

DNA R-1

Dynamic Network Analyser

For an independent EN54-13
Life safety Communication
Network layer



Overview

The DNA R-1, Dynamic Network Analyser for ring topology networks, has been developed by INSTANCE to facilitate dynamic network management through the provision of an independent communication layer.

The equipment is designed to improve the Quality of Service (QoS) of critical communication networks while operating under the performance criteria required by EN54-13 and BS5839 part 1.

The ports connected to the communications ring are correctly terminated to match the network communications cable impedance to ensure optimum signal quality and amplitude. Signal quality is constantly monitored and the termination impedance is adjusted to compensate for changes in cable impedance due to climatic or physical cable parameter changes.

An Input/Output interface is provided for through an independent communication layer.

This feature provides a basic redundant network protocol with the mapping configuration managed through the PC graphics IView programming tool.

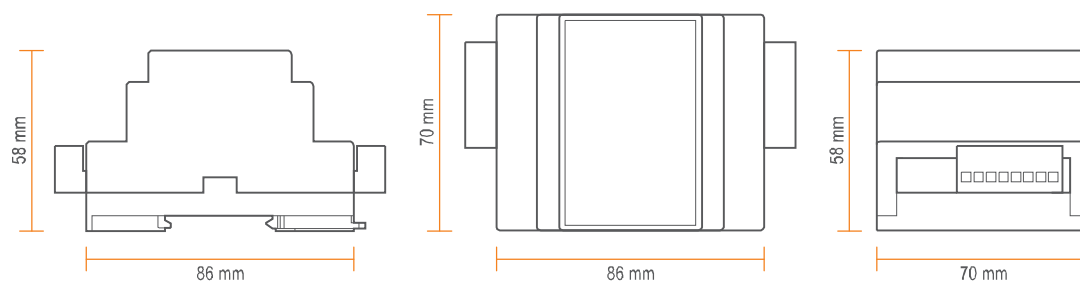
Features

- Independent Reporting with Class A ring communication redundancy
- Multiple fault tolerance
- 2.5 kV isolation Port A to other Ports B/C
- Single industrial equipment RS485 connection
- Can operate on Hosted Fiber/Ethernet links
- Simple LED system status indication
- Signal quality and amplitude visual indication
- Wireless Connectivity for remote monitoring using a Bluetooth or WIFI communication connection
- Supports the generation of system performance reports for installation commissioning
- Visual interface provided by IView, the INSTANCE Graphical User Interface, with monitoring, diagnostics and reporting options
- Enables preventative maintenance management through system degradation monitoring
- Configuration and commissioning parameters are stored allowing for system performance tracking over time
- DIN rail mounting
- Field Ports B and C have adjustable termination to correctly match loop cabling segment
- Baud rate selectable from 9600-115kbits/sec

Specifications

Dimension Diagram

Dimensions: 70 X 58 X 86 mm
Weight: 0.2kg



Power

Operating voltage: 18 to 36V (24V DC nominal)
Rated current: 250mA (at 24V)

Interfaces

RS485: Port A: Fixed Termination
Port B: Dynamic Termination
Port C: Dynamic Termination
Port B & Port C: Isolated (2.5kV)
Baud Rate: 9600 to 115200 (selectable / configurable)
USB: USB Micro-B connection (Device / Slave Mode)

Temperature

Operating: -10 to 70°C
Storage: -40 to 70°C

Agency Approvals and Standards

CE, RoHs, WEEE compliant
EMC EN 61000-6-2, Immunity Standard (Industrial Environments)
EN 61000-6-4, Emission Standard (Industrial Environments)
Safety EN 60950, IT Equipment



Instance

Managing Data Xchange

Instance Network Equipment

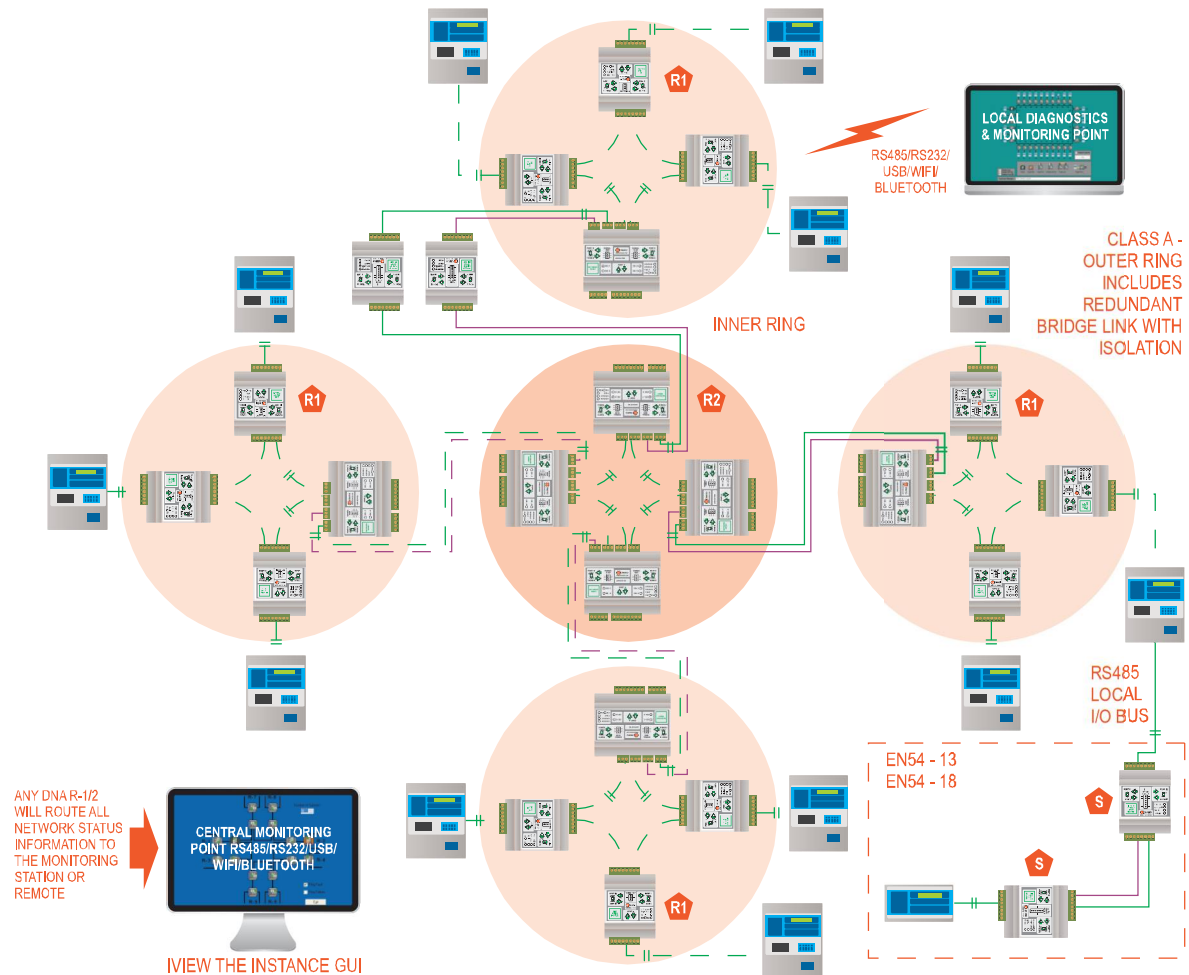
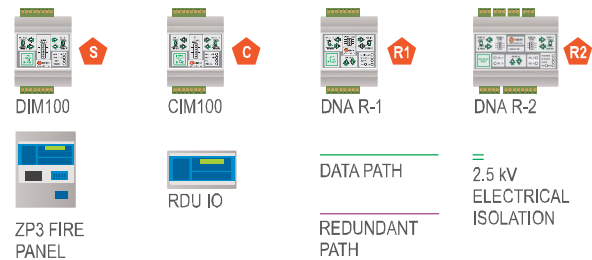
Application:

Ziton Multiple Fault (wiring) Network Redundancy for BS5839-1

Products Used:

- DNA-R2** Dynamic Network Analyzer (Dual CIE port with CIE & Link Isolation)
- DNA-R1** Dynamic Network Analyzer (Single CIE port with CIE Isolation)
- CIM100** RS485 Isolator/Repeater Module
- DIM100** DIM Impedance (Redundancy) Module
- IVIEW** Graphics Monitoring Tool

Legend:



Instance
Managing Data Xchange

Instance Network Equipment

Application:

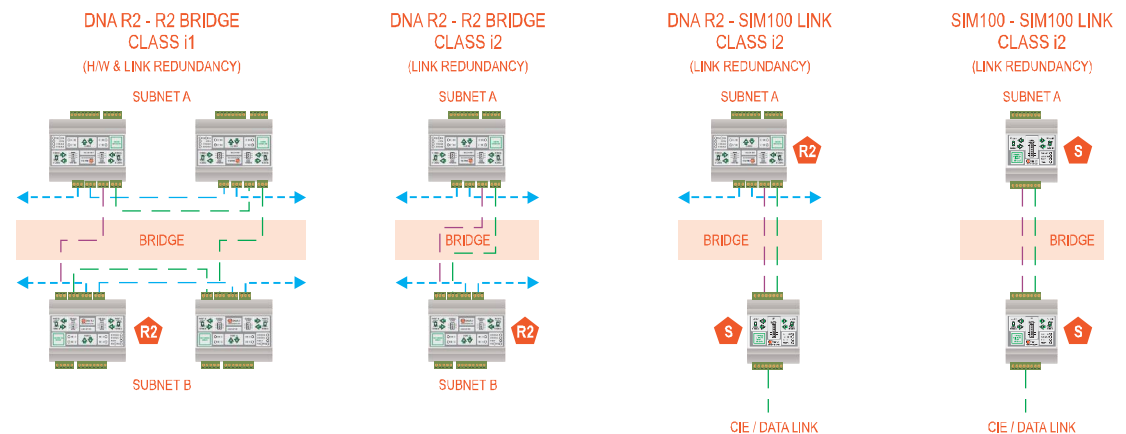
Instance Redundant Network Bridge for full
EN54-13 Class i1 and
BS5839-1 Class i2 compliance

The multi-Ring topology supported by Instance is utilised to increase the number of faults a network can tolerate while maintaining full communication.

Products Used:

DIM 100 Dynamic Impedance Module
DNA-R2 Dynamic Network Analyzer
(Dual CIE port with CIE & Link Isolation)

Legend:



Instance

Managing State Xchange

Instance Network Equipment

Application:

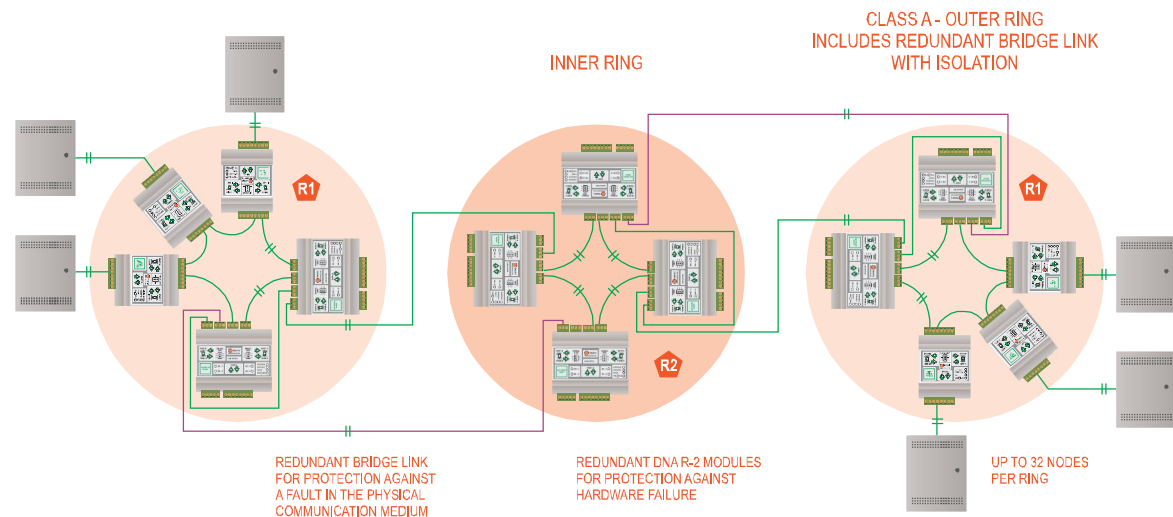
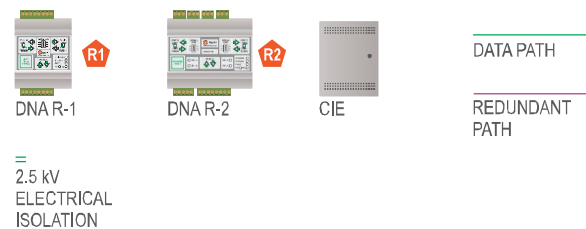
Instance Redundant Network Bridge for full EN54-13 and BS5839-1 compliance

The multi-Ring topology supported by Instance is utilised to increase the number of faults a network can tolerate while maintaining full communication.

Products Used:

- DNA-R1** Dynamic Network Analyzer (Single CIE port with CIE Isolation)
- DNA-R2** Dynamic Network Analyzer (Dual CIE port with CIE & Link Isolation)

Legend:



Instance Network Equipment

Application:

Ziton Network Redundancy for
BS5839-1/EN54-13/EN54-18

The Inner Ring allows for a single fault in each subnet while maintaining full communication with each CIE node.

Products Used:

- DNA-R2** Dynamic Network Analyzer (Dual CIE port with CIE & Link Isolation)
- DNA-R1** Dynamic Network Analyzer (Single CIE port with CIE Isolation)
- DIM100** Impedance (Redundancy) Module
- IVIEW** Graphics Monitoring Tool

Legend:

