

Manufacturer: ILECSYS Rail Ltd

Issue : 1
Valid From : 12-09-2016

Class II Hybrid FSP Annexe for Signalling Power Supply Distribution Systems

Product Description

A Class II Hybrid FSP Annexe suitable for fitment to signalling apparatus housings without additional foundation requirements.

The Class II Hybrid Annexe is available in a the following configurations:

- FSP 02/04 Switchgear in accordance to NR/L2/SIGELP/27409 Issue 2 – Product Specification for Functional Supply Points
- Signalling transformers in accordance to NR/L2/SIGELP/30007 Issue 3 – Product Specification for Power Transformers for Signalling Systems
- 2-C and 4-C outgoing connection boxes
- Installation Accessories

Product Image



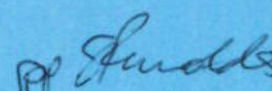
Scope of Acceptance: Full Acceptance

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

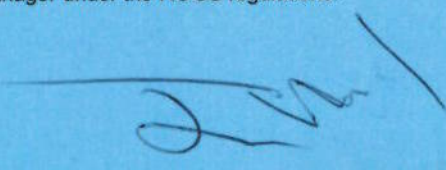
Suitable for attachment to existing signalling apparatus housing which have been assessed for suitability or installation of an FSP Annexe by appropriate survey.

FSP Annexe comprising Switchgear type FSP04 is 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. 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

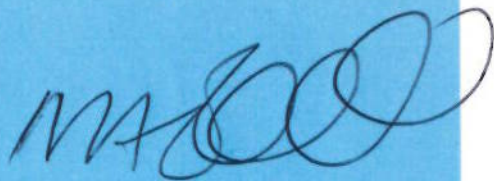
Network Rail Acceptance Panel (NRAP) hereby authorises the product above for use and trial use on railway infrastructure for which Network Rail is the Infrastructure Manager under the ROGS regulations.
 Authorised by:



Vanessa Cumine
 Product Approval Specialist



Jerry Morling
 Head of Signalling



Nigel Edwards
 Head of Power Distribution (HV/LV)

Manufacturer: ILECSYS Rail Ltd

Issue : 1
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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) See General Terms and Conditions
- 2) Compliance with applicable Network Rail PA05/06436 Acceptance requirements
- 3) Compliance with applicable Network Rail PA05/06087 acceptance requirements
- 4) Each Class II Hybrid FSP Annexe shall be tested in accordance with section 9.2 Insulating materials or coatings, of NR/L2/SIGELP/27409 Issue 2 (Class II Dielectric Test).
- 5) Test records along with photographs of each Class II Hybrid FSP Annexe shall be maintained for traceability of Class II tests.
- 6) The routine test certificate for each Class II Hybrid FSP Annexe shall be provided at the time of procurement.
- 7) Each Class II Hybrid FSP Annexe shall be individually serial numbered and shall be accompanied by a certificate of conformity.
- 8) Each Class II Hybrid FSP Annexe shall come with a laminated sheet containing the following:
 - The tool list
 - Health and safety information
- 9) An installation, performance and reliability report shall be produced as detailed below:
 - A sample of 30 units shall be inspected 30 days after installation, and the test repeated 3 times during the first 6 months of installation demonstrating;
 - Mechanical integrity of the existing enclosure was preserved
 - The adhesive has no detrimental effect to the existing enclosure
 - There is no evidence of condensation or moisture
 - There is no lateral, longitudinal or axial displacement of the existing enclosure
- 10) The supplier shall provide support in failure investigation and analysis.

Manufacturer: ILECSYS Rail Ltd

Issue : 1

Valid From : 12-09-2016

User

- 1) Class II Hybrid FSP Annexe product range detailed in the system configuration are suitable for use as FSP Switchgear Assemblies in accordance with NR/L2/SIGELP/27409 Issue 2
- 2) The Class II Hybrid FSP Annexe shall only be installed to an existing enclosure which has been deemed suitable by survey. The survey requirements shall be agreed between the route asset manager (RAM), manufacturer and the installation contractor.
The survey at a minimum shall include:
 - Ground suitability;
 - Existing enclosure skin suitability and;
 - Existing enclosure vertical, axial and longitudinal loading stability
- 3) The Annexe shall be installed in accordance with the Installation and Operations Manual O&M Manual ILS100233 (CAMaster) v4.0
- 3) The Annexe shall not be installed where access will cause a risk to safety including:
 - Areas of restricted or limited clearance;
 - Tunnels; and
 - Non-metallic enclosures (including wooden enclosures)
- 4) Where a Class II FSP Annexe is used in a Class I installation, it shall be in accordance with NR/L2/SIGELP/27410 Issue 2.
- 5) The switchgear assemblies and transformers forming part of the installation shall conform to the requirements set out in certificate of acceptance PA05/06087.
- 6) Class II Hybrid FSP switchgear and cable connection boxes shall interface with flexible conduits and glands in accordance with NR/L2/SIGELP/27421 and NR/L2/SIGELP/27422.
- 7) Installed terminals within the Class II Hybrid FSP Annexe product range are suitable for 2-core feeder cables in the range 6 to 120mm² in Al or Cu depending on model selected. 120mm² is the maximum cable cross sectional area permitted.
- 8) Equipment and material used in the installation of the Class II Hybrid FSP Annexe shall not have detrimental effect to:
 - Existing enclosure
 - Environment
 - People
- 9) The existing enclosure condition shall be inspected before each installation to verify survey data.

PRODUCT PHOTO






Manufacturer: ILECSYS Rail Ltd

Issue : 1
Valid From : 12-09-2016

Product Configuration





Class II Hybrid FSP housing assemblies

Part No.	Description	Image	Catalogue No
ILS100233-004	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure)</p> <p>Fitted with:</p> <ul style="list-style-type: none"> ● FSP04 (legacy) Class II switchgear rated to 690V, 63A ● Incoming 650V feeder cables size 6-50mm² (Cu cable only) ● Incoming feeder fuse carriers BS88-2 (CAMaster) ● Outgoing 110V functional supply, cable size 2.5-10mm² ● 250VA cased class II hybrid 650/110V Transformer 		054/214931
ILS100233-009	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure)</p> <p>Fitted with:</p> <ul style="list-style-type: none"> ● FSP04 (legacy) Class II switchgear rated to 690V, 63A ● Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) ● Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) ● Outgoing 110V functional supply, cable size 2.5-10mm² ● 250VA cased class II hybrid 650/110V Transformer 		054/214932
ILS100233-012	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure)</p> <p>Fitted with:</p> <ul style="list-style-type: none"> ● FSP04 (legacy) Class II switchgear rated to 690V, 63A ● Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) ● Incoming feeder fuse carriers BS88-2 (CAMaster) ● Outgoing 110V functional supply, cable size 2.5-10mm² ● 250VA cased class II hybrid 650/110V Transformer 		054/214933

Manufacturer: ILECSYS Rail Ltd

Issue : 1


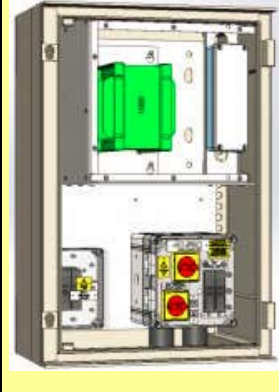
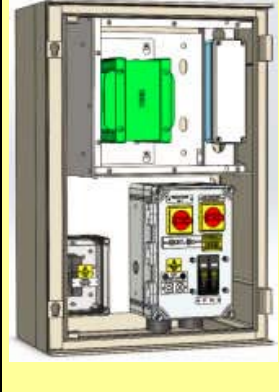
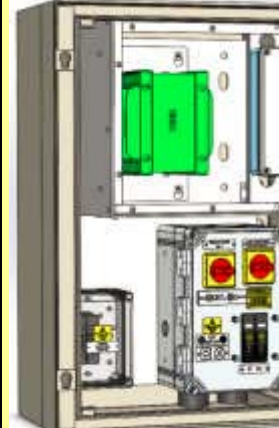
Valid From : 12-09-2016

<p>ILS100233-014</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 250VA cased class II hybrid 650/110V Transformer 		<p>054/214934</p>
<p>ILS100233-008</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA cased class II hybrid 650/110V Transformer 		<p>054/214935</p>
<p>ILS100233-015</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA cased class II hybrid 650/110V Transformer 		<p>054/214936</p>
<p>ILS100233-018</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA cased class II hybrid 650/110V Transformer 		<p>054/214937</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

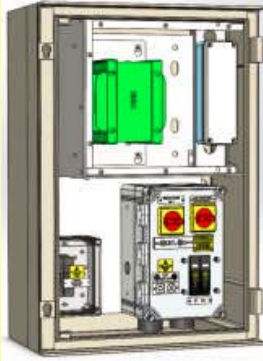
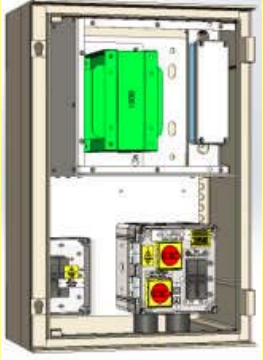
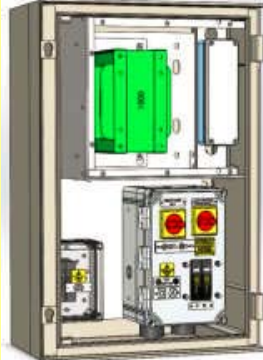
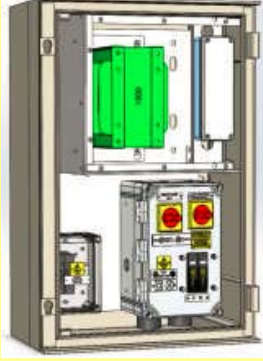
Valid From : 12-09-2016

<p>ILS100233-020</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA cased class II hybrid 650/110V Transformer 		<p>054/214938</p>
<p>ILS100233-024</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214939</p>
<p>ILS100233-057</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214940</p>
<p>ILS100233-060</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214941</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

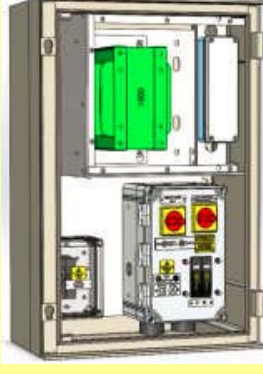
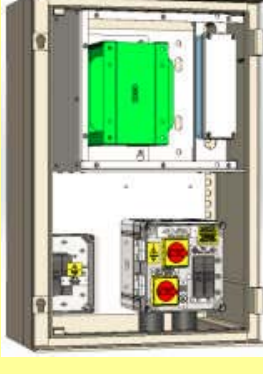
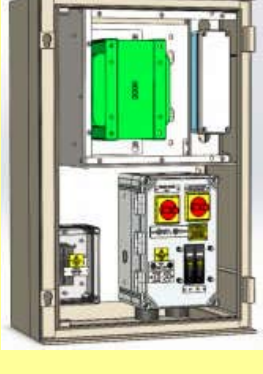
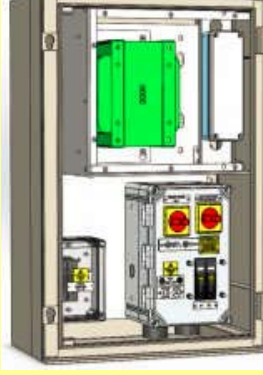
Valid From : 12-09-2016

<p>ILS100233-062</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214942</p>
<p>ILS100233-028</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1500VA open frame class II hybrid 650/110V Transformer 		<p>054/214943</p>
<p>ILS100233-063</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1500VA open frame class II hybrid 650/110V Transformer 		<p>054/214944</p>
<p>ILS100233-066</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1500VA open frame class II hybrid 650/110V Transformer 		<p>054/214945</p>

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Issue : 1

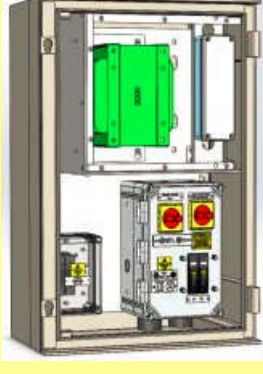
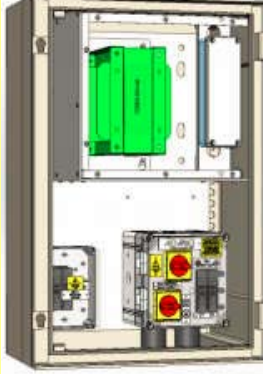
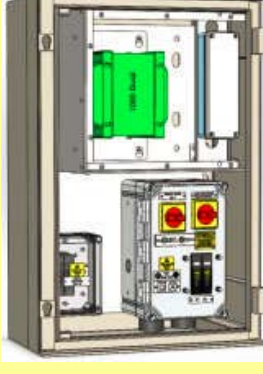
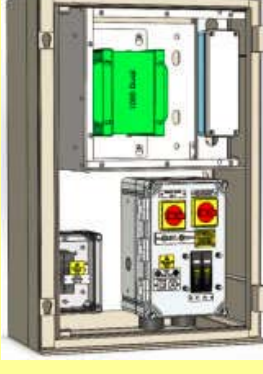
Valid From : 12-09-2016

<p>ILS100233-068</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 1500VA open frame class II hybrid 650/110V Transformer 		<p>054/214946</p>
<p>ILS100233-032</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214947</p>
<p>ILS100233-069</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214948</p>
<p>ILS100233-072</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214949</p>

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Issue : 1

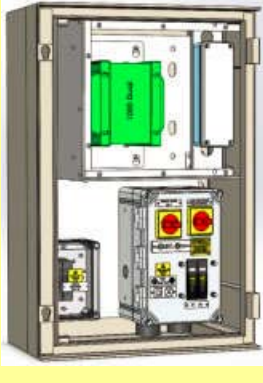
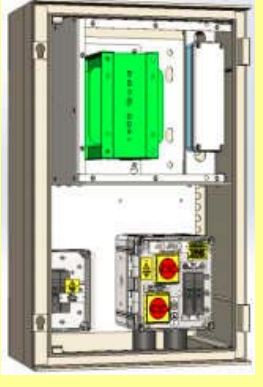
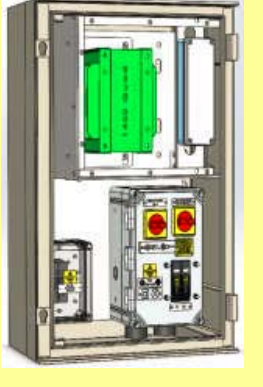
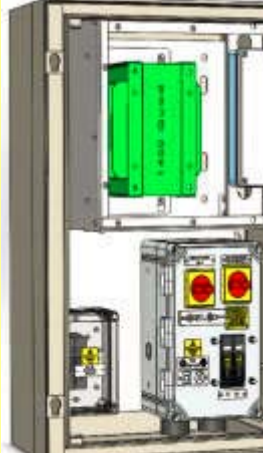
Valid From : 12-09-2016

<p>ILS100233-074</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214950</p>
<p>ILS100233-040</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 2 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214951</p>
<p>ILS100233-081</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • 2 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214952</p>
<p>ILS100233-084</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 2 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214953</p>

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Issue : 1

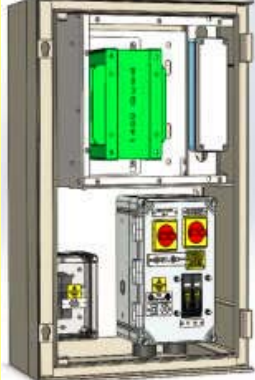
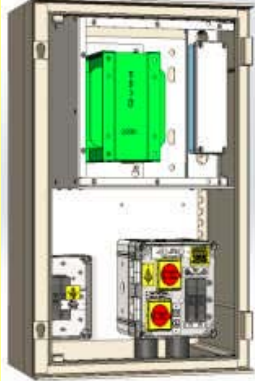
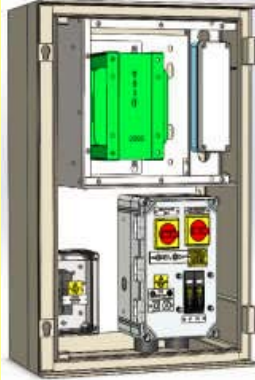
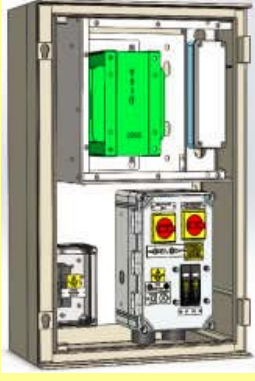
Valid From : 12-09-2016

<p>ILS100233-086</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 2 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1000VA open frame class II hybrid 650/110V Transformer 		<p>054/214954</p>
<p>ILS100233-114</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1400VA open frame class II hybrid 650/110V Transformer 		<p>054/214955</p>
<p>ILS100233-119</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1400VA open frame class II hybrid 650/110V Transformer 		<p>054/214956</p>
<p>ILS100233-122</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1400VA open frame class II hybrid 650/110V Transformer 		<p>054/214957</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

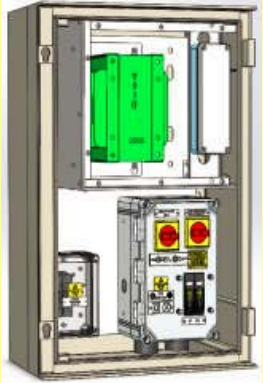

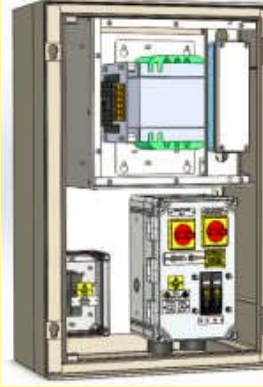
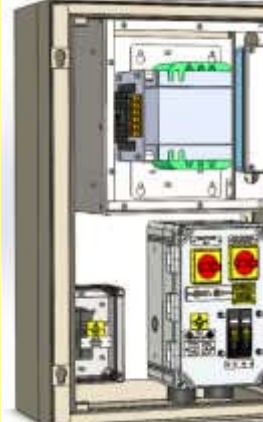
Valid From : 12-09-2016

<p>ILS100233-124</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 1400VA open frame class II hybrid 650/110V Transformer 		<p>054/214958</p>
<p>ILS100233-118</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214959</p>
<p>ILS100233-125</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214960</p>
<p>ILS100233-128</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214961</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

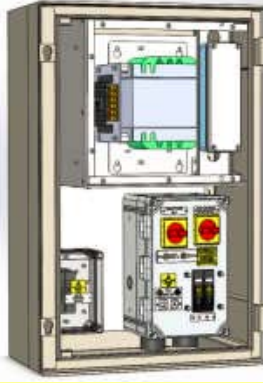
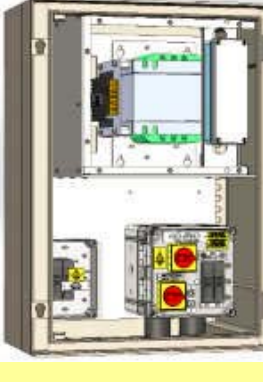
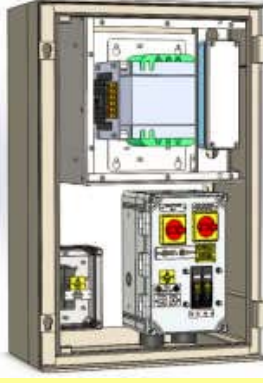
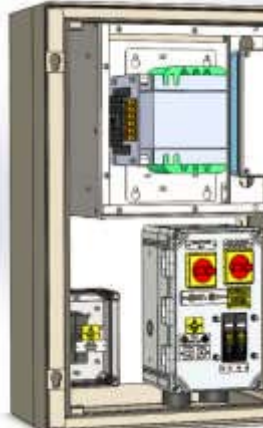
Valid From : 12-09-2016

<p>ILS100233-130</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • 4 Outgoing 110V functional supplies, cable size 2.5-10mm² • 2000VA open frame class II hybrid 650/110V Transformer 		<p>054/214962</p>
<p>ILS100233-044</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2.5A open frame class II hybrid Transformer / Rectifier 		<p>054/214963</p>
<p>ILS100233-087</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2.5A open frame class II hybrid Transformer / Rectifier 		<p>054/214964</p>
<p>ILS100233-090</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2.5A open frame class II hybrid Transformer / Rectifier 		<p>054/214965</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

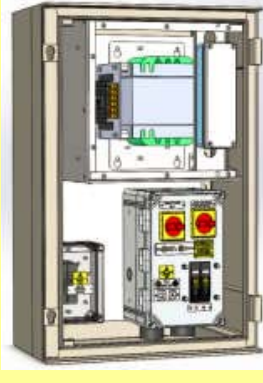
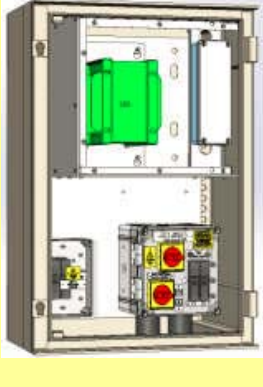
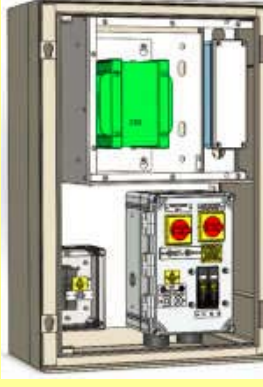
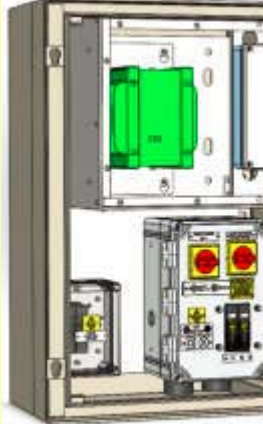
Valid From : 12-09-2016

<p>ILS100233-092</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 2.5A open frame class II hybrid Transformer / Rectifier 		<p>054/214966</p>
<p>ILS100233-048</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 5A open frame class II hybrid Transformer / Rectifier 		<p>054/214967</p>
<p>ILS100233-093</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 5A open frame class II hybrid Transformer / Rectifier 		<p>054/214968</p>
<p>ILS100233-096</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 5A open frame class II hybrid Transformer / Rectifier 		<p>054/214969</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

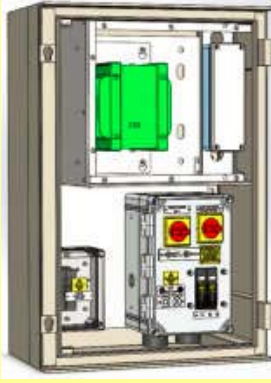
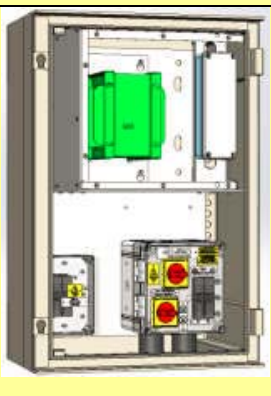
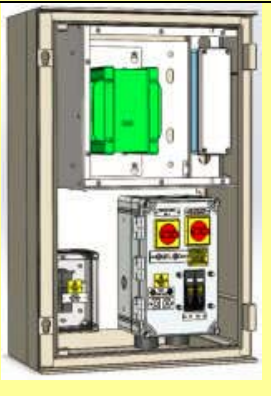
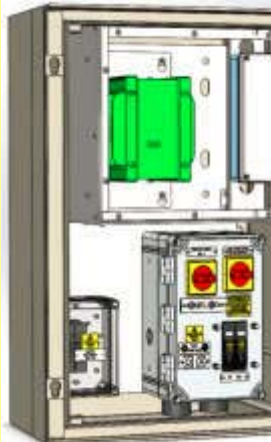
Valid From : 12-09-2016

<p>ILS100233-098</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 5A open frame class II hybrid Transformer / Rectifier 		<p>054/214970</p>
<p>ILS100233-131</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 250VA open frame class II hybrid 650/110V Transformer 		<p>054/214971</p>
<p>ILS100233-132</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 250VA open frame class II hybrid 650/110V Transformer 		<p>054/214972</p>
<p>ILS100233-133</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 250VA open frame class II hybrid 650/110V Transformer 		<p>054/214973</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1

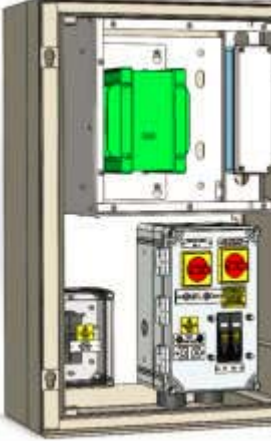


Valid From : 12-09-2016

<p>ILS100233-134</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 250VA open frame class II hybrid 650/110V Transformer 		<p>054/214974</p>
<p>ILS100233-135</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size 6-50mm² (Cu cable only) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA open frame class II hybrid 650/110V Transformer 		<p>054/214975</p>
<p>ILS100233-136</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers IEC60269 (ABB 10x38mm) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA open frame class II hybrid 650/110V Transformer 		<p>054/214976</p>
<p>ILS100233-137</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP04 (legacy) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA open frame class II hybrid 650/110V Transformer 		<p>054/214977</p>


Manufacturer: ILECSYS Rail Ltd

Issue : 1

Valid From : 12-09-2016

<p>ILS100233-138</p>	<p>Complete Class II Hybrid FSP Housing Assembly (Mounted in 747x536x300mm GRP Enclosure) Fitted with:</p> <ul style="list-style-type: none"> • FSP02 (ring) Class II switchgear rated to 690V, 63A • Incoming 650V feeder cables size up to 120mm² (Cu / Alu cable) • Incoming feeder fuse carriers BS88-2 (CAMaster) • Outgoing 110V functional supply, cable size 2.5-10mm² • 500VA open frame class II hybrid 650/110V Transformer 		<p>054/214978</p>
<p>08400.0-03</p>	<p>DD 084 Drainage Device</p>		<p>054/214979</p>
<p>08410-0-00</p>	<p>DA084 IP55 Vent Plug</p>		<p>054/214980</p>

Hardware (Maintenance Spares and Line Replaceable Units)

Part No.	Description		Catalogue No.
<p>08410-0-00 ILS100233-DR</p>	<p>Replacement Annexe Door. Pre-machined for labels and fitted with 3 point locking system and security handle.</p>		<p>054/214981</p>

Manufacturer: ILECSYS Rail Ltd

Issue : 1
Valid From : 12-09-2016

Assessed Documentation

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
Class II Hybrid FSP Annexe	Product Configuration – System or Complete Assembly	-	04-07-2016	1
03 - Covering Letter v1.5	Acceptance Requirements for Railway Infrastructure Products and Systems	V1.5	04-07-2016	1
04 –PA05_06436	Class II Hybrid FSP Annexe Product acceptance compliance matrix	V8.0	04-07-2016	1
14-Compliance Matrix v3.0	Mechanical and Environmental Requirements for 650 V External Power Annexes Compliance	V43.0	04-07-2016	1
12 - PA05_06436	Product Acceptance Compliance for LOC Bracket	V1.0	04-07-2016	1
ILS100233	OM Manual ILS100233 (CAMaster) v4.0	V4.0	04-07-2016	1
Annexe A	Certification: ISO 9001, CE Cert, Independent certifications, verifications and declarations	-	04-07-2016	1
Annexe B	Components: Including accessories	-	04-07-2016	1
Annexe C	Reports: Compliance reports, Type test report, Temperature rise test, Cable pull test, HV test, FSP test, Environmental test, Hot wire test, Random vibration test, Annex moisture ingress protection, Dielectric strength test,	-	04-07-2016	1
Annexe D	Supporting Documents: Condensation test, Engineering cases, email verification of suitability of components and materials	-	04-07-2016	1
Annexe E	Drawings: General equipment layout, generic block schematics for FSP, Example general schematic for Annexe, Machining drawings, GA for clamp assembly for Annexe and for cable cleat bar, clamp assembly schematics	-	04-07-2016	1
Images	Product Images	-	04-07-2016	1
PA05_06436 T1	Trial Acceptance Certificate PA05_06436	T1	04-07-2016	1

Manuals and Training Materials

Reference	Title	Doc. Rev.	Date and Applies to Cert. issue No.	
O&M Manual ILS100233 (CAMaster) v4.0	Operating and Maintenance Manual	V1.0	15/05/2016	1

Certificate of Acceptance

PA05/06436

Manufacturer: ILECSYS Rail Ltd

Issue : 1

Valid From : 12-09-2016

Certificate History

Issue	Date	Issue History
T1	15/05/2016	Accepted for trial assessment
1	12/09/2016	Accepted for first use after trial

Contact Details

Manufacturer

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Lead Reviewing Engineer

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Manufacturer: ILECSYS Rail Ltd

Issue : 1

Valid From : 12-09-2016

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.

Manufacturer: ILECSYS Rail Ltd

Issue : 1

Valid From : 12-09-2016

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.