Intelligent 4 Door Access Module

P/No: 994012 / 995014

4 Door Controller with 4 or 8 Reader interface for Model 3000 and Access 4000

INSTALLATION MANUAL

OVERVIEW

The Intelligent 4 Door Access Module provides an interface for up to 4 Doors using 4 Card Readers or, if used in conjunction with the Intelligent Reader Expander board (994013), up to 4 Doors with Card In / Card Out operation using 8 Card Readers.

This module incorporates an Off-line operation feature. The Intelligent Reader Module downloads and maintains relevant data from the Control Module in order that it may continue to control door access in the event of LAN communication failure or damage to the Control Module etc.

The Module will even maintain "Card + PIN" operation in the event of LAN communication failure by supporting a network of up to 8 LCD Terminals. While physically isolated from the rest of the LAN, these LCD Terminals can still be utilized as normal Terminals when the Intelligent Reader Module is online.

Dual Card, Card + PIN, and Anti-Passback features continue to operate on a "per Door" basis.

 Part No: 634012

Contents

Parts List

- Intelligent 4 Door Access Module PCB mounted on metal chassis in metal box.
- Tamper switch bracket.
- Battery bracket.
- Installation Kit containing:
  - 8 x 8 Way plug-on screw terminals.
  - 5 x 6 Way plug-on screw terminals.
  - 4 x 3 Way plug-on screw terminals.
  - 18 x 2 Way plug-on screw terminals.
  - Tamper switch.
  - 2 x 6.3mm Tamper switch connectors.
  - 2 x 4.8mm Battery terminal connectors.
  - 2 x 0.5 Amp Fuse. M205 (Spare)
  - 2 x 1 Amp Fuse. M205 (Spare)
  - 2 x 2 Amp Fuse. M205 (Spare)
  - 4 x 1N4004 Diode. (Connect in reverse polarity across lock coils)
  - 20 x 2k2 End-of-line resistors. (red-red-black-brown-brown)
  - 20 x 6k8 End-of-line resistors. (blue-grey-black-brown-brown)
  - 2 x Jumper Links. (Spare)
  - 10 x Plastic “D” bungs. Must be fitted to all unused cable entry cutouts in the cover.
  - 1 x Special AC Power cord entry “D” bung.
  - 1 x Logo badge.
- Installation Manual. (This document)

In countries where the Mains input cable is not pre-fitted, the following parts are also supplied:
- 1 x Plastic Cable grommet.
- Sufficient mounting screws to assemble all parts to the housing.

INSTALLATION AND SAFETY INSTRUCTIONS

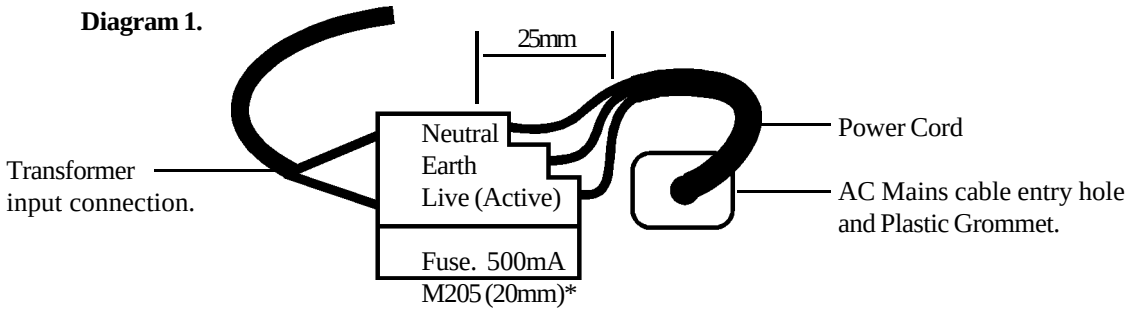
Electrical AC Mains Power connection.

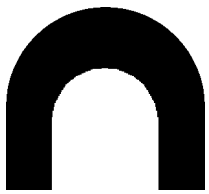
In countries where the module is supplied without a mains power cord, a suitable mains power cord for connection to the 240V AC Mains supply must be installed by a suitably qualified electrician or technician.

1. Strip 30mm of the sheath from the end of the power cord. Trim 5mm from the ends of the Active and Neutral conductors so that the Earth conductor remains slightly longer.
2. Strip 5mm of insulation from each of the conductors. (Units manufactured prior to September 2000 used a terminal block with no wire protection leaf and must have conductive sleeves fitted to the exposed ends of the conductors)
3. Feed at least 150mm of the power cord through the AC mains cable entry hole from the rear (underside) of the chassis.
4. Terminate the power cord in the terminal and fuse block as illustrated in Diagram 1 below. (Note that the Active wire is always connected into the termination nearest to the fuse)
5. Determine the appropriate length of power cord between the terminal block and the cable entry hole. (Approx. 100mm) Working from the rear of the chassis, fit the plastic grommet (supplied) around the power cord and apply pressure to both sides of the grommet to clamp the cable. The grommet can now be inserted into the AC mains cable entry hole.
6. When fitting the cover, ensure that the special AC Powercord "D" bung is fitted to the cable entry cutout in the cover where the AC Powercord enters the enclosure. Standard "D" bungs must be fitted to <u>all</u> other unused cable entry cutouts.

IMPORTANT NOTE: An AC Mains socket-outlet shall be installed near the equipment and shall be easily accessible for connection of the mains power cord.

Diagram 1.





Special "D" bung for AC Power cord entry.

*Note: Units manufactured prior to September 2000 have terminal blocks that utilise an 8AG (25mm) fuse.

Mounting the Unit. See Diagram 2.

1. Installation environment should be maintained at a temperature of 0º to 40º Celsius and 15% to 85% Relative humidity (non-condensing)
2. Intelligent 4 Door Access Modules are supplied in metal boxes which must be secured to a flat, vertical surface using fasteners through the six "keyhole" mounting holes in the chassis.
3. <u>When mounting this product onto flammable surfaces, a fire protection backplate MUST BE INSTALLED</u>. The mounting holes in the backplate align with the mounting holes in the chassis so no additional mounting hardware is required. Standard "D" bungs must be fitted to <u>all</u> unused cable entry cutouts.

   This backplate is available from your distributor. Please quote part number 925011.
4. The tamper switch bracket must be positioned through one of the slots in either side of the chassis and under the base of the chassis, <u>before</u> the chassis is secured to the wall.
5. Orientation of the enclosure MUST be as per either of the illustrations in Diagram 2.

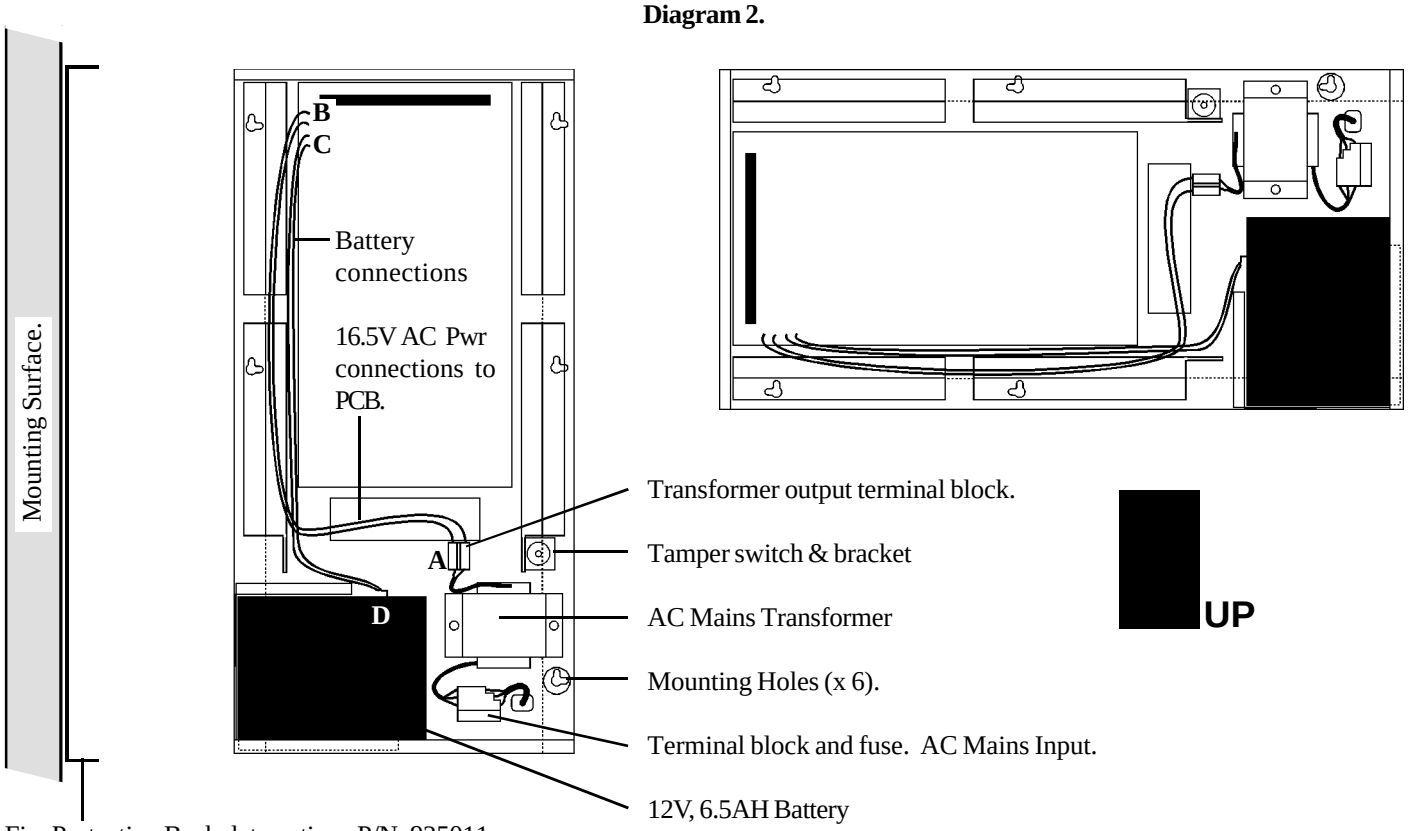
Connecting Power to the PCB. See Diagram 2 below.

1. Measure and cut two appropriate lengths of insulated cable to connect between the AC mains transformer output terminal block (A) and the "AC" Input connections on the PCB (B).
2. Strip 5mm of insulation from both ends of the cables and terminate into the transformer output terminal block and then into the "AC" Input connections on the PCB. The cables may be routed underneath the chassis to avoid interference with other cables.

Connecting the Battery to the PCB. See Diagram 2 below.

1. Measure and cut two appropriate lengths of insulated cable to connect between the "+B" and "-B" connections on the PCB (C) and the Battery terminals (D).
2. Strip 5mm of insulation from both ends of the cables and terminate into the "+B" and "-B" connections on the PCB & then into the 4.8mm Battery Terminal connectors supplied in the installation kit. The cables may be routed underneath the chassis to avoid interference with other cables.

Diagram 2.

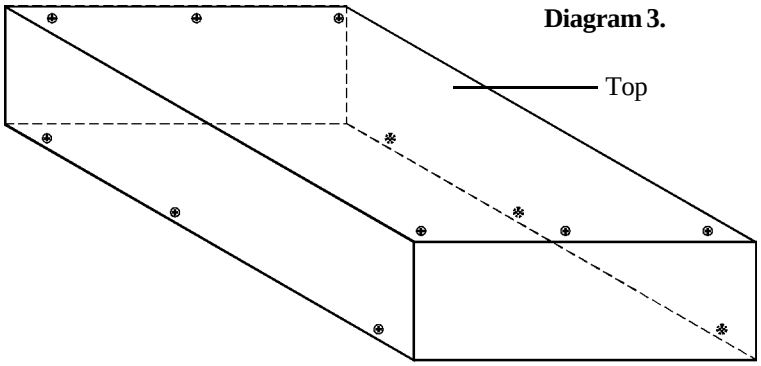


Fire Protection Backplate option. P/N: 925011.
(Side View)

Fitting the Cover.

In order to comply with performance regulations, all twelve (12) of the screws provided to fix the cover to the chassis must be tightly secured. Three screws are located on each of the long sides, and at each end of the top of the cover as illustrated in Diagram 3 opposite.

Diagram 3.



Wiring Diagrams

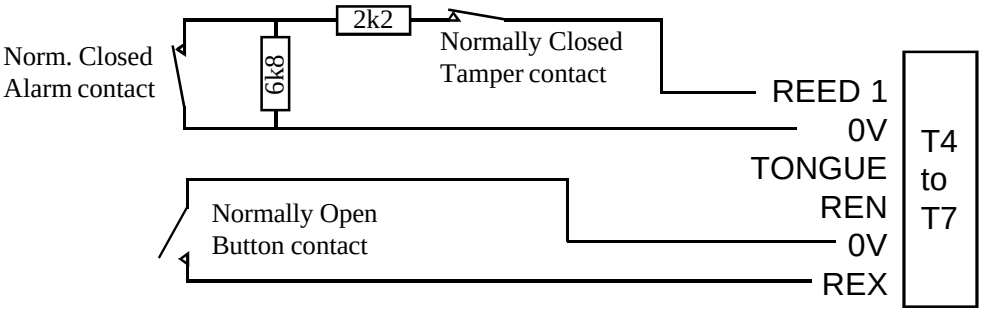
ZONE INPUT WIRING.

Typical Detection devices with *Normally Closed* Alarm contacts and *Normally Closed* Tamper Contacts are wired using End-of-line resistors. e.g. Door Reeds, Tongue Sense contacts, PIRs etc.
NOTE: Detection devices with *Normally Open* Alarm contacts are wired in exactly the same manner as shown below. When programming the Zone Input, however, the option to "**S**wap Seal and Alarm conditions" must be set to [Y]es.
e.g.

I01:Z01	X **S** R A N T . .
Options ->	n **Y** n n n n n n

REX (Request to Exit), REN (Request to Enter) and ARM inputs are wired as normally Open contacts with no End-of-line resistors.

INPUT STATES:		
2k2	=	Sealed
9k (2k2 + 6k8)	=	Unsealed (or Alarm)
Open Circuit	=	Tamper
Short Circuit	=	Tamper



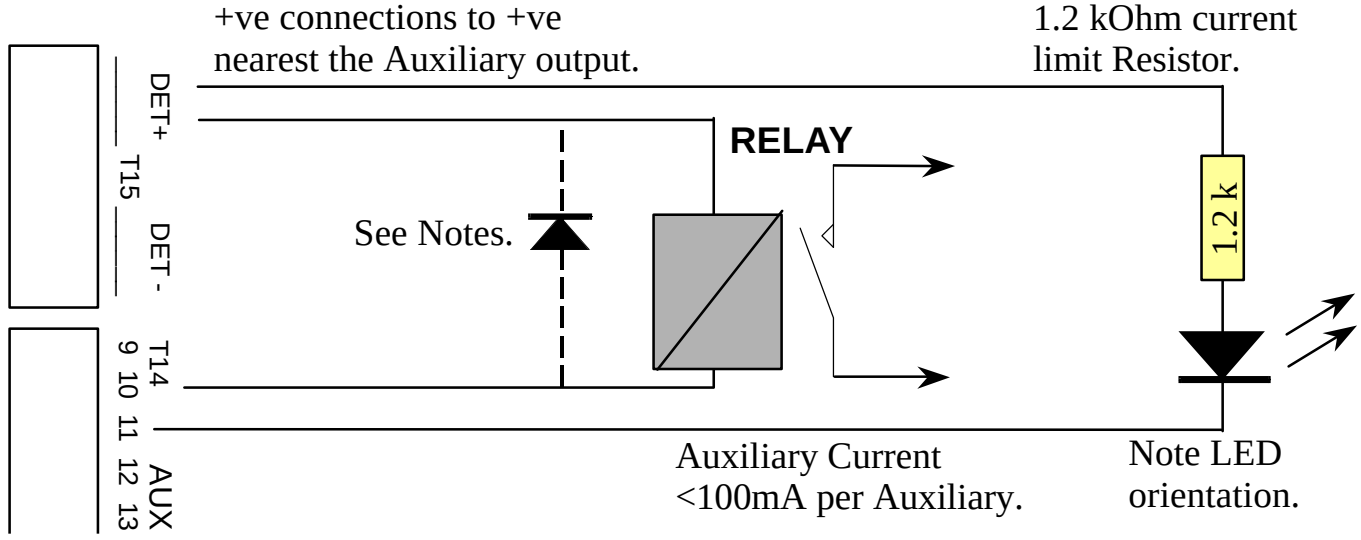
Door Reeds, Tongue Sense and General purpose Zone Inputs.

REX, REN and ARM Inputs.

AUXILIARY WIRING

Rules for Auxiliary wiring on an Intelligent 4 Door Access Module.

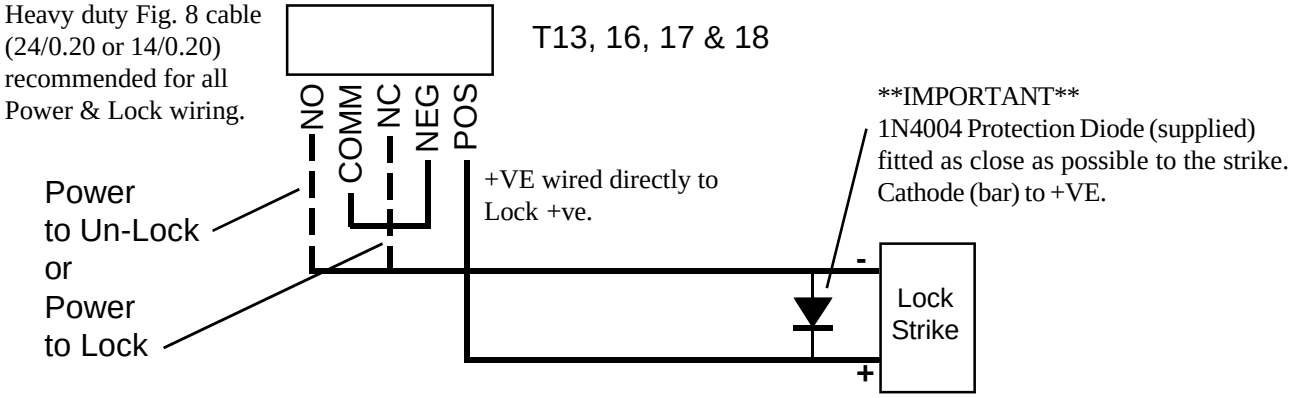
- Max current on any individual Auxiliary must be less than 100mA.
- Locks + Readers + Auxiliaries + LAN current + Detectors must be less than 2A, or an external power supply must be used.
- The Positive connection of the device being controlled by the Auxiliary must be wired back to the Positive connection nearest the Auxiliary. i.e. On the same module.
- If an external power supply is used to power the device, a good common Negative connection MUST exist between the power supply and the module.
- Clamp diode should be fitted across inductive loads. Cathode (bar) to +ve.



LOCK WIRING

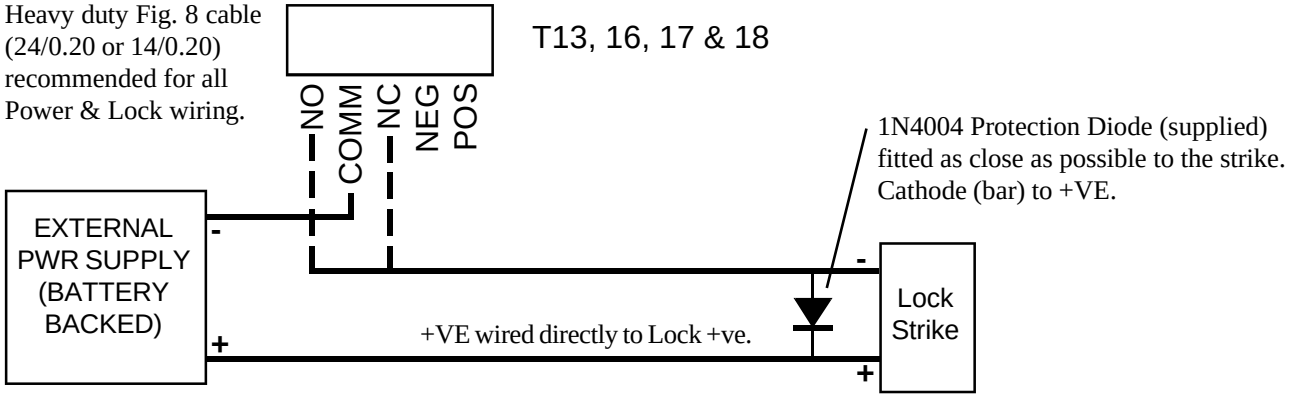
Using On-board Power Supply.

Locks are activated via an on-board relay. Normally, lock power can be provided by the lock "POS" connection providing the total current required by all Locks, Readers, Detectors, Auxiliaries and the LAN does not exceed 2.0 Amps. Each lock "POS" terminal is separately protected by a 1A fuse. This fuse should only be replaced with a fuse of the same value.

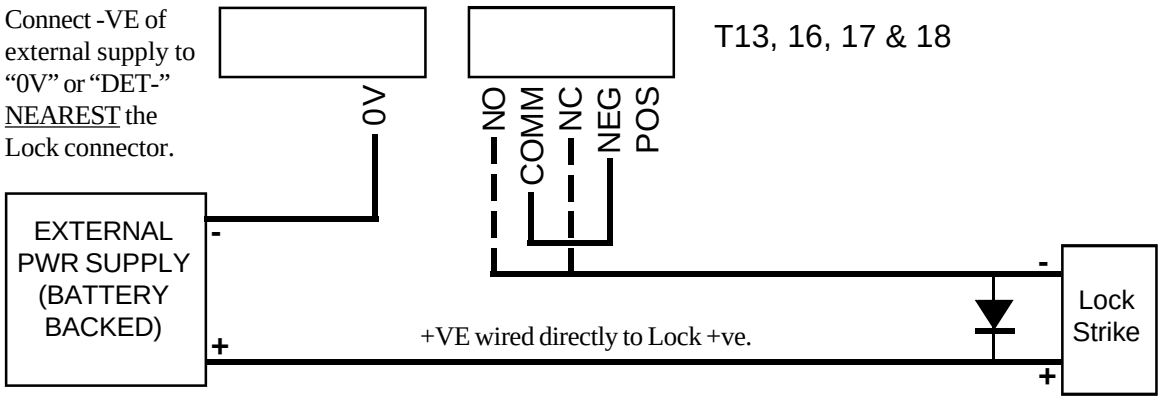


Using a separate external Power Supply.

If the lock current exceeds specification, a separate power supply should be used for lock power and wired as shown below.



If **Lock fault monitoring** is required when using an external supply, connect the lock as shown below.



READER WIRING

READER	0V	+VE	D1 CLK	D0 DATA
Omron Swipe	green	yellow	red	brown
HID Proximity / Motorola Indala Proximity HID Sensorkey	black/shield	red	white	green
HID Classic Swipe/Insertion/ Epic Wiegand Card Reader (Units may have flying leads OR screw terminals)	black/shield GND	red +VE	white Data 1	green Data 0

READER OPTION LINK SETTINGS

READER	JP18-21 Format: 1-2 Swipe 2-3 Wieg.	JP22-25 Format: OFF Swipe ON Wieg.	JP13-16 Supply: 1-2 +5V 2-3 +12V	JP6-9 Data 1-2 +5V 2-3 +12V	JP10,11,12 & 17 Mode: Cardx 1-2 Default 2-3
Omron Swipe	1-2	OFF	1-2	1-2	2-3
Cardlock Swipe	1-2	OFF	1-2	1-2	2-3
Hughes MiniProx / ThinLine	2-3	ON	1-2	1-2	2-3
Hughes ProxPro	2-3	ON	2-3	2-3	2-3
HID Sensorkey	2-3	ON	1-2	1-2	2-3
HID Swipe/Insertion/Turnstile Wiegand Card Readers	2-3	ON	1-2	1-2	2-3
Motorola Indala. SlimLine/ WallSwitch/PinProx/ValueProx/SecureProx/ MasterProx	2-3	ON	1-2	1-2	2-3
Motorola Indala. Standard/ Medium Range/MasterProx (for 30cm read range)	2-3	ON	2-3	2-3	2-3

Module Numbering

The Module number is set using DIPswitches 1 to 7. The Module number equals *n* + 1, where *n* is the binary number set on DIPswitches 1 to 7.

Module No:	**DIPswitch:**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Binary value:	1	2	4	8	16	32	64
1		off	off	off	off	off	off	off
2		ON	off	off	off	off	off	off
3		off	ON	off	off	off	off	off
4		ON	ON	off	off	off	off	off
5		off	off	ON	off	off	off	off
6		ON	off	ON	off	off	off	off
7		off	ON	ON	off	off	off	off
8		ON	ON	ON	off	off	off	off
9		off	off	off	ON	off	off	off
through to								
99		off	ON	off	off	off	ON	ON

THE INTELLIGENT 4 DOOR

STATUS LEDs.
LED 1. Database.
LED 2 / 3. Fault LEDs.
See Status LED table for details.

Lnn.
Reader Data indication. Reader 3 & 4.
LEDs indicate D0 and D1 Data being received.
Separate LEDs provided for each Reader.

+5V Supply indicator.

+13.8V Supply indicator.

DIPswitch S2
Sw1-7: Module Address.
See details on page 7.
Sw8: Lock Open Time Mode.
Off = 1 Sec increments.
On = 100 mS increments.
See additional information on page 10.

DIPswitch S1.
Sw 1-6: Factory Only.
Sw 7 & 8. Reset to Factory default.
Procedure. (Use only if instructed by Tech support.)
1) Disconnect Power and Battery.
2) Set DIPswitch 7 & 8 to ON.
3) Reconnect Power and Battery & wait 2 seconds.
4) Disconnect Power and Battery again.
5) Set DIPswitch 7 & 8 to OFF.
6) Reconnect Power and Battery.

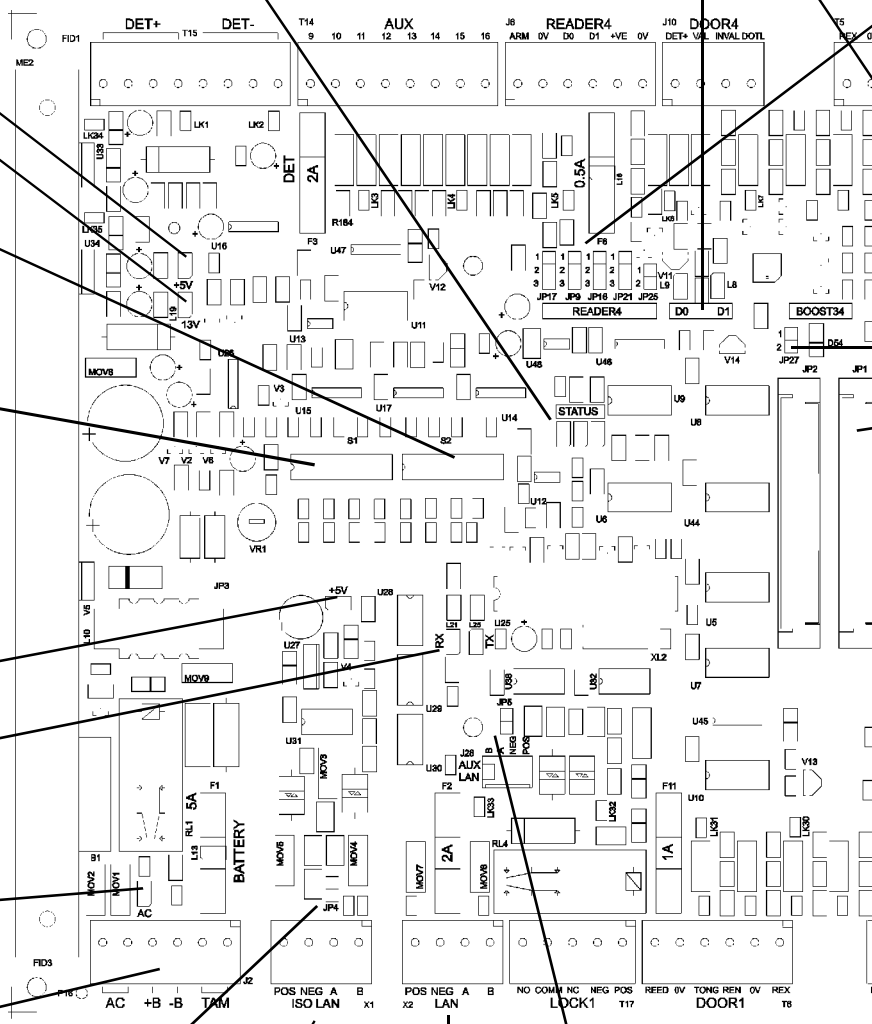
Main LAN Power.
(From LAN "POS" connection)

Main LAN Activity LEDs
Rx =Receive Data
Tx =Send Data

AC Supply Indicator.

J2 Power Supply & Tamper connections.

AC	16 to 18 V AC Transformer connections.
+B/-B	12V 6.5AH to 15AH Battery.
TAM	Cabinet Tamper switch connection.



X1. Main LAN Connection.
Isolated LAN Port to Control Module.

JP5. Local LAN Termination.

JP4. Main LAN Termination.

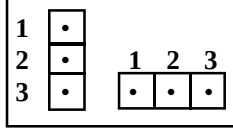
No Link	Unterminated
Link IN	Terminated. (Only if module is at either end of the LAN)

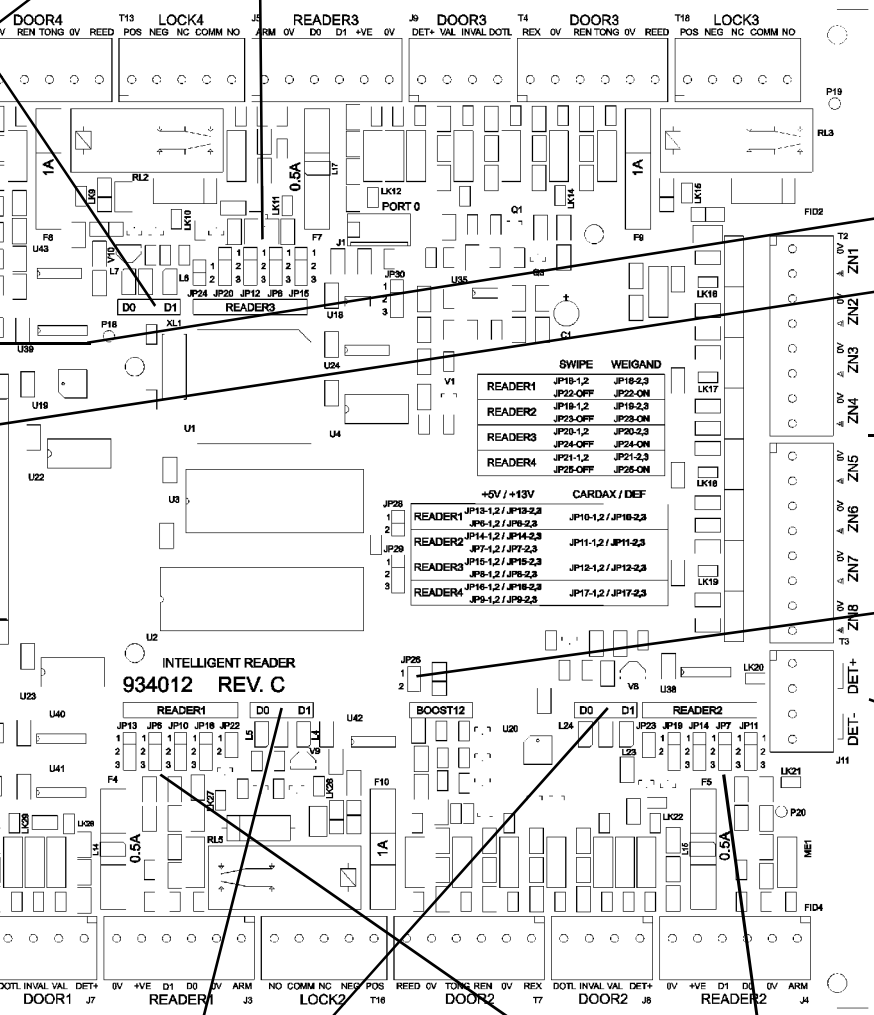
X2. Local LAN Connection.
LAN Port to LCD Terminals associated with Doors on this Intelligent Reader Module.

ACCESS MODULE PCB

JPnn.
Reader Settings. Reader 3 & 4.
Format, Supply, Data Voltage and Mode.
Set separately for each Reader.
See separate table.

JUMPER LINK ORIENTATION





JP27. BOOST 3-4
For 12V Readers.
Fit if DC Volts at Reader Head 3 or 4 is <11.5V

JP1 Reader Expander Board connection.
When fitted provides 4 additional Reader Ports.

T2 & T3. Zone Inputs.
See "ZONE INPUT WIRING" for details.

JP26. BOOST 1-2
For 12V Readers.
Fit if DC Volts at Reader Head 3 or 4 is <11.5V

J11
Detector Power connections.

Lnn.
Reader Data indication. Reader 1 & 2.
LEDs indicate D0 and D1 Data being received.
Separate LEDs provided for each Reader.

JPnn.
Reader Settings. Reader 1 & 2.
Format, Supply, Data Voltage and Mode.
Set separately for each Reader.
See separate table.

INTELLIGENT READER MODULE STATUS LEDs

DATABASE LED

LED 1	**EXPLANATION / REMEDY**
Flash	Directory problem. May flash for around 1 minute when first connected or if Control Module memory is defaulted. If LED 1 continues to flash for longer than 90 seconds: -Check the FAULT LEDs for LAN Comms problems. -Check that Control Module Memory configuration chosen for this installation has Intelligent Reader Modules available. *See "Memory Configurations" in the Programming Applications & Reference Manual.* If flashing continues, default the Intelligent Reader Module *(see "DIPswitch S1" details on page 8)* and allow database to update again. (Note that this may take up to 14 minutes for a 512k Memory configuration.)
ON	Updating Database. Access disabled. Only relevant when Module or Door programming changes made. (Not relevant for other database changes such as Users, TimeZones, Lists, etc.)

FAULT LEDS

LED 2	**LED 3**	**EXPLANATION / REMEDY**
ON	ON	Module is Offline.
OFF	ON	Module type unknown. Firmware upgrade required to Control Module.
Flash	ON	Duplicate Module. This module number is already in use by a module of the same type.
Flash	Flash	Module number selected is too big for Control Module RAM size. Select a lower Module number.
ON	OFF	Too many modules on Network for Control Module RAM size.

LOCK OPEN TIME MODE SETTINGS

Note: Only available in Intelligent 4 Door Access Module firmware V1.08 or later.

The "Lock Open Time" defined in Door programming is normally specified in Seconds.
e.g. A Lock Open Time of "5", will activate the Lock Auxiliary for 5 Seconds.

In some installations, the Lock Open Time needs to be shorter than 1 second.
e.g. When providing a short pulse output to trigger a special access device such as a turnstile system.

An option is available to allow an Intelligent 4 Door Access Module to process the "Lock Open Time" as 100 milli-Second increments instead of 1 Second increments.
e.g. -A Lock Open Time of "5", will then activate the Lock Auxiliary for 500 milli-Seconds. (5 x 100mS)
-A Lock Open Time of "50", will then activate the Lock Auxiliary for 5 Seconds. (50 x 100mS)

This is done by setting Switch 8 on DIPswitch 2 to the ON position.
When set, the Lock Open Time will then be processed as 100 milli-Second increments for all 4 Doors on that particular Module.
(See page 8 for location of the DIPswitch)
Only Modules with the DIPswitch set to ON will process the Lock Open Time in this way. Any other Modules with the DIPswitch left in the OFF position, will process the Lock Open Time in the normal manner as 1 second increments.

Intelligent Reader Input / Output Table

Input Output	ID ("nn" = Module number)
General Purpose Zone 1	Inn : Z01
General Purpose Zone 2	Inn : Z02
General Purpose Zone 3	Inn : Z03
General Purpose Zone 4	Inn : Z04
General Purpose Zone 5	Inn : Z05
General Purpose Zone 6	Inn : Z06
General Purpose Zone 7	Inn : Z07
General Purpose Zone 8	Inn : Z08
Door #1 Reed Zone Input	Inn : Z09
Door #2 Reed Zone Input	Inn : Z10
Door #3 Reed Zone Input	Inn : Z11
Door #4 Reed Zone Input	Inn : Z12
Door #1 Tongue Sense Zone Input	Inn : Z13
Door #2 Tongue Sense Zone Input	Inn : Z14
Door #3 Tongue Sense Zone Input	Inn : Z15
Door #4 Tongue Sense Zone Input	Inn : Z16
Door #1 Lock Tamper System Input	Inn : S01
Door #2 Lock Tamper System Input	Inn : S02
Door #3 Lock Tamper System Input	Inn : S03
Door #4 Lock Tamper System Input	Inn : S04
Door #1 Forced System Input	Inn : S05
Door #2 Forced System Input	Inn : S06
Door #3 Forced System Input	Inn : S07
Door #4 Forced System Input	Inn : S08
Door #1 Door Open Too Long (DOTL) System Input	Inn : S09
Door #2 Door Open Too Long (DOTL) System Input	Inn : S10
Door #3 Door Open Too Long (DOTL) System Input	Inn : S11
Door #4 Door Open Too Long (DOTL) System Input	Inn : S12
Door #1 Invalid Card System Input (In or Out)	Inn : S13
Door #1 Invalid Card System Input (In or Out)	Inn : S14
Door #1 Invalid Card System Input (In or Out)	Inn : S15
Door #1 Invalid Card System Input (In or Out)	Inn : S16
Cabinet tamper	Inn : S17
General Lock Fault	Inn : S18
Battery Test Fail	Inn : S19
AC Fail	Inn : S20
Low battery	Inn : S21
LAN Fuse	Inn : S22
Detector Fuse	Inn : S23
LAN Comms Status	Inn : S24
Door #1 Lock Relay	Inn : X01
Door #1 Lock Relay	Inn : X02
Door #1 Lock Relay	Inn : X03
Door #1 Lock Relay	Inn : X04
Spare	Inn : X05
Spare	Inn : X06
Spare	Inn : X07
Spare	Inn : X08
General Purpose Auxiliaries 9 to 16.	Inn : X09 to X16

LAN CONNECTIONS. ***Refer to diagram opposite.***

- "A" & "B" signal connections are wired in parallel across the system using twisted pair cable. ❶ *See "Cable Types" details.* 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 or the "Isolated LAN" connection on the Intelligent Reader Module. ❸

- The Intelligent 4 Door Access Module connects into the LAN System via the "Isolated LAN" connection, X1. This is to ensure that any LAN faults will not effect any LCD Terminals that have been connected to the Local LAN connection for the purposes of Card+PIN operation. ❹ The Power for the Isolated LAN (POS & NEG) should be derived from the Control Module or an Expander Module connected to this section of the LAN, or an external power supply. ❺

- Any LCD Terminals to be used for Card+PIN / Card or PIN operation in conjunction with Readers on an Intelligent 4 Door Access Module must be Univeral Elite LCD Terminals, must be connected to the Local LAN connection, X2, and must have special firmware fitted to allow Off-line operation. ❻ No other Modules should be connected to this LAN Port.

- Avoid installing the LAN cable with mains power cables & any other cables likely to cause interference wherever possible.

- No module is to be more than 1.5km (1500 metres) cable length from the Control Module OR Intelligent 4 Door Access Module Local LAN Port OR from a LAN Isolator "LAN 2" or "LAN 3" Port. (LAN Isolator/s can be used to extend the maximum cabling distance)

- TOTAL LAN CABLING in any one section of the LAN should not exceed 2000 metres, and/or 64 Modules.

- The LAN MUST be Terminated for optimum performance, by ensuring that the Termination Resistor (470 Ohm*) is "IN" on the first and last modules in the LAN network. Terminated modules are indicated with a "**T**" on the illustrations. (Termination is put "IN" with a jumper link or a DIPswitch, depending on the module type)

- MULTIPLE CABLE RUNS. In systems where there are multiple cabling runs going out from the Control Module or LAN Isolator (i.e. "star" configuration), Termination is fitted on the modules at the end of the two longest runs.

CABLE TYPES

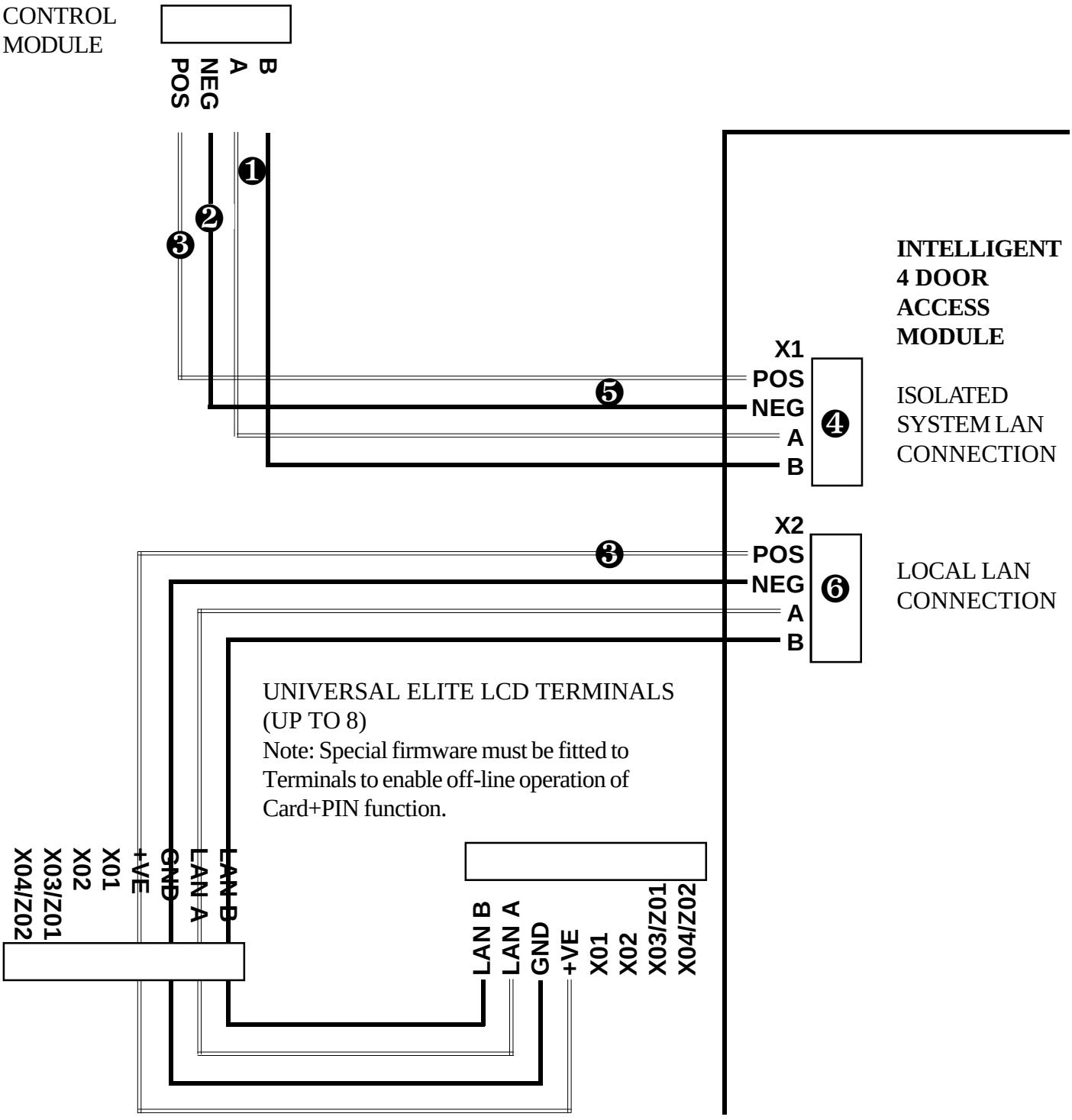
- TWISTED PAIR Cable MUST be used to connect the LAN.
  Two pair Telephone or LAN cable is suitable as it provides all 4 conductors required. One twisted pair for "A" & "B", and the other for "POS" & "NEG". Unshielded cable is quite acceptable, however, in situations where electrical storms or high levels of electrical interference are a problem, shielded 2 pair cable may be used. Examples of suitable 2 pair cables:

Unshielded. ***Figure 1.***	Shielded (All Multistrand) ***Figure 2.***		
Olex TJC590AA002	Olex JEIP87AA002	Belden 8723 *	† 3 Pair.
Tycab TIC6105 †	Tycab DPF4702	Tycab DQQ47025 *	‡ Multistrand (7/0.2).
MM MegaTwistpatch ‡	MM B2002CS	Garland MCP-2S	* Indivually screened pairs.
Category 5.	Electra EAS7202P / 7302P	Electra EAS16202P	

- If SHIELDED CABLE is used, DO NOT use the shield as a negative connection & do not allow the shield to make contact with Negative, Ground, or any other wiring or metalwork within the system. Shields should only be terminated to a Protective Earth at ONE END of the cable.

- LAN POWER CABLING. Separate heavy duty Figure 8 cable (24 / 0.20 recommended) should also be run for "POS" & "NEG" over longer distances if used for powering modules. e.g. LCD Terminals.

LAN "POS" current required:	**Max. Cabling Length for LAN +ve (POS) & GND (NEG)**		
	Twisted pair	Fig 8. 14 / 0.20	Fig 8. 24 / 0.20
60mA (e.g. 1 LCD Terminal)	200 metres	400m	640m
120mA (e.g. 2 LCD Terminals)	100 metres	200m	320m
250mA (e.g. 4 LCD Terminals)	50 metres	100m	160m
500mA (e.g. 8 LCD Terminals)	25 metres	50m	76m


CONTROL MODULE
POS
NEG
A
B
1
2
3
5
INTELLIGENT 4 DOOR ACCESS MODULE
X1
POS
NEG
A
B
4
ISOLATED SYSTEM LAN CONNECTION
X2
POS
NEG
A
B
6
LOCAL LAN CONNECTION
UNIVERSAL ELITE LCD TERMINALS (UP TO 8)
Note: Special firmware must be fitted to Terminals to enable off-line operation of Card+PIN function.
X04/Z02
X03/Z01
X02
X01
+VE
GND
LAN A
LAN B
LAN B
LAN A
GND
+VE
X01
X02
X03/Z01
X04/Z02

SYSTEM EARTHING

- The System Ground is connected to Mains Earth via the Power cord at the Control Module.

- The 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. **Ensure that there are no other 0V or Ground connections between the Control Module and Intelligent 4 Door Access Modules.**

LAN VOLTAGE TESTING

LAN problems can often be quickly diagnosed by using a Multimeter on the DC Volts range as detailed in the table below.

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 the default 60 / 120 seconds or greater.
   b) Disconnect LAN A and LAN B from any unaddressed modules on the LAN, as these modules will be constantly attempting to send messages to the Control Module.
   c) Ensure that Terminals, Readers, etc. are not being used while performing tests.
   Before proceeding with Voltage tests, check the "RX" LED 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.

Test Point + PROBE	**Test Point - PROBE**	**EXPECTED RESULT**	**PROBLEM/ REMEDY**
LAN +ve	LAN -ve or GND	11V to 14V DC	**0V.** Open circuit LAN +ve connection, or short cct between LAN +ve and LAN -ve. **<11V.** 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	200 to 400mV DC	**<200mV.** Short cct between LAN A & B. More than 2 modules terminated in this section of LAN. **>400mV.** LAN A &/or LAN B Open circuit. Less than 2 modules terminated in this section of LAN **<0V (Negative reading)**. LAN A & LAN B connections reversed.
LAN A	LAN -ve or GND	200mV to 2.5V DC	**<200mV / >2.5V DC.** System may have more than one module connected to an earth point, causing earth loop/s. Ensure that no more than one module in the system is connected to earth. Remember that a module 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 multiple earth points unavoidable, install LAN Isolator/s at suitable points in the LAN system to isolate the earthed section/s
LAN B	LAN -ve or GND	200mV to 2.5V DC	As above.

Intelligent 4 Door Access Module Hardware configuration Table.

DOOR NUMBER [Menu, 7, 6]	DOOR NAME (Up to 16 characters) [Menu, 7, 6]	IN READER connected to: [Menu, 7, 2, 8]	IN LCD Terminal (Terminal for PINs) [Menu, 7, 2, 1]	OUT READER connected to: [Menu, 7, 2, 4]	OUT LCD Terminal (Terminal for PINs) [Menu, 7, 2, 1]
D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __
D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __
D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __
D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __
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D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __
D __ __ __		I __ __ __ Reader No: ____	T __ __ __	I __ __ __ Reader No: ____	T __ __ __

Electrical Specifications

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. 500 milliAmps. M205 (20mm). (Units made prior to September 2000 have an 8AG -25mm fuse)
	PCB AC Input Voltage:	16 to 18V AC. 50 Hertz.
	Battery Capacity:	12V 6.5 AH. Sealed Lead Acid Battery.
	Battery Input Fuse:	5 Amperes.
Power Supply Ouput:	13.8 V DC. 3 Amps total.	
Detector Supply Output:	13.8 V DC. 1 Amp.	
Reader Head Supply O/P:	5V or 13.8V DC. 300mA maximum per Reader.	
Current Consumption:	250mA standby. 450mA max. with lock relays & LED outputs all active. (NOT including Reader current.)	

NOTE: Allow 50 to 120mA for small Prox Reader (~10cm range)
Allow 120 to 180mA for standard Prox Reader (~15cm range)
These values are general approximations.
See information supplied with Reader for actual current consumption.

Battery.	
Maximum capacity:	15 Amp/Hour.
Deep discharge cutoff:	10 Volts.
Low Battery indication:	11 Volts.
Lock Relay.	
Contact rating:	30 V DC. 1 Amp maximum.
Fuse Protection.	
Battery Input:	5A. M205 (20mm)
Lock Power:	1A. M205 (20mm)
Reader Power:	0.5A. M205 (20mm)
LAN Power:	2A. M205 (20mm)
Detector Power	2A. M205 (20mm)

Note: Total combined current required by all devices connected to the Intelligent Reader Module must not exceed 2.5 A.
ALWAYS REPLACE FUSES WITH SAME FUSE VALUE!

Physical Specifications

Cabinet size:	647mm High x 326mm Wide x 115mm Deep.
Operating Environment:	0º to 50º Celsius and 15% to 80% Relative humidity (non-condensing)