# Eight-Input Expansion Module Installation Sheet

Description / Operation

Eight-Input Expansion Modules add eight inputs to TS0820, TS0824, TS0866 and TS1020 DGPs.

This Installation Sheet applies to models TS0021 and TS1021 expansion modules:

- TS0021 expansion modules (green PCB) may be used with Challenger10-series TS1020 Analogue DGPs, and with Challenger V8-series TS0820, TS0824, and TS0866 Data Gathering Panels (DGPs).

- TS1021 expansion modules (blue PCB) may be used with Challenger10-series TS1020 Analogue DGPs.

Figure 1: Eight-Input Expansion Module
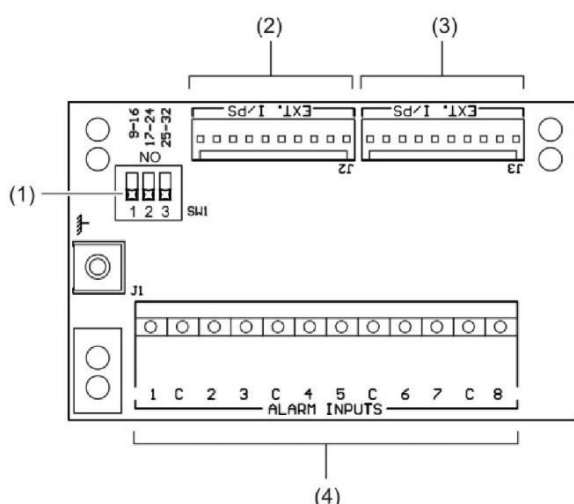
1. Configuration DIP switch

2. J2 connector for ten-way cable from DGP or from previous expansion module

3. J3 connector for ten-way cable to next expansion module

4. Input terminals

Expansion modules have a pair of ten-way connectors, and one cable. One module can be plugged into a DGP's J7 connector, and two additional modules can be daisy-chained to the first, subject to the following:

- TS0820, TS0824, and TS1020 DGPs have eight onboard inputs. Up to three expansion modules can be daisy-chained to increase the quantity of inputs to 32.

- TS0866 Intelligent 4-Door Controllers have eight onboard inputs. One TS0021 module can be used to increase the quantity of inputs to 16.

The added inputs are numbered according to "Input numbering" on page 2.

Product contents

Quantity	Item
1	Eight-Input Expansion Module with ten-way cable
1	Installation Sheet
1	Ring terminal
4	Three-way plug-on screw terminal connectors
5	M3 x 10 mm pan head screws
4	PCB standoffs
18	10 kΩ 1/4 W resistors

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.

Installation

Expansion modules are mounted on standoffs (supplied) using M3 x 10 mm pan head screws (supplied) inside the DGP enclosure. The PCB is size B.

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

To install the module:

1. Disconnect the plug pack and battery from the DGP.

2. Insert four standoffs (supplied) into the DGP enclosure at a location suitable for the ten-way cable to connect the expansion module to the DGP, or other expansion module, as needed.

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

4. Use four M3 x 10 pan head screws to fix the module to the standoffs.

5. Connect the ten-way cable to the J2 connector on the expansion module.

6. Connect the ten-way cable to the J7 connector on the DGP, or other expansion module, as needed.

7. Connect the required input cables to the input terminals. See "Input wiring" on page 2.

8. Configure the expansion module's three-segment DIP switch, and (if applicable) the DGP's DIP switch (see "Configuration settings" on page 2).

9. Reapply power to the DGP.

Configuration Setting

Configure the module's position in relation to the DGP using the three-segment DIP switch (Figure 1 on page 1, item 1).

Table 1: DIP switch settings

Module position	SW1	SW2	SW3
First (connected to the DGP)	I	O	O
Second*	O	I	O
Third*	O	O	I

Legend: I = ON, O = OFF

* If more than one expansion module is connected to a DGP, then segment 5 in the DGP's eight-segment DIP switch must be set to ON.

Input wiring

By default, the Challenger system can monitor 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 input circuit.

Notes:

- The TS1020 DGP's onboard inputs (and inputs connected via TS1021 Eight-Input Expansion Modules) may be configured to use a different EOL resistor value (not 10 kΩ), in which case you must use resistors of appropriate value in each input circuit.

- TS0021 Eight-Input Expansion Modules do not support 1K0, 1K5 or 2K0 EOL values.

To use two-state monitoring for all inputs, Input Tamper Monitoring must be set to No (Install menu option 7, System Options).

See *Challenger Installation and Quick Programming Manual* for details about wiring four-state and two-state monitored input circuits.

Install EOL resistors in input circuits at the end of the circuit. If an alarm device is connected, place the EOL resistors at the device's connections. If an 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.

Input numbering

Challenger input numbers are assigned according to Table below.

Table 2: Challenger10 and Challenger V8 input numbers

Panel or DGP	V10 inputs	V8 inputs
Challenger panel	1 to 16	1 to 16
LAN 1, DGP 1	17 to 48	17 to 32 (or 48*)
LAN 1, DGP 2	49 to 80	33 to 48 (or 64*)
LAN 1, DGP 3	81 to 112	49 to 64 (or 80*)
LAN 1, DGP 4	113 to 144	65 to 80 (or 96*)
LAN 1, DGP 5	145 to 176	81 to 96 (or 112*)
LAN 1, DGP 6	177 to 208	97 to 112 (or 128*)
LAN 1, DGP 7	209 to 240	113 to 128 (or 144*)
LAN 1, DGP 8	241 to 272	129 to 144 (or 160*)
LAN 1, DGP 9	273 to 304	145 to 160 (or 176*)
LAN 1, DGP 10	305 to 336	161 to 176 (or 192*)
LAN 1, DGP 11	337 to 368	177 to 192 (or 208*)
LAN 1, DGP 12	369 to 400	193 to 208 (or 224*)
LAN 1, DGP 13	401 to 432	209 to 224 (or 240*)
LAN 1, DGP 14	433 to 464	225 to 240 (or 256*)
LAN 1, DGP 15	465 to 496	241 to 256
LAN 2, DGP 17	497 to 528	N/A
LAN 2, DGP 18	529 to 560	N/A
LAN 2, DGP 19	561 to 592	N/A
LAN 2, DGP 20	593 to 624	N/A
LAN 2, DGP 21	625 to 656	N/A
LAN 2, DGP 22	657 to 688	N/A
LAN 2, DGP 23	689 to 720	N/A
LAN 2, DGP 24	721 to 752	N/A
LAN 2, DGP 25	753 to 784	N/A
LAN 2, DGP 26	785 to 816	N/A
LAN 2, DGP 27	817 to 848	N/A
LAN 2, DGP 28	849 to 880	N/A
LAN 2, DGP 29	881 to 912	N/A
LAN 2, DGP 30	913 to 944	N/A
LAN 2, DGP 31	945 to 976	N/A
LAN 2, DGP 32	977 to 1008	N/A

* A Challenger V8 DGP address with more than 16 inputs makes the next DGP address unusable.

Regulatory information

NOTICE! 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 KGS Fire and Security Australia Pty Ltd (trading as Aritech) 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.

Contact information

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