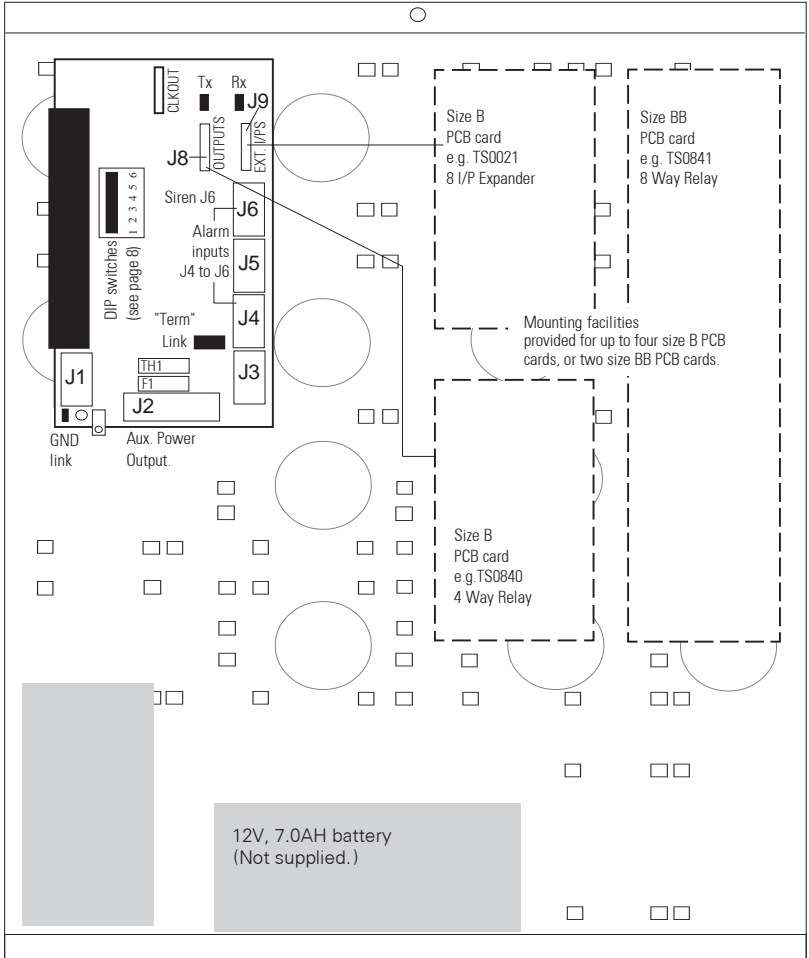




Challenger Version 8 Data Gathering Panels Installation Guide Models TS0820 & TS0823

Recommended mounting position of the TS0820 in the Universal Enclosure

Note: the TS0823 is a DGP PCB only without an enclosure



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Introduction

- The TS0820/TS0823 Data Gathering Panels are used to expand the Challenger Panel by providing 8 inputs, and up to 16 relay outputs. (The DGP can provide up to 32 inputs with TS0021 8 I/P expansion modules).
- Up to 8 relay outputs are available if 4 Way Relay modules are fitted. (TS0840)
- Up to 16 relay outputs are available via 8 Way clocked relay cards. (TS0841)
- Relay modules may be mounted on standoffs provided in the DGP, depending on the number of input expanders fitted. 4 Way & 8 Way relay cards cannot be used together on the same DGP.
- The DGP can be installed up to 1.5km from the Challenger to provide remote alarm inputs & outputs.

Installation Kit

The checklist below details all the items included in your Version 8 Data Gathering Panel and its installation kit.

1 x V8 DGP in metal enclosure (TS0820)	<input checked="" type="checkbox"/>	1 x black battery lead with QC terminal	<input checked="" type="checkbox"/>
1 x 16 Volt AC plug pack	<input type="checkbox"/>	20 x 10K 1/4 Watt resistor	<input type="checkbox"/>
1 x V8 DGP installation guide	<input type="checkbox"/>	1 x 1K 1/4 Watt resistor	<input type="checkbox"/>
10 x 3 way plug-on screw terminal	<input type="checkbox"/>	1 x 6.3 mm female blue connector	<input type="checkbox"/>
2 x 2 way plug-on screw terminal	<input type="checkbox"/>	1 x tamper switch in bracket	<input type="checkbox"/>
1 x red battery lead with QC terminal	<input type="checkbox"/>	4 x 3 X 10mm screw	<input type="checkbox"/>
		4 x spring-steel standoff	<input type="checkbox"/>

Adding the PCB to the Enclosure and Mounting the Enclosure

1. First secure the PCB in the enclosure using the standoffs and screws supplied. The enclosure has arrows marking the position for the PCB.
2. If **TS0820** (with Universal Enclosure) is supplied: Refer to the Universal Enclosure installation guide (supplied) for instructions on how to mount the enclosure.

Mechanical & Environmental Specifications

- Enclosure dimensions (TS0820): 450mm long, 345mm wide and 73mm deep
- Minimum clearance between equip. enclosures: 50 mm (between equipment vents)
- Minimum clearance between encl. & side wall: 25 mm
- Storage temperature: -20 to +80 degrees C
- Operating temperature: 0 to +50 degrees C
- Humidity: 95% non-condensing

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

Input Numbering

A standard 8 I/P DGP can have 8 inputs connected to it. This can be expanded in increments of 8 up to 32, using the TS0021 8 I/P expanders. (A DGP can have 8, 16, 24 or 32 inputs.)

There are 16 inputs allocated to every DGP address. **If a DGP has 24 or 32 inputs** (2 or 3 expanders fitted) the additional system input numbers are taken from the following DGP address. If this is done, **the next DGP address ceases to exist and is not included to be polled.**

Example: DGP 1 has 24 inputs (Inputs 17 to 40). The next DGP in the system must now be addressed and polled as DGP 3, because inputs 33 to 40 on DGP 1 have been taken from DGP 2. The unused input numbers in the system (Inputs 41 to 48) must be programmed in the Input Database as Type 0. (See Table 1 below.)

Relay Numbering

A DGP can have a maximum of 16 relays, regardless of the number of inputs on the DGP. The relay numbers are the same as the 16 input numbers allocated to the DGP address. For example, DGP 1 has 32 inputs: 17-48, DGP 1 relays (max 16) : 17-32, DGP 3 has 32 inputs: 49-80 DGP 3 relays: 49-64.

Table 1: Input & Relay Numbering:

Chall	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DGP1	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
DGP2	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
DGP3	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64
DGP4	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
DGP5	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
DGP6	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DGP7	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128
DGP8	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144
DGP9	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
DGP10	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176
DGP11	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192
DGP12	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208
DGP13	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224
DGP14	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
DGP15	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	↗

The Siren Output is the last relay number assigned to the DGP address.
The Siren can not be operated on DGP 15.

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 *Be sure to read the requirements for Protective Earthing Systems on the previous page first!*

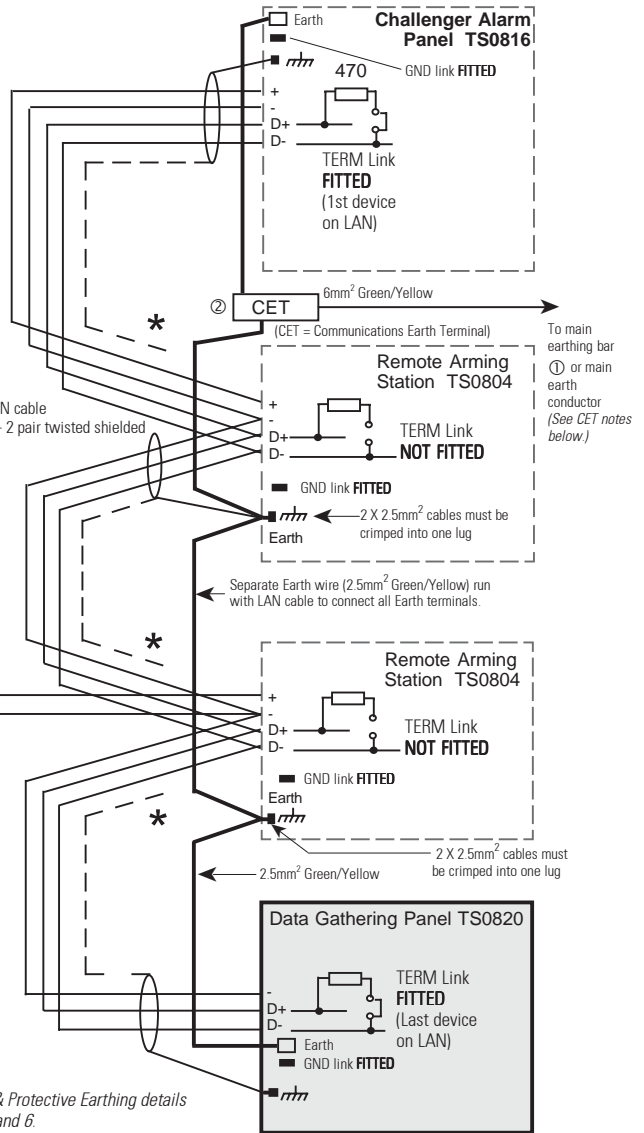
TIPS:

- "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.

Separate 12V power supply
(Required if RAS is >100 metres from nearest panel or DGP)

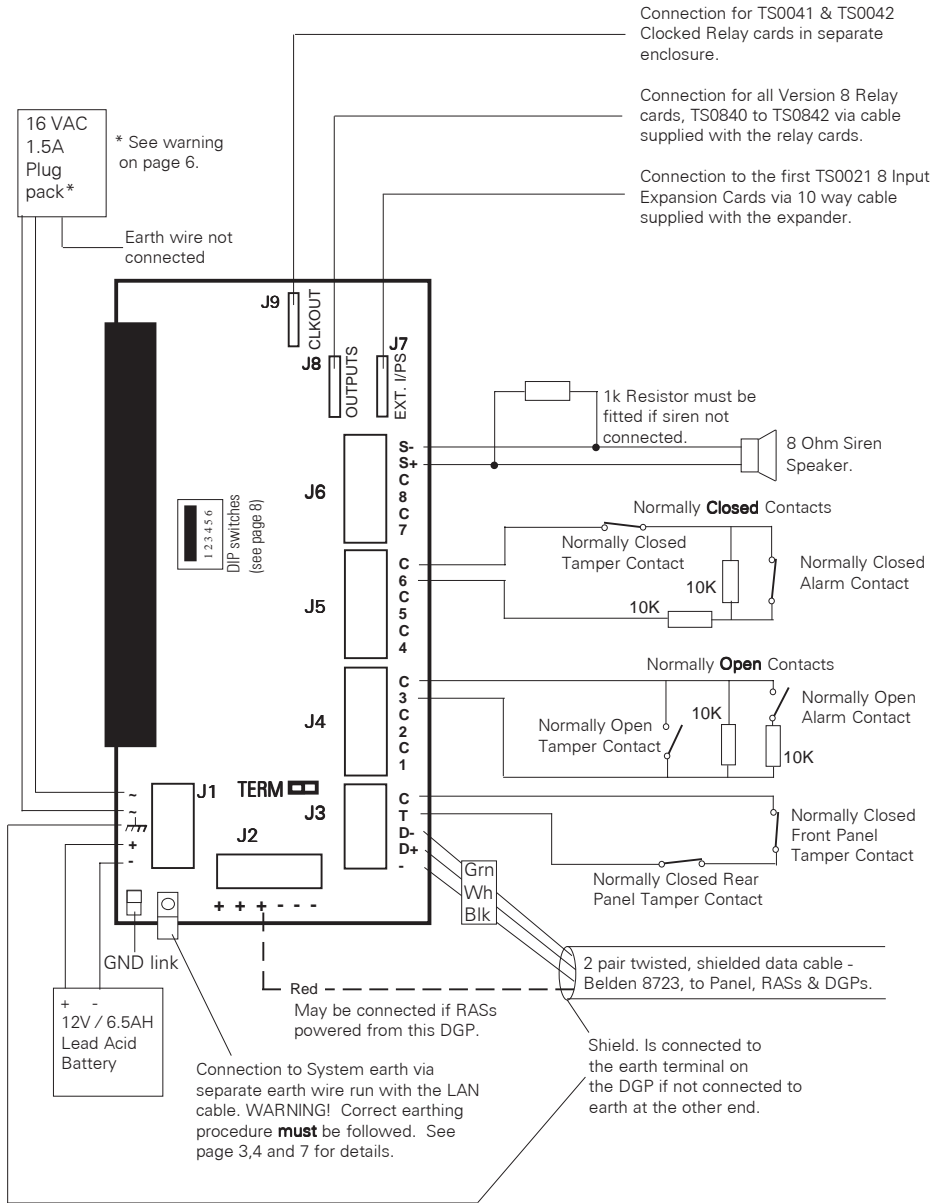
See: LAN & Protective Earthing details on page 3 and 6.



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"

Connection Diagrams



See: Connection Details on Pages 7 & 8.

LAN Connection

- The RS485 LAN is used to connect Data Gathering Panels (to provide extra inputs) and Arming Stations to the Challenger panel.
- Data Gathering Panels (DGPs) must be connected via a 2 pair twisted shielded data cable from the LAN connection. (Belden 8723 is recommended).
- The shield of any data cable connected to the Data Gathering Panel (DGP) should be connected to earth at one end only. (*See wiring diagrams on page 4.*)

LED Diagnostics

- Rx:** **Rx LED flashing** indicates polling data being received on the LAN from the Challenger Panel.
No flashing Rx LED indicates LAN fault (usually cabling) or Challenger Panel not operational.
- Tx:** **Tx LED flashing** indicates DGP is replying to the Challenger Panel poll.
No Tx LED flashing and Rx LED flashing indicates DGP isn't programmed to be polled or is incorrectly addressed.

CAUTION ! AC Plug Packs

State Energy Authorities require that the AC Plug pack supplied with this DGP, has an internal fuse to prevent overheating and fires caused by overload and short circuits.

Standards Australia stresses that the need for fire prevention in electrical products cannot be overstated, hence the need for these design requirements.

When installing plug packs, **do not** power the unit until you have terminated the leads and checked that you do not have a short circuit. **Fused plug packs cannot be replaced under warranty** as the fuse operation can only be caused by a direct short circuit.

Connections: 5mm Plug-on Screw Terminals

J1 AC:	~ ~	Connection of the 16 Volt, 1.5A, AC Plug pack supplied with the Data Gathering Panel. <i>(See warning on page 6 & connection diagram on page 5.)</i> Maximum current drawn by the DGP with no peripheral devices fitted is 120mA.
J1 Earth:	⏏	Do not connect to Plug Pack Earth. Connect LAN cable shields to this terminal. <i>(See: diagram on page 4 & protective earthing details on page 3.)</i>
J1 Batt:	+ -	Positive and negative connections to 12V sealed lead acid battery. (7.0 AH Maximum) <i>(See connection diagram on page 5.)</i>
J2 Aux Pwr:	+ -	+12 Volt DC Auxiliary power output to supply detectors, etc. 700mA maximum current.
J3 LAN:	- D + D -	Data positive, Data negative and Common 0 Volt connection of the RS485 LAN. Remote units can be up to 1.5 kms from the Challenger control panel. <i>(See: Diagram on page 4 & "LAN connection" details on page 6.)</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. <i>(See connection diagram on page 5.)</i>
J4 to J6: Alarm Inputs 1 to 16	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. <i>(See connection diagram on page 5 and relay numbering on page 3.)</i>
J6 Siren:	S + S -	Positive and negative connection to external 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 (last) Relay allocated to the DGP address, for example on DGP 1 the Siren is Relay 32. On DGP 2 the Siren is Relay 48 etc. <i>(See connection diagram on page 5 and relay numbering on page 3.)</i>

Links:

Term:	The termination jumper link must be fitted the DGP is the first or last device on the LAN. If the system LAN is wired in a "star" configuration, the TERM link is fitted only to the devices at the end of the two longest LAN cable runs, that is, in a Challenger system only two devices connected to the LAN can have the TERM link fitted.
Gnd:	Must remain fitted for ground terminal connection to earth lug.
Test:	1, 2 These links are not used. 3 Disable Mains Fail monitoring.

Connections: Headers and Sockets

- EXT I/PS: J7** Connection to TS0021 8 Input Expansion Cards via 10 way cable supplied with the expander card. **DIP switch 5 on the DGP MUST be set to ON if 2 or 3 expansion cards are connected.**
- DIP switches 1 to 3 on the expansion card identify the expander number:
- Set **DIP switch 1 to ON on the 1st expansion card** — 9th to 16th inputs.
 - Set **DIP switch 2 to ON on the 2nd expansion card** — 17th to 24th inputs.
 - Set **DIP switch 3 to ON on the 3rd expansion card** — 25th to 32nd inputs.
- (See connection details on page 5)*
- Outputs: J8** +12V DC Supply and Open Collector OR data output for connection to TS0840, TS0841 & TS0842 Version 8 Relay Cards via 10 way cable supplied with the Relay Card. Up to 8 relays are available with 4 Way Relay cards and up to 16 relays are available with 8 Way Relay or 16 Way Open Collector Cards. (4 way & 8/16 Way Relay Cards cannot be used together on the same DGP).
- CLKOUT: J9** +12V DC Supply and data output for connection to Version 6 Relay Controllers via separate cable, LEV6-CLK. (TS0041 8 way relay & TS0042 16 Way Open Collector.)

Over-current Protection

- F1:** 1A fuse to limit "Aux" O/P current. (AUX Pwr and Siren)
- TH2:** 1.5A PTC Thermistor to limit current when unit is running on the battery.
Caution! Thermistors get very hot!

DGP DIP Switch Settings

DGP Address. DIP switches 1 to 4 are used to configure the DGP number.
Set DIP switches 1 to 4 all OFF to disable the DGP.

DIP switch number	DGP number														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON	OFF	ON
2	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON	OFF	OFF	ON	ON
3	OFF	OFF	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON
4	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
5	ON if DGP controls more than 16 inputs, that is, when 2 or 3 input expansion modules are fitted.														
6	ON if a Relay Controller is connected to J8 or J9. (8 Way Relay or 16 Way Open Collector) Relay Controller cannot be used in conjunction with TS0040/TS0840 4 Way Relay Cards.														

Notes

Notes

Notes



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.

Disclaimer Details

The customer is responsible for testing and determining the suitability of this product for specific applications. In no event is GE Interlogix Pty Limited responsible or liable for any damages incurred by the buyer or any third party arising from its use, or their inability to use the product.

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