

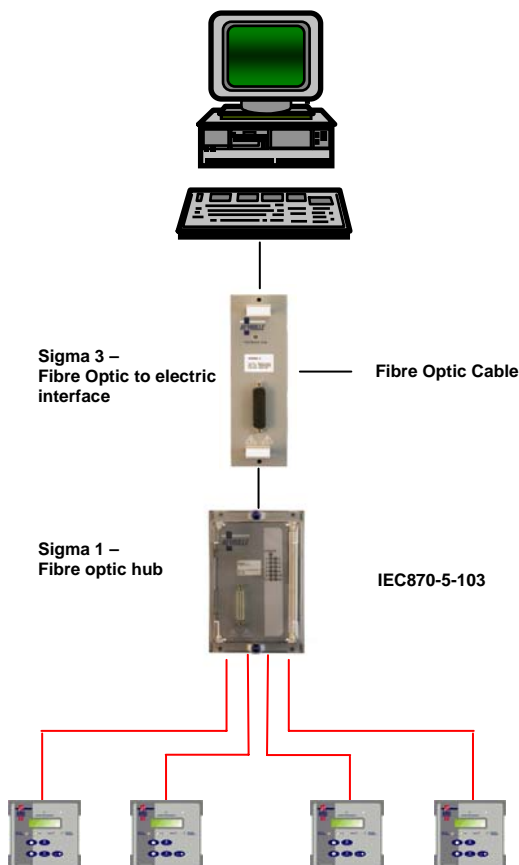
FIBRE OPTIC HUB – 7SG24 - SIGMA 1

INTRODUCTION

Complementing the relay product ranges, Sigma 1 provides a star topology for IEC-870 fibre-optic relay communications.

Argus and Modular II relays may be connected in a ring, but if one relay is taken out of service, all relays will lose their communication link.

Sigma 1 connects directly to each relay over a pair of fibres, and concentrates them into a single fibre channel to a master controller in a "star" arrangement. This allows any relay to be removed without affecting the communications to other relays.



FEATURES

- For use with all Reyrolle Protection relays employing a fibre optic interface
- Available with 5, 10, 20 or 30 channels (channel 1 is always the master channel)
- Suitable for glass fibres of up to 3km in length, depending on fibre type and relay type
- Light-off (fault tolerant) or light-on (fault fail) modes for each channel
- Power and channel activity indicators
- Can be used in pairs as a line driver for sending relay communications over long distances
- Front mounted RS232 output with automatic switchover



SPECIFICATIONS

Rear connectors:

- 9mm ST® fibre-optic receive and transmit (Rx & Tx)
- Modular terminal block for DC supply
- terminals: 13DC +ve, 14DC -ve, 15 earth

Front connector:

- 25-way D-type override

Settings:

- 10-way internal DIP switch per channel.
- OFF = light off (default and unused channels)
- ON = light on

Auxiliary supply:

- 50/110V d.c. or 220V d.c.

OPTICAL INTERFACE

Relay	Sigma 1			
	Tx MIN	Tx MAX	Rx MIN	Rx MAX
1mm Polymer	-6.4	-10.4	-24	-9.2
200 µM PCS	-2.8	-6.8	-24	-9.2
62.5/125 µm	-11.7	-15.7	-24	-9.2

Notes: Rx Receiver sensitivity
Tx Transmitter launch power

DUAL RS-232 TO FIBRE-OPTIC INTERFACE UNIT – 7SG24 - SIGMA 3

FEATURES

- For use with all Reyrolle numeric protection relays employing a fibre-optic interface
- Two electrical RS-232 outputs – one rear permanent connection, one front-panel override with automatic switch-over
- SMA version for polymer fibre
- ST® version for glass fibre
- Self-powered from PC or modem
- Optional external power supply
- Power indicator



INTRODUCTION

The Sigma 3 is one of a range of communications support units. It provides a dual RS-232 to fibre-optic interface between a PC and the fibre-optic output of a relay (or ring of relays).

This allows, for example, a permanent connection to a SCADA or control room, and a local override to allow a laptop PC to interrogate all the relays connected to it. Changeover is handled automatically when a PC is connected to the front port.

SPECIFICATIONS

Connectors

Front: 25-way female D-type (e.g. laptop PC)

Rear: 25-way female D-type (e.g. SCADA)
SMA / ST® fibre-optic Rx/Tx
3.5mm mono jack socket for optional external power

RS-232 connections can be made through a standard 9-25 way AT modem cable. When used with a modem, a null-modem adaptor is required.

External power supply: 6-15V dc @ 50mA to jack socket (tip +ve) or pin 9 on D-connector

Pinout: 2 Rx (input)
3 Tx (output)
4-5 RTS/CTS (internally connected)
6-8-20 DSR/CD/DTR(internally connected)
7 Ground
9 External power (6-15V dc)

OPTICAL INTERFACE

Fibre	Sigma 3-101		Sigma 3-103	
	Tx min	Tx max	Tx min	Tx max
1mm polymer	-16.8	-12.8	-16.6	-12.6
200µm PCS	-23.8	-19.8	-15.4	-11.4
62.5/125µm	NS	NS	-24.7	-20.7

Notes: NS – not suitable
Tx – Transmitter launch power (dBm)
Receiver sensitivity is -25.4 (-24 for Sigma 3-101) to -9.2 dBm

RS-232 TO FIBRE-OPTIC INTERFACE UNIT - 7SG24 - SIGMA 4

FEATURES

- For use with all Reyrolle numeric protection relays employing a fibre-optic interface
- SMA versions for polymer and glass fibre
- ST® version for glass fibre
- Self-powered from PC or modem
- Optional external power supply
- May be panel or 4U rack-mounted



INTRODUCTION

The Sigma 4 is one of a range of communications support units. It provides a single unit RS-232 to fibre-optic interface between a PC and the fibre-optic output of a relay (or ring of relays).

SPECIFICATIONS

Connectors

Front: 25-way female D-type

Rear: SMA / ST® fibre-optic Rx/Tx
3.5mm mono jack socket for optional external power

RS-232 connections can be made through a standard 9-25 way AT modem cable. When used with a modem, a null-modem adaptor is required.

External power supply: 6-15V dc @ 50mA to jack socket (tip +ve) or pin 9 on D-connector

Pinout: 2 Rx (input)
3 Tx (output)
4-5 RTS/CTS (internally connected)
6-8-20 DSR/CD/DTR (internally connected)
7 Ground
9 External power (6-15V dc)

OPTICAL INTERFACE

Fibre	Sigma 4-101		Sigma 4-102/103	
	Tx min	Tx max	Tx min	Tx max
1mm polymer	-12.6	-8.6	-16.6	-12.6
200µm PCS	-23.7	-19.7	-15.4	-11.4
62.5/125µm	NS	NS	-24.7	-20.7

Notes: NS – not suitable
Tx – Transmitter launch power (dBm)
Receiver sensitivity is -25.4 to -9.2 dBm

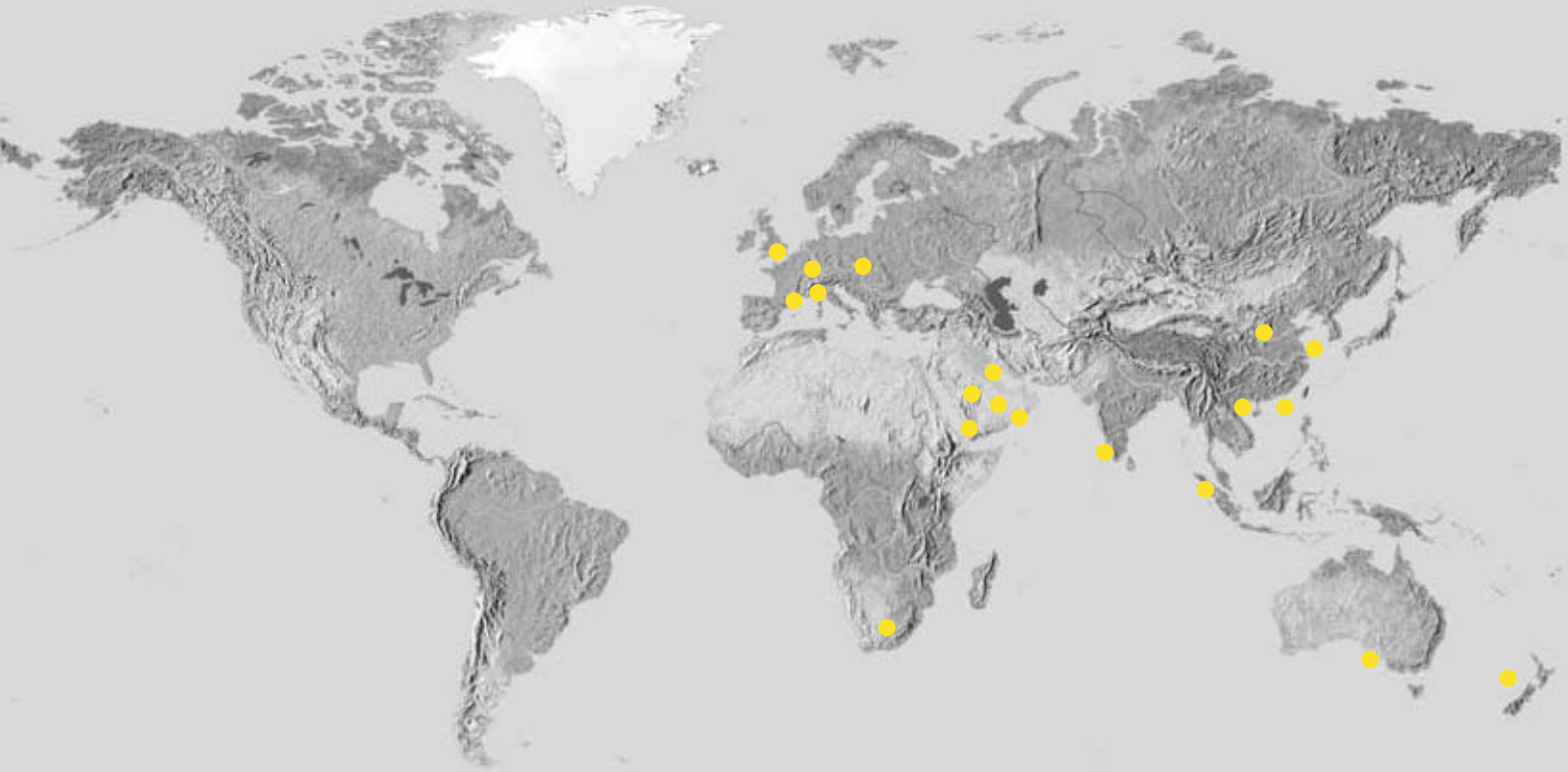
SIGMA 7SG24

Product description	Variants	Order No.
<p>Sigma 4 Fibre optic to electrical converter.</p> <p><u>Relay type</u> Sigma 4 – Fibre optic to electric converter providing one RS232 interface</p> <p><u>Channel options</u> 1 channel, SMA connectors for polymer fibre plus one RS232 interface 1 channel, SMA connectors for glass fibre plus one RS232 interface 1 channel, ST connectors for glass fibre plus one RS232 interface</p> <p><u>Auxiliary supply</u> External - see note 1</p> <p><u>Housing size</u> Special - see note 3</p>		<p>7 S G 2 4 □ 0 - □ □ A 0 0 - 0 □ A 0</p> <p style="text-align: center;">↑ ↑ ↑ ↑</p> <p style="text-align: center;">4 1 2 3</p> <p style="text-align: center;">A A</p>

1) Self powered from PC or modem via pin 9 on D connector or optional external power supply 6-15V DC @ 50mA to jack socket (tip +ve)
 2) Housing dimensions – 4U high, size 2 width panel mount, 140mm depth, excluding fibre bend radius
 3) Housing dimensions – Housing dimensions – 85mm (l) x 58mm (w) x 19mm (h)

For all of our overseas office details, please visit our website at:

www.reyrolle-protection.com



Visit our Australian partner, Relay Monitoring Systems Pty Ltd at:

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