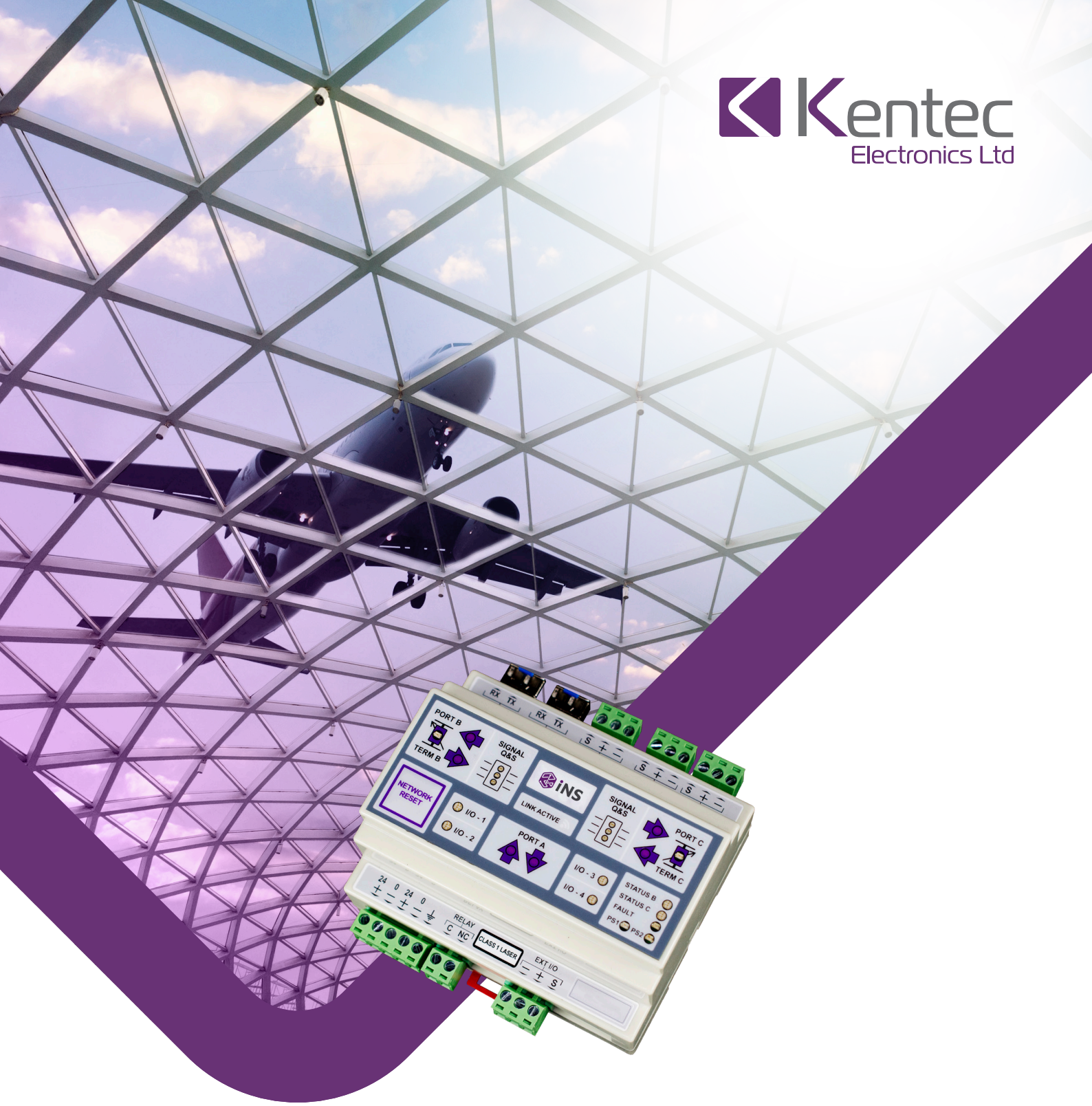
Kentec
Electronics Ltd



Intelligent Networking Solutions

iNS

Introduction

Performance of a networked fire system relies on efficient data flow between all panels. Any loss in data will slow the response of the system, resulting in intermittent fault events as the panels fail to communicate correctly.

In modern day society, where quick and convenient monitoring of data is key, optical networking allows a proactive approach to system management by allowing time for revision and repairs before a critical failure occurs. Life safety is paramount to any business, as well as protecting property and assets, which is why fully monitored optical networking is effective for distributed fire detection and alarm systems.

Traditional wired networks are a robust and proven solution but can be adversely affected by poor cabling and external interference, resulting in lost time and money whilst a technician finds and rectifies such problems.

Intelligent Networking Solutions

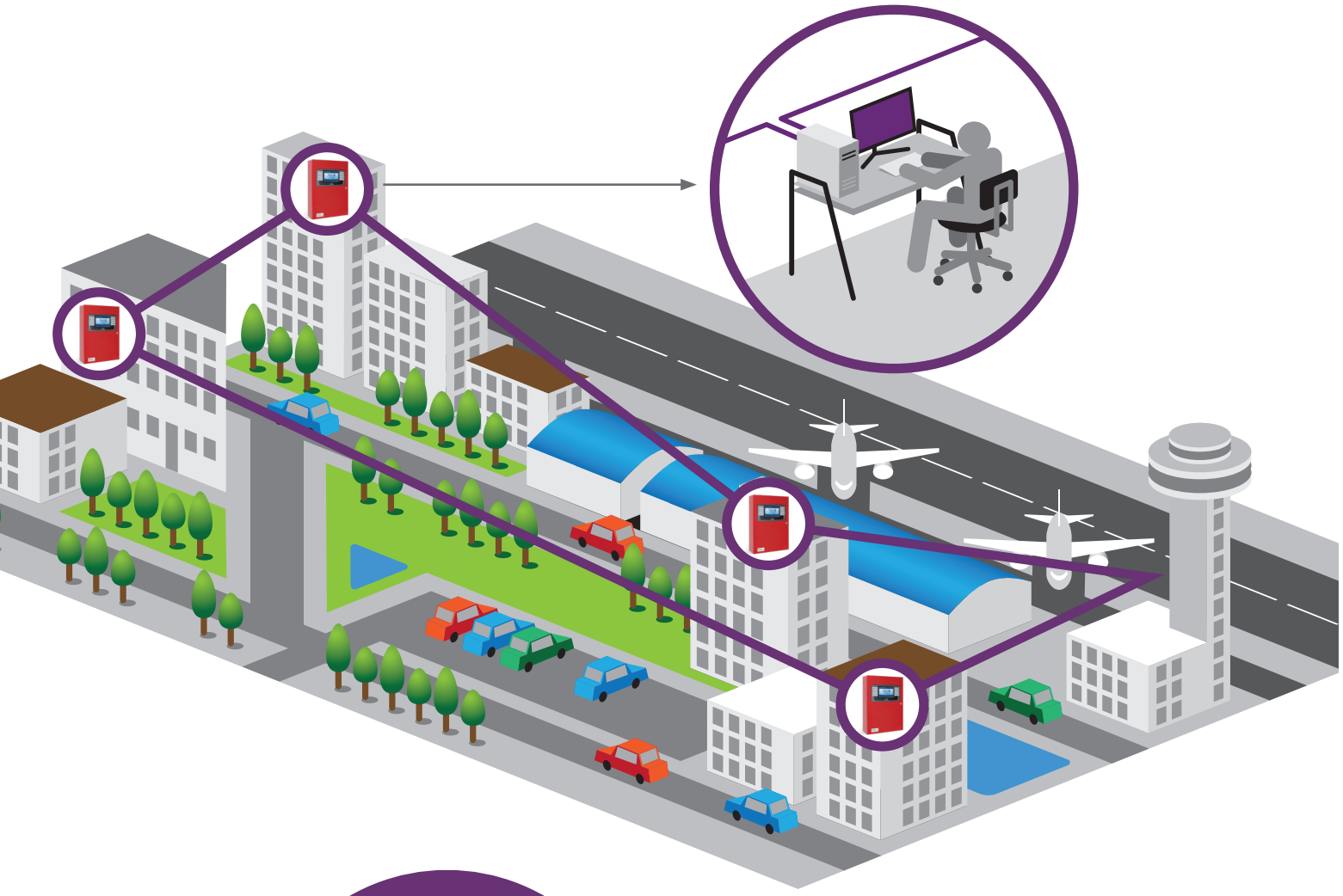
iNS provides a range of advanced networking solutions for Kentec's Addressable fire alarm panel range.
Enhanced solutions for RS485 wired networks, fibre optic networks and hybrid networks (combination of both wired and fibre optic networking). Along with advanced PC tools network performance can be fully monitored to ensure optimum performance and early warning of performance degradation.

Simple networking solutions are available in the iNS range which can allow fire and fault signals to be passed between not just addressable but conventional fire panels using an Ethernet network.

Reliability of fire alarm networks is critical and the iNS range offers a unique transient suppression solution to prevent damage from surges caused by such things as ESD and lightning strikes.

Application Diagram

Many sites can consist of multiple buildings spread out over a large area i.e. airports, universities or hospitals. Each building will have their own fire alarm control panel or panels which can be networked together to create a site-wide fire alarm system passing status information between buildings. Networking of fire alarm panels can enable central control and monitoring of the whole site from one location.



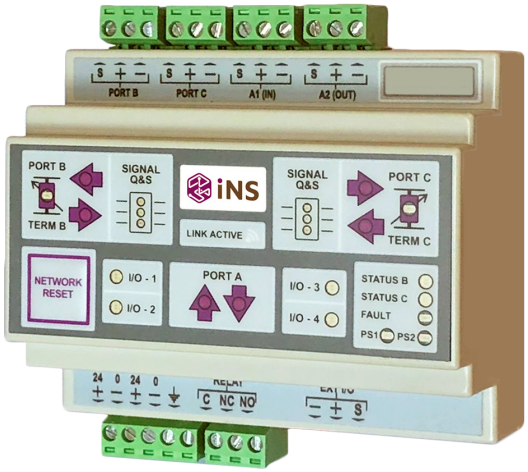
iNS Networking Modules

Dynamic Network Analyser for RS485 Wired Networks

The Dynamic network Analyser DNX-A-2R-K is designed to provide enhanced communication performance on an RS485 wired network while providing advanced diagnostic information making network fault finding quicker and easier. Modules are installed on each networked fire panel with the DNX-A-2R-K managing data transfer across the network and ensuring optimum network performance. LED indicators provided simple first look diagnostics making it simple to identify the source of network faults.

Main Features

- Quick and simple check of network installation
- Automatic impedance matching to network cables optimises performance
- Continually monitors and indicates signal quality
- 2.5kV galvanic isolation on all ports
- Independent reporting with Class A communication redundancy with multiple fault tolerance
- Enables preventative maintenance management through system degradation monitoring
- Compatible with IVIEW Graphical User Interface
- Can be used on the same network as DNx-R-2F/FC-K to provide a hybrid wired/fibre network solution
- Storage of configuration and commissioning parameters to allow system performance tracking over time

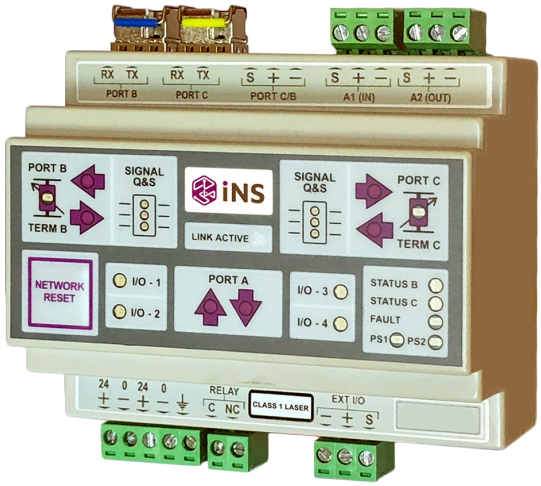


Intelligent Fibre Optic Network Analyser

Fibre optic networking can provide advantages over wired network solutions by enabling significantly extended communication distances and immunity to electrical interference. DNx-R-2F/FC-K provides a full fibre optic network solution or can be used with the DNX-A-2R-K to provide a hybrid solution combining wired and fibre optic sections on the same network. Each panel on the network which requires a fibre optic connection requires one module only. This module can provide any fibre optic connection type—Single-mode, Multi-mode or single fibre bi-directional—by the use of pluggable fibre optic transceivers . Unique DOM (Digital Optical Monitoring) is provided on the module for monitoring of all aspects of the fibre optic performance i.e. Tx/Rx Power (dBm), laser current(mA), Temp(°C) and supply voltage(V) ensuring optimum performance of the fibre optic network and early warning of any degradation. LED indicators provide simple first look diagnostics making it simple to identify the source of network faults.

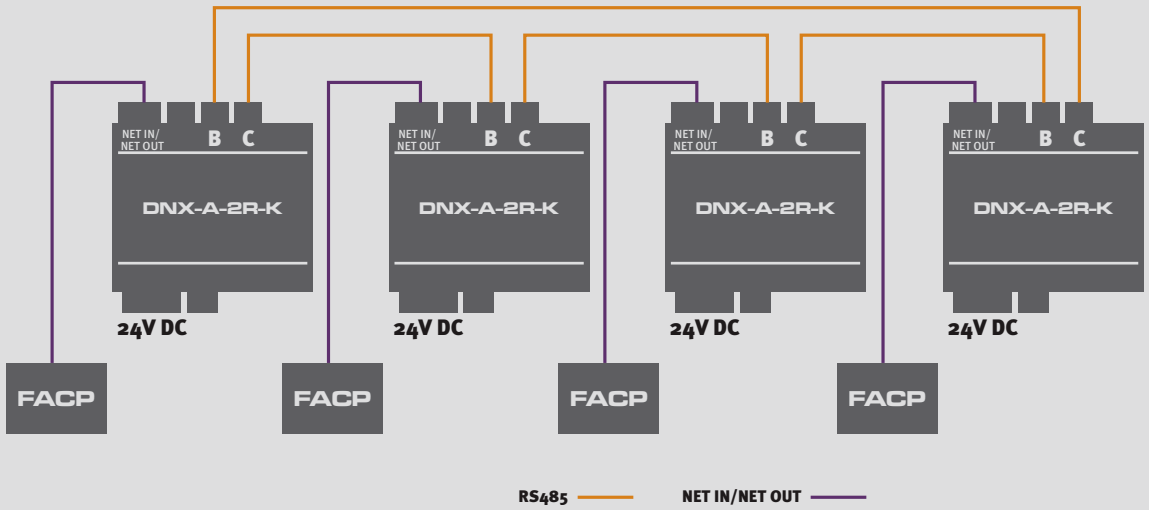
Main Features

- Quick and simple check of network installation
- Continually monitors and indicates signal quality
- 2.5kV galvanic isolation on all ports
- Independent reporting with Class A communication redundancy with multiple fault tolerance
- Unique Digital Optical Monitoring of fibre optics
- Enables preventative maintenance management through system degradation monitoring
- Compatible with IVIEW Graphical User Interface
- Can be used on the same network as DNX-A-2R-K to provide a hybrid wired/fibre network solution
- Storage of configuration and commissioning parameters to allow system performance tracking over time

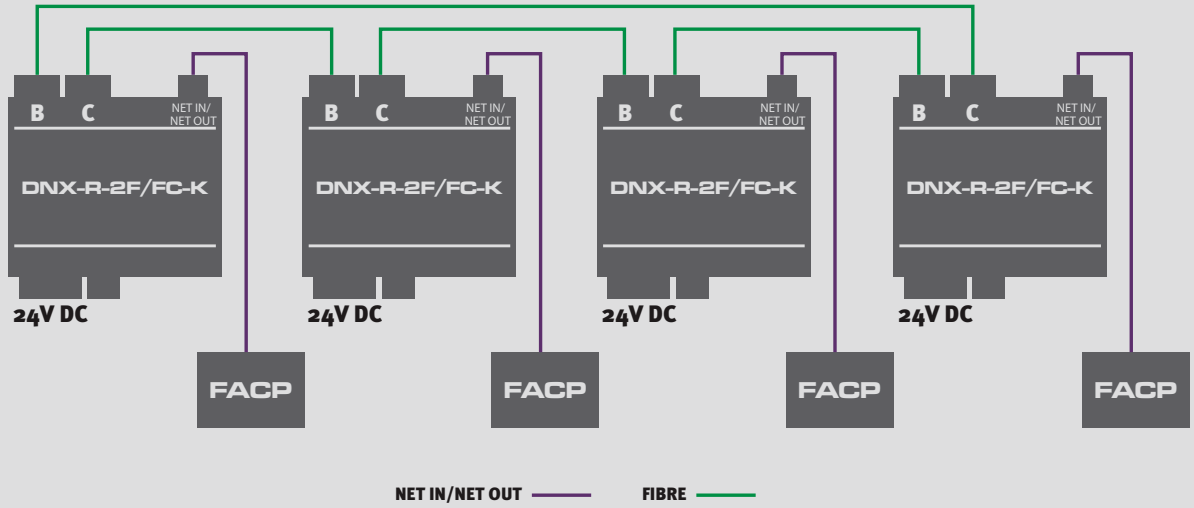


Typical Network Configurations

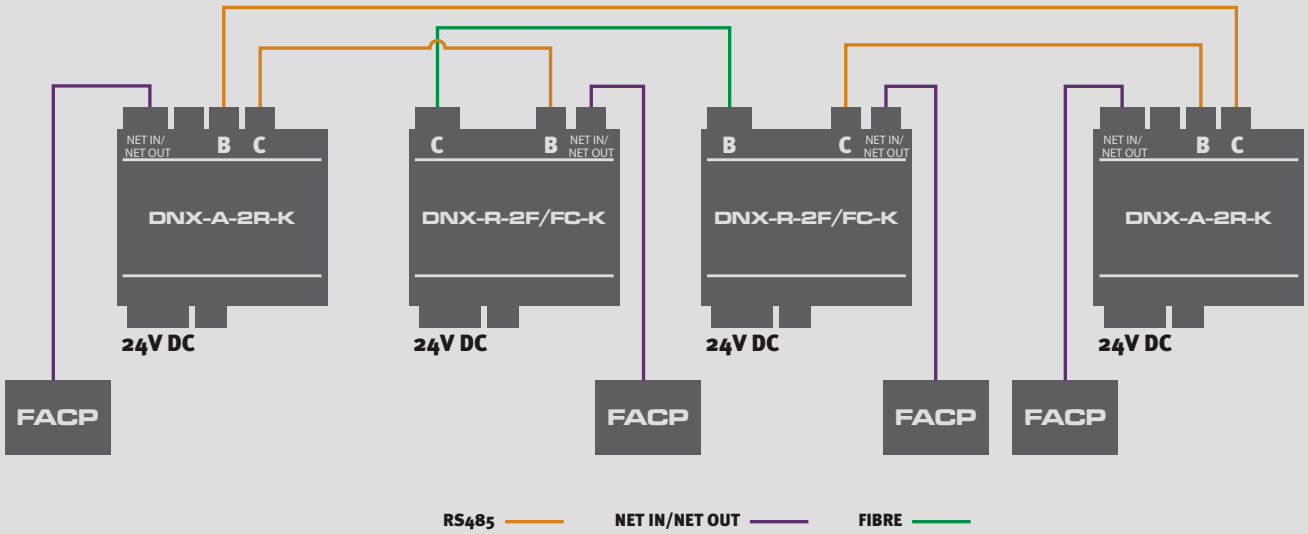
Class A - Redundant RS485 Wired Network



Class A - Redundant Fibre Network



Class A - Hyrbrid Network



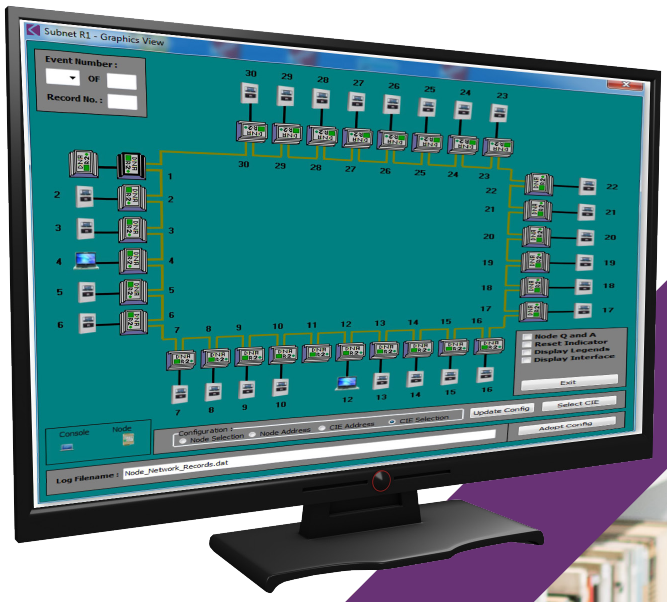
Network Reliability Monitoring and Diagnostic Analysis

IVIEW Graphical User Interface

Performance of RS485 and fibre optic networks is something that is generally not visible, with very little detail available for analysis. This can be extremely frustrating for building owners as network performance can be affected by many things which can create anomalies in network data that can be misinterpreted or result in an incorrect fault diagnosis.

IVIEW works in conjunction with the iNS network analyser modules to identify, isolate and eliminate network faults. IVIEW is specifically designed to rapidly recognise and diagnose errors on the network. Used in conjunction with the DNX-A-2R-K and DNx-R-2F/FC-K provides detailed information and reports on network performance i.e. transmission rates, data signal quality, voltage levels, temperature etc. enabling potential issues to be highlighted and preventative maintenance to be carried out.

IVIEW can be used to download detailed performance information which can be provided in a report format to an end-user giving confidence in the network integrity and stability.



Network Protection

Transient Suppression Module

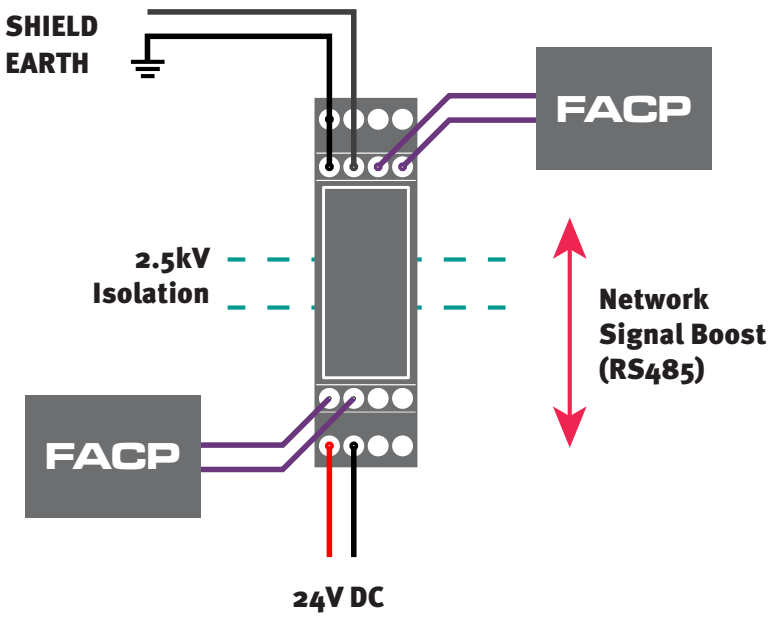
The presence of transients across or over a fire alarm network can cause significant damage to fire alarm panels connected on the network. Damage can be instant i.e. circuit board failures, or it can be latent i.e. equipment may continue to work but with degradation to the expected lifetime.

The TSM-100 Transient Suppression Module can be installed on RS485 networks to prevent these electrical transients causing unnecessary damage to fire alarm panels on the network. TSM-100 modules can also be used as a signal repeater/booster to extend RS485 communication distances.

Main Features

- 2.5kV Galvanic isolation into RS-485 path
- Protection against Electrostatic Discharge (ESD)
- Protection against Electrical Fast Transients (EFT), e.g. EFT from switching of inductive loads
- Protection against slow high energy transients (surge), e.g. surge from lightning strikes
- Protection against RS-485 signal overdrive, e.g. reboot of connected PC/laptop/workstation
- Protected and isolated Power Supply
- RS-485 repeater/booster

Typical Wiring Configuration



Simple Panel Interconnectivity

Remote Interface Modules

A simple solution to link fire and fault outputs between non-networkable fire alarm control panels. The RIM100M-3-K and RIM100E-K modules work together as a pair to provide bi-directional monitoring of fire and fault relays across an Ethernet link. This provides a simple network where it is not possible to provide a hard wire connection between panels.

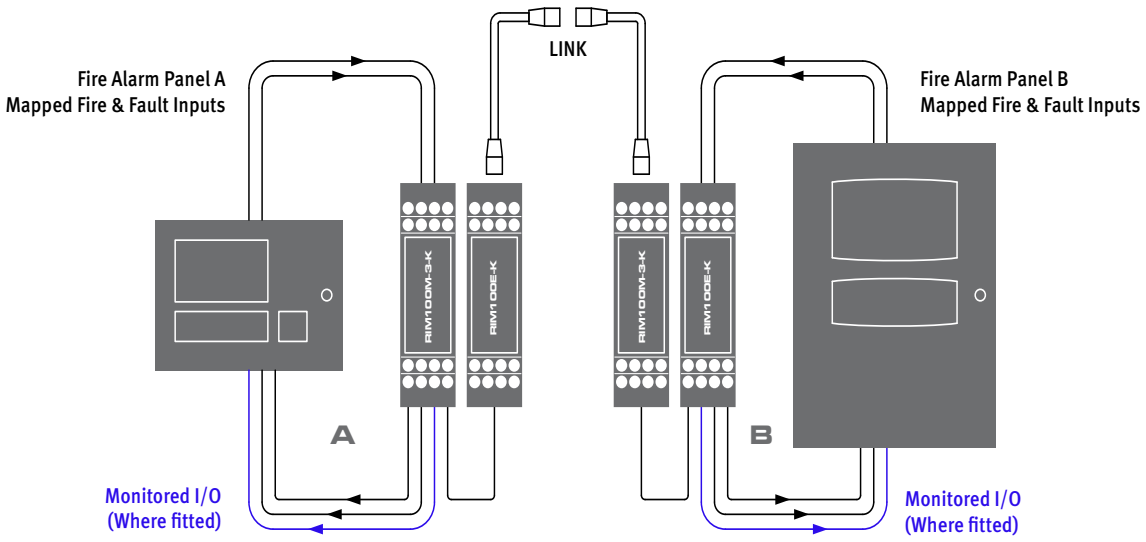
Main features RIM100M-3-K

- Two bi-directional Input/Output signal states communicated across RS485 to RIM100E-K
- Supports a simple 'monitored' communication channel with configurable latency
- An effective solution for introducing a 'remote' conventional Fire Alarm Control Panel to an existing network, via a monitored communication channel

Main features RIM100E-K

- Combines with RIM100M-3-K to create an Ethernet communication path between the modules
- The RIM100E-K has a built-in web page for configuring the device
- An RJ45 status indicator light is used to provide status on data activity
- Front fascia LEDs system status indication
- Supports TCP Server, TCP Client, UDP and UDP Server Ethernet protocols
- Support for debug via laptop with simple USB interface

Typical Remote Indicatior Module Configuration



Company Overview

Kentec Electronics is one of the world's leading life safety solutions manufacturers of conventional, analogue addressable fire detection and extinguishant control panels.

Founded in 1985, Kentec is an end-to-end manufacturer, with everything sold being made in the UK. It employs approximately 240 members of staff in its production facility, head office and research and development department.

In addition to design and manufacture, Kentec provides technical support specified to the local standards and customer requirements of over 90 countries worldwide. With a commitment to meeting the needs of individual national markets, Kentec has achieved a global reputation, resulting in its life safety systems being installed in numerous prestigious sites across the world.

Kentec manufactures products approved to EN54, EN12094, UL, FM, NFPA and marine classification societies.

Certificate No. FM 32987
BS EN ISO 9001: 2015

Certificate No. EMS 518118
BS EN ISO 14001:2015

Certificate No. 360
BS EN ISO 9001: 2015

Fire Industry Association

BS-EN12094-1
KM 96761

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