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Henry Williams

Class II SafeBox

Operation & Maintenance Manual

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1.5	19/11/12	D Hughes	C Stephenson	Clarifications Added
1.6	11/09/23	C Stephenson	P Davies	Clarifications Added

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Chapters and Appendices

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1 Introduction

This document is designed for use by the maintenance staff (technicians and their supervisors) to maintain (fault find, repair or replace) components of the SafeBox and associated components.

Throughout this document, references will be made to other essential information and documentation either prepared by HWL or provided from the equipment supplier/manufacturer.

After safety issues are discussed in Chapter 2 this manual follows a logical path from Description of the relevant components, equipment installation, repair/replacement, routine maintenance and finally a spare parts listing.

- **Chapter 2 Safety**
  Gives details of any relevant safety issues to be observed in the use and disposal of the equipment.
- **Chapter 3 Details of SafeBox Equipment**
  Gives details of the SafeBox enclosure and equipment.
- **Chapter 4 SafeBox Installation**

  Gives details on installation of the SafeBox and the power cables.
- **Chapter 5 Maintenance**
  Details the recommended maintenance checks required to ensure the ongoing correct operation of the system.
- **Chapter 6 Part Numbers**
  Lists the main parts of the SafeBox System complete with Supplier and Part numbers to aid in the re-ordering of spare parts.

1.1 Maintenance Policy

The SafeBox system comprises highly reliable components. However should a fault occur, the unit can be completely replaced or repaired.

1.1.1 Complete Replacement

If the SafeBox is completely replaced, note the following:

Note that this is a Class II unit and must only be replaced by another Class II unit.

1.1.2 Component Repair

Repair of the box is assumed to be limited to replacement of either failed components or wiring replacement as necessary.

To summarise, the maintenance policy is one of “Repair by Replacement” since:

- Internal components are relatively inexpensive with respect to the cost of fault diagnosis and repair.
- Most internal components are interchangeable although some disassembly will be required for access.

1.2 Competencies and Training Requirements

Staff with the responsibility for installation and maintenance of the SafeBox must hold the required Network Rail licenses.

The training will provide the skills and knowledge needed to identify faulty modules/components and the correct procedures for their replacement. Training for the repair of line replaceable units (modules) is not available. Line replaceable units, where appropriate will be returned to the manufacturer for repair or replaced from spares where repair is not practical.

1.3 Glossary of Terms and Abbreviations

EIC	Electrically Insulated Coating
Class II	See definition in Section 2.3
HWL	Henry Williams Limited
Loc	Location/Location Case
mm	millimetres
REB	Relocatable Equipment Building
SafeBox	Enclosure containing integrated electrical components
VAC	Voltage (AC) Alternating Current

1.4 Drawing References

Circuit Schematics

- SafeBox 12 22190-12-II-w
- SafeBox 13 22190-13-II-w
- SafeBox 14 22190-14-II-w
- SafeBox 15 22190-15-II-w
- SafeBox 22 22190-22-II-w
- SafeBox 23 22190-23-II-w
- SafeBox 32 22190-32-II-w
- SafeBox 35/SA 22190-35SA-II-w
- SafeBox 105 22190-105-II-w
- SafeBox 105/SA 22190-105/SA-II-w
- SafeBox 100+5 22190-100+5-II-w

General Arrangements

- SafeBox 12 22190-12-II
- SafeBox 13 22190-13-II
- SafeBox 14 22190-14-II
- SafeBox 15 22190-15-II
- SafeBox 22 22190-22-II
- SafeBox 23 22190-23-II
- SafeBox 32 22190-32-II
- SafeBox 35/SA 22190-35SA-II
- SafeBox 105 22190-105-II
- SafeBox 105/SA 22190-105/SA-II
- SafeBox 100+5 22190-100+5-II

2 Safety

2.1 Isolation and Risk of Electrocution

The SafeBox is designed to work with voltages up to (and including) 650VAC and as such there is a danger of electrocution once the cover is removed.

All electrical power feeds to the SafeBox MUST be ISOLATED and LOCKED OFF BEFORE opening any doors or removal of the enclosure cover.

A 650VAC supply voltage is commonly used inside the signalling cubicles, and any personnel working inside these units should be appropriately trained. It should also be noted that the SafeBox units are designed to be mounted inside a locked enclosure, which is in a protective environment (Signalling Cubicle or REB) and have large caution labels clearly visible from the front.

Personnel working on the SafeBox should be appropriately trained to work with dangerous voltages and be fully conversant with the power circuitry. All connections are shrouded to prevent accidental contact with personnel (fingers etc.) however these voltage may be exposed when using tools such as screwdrivers etc.

Once Isolation has been carried out, it is essential that a proved* voltage indicator is used to recheck that all electrical equipment is dead prior to any works being undertaken.

* It is recommended to use a proving device with the voltage indicator to check for correct operation both before and after checking that the equipment to be worked upon is dead.

2.2 Class II coating

The product is coated with a special Electrically Insulated Coating (EIC) which can withstand very high voltages. This coating must remain intact in order to ensure the integrity of the insulation properties of the enclosure. There must therefore be no further holes or other cut-outs made into the enclosure body post manufacture.

2.3 Class II Definition

A Class II or double insulated electrical appliance is one which has been designed in such a way that it does not require a safety connection to electrical earth.

The basic requirement is that no single failure can result in dangerous voltage becoming exposed so that it might cause an electric shock and that this is achieved without relying on an earthed metal casing.

This is usually achieved at least in part by having two layers of insulating material surrounding live parts or by using reinforced insulation.

2.4 Lifting & Trapping

The SafeBox units are fairly heavy (approx 15Kg to 40Kg depending upon model) and extra care should be exercised when handling these units. The Manual Handling Regulations should be taken into account when lifting heavy items. Due to the obstructions underfoot in track areas, it is recommended that the removal and/or replacement of a SafeBox unit should be carried out with a minimum of two people.

There is a risk of trapping of fingers when the cover is repositioned over the body of the SafeBox unit. It is recommended that one person positions and holds the cover whilst a second person installs the fixing screws.

2.5 Disposal of Equipment

Due consideration must be given when disposing of equipment.

Environmental regulations and standards are continually being updated and therefore a risk assessment must be undertaken at the time of equipment disposal.

None of the SafeBox components contain batteries or other toxic materials.

Although the Class II coating and other materials used in the equipment are designed to release low smoke and less toxic fumes when burnt, burning of this equipment, as a means of disposal is not appropriate.

The equipment must be disposed of in accordance with the

Waste Electrical and Electronic Equipment (WEEE) Regulations

2.6 Fuse Ratings

All fuses installed into the SafeBox fuse carriers must be rated to 690VAC.

2.7 Surge Protection Device Type

Only two-wire type surge protection devices can be used with the Class II SafeBox. See spares list for standard type installed.

2.8 Fault Conditions Required for Electric Shock

Note that in order for a person to receive an electric shock (with the box closed) the following simultaneous fault conditions must exist:

- The outer coating must be penetrated/damaged (at least to bare metal).
- The inner coating must be penetrated/damaged (at least to bare metal).
- An internal electrical fault must occur so that a live conductor touches exactly the same area where the inner coating is exposed to bare metal.
- The person must make contact with exactly the same area where the outer coating is exposed to bare metal.

3 Details of the SafeBox Equipment

3.1 General Information

The SafeBox is a Class II 650VAC distribution system in a single enclosure. It is designed to be fixed to standard BRS SM 440 rails as found in location cases, REBs and other railway enclosures. It can also be fitted to any flat surface if required using standard M8 fixings.

The SafeBox is designed to be the unit which will terminate the incoming and outgoing 650VAC power loop cables. This is achieved using two independent gland plates with stud terminals for the termination of conductors of each power cable.

The unit is designed so that the incoming and outgoing loop feeder cable terminals are housed in separate compartments. This allows one cable to be isolated and safely worked on whilst the other is still live and powering the location signalling equipment.

The SafeBox also has over-current protected outgoing ways which can be used to feed 650VAC to the local transformers which in turn feed the signalling system.
The enclosure is manufactured from stainless steel which is completely covered in a special insulated paint. This insulation gives the enclosure its Class II protection properties.

The SafeBox can also house an optional 650VAC suppression module should this be required. Note that only two-wire type surge protection devices can be used with the Class II SafeBox.

3.2 SafeBox Layout/General Arrangement

The photograph below shows the general layout of the SafeBox. This general layout is similar for all of the SafeBox models. There are two models shown below.

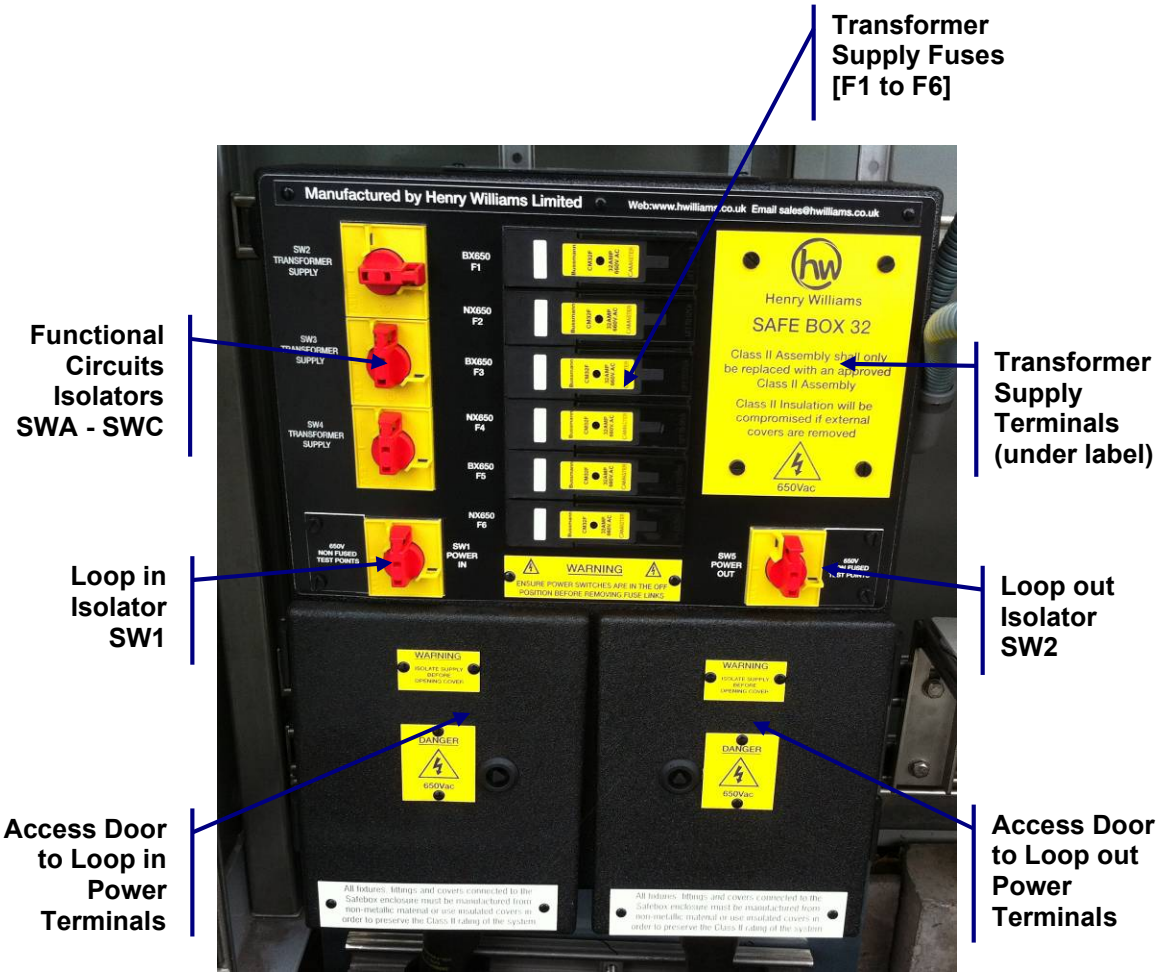

Figure 1: SafeBox 32 Front Layout Arrangement

Figure 1 shows the general layout applicable to the SafeBox model no. range 12 to 35.

Figure 2 shows the general layout applicable to the SafeBox model no. 105.

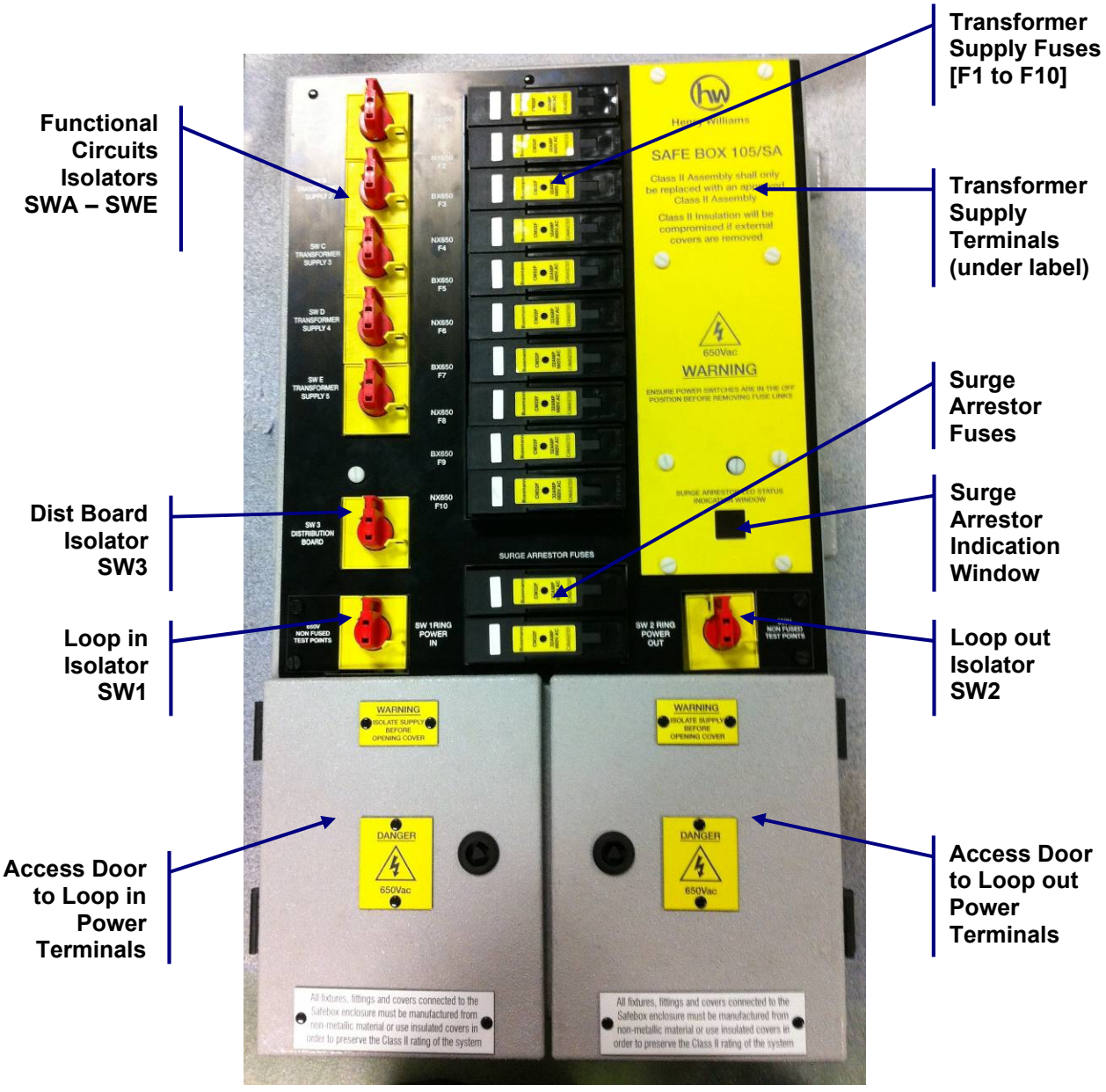

Figure 2: SafeBox 105/SA Front Layout Arrangement

Figure 3: Power In/Out Terminal Arrangement

Figure 4: Transformer Wiring Outlets

4 SafeBox Installation (First fit – with Power OFF)

The following sub-sections detail the instructions for installation of the SafeBox into a variety of enclosures.

The SafeBox can be installed into the following:

- Railway location case
- REB racking
- Marine ply backboard

4.1 Installation of SafeBox 12 to 35 Series

The SafeBox has been designed to be installed directly onto approved BRSM440 rails. These are usually found within a railway location case or REB power racking bay.

Figure 5: SafeBox installed into a Location Case

Four pre-drilled fixing lugs are fitted to the SafeBox for mounting purposes. These pre-drilled holes are designed to accept M8 fixings.

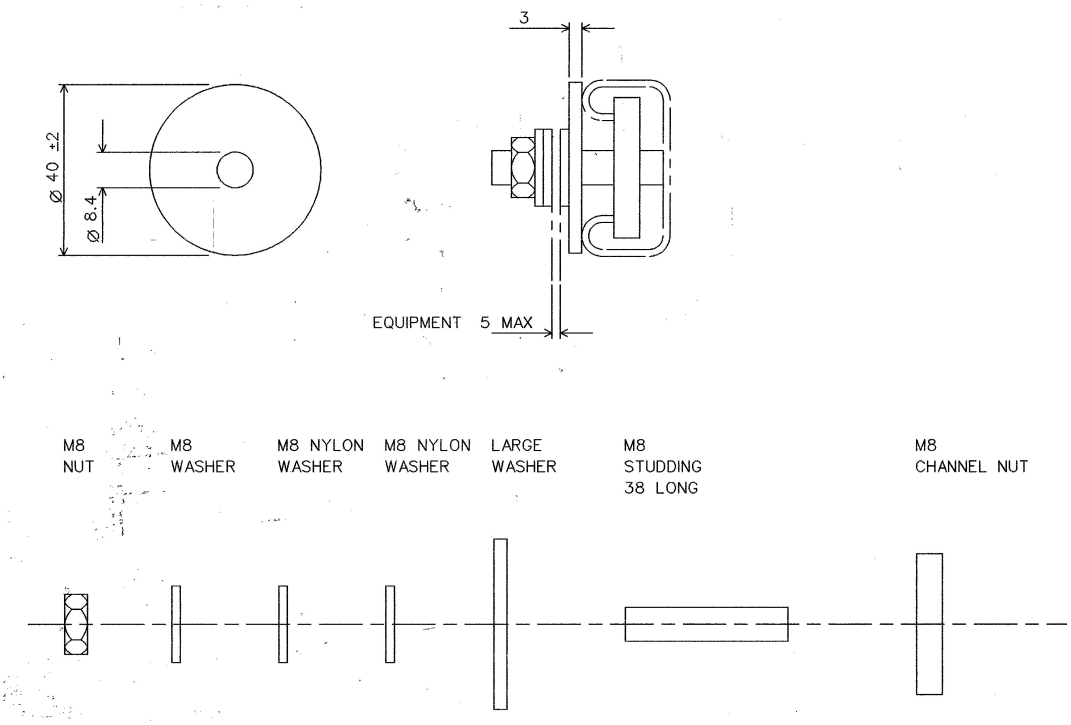

Figure 6: BRS-SM 440 Fixing Kit [M4]

For BRS-SM 440 fixings use an M4 fixing kit which is shown in Figure 6.

M4 fixing kit : CAT No. 086/43556.

The SafeBox 12 – 35 Series can be rear mounted directly onto the BRS-SM440 mounting rails.

4.1.1 Optional Mounting Brackets

Alternatively the SafeBox can be front-mounted to unistrut rails using an optional mounting bracket pair.

For SafeBox 12 – 35 Series, these brackets (Henry Williams Part No. 2012.042-A1-000) allow the unit to mount further forward in the Location Case. See Figure 7 below.

Figure 7: Safebox 12 – 35 Series (Front Mounted)

For the SafeBox 100 Series models, the front-mounting brackets are provided and shown in Figure 8 below, also mounted to the racking in Figure 9 and Figure 10.

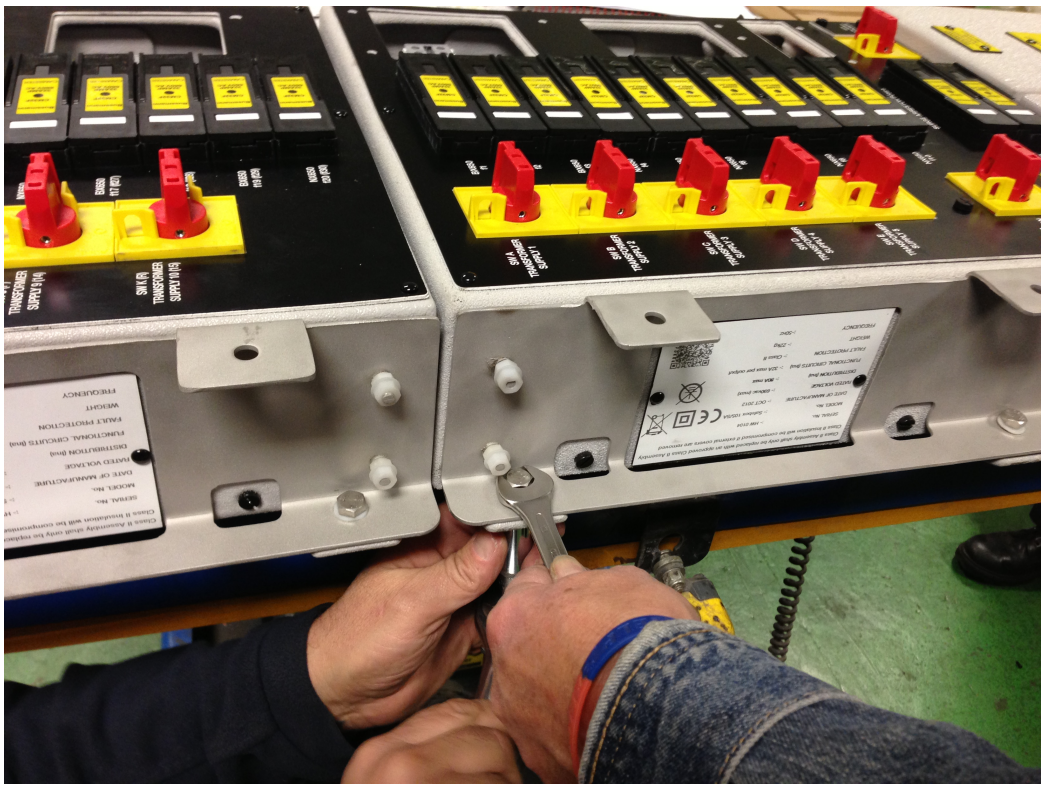

Figure 8: SafeBox 100 Series Side Mounting Brackets

These brackets allow the SafeBox to sit back behind the front mounting rails and may give a better placement on the REB racking where the gland plates are to line up with the incoming cable floor entries. See Figure 9.

4.2 Installing a SafeBox 100 Series Model to Racking

The SafeBox has been designed to be installed directly onto approved BRSM440 rails. These are usually found within a railway location case or REB power racking bay.

The SafeBox 100 Series is provided with brackets which enable the unit to be mounted to the racking.

The SafeBox 105 (base module) comes with five functional circuit outputs, this can be increased in blocks of five further outputs by attaching a SafeBox 100+5 module. See Section 4.2.1.

It should be noted that the incoming and distribution board switches are rated to a maximum of 80A. The sum of all load and ring currents should not exceed the rating of these switches.

Figure 9: A SafeBox 105/SA (Base Module)

4.2.1 Installing a SafeBox 100+5 Extension Module (Direct Connection)

The SafeBox 100+5 Module is attached to the top of the base SafeBox 105 unit using the fixing brackets supplied with the module. See photos below.

Attaching one 100+5 module to a SafeBox 105 results in a total of ten functional circuit outputs.

If more than ten functional circuit outputs are required, further 100+5 modules can be added on top of each other in order to give the required number of outputs.

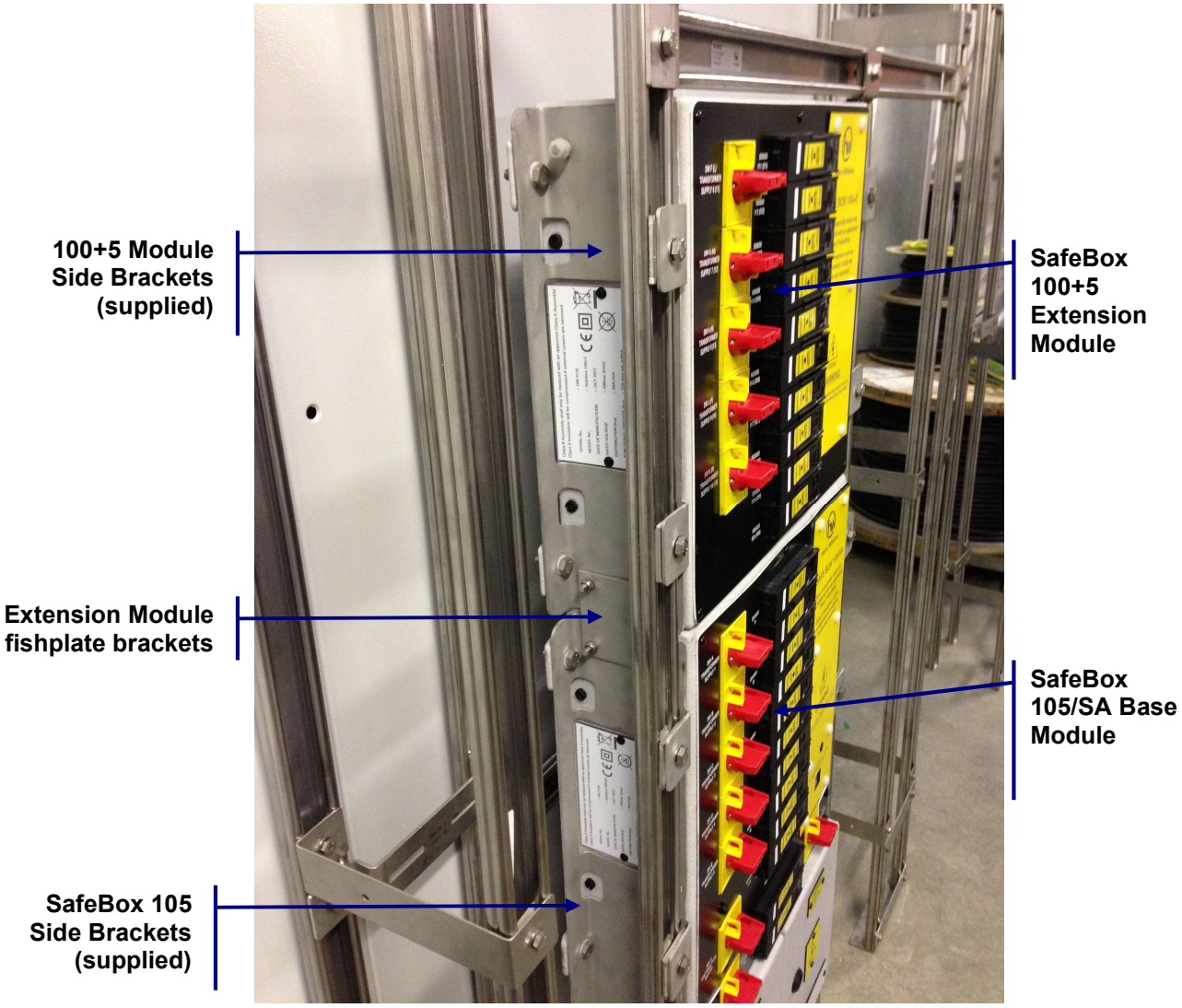

Figure 10: Attaching a SafeBox 100+5 Extension Module

A set of extension module fishplate brackets is supplied with each SafeBox 100+5 extension module unless the complete unit is supplied pre-assembled.

The 100+5 extension module is also delivered with wire “tails” to readily connect it to either a 105 Module or another 100+5 Module. Terminals are located within the SafeBox 105 and SafeBox 100+5 models in order to facilitate easy connection.

Figure 11: Wiring Tails fed through SafeBox Modules

Each of the SafeBoxes (105 base module & 100+5 extension module) has a 25mm diameter hole in the top at the right-hand side.

Each SafeBox 100+5 extension module has a 25mm diameter hole in the bottom at the right-hand side.

When attaching two modules together, the 25mm plug should be removed from each mating hole.

The wiring tails (16sqmm Brown & Black) can then be fed through the holes as shown in Figure 11.

Terminals are located within the SafeBox 105 and SafeBox 100+5 models in order to facilitate easy connection of the two power cables (tails) from one module to another.

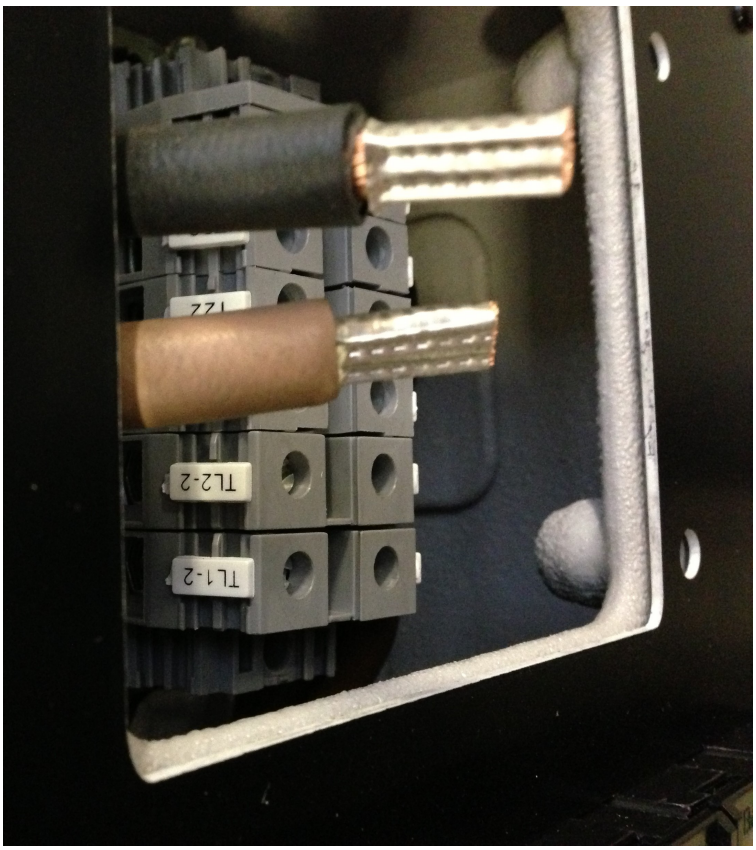

Figure 12: Terminals for Linking Modules

Figure 12 shows the pre-crimped cable leads which are supplied with the SafeBox 100+5 extension module.

The schematic drawings for the SafeBox 105 & 100+5 modules show the terminals to be used for the connection of these wiring tails.

4.2.2 Installing a SafeBox 100+5 Extension Module (Remote Connection)

The SafeBox 100+5 (extension module) can be mounted in a remote location away from the SafeBox 105 (Base Module) e.g. A different rack within an REB.

In this arrangement the double insulated properties must be retained for the cables connecting the two units together. The cables should be run in 25mm plastic conduit secured into the top hole of the SafeBox 105 base unit and the bottom hole of the SafeBox 100+5 unit.

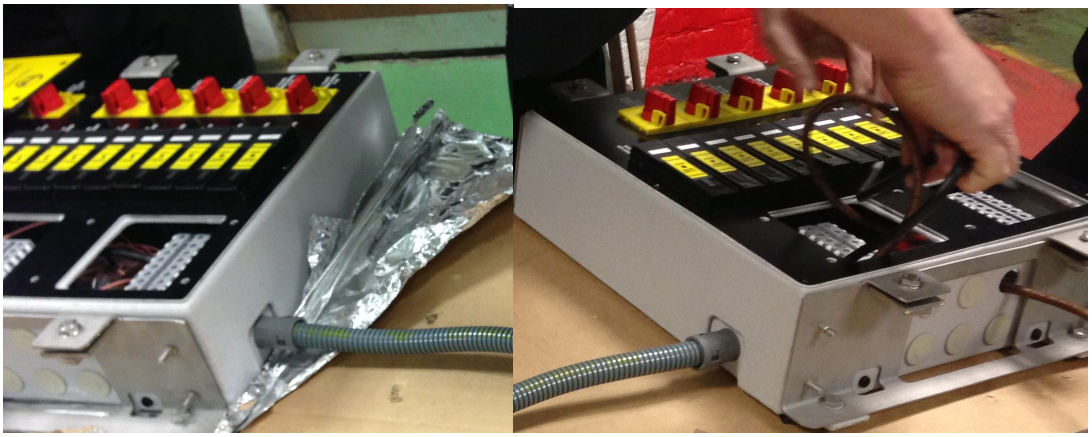

Figure 13: Conduit Location for Remote Connected SafeBox Modules

Figure 13 shows the Safebox 105 on the left and the remotely connected SafeBox 100+5 on the right.

4.2.3 Special Rails (BRS-SM440 Style)

If required for the installation, Henry Williams can supply the following rails:

- **B5T1** – Vertical rail with foot & tab – length 1520mm. This rail can be used to secure the right-hand side when a SafeBox 105 & a Safebox 100+5 are mounted together in a rack – see Figure 9.

- **B5T2** – Vertical rail with foot & tab – length 1890mm. Longer version of the B5T1 rail which can be used when a SafeBox 105 & two 100+5 extension modules are mounted together in a rack.

- **D4** – Horizontal rail with tab both ends – length 442mm. This rail is used for the support of transformers or other equipment to the side of the SafeBox installation. This allows the user to maximise the amount of rack space which can be used by equipment – see Figure 9.

4.3 Installation of Incoming/Loop Power Cables (with Power OFF)

The SafeBox has been designed to accommodate power cables up to 120mmsq. The terminal studs are 10mm and the correctly sized cable lugs must be fitted to suit both the cable and the terminal studs.

Installation Sequence:

1. Remove the gland plate from the bottom of the terminal chamber – see Figure 14.
2. Install Stripped Cable into gland & tighten.
3. Install gland plate back onto the bottom of the terminal chamber.
4. Fit crimp lugs loosely onto terminals and mark cable for cut – see Figure 15.
5. Remove gland plate fixings & pull forward for easier access to cut cable tails to length – see Figure 16.
6. Strip & crimp cable tails – see Figure 17.
7. Refit gland plate to bottom of the SafeBox enclosure – see Figure 18.
8. Install cable lugs onto terminals, fit washers/nuts & tighten – see Figure 19.
9. Refit terminal protective covers – see Figure 20

Figure 14: Cable Gland Plate removed from the enclosure

Figure 15: Cable length marked ready for cutting

Figure 16: Cable cut to length

Figure 17: Fit & Crimp Cable Lugs

Figure 18: Refit Gland Plate

Figure 19: Complete Termination

Figure 20: Refit Terminal Covers

4.4 Installation of Transformer Load Circuits Wiring

Outgoing terminals are provided for connection of the functional circuits wiring within the SafeBox. The outgoing wiring is connected to these terminals which are located underneath the top right label – see Figure 23.

The SafeBox fuses and terminals are numbered to correspond with the electrical schematic diagram for the relevant model. The electrical schematic diagram (which matches the model being installed) must be consulted before terminations are carried out to ensure the correct connections are made.

Pre-made access holes (20mm) are provided in the top right hand side of the enclosure – see Figure 4. These are installed during the manufacturing process for the fitting of conduit or glands for the securing and protection of the functional circuits wiring.

All fixtures, fittings, and covers connected to the SafeBox enclosure must be manufactured from non-metallic material or use insulated covers in order to preserve the Class-II rating of the system.

Figure 21: Assembly of BRS-SM440 Transformer Brackets

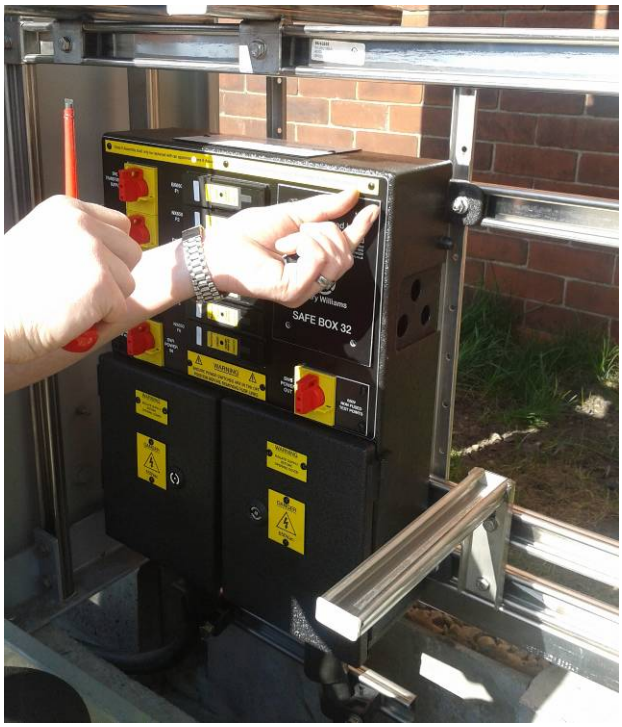

Figure 22: Removal of Terminal Cover

Figure 23: Terminal Cover Removed

Figure 24: Glands & End Caps Applied

Figure 25: Transformer in Position

Figure 26: Transformer Conduit to SafeBox Installation

All fuses installed into the SafeBox fuseholders MUST be rated to 690VAC

Figure 27: Final Installation

4.5 Replacement of Incoming or Outgoing Loop Power Cables (Under Operational Conditions)

The SafeBox unit is designed so that the incoming and outgoing loop feeder cable terminals are housed in separated compartments. This allows one cable to be isolated and safely worked on whilst the other is still live and powering the location signalling equipment.

Once Isolation has been carried out, it is essential that a proved* voltage indicator is used to recheck that all electrical equipment is dead prior to any works being undertaken.

* It is recommended to use a proving device with the voltage indicator to check for correct operation both before and after checking that the equipment to be worked upon is dead.

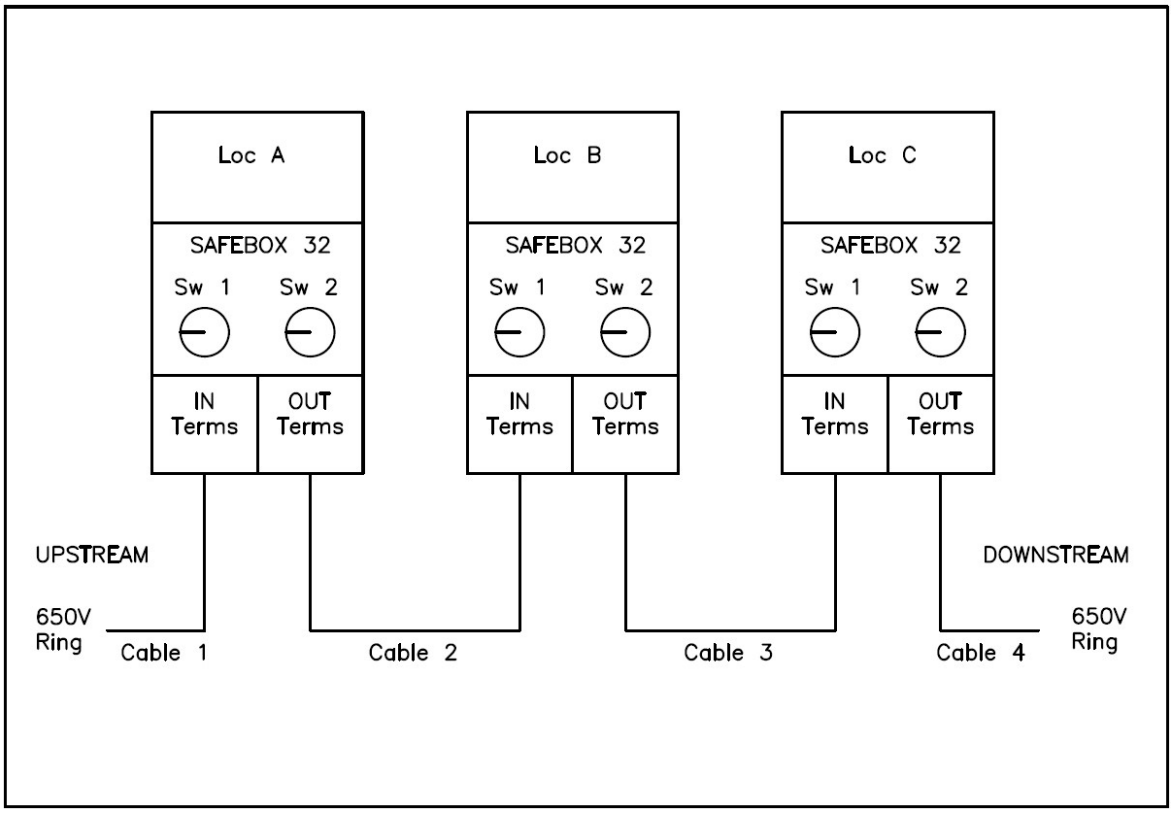

Figure 28: Ring Cable Diagram

The above diagram shows three location cases, each one fitted with a SafeBox (Model 32) to terminate and distribute the 650V ring & local cables. The local transformer feed isolators (SWA to SWC) are not shown in the above simplified diagram as the intention here is to focus on replacing the mains feeder loop cables.

As a general rule, the main incoming switch (UPSTREAM) is labelled SW1 and the outgoing switch (DOWNSTREAM) is labelled SW2. To try and avoid any confusion, the transformer/load feed switches are usually identified with letters i.e. SWA to SWB for the SafeBox (Model 32). However this may not always be the case as client requirements/project specifications may require alternate switch references.

Each cable is terminated into one of the SafeBox main terminal chambers (either IN Terms or OUT Terms in the above diagram). The SafeBox internal busbar arrangement (and hence local transformer feeds) can be powered by either cable or both cables if they are both live i.e. part of the mains ring.

Examples of Isolation Scenarios

In the following example scenarios, please refer to the associated ring cable diagram given in Figure 28.

Note that the Switch Numbers given below refer to SafeBox model 32. The Switch numbers may be different depending upon the FSP model installed.

It is essential to refer to the correct model wiring diagram before operating any of the SafeBox isolation switches.

Scenario Example 1 - Complete Isolation of Location B SafeBox

In order to fully isolate the SafeBox in location case B then both cable 2 & cable 3 must be isolated from all sources of supply. This can be accomplished by switching OFF and locking OFF, switch 2 in Loc A (UPSTREAM of Loc B) and also switch 1 in Loc C (DOWNSTREAM of Loc B).

It is also essential to check that there is no power being backfed (through switches SWA to SWC) from the local transformer supplies into the SafeBox unit.

Scenario Example 2 - Replacement of Cable 3

Provided the above system is part of a complete closed ring main system (i.e. power fed from both ends) then Cable 3 can be replaced without losing power to any of the three location cases.

In the diagram shown in Figure 28 Cable 3 must first be isolated from all sources of supply by switching OFF & locking OFF switch 2 in Loc B (UPSTREAM of Cable 3) and also switch 1 in Loc C (DOWNSTREAM of Cable 3).

In the SafeBox in Loc B the terminal chamber door to “OUT Terms” can now be opened allowing access to the terminations for cable 3. These terminations have a safety shroud fitted which must be removed to gain full access to the terminal securing bolts once the equipment is proved dead.

The covering safety shroud has two small holes which allow the user to ensure the terminals are dead (by use of a suitable proved test indicator) before removal of the shroud.

Similarly the SafeBox in Loc C the terminal chamber door to “IN Terms” can now be opened allowing access to the terminations for the other end of cable 3. These terminations also have a safety shroud fitted which must be removed to gain full access to the terminal securing bolts once the equipment is proved dead.

Scenario Example 3 - Replacement of Cable 2

Provided the above system is part of a complete closed ring main system (i.e. power fed from both ends) then Cable 2 can be replaced without losing power to any of the three location cases.

In the diagram shown in Figure 28 Cable 2 must first be isolated from all sources of supply by switching OFF & locking OFF switch 2 in Loc A (UPSTREAM of Cable 2) and also switch 1 in Loc B (DOWNSTREAM of Cable 2).

In the SafeBox in Loc A the terminal chamber door to “OUT Terms” can now be opened allowing access to the terminations for cable 2. These terminations have a safety shroud fitted which must be removed to gain full access to the terminal securing bolts once the equipment is proved dead.

The covering safety shroud has two small holes which allow the user to ensure the terminals are dead (by use of a suitable proved test indicator) before removal of the shroud.

Similarly the SafeBox in Loc B the terminal chamber door to “IN Terms” can now be opened allowing access to the terminations for the other end of cable 2. These terminations also have a safety shroud fitted which must be removed to gain full access to the terminal securing bolts once the equipment is proved dead.

4.6 Load/Transformer Feed Wiring

The signalling loads/transformers wiring is connected into the terminals installed under the cover label in the top right-hand corner of the SafeBox unit – See Figure 1.

It is essential that the SafeBox is fully isolated and locked off from all supplies (See Scenario Example 1 above) **before** the terminal cover is removed.

Once Isolation has been carried out, it is essential that a proved* voltage indicator is used to recheck that all electrical equipment is dead prior to any works being undertaken.

* It is recommended to use a proving device with the voltage indicator to check for correct operation both before and after checking that the equipment to be worked upon is dead.

Once the equipment is proven to be dead, access can be gained to these terminals to install or replace load cables as required.

5 Maintenance

All electrical power feeds to the SafeBox MUST be ISOLATED and LOCKED OFF prior to the opening any doors or removal of the enclosure cover.

5.1 Replacement of Components

The internal components can be replaced with new on a like-for-like basis as required. For reference, the part numbers for the components used within the SafeBox are given in the parts table in section 6.

5.2 Annual Procedure

It is recommended that the following work be carried out yearly:

- General visual inspection as to the condition of the enclosure and components within (including wiring).
- Check that the Electrically Insulated Coating (EIC) does not show any signs of damage and in particular any exposure of the metal base material that this damage caused. See guidance given in Section 5.3
- Check presence & legibility of all I.D. labelling and warning notices.
- Check all cable connections and crimps are secure and do not show any sign of heat/burning.
- Check that all fuses are present and of the correct size (and voltage rating on 650VAC) as detailed on the electrical schematic diagrams.
- Remove, inspect, and re-insert fuses. Check carrier tightness & for signs of any burning.
- Ensure all fixing nuts, washers, bolt covers etc. are present, correct, and tight.
- Check cables and glands box for damage or evidence of water ingress.
- Give the equipment a general clean and remove any build up of dust/debris using a brush or small nozzled vacuum.
- Before being returned to service, it is recommended to carry out an operational check of the isolation switches.

Note that this is a Class II unit and if completely replaced, it must only be replaced by another Class II unit.

5.3 EIC Coating Damage Guidance

As the coating is applied to both the inside and the outside of the inner stainless steel enclosure body, the outer coating can take some acceptable damage before the unit requires replacing.

Note that in order for a person to receive an electric shock (with the box closed) the following simultaneous fault conditions must exist:

- The outer coating must be penetrated/damaged (at least to bare metal).
- The inner coating must be penetrated/damaged (at least to bare metal).
- An internal electrical fault must occur so that a live conductor touches exactly the same area where the inner coating is exposed to bare metal.
- The person must make contact with exactly the same area where the outer coating is exposed to bare metal.

Figure 29 shows a practical guide which has been developed by Henry Williams to help maintenance personnel understand what levels of damage are acceptable and which are not.

As can be seen below the damage guide is split up into three action levels:

Action Level 1

The amount of damage is superficial and does not completely penetrate the outer coating. This level of damage should be noted on the maintenance sheet along with its location. The damage can then be monitored during future inspections to ensure that no further worsening occurs.

It is not recommended to increase the frequency of visual inspections for this level of damage.

Action Level 2

The amount of damage is worse than that in action level 1 in that it does completely penetrate the outer coating. This level of damage should be noted on the maintenance sheet along with its location. The damage can then be monitored during future inspections to ensure that no further worsening occurs.

The unit can be put back into service with an affixed label/notice indicating what damage has been observed.

It is recommended to increase the frequency of visual inspections for this level of damage to ensure that there is no further degradation in the coating.

Action Level 3

The amount of damage is much worse than that in action level 2 in that the enclosure is completely penetrated through both the inner & outer coatings and the stainless steel body. This level of damage should be noted on the maintenance sheet along with its location.

The unit can be put back into service with an affixed warning label/notice indicating what damage has been observed.

It is recommended to replace the unit at the next available opportunity.

Note that the EIC Coating is a NON-REPAIRABLE item

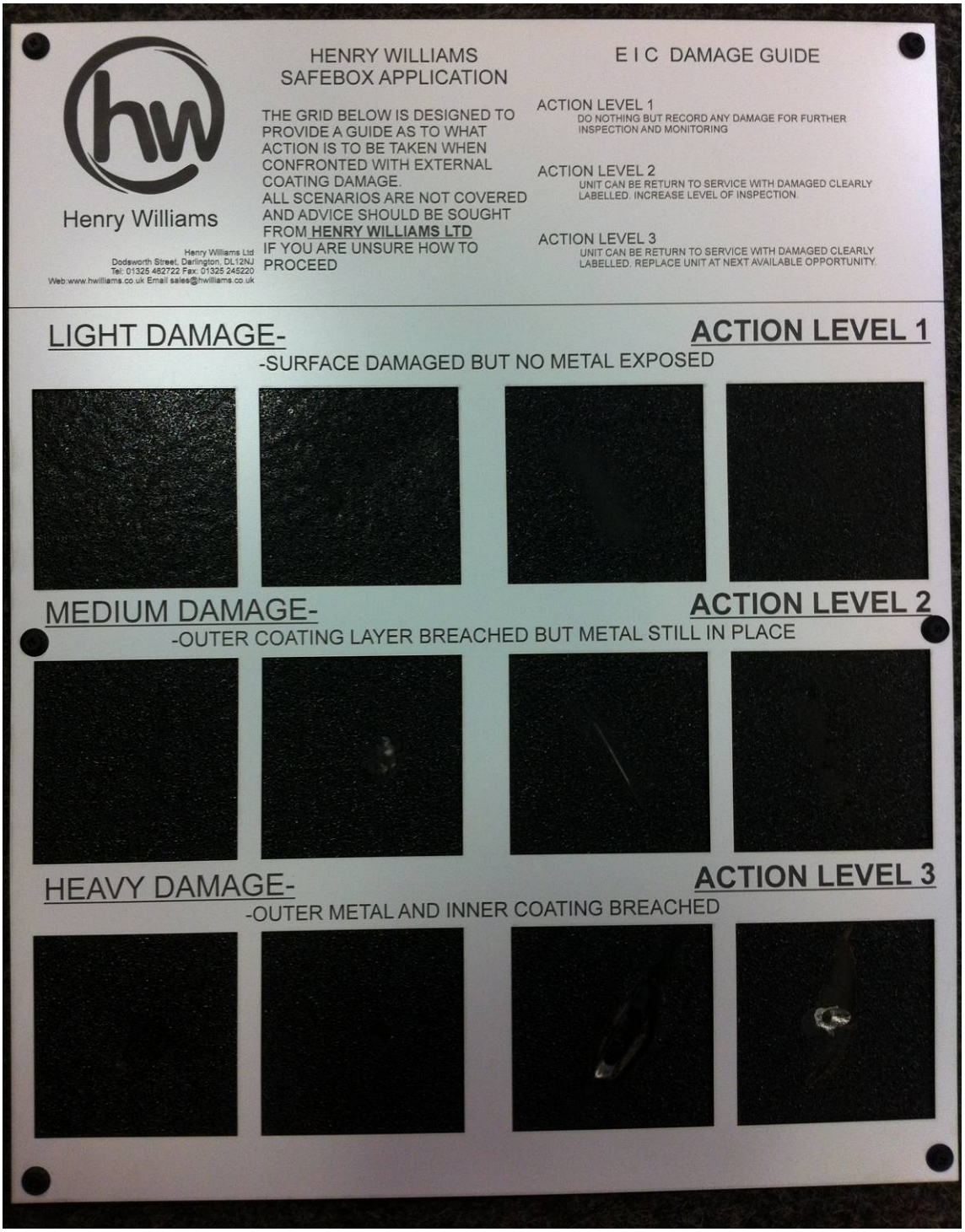

Figure 29: EIC Damage Guide

6 Part Numbers

The table below details the part numbers for the main component items used in the SafeBox System along with a description and supplier for each item.

Description	Supplier	Part Number
3 Pole Isolating Switch (80A)	ABB	OT80F3 / 1SCA105798R1001
Isolating Switch Red/Yellow Handle	Henry Williams Ltd.	HWSABB/OT80F3/001
Isolating Switch Yellow Shroud	Henry Williams Ltd.	HWSABB/OT80F3/002
Stud Terminals (M300/42.FF)	ABB	1SNA 115 149 R2000
Terminal Partition (ECP42)	ABB	1SNA 113 692 R1700
Stud Terminal Nylon Mounting Pillar Kit	Henry Williams Ltd.	HWSSTNPK001
Main Terminals Clear Safety Cover Kit	Henry Williams Ltd.	HWSMTCSCK001
Through Terminals (Grey M10/10)	ABB/Entrelec	1SNA115120R1700
Interconnection Terminals (Grey M16/12)	ABB/Entrelec	1SNA115129R1400
Outgoing Terminals Warning Label/Cover Kit	Henry Williams Ltd.	HWSOTWLCK001
20mm Hole Blanking Plugs (pack of 5)	Henry Williams Ltd.	HWS20HBP001
DIN Rail Nylon Mounting Pillar Kit	Henry Williams Ltd.	HWSDRNPK001
Spare Door (inc. Hinge) Left Hand	Henry Williams Ltd.	HWSDLH001
Spare Door (inc. Hinge) Right Hand	Henry Williams Ltd.	HWSDRH001
Door Locks (pack of 2)	Henry Williams Ltd.	HWSDLP2001
Gland Plates (undrilled) (pack of 2)	Henry Williams Ltd.	HWSGP2U001

Description	Supplier	Part Number
Complete Label Kit	Henry Williams Ltd.	HWSCLK001
Nut covers (pack of 10)	Henry Williams Ltd.	HWSNCP10001
BRSSM440 M4 Rail Fixing Kit	Henry Williams Ltd.	086/43556
SafeBox 12 – 35 Series: Forward Mounting Brackets – Pair includes LH, RH, & Fasteners.	Henry Williams Ltd.	2012.042-A1-000
Special Rails (BRS-SM440 style)		
Vertical rail with foot & tab (1520mm)	Henry Williams Ltd.	HW-B5T1
Vertical rail with foot & tab (1890mm)	Henry Williams Ltd.	HW-B5T2
Horizontal rail with end tabs (442mm)	Henry Williams Ltd.	HW-D4
Protection Devices/Holders		
Camaster Fuseholder (32A)	Cooper-Bussman	CM32F
Redspot Fuseholder (32A)	Redspot	RS32P/BLK
System pro M compact fuseholder (32A)	ABB	E91/32 Range
650V Surge Arrestor Module (optional)	PD Devices	Cat: 086/047165
140V Surge Arrestor Module (optional)	PD Devices	Cat: 086/047166
110V Surge Suppressor Module (optional)	PD Devices	Cat: 086/047167
Training/Maintenance Aid		
Electrically Insulated Coating (EIC) Damage Guide (Figure 29).	Henry Williams Ltd.	HWSEICDGB001