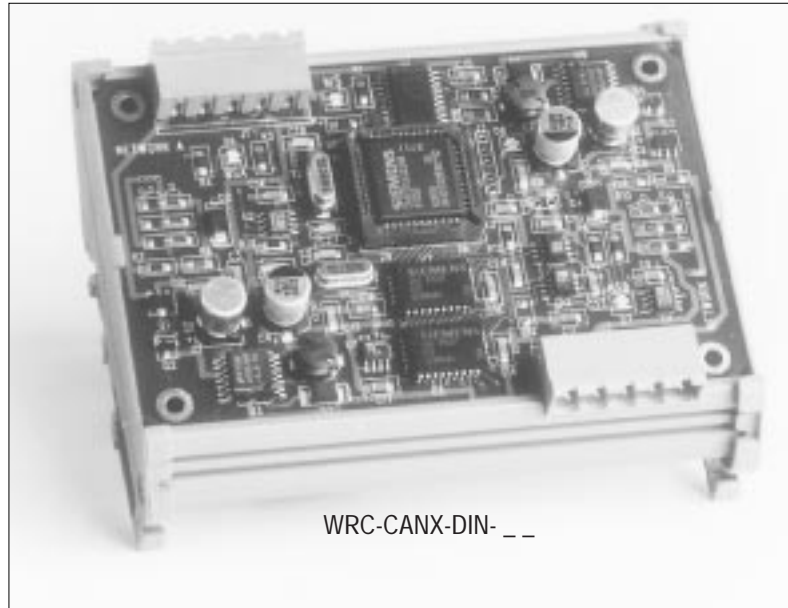


WRC-CANX DeviceNet and CAN-Bus Extenders

WRC-CANX CAN Bus Extenders extend CAN Bus networks such as DeviceNet, SDS, and OpenCAN Part B. CAN-based products limit cable length based upon network data rates, as well as limit the length of drops from T-Junctions. WRC's Bus Extenders allow a user to extend the cable length without having to sacrifice network speed by providing an isolated extender operating at the network speed to effectively multiply the allowed network cable length.

Common Features include:

- Isolated network extender
- Manual or automatic speed selection - 125K, 250K, 500K, baud rates
- No address setting required for DeviceNet, SDS, or OpenCAN
- Multiple extenders can be used in series with manual speed selections
- Works on all CAN-Based bus networks
- Powered from 24 Vdc supplied by the CAN Network or by the user (on each side of the repeater)
- Diagnostic bi-color LEDs on each network - green / red
- Diagnostic bi-color LED for Module status - green / red
- 1 millisecond latency for each network extension
- Ambient Temperature : 0 to 70 degrees :C
- Humidity: 0 - 95% RH non-condensing



WRC-CANX-DIN- __



WRC-CANX-NEM- __



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Two Extender media to choose from:

- Basic DeviceNet Extender takes a CAN-based message in Port A, transfers it over an isolation barrier and regenerates the message out Port B (see figure 1).

Applications which require extensions to overcome DeviceNet limitations should consider this approach. Models available include:

- WRC-CANX-DIN-DN
- WRC-CANX-NEMA-DN
- WRC-CANX-DIN-SDS
- WRC-CANX-NEMA-SDS
- WRC-CANX-DIN-CAN
- WRC-CANX-NEMA-CAN

- WRC's Fiber-optic version takes a CAN-based message in Port A, transfers the message over a fiber optic link (B) and regenerates the message out Port C (see figure 2).

WRC-CANR-DF-DN is a fiber-optic repeater with ST connectors:

- WRC-CANR-DF-DN is compatible with 62.5/ 125 micrometer multi-mode cable, maximum distance is 2200 meters.

Pairs of repeaters are required. Models available include:

- WRC-CANR-DF-DN

Two mechanical packages to choose from:

DIN-rail

WRC-CANX-DIN is DIN-rail mountable:

- Dimensions: 3.43" wide x 4.35" long x .213" high (87 mm wide x 110 mm long x 54 mm + high)
- PC Board 2.86" wide x 4.25" long with removable termination strip facing out on the long side
- PVC DIN Rail mount material
- DeviceNet compatible 5 - conductor, removable termination strip for each network connection
- Uses EN50022 Din Rails (available as WRC50022)

figure 1:

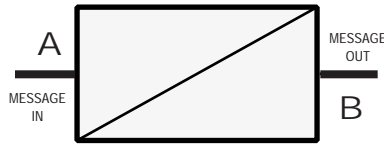
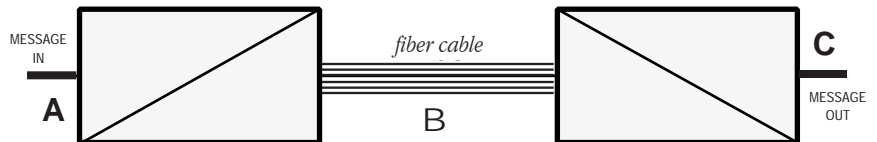


figure 2: (with copper cable connecting to ports A and C)



NEMA-style

WRC-CANR-DF-DN and WRC-CANX-NEM are sealed NEMA4X/IP66 enclosures:

- "Mini" style, quick disconnects for the network: 1 male, 1 female
- 3-conductor female, "mini" style, quick disconnects are provided for power connectors
- Dimensions: 3.70" wide x 5.12" long x 2.24" high (94 mm wide x 130 mm long x 81 mm high)
- Transparent polycarbonate cover allows viewing diagnostic LEDs on each network
- UL 94-V1, VDE 0471-Part 2, Flammability Ratings
- Polycarbonate, glass filled body
- Groove & Lip seal design
- Polyurethane gasket sealing that is oil, acid, and temperature resistant
- 4 mounting screws - external to gasket seal



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Extending and Conditioning DeviceNet Cabling

Excerpt of Presentation to Allen-Bradley Automation Fair, December 1988

Introduction

- DeviceNet is an exciting and growing network technology
- Understanding DeviceNet's data rate and distance limitations is crucial to your project's success
- The following is a review of these limitations and the techniques which allow users to exceed these limitations by observing:
 - distance / speed / cable specifications
 - DeviceNet / Can extenders
 - Topology Options
 - trade-offs

Overview

- DeviceNet
 - low-cost communications link
 - connects industrial devices to a network
 - eliminates expensive hard-wiring
 - supports device-level diagnostics
- "Allowed" end-to-end network distance varies with data-rate and cable thickness
- WRC products extend performance outside of the "allowed" envelope

Vocabulary

- trunk line
- thick cable vs. thin cable
- drop line
- terminators
- linear bus topology
- star bus topology
- extenders vs. repeaters / bridges / gateways

Distance / Speed / Cable specifications

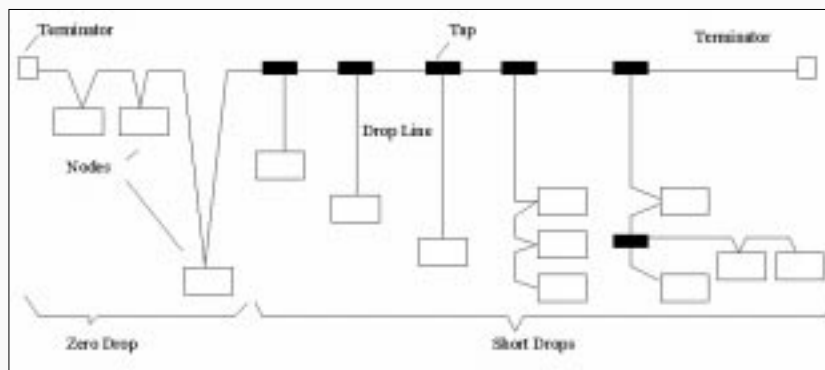
Data Rates	125 Kbps	250 Kbps	500 Kbps
Thick trunk length	500 m	250 m	100 m
Thin trunk length	100 m	100 m	100 m
Drop length	6 m	6 m	6 m
Cumulative drop length	156 m	78 m	39 m

DeviceNet Can Extenders

- doubles DeviceNet distance specs
- allows variety of network topologies
- isolates the network

Topology Options

- linear bus topology



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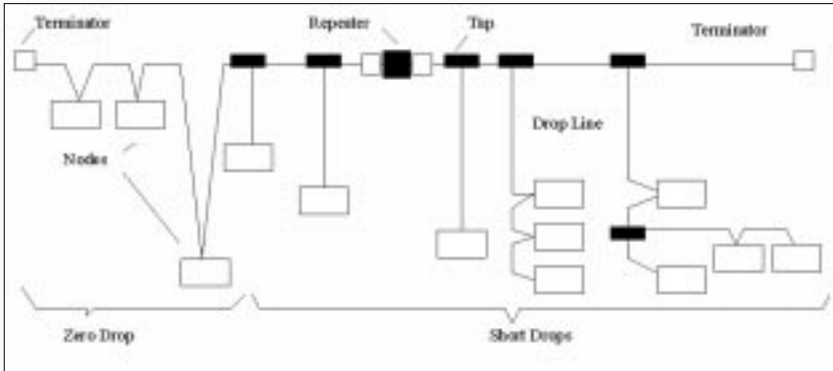
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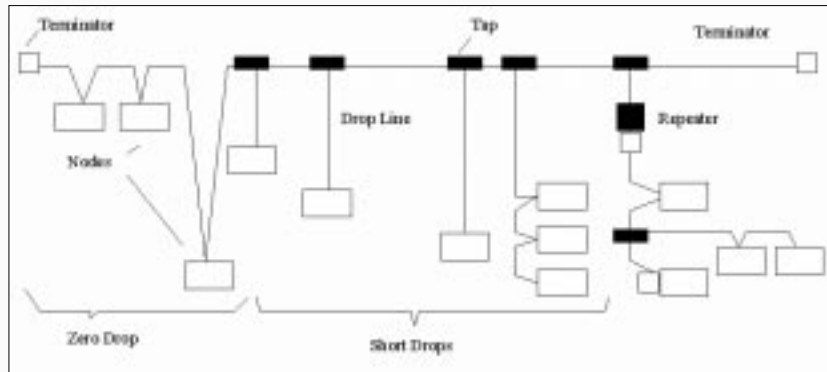
Webs:
<http://www.wrcakron.com>

Vocabulary

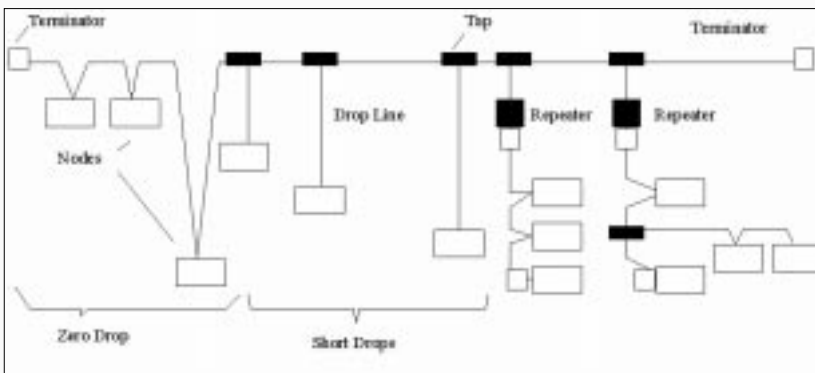
- trunk line



- thick cable vs. thin cable
- drop line



- terminators
- linear bus topology



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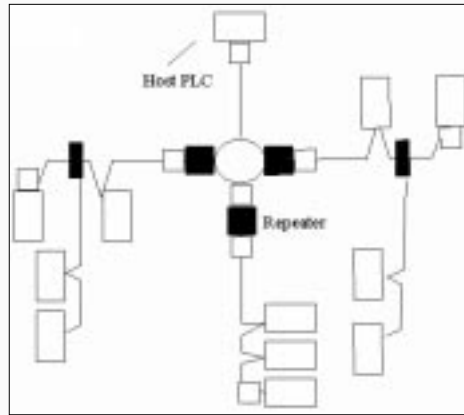
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Website:

<http://www.kron.com/>

Vocabulary

- trunk line
- thick cable vs. thin cable
- drop line
- terminators



- linear bus topology
- star bus topology
- extenders vs. repeaters / bridges / gateways

Distance / Speed / Cable specifications

Data Rates	125 Kbps	250 Kbps
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500 Kbps

Thick trunk length	500 m	250 m	100 m
Thin trunk length	100 m	100 m	100 m
Drop length	6 m	6 m	6 m
Cumulative drop length	156 m	78 m	39 m

DeviceNet Can Extenders

- doubles DeviceNet distance specs
- allows variety of network topologies
- isolates the network

Topology Options

- linear bus topology

Topology Options

- linear bus topology - distance doubled

Topology Options



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