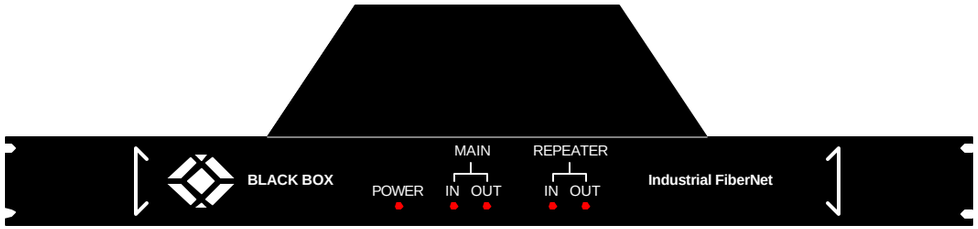
ME300A



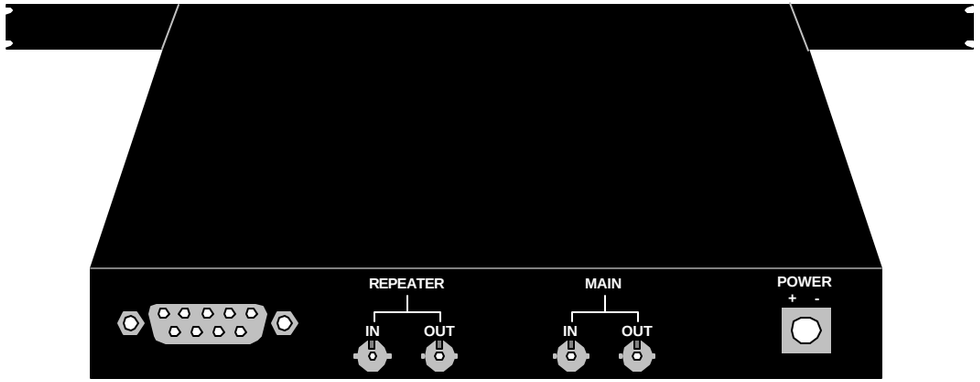
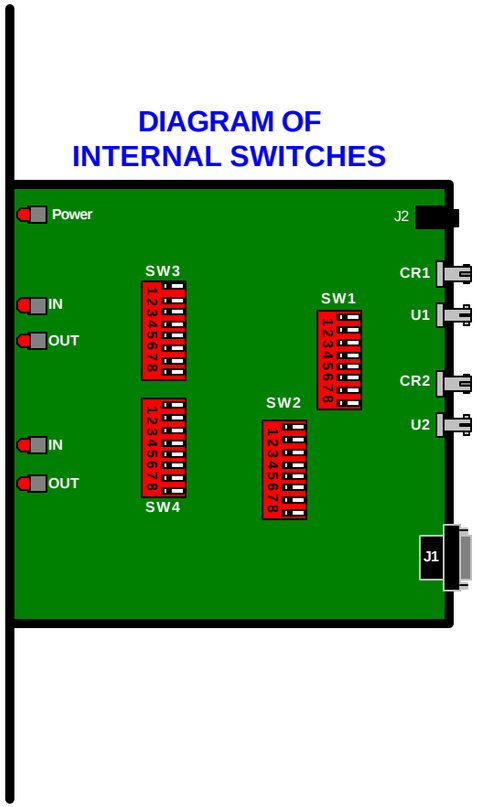


DIAGRAM OF INTERNAL SWITCHES



SPECIFICATIONS:

Protocol: Asynchronous

Data Rates: 300 to 115,200 bps (user-selectable).

User Controls: (4) 8-position DIP switches;
Jumpers: W5, W6, W7, W8, W9, W10 and W11 (W1 through W4 are for factory use.

Connectors: (1) DB9F, (4) ST type optical fiber.

Indicators: (5) Leeds: Power, Main In, Main Out, Repeater In, Repeater Out.

Interface: Optical fiber interface, EIA RS-422/485.

Power: 115 VAC, 60 Hz, 500-mA maximum, 5 VDC.

INTRODUCTION:

The Industrial Fiber Net is an asynchronous, bi-directional data converter. It changes standard EIA RS-422/485 signals into light pulses for high-speed transmission via optical fiber cable between asynchronous RS-422/485 devices.

The Industrial Fiber Net has an RS-422/485 port and two fiberoptic ports, designated as Main and Repeater. In Normal mode, Data received in the RS-422/485 port is sent out the Main and Repeater fiberoptic ports. Data received in either the Main or Repeater fiberoptic ports is sent out the RS-422/485 port.

In Master mode, any data received in the RS-422/485 port is only sent out the Main fiberoptic port, not the Repeater fiberoptic port. Any data received in the Main fiberoptic port is sent out the RS-422/485 port, but any data received in the Repeater fiberoptic port is not sent out the RS-422/485 port.

Passing data across a fiberoptic data link will introduce a small amount of pulse-width distortion into the signal. If a signal is passed through multiple Industrial Fiber Nets, the distortion can accumulate and cause a data error. To eliminate this potential problem, the Industrial Fiber Net has timing-restoration circuits on the Main and Repeater ports. These circuits can be enabled or disabled with jumpers.

The Industrial Fiber Net has an anti-streaming circuit to prevent a malfunctioning device from driving the fiberoptic transmitters constantly on. The anti-streaming circuit must see a transition in the RS-422/485 data at least once every 85 milliseconds or the fiberoptic transmitters will shut off until a transition occurs.

CONFIGURATION:

Before you install the Industrial Fiber Net, you should configure it for your application. Set the DIP switches and jumpers for the configuration (range and baud rate) that best suits your application. Note that the switch positions are up for open (OFF) and down for closed (ON).

Range Select:

Use DIP switch SW1 to set the range of the Main and Repeater fiberoptic ports. As shown on the next page, positions 1 through 4 control the Main port's range, and positions 5 through 8 control the Repeaters port's range. Select the shortest range which accurately passes data.

Continued on next page:

Baud Rate Selection:

Use DIP switch SW3 to set the Main fiberoptic port's baud rate. As shown in the table on the next page, positions 1 through 4 control the Main port's baud rate, and positions 5 through 8 are reserved for future use.

Use DIP switch SW4 to set the Repeater fiberoptic port's baud rate. As shown in the table on the next page, positions 1 through 4 control the Remote port's baud rate, and positions 5 through 8 are reserved for future use.

Jumper Options:

Jumpers W1 through W4 are for factory use.
Use Jumper W5 to set the Main port fiberoptic receiver to Normal or Inverted operation.
Use Jumper W6 to set the Repeater port fiberoptic receiver to Normal or Inverter operation.
Use Jumper W7 to Enable or Disable the Main port timing-restoration.
Use Jumper W8 to Enable or Disable the Repeater port timing-restoration.
Use Jumper W9 to set the MS Mode Enabled or Disabled.

Timing (MS Mode Only)

When MS Mode is enabled, the Repeater will automatically switch between Master and Normal modes. Switching will occur when data sent out the Main port is not received in the Repeater port within the user-selectable time-out period.

Once switching occurs, the Repeater will automatically switch back to Normal mode after a user-selectable reset time.

Set the Time-Out Period by using switch group SW2, position 1 through 4.

Set the Reset Time by using switch group SW2, positions 5 through 8.

DIP Switch SW1 Settings (Range)

Function	DIP-Switch Position							
	1	2	3	4	5	6	7	8
MAIN PORT RANGE								
Extra Long Range	ON	OFF	OFF	OFF				
Long Range	OFF	ON	OFF	OFF				
Medium Range	OFF	OFF	ON	OFF				
Short Range	OFF	OFF	OFF	ON				
REPEATER PORT RANGE								
Extra Long Range					ON	OFF	OFF	OFF
Long Range					OFF	ON	OFF	OFF
Medium Range					OFF	OFF	ON	OFF
Short Range					OFF	OFF	OFF	ON

DIP Switch SW2 Settings (Timing)

Function	DIP-Switch Position							
	1	2	3	4	5	6	7	8
TIMEOUT PERIOD (in milliseconds)								
1	OFF	OFF	OFF	OFF				
2	ON	OFF	OFF	OFF				
4	OFF	ON	OFF	OFF				
6	ON	ON	OFF	OFF				
8	OFF	OFF	ON	OFF				
10	ON	OFF	ON	OFF				
20	OFF	ON	ON	OFF				
40	ON	ON	ON	OFF				
60	OFF	OFF	OFF	ON				
80	ON	OFF	OFF	ON				
100	OFF	ON	OFF	ON				
200	ON	ON	OFF	ON				
400	OFF	OFF	ON	ON				
600	ON	OFF	ON	ON				
800	OFF	ON	ON	ON				
1 second	ON	ON	ON	ON				

DIP Switch SW3 Settings (Main Port Baud Rate)

Function	DIP-Switch Position							
	1	2	3	4	5	6	7	8
BAUD RATE (in bps)								
115,200	OFF	OFF	OFF	OFF				
76,800	ON	OFF	OFF	OFF				
57,600	OFF	ON	OFF	OFF				
38,400	ON	ON	OFF	OFF				
28,800	OFF	OFF	ON	OFF				
19,200	ON	OFF	ON	OFF				
14,400	OFF	ON	ON	OFF				
9,600	ON	ON	ON	OFF				
7,200	OFF	OFF	OFF	ON				
4,800	ON	OFF	OFF	ON				
3,600	OFF	ON	OFF	ON				
2,400	ON	ON	OFF	ON				
1,800	OFF	OFF	ON	ON				
1,200	ON	OFF	ON	ON				
600	OFF	ON	ON	ON				
300	ON	ON	ON	ON				
RESERVED					OFF	OFF	OFF	OFF

DIP Switch SW4 Settings (Repeater Port Baud Rate)

Function	DIP-Switch Position							
	1	2	3	4	5	6	7	8
BAUD RATE (in bps)								
115,200	OFF	OFF	OFF	OFF				
76,800	ON	OFF	OFF	OFF				
57,600	OFF	ON	OFF	OFF				
38,400	ON	ON	OFF	OFF				
28,800	OFF	OFF	ON	OFF				
19,200	ON	OFF	ON	OFF				
14,400	OFF	ON	ON	OFF				
9,600	ON	ON	ON	OFF				
7,200	OFF	OFF	OFF	ON				
4,800	ON	OFF	OFF	ON				
3,600	OFF	ON	OFF	ON				
2,400	ON	ON	OFF	ON				
1,800	OFF	OFF	ON	ON				
1,200	ON	OFF	ON	ON				
600	OFF	ON	ON	ON				
300	ON	ON	ON	ON				
RESERVED					OFF	OFF	OFF	OFF

JUMPER SETTINGS

Function	JUMPER POSITION				
	W5	W6	W7	W8	W9
MAIN RECEIVER					
Normal	BC				
Inverted	AB				
REPEATER RECEIVER					
Normal		BC			
Inverted		AB			
MAIN TIMING RESTORATION					
Disabled			BC		
Enabled			AB		
REPEATER TIMING RESTORATION					
Disabled				BC	
Enabled				AB	
MS MODE					
Enabled					BC
Disabled					AB

JUMPERS W10 AND W11

JUMPER	FUNCTION
W10	Receiver 2-wire
W10	Receiver 4-wire
W11	Transmitter 2-wire
W11	Transmitter 4-wire