FSP Class II – 650V Distribution (Front) Module (without ARS Support) Class II FSP03 distribution module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. The FSP front-side Distribution Module incorporates two large terminal enclosures with removable gland plates for termination of the incoming and outgoing mains feeder cables up to 120mm ² (Al or Cu). The front-side Distribution Module incorporates 3 off switches (125A rated) for the purpose of power switching and signalling supplies isolation. Test Points are also incorporated to aid in diagnostics and maintenance. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This is used to provide the power to the railway equipment case auxiliary equipment which usually consists of an anti-condensation heater and work lighting. A separately switched and fused 650V Surge Arrestor is also contained within this distribution module. This module is internally completely fitted out, pre-wired, and tested. It is designed to bolt directly onto the upright vertical rails installed in a standard railway equipment case. The module <u>does not have</u> pre-wired (in conduit) outputs to connect it to an ARS unit or terminal box. The power supply wiring which connects to the (rear-mounted) output functional modules is pre-wired in conduit ready for termination once the modules are fitted into the rear of the railway equipment case.			
092/002447	FSP 2FS Rear Module (Siemens Switchgear)	24014-FSP2FS 2018.013-A1-001	0	2	2
		FSP Class II – 650V Output (Rear) Module (provides 2 Functional Supply Outputs) - Fitted with cable out tunnel terminals Class II FSP03 functional supply module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with tunnel terminals for ease of load wiring installation.			
092/002448	FSP 4FS Rear Module (Siemens Switchgear)	24014-FSP4FS 2018.012-A1-001	0	4	4
		FSP Class II – 650V Output (Rear) Module (provides 4 Functional Supply Outputs) – Fitted with cable out tunnel terminals Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with tunnel terminals for ease of load wiring installation.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002449	FSP 4FSREB Rear Module (Siemens Switchgear)	24014-FSP4FSREB 2018.078-A1-001	0	4	4
		FSP Class II – 650V Output (Rear) Module (provides 4 Functional Supply Outputs) – Fitted with cable out stud terminals. Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with stud cable terminals for ease of load wiring installation.			
092/002450	FSP SPM1 Spur Rear Module (Siemens Switchgear)	24014-FSPSPM1 2018.014-A1-001	0	1	1
		FSP Class II – 650V Output (Rear) Module (provides 1 Spur Functional Supply Output) – Fitted with cable out stud terminals. Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. The functional supply output way has a lockable isolator, fuse protection, and removable gland plate with stud cable terminals for ease of load wiring installation.			
092/002452	FSP (with ARS Support) Front Module (ABB Switchgear)	HW-FSPFARS HW-FSPFS 2018.011-A1-100	5	N/A	N/A
		FSP Class II – 650V Distribution (Front) Module (with ARS Support) Class II FSP03 distribution module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. The front-side Distribution Module incorporates two large terminal enclosures with removable gland plates for termination of the incoming and outgoing mains feeder cables up to 120mm ² (Al or Cu). The front-side Distribution Module incorporates 5 off switches (125A rated) for the purpose of power switching, Auto Reconfiguration System bypass and signalling supplies isolation. Test Points are also incorporated to aid in diagnostics and maintenance. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This is used to provide the power to the railway equipment case auxiliary equipment which usually consists of an anti-condensation heater and work lighting. A separately switched and fused 650V Surge Arrestor is also contained within this distribution module. A separate telecoms terminal compartment is also contained within this distribution module. This module is internally completely fitted out, pre-wired, and tested. It is designed to bolt directly onto the upright vertical rails installed in a standard railway equipment case. The module has pre-wired (in conduit) outputs to connect it to an ARS unit or terminal box (if ARS to be fitted later). The power supply wiring which connects to the (rear-mounted) output functional modules is also pre-wired in conduit ready for termination once the modules are fitted into the rear of the railway equipment case.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002453	FSP (without ARS Support) Front Module (ABB Switchgear)	HW-FSPF HW-FSPFS 2018.011-A1-600	3	N/A	N/A
		FSP Class II – 650V Distribution (Front) Module (without ARS Support) Class II FSP03 distribution module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. The FSP front-side Distribution Module incorporates two large terminal enclosures with removable gland plates for termination of the incoming and outgoing mains feeder cables up to 120mm ² (Al or Cu). The front-side Distribution Module incorporates 3 off switches (125A rated) for the purpose of power switching and signalling supplies isolation. Test Points are also incorporated to aid in diagnostics and maintenance. The Distribution Module also includes a 650/110V (80VA) Class II transformer with isolator & IEC fuses. This is used to provide the power to the railway equipment case auxiliary equipment which usually consists of an anti-condensation heater and work lighting. A separately switched and fused 650V Surge Arrestor is also contained within this distribution module. This module is internally completely fitted out, pre-wired, and tested. It is designed to bolt directly onto the upright vertical rails installed in a standard railway equipment case. The module does not have pre-wired (in conduit) outputs to connect it to an ARS unit or terminal box. The power supply wiring which connects to the (rear-mounted) output functional modules is pre-wired in conduit ready for termination once the modules are fitted into the rear of the railway equipment case.			
092/002454	FSP 2FS Rear Module (ABB Switchgear)	HW-FSP2FS 2018.013-A1-500	0	2	2
		FSP Class II – 650V Output (Rear) Module (provides 2 Functional Supply Outputs) - Fitted with cable out tunnel terminals Class II FSP03 functional supply module (690VAC Rated) manufactured from mild steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with tunnel terminals for ease of load wiring installation.			
092/002455	FSP 4FS Rear Module (ABB Switchgear)	HW-FSP4FS 2018.012-A1-500	0	4	4
		FSP Class II – 650V Output (Rear) Module (provides 4 Functional Supply Outputs) – Fitted with cable out tunnel terminals Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with tunnel terminals for ease of load wiring installation.			

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PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/002456	FSP 4FSREB Rear Module (ABB Switchgear)	HW-FSP4FSREB 2018.078-A1-500	0	4	4
		FSP Class II – 650V Output (Rear) Module (provides 4 Functional Supply Outputs) – Fitted with cable out stud terminals. Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. Each functional supply output way has a lockable isolator, fuse protection, and separate connection chamber with stud cable terminals for ease of load wiring installation.			
092/002452	FSP SPM1 Spur Rear Module (ABB Switchgear)	HW-FSPSPM1 2018.014-A1-500	0	1	1
		FSP Class II – 650V Output (Rear) Module (provides 1 Spur Functional Supply Output) – Fitted with cable out stud terminals. Class II FSP03 functional supply module (690VAC Rated) manufactured from mild Steel (CR4) & IEC Coated. This module is designed to bolt to standard BRS440 rails in a railway equipment case. Internal wiring terminals and conduit fitting are pre-installed for the incoming wiring from the (front-mounted) Distribution Module. There are also terminals to link wiring from/to another functional supply output module if required. The functional supply output way has a lockable isolator, fuse protection, and removable gland plate with stud cable terminals for ease of load wiring installation.			

The following item is geographically constrained as per the User's Conditions

PADS No.	Model Reference	Circuit Drawing Reference	Distribution Switches	Functional Switches	Fuses
092/001364	SafeBox 115/SA	22190-115/SA/II-w Sheets 1-3	3	15	32
		Class II distribution unit rated to 690V fitted with Ring Power IN and OUT Isolators. Fifteen switched & fused output transformer supplies. Includes switched & fused Surge Arrestor.			

Notes:

- Models manufactured from 316 Grade Stainless Steel (Class II – EIC coated) for harsher/marine environments are prefixed with an M/ prefix in the above table. E.g. SafeBox M/105 denotes Marine Version without Surge Arrestor.
- All models above, except where explicitly stated, can be fitted with an optional two-wire surge arrester by adding the following suffix to the end of the model reference no. in the table above:
 - 650V Surge Arrestor (MOV) – CAT No. 0086/047165 add /SA
 - E.g. SafeBox 105/SA denotes Standard Version with 650V Surge Arrestor.
 - E.g. SafeBox M/105/SA denotes Marine Version with 650V Surge Arrestor.

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- The add-on module (100+5) is designed to be attached to a SafeBox 105 (base model) or to another 100+5 unit and adds five additional switched/fused functional output supplies to the overall capacity of the unit.

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
	PA05/5297 Evidence zip file.		26.04.2012	1
	PA05/5297 application form		19.10.2011	1
	Email from Ernest Brigden in response to the review of acceptance requirements		11.05.2012	1
	Henry Williams Safe-box cover letter		20.04.2012	1
	Henry Williams letter in response to the review of acceptance requirements		11.05.2012	1
	Safe-box submission documents 11.05.2012 zip file		11.05.2012	1
	Henry Williams Email with drawing Updates		19.06.2012	1
	PA05/5297 Evidence zip file.		26.04.2012	1
	Safe-box submission documents 11.05.2012 zip file		11.05.2012	1
	Henry Williams Email with drawing Updates		19.06.2012	1
	PA05/5297/1 Evidence Zip File.		21/12/2012	3
	Henry Williams Cover Letter dated 23/11/12		21/12/2012	3
	Configuration Management Application form Safebox 100 Series		21/12/2012	3
	Henry Williams Directory of Evidence		21/12/2012	3
	Document Updates to PA05/05297 Issue 1 Submission		21/12/2012	3
	GSSR ELR Coverage		21/12/2012	3
	Quail Map/ GSSR ELR Coverage		21/12/2012	3
	Addition of Cat No's		16/04/2013	4
	FSP 03 Zip File of Evidence		16/01/2015	5
	Folder 'HW PA Evidence – August 2019'			6
	Folder 'SML Project Documentation'			6
	Henry Williams FSP Product Acceptance RA		20/03/2020	6
	PA05_05297 Product Acceptance Requirements	1.0	29/04/2020	6
F526-INV-REP-EL-000003	Henry Williams Switchgear Critical Review Report	1.0	16/07/2021	8/9

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Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
HWC2Mod1	Henry Williams Class II FSP Modules Operation & Maintenance Manual (Siemens)	1.1	21/08/19	6

Certificate History

Issue	Date	Issue History
1	20/06/2012	First accepted for use.
2	25/09/2012	Amended to add new parts (Certificate raised in error).
3	13/02/2012	Amended to include new items and new scope of acceptance as per change configuration request PA05/05297/1.
4	16/04/2013	Fourth acceptance in order to add cat. no.s omitted at previous issue.
5	16/01/2015	Fifth Issue adding FSP 03 Series Safebox 3000.
6	25/05/2020	Addition of trial of redesigned modules incorporating Siemens components at Hither Green.
7	15/07/2021	Extension of trial.
8	25/07/2021	Full approval of trial components.
9	18/10/2021	Addition of modular design with ABB switchgear.

Contact Details

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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 via the NR sponsoring applicant.

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:
 - 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 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 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.