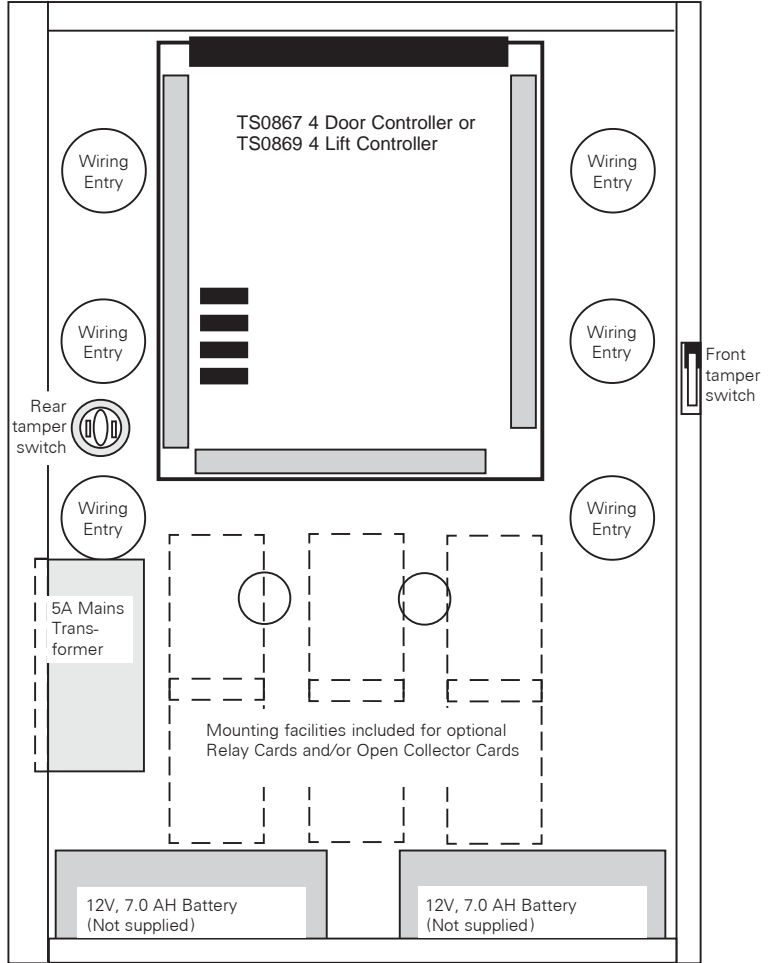




Challenger Version 8 4 Door /4 Lift Controller Installation Guide Models TS0867 & TS0869

Diagram of 4 Door or
4 Lift Controller
mounted inside
enclosure.



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Mechanical & Environmental Specifications

- Enclosure dimensions: 585mm long, 385mm wide and 77mm 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.

Important Notes

- This guide covers the wiring and installation instructions for both the Intelligent 4 Door and 4 Lift Controller. Unless mentioned otherwise, when referring to the Intelligent Controller, the details apply to both the Intelligent 4 Lift Controller and the Intelligent 4 Door Controller. (The Intelligent 4 Door Controller and the Intelligent 4 Lift Controller differ only in the software installed.)
 - The programming option defaults vary. These are listed in the *Intelligent Access Controller Programming Guide*, pages 37 to 39.
 - This equipment must only be installed and serviced by professional qualified personnel in accordance with ACA cabling requirements. Outside Australia check requirements with your local cabling authority.
-

Installation Kit

The checklist below details the items included in your Version 8 Controller and its installation kit.

- 1 x V8 Controller panel in metal enclosure with hinged door & built-in transformer
- 1 x V8 Controller Installation Guide (this document) ..

The installation kit contains:

- 25 x 3 Way plug-on screw terminal connectors
- 13 x 2 Way plug-on screw terminal connectors
- 2 x Red battery lead with QC terminal.....
- 2 x Black battery lead with QC terminal
- 40 x 10k 1/4 Watt resistors
- 2 x Quick connector (Part number: COQC-F-BL/63) ..
- 1 x 1K resistor
- 4 x Link jumper

Enclosure Cover

The enclosure cover is a hinged door secured with two hex bolts. A knockout is provided for fitting a lock if required.

Note: When opening the cover after system is installed, be aware that tamper alarms are fitted to detect cover removal and the removal of the base from its mounting surface.


Mounting

- The unit is mounted via screws or bolts through the 4 mounting holes in the base.
- **Ensure that the unit is mounted on a flat, solid, vertical surface** such that the base 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.

Protective Earthing System

(The following recommendations are based upon Australian wiring regulations ACA AS/ACIF S009 Section 5 and AS3000:2000 Section 5.)

- Challenger system equipment **with earth terminals** must be earthed (via a CET) by either connecting to the Protective Earthing system earth bar in the main or sub-electrical switchboard or, connecting directly to the main building earth conductor. All Challenger earth wiring must be Green/Yellow at least 2.5mm² or greater, to comply with Australian wiring regulations (see wiring diagram on page 4).
- The DGP "GND" link must remain fitted.
- **Do not** connect the plug pack earth to the DGP earth terminal. (J1)
- This method of protective earthing is the only way to minimise earth potentials between any two Challenger products by using a common building earth system.

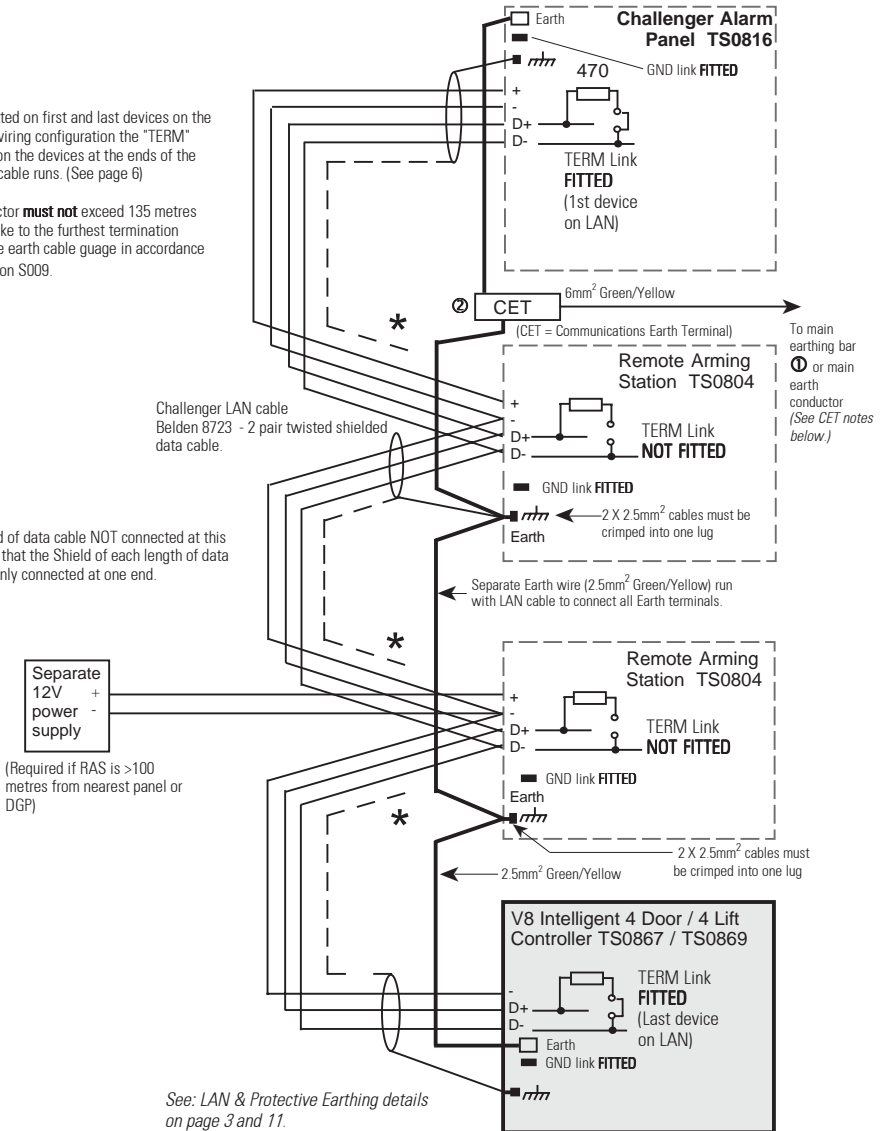
-  **Tips:**
- **Do not** install multiple earth stakes in the same building. (electrical installation)
 - Install Challenger LAN isolation devices between multiple buildings.

LAN System & Protective Earth Connection Block Diagram. *Read the requirements for Protective Earthing Systems on the previous page first!*

Tips:

- "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. (See page 6)
- 2.5mm² conductor **must not** exceed 135 metres from the earth stake to the furthest termination point. Upgrade the earth cable gauge in accordance with ACA regulation S009.

* Shield of data cable NOT connected at this end. Note that the Shield of each length of data cable is only connected at one end.



Notes on Communications Earth Terminal (CET)

- ① Termination of 6mm² earth to switchboard earth bar or main earth conductor **must** be installed by a licenced electrical contractor. Install only one CET per switchboard.
- ② CET is a two or more terminal earth bar. CET **must** be labelled: "Communications Earth Terminal"

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 Challenger Panel.
- Up to 12 Intelligent 4 Door and 4 Lift 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 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 Intelligent 4 Door Controllers and 4 Lift Controllers have their 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 an Intelligent Controller. (See wiring diagrams on page 4.)

DIP Switch Settings

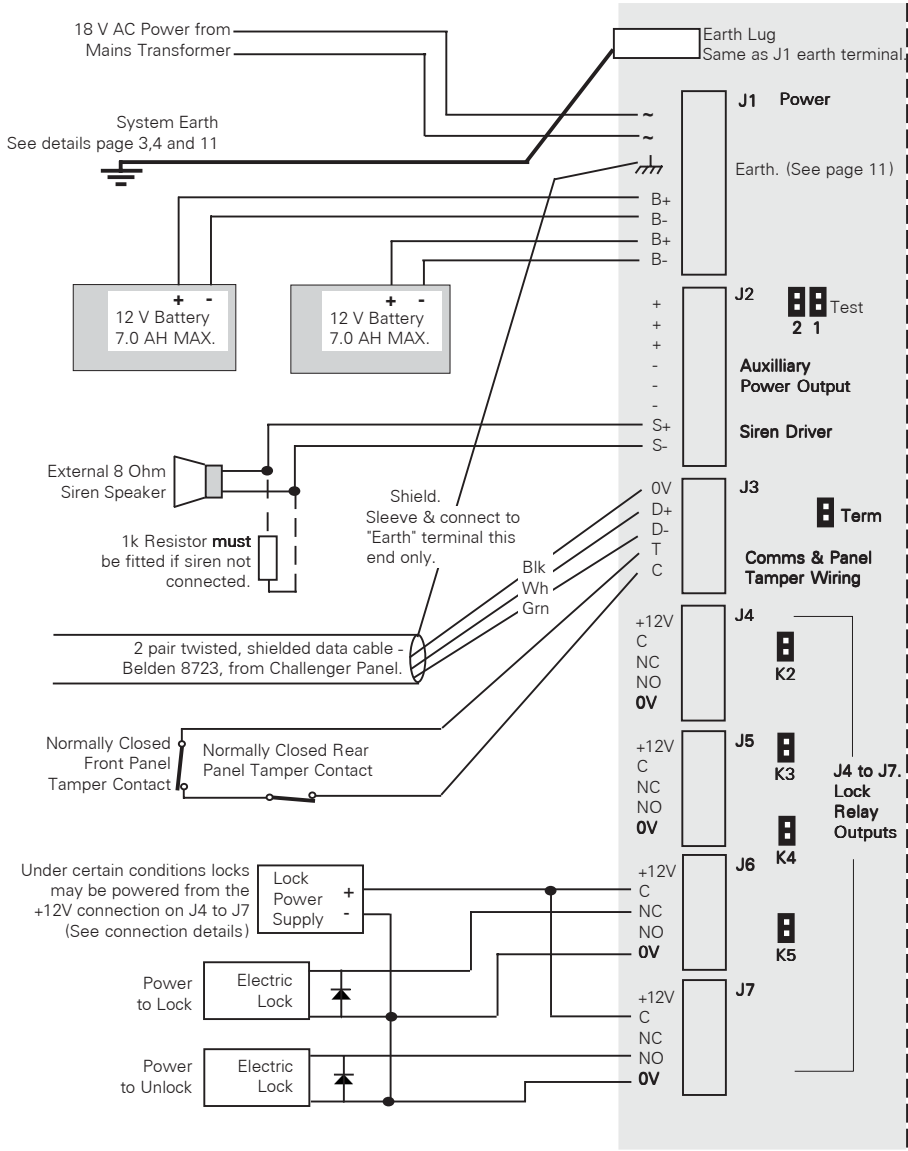
DGP Address. DIP switches 1 to 4 are used to identify this DGP number, that is, assign the DGP.

Address Set DIP switches 1 to 4 all OFF to disable the DGP.

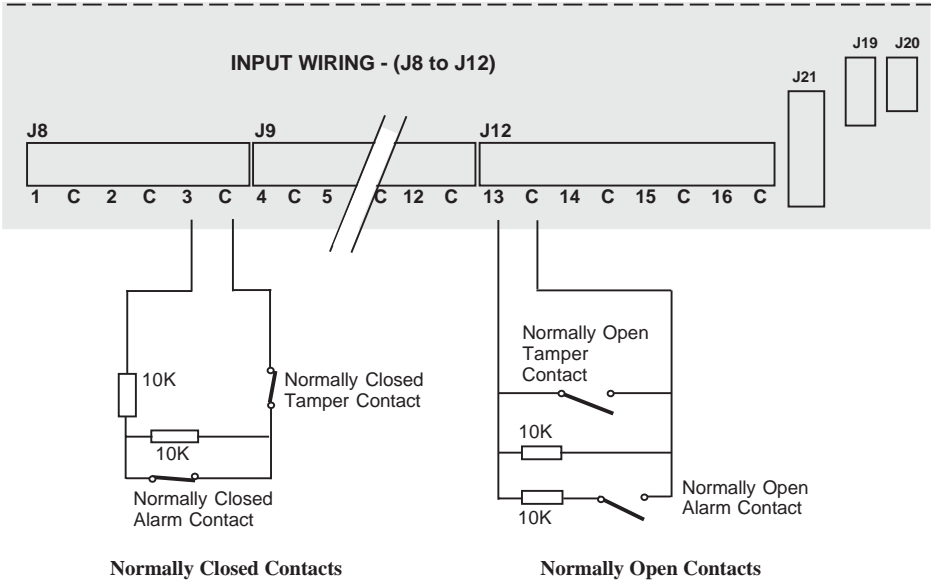
A 4 Door or 4 Lift Controller can only be addressed as DGPs 1 to 12.

DIP switch number	DGP number											
	1	2	3	4	5	6	7	8	9	10	11	12
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
5	Not currently used.											
6	Not currently used.											
7	Not currently used.											
8	Not currently used.											

Connection Diagrams: J1 to J7



Connection Diagrams: J8 to J12



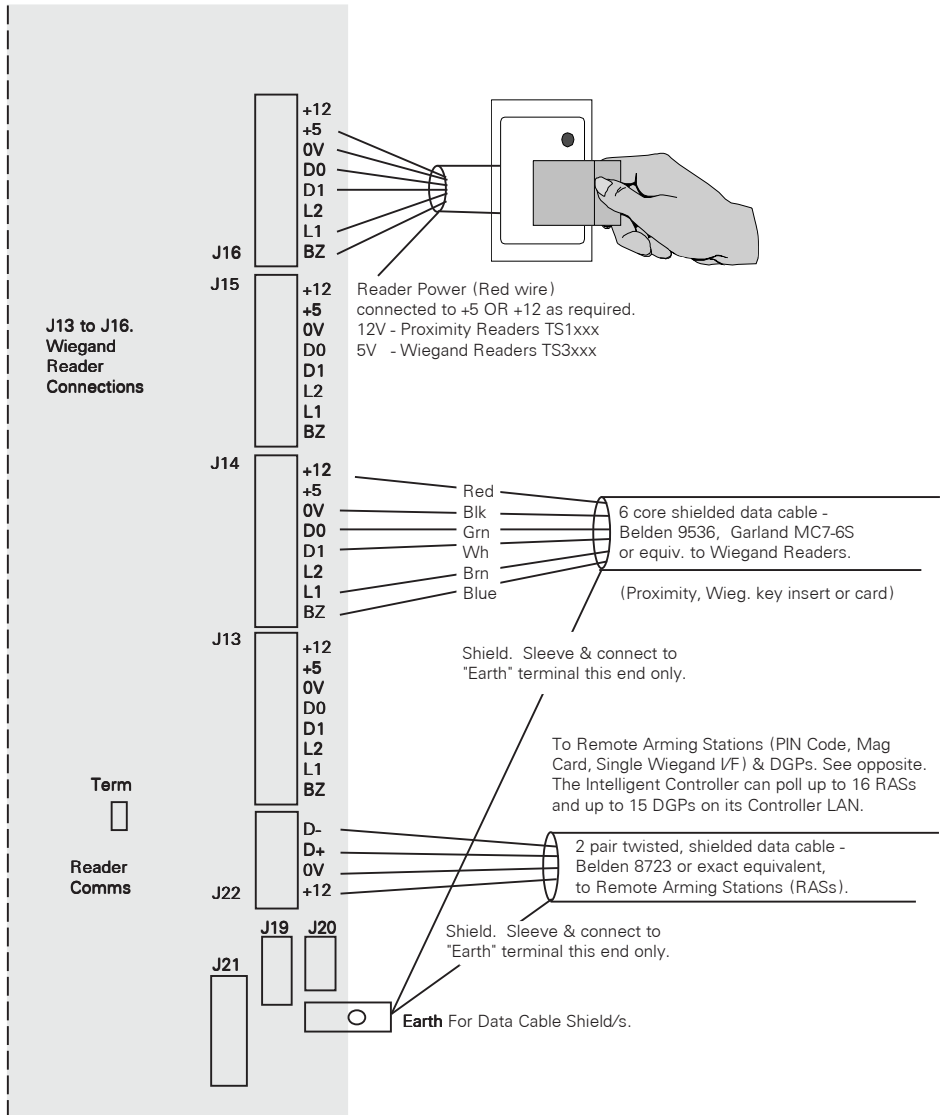
Door Contacts and Egress Buttons associated with each door are wired to the 4 Door Controller Inputs. Floor Monitoring and Security override inputs are wired to the 4 Lift Controller inputs or inputs on DGPs that are connected to the Intelligent Controller LAN **not** the Challenger LAN. Spare inputs for both devices are also provided for other devices such as PIRs etc. Any input used for DOTL inputs, cannot have any wiring connected.

4 Door & 4 Lift Controller Input & Relay Defaults

	4 Door Controller defaults					4 Lift Controller defaults			
	1st DOOR	2nd DOOR	3rd DOOR	4th DOOR		1st LIFT	2nd LIFT	3rd LIFT	4th LIFT
Door Contact	1	4	7	10	Starting Floor	1	1	1	1
Spare	2	5	8	11	Last Floor	64	64	64	64
Egress Input	3	6	9	12	Starting Relay	1	65	129	193
DOTL Input	16	15	14	13	Starting Input	1	65	129	193
Door Relay	1st	2nd	3rd	4th					

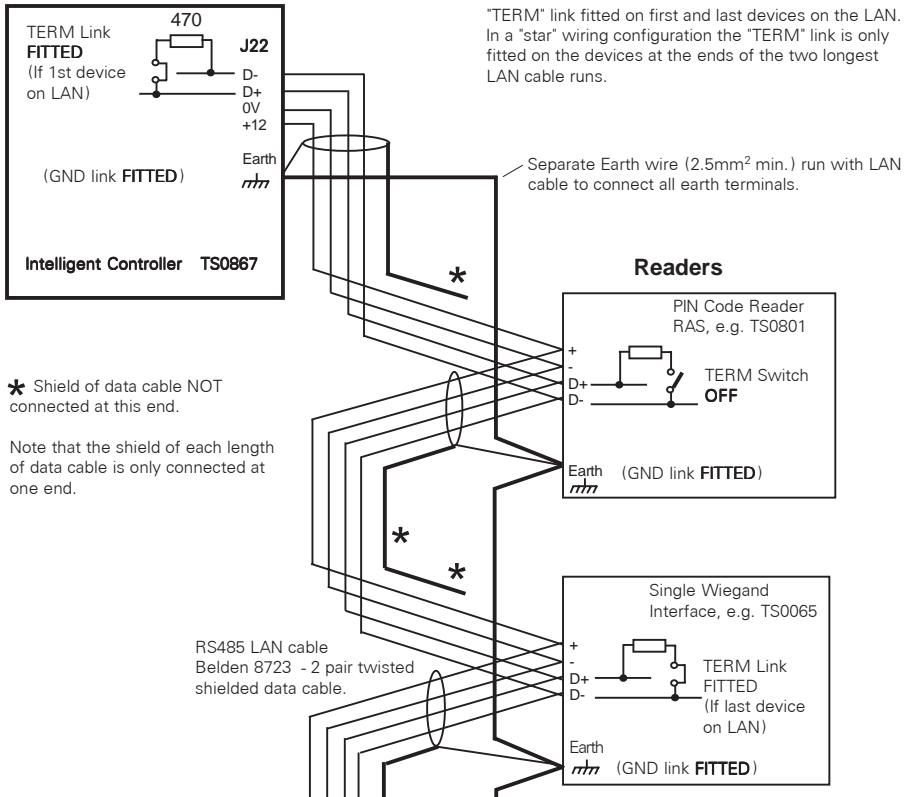
The input numbers in this table refer to the physical input numbers on the 4 Door / 4 Lift Controller PCB. The system input numbers relating to these functions for each of the 4 Door / 4 Lift Controllers can be found in the table provided in the Version 8 Four Door / Four Lift Controller *Intelligent Access Controller Programming Guide*.

Connection Diagrams: J13 to J16 & J22

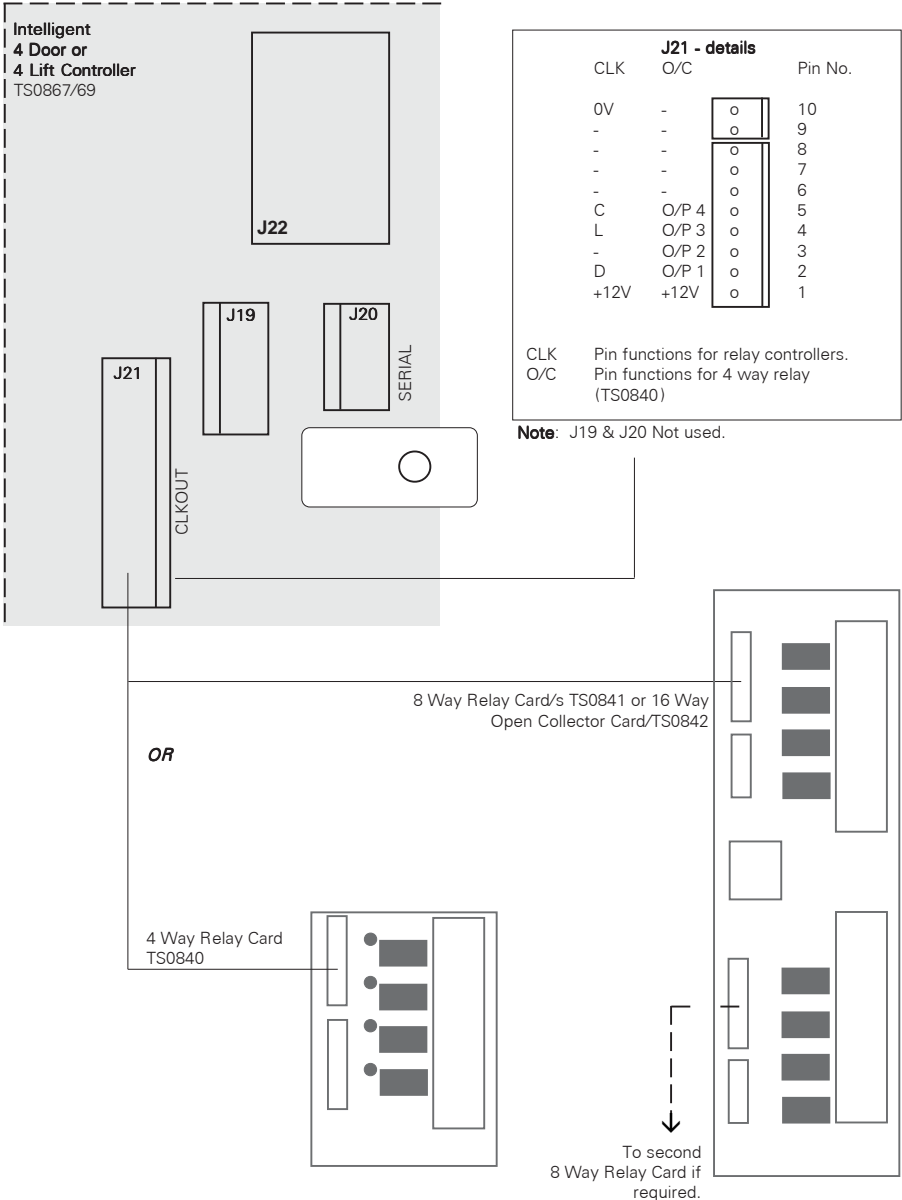


Intelligent Controller LAN SYSTEM & Earth Connection

- The 4 Door / 4 Lift 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 or 4 Lifts associated with each unit. Both Intelligent Controllers can connect up to 16 RASs. The Intelligent 4 Lift controller can control up to 15 DGPs on the Controller LAN.
- **Example:** *When card presentation, followed by PIN code entry is required 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; that is, up to 16 RASs in total.
- 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 they are entirely separate LAN systems.



Connection Diagrams J21: Connection of Output Cards



Connections: 5mm Plug-on Screw Terminals

J1 AC:	- -	Connection of the 18 Volt, 5.6A, Transformer output. (See <i>wiring diagrams</i>) Maximum current drawn with no peripheral devices fitted is 700mA.
J1 Earth:	n/n	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 <i>diagrams and earthing details on pages 3 and 4.</i>)
J1 BATT:	+ - + -	Positive and negative connections to 12V sealed lead acid batteries. Two batteries can be installed for power backup. (7.0 AH Maximum) (See <i>connection diagram on page 6</i>)
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 0 Volt connection of the RS485 LAN. Remote units can be up to 1.5 kms from the Challenger control panel. (See <i>diagrams & LAN connection details on pages 4 and 5.</i>)
J3 Tamper:	T C	Input and Common connection for panel tamper switches. Short circuit 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 <i>connection diagram on page 6.</i>)
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 <i>connection diagram on page 6.</i>)
J8 to J12: Alarm Inputs 1 to 16	1 C 2 C 3 C	Requires 10k End-Of-Line resistor (for sealed 5k, or 20k for unsealed). Open or Short circuit for Tamper condition if "Input Tamper Monitoring" enabled in the System options. (See <i>connection diagram on page 7.</i>)
	etc.	

Continued on next page

Connections: 5mm Plug-on Screw Terminals

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 on pages 4 and 5.)

J13-16 DOORS:

BZ
L1
L2
D1
D0
0V
+5
+12

Reader Buzzer control output.
Reader LED 1 control output.
Reader LED 2 control output. (Not currently in use)
Wiegand Data 1's input.
Wiegand Data 0's input.
0 Volt connection for reader power.
+5 Volt connection for reader power. (e.g.TS3005, TS3387)
+12 Volt connection for reader power. (e.g.TS1451-1A, TS1452-1A, TS1110, TS1112 etc.)
(See connection diagram on page 8.)

Connections: Headers and Sockets

Serial J19:

Tx
DTR
Rx
CTS
0V

Not currently in use.

Serial J20:

+12
RX
TX
0V

Not currently in use.

CLKOUT: J21

+12V DC supply & Open Collector OR data outputs; for connection to Relay Controllers, that is, a single 4 Way Relay card OR 8 Way Relay and 16 Way Open Collector cards.

TS0840 to TS0842 (V8 Relay cards) are connected with 10 way cable supplied.
(See V8 Intelligent Controller Programming guide if 8 Way or 16 Way cards fitted.)

J23

Connection to optional interface/s. Not currently used.

Links

TERM: Nearest J3 The termination link must be fitted 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, that is, in a Challenger system only two devices connected to the main Challenger LAN can have the TERM link fitted.

(See LAN connection details & diagrams on pages 4 and 5.)

**TERM:
Nearest J22**

The termination link must be fitted 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 on pages 4 and 5.)

K2 to K5:

Lock Fault Monitoring option. These links must only be fitted on any lock output that is wired in the configuration for "Power Off to Lock" that is, power to unlock.

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.

LED Diagnostics:

RS232:

Not currently in use.

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 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.

L1 to L4:

Indicates Lock Relay active.

Over-Current Protection

F1 BATT 1	3A fuse to limit current when unit is running on the battery.
F2 BATT 2	3A fuse to limit current when unit is running on the battery.
F3 AUX	1A fuse to limit "Auxiliary" O/P current. (AUX Pwr and Siren - J2.)
F4 EXT	2A fuse to limit "External" O/P current. (Reader power and Reader Comms power - J13 to J16 & J22.)

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 LEDs **on the Intelligent Controller** should display as follows;

Main System LAN indicator LEDs:

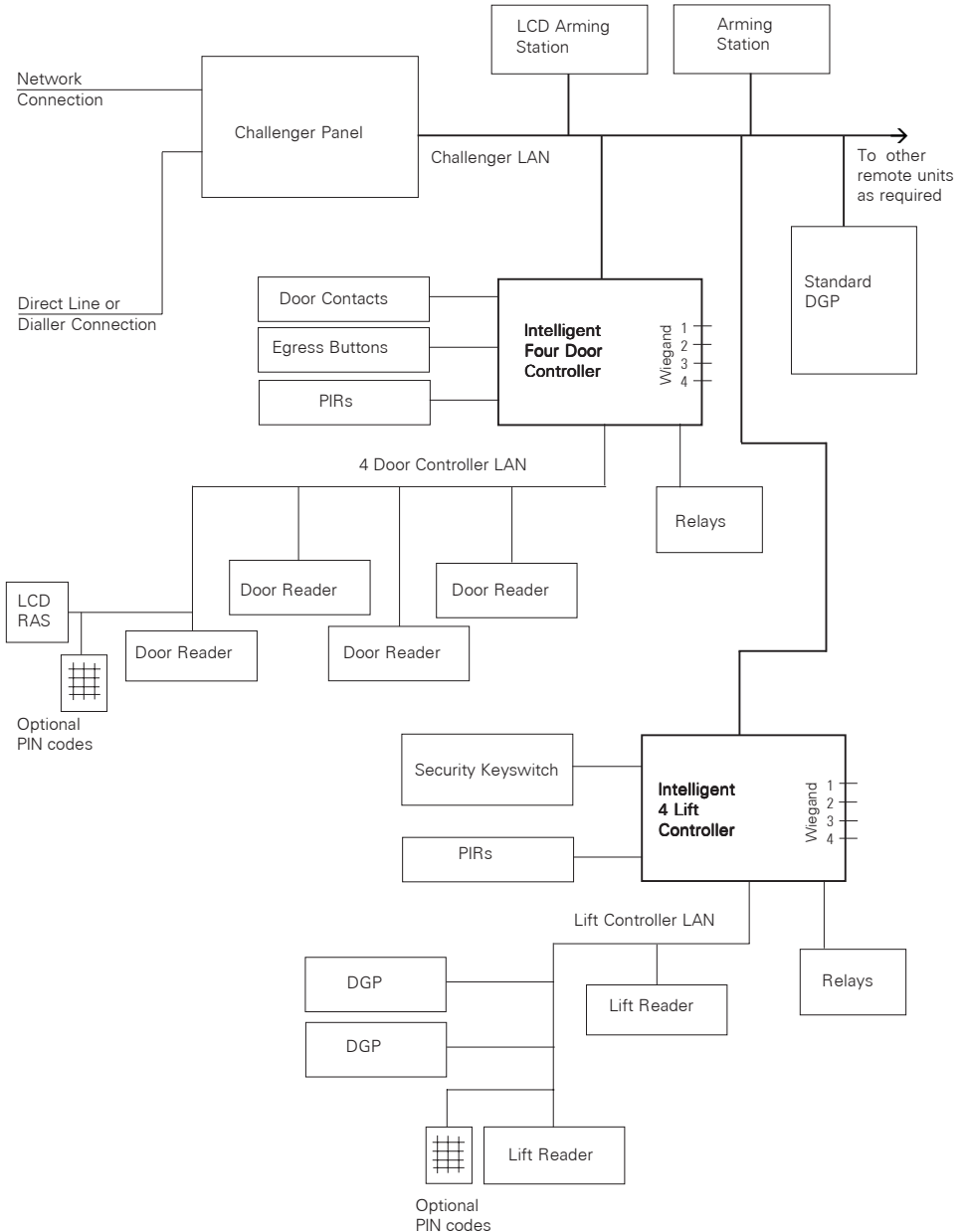
- Rx0** **Flashing** if Controller connected to Challenger Panel LAN correctly and the Challenger is functioning.
- Tx0** **Off** if Controller is not addressed or is not programmed to be polled by the Challenger
On if Controller.
- Tx1** **Rapid Flashing.**
Very rapid flashing if RAS 1 connected to 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 addressed as RAS 1.

On initial power up only, the Intelligent Controller should be initialised. This is done via the Door / Lift Data Menu option 3: - Initialise 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.

Sample System Layout





N4131

Please note, this product conforms to the standards set by Standards Australia on behalf of the Australian Communications Authority (ACA)

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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