



CABLE PROTECTION SYSTEM

BACKGROUND AND APPLICATIONS

The Drallim Cable Protection System enables cable network operators to continuously monitor the integrity of their systems.

Over time, ageing cable assets can degrade, be accidentally damaged by works contractor activity or be subject to theft and vandalism.

Repair and restoration of service of cable networks can be costly and, not viable at worst, affecting business reputation. The main goal of the Drallim system is cable damage prevention.

Drallim have gained experience since the 1980s in providing quality, robust pressurised cable air supply equipment, some of which is still in operation. Much of the UK copper network and RF Waveguide terrestrial TV transmitters have been fed from Drallim units. The devices range from high capacity dry air delivery for city-wide exchanges to precision supply waveguide feeds.

To complement this range an embedded monitoring solution was developed to guarantee security of roadside service cabinets and guard against unauthorized entry.

This system was augmented to monitor the integrity of the pressurized cable with continuous polling of pressure, temperature and humidity analysis. This enabled cable operators to react to cable pressure faults and damage affecting service provision.

In more recent years cable asset core materials have increased in value and the number of cable theft incidents has soared. In 2014 Drallim were approached by the UK's main Telecommunications operator to devise a variant of the cable management system that could generate fault alerts within seconds of an unauthorized access or cable fault.

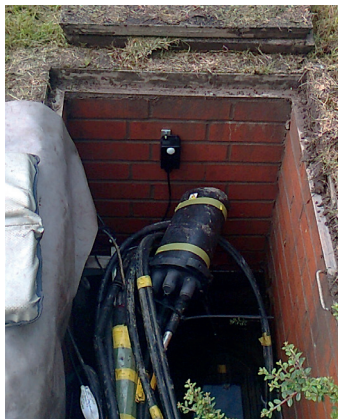
A series of transponder types were developed that included, door-switch, passive infra-red and cable break detectors.



Door Switch



Pit cover switch



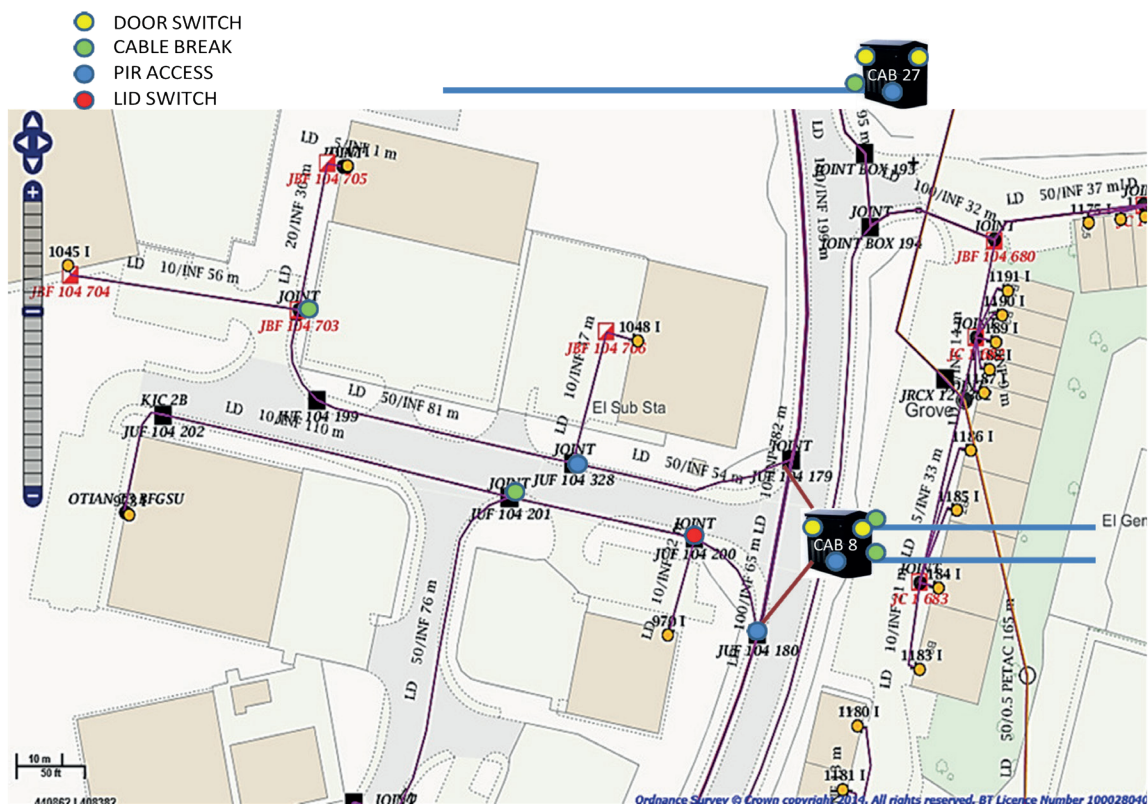
PIR access



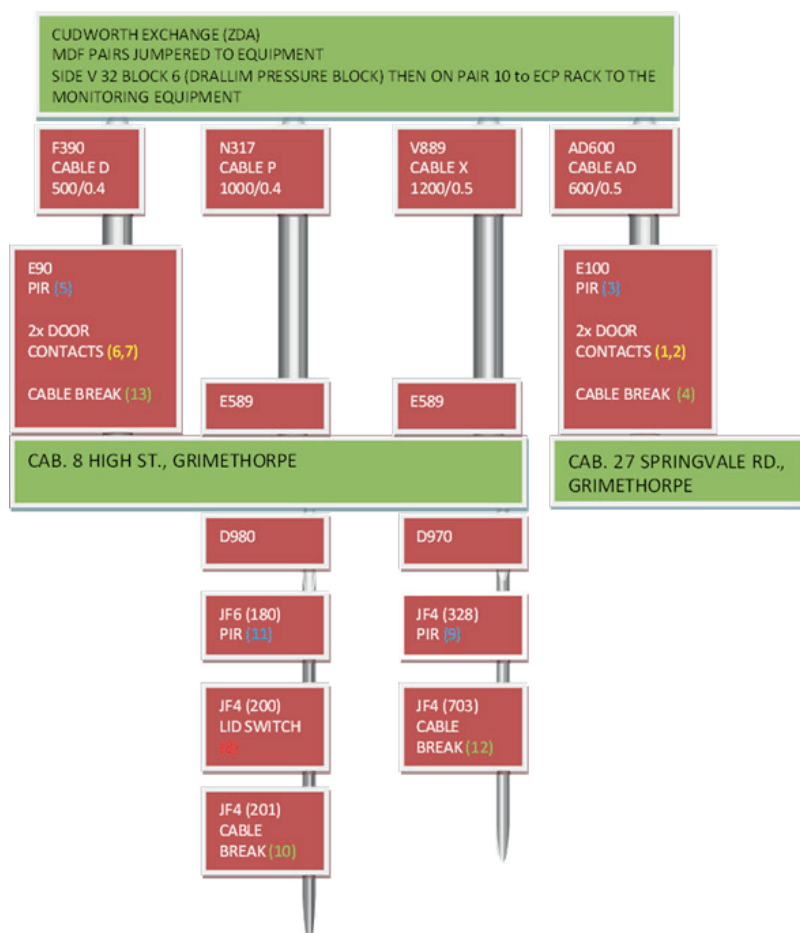
Cable break

CABLE PROTECTION SYSTEM- BACKGROUND AND APPLICATIONS

The map below shows an example of a typical installation;



This is the topology of the monitored system;



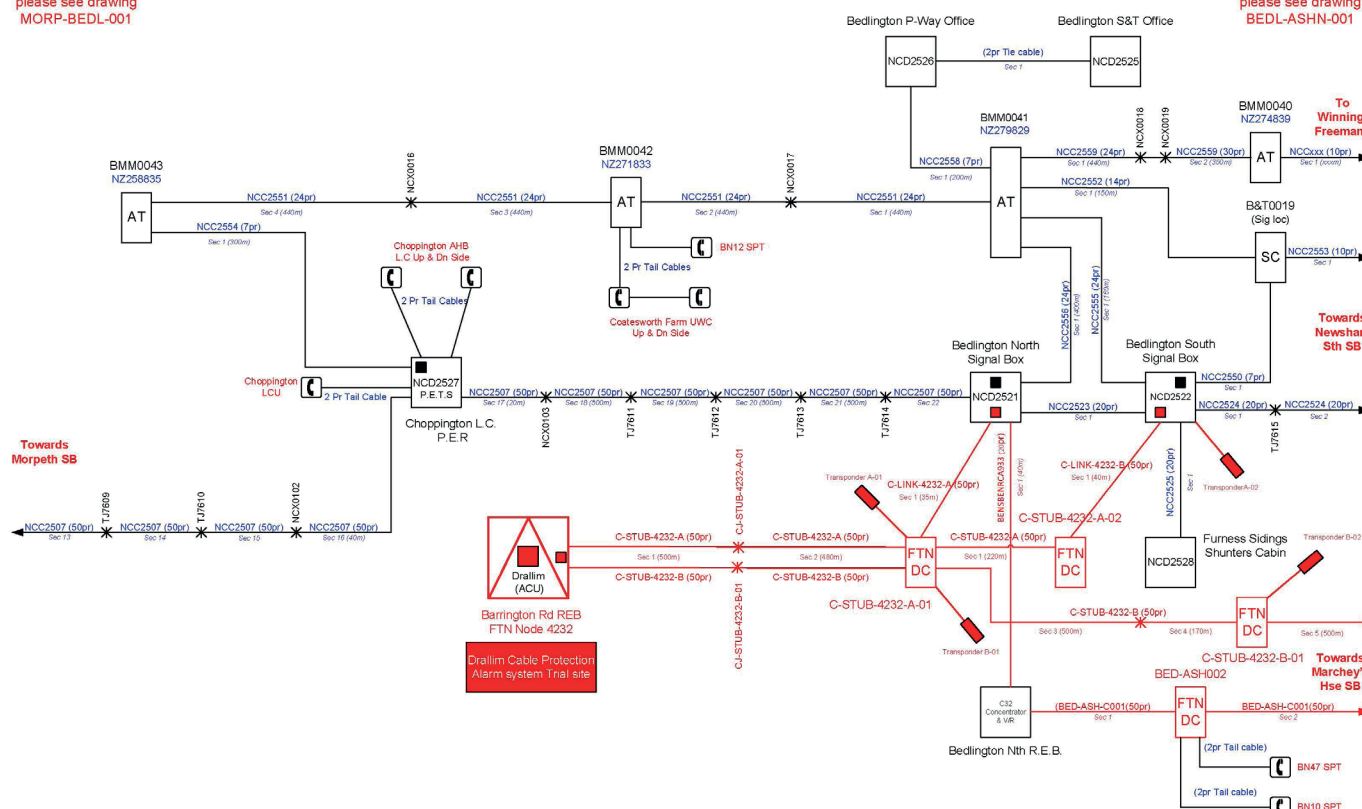
A secure mobile web page provides access to system status, alarm management and history.



Host Exchange	Cable/Access Point	Location	Alarm	Status	Activated	Number	
Cudworth	JB 104_180	Springvale Rd.	PIR ACTIVATED (11)	ALARM	03/06/2014 09:54:56	+447823666739	Delete
Cudworth	CABINET 27	Springvale Rd., Jn. Acorn Way	RIGHT DOOR OPEN (2)	ALARM	03/06/2014 09:52:44	+447823666739	Delete
Cudworth	CABINET 27	Springvale Rd., Jn. Acorn Way	LEFT DOOR OPEN (1)	ALARM	03/06/2014 09:50:33	+447823666739	Delete
Cudworth	CABINET 8	High St., Grimethorpe	RIGHT DOOR OPEN (7)	ALARM	03/06/2014 09:48:23	+447823666739	Delete

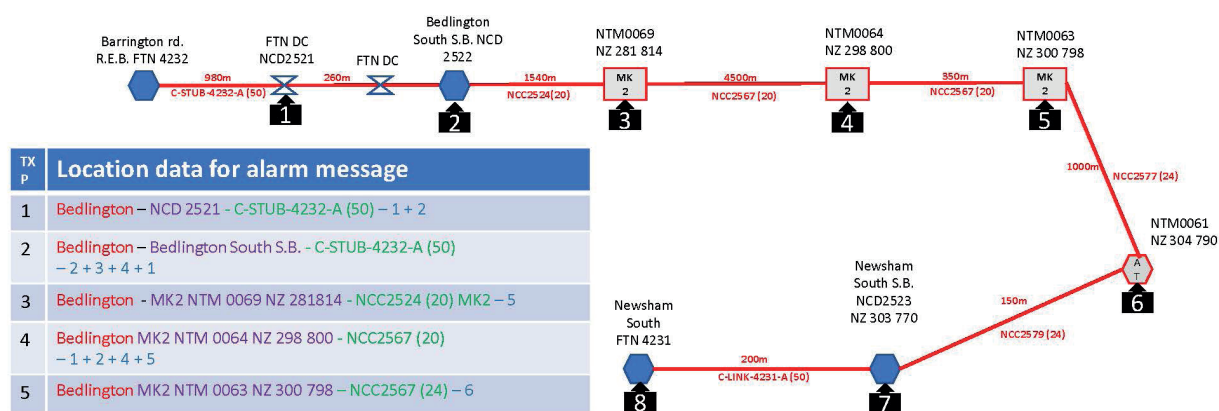
Drallim Cable Protection has been adopted by the Rail industry, a typical configuration example is shown below;

For next section
please see drawing
BEDL-ASHN-001



Network topology is shown here;

Drallim Cable Protection trial – Network Rail - Bedlington



Alarm Control Unit 1 – Port 1 coverage (8.98km)

To configure and record system settings the following data entry records are used.

[illegible]

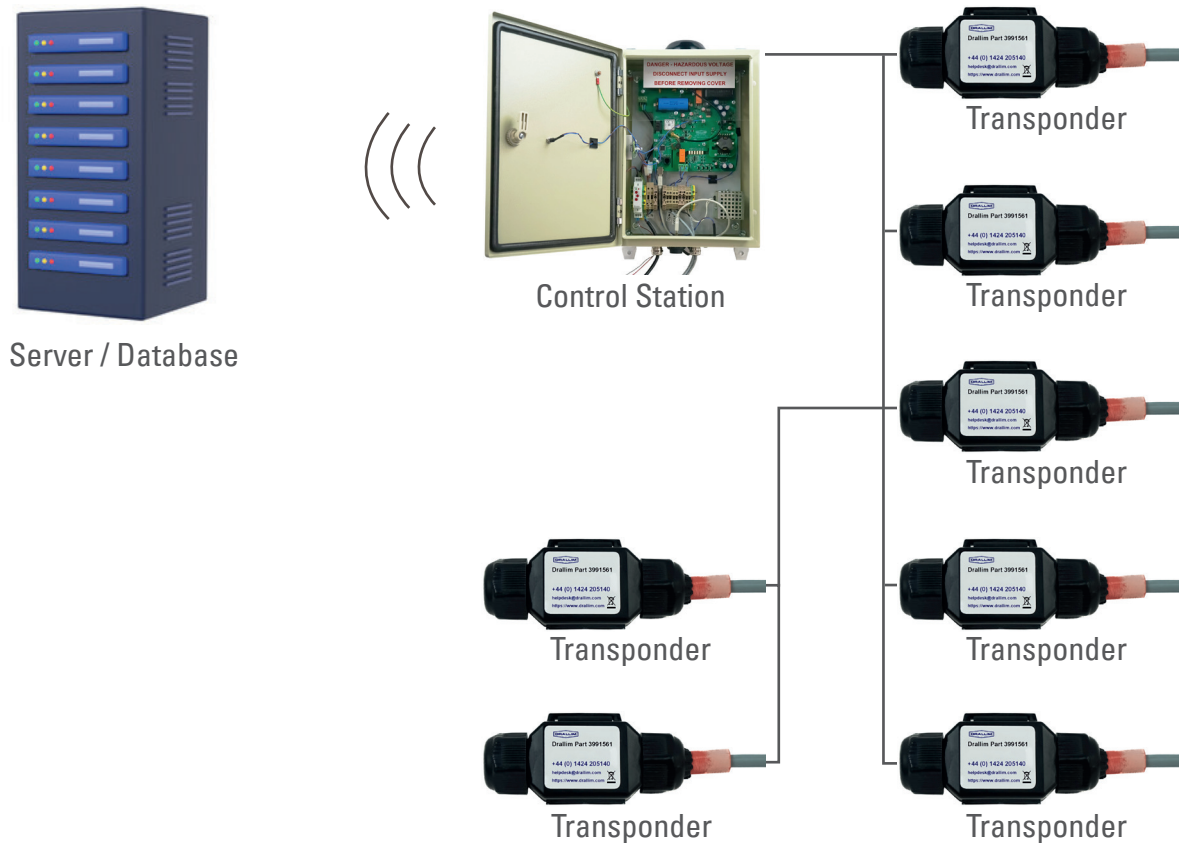
Central Alarm Control Units are configured using a software tool that can also be applied remotely.

The screenshot shows the 'Alarm Control Unit Configuration Tool' window. It has a title bar with standard Windows controls. Below the title bar, it displays 'SW 1660' and 'Version 0.1'. A tabbed interface at the top includes 'Texts', 'Programming', 'Verify', 'ACU Settings' (which is active), 'Monitor', and 'Transponders'. A 'Manual' button is located on the right. The main area contains various configuration fields and buttons. Fields include 'wlapn.com' for APN, 'Drallim Ustr 1' for User Name, and 'Password 1' for Password. There are 'Get' and 'Set' buttons for these fields. Below these are IP address fields for 'Main Svr' (192.168.248.6) and 'Backup Svr' (192.168.1.1), also with 'Get' and 'Set' buttons. Other fields include 'V-Alarm' (4.0), 'Static Key' (123), 'WDS' (Automatic), 'ACU ID' (8), and 'RTC' (15:40 9/2/2022). There are 'Get' and 'Set' buttons for 'V-Alarm', 'Static Key', 'WDS', 'ACU ID', and 'RTC'. A 'Door Override' section has a radio button and 'Get' and 'Set' buttons. A 'Format ACU Drive' button is present. A 'List Files on Hard Drive' button is also visible. A 'PC Time' button is located on the right. A 'Test Server Comms' section includes a 'Test Backup Svr?' checkbox and a 'Cancel' button. Below this are radio buttons for 'Power', 'Network', 'Internet', 'Socket', and 'Transfer Result'. A 'Transponder Type' dropdown is set to 'Basic', with a 'Poll' button next to it. A 'Cycle Power before polling?' checkbox is checked. A 'Download' button is located on the right side of the window. A 'Result' label is at the bottom right.

This tool is used to set up the server database, communications methods, user access arrangements, transponder functions and identities.

Drallim now support a flexible system that can be configured to provide asset protection to a range of industries, with nationwide scope.

CABLE PROTECTION SYSTEM



System Components

Control Station

- Wall mount steel enclosure
 - 460*300*170 mm
- 230VAC mains supply
- Battery backup
- Transponder interface 5 kV Isolated from supply
- 10 km range (connected cable length)
- Two output channels
- Up to 30 connected Transponders
- SMS Alarms
- Local USB configuration

Server (Optional)

- 2G/4G Router
- Data interface / Alarm delivery software service
- Email alarm delivery
- Requirements
 - Microsoft Windows Server
 - >10 MB/s internet connection
 - Edge/Chrome browser compatible
 - 230VAC mains supply

Transponder

- Miniature design for discrete installation
 - 100*40*25 mm
- Hardwired, line-powered, 2-wire protected cable
- Tamper/orientation monitor

For further information and to see our complete product line, please visit www.drallim.com.
The images shown are for illustration purposes only and may not be an exact representation of the product.
Products and specifications subject to change without notice.