



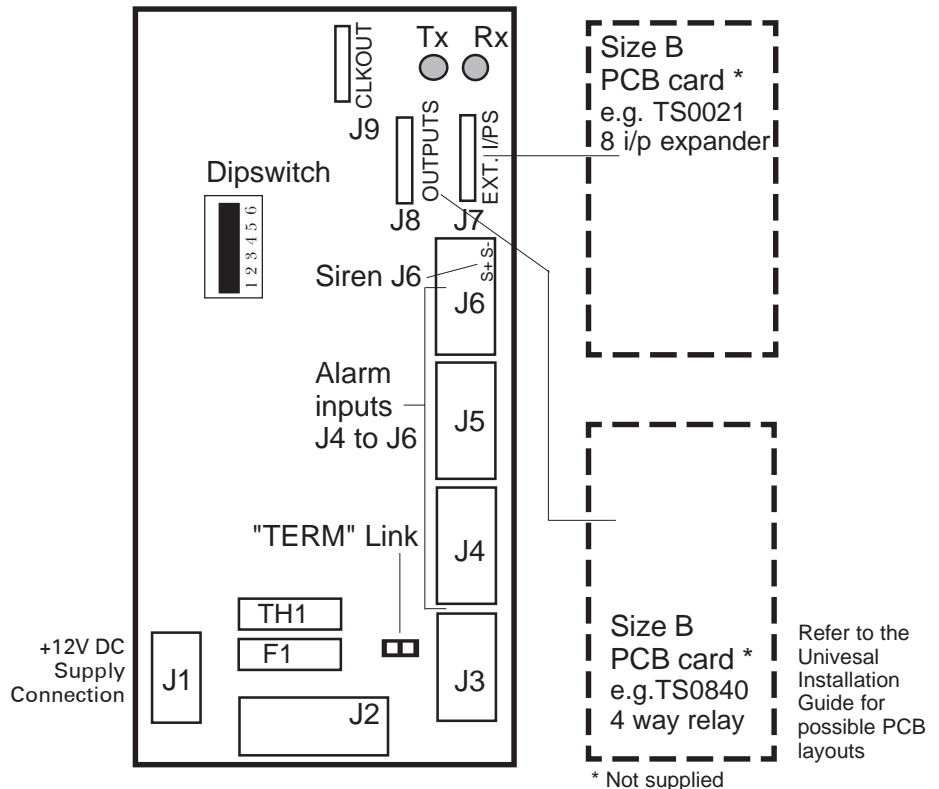
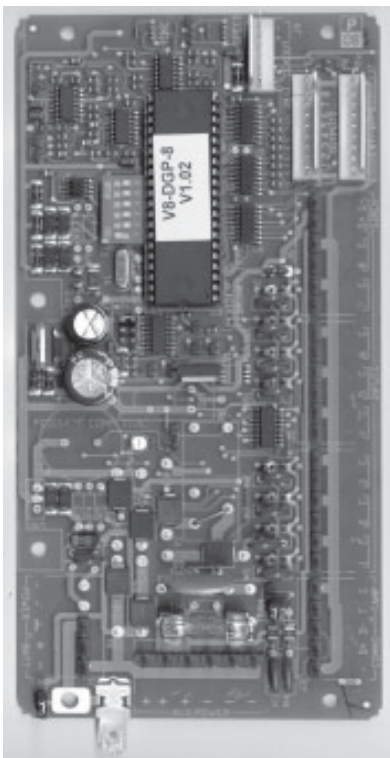
Challenger Version 8 DC Data Gathering Panels Installation Guide Models TS0822 & TS0824

TS0824 is a "board only" version

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Photo and PCB layout diagram of TS0822/24 PCB. Sample relays and expanders attached



Introduction

- The 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.
- Up to 16 relay outputs are available via 8 Way clocked relay cards.
- (Relay modules may be mounted on standoffs (provided), 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 Universal Enclosure (TS0822 only)
- 1 x V8 DGP Installation Guide (this document)
- 1 x 1K resistor
- 10 x 3 Way plug-on screw terminals
- 1 x 2 Way plug-on screw terminals
- 20 x 10k 1/4 Watt resistors
- 4 x Steel spring standoff (TS0822 only, Re-order number HAST3*0.25PCBST)
- 4 x 3 X 10mm bolt (TS0822 only, Re-order number HASEM3-10PANPH X 4)
- 1 x Programming Guide
- 1 x Quick connector (COQC-F-BL/63)

Mounting when supplied with an enclosure (TS0822)

Refer to the Universal Enclosure installation guide.

Mechanical & Environmental Specifications

Enclosure dimensions:	450mm long, 345mm wide and 75mm 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.

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.**

For 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.

E.g. DGP1 has 32 inputs : 17-48
 DGP1 relays (max 16) : 17-32
 DGP3 has 32 inputs : 49-80
 DGP3 relays : 49-64

See table 1 below.

Table 1: Input and 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 

LAN System & Protective Earth Connection Block Diagram *Be sure to read the requirements for Protective Earthing Systems on the previous page first!*

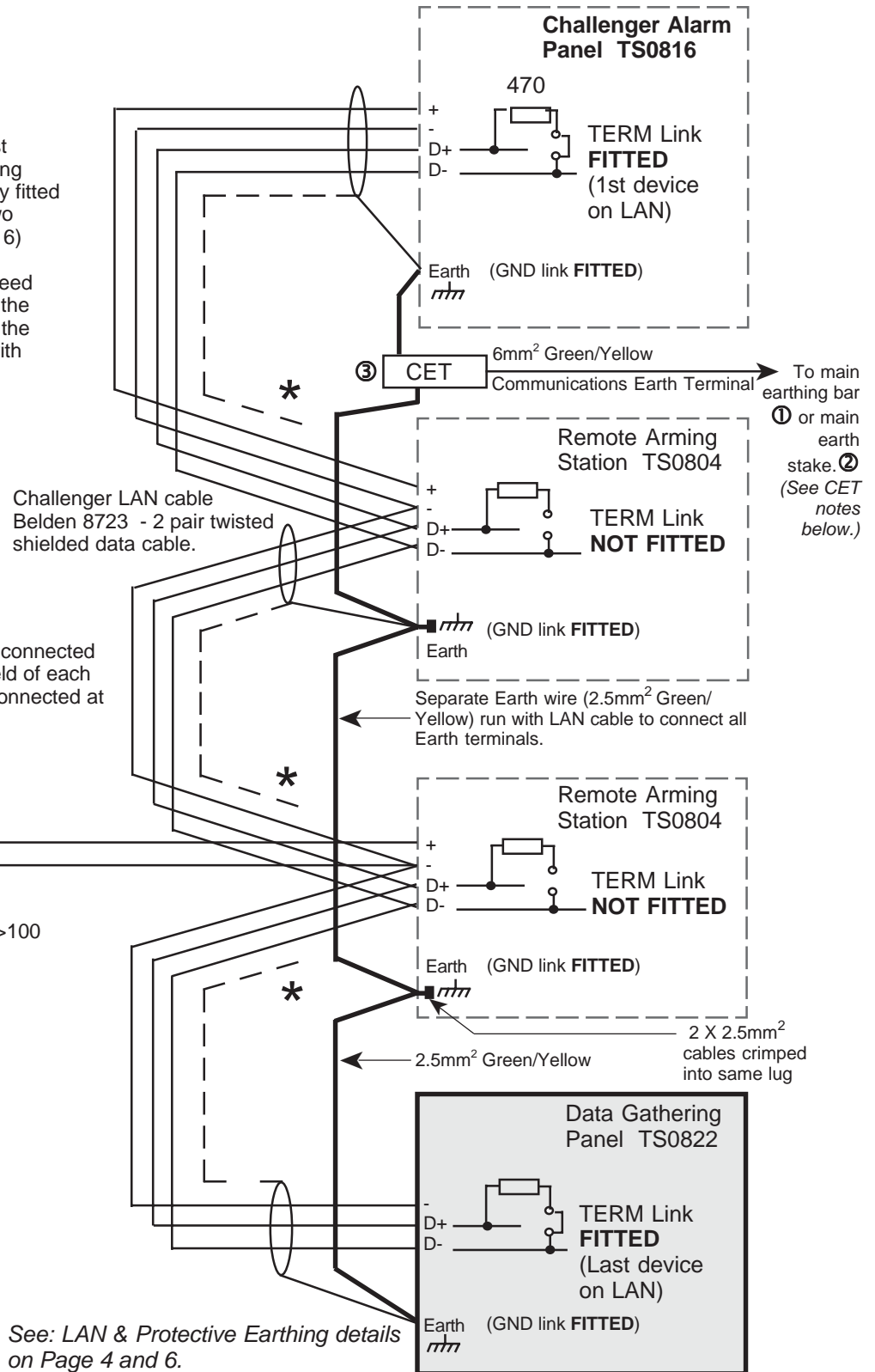
TIPS:

● "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)



Notes on Communications Earth Terminal (CET)

- ① CET **must** be installed by a licenced electrical contractor. Install only one CET per switchboard.
- ② If CET is connected to Earth stake the connection **must** be made by a licenced cabler. Extra protective earth bars may be installed and connected to the CET.
- ③ CET is a two or more terminal earth bar. CET **must** be labelled: "Communications Earth Terminal"

Connection Diagrams

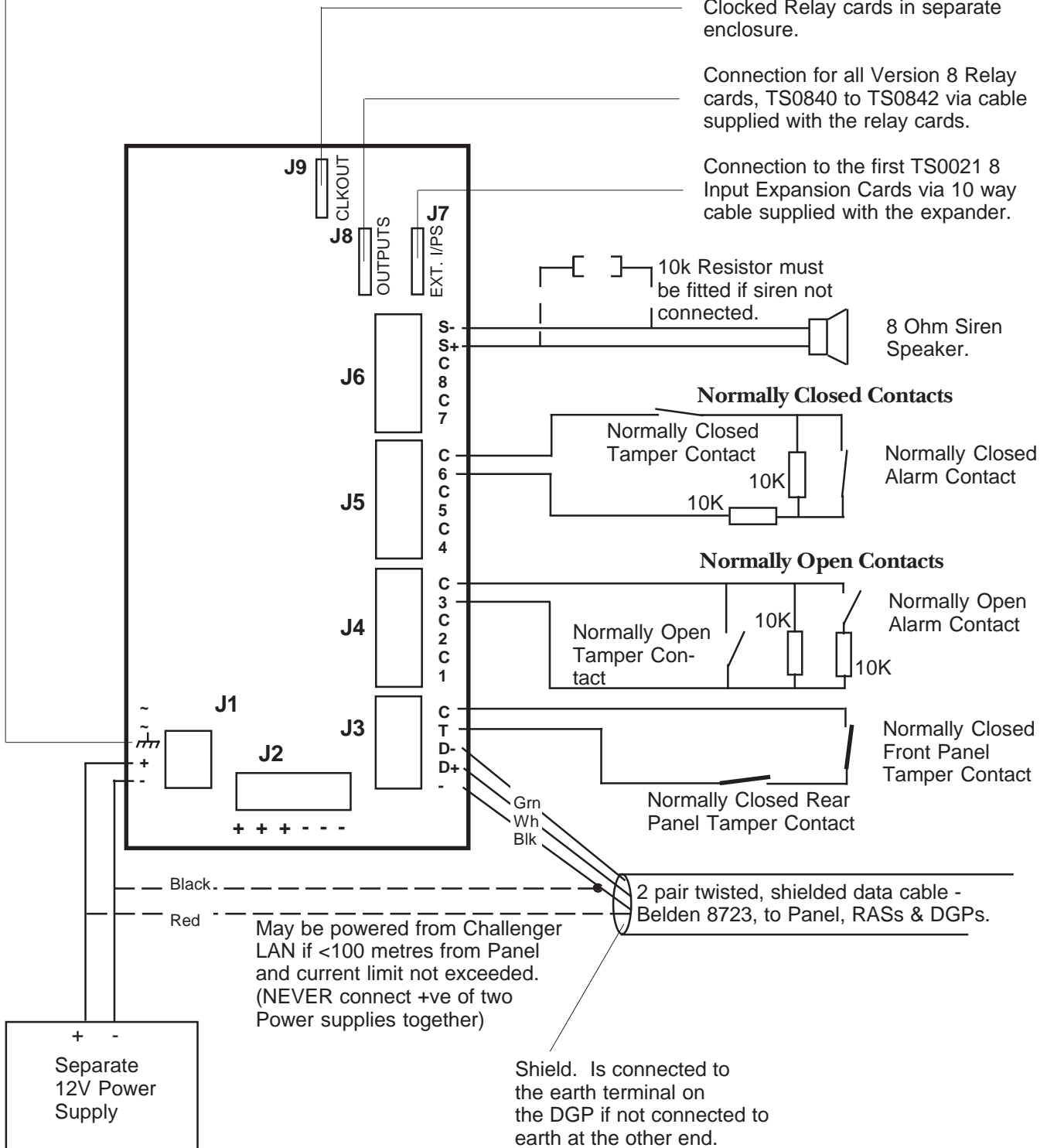
Connection to System earth via separate earth wire run with the LAN cable.

WARNING! Correct earthing procedure must be followed. See page 6 for details.

Connection for TS0041 & TS0042 Clocked Relay cards in separate enclosure.

Connection for all Version 8 Relay cards, TS0840 to TS0842 via cable supplied with the relay cards.

Connection to the first TS0021 8 Input Expansion Cards via 10 way cable supplied with the expander.



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 (Belden 8723 is recommended) from the LAN connection.
- The shield of any data cable connected to the Data Gathering Panel (DGP) should be connected to earth at one end only.
- It is recommended that where the distance between a **TS0822** or **TS0824** (DC DGP) and the nearest device is more than 100 metres, a separate power supply be used to power the DGP.
- To power the DGP, **do not** connect '+' from the LAN. Connect '+' of the local power supply to 'Batt +' on the DGP and connect 0 volts from the power supply **and** 0 volts from the LAN connection to the DGP terminal marked 'Batt -'.

See wiring diagrams on page 4.

LEDs

- 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 polling from the Challenger Panel. Rx LED flashing but no Tx LED indicates DGP is not programmed to be polled or is addressed incorrectly.

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 stake. All Challenger earth wiring must be Green/Yellow at least 2.5mm² or within 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. (*See wiring diagrams on page 4.*)

 **Tips:**

- **Do not** install multiple earth stakes in the same building.
- Install Challenger LAN isolation devices between multiple buildings.

Connections — 5mm plug-on screw terminals

J1 AC:	~ ~	Not used.
J1 Earth:	///	Terminal for Earthing. Earth wire from this terminal is connected to protective earth . (Not Mains earth) via separate 2.5mm ² green/yellow earth wire, and the shield of the LAN cable. <i>(See: diagram on page 4 & "Earthing" details on page 6)</i>
J1 BATT:	+ -	Positive and negative connections from the 12V Power supply. <i>(See connection diagram on page 5)</i>
J2 AUX PWR:	+ -	+12 Volt DC Auxiliary power output to supply detectors, etc. 700mA maximum current. (Depending on the power supply used!)
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 <i>The Challenger</i> 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 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. <i>(See connection diagram on page 5)</i>
J4 to J6: Alarm Inputs 1 to 16	1 C 2 C 3 C etc.	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)</i>
J6 SIREN:	S+ S-	Positive and negative connection to external 8 ohm siren speaker. A 10k 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. e.g. On DGP 1 the Siren is Relay 32. On DGP 2 the Siren is Relay 48 etc. <i>(See connection diagram on page 5)</i>

Links:

TERM:		The termination jumper link must be in if 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 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 LAN can have the TERM link fitted.
GND:		Must remain fitted.
TEST:	1, 2	These links are not used.
	3	Disable Mains Fail monitoring. Factory fitted on TS0822 & TS0824

Connections: Headers and sockets

EXT I/PS: J7 Connection to TS0021 8 Input Expansion Cards via 10 way cable supplied with the expander card. **DIPswitch 5 on the DGP MUST be set to ON if 2 or 3 expansion cards are connected.**

Dipswitches 1 to 3 on the expansion card are used to identify the expander number:

Set **DIPswitch 1 to ON on the 1st expansion card** - 9th to 16th inputs.

Set **DIPswitch 2 to ON on the 2nd expansion card** - 17th to 24th inputs.

Set **DIPswitch 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)

TH1: 1.5A thermistor to limit input current from the power supply. Thermistors automatically reset when the condition causing excess current drain is rectified.

DGP Dipswitch settings

DGP Address. Dipswitches 1 to 4 are used to identify this DGP number.
Set Dipswitches 1 to 4 all OFF to disable the DGP.

DIPswitch 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. i.e. When 2 or 3 input expansion modules 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.														



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

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 the use or their inability to use the product.

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