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Line Isolating Unit 8A

About this document ...

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Content approval

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by Kieran Sheahan, Access Components Copper & NGA Specialist

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1 *General*

Warning: All Planners and engineers involved with working at hot-sites MUST be hot-site trained. If you are not suitably trained you MUST NOT work on any of the line-plant at the location or on cables within the hot-site zone (which may extend a considerable distance from the end-user site).

Warning: Hot-site status should be checked by referring to the [hot site register](#) and by checking with the site operator. Lines may have been installed in the past without isolation, but it may not be an indication the site is cold. CSS should show the status of these locations. If you find any of this information to be incorrect in any way please email openreach.hotsites@openreach.co.uk

This document implements a policy which has been agreed with the Electricity Supply Industry (ESI) for the provision of telephony based services (traditionally supplied by BT) at electricity generating and transforming stations and adjacent premises. It should be read in conjunction with EPT/PPS/B013 and EPT/PPS/B014.

The majority of electricity companies forming the ESI are affiliated to the Energy Networks Association (ENA) which produce various industry documents governing procedures and risk assessment at power sites.

Note: This document incorporates changes agreed (2007) with the ENA, based on risk assessment of hot-sites and allows for less protection equipment to be fitted at off-site-hot end-user locations – See Section 14.

Note: Full protection **must** still be fitted for all users within the hot-site HV compound/boundary fence.

2 *Introduction*

The Line Isolating Unit LIU 8A is used on copper pairs carrying voice frequency private circuits to certain electricity generating and transforming stations where high voltage isolation is required. These stations are classified as 'hot sites'. Further information about hot sites and the general procedures to be adopted at them is contained in the Rise of Earth Potential at Electricity Stations, ISIS document EPT/PPS/B012 and associated documents.

This document only gives information specific to the LIU8A. It should be read in conjunction with the associated Rise of Earth Potential ISIS documents.

The LIU8A is an electrical safety item which forms part of the BT network. Its function is to prevent damage to telecommunications apparatus and the risk of electrical hazard to personnel. It is therefore essential that the practices and procedures described in this document and the associated Rise of Earth Potential ISIS documents are followed.

3 *Description*

The LIU8A provides isolation facilities for either one 4-wire or two 2-wire private circuits. It passes signals in the frequency range 300Hz-4kHz. It has the capability to turn around a dc wetting current on the line side of the unit and re-inject dc wetting on the customer side.

The unit is housed in a plastic case 250mm x 160mm x 90mm. It is supplied with screws and bolts for mounting on a wallboard or on racking.

The unit appears in the Engineering Stores Catalogue and has the item code 314977. It supersedes the Line Isolating Unit 5A.

4 *Use with RedCare Alarm Circuits at Hot-sites*

As RedCare cannot be delivered over the normal PSTN circuit to hot-sites, the LIU8A must be used as part of a RedCare Direct service over a separate copper pair. Please refer to the RedCare information desk for further details on circuit configuration. EAssistant has some basic details and contact points copied here.



[click here](#)

For a copy of the Redcare Overview please

See also, Enquiries section of this document.

5 *Installation*

5.1 *Cabling and Wiring*

The procedures described in EPT/PPS/B013 should be followed. Some specific points are extracted from EPT/PPS/B013 and repeated below.

Warning: Before terminating cables on the line side of the isolating links, the external outlet cable should be disconnected and isolated at the first joint or primary cross-connection point outside the hot zone.

Before wiring and cabling is carried out on the customer side of the isolating links the links must be removed.

Every outlet cable pair should be individually protected as described in EPT/PPS/B013.

The BT outlet cable pairs should be terminated on Links Isolating 6E, item code 334960.

Between the Links Isolating 6E and LIU8A, Cable Internal 4, 1-pair, item code 0350801 should be used. This should be oversleeved as described in EPT/PPS/B013, Paragraph 2.6.

No special cabling standards need to be applied on the customer side of the LIU8A; but the customer side wiring should be run physically separate from the line side wiring.

5.2 50V dc Power Supply

If dc wetting is required on the customer side of the unit, a 50V dc (-50V and OV, positive earth) should be provided from an external source and run in a two conductor cable eg Cable Internal 9 1-pair W&B (item code 035131). It should be kept physically separate from the line side wiring.

A means of isolation should be provided to enable the 50V dc supply to be disconnected before working inside the unit.

The LIU8A incorporates a 100mA anti-surge fuse.

5.3 Setting Up

The only setting up required is the setting of links for dc wetting. The positions of the links are shown on diagrams on the underside of the lid of the unit. The units come from the manufacturer set for high current dc wetting.

The unit will not pass ac signals unless:

- dc wetting current is applied with the links set for dc wetting; or
- the links are set for 'without dc'.

6 *Maintenance*

No routine maintenance is required on the unit.

The IDC terminal block on the customer side PCB provides test points to monitor the transmission paths through the unit.

If the dc wetting has failed on the customer side of the unit, the fuse should be examined and the power supply checked.

If it is clear that the unit is faulty it should be replaced and sent for repair.

7 *Repair*

No procedure exists for BT to repair the LIU8A.

The LIU8A has a two year warranty period. If a unit fails under warranty it should be returned to the address below, according to current materials handling practices, marked for the attention of 'Goods Inwards'.

Whiteley Electronics Ltd
Victoria Street
Mansfield
NOTTINGHAMSHIRE
NG18 5RW

Telephone 0623 421300

Units should be identified as 'Repair under guarantee' on the enclosed paperwork and an accompanying fault report should detail the circumstances and nature of the fault reported.

If a unit fails outside its warranty period it should be sent to Whiteley Electronics, identified as 'Repair' on the enclosed paperwork, with a request to repair the unit within a budget not exceeding the current cost of the unit. Whiteley Electronics will return the unit as 'Beyond economic repair' if they estimate that repair costs will exceed the budget.

8 *Enquiries*

Enquiries about this document should be directed to the author, contact details for the author are given at the front of this document.

Enquiries about RedCare to hot sites should, in the first instance, be via the RedCare helpdesk and intranet pages, with a 'last resort' call to Pete Stimpson pete.stimpson@bt.com

END OF DOCUMENT
