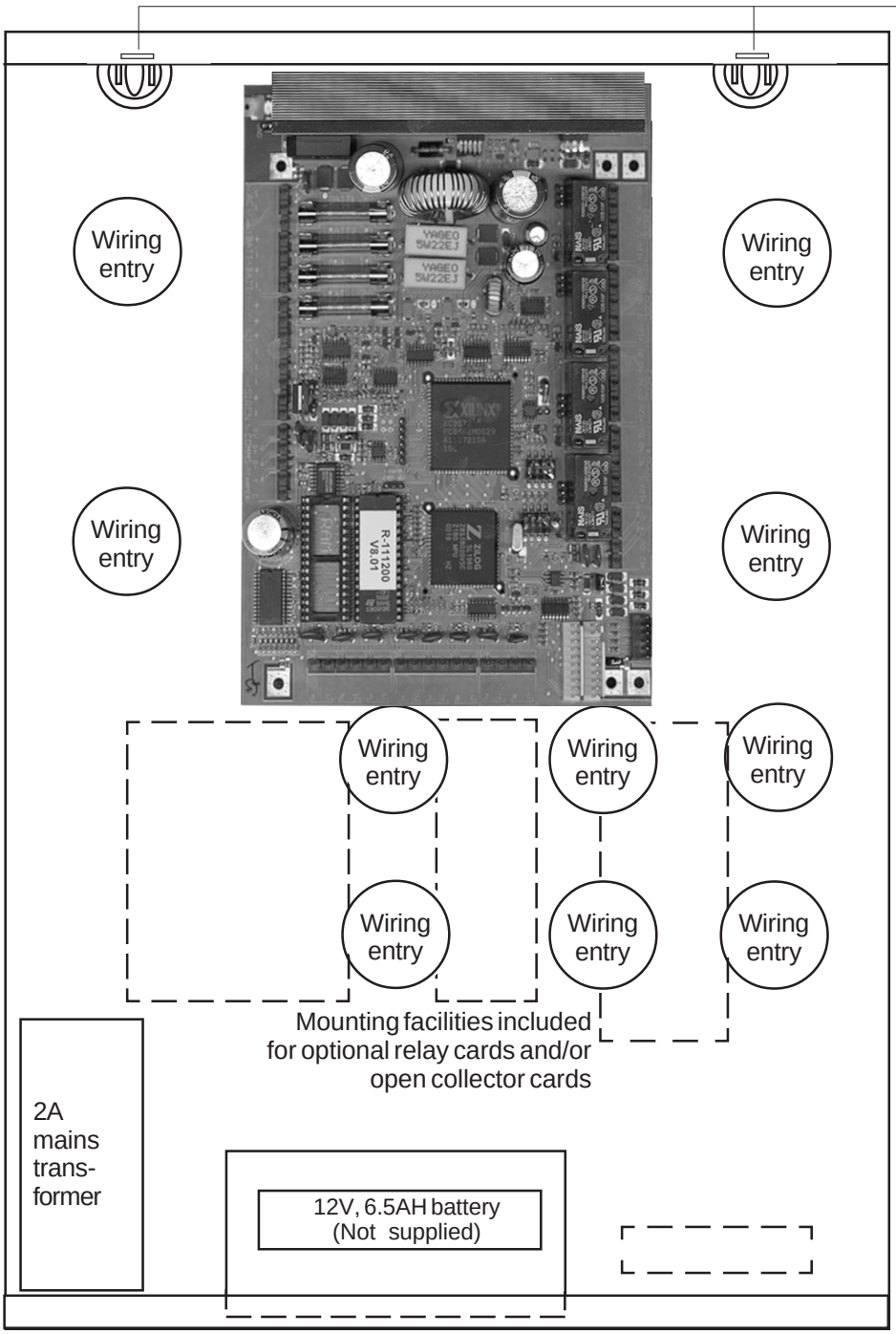
Installation guide

V8 Tecom Reader 4-Door Controller Model TS0866

Revised! — see *Protective Earthing Addendum*

Diagram of the TECOM Reader 4-Door Controller mounted in the Universal Enclosure



This equipment must be installed and serviced by professional & qualified personnel only. In Australia the TS0866 must be installed in accordance with Australian Communications Authority (ACA) cabler requirements. In other locations check local regulatory requirements.

Disclaimer:

- It is the responsibility of the customer to test and determine the suitability of this product for specific applications.
- In no event shall Tecom Systems be responsible or liable for any damages incurred by the buyer or any third party arising out of the use or inability to use the product.
- Due to ongoing development the contents of this manual are subject to change without notice.
- All efforts have been made to ensure the accuracy of this manual. However, Interlogix Australia assumes no responsibility for any errors or omissions in this manual or their consequences. If any errors are found, we greatly appreciate being notified of them.

Contents:

Mechanical & Environmental Specifications:

Enclosure dimensions:	455mm long, 344mm wide and 73mm deep.
Minimum clearance between equip. enclosures:	50mm (between equipment vents)
Minimum clearance between encl. & side wall:	25mm
Storage temperature:	-20 degrees C to +80 degrees C.
Operating temperature:	0 degrees C to +50 degrees C.
Humidity:	95% Non condensing

Note: Units should only be used in a clean environment and not in humid air.

Installation Kit Checklist:

Use the checklists below details to ensure all the items are included with your Version 8, Reader 4-Door Controller and its installation kit.

Version 8 Controller:

- ❑ 1 x TS0866 Universal Metal Enclosure with lid, built in transformer and tamper switch
- ❑ 1 x TS0866 Installation Guide

The installation kit contains:

- ❑ 12 x 3-way plug-on screw terminal connectors
- ❑ 12 x 2-way plug-on screw terminal connectors
- ❑ 4 x link jumpers
- ❑ 8 x cable ties
- ❑ 2 x red battery lead with QC terminal (800mm)
- ❑ 2 x black battery lead with QC terminal (800mm)
- ❑ 29 x 10k 1/4 watt resistors
- ❑ 1 x quick connector (PN# COQC-F-BL/63)
- ❑ 1 x 1K 1/4 watt resistor
- ❑ 4 x standoffs (PN# HAST3*0.25PCBST)
- ❑ 4 x10mm bolts (PN# HASEM3-10PANPH)

Cover:

- The panel cover is swivel mounted at the base, and secured with one hex bolt.

  Note: When opening the cover after the system is installed, remember that tamper alarms are fitted to detect cover removal and the removal of the base from it's mounting surface.

Mounting:

- The unit is mounted via screws or bolts through the 4 mounting holes in the back of the unit.
- **Ensure that the unit is mounted on a flat, solid, vertical surface** so the back of the unit will not flex or warp when the mounting screws/bolts are tightened.
- 50mm clearance should be allowed between equipment enclosures mounted side by side and 25mm allowed between the enclosure and the side wall.

Earthing:

!!! WARNING: Correct earthing procedure *must* be followed !!!

- The **earth terminals** on every piece of equipment in the system that has an earth connection, **must be earthed by connecting them all to <u>one</u> common earth point via a separate earth wire run with the LAN cable/s from the Challenger Panel.** The separate earth wire must be at least 2.5mm. A heavier gauge is recommended for runs of over 500 metres.
- **The ground ("GND") link must remain fitted.**
- Individual devices such as DGPs, RASs, Mag readers & Door/Lift Controllers or their readers and interfaces **must not** be connected to any local earth point. These devices are only to be earthed via the separate earth wire.
- **Do not** connect the earth wire from the plug pack or separate power supply to these devices.
- **The common earth point should be connected to a good building earth (steel frame of the building, sprinkler system, etc.) or to the main switchboard earth. (By a licensed contractor.)**
- This method of earthing is the **only way to guarantee** the difference in earth potential between any two Challenger products connected to the LAN remains at an acceptable minimum.
- It therefore offers the best protection against variations in earth potential, regardless of the layout of the particular installation. (Particularly on multi-building sites)
- *See wiring diagrams on following pages.*

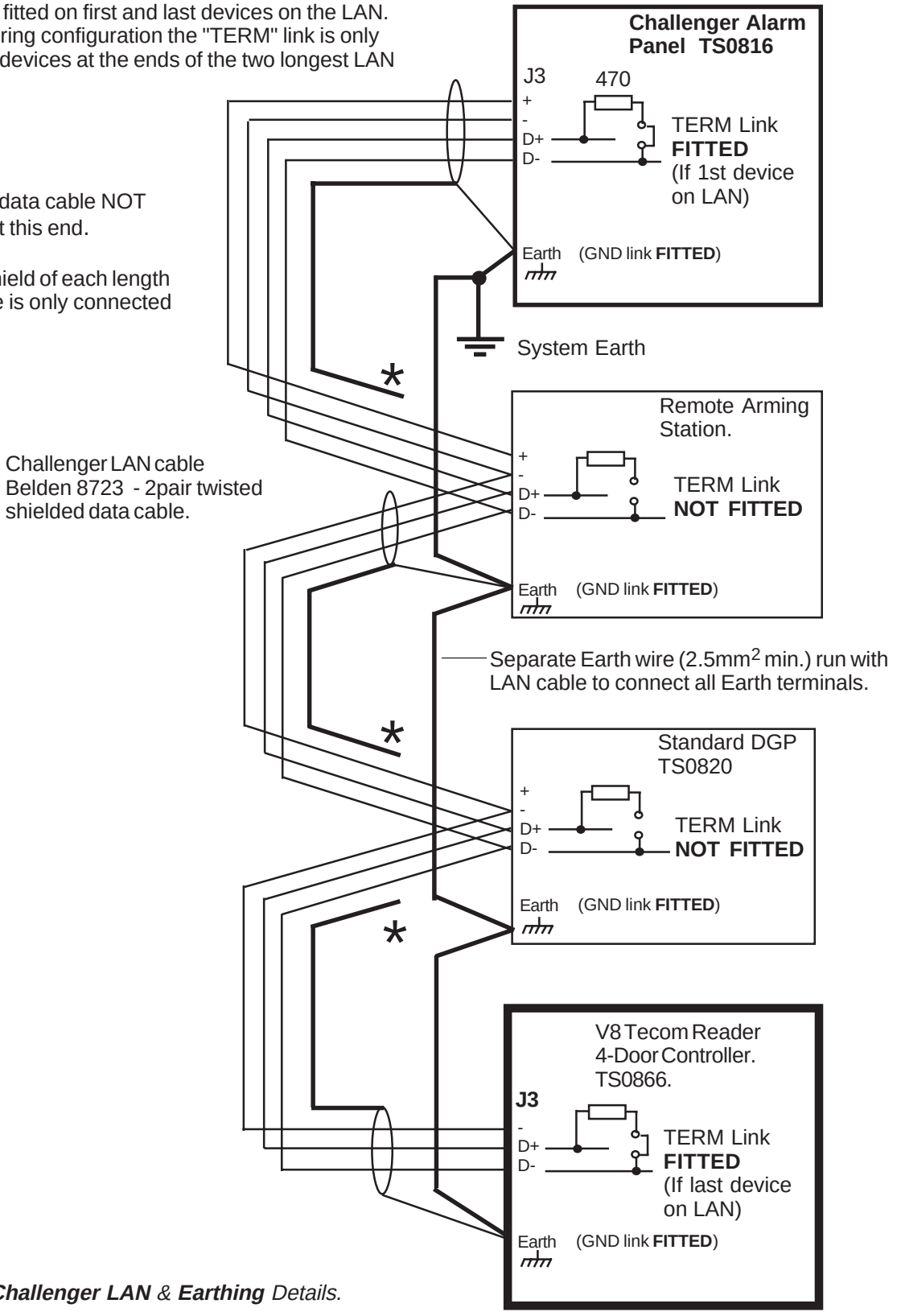
Main Challenger LAN System & Earth Connection

Revised! — see *Protective Earthing Addendum*

"TERM" link fitted on first and last devices on the LAN. In a "star" wiring configuration the "TERM" link is only fitted on the devices at the ends of the two longest LAN cable runs.

*Shield of data cable NOT connected at this end.

Note: The shield of each length of data cable is only connected at one end.



See: ***Main Challenger LAN*** *&* ***Earthing*** *Details.*

Main Challenger LAN Connection:

- The main Challenger LAN is used to connect Data Gathering Panels (including Intelligent 4-Door Controllers and 4-Lift Controllers) and Arming Stations to *The Challenger* panel. Each unit is assigned an address and is polled in sequence by the *The Challenger* panel.
- Up to 12 Tecom Reader 4-Door Controllers can be connected on the main *Challenger* LAN. *(See "Dip Switch Settings" below)*
- Remote units can be up to 1.5 kms from *The Challenger* control panel.
- Arming stations and Data Gathering Panels must be connected in parallel via a 2 pair twisted shielded data cable from the LAN connection. (Belden 8723 is recommended)
- The shield of the data cable connected to *The Challenger* Panel OR between any two devices on the LAN, should be connected to earth at one end only.
- The Tecom Reader 4-Door Controller has its own built-in power supply and do not require power from the LAN. Only the D+, D- and 0V connections are required between *The Challenger* panel and the Tecom Reader 4-Door Controller. *See wiring diagrams.*

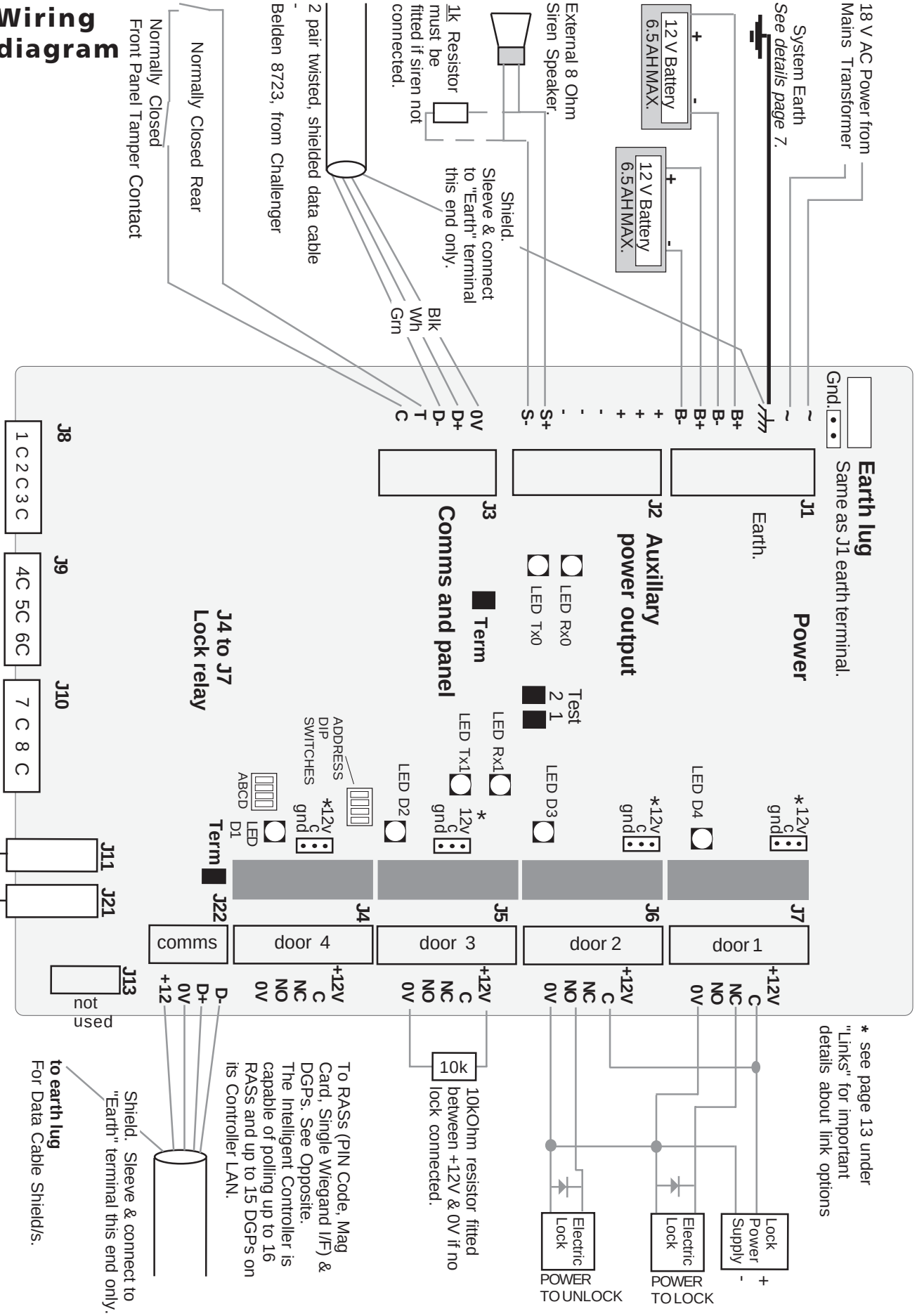
DIP Switch Settings:

DGP address:

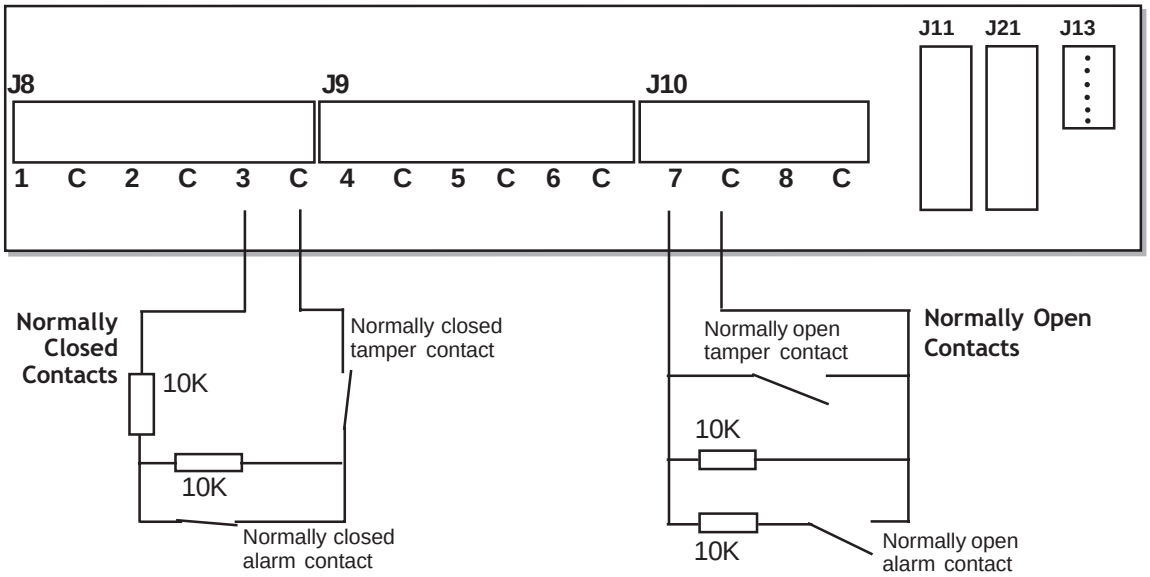
- DIP switches 1 to 4 (labelled ADDRESS on the PCB) identify the DGP number, i.e. assign the DGP address.
- To disable the DGP, set the DIP switches 1 to 4 all OFF.
- A four-door controller can only be addressed as DGPs 1 to 12.

	DGP Number	1	2	3	4	5	6	7	8	9	10	11	12
	DIP switch setting												
'ADDRESS' DIP switches	**1**	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF
	2	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF
	3	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON
	4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON
'ABCD' DIP Switches	**A**	Not currently used.											
	B	Not currently used.											
	C	Not currently used.											
	D	Not currently used.											

Wiring diagram



Connection Diagrams — J8 to J10 Input Wiring - (J8 to J10)



- Door Contacts and Egress Buttons associated with each door are wired to the 4 Door Controller Inputs.
- Spare inputs for both devices are also provided for other devices such as PIRs etc.
- Any input used for DOTL inputs, cannot have any wiring connected.

Four-door controller input & relays' defaults

Four-door controller defaults:

	1st door	2nd door	3rd door	4th door
DOOR CONTACT	1	4	7	10
SPARE	2	5	8	11
EGRESS INPUT	3	6	9	12
DOTL INPUT	16	15	14	13
DOOR RELAY	1st	2nd	3rd	4th

- The input numbers in the table refer to physical input numbers on the 4 Door Controller PCB.
- The system input numbers relating to these functions for each of the 4 Door Controllers can be found in the table provided in the Version 8 Four Door Controller Programming guide.

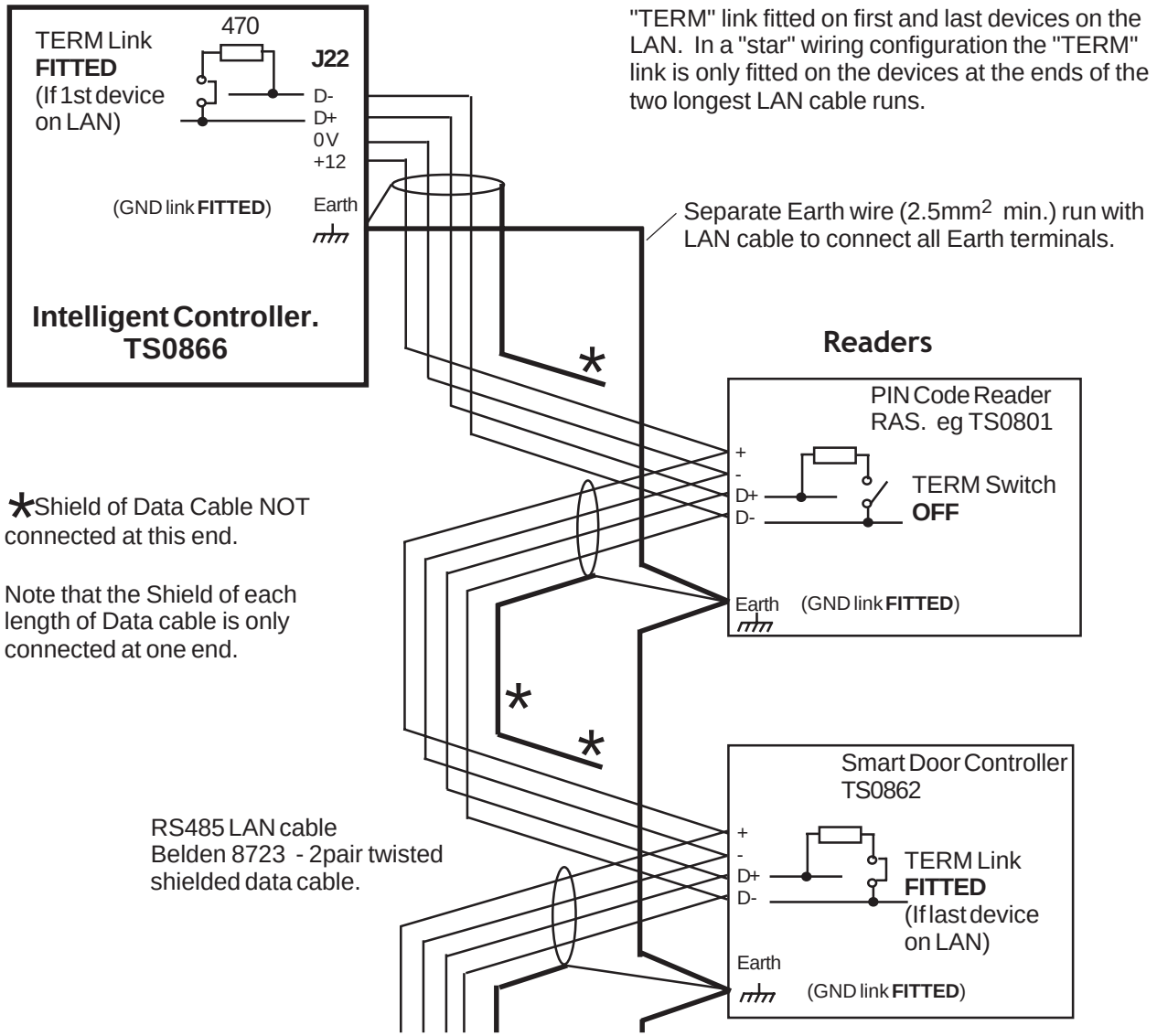
Intelligent Controller LAN System & Earth Connection

- The 4 Door Controller LAN is used to connect Arming Stations (LCD RASs, 4 LED RASs, Magnetic Card Readers and Single Wiegand interfaces) and DGPs to the Intelligent Controller to control the 4 doors associated with each unit. In effect the Intelligent Controller can connect up to 16 RASs and up to 15 DGPs on the Controller LAN.
  Example: If Card presentation followed by PIN code entry is needed for access, the Version 8 Four Door Controller can provide LAN connections for a Proximity reader (connected via a Single Wiegand Interface) AND a PIN code reader on both sides of each door. i.e., a total of up to 16 RASs.

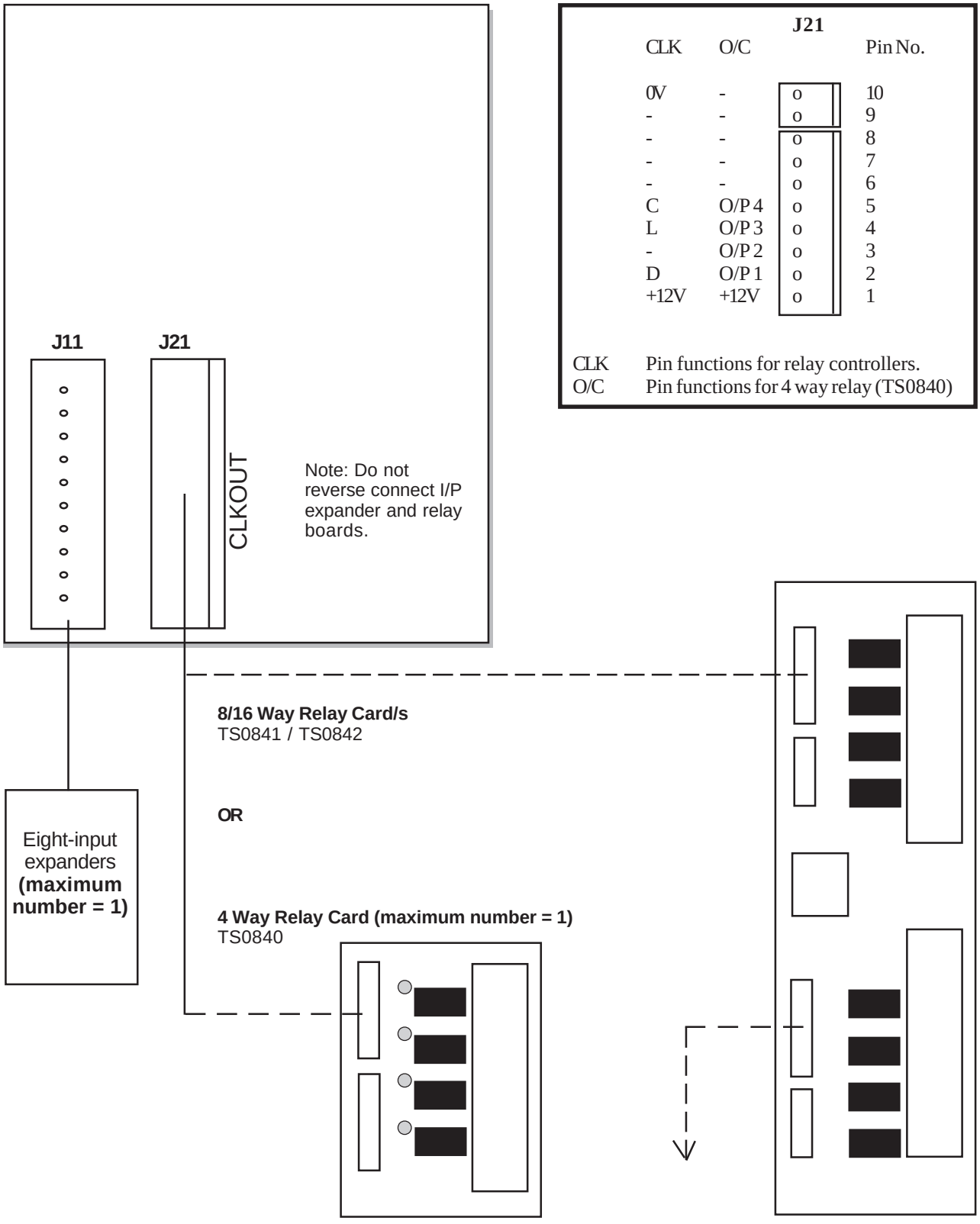
- Each unit is assigned an address and is polled in sequence by the *Intelligent Controller*.

- Remote units can be up to 1.5 kms from the *Intelligent Controller*.

- Wiring details, earthing and termination procedures are the same as the main Challenger LAN, except for the fact they're entirely separate LAN systems.



Connection Diagrams J21 — Connection of Output Cards



Connections: 5mm Plug-On-Screw Terminals

J1 AC: ~ ~
Connection of the 40 VA, (18V, 2A) transformer output.
(See wiring diagrams)

J1 Earth: ⏚
Terminal for earthing. Earth wire from this terminal is connected to **system earth** (Not Mains earth), and the shield/s of the LAN cable/s.
(See: diagrams and "Earthing" details)

J1 BATT: + - + -
Positive and negative connections to 12V sealed lead acid batteries.
One battery can be installed for power backup.
(6.5 AH Maximum)
(See connection diagram)

J2 AUX PWR: + -
+12 Volt DC auxiliary power output to supply detectors, etc.
700mA maximum including any current drawn by devices connected to J3 (LAN) + & - and siren.

J2 SIREN: S+ S -
Positive and negative connection to 8 ohm siren speaker.
A 1k resistor must be fitted across these terminals if the siren is not connected.
The siren output is the 16th relay number assigned to the DGP address.

J3 System LAN: 0V D+ D-
Data positive, data negative and 0Volt connection of the RS485 LAN.
Remote units can be up to 1.5 kms from *The Challenger* control panel.
(See: Diagrams & "LAN connection" details)

J3 Tamper: T C
Input and common connection for panel tamper switches.
Short cct for seal. Open circuit for unsealed. (Must be sealed if not used)
Can only be used with normally closed contacts such as the panel tamper switches.
(See connection diagram)

J4-7 RELAY: +12 C NC NO 0V
Positive 12 Volt power source for lock power.
(For 12 Volt locks only. Maximum current per lock - 250mA)
Lock Relay, common contact.
Lock Relay, normally closed contact
Lock Relay, normally open contact.
0 Volt power connection for lock power
(See connection diagram)

J8 to J10: Alarm Inputs 1 to 8 1 C 2 C 3 C
Require 10k end-of-line resistor for seal.
5k or 20k for unsealed.
Open or short circuit for tamper condition if "Input Tamper Monitoring" enabled in the system options.
(See connection diagrams)

Continued next page

etc.

Connections: 5mm Plug-On-Screw Terminals *(from previous page)*

J22 Controller LAN:

+12
0V
D+
D-

+12 Volt, 0 Volt, Data positive, and data negative connection of the 4 Door Controller RS485 LAN. For connection of Readers/Interfaces, DGPs etc. Remote units can be up to 1.5 kms from the Intelligent Controller.
(See: Diagrams & "LAN connection" details - page 11).

Connections: Headers and Sockets

CLKOUT: **J21** +12V DC Supply & Open collector OR data outputs; for connection to relay controllers. i.e. A single 4 Way Relay card OR 8 Way Relay and 16 Way Open Collector cards. TS0840 4 Way Relay card, TS0841 (8 Relay cards), TS0842 (16 Way Open Collector cards) are connected with 10 way cable supplied.
(See V8 Intelligent Controller Programming guide if 8Way or 16Way cards fitted)

Links:

TERM: Nearest J3	The termination link must be in if the Controller is the first or last device on the **Main Challenger LAN.** If the Challenger LAN is wired in a "star" configuration, the TERM link is only fitted on the devices at the end of the two longest LAN cable runs. i.e. In a Challenger system only two devices connected to the main Challenger LAN can have the TERM link fitted. *(See: "LAN connection" details & diagrams - page 5).*
TERM: Nearest J22	The termination link must be in if the Controller is the first or last device on the **Intelligent Controller LAN.** If the Controller LAN is wired in a "star" configuration, the TERM link is only fitted on the devices at the end of the two longest LAN cable runs. *(See: "LAN connection" details & diagrams - page 9).*
RAM:	This link must not be fitted unless instructed to do so when installing options.
FLASH:	This link must not be fitted unless instructed to do so when installing options.
EPROM:	These links must not be fitted unless instructed to do so when installing options.
TEST: 1	This link is for factory use only.
2	This link is for factory use only.
Lock supply voltage option	When linked between + ve and common (c), 12V is supplied to the lock common contact. When linked between — ve and common (c), ground is supplied to the lock common contact.

LEDs:

Rx0:	Flashing Rx0 LED indicates polling data being received from the Challenger panel on the system LAN.
Tx0:	Flashing Tx0 LED indicates Intelligent Controller replying to polling from the the Challenger panel on the system LAN.
Tx1:	Flashing Tx1 LED indicates Intelligent Controller is polling remote unit/s (Readers/interfaces) on the Controller LAN. The Tx1 LED should always be active.
Rx1:	Flashing Rx1 LED indicates remote units (Readers/interfaces) replying to polling.
D1 to D4:	Indicates Lock Relay active.

Over-Current Protection:

CAUTION! PTC Thermistors get very hot when they approach their current limit. Don't touch them!

F1/TH1: BATT 1	1.5A	1.5A PTC Thermistor or 3A fuse to limit current when unit is running on the Battery.
F2/TH2: BATT 2	1.5A	1.5A PTC Thermistor or 3A fuse to limit current when unit is running on the Battery.
F3/TH3: AUX	700mA	700mA PTC Thermistor or 1A fuse to limit "Auxiliary" O/P current. (AUX Pwr and Siren - J2) and reader comms. power J22.
F4/TH4: EXT	700mA	700mA PTC Thermistor or 1A fuse to limit "External" O/P current.

PTC Thermistors (if fitted) will automatically reset when the condition causing excess current drain is rectified.

Power Up Procedure:

When installation is complete, ensure that the unit is addressed correctly using dip switches 1 to 4.
On initial power-up, the correct displays for the LEDs are:

Main System LAN:

Rx0 - Flashing if Controller connected to Challenger Panel LAN correctly and the Challenger is functioning.

Tx0 - Off if Controller is not addressed or is not programmed to be polled by the Challenger
- On if Controller is addressed and is programmed to be polled by the Challenger.

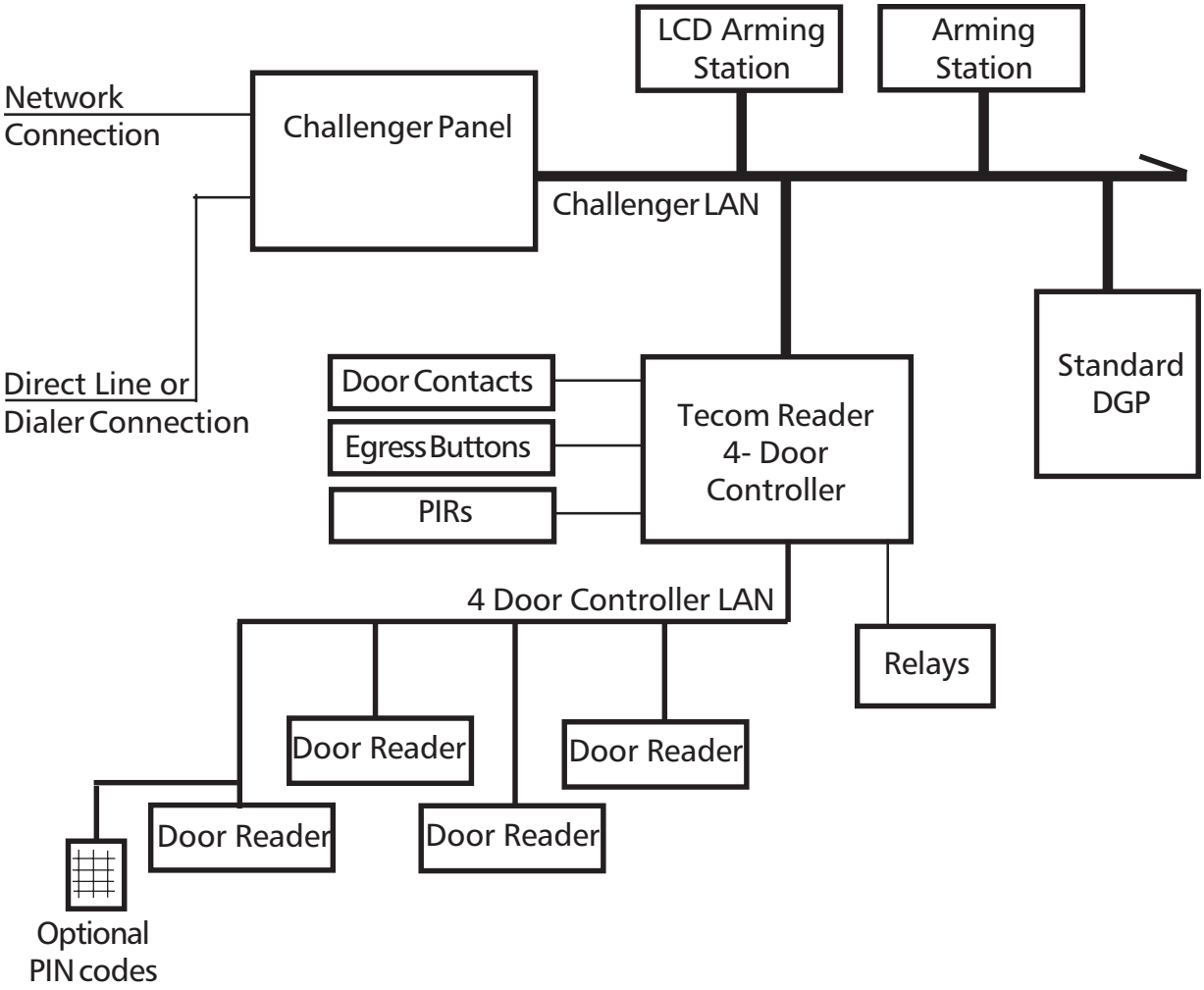
Intelligent Controller LAN:

Tx1 - Rapid flashing
- Very rapid flashing if RAS 1 connected to J22.

Rx1 - Very rapid flashing if RAS 1 connected to J22, addressed correctly & functional
- Off if no devices connected to J22, or if no devices connected to J22 are addressed as RAS 1.

- On initial power up only, the Intelligent Controller should be initialized. This is done via the Door Data Menu option 3: - Initialize Database.
- **CAUTION!** All Programming and settings will be reset to factory defaults. Factory defaults are listed in the programming guide on pages 37 to 39.

Typical System Layout



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Please note, this product conforms to the standards set by Standards Australia on behalf of the Australian Telecommunications Authority (AUSTEL) and the Spectrum Management Agency (SMA).

WARNING:

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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