







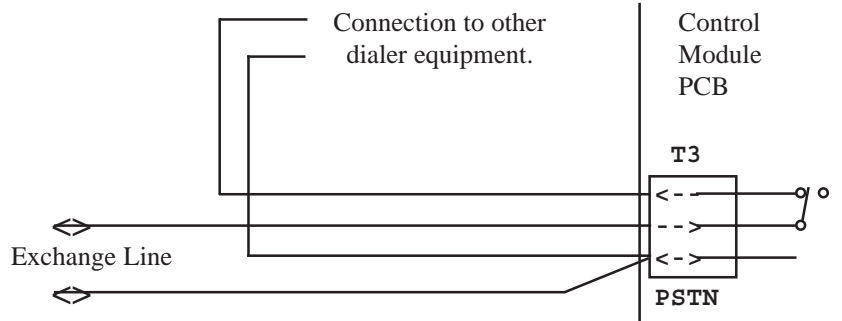




## TELECOMMUNICATIONS WIRING

### Mode 3 wiring diagram for Dialer reporting formats. (e.g. Contact ID, IRfast, SIA, 4+2, etc.)

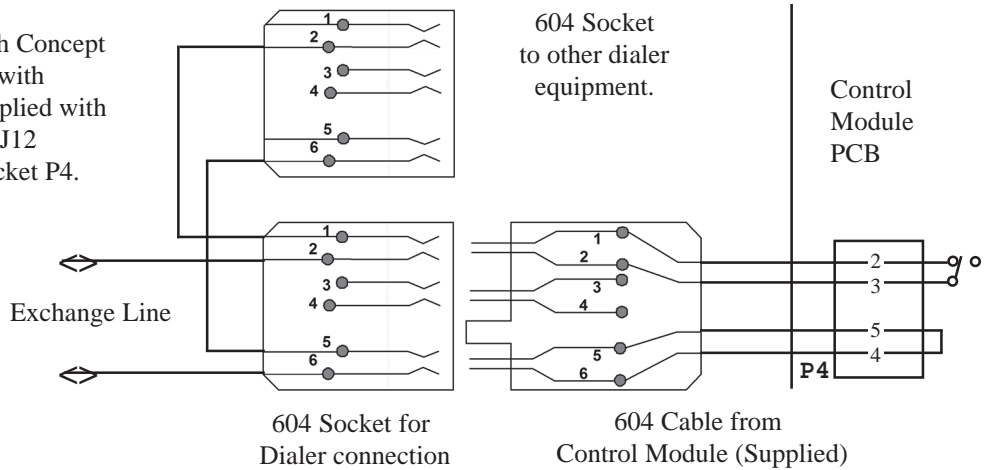
Other equipment such as a telephone, fax machine or answering machine may share the Dialer line connection. If so, the telecom connection must be wired as shown to ensure that the system has priority use of the line so that alarm reporting is not compromised.



### “604” Plug & socket wiring. (Australia Only)

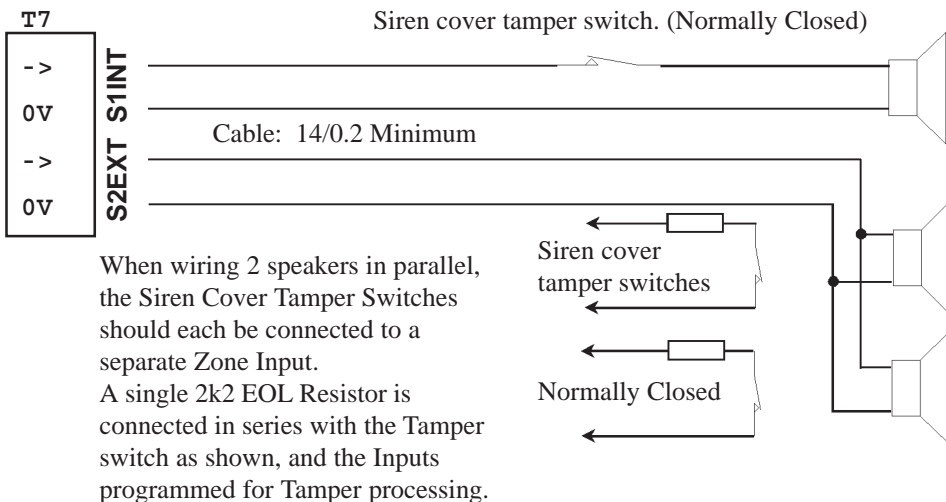
NOTE: Telephone cables supplied with Concept Control Modules are NOT compatible with Integriti. Only the telephone cable supplied with the Integriti Controller, or a standard RJ12 telephone cable must be used in the socket P4.

604 Socket pinouts:  
 Dialer Line IN: Pins 2 & 6  
 Dialer Line OUT: Pins 1 & 5



## SIREN WIRING

A maximum of two 8 Ohm Siren speakers may be connected to each siren output, wired in parallel. Normally Closed Siren cover Tamper switches may be wired in series with the speaker cable. This method utilizes the siren speaker circuit monitoring.



NOTE:  
 If high-impedance devices such as Piezo Siren speakers are used, a 2k2 Resistor should be fitted across the Piezo Siren device terminals to Seal the “Siren Tamper” System Input.

When wiring 2 speakers in parallel, the Siren Cover Tamper Switches should each be connected to a separate Zone Input. A single 2k2 EOL Resistor is connected in series with the Tamper switch as shown, and the Inputs programmed for Tamper processing.













## RS485 LAN SYSTEM OVERVIEW

The Integriti RS485 LAN (Local Area Network) is a 3 or 4 wire network, and is the primary method used to connect the modules in a system. Using recommended cable types, modules on the LAN can be installed hundreds of metres from the Control Module.

The RS485 LAN is a secure communications network, providing a programmable supervisory polling system to monitor the network for cable tamper, cable fault conditions, module off-line and module substitution. The data format used has been developed to ensure fast, reliable communications regardless of the size of the system.

For larger systems and complex sites, LAN Isolators can provide opto-isolation between sections of the LAN, eliminate potential earth loop problems, improve surge protection, provide signal level restoral for improved performance over longer cabling distances and offer a monitored “loop” LAN wiring option for a higher level of LAN integrity.

### CONNECTING MODULES TO THE LAN. Refer to diagram opposite.

- “A” & “B” signal connections are wired in parallel across the system using TWISTED PAIR cable. ❶  
See “Cable Types” details on page 14.
- The “NEG” connection (0V reference) must also be wired to every module. ❷
- An optional + 12 V connection (LAN +ve) may be used to provide power to modules that do not have their own on-board power supply. e.g. LCD Terminals. ❸
- The +12 V connection (LAN +ve) used to power LCD Terminals, etc. can be derived from any module with it’s own on-board power supply (e.g. Control Module and Expander Modules), or from a separate external power supply. ❹  
**CAUTION !** Never connect the +ve (POS) of two power supply sources together. i.e. Control Module LAN POS, Expander Module LAN POS, or External Power Supply +ve.
- When wiring the LAN to Modules that are powered by an on-board power supply (e.g. 16-Zone Expanders), or from a local external Power Supply (e.g. Reader Modules, 8-Zone Expanders), do not connect any incoming LAN +12V wires to the LAN+ (LAN POS) connection on the Module. ❺ & ❻  
Some legacy Concept 3000/4000 Modules have a wiring terminal labelled “SPARE”. Use this “Spare” terminal (labelled “SPARE” or “SPR”) for the LAN +ve connection. ❻

**NOTE:** LAN “POS” and “NEG” should not be used to power detectors, relays, etc. Always use “DET+” and “DET-” on the module to power these devices.

- A DC Voltmeter may be used to check that the LAN will operate reliably. See “LAN Voltage Testing” on Page 18.

### SYSTEM EARTHING

- Ensure that 0V(Common) and DET - , on all Modules have NO local connection to Earth. (Defeats Surge Diversion circuitry if connected)
- The System Ground is connected to Mains Earth via the Power cord at the Control Module. The enclosure can be mounted on a grounded conductive surface, providing a secondary ground connection.
- In some cases a Printer, PC, modem, etc. connected to the Control Module UART board may also provide a connection to earth via the peripheral device. If so, ensure that the peripheral device is powered from the same AC Mains circuit or the RS232 Serial connection is isolated.
- The legacy Concept 4000 Intelligent 4 Door Access Module also has local Ground connected to Mains Earth via it’s Power cord, however, the System LAN connection (X1 “ISO LAN”) is isolated to eliminate Earth loops.
- While the metal chassis of Modules with on-board power supply such as 16-Zone Expanders is connected to Mains Earth, the PCB circuitry is isolated from the chassis. Ensure that wiring, additional hardware or peripherals connected to these modules does NOT provide an Earth connection to the Module PCB.













### LAN VOLTAGE TESTING

#### NOTES:

1. These Voltage checks should be done with no (or minimal) communications traffic on the LAN. To ensure this:
  - a) Check that poll times for all addressed modules in the system are set to 1 minute (60 seconds) or greater.
  - b) Disconnect LAN A and LAN B from any unaddressed modules on the LAN, as these modules may be constantly attempting to send messages to the Control Module.
  - c) Ensure that Terminals, Card Readers, etc. are not being used while performing tests.  
Before proceeding with Voltage tests, check the "LAN RX" LED (L12) on the Control Module to confirm that there is minimal LAN activity.
  
2. To determine if a problem exists on the module under test, or elsewhere on the LAN, these voltage tests can be performed:
  - a) With the module connected to the LAN.
  - b) On the cable connections with the module disconnected from the LAN.
  
3. If a section of the Integriti LAN contains ONLY legacy Concept 3000/4000 Modules, AND is isolated from the Integriti Controller and any Integriti Modules by a LAN Isolator or CLOE Slave Unit, termination links may be fitted in that section of the LAN as per Concept 3000/4000 LAN Termination instructions.  
In such a case the LAN Voltages for this section of the LAN will be in accordance with the table provided on page 18 of the Concept 3000/4000 Control Module Installation Manual.

Test Point + PROBE	Test Point - PROBE	EXPECTED RESULT	PROBLEM/ REMEDY
LAN +ve	LAN -ve or GND	11V to 14V DC	<b>0V.</b> Open circuit LAN +ve connection, or short cct between LAN +ve and LAN -ve. <b>&lt; 11V.</b> Too many modules powered from the LAN power supply source. Length (or guage) of LAN cabling causing excessive Voltage drop on the cable.
LAN B	LAN A	> 0V DC < 5V DC	<b>Negative reading (&lt; 0V).</b> LAN A & LAN B connections reversed. <b>0V.</b> Short circuit between LAN A & B.
LAN A	LAN -ve or GND	> 0V DC < 5V DC	<b>≤ 0V or &gt; 5V DC.</b> There may be one or more Modules in the system where '0V' is connected to an earth point, causing earth loop/s. Ensure that only the dedicated 'Earth' terminals on the PCBs are connected to earth. Remember that a Module's 0V rail may be connected to earth via a peripheral device or it's cabling. e.g. PC, Printer, External power supply, Detector, Output device, etc. If installation methods &/or system configuration makes earth loops unavoidable, install LAN Isolator/s, Fibre Modem pairs or CLOE devices at suitable points in the LAN system to isolate sections of the LAN.
LAN B	LAN -ve or GND	> 0V DC < 5V DC	As above.

**Electrical Specifications**

Power Supply Type	Type A (EN50131-1)	
Power Supply Input	Transformer Input Voltage:	240V AC -10% / +10%. 50 Hertz.
	Transformer Output Voltage:	16.5V AC. 50 Hertz.
	Current Consumption:	Maximum 500 milliAmps from 240V AC Source.
	Fuse Protection:	Separate AC mains input fuse. 1.0 Amp. Slow Blow. M205 (20mm)
	PCB AC Input Voltage:	16 to 18V AC. 50/60 Hertz.
Battery (12V, Sealed Lead Acid Type)	Charger Output Voltage:	13.75V DC -0.15/+0.05 V
	Battery Capacity:	Min; 6.5 to 7.2 AH      Max; 18AH
		NOTE: If Plug Pack used, Battery capacity must not exceed 7.2 AH.
	Battery Input Fuse:	5 Amperes.
	Low Battery Voltage Alarm:	< 11V DC +/- 100mV
	Deep Discharge protection:	Activates at 10.4 V +/-100mV. Restores at 12.4V +/-100mV.
Power Supply Output	LAN "POS" & DET+:	Output Voltage: 13.75V DC -0.15/+0.05 V
	Maximum Ripple:	At maximum ancillary load current: < 200mV P-P / 75mV RMS
	Low DC Voltage Alarm:	< 11V DC +/- 100mV
Relay Contact Ratings.	AX1 / AX2:	30 V DC. 1 Amp maximum.
	Watchdog output:	30 V DC. 200mA maximum. (Solid-state relay output) <i>See page 8.</i>

<u>AC Source.</u>	<u>JP5 Setting</u>	<u>Total Current Limit</u>	<u>Static Controller Current</u>	<u>Battery Capacity</u>	<u>Max Ancillary Current</u>
1.5A Plug Pack:	NOT shorted	1.3 Amp.	275mA	7 AH	700mA
3A or 4A Transformer:	Shorted	2.2 Amp.	275mA	7 AH	1.2A
3A or 4A Transformer:	Shorted	2.2 Amp.	275mA	18 AH	480mA

## NOTES:

- 1) "Max Ancillary Current" is the maximum combined current allowed to be drawn from LAN "POS" and "DET+".
- 2) Battery re-charge times will depend on the remaining current available to the Battery after the "Static Controller Current", "Ancillary Current" and UART current (if fitted) are subtracted from the "Total Current Limit". To shorten Battery re-charge times, minimise the Ancillary current by using separate battery-backed Power Supplies for Detectors, Warning Devices, etc.
- 3) See data supplied with detectors and output devices for actual current consumption of items powered from the module.

Fuse Protection	Separate 2 Ampere replaceable fuses are provided for: LAN "POS" & "DET+".
Over-voltage Protection	Protection from over-voltage transients of up to 5 seconds is provided via the Battery and limits the Power Supply Output voltage to 16V DC. Longer term over-voltage conditions may result in damage to the on-board electronic components &/or the Battery. Further protection from higher voltage transients is provided by Epcos S07K14 Metal-Oxide Varistors fitted on all Power Supply outputs.

**Mechanical Specifications**

## With Enclosure:

Dimensions:      Length: 464 mm.                      Width: 360 mm.                      Depth: 80 mm.  
Weight:              8.2 k.g. (Includes mains transformer, 7AH battery and cover.)

## PCB Only:

Dimensions:      Length: 200 mm.                      Width: 200 mm.                      Depth: 40 mm.

**SD CARD.**

Integriti Controllers are supplied with a 2GB Micro SD Card memory. This card is installed in the combined Smart Card/SD Card holder, CARD1. *See page 11 for location.*

This memory is used to store the Controller database and the Review Event log and must remain in place at all times.

In the event of Controller failure, if the Micro SD card is not damaged or corrupted, it may be installed in the replacement Controller.

**SMART CARD.**

The Smart Card is used to licence database expansion and additional features.

The Level One Smart Card can be purchased from your Integriti distributor. P/N: 996020L1.

Expansion Keys for upgrading to other Smart Card Levels and providing additional features such as Smartphone Interface, Lift HLI, SALTO Door integration, etc. are supplied online via Inner Range KeyPoint.  
<https://license.innerrange.com/>

In the event of Controller failure, if the Smart Card is not damaged or corrupted, it may be installed in the replacement Controller.

Current Smart Card database expansion levels are shown in the following table.

<b>Permission Level</b>	<b>Zones</b>	<b>Doors</b>	<b>Users</b>	<b>Review Events</b>
No Smart Card	100	16	200	10,000
Level One	200	40	2,000	20,000
Level Two	600	80	10,000	30,000
Level Three	2,000	160	65,000	60,000
Level Four	3,000	240	100,000	100,000

NOTE: Modules. A Smart Card Level does not restrict the type or number of Modules that may communicate with an Integriti Security Controller. Up to 99 Modules of each type may be connected regardless of the Smart Card Level. However, Zone and Door limits imposed by the Smart Card Level will determine the numbers of these entities allowed to be “in use” on Modules connected to a particular Integriti Security Controller.

**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 system or it's peripherals. The purchaser assumes all responsibility in the use of the 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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