

SubStation Hardened RS232 Serial Copper to Fiber Link/Repeaters



For Reliable Substation Communications

Technical Description

Dymec models 5843 and 5844 are hardened fiber optic Link/Repeaters that convert RS232 or TTL level copper to amplitude based fiber output. Supports data rates from dc to 250k bps, DCE or DTE port configuration and a diagnostic/test mode that allows testing of the copper and fiber connections before the connected IED is active in the network.

By simply setting a few switches, the **DYMEC** 5843 and 5844 Link/Repeaters can be configured for point-to-point, star, optical bus, or loop networks, and permit quick, easy connection of devices. For example, an extensive multi-drop network -- where two or more intelligent electrical devices are connected and communicating -- can be constructed simply by connecting the devices through Link/Repeaters.

DYMEC 5843 and 5844 Link/Repeaters may optically connect devices of different formats, eliminating the need for format converters. For example, an RS232 IED may be connected to a model 5844 which is optically connected to a model 5846, which, in turn, can communicate electrically to its IED electrically in EIA 485.

Features and Benefits

- Single Channel RS232 or TTL Logic Levels
- Powered from Station Battery Bus to C37.90 or 12 Vdc
- Operates reliably at temperatures of -40°C to 85°C with no fans.
- Extended distances of 5 km over Multi-mode fiber and 30 km over Single-mode fiber.
- Multiple Mounting choices with built-in mounting brackets and optional mounting shelf
- Packaged in rugged, industrial-quality Galva Neal and powder coated shells
- 4 Diagnostic LEDs for easier debug of installation
- Conformal coated PC Boards
- Compatible with all earlier 5843/5844 versions of Dymec Link/Repeaters
- 5- year warrantee



Model 5843
Model 5844

TECHNICAL BULLETIN TB5843

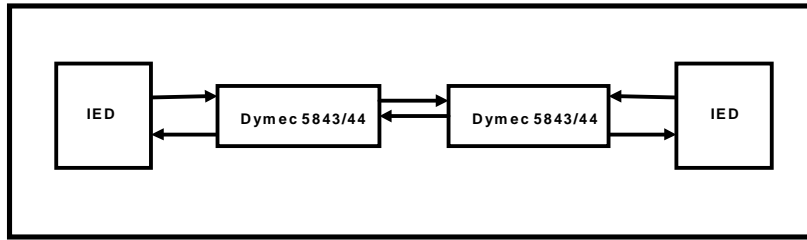
5843/5844 Specifications

Optical Parameters @ Maximum Temp	Multimode	Single-Mode
Optical Budget Typical	19.5 dB	19 dB
Output power Typical	-10.5 dBm peak	-14.5 dBm peak
Receiver Sensitivity Typical	-30 dBm peak	-33.4 dBm peak
	(62.5µ/125 Multimode)	(9µ/125 Single-mode)
Wavelength	850nm	1310nm
Connector Type	ST	
Compatible Fiber Type	Multimode (50-200µm)	Single-Mode (9-13µm)
Configuration (Switches)	DTE/DCE	
	AC/DC Coupled	
	Link/Repeat	
	Pin 8 Drive Current	
	Pin 6 +5 Vdc (DSR or CTS pull up)	
	Diagnostic Mode	
Data Rate	DC to 250K bps	
Data Transmission	Asynchronous, simplex	
	or Full Duplex	
Transmission Distance	up to 5000 meters	up to 30K meters
	(62.5µ/125 Cable@3dB/km)	(9µ/125 Cable@0.5dB/km)
Bit Error Rate	10-E9 Max.	
Point to Point Latency	4 µsec Max	
Repeat Latency	400 nsec Max	
Electrical Parameters		
Inputs		
I/O Data Format	EIA RS232; CCITT v24	
Data Connector	9 pin D-Type Female	
Input Impedance	>3000Ohms	
Input Voltage	+/- 30 Volts Max	
Outputs		
Output Impedance	>300 Ohms	
Driver Output	+/- 5 V min into 3000 Ohms	
Pin 8 Output	0 to 5V	
	67 or 207 Ohm Source Impedance	
Ambient Temperature		
Operating Temperatures	-40 to +85 C	-40 to +70 C
Storage Temperature	-40 to +85 C	
Power Required		
5844	4.0 Watts	5.5 Watts
	35 mA @ 90-250 V	50 mA @ 90-250 V
	250 mA @ 18-60 V	340 mA @ 18-60 V
5843	3.0 Watts	4.1 Watts
	250mA @ 12Vdc	340mA @ 12Vdc
Power Dissipation BTU/H		
5844	10.9 BTU	12.3 BTU
5843	8.2 BTU	10.2 BTU
Physical Parameters		
Weight		
5844	17 Ozs.	17 Ozs.
5843	9 Ozs.	9 Ozs.
Dimensions Inches		
5844	4.1W X 5.1L X 1.3H	
5843	2.0W X 5.1L X 1.3H	
Indicators		
	Power	
	Transmit Fiber	
	Transmit Electrical	
	Receive Fiber	
	Receive Electrical	

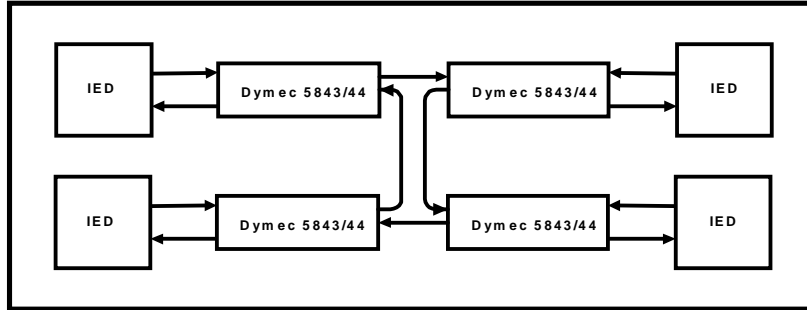
Specifications Subject to Change Without Notice



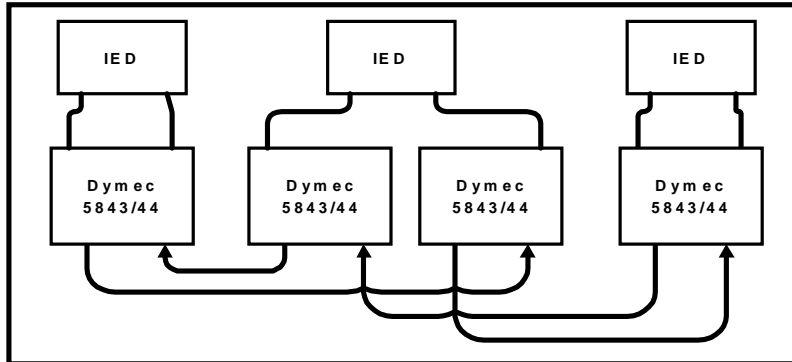
Sample Applications



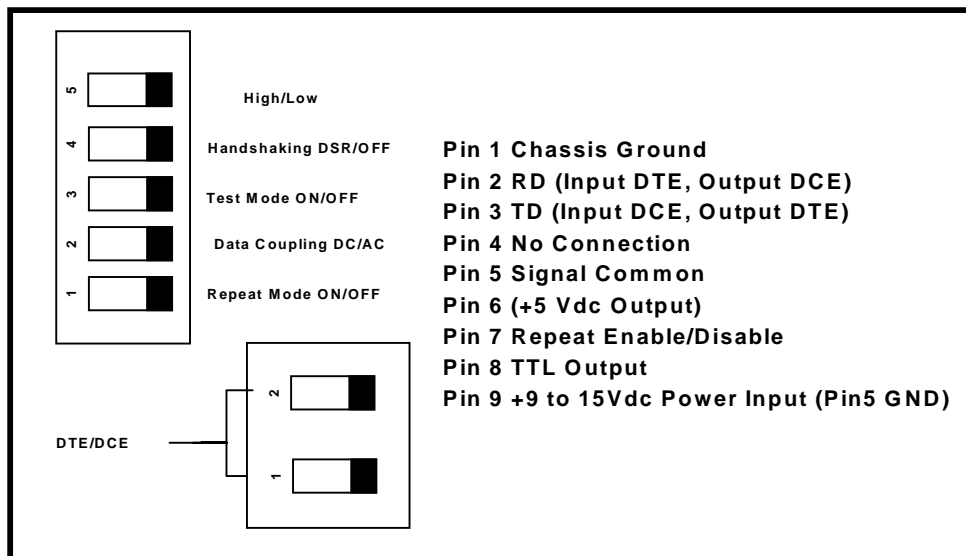
Point to Point Connection



Loop Configuration



Bus Configuration

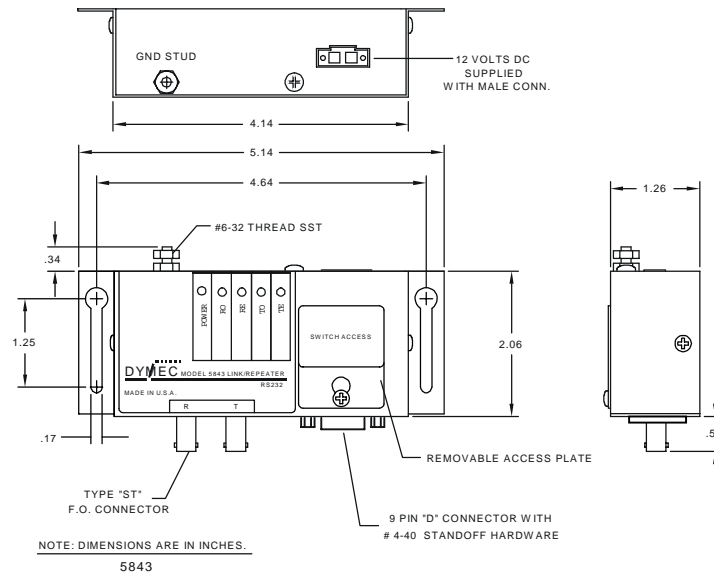


Ordering Information

Model	Input	Fiber Type	Input Power Rating
5843HRT	RS232/TTL	Multimode	9 - 15 Vdc
5844HRT-H	RS232/TTL	Multimode	90-250 Vdc/ 90-250 Vac
5844HRT-L	RS232/TTL	Multimode	24 to 48 Vdc
5843SHRT	RS232/TTL	Single-Mode	9 - 15 Vdc
5844SHRT-H	RS232/TTL	Single-Mode	90-250 Vdc/ 90-250 Vac
5844SHRT-L	RS232/TTL	Single-Mode	24 to 48 Vdc
ACC-LCS	Link Cantilever Mounting Bracket		
ACC-CBL1	DB9 Male/Tinned Lead 10 Foot Cable/Pigtail		

Outline Drawings

Model 5843



Model 5844

