

## FEATURES

- RS485 to multi-mode fiber
- One or two fiber optic channels
- 19.2 to 78 + K baud rates
- Transparent repeater function
- Optical signal regeneration
- LED signal indication

## APPLICATIONS

- RS485 Bacnet or proprietary serial trunks
- Twisted pair to fiber optic communications
- Electrical noise immunity between buildings by utilizing fiber
- Extends network up to 2.5K
- Hub or single point to fiber compatible

## DESCRIPTION & OPERATION

The FR485 is a RS-485 to fiber optic convertor module available as a single fiber pair output repeater or dual fiber pair output repeater. The FR485 uses OPTEK's b 850nm, transmitter and receiver with the "ST" connector receptacles for 62.5-125mm (50/125mm) fiber optic cables. The FR485 is biased to transmit distances up to 2.5 km at 78K bps rate.

The FR485 is powered by a 24VAC supply. Network RS-485 communication is received at the input terminal, filtered, fed into a half-duplex RS485 transceiver, where it is converted into a TTL signal for fiber optic transmission.

Separate multi-mode fibers are used for transmit and receive. When the FR485 receives a signal via fiber, the TTL signal is converted back to the RS-485 format and sent out on the RS485 communication trunk. The FR485 operates as a transparent repeater only, which does not perform any additional routing functions and requires no additional software configuration. Led indication is provided on all transmit and receive fiber channels.

The FR485 is available as a single or dual channel repeater. The single channel FR485 is used for simple point to point repeating functions. The dual channel FR485 transmits an incoming packet from a single twisted pair, porting to both fiber channels simultaneously, as well as echoing any incoming fiber signal on the other fiber channel. This allows the dual channel FR485 to support Ring, Bus, and point to point topologies.



## SPECIFICATIONS

Size:	4"W x 3"L x 1.5"H
Mounting:	PVC plastic enclosure
Power:	24VAC 50/60 Hz
FR495/S	3.0VA
FR485/D	6.0VA
Communication:	RS485 to multi-mode fiber
Baud Rates:	19.2K to 78 + K baud
RS485 Trunk:	18 AWG twisted pair
Fiber Cable:	Two 62.5/ 125µm diameter Multi-mode cable

## ORDERING INFORMATION

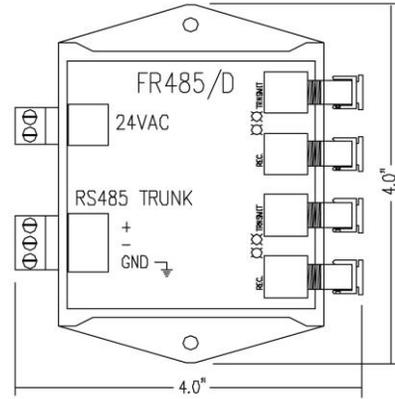
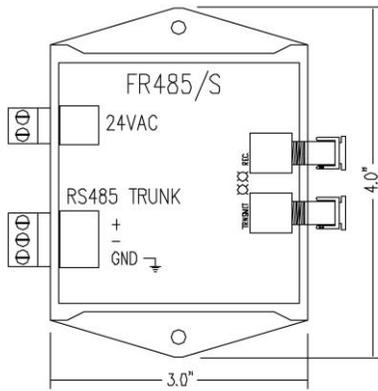
### FR485 /X

└ S - Single, or D - Dual fiber outputs

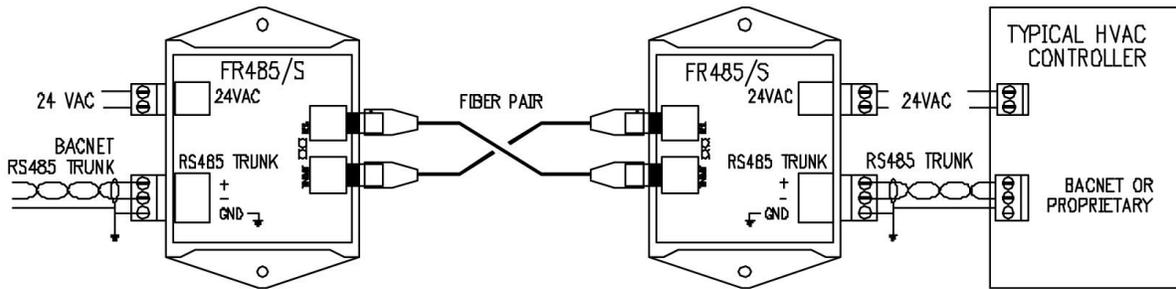


**PHYSICAL CONFIGURATION – SINGLE OUTPUT**

**PHYSICAL CONFIGURATION – DUAL OUTPUT**

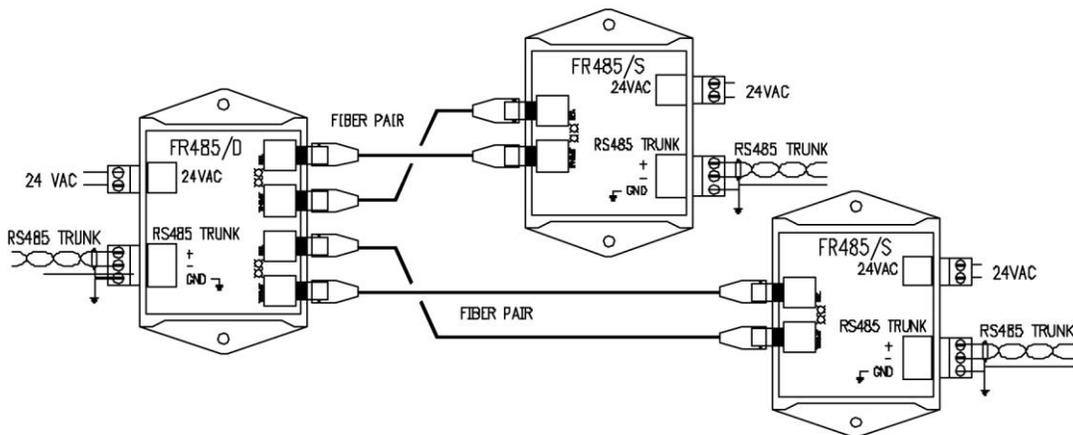


**APPLICATION 1  
NETWORK COMMUNICATION BETWEEN BUILDINGS VIA FIBER OPTIC CABLE**



The FR485 single channel fiber repeater is used in a point to point application to extend the physical twisted pair network up to 2.5 km. The FR485 acts as a repeater only, and is completely transparent to the network. Any communication received on the near side of the RS485 network will be propagated to the far side via fiber optic cable, where the twisted pair RS485 signal will be regenerated on the far side of the network.

**APPLICATION 2  
NETWORK COMMUNICATION BETWEEN BUILDINGS VIA FIBER OPTIC CABLE**



The FR485 dual channel repeater can be used to support ring and bus topologies. The incoming twisted pair communications are reproduced on both fiber channels. In addition, any communication received on one fiber channel will be echoed to the second fiber channel, as well as re-transmitted on the twisted pair copper network. All fiber links remain completely transparent to the network.