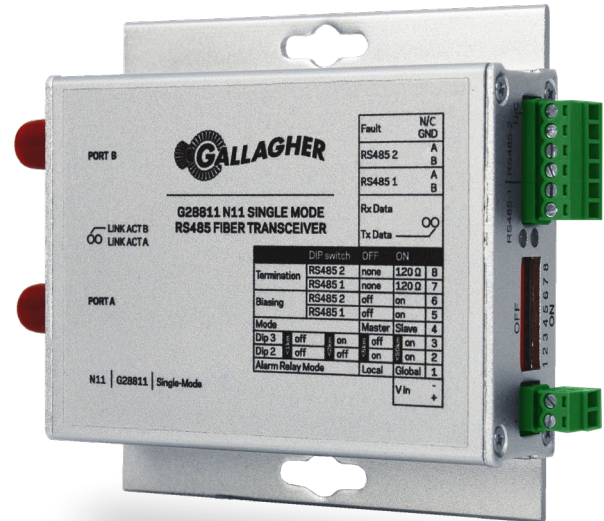


# RS485 Fiber Transceiver

The Gallagher RS485 Fiber Transceiver provides a high speed communication solution to networking of Gallagher field devices on fiber optic cabling. Fully functional with Gallagher, GBUS, HBUS and LV Sync devices and provides two independent data channels on a single fiber.

## Features and benefits:

- Fully functional with Gallagher, GBUS, HBUS and LV Sync devices
- Single-mode (N11) and multi-mode (N12) fiber types
- Supports three different network topologies
- Relay and LED indication of port faults and network damage
- LED status indication
- Fiber network allows synchronization of a large number of fence controllers over large distances
- 60 RS485 devices per transceiver channel can be connected to the network
- Gallagher standard bias offset levels and termination are supported



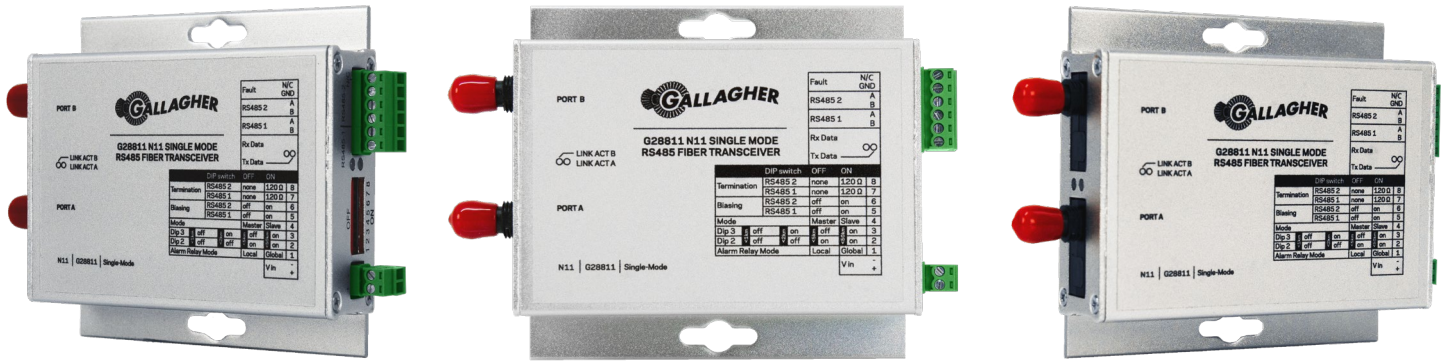
## Fully functional with Gallagher, GBUS, HBUS and LV Sync devices

The RS485 Fiber Transceiver provides two independent data channels transparent up to 1MB/S, on a single fiber. This enables Gallagher field devices to be networked via a fiber optic cable over large distances to the centralized controller 6000 as well as facilitating multiple BUS systems required for upgrade or retrofit. Device connection to the transceivers is by two wire half duplex RS485 data.

## Single-mode (N11) and multi-mode (N12) fiber types

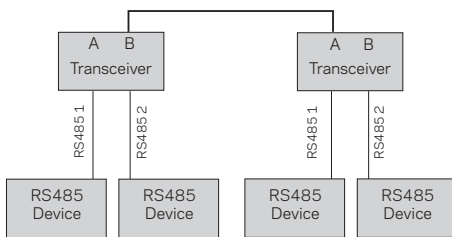
For application flexibility, including use with pre-existing networks, the RS485 Fiber Transceiver has both single-mode (N11) and multi-mode (N12) versions.

- N11 - capable of supporting up to 40km between fiber transceivers
- N12 - capable of supporting up to 4km between fiber transceivers

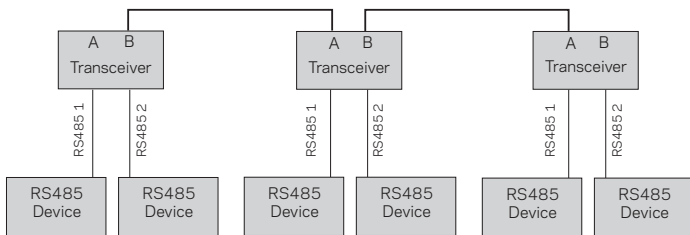


## Supports three different network topologies

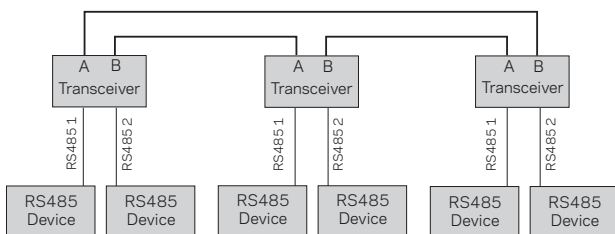
### 1. Point-to-point



### 2. Linear add/drop/repeat



### 3. Redundant self-healing ring topology (recommended for perimeter security applications as it allows the system to continue functioning in the event of the fiber ring being severed).



## Relay and LED indication of port faults and network damage

For continuity of security, it is critical that network damage is reported and can be located. The N11 and N12 RS485 Fiber Transceivers have local LED indication of port faults and can use on-board relay outputs configurable to indicate either global (all transceiver) or individual transceiver port communication failure.

### LED status indication

Data activity, synchronization status, fault status and fault location are indicated with the local LED indicator. This helps assist technicians to install and commission the product, locate network faults and resolve problems quickly and efficiently.

## Fiber network allows synchronization of a large number of fence controllers over large distances

Having two independent data channels allows one channel to be dedicated for security fence controller synchronization over the fiber network. This allows synchronization of a large number of units over distances that cannot be achieved with RS485 over copper, meaning no fence circuits need to be used for HV synchronization. Having the synchronization signal operating over fiber is a more secure system than using an HV synchronization wire which can be cut.

## 60 RS485 devices per transceiver channel can be connected to the network

There is a limit of 60 HBUS or 14 GBUS devices per RS485 channel. With two channels each transceiver is capable of connecting devices up to the Controller 6000 device limits.

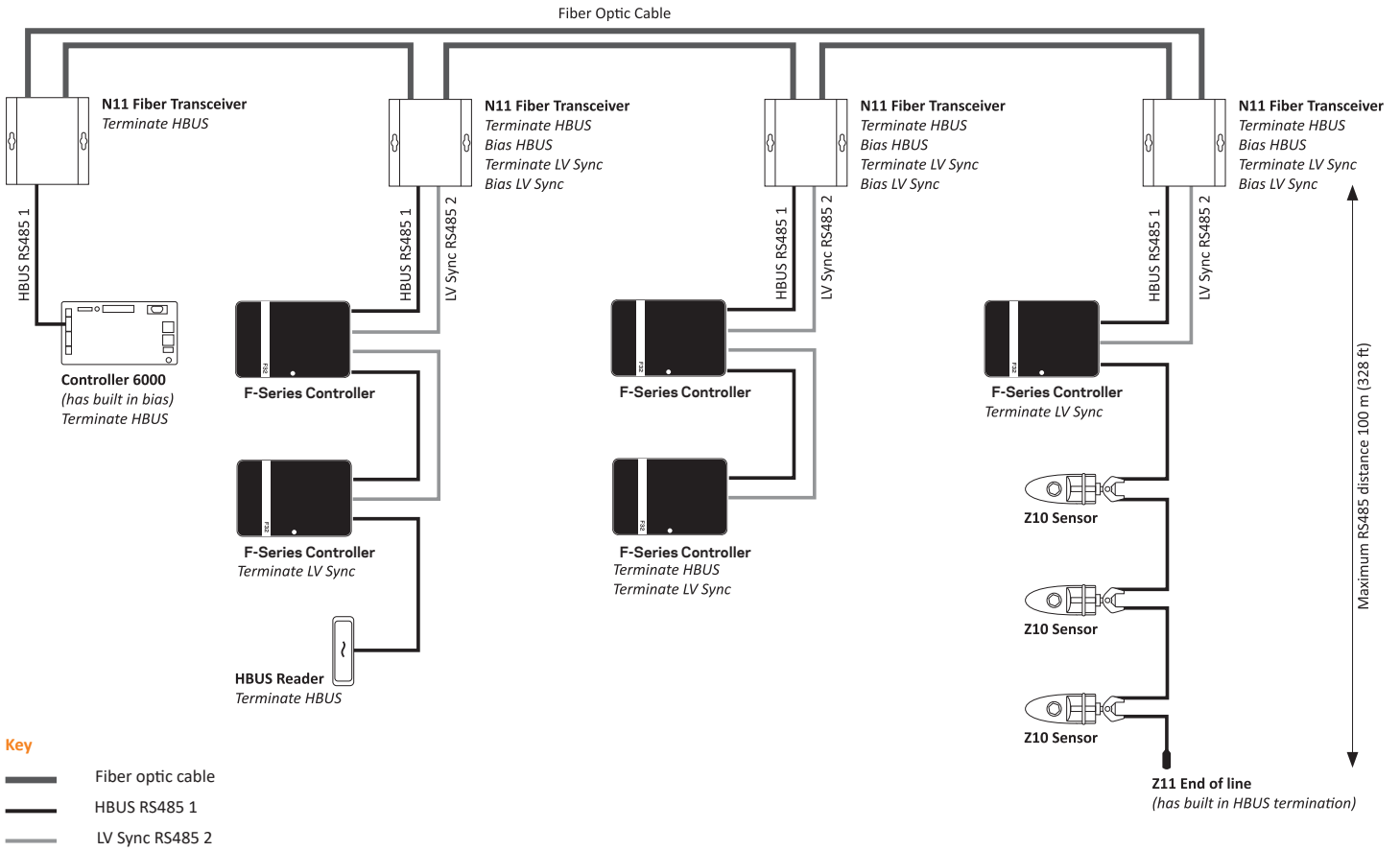
## Standard bias offset levels and termination are supported

The N11 and N12 support Gallagher's standard bias offset levels and termination which are selectable via DIP switch for each channel.

## Example: Topology Diagram HBUS + LV SYNC

This example uses a self-healing ring topology, (i.e. in the event of an optical fiber break, all devices on the network maintain communication). This example uses the N11 Fibre Transceiver, but is applicable for the N12 Fibre Transceiver also.

Note: The N11 should not be connected to an N12. The N11 and N12 Fibre Transceiver are not interchangeable.




## Fibre Transceiver Isolation Block

Provides isolation of the N11/N12 Fibre Transceiver from the back plane of the Cabinet. Aids in protection against transient High Voltage from arcing on the Fence line.



## Technical Specifications

Data		Electrical & Mechanical	
Channels	2 Half-Duplex	Power	9-36VDC @ 3W
Data Rate	Transparent Up To 1Mbps Max (including support for following speeds) 9600bps, 19K2bps, 1Mbps	Connector	2-Way Screw Terminal Block
Data Format	2-Wire RS485	Current Protection	Automatic Resettable Solid-State Current Limiters
Bit Error Rate	<10 <sup>-12</sup> @ Maximum Optical Loss Budget	Reverse Polarity Protection	Present
Termination	DIP Switch Selectable 120Ω Termination Per Channel	Circuit Board	Meets IPC Standard
Bias	DIP Switch Selectable 680Ω Bias Per Channel	Size (L x W x H)	10.4cm x 9.4cm x 2.8cm (Excluding Connectors) (4.1in x 3.7in x 1.1in)
Connector	6-Way Screw Terminal Block	Weight	0.2kg (0.35kg including packaging)
Maximum RS485 Cable Length	100 Meters		2.44lb (0.77lb including packaging)
		Mounting	2 x wall/surface mount screw fixing holes
Optical		LED Indicators	
Number Of Fibers	1 or 1in/1out	Optical Link	1 Per Fiber (A & B) Bi-Color (Red/Green)
Wavelength	1310/1550nm (Multi-Mode & Single-Mode Variants)	Data Tx	1 Single Color (Green)
Optical Budget	Multi-Mode (50/125μm or 62.5/125μm) = 16dB @ 1310nm (4Km Between Units Max) Single-Mode (9/125μm) = 19dB @ 1310nm (40Km Between Units Max)	Data Rx	1 Single Color (Green)
		Environmental	
Optical Emitter	Laser Diode	MTBF	>100,000 Hours
Optical Connector Type	ST Type	Operating Temperature	-40°C to +75°C (-40°F to +167°F)
		Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Relay		Relative Humidity	0% to 95% (non-condensing)
Number of Relays	1	Standards compliance	
Type	Normally Closed: Solid State Relay Contacts	This product meets the following standards, as specified by ComNet.	
Load	0.5mA Resistive Load	    	
DIP Switches			
1	Alarm Relay Mode		
2 & 3	Ring Length (SHR Only)		
4	Master/Remote (SHR Only)		
5 & 6	680 ohm Pull Up/Pull Down for Bias on RS485 bus		
7 & 8	120 ohm Termination across RS485 bus		

### Part numbers

G28812 N12 Multi-Mode Transceiver

G28811 N11 Single-Mode Transceiver

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