

## Electrical Specifications

Power Supply Inputs: 11V to 14V DC (Typically derived from the individual LAN sections connected)

Current Consumption. LAN 1 section: Standby: 28mA    Busy: 65mA  
 LAN 2 or 3 section: Standby: 15mA    Busy: 30mA

Electrical Isolation. LAN 1 to LAN 2: 2.5kV  
 LAN 1 to LAN 3: 2.5kV

# 3000/Access 4000

## LAN ISOLATOR UNIT

P/No: 993080

## INSTALLATION NOTES

**Designed & manufactured in Australia.**

### **Disclaimer:**

1. The manufacturer &/or it's agents take no responsibility for any damage, financial loss or injury caused to any equipment, property or persons resulting from the correct or incorrect use of the 3000/Access 4000 system or it's peripherals. The purchaser assumes all responsibility in the use of the 3000/Access 4000 system and it's peripherals.

2. While every effort has been made to ensure the accuracy of this manual, the manufacturer assumes no responsibility or liability for any errors or omissions.

Due to ongoing development, this manual is subject to change without notice.

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## Overview

The LAN Isolator is designed to provide electrical isolation and signal level restoral between remote 3000/Access 4000 modules and/or sections of the LAN.

e.g. LAN Isolators may be installed in the LAN cable run between the Control Module and a remote module, or in the LAN cable runs between separate buildings.

The unit can be installed in any 3000/Access 4000 system to:

- Eliminate LAN earth loop problems.
- Improve lightning protection.
- Improve signal-to-noise performance over longer cable runs. (Providing increased LAN cabling distances)
- Protect sections of the LAN from faults/tampering that occur in another section.
- Monitor the status of individual LAN “Loops” and “Branches”.

### IMPROVED CABLE TAMPER PROTECTION

The LAN Isolator provides improved protection against most LAN cable faults and tamper conditions. This is achieved with the ability of the LAN Isolator to suspend activity (switch to “isolate”) on a branch where it detects severed LAN cables and other abnormal conditions, allowing the rest of the LAN to continue to function normally. When the fault or tamper condition is rectified, communications will automatically be re-established.

“OUT2” can be wired to a Zone Input on a Module to monitor when a branch has been isolated, allowing an alarm and or warning device to be activated.

(Note that the system also reports an alarm to the Central station when communications with any module on the LAN is lost)

### COMMS LOOP FEATURE

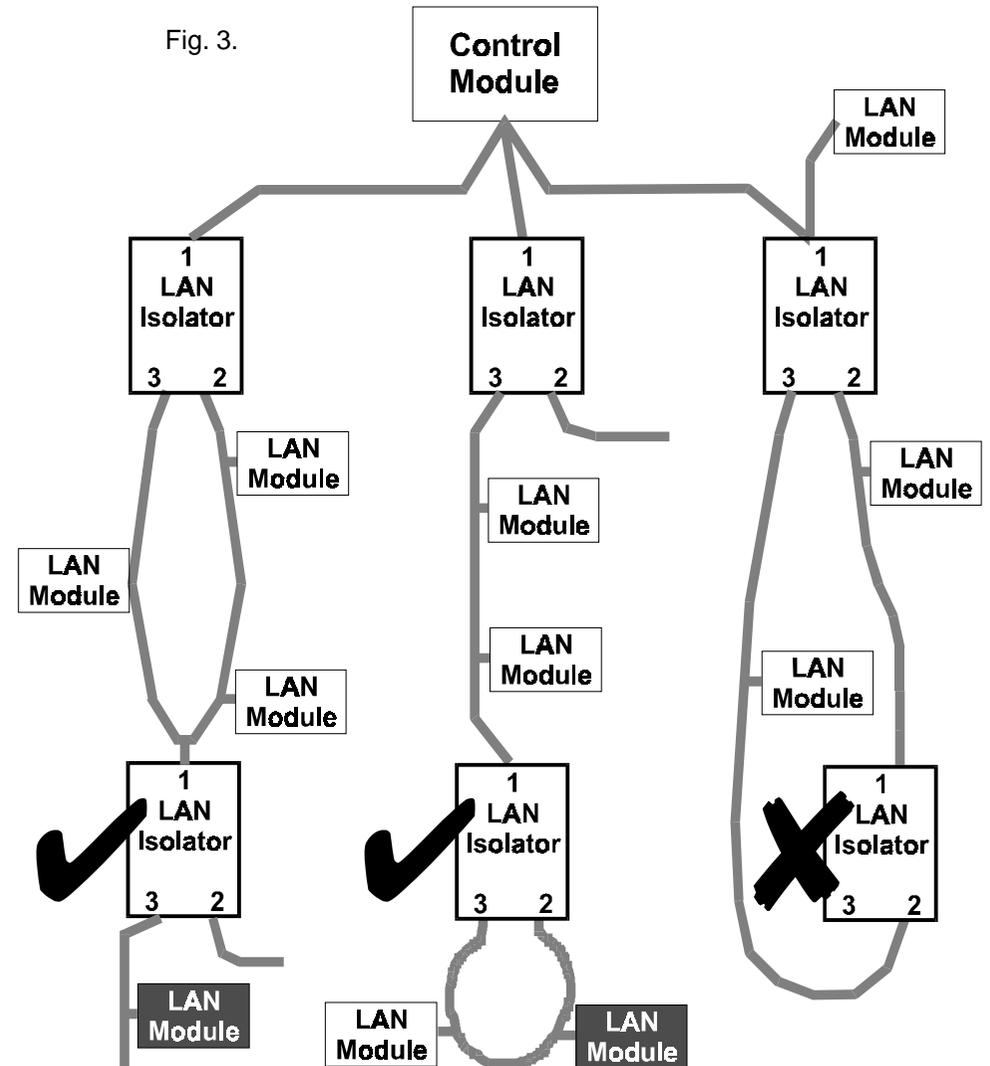
The LAN Isolator provides a total of three isolated LAN Ports.

One Port is always the Uplink, connecting to the LAN section that returns to the Control module. The other two Ports are Downlinks, connecting to remote modules.

The two Downlink Ports may be connected in a loop, providing for alternative communications paths to any of the remote modules connected to the loop. If the loop is cut at any point, the LAN Isolator switches the Downlink Ports to “Branch Mode” preserving communications to all modules on the loop.

When the loop cabling is restored, the LAN Isolator will automatically switch back to “Loop Mode” when it next detects activity on the LAN.

The status of the Downlink (“Loop Mode” or “Branch Mode”) is monitored by connecting “OUT1” on the LAN Isolator, into a Zone Input on a Module. This allows the system to be programmed to generate an alarm when a fault is detected in the loop.



The “LAN 1” connection can be connected to a branch or a loop of a preceding LAN Isolator to provide additional isolation between sections of the LAN, or to extend the LAN cabling distance. There must be no more than 5 LAN Isolators in series between any two modules in the system.

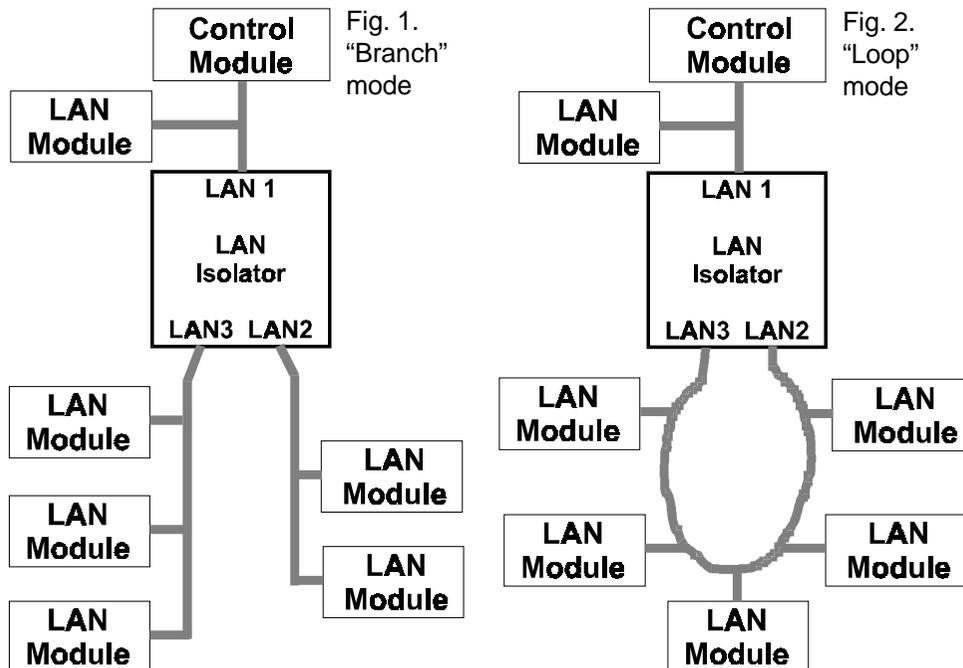
The length of a loop cannot be extended by installing another LAN Isolator in series with the loop.

**Note:** “LAN Module” refers to any standard 3000/Access 4000 module that communicates on the LAN. i.e. Expanders, LCD Terminals, Reader Modules, etc.

## Cabling Configurations

### General Rules:

1. "LAN 1" must always be connected to the Control Module, or to a LAN section that provides a return path to the Control Module. (The Uplink)
2. The LAN Isolator introduces a small delay. No more than five LAN Isolators can be installed in series between any two Modules in the system. *Note in Figure 3, that there are four LAN Isolators in series between the two highlighted LAN modules.*
3. If a loop connection is to be used it must be wired between "LAN 2" & "LAN 3" and must not be longer than 1.5km from "LAN 2" to "LAN 3" connections. *See Fig. 2.*
4. A LAN Isolator must not be installed in series with a loop. *See Fig. 3.*
5. Ideally, the required LAN Isolators would be mounted near the Control Module. This configuration isolates all external LAN cabling from the Control Module and also isolates all individual LAN branches or loops from each other. *See Fig. 3.*
6. When using an Isolator to extend the distance of the LAN, it is best installed no more than 1.5 km from the Control Module or from the previous LAN Isolator.



## Installing the LAN Isolator.

### Mounting the Unit

- The LAN Isolator is supplied in the plastic utility enclosure which can be mounted in a convenient location using fasteners through the four mounting holes in the base.
- Base and Lid tamper switches may be fitted to the enclosure before it is mounted, but will need to be wired back to Zone Inputs on a module on the LAN 1 Uplink side, using End-of-Line resistors. (The LAN Isolator is not a "module" and therefore has no Zone or Tamper inputs)
- Installation environment should be maintained at a temperature of 0° to 40° Celsius and 15% to 85% Relative humidity (non-condensing)
- Enclosure physical dimensions:
 

Length:	238mm
Width:	118mm
Depth:	72mm

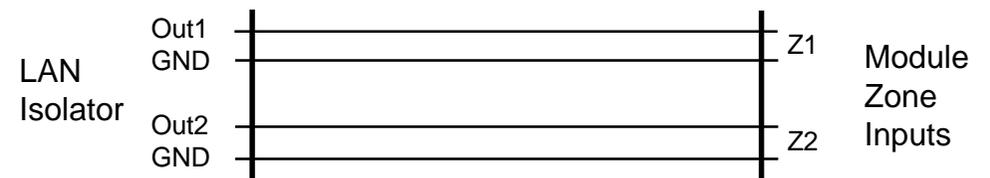
### LAN Initialization

When LAN Isolators are installed, particularly in larger systems, LAN Initialization may take a few seconds longer than usual whenever the system is powered up. This is normal.

### Monitoring the LAN status

The LAN Isolator is transparent to the Control Module. It simply passes on all LAN communications data as it is received. It is not addressed and does not generate any LAN messages of it's own; and is therefore not treated as a type of "Module" on the LAN.

To allow alarms to be activated when the LAN Isolator detects abnormal conditions on the LAN, ensure that OUT1 and OUT2 are wired into Zone Inputs on the nearest module on the Uplink (Control Module) side of the unit. These outputs are wired directly to Zone Inputs, as the End-of-Line resistors are already included on the LAN Isolator PCB.



## THE LAN ISOLATOR PCB

