TS1020 Analogue Data Gathering Panel Installation Manual

Content

Important information

Limitation of liability

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Installation in accordance with this manual, applicable codes, and the instructions of the authority having jurisdiction is mandatory.

While every precaution has been taken during the preparation of this manual to ensure the accuracy of its contents, Aritech assumes no responsibility for errors or omissions.

Agency compliance

This product conforms to the standards set by Standards Australia on behalf of the Australian Communications and Media Authority (ACMA).

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

Product overview

This manual applies to the TS1020 Analogue Data Gathering Panel (DGP) supplied with enclosure and plug pack, designed for use with Challenger control panels. Analogue data gathering panel (DGP) models are also known as standard DGPs.

The TS1020 DGP is part of the Challenger10 system, and may be used with Challenger V8 systems.

Note: When used on a Challenger V8 system certain TS1020 DGP functionality may not apply. The installer is responsible for checking the correct operation of any installation.

This manual describes:

- How to install the DGP and enclosure (if applicable)

- How to connect other equipment to the DGP

This manual is intended for use only by trained Challenger installation and configuration technicians.

Mechanical, electrical, and environmental specifications

Mechanical	Physical dimensions		
	Enclosure (W x D x H)	mm	345 x 450 x 73
	PCB dimensions	mm	'A' size (85 x 176.5)
	Weight		
	Main board	g	300
	Mounted	kg	11
Electrical	Mains input Voltage	VAC	230 +10%, -15%, 50 Hz +/- 10%
	Transformer output	VAC	16, SELV Class I power limited
	Mains Fuse		M205 (5x20 mm) 630mA 250 VAC slow blow
	PCB AC input voltage	VAC	16, 21 absolute maximum
	Auxiliary Power Output		1.0 A at 12 VDC
	Current consumption (when supplied from fully charged 12 V battery)		64 mA (no peripheral devices fitted, EOL resistors fitted)
	Battery Type		7.2 Ah, 12 v Nom (BS127N)
	Battery cable fuse		M205 (5x20 mm) Time lag (slow blow)
	Current	A	8
	Voltage	VAC	250
	Example parts		Bel Fuse 0655R8000-19
			Schurter 0034.3126
			Shanghai Fullness GTL1800200
	OR		
	Battery cable fuse		3AG slow blow
	Current	A	8
	Voltage	VAC	250
	Example parts		Bel Fuse 3SB 8-R
			Schurter 8020.5020
			Littelfuse 0313008.HXP
Environmental	Room temperature		
	Storage	°C	-20 to +80
	Operating**	°C	0 to +50
	Relative humidity	%	0 to 93 non-condensing
	Location		Indoor. Dry area.
	IP Protection grade		IPX0
Enclosure details	Compatible enclosure		TS0307 (included)
			ENC-LGE (optional)

Product contents

Inspect the package and contents for visible damage. If any components are damaged or missing, do not use the unit; contact the supplier immediately. If you need to return the unit, you must ship it in the original box.

Table 1 below lists the items that are shipped with TS1020 DGPs.

Table 1: TS1020 DGP shipping list

Quantity	Item
1	Printed circuit board (PCB)
1	Installation Manual
1	Universal Enclosure (with four spring standoffs fitted)
1	16 VAC plug pack
1	Tamper switch
1	Tamper switch metal bracket
1	Ring terminal
1	M4 x 12 Allen head cap screw
5	M3 x 10 pan head screws
10	3-way plug-on screw terminal connectors
2	2-way plug-on screw terminal connectors
1	Red battery lead with QC terminal
1	Black battery lead with QC terminal
2	Link jumpers
1	1K 1/4 watt resistor
20	10K 1/4 watt resistors

Related documentation

If used with a Challenger10 panel, refer to the *Challenger10 Installation and Quick Programming Manual* for information about connecting the TS1020 DGP to a Challenger system.

If used with a Challenger V8 panel, refer to the *Challenger V8 & V9 Installation and Quick Programming Manual* for information about connecting the TS1020 DGP to a Challenger system.

Installing the Data Gathering Panel

Before you begin

When installing a DGP, or any other parts of the system, you need to be aware of requirements for cabling and earthing, and plan accordingly.

Notice! A qualified service person, complying with all applicable codes, should perform all required hardware installation.

See Figure 1 below for overall details of a TS1020 DGP installed in a TS0307 Universal Enclosure (supplied).

Figure 1: TS1020 board mounted in enclosure
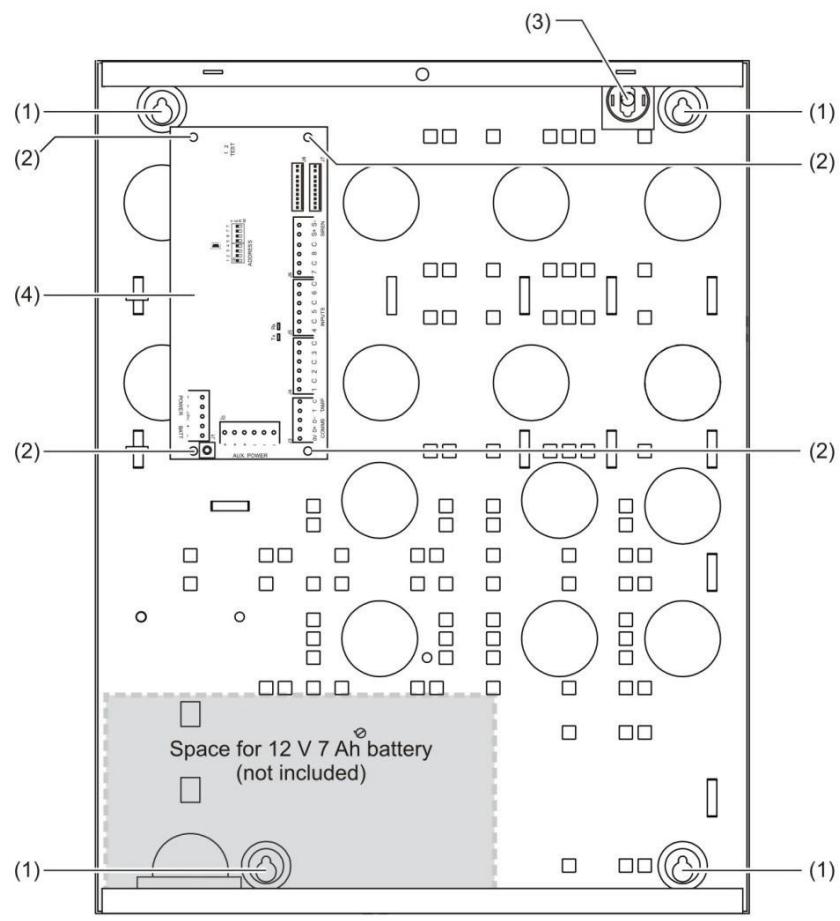
1. Enclosure mounting points
2. Board mounting points
3. Location of tamper switch
4. TS1020 board

Installation guidelines

DGPs are designed, assembled and tested to meet the requirements related to safety, emission and immunity with respect to environmental electrical and electromagnetic interference, as of current relevant standards.

In addition to the general installation guidelines, installers must adhere to any country dependent requirements of local applicable standards. Only a qualified electrician or other suitably trained and qualified person should attempt to wire this system to the mains.

- Mount the unit using screws or bolts through the four mounting holes in the base. Ensure that the unit is mounted on a flat, solid, vertical surface so that the base will not flex or warp when the mounting screws or bolts are tightened.

- Allow 50 mm clearance between the equipment enclosures mounted side by side, and 25 mm between the enclosure and any side wall or ceiling.

- The TS1020 DGP is powered via a 16 VAC plug pack (supplied). A power outlet (GPO) must be in proximity to the DGP. Only qualified Electricians should provide a GPO.

- If the upper and/or lower cabinet entry cable holes are used to route wiring into the DGP, always use a proper conduit fitting system by means of an appropriate conduit and junction box. For this purpose, use only materials of suitable flammability class.

- Avoid loops of wire inside the enclosure, and route cables so that they do not lie on top or underneath the printed circuit board. The use of cable ties is recommended and improves neatness of the wiring within the box.

- The batteries used with this unit must be made of materials of suitable flammability class (HB or better).

- Only use units in a clean environment and in low humidity.

Installation procedures

To mount the enclosure:

1. Fix the enclosure to the wall via the enclosure's four mounting holes (1) in Figure 1 on page 4.

    Make sure the enclosure is level, and the rear tamper switch (3) location isn't sitting over a line of mortar if you're installing the enclosure on a brick wall.

To mount the tamper switch:

   The two-way tamper switch detects removal of the cover from the enclosure, and removal of the enclosure from the wall.

1. Insert the tamper switch into its metal bracket.

2. Insert the bracket with tamper switch into the 1 cm slot on top right-hand side of the enclosure (3) in Figure 1 on page 4.

To mount the printed circuit board to the enclosure:

1. Remove the board from its antistatic bag.

2. Use four M3 x 10 pan head screws to fix the board to the enclosure's standoffs.

3. Slide the board's terminal connectors together and mount them to the board.

Earthing Instructions for cabinet

Two leads will be required to earth the cabinet to the enclosure door:

- One lead between the stud (see Figure 2a, item 1) and the earth point (see Figure 3, item 7) of the PCB. The required lead will be ring to ring and roughly 200mm long.

- One lead between the weld tab (see Figure 2a, item 2) and the stud on the cover (see Figure 2b, item 3). The required lead will be ring to female tab and roughly 300mm long.

Figure 2a: Enclosure base
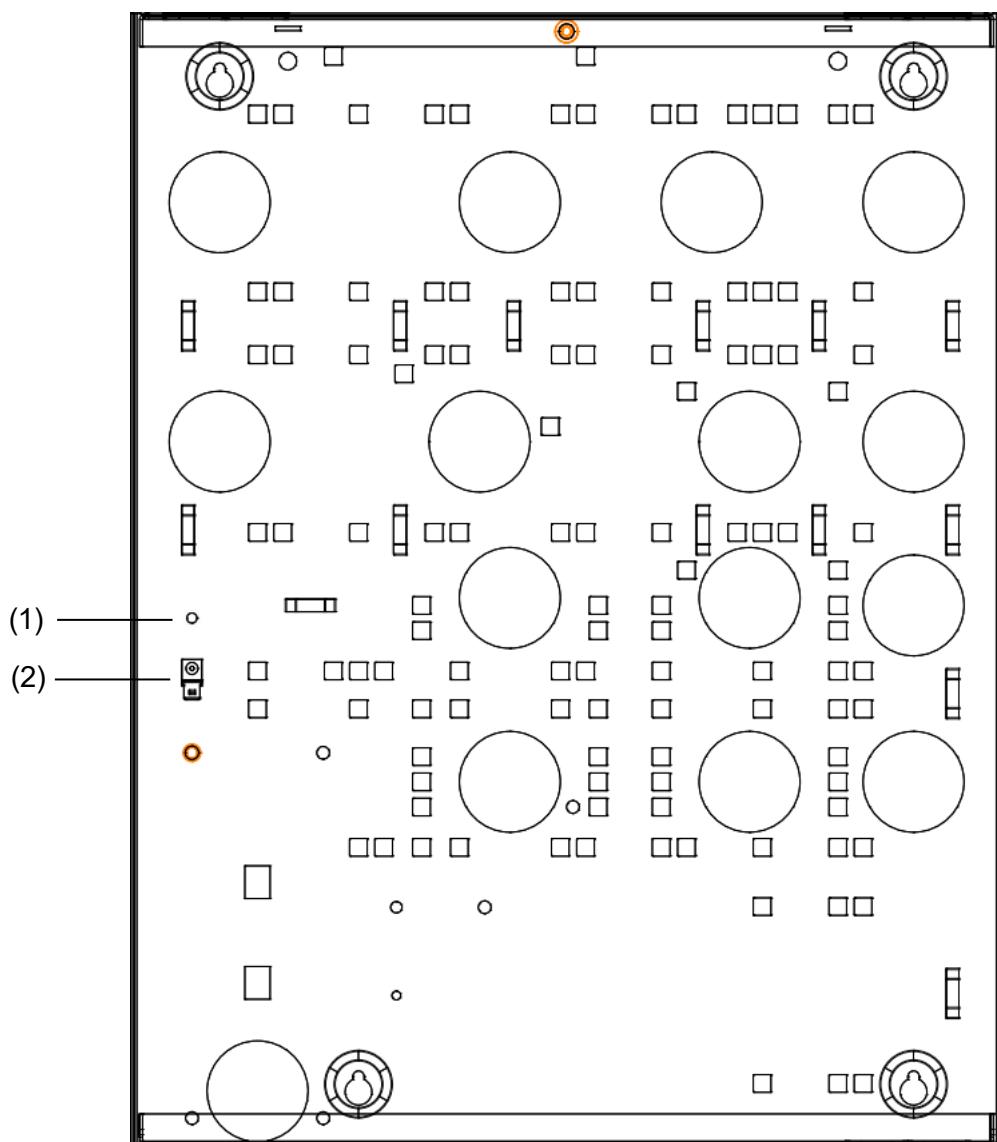
Figure 2b: Inside of enclosure cover
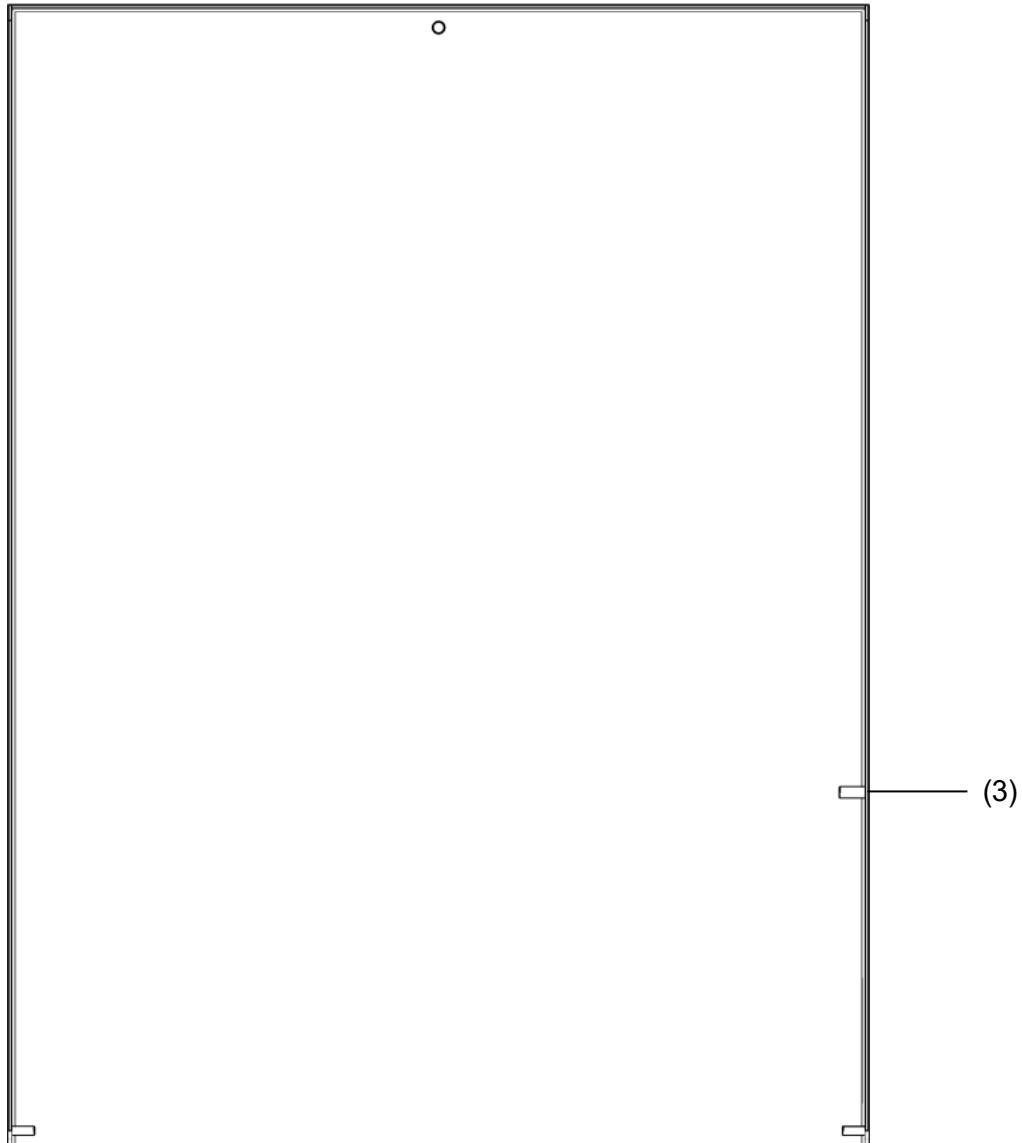
Figure 2a and Figure 2b legend

Item	Description
1.	Earth Stud
2.	Weld tab
3.	Earth Stud

To set the LAN address:

Configure the DGP address in the range 1 to 16 using the DIP switch. Refer to "DIP switch settings" on page 8.

DIP switch settings

DGPs must be addressed in the range 1 to 16. Use the first four segments of the eight-segment DIP switch to set the address (Figure 3 on page 10, item 2).

Table 2: DGP addressing, DPG DIP switches, and input and relay numbering

LAN	Address	Polled as	SW1	SW2	SW3	SW4	Inputs	Relays
LAN 1	DGP 1	DGP 1	I	O	O	O	17 to 48	17 to 32
LAN 1	DGP 2	DGP 2	O	I	O	O	49 to 80	33 to 48
LAN 1	DGP 3	DGP 3	I	I	O	O	81 to 112	49 to 64
LAN 1	DGP 4	DGP 4	O	O	I	O	113 to 144	65 to 80
LAN 1	DGP 5	DGP 5	I	O	I	O	145 to 176	81 to 96
LAN 1	DGP 6	DGP 6	O	I	I	O	177 to 208	97 to 112
LAN 1	DGP 7	DGP 7	I	I	I	O	209 to 240	113 to 128
LAN 1	DGP 8	DGP 8	O	O	O	I	241 to 272	129 to 144
LAN 1	DGP 9	DGP 9	I	O	O	I	273 to 304	145 to 160
LAN 1	DGP 10	DGP 10	O	I	O	I	305 to 336	161 to 176
LAN 1	DGP 11	DGP 11	I	I	O	I	337 to 368	177 to 192
LAN 1	DGP 12	DGP 12	O	O	I	I	369 to 400	193 to 208
LAN 1	DGP 13	DGP 13	I	O	I	I	401 to 432	209 to 224
LAN 1	DGP 14	DGP 14	O	I	I	I	433 to 464	225 to 240
LAN 1	DGP 15	DGP 15	I	I	I	I	465 to 496	241 to 256
LAN 2	DGP 1	DGP 17	I	O	O	O	497 to 528	257 to 272
LAN 2	DGP 2	DGP 18	O	I	O	O	529 to 560	273 to 288
LAN 2	DGP 3	DGP 19	I	I	O	O	561 to 592	289 to 304
LAN 2	DGP 4	DGP 20	O	O	I	O	593 to 624	305 to 320
LAN 2	DGP 5	DGP 21	I	O	I	O	625 to 656	321 to 336
LAN 2	DGP 6	DGP 22	O	I	I	O	657 to 688	337 to 352
LAN 2	DGP 7	DGP 23	I	I	I	O	689 to 720	353 to 368
LAN 2	DGP 8	DGP 24	O	O	O	I	721 to 752	369 to 384

LAN	Address	Polled as	SW1	SW2	SW3	SW4	Inputs	Relays
LAN 2	DGP 9	DGP 25	I	O	O	I	753 to 784	385 to 400
LAN 2	DGP 10	DGP 26	O	I	O	I	785 to 816	401 to 416
LAN 2	DGP 11	DGP 27	I	I	O	I	817 to 848	417 to 432
LAN 2	DGP 12	DGP 28	O	O	I	I	849 to 880	433 to 448
LAN 2	DGP 13	DGP 29	I	O	I	I	881 to 912	449 to 464
LAN 2	DGP 14	DGP 30	O	I	I	I	913 to 944	465 to 480
LAN 2	DGP 15	DGP 31	I	I	I	I	945 to 976	481 to 496
LAN 2	DGP 16	DGP 32	O	O	O	O	977 to 1008	497 to 512

Legend: I = ON, O = OFF

Set the DIP switch segment 5 to ON if the DGP controls more than 16 inputs (when two or three eight-input expansion modules are fitted).

Set the DIP switch segment 6 to ON if a TS0841 or TS0842 relay controller is connected to J8, or OFF if a TS0840 4-Way Relay Card is connected.

Set the DIP switch segment 8 to ON if LAN termination is required (see "Terminating the RS-485 LAN" on page 12).

Note: If used with a Challenger V8 panel, the rows marked "LAN 2" in Table 2 on page 8 do not apply. Refer to the *Challenger V8 & V9 Programming Manual* for input and relay numbering.

Connections

See Figure 3 on page 10 for the locations of connectors and other items.

Figure 3: TS1020 DGP board details
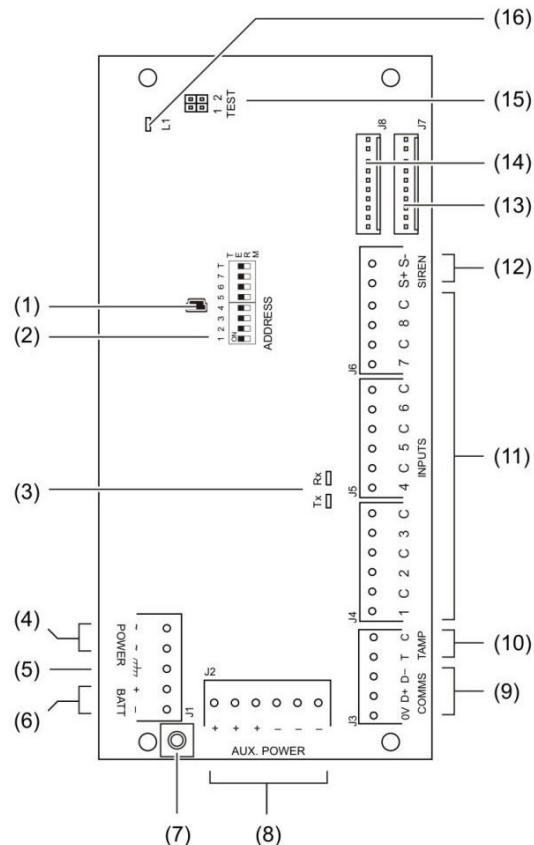
Figure 3 legend

Item	Description
1.	USB port.
2.	Configuration DIP switch. Refer to "DIP switch settings" on page 8.
3.	Tx and Rx LED. See "LED indications" on page 16.
4.	Connect the AC terminals to 16 VAC plug pack.
5.	Connect the plug pack earth wire (green) to the power earth terminal.
6.	Connect the + and – terminals to a 12 V sealed lead acid battery (7.0 Ah maximum), not supplied.
7.	Connect one end of the LAN cable shield to the ring terminal and fasten with M3 screw to the DGP board's LAN earth terminal.
8.	Connect the + and – auxiliary power output terminals to devices that require 12 Volt DC power, such as detectors or arming stations on the RS-485 LAN. See "Auxiliary power terminals" on page 12.
9.	Connect the 0V, D+ and D– terminals to the system RS-485 LAN.
10.	Connect the T and C terminals to the panel tamper switch (supplied). Short circuit for sealed, open circuit for unsealed. Must be sealed if not used. Use only normally closed contacts such as the panel tamper switches.
11.	Zone input terminals. See "Zone inputs" on page 14.

Item	Description
12.	The S+ and S– terminals may be used according to "Siren mode" on page 21:
	• In standard siren mode connect the S+ and S– terminals to an 8 Ω siren speaker. Alternatively, connect a 1k Ω resistor across S+ and S– terminals if a siren or siren speaker are not connected.
	• In DC Volts siren mode connect the S+ and S– terminals to a device that requires 12 Volt DC power when the DGP's siren relay is active.
13.	J7 10-way cable socket for optional eight-input expansion modules.
14.	J8 10-way cable socket for TS0840, TS0841, or TS0842 relay or output expansion modules.
15.	Test links 1 and 2 are used as part of the firmware upgrade procedure. See "Upgrading the firmware" on page 17.
16.	L1 LED. See "LED indications" on page 16.

Figure 4 below details the wiring for terminal blocks J1, J2, J3, and J6.

Figure 4: Connection details for terminal blocks J1, J2, J3, and J6
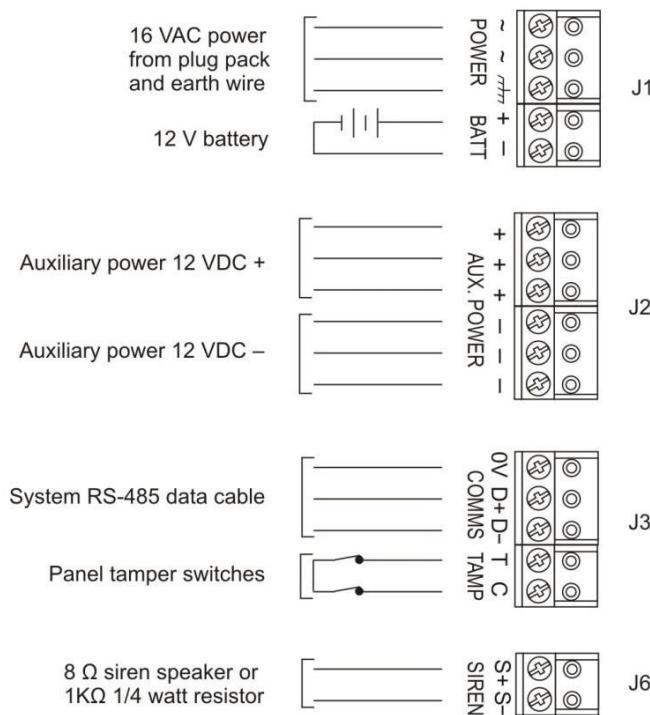
16 VAC plug pack

Notes:

• Use the 16 VAC plug pack supplied with the DGP.

• When installing plug packs, do not power the unit until you have terminated all necessary wires 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.

12 V Battery

The TS1020 should be connected to a 12 V 7.2 Ah battery compliant with IEC 61056-1 or IEC 61056-2.

A fuse is required in the positive lead of each battery, as fitted in the supplied battery leads; a spare is not provided. Refer to the label on the battery cable to identify the suitable fuse options specified in the Electrical section of Specifications on page 2.

⚠️ **CAUTION**

RISK OF EXPLOSION IF Battery IS REPLACED by INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Auxiliary power terminals

Connect the + and – auxiliary power output terminals to devices that require 12 VDC power, such as detectors. Three sets of auxiliary power output terminals are provided: if you need more than three connections you can use a TS0844 Power Distribution Board to increase the number of terminals.

Note: The maximum current draw for all auxiliary devices (excluding siren), must not exceed 1.0 A (1000 mA).

RS-485 LANs

Use 2-pair twisted shielded data cable such as Belden 8723 to connect the DGP to the Challenger panel or to an Intelligent Access Controller.

• Connect the 0V terminal to the black wire.

• Connect the D+ terminal to the white wire. The D+ terminal is data positive.

• Connect the D– terminal to the green wire. The D– terminal is data negative.

• Connect the data cable shield to the LAN earth connection (Figure 3 on on page 10, item 7).

Terminating the RS-485 LAN

All Challenger LAN devices (including the panel) use a 470 Ω LAN termination resistor where required. LAN termination resistors are used to set the impedance of the LAN to around 220 Ω in order to minimise noise. The termination resistor may be external or onboard (where a link or DIP switch is used to set the LAN termination to ON).

A Challenger LAN should have only two devices with the LAN termination set to ON:

• In a straight LAN configuration the termination is ON at the Challenger panel and the most distant device.

• In a star LAN configuration the termination is ON at the two devices that are the furthest apart (and OFF at the Challenger panel).

In a completely-connected (but powered down) system, you can check for correct LAN termination by measuring the resistance across the D+ and D– terminals:

• 0 Ω indicates a short circuit in the cabling

• 160 Ω or less indicates that three or more devices are terminated

• 220 Ω is good (two devices are terminated)

• 470 Ω or more indicates that less than two devices are terminated

Zone inputs

Zone inputs are also known as alarm inputs. A Challenger10 system can receive alarm signals from up to 1008 zone inputs, including the Challenger panel's 16 onboard inputs. Each pair of zone input terminals may be connected to an alarm system device, such as a detector or reed switch.

Additional zone inputs, numbered in the range 17 to 1008, are provided via DGPs, Wireless Data Gathering Panels (WDGPs) and Intelligent Access Controllers on the Challenger10's two system LANs.

By default, the Challenger system can monitor zone inputs for four states (sealed, unsealed, open circuit, and short circuit). This is accomplished by using two 10 kΩ end-of-line (EOL) resistors in each zone input circuit, as shown in Figure 5 below.

Note: The EOL resistor value is configurable via the programming option "EOL resistor" on page 20. The default value is 10K, and all examples in this manual are based on the default value. Use only 10K in a Challenger V8 system.

Install EOL resistors in zone input circuits at the end of the circuit. If an alarm device is connected, place the EOL resistors at the device's connections. If a zone input is not used, you don't need to connect an EOL resistor if you program the corresponding input number as type 10 (spare).

Tip: Use sleeves on the resistor leads to prevent accidental shorting.

Figure 5: Four-state monitored zone input circuits
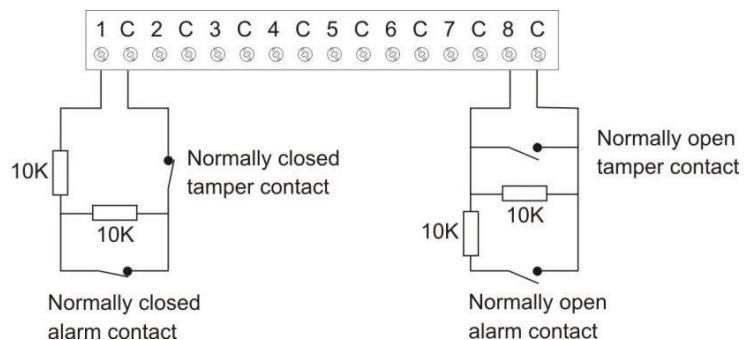
When four-state monitoring is used, the panel uses the circuit's resistance to determine the state of the zone input. When the default 10K EOL value is used:

- 10 kΩ indicates sealed
- 5 kΩ or 20 kΩ indicates unsealed
- Open circuit indicates input tamper
- Short circuit indicates input tamper

To use four-state monitoring for all zone inputs, input tamper monitoring must be set to Yes (Install menu option 7, System Options) for the Challenger panel.

Alternatively, the Challenger system can be configured to monitor zone inputs for two states (sealed and unsealed). This is accomplished by using one 10 kΩ resistor in each circuit, as shown in Figure 6 on page 15.

Figure 6: Two-state monitored zone input circuits
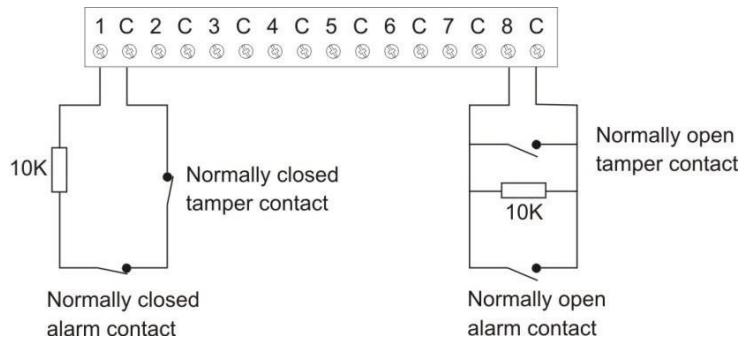
The panel uses the circuit's resistance to determine the state of the zone input. When the default 10K EOL value is used:

• 10 kΩ indicates sealed

• Open circuit or short circuit indicates unsealed

To use two-state monitoring for all zone inputs, input tamper monitoring must be set to No (Install menu option 7, System Options) for the Challenger panel.

Note: Two-state monitoring is not compatible with input types 33 or 40. See the *Challenger Programming Manual* for details.

Relay or outputs

Challenger10 supports 512 relays:

• Panel relays are numbered 1 to 16 (relay 2 operates the strobe). Higher relay numbers can be used at the risk of duplication (for example, relay 17 on both the panel and DGP 1 can activate simultaneously).

• LAN 1 can have 15 DGPs with relays numbered 17 to 256.

• LAN 2 can have 16 DGPs with relays numbered 257 to 512.

• Each DGP address uses the 16th relay number for the siren

output. Refer to Table 2 on page 8 for details of relay numbering.

Connecting expansion modules

Input expansion

TS1020 DGPs have eight zone input circuits. The DGP has a cable socket at J7 that may be used to connect (in series) up to three TS0021 or TS1021 eight-input expansion modules to increase the quantity of inputs to 32.

Refer to Table 2 on page 8 for details of input numbering.

Notes:

- Input numbers higher than 999 cannot report CID alarms.

- Input numbers higher than 999 cannot be programmed via Forcefield management software.

Relay and output expansion

The DGP has a cable socket at J8 that may be used to connect the following:

- TS0840 Four-Way Relay Expansion Board (a second TS0840 can be connected to the first, for a total of eight relays)

- TS0841 Eight-Way Clocked Relay Expansion Board (a second TS0841 can be connected to the first, for a total of 16 relays)

- TS0842 16-Way Clocked Open Collector Expansion Board

LED indications

Rx and Tx LEDs

Rx and Tx LEDs on the PCB (Figure 3 on page 10, item 3) indicate the state of the system LAN:

- Rx flashing indicates polling data being received from the RS-485 LAN. No flashing indicates a fault with the LAN, the Challenger panel, or the Four-Lift Controller.

- Tx flashing indicates the DGP is replying to polling from the RS-485 LAN. Tx off indicates that the DGP is not correctly addressed or is not being polled.

L1 LED

The L1 LED on the PCB (Figure 3 on page 10, item 16) flashes slowly to indicate normal operation, and flashes quickly during firmware update (see "Upgrading the firmware" on page 17).

Powering up the DGP

Before applying power, check the following:

- The DGP address is correctly set ("DIP switch settings" on page 8).

- The DGP is connected to the RS-485 LAN at J3.

- The DGP address is being polled.

- If connected to a Challenger panel ensure the DGP type is programmed as "Standard" in the Challenger Install menu option 4, DGP Database.

After power-up, check the Rx and Tx LEDs. See "LED indications" above.

Upgrading the firmware

The installation process optionally includes upgrading the DGP's firmware. This section describes how to upgrade the DGP's firmware via USB connection to a Windows computer.

Note: During the upgrade process, the Challenger panel will not be able to receive or report alarm signals from the DGP. We recommend that you follow the general instructions listed in the *Challenger Programming Manual*, "Recommended routine maintenance procedures", in particular, to notify the alarm monitoring company and personnel on the premises (if applicable).

Requirements

To upgrade the firmware you need the following:

• A powered and functioning DGP

• A Windows PC with a USB 2.0 port

• Tecom Firmware Loader application

• Access to the DGP's printed circuit board (PCB)

• A USB cable (Type A Male to Type B Mini Male) to connect the Windows computer to the DGP's PCB

• Firmware upgrade file

Upgrade process

To upgrade the DGP's firmware:

1. Disconnect the DGP's power supply.

2. Fit test links 1 and 2 (Figure 3 on page 10, item 15).

3. Reconnect power to the DGP. LED L1 will blink rapidly (Figure 3 on page 10, item 16).

4. Use the USB cable to connect the computer to the DGP's USB port (Figure 3 on page 10, item 1).

   The first time you connect a DGP to the computer's USB port, the Found New Hardware Wizard may display. If the Found New Hardware Wizard does not display, go directly to step 9.

5. If the wizard asks "Can Windows connect to Windows Update to search for software?", click to select the "No, not this time" radio button, and then click Next.

6. If the wizard asks "What do you want the wizard to do?", click to select the "Install from a list or specific location" radio button, and then click Next.

7. Click to select the "Search for the best driver in these locations" radio button, and then browse to include the location of the Tecom Firmware Loader application in the search (for example, C:\Program Files\Tecom Firmware Loader\inf_driver).

8. Run Tecom Firmware Loader (for example, double-click the file C:\Program Files\Tecom Firmware Loader\tecom-fw-loader_Vn.n.exe).

When you run it will tell you if the device is ready, otherwise you can't select a file.

9. Click Select File… and then browse to the location of the firmware upgrade file on your computer. Select the file and then click Open.

10. Click Program File… to update the DGP firmware. The process will take several minutes. The percentage completion displays at the bottom of the window. When finished, a "Programming is complete" message displays.

11. Remove the USB cable from the DGP.

12. Disconnect the DGP's power supply.

13. Remove test links 1 and 2.

14. Reconnect power to the DGP.

15. Use DGP menu option 4 to display the DGP version number. It should display the new version number. See "Version" on page 22.

16. We recommend that you also default the DGP's programming. Use DGP menu option 5 to reset all custom programming. See "Factory Defaults" on page 22.

Programming guide

Introduction

TS1020 DGPs have a number of options that are programmable at the time of installation to help integrate the DGP into the local environment.

Use the following steps to configure a DGP at address *nn* (where *nn* is a DGP address in the range 1 to 15 and 17 to 32). If used on a Challenger V8 system use only DGP addresses in the range 1 to 15.

Use the Install menu option 28–Remote Controllers, and then select option 1–DGP.

Press the buttons that correspond with DGP address *nn*, and then press the # button (or press the Enter # key).

> **TS1020 Analog DGP**
> **0–Exit, Menu:**

Enter a number to select the DGP menu options:

- Press [1] [ENTER] to program the DGP's options. See "Setup DGP Options" below.

- Press [2] [ENTER] to display the DGP's power use. See "DGP Voltage & Current" on page 21.

- Press [3] [ENTER] to display the resistance values of one or more of the DGP's input circuits. See "Measure EOL Resistors" on page 22.

- Press [4] [ENTER] to display the DGP's firmware version number. See "Version" on page 22.

- Press [5] [ENTER] to reset the DGP to default programming. See "Factory Defaults" on page 22.

The DGP menu options are described in the following sections.

Setup DGP Options

> **1–Setup DGP Options**
> **0–Exit, Menu:**

The DGP setup options are described in the following sections:

- "EOL resistor" on page 20
- "Input reset timer" on page 20
- "Siren mode" on page 21
- "Expander type" on page 21

EOL resistor

Challenger systems normally use the default 10 kΩ end-of-line (EOL) resistor value to detect the electrical states of input circuits. This option is used to apply a different EOL resistor value to the zone inputs connected to the DGP.

Note: Use only 10 kΩ EOL resistors in a Challenger V8 system.

At the Setup DGP Options menu press [1] [ENTER] to program the EOL resistor value.

```
EOL Resistor: 0–10K Ohm
Code:
```

Note: Accessing this option via a TS1001 Touch Screen RAS may display the RAS's home screen. Press the "Classic" button to continue.

Challenger systems normally use the default 10 kΩ end-of-line (EOL) resistor value to detect the electrical states of input circuits. This option is used to apply a different EOL resistor value to the zone inputs connected to the DGP.

Refer to the *Challenger10 Installation and Quick Programming Manual* REV 03 (or later) for the expected resistance values for sealed (normal) and unsealed (active) states for each EOL resistor option.

Enter a number to select the following EOL resistor values:

- Press [0] [ENTER] for 10K (default)
- Press [1] [ENTER] for 4K7
- Press [2] [ENTER] for 2K2
- Press [3] [ENTER] for 6K8
- Press [4] [ENTER] for 5K6
- Press [5] [ENTER] for 3K7
- Press [6] [ENTER] for 3K3
- Press [7] [ENTER] for 2K0 (see notes below)
- Press [8] [ENTER] for 1K5 (see notes below)
- Press [9] [ENTER] for 1K0 (see notes below)
- Press [10] [ENTER] for 2K2/6K8 (see notes below)

Notes

- The 2K0, 1K5, and 1K0 options are not compatible with inputs connected via TS0021 Eight-Input Expansion Modules.

- The 2K2/6K8 option is not compatible with alarm devices using normally open (NO) alarm contacts, and will result in the input indicating unsealed when it is sealed.

Press [ENTER] to move to the next setup option.

Input reset timer

Certain input devices can bounce upon resealing and register nuisance sealed and unsealed changes. You can program a pause for the DGP to wait before reporting inputs as reset via the input reset timer.

```
Input Reset Timer: 3
Time (Sec):
```

Enter the number of seconds in the range 0 to 15, and then press [ENTER]
to move to the next setup option.

Siren mode

The onboard siren output can be configured for use with a standard siren, or for
use with an integrated siren/strobe unit that requires a 12 V DC supply.

Alternatively, the 12 V DC output can be used for a device that requires 12 Volt
DC power when the DGP's siren relay is active.

```
Siren Mode: 0–Standard Siren
Mode:
```

Enter 0 for standard siren, or enter 1 for DC Volts mode. Press [ENTER] to
return to the Setup DGP Options menu.

Expander type

If the DGP has one or more eight-input expansion modules connected, you
need to specify whether TS0021 or TS1021 modules are used.

```
Input Expander 1: TS0021 (V8)
*–Chg, 0–Exit:
```

Press [MENU*] to toggle between TS0021 or TS1021 modules. Press [ENTER]
to save the displayed information and move to the next option.

If additional expanders are connected, then you must specify the expander
types for Input Expander 2 and Input Expander 3. These options display
automatically if DIP switch segment 5 to set to ON.

DGP Voltage & Current

At the Setup DGP Options menu press [2] [ENTER] to display the DGP's and
the battery's electrical condition.

```
DGP: 13.72V, 0.03A Battery: –0.06A
Next or Enter
```

Press [NEXT] to update the display. Press [ENTER] to exit.

Measure EOL Resistors

At the Setup DGP Options menu press [3] [ENTER] to display the approximate resistance values of one or more of the DGP's input circuits.

```
Measure EOL Resistors
Input No (0–All)
```

If you select 0-All, the resistance of the first four input circuits is shown.

```
1–10K1, 2–10K0, 3–10K1, 4–10K1
Next or Enter
```

Press [NEXT] to update the display. Press [ENTER] to see the next four input circuits, and repeat to see each group of four (to either 16 or 32 inputs configured for this DGP). After viewing all the inputs, press [ENTER] to exit.

Version

At the Setup DGP Options menu press [4] [ENTER] to display the DGP's firmware version information.

```
(C) 2025 KGS Fire & Security P/L V01-02.05170
```

Press [ENTER] to display the firmware build date.

```
Build Date: Aug 1 2013 at 11:45:44
```

Press [ENTER] to display the bootloader version.

```
Bootloader Ver:
V02-03.03433
```

Press [ENTER] to exit.

Factory Defaults

At the Setup DGP Options menu press [5] [ENTER] to reset the DGP's programming to default.

```
Restore Factory Defaults?
1–Yes, ENTER–No:
```

Press [1] to restore or press [ENTER] to exit.