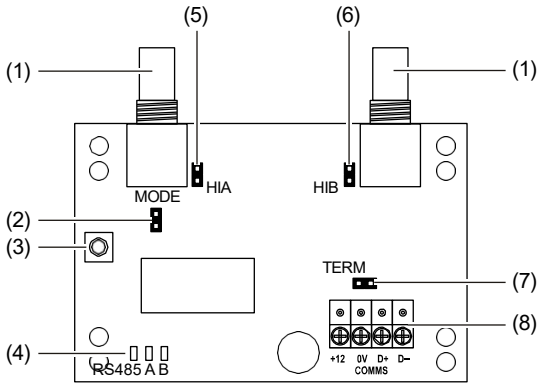
TS0896 RS-485 LAN to Optical Fibre Interface Installation Sheet

Figure 1: TS0896 printed circuit board (PCB) details



(1) Optical fibre connections (standard ST bayonet fitting)

(2) Mode link

(3) Earth lug

(4) LEDs

(5) HIA link for high power on channel A

(6) HIB link for high power on channel B

(7) RS-485 LAN termination link

(8) Power and RS-485 data terminals

Description

The TS0896 RS-485 LAN to Optical Fibre Interface is a multi-purpose optical fibre interface to the RS-485 Challenger LAN.

TS0896 modules also provide electrical isolation between components on a Challenger LAN. LAN isolation is used where the LAN wiring extends to separate buildings, and must use more than one common earth system.

The TS0896 has two operating modes:

- Mode A provides a dual optical fibre connection to one other TS0896 module.
- Mode B provides a single optical fibre connection to up to two more TS0896 modules in a multi-drop configuration.

See Figure 2 on page 2 for details.

For fault diagnosis, the board has LEDs to indicate the status of the RS-485, Port A, and Port B connections.

The TS0896 has a standard Tecom 'B' board footprint, and can be mounted in its enclosure (supplied with model TS0896) or in existing metalwork.

Product contents

Quantity	Item
1	TS0896 RS-485 LAN to Optical Fibre Interface
2	2-way plug-on screw terminal
4	M3x10 pan-head Phillips screw
4	PCB support stand off
1	Ring terminal
1	Enclosure (not applicable to board-only model TS0896B)
1	Installation Sheet

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

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

Refer to the *Challenger V8 & V9 Installation and Quick Programming Manual*, REV 7.0 (or later) for our latest recommendations.

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

RS-485 LAN termination

If required, place a jumper over the RS-485 LAN termination pins (see Figure 1 above, item 2).

If the TS0896 is the last device on the RS-485 LAN, the LAN termination should be ON. In a star wiring configuration, the RS-485 LAN may consist of a number of cable runs (branches). LAN termination should be set to ON only at the devices at the far ends of the two longest branches.

A star LAN that has multiple branches in excess of 100 m may need to use TS0893 Isolated RS-485 to RS-485 Interface modules to isolate the LAN segments that do not have LAN termination set to ON.

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Power supply and RS-485

The functions of the power and comms terminals (Figure 1 on page 1, item 3) are listed below.

+12	+12 VDC supply (LAN + or external power, if used)
0V	–12 VDC supply (LAN 0V and external power, if used)
D+	Positive data connection of the RS-485 LAN
D–	Negative data connection of the RS-485 LAN

We recommend that you use 2-pair twisted shielded data cable (such as Belden 8723) for the RS-485 LAN.

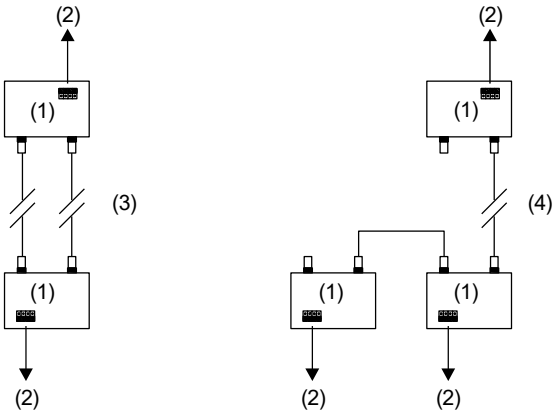
Application

Two modes of operation are selectable via the Mode link (Figure 1 on page 1, item 2):

- **Mode A (link fitted):** Two separate uni-directional optical fibre cables are used, one for transmitting and one receiving. The two optical fibre connectors work like a dual motorway, where one connector transmits data to the RS-485 port and the other receives data from the RS-485 port.
- **Mode B (link not fitted):** Two independent bi-directional optical fibre cables are supported for use in a multi-drop formation. All data received from optical fibre port A is transmitted to both optical fibre ports B and the local RS-485 port. All data received from the optical fibre port B is transmitted to both optical fibre port A and the local RS-485 port. In turn, all data received from the local RS-485 port is transmitted to both optical fibre ports.

Gain control is fixed internally (non-adjustable).

Figure 2: Mode A and B applications



(1) TS0896 module

(2) Challenger RS-485 LAN

(3) Dual optical fibre

(4) Single optical fibre

LED indications

When connected and powered, LEDs (Figure 1 on page 1, item 1) indicate system status:

- **RS-485** — Transmitting on RS-485
- **A** — Transmitting on fibre channel A
- **B** — Transmitting on fibre channel B

Specifications

Voltage	10.5 to 13.8 VDC
Max. operating current	60 mA @ 13.5 V (when transmitting at high power on both fibres simultaneously)
PCB dimensions	Tecom ‘B’ size
Enclosure dimensions (W × H × D)	274 x 364 x 75 mm
Optical fibre cable	
Fibre size	62.5/125 µm
Wavelength	850 nm
Test distance	1.5 km
Operating environment	
Operating temperature	0 to 70°C
Relative humidity	0 to 95% noncondensing

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

Regulatory information

Manufacturer	KGS Fire and Security Australia Pty Ltd Suite 4.01, 2 Ferntree Place, Notting Hill VIC, 3168, Australia
Year of manufacture	The first two digits of the product serial number (located on the product identification label) are the year of manufacture.
Compliance	N4131

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.

Warning: Class 1 laser product.

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

For contact information, see www.aritech.com.au

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