

BaudMaster™ BMFBR Fiber Optic Converters

duTec

Division of Electronic Solutions Inc.

INNOVATIVE I/O SINCE 1977

3-in-1 Signal Conversion

Multi-mode operation: RS-232 to Fiber; RS-422 to Fiber; and RS-485 to Fiber. Transmits full or half duplex asynchronous serial optical signals over two fibers at typical distances up to 2.5 miles (4.0 km). All modes are automatically sensed. No jumpers or switches to set.

Isolates and Protects

BaudMaster™ BMFBR Eliminates hazardous ground potential rise, signal ground loops and induced electrical interference that destroy computer ports and reduce serial communications reliability commonly caused by copper wires. Power supply isolation provides full galvanic isolation from the power source, protecting your expensive RS-232/422/485 equipment. Galvanic isolation breaks power and ground paths using electromagnetic technology. This eliminates all grounding problems. All copper communication and power lines are transient protected.

Variety of Applications

BaudMaster™ BMFBR can operate as an RS-232/422/485 copper wire to 820 nm or 650 nm optical converter. Almost any size multimode glass fiber size can be used as well as plastic POF and HCS fiber. When used in ring mode, it can be used as a fiber optic repeater to extend the distance of the optical signals. When used in pairs, the BMFBR become short haul modems for RS-232. The BMFBR can also be used in a multi-drop ring network.

Troubleshooting Tool

Transmit and receive LEDs on the BaudMaster™ BMFBR confirm that data transmission and reception are occurring. When used with a notebook computer (see typical application diagram in user's manual), live optical data traffic can be monitored. Now you can see what's happening on optical communication lines.



Automatic Data Flow Control

ADFC™ (Automatic Data Flow Control), incorporates a technique protected by U.S. patent no. 5,729,547 that automatically senses and controls the direction of RS-485 data eliminating the need for software control.

Wide Supply Voltage Range

Incorporates special power converter circuitry that allows the unit to be powered by a wide range of AC or DC power. BaudMaster™ BMFBR uses any 9-24 volt, AC or DC power source. Wall-plug adapters are available from duTec or others. Screw terminals are also provided for use with other power supplies.

No Jumpers or Switches

BaudMaster™ BMFBR automatically adapts to all rates up to 115K baud and varying word length. There are no jumpers or switches to set.

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Specifications

Isolation

Electromagnetic, Power-to-RS-232/422/485
 Hi-Pot: 1500VRMS for 1 minute, 5500 VDC for 1 second.
 Leakage Current: Less than 50uA@1500 VAC/60 Hz: 5500 VDC

Baud Rates

RS-232/422/485: 0 to 115.2K bps
 Optical (Repeat Mode): 0 to 2M bps

Range

RS-422/485: 4,000 feet (1220 m) @ 38.4K baud with 24 AWG twisted pair.
 RS-232: 50 feet (15 m) @ 115.2K baud.
 Optical: 158 feet to 2.73 miles (4.39 km) typical depending on model and fiber type.

Optical Transmitter

820 nm LED, Type ST Connector,
 Output Power -22.2 to -6.9 dBm
 650 nm LED, Type ST or SMA Connector
 Output Power -7.5 dBm (POF), -18.0 dBm (HCS)

Optical Receiver

820 nm, Type ST Connector, -24 dBm minimum input
 650 nm, Type ST or SMA Connector, -21.6 dBm (POF),
 -23 dBm (HCS)

Power

9 to 24 volts AC or DC @ 155mA (max)
 Connector: Power Jack, 0.1" dia. For Wall-Plug Adapter and Pluggable Terminal Block (#16 to #24 AWG).

Indicators (LEDs)

Power, RxD, TxD, Collision, Link

RS-485/422

Supports RS-422, 4 or 2 wire and RS-485, Auto Detect
 Input Resistance: 12K to 15K ohms (1 unit load)
 Drive: Up to 32 unit loads (1 unit load = 12K ohms)
 Connector: Pluggable Terminal Blocks (#16 to #24 AWG)
 Biasing Resistors: Selectable 100K or 1.2K ohms
 Terminating Resistors: Selectable NONE, AC or DC

RS-485 Enable

Automatic. Patented ADFC™ technology automatically controls data direction flow.

RS-232

Supports TxD, RxD, DTR, DSR, RTS, CTS, DCD;
 Connector: DB9 Female DCE or DTE selectable

Environment

Storage Temperature:
 Operating Temperature: -20°C to +80°C
 Humidity: 5% to 95%

Compliance

RoHS Compliant
 Pending (CE, FCC Class A, CUL, UL Safety Class II)

Surge Protection

600 Watt Transient Voltage Suppression on all RS-485/422, RS-232 and Power lines.

Enclosure

18 Gage Stainless Steel Type 304
 Weight: 13.5 oz (383 gms)
 4.60" h x 4.16" w x 1" d (117mm x 106mm x 25mm)

Ordering Information

BMFBR - U E P

TYPE

U = RS-232/485/422 to Fiber Converter
 C = RS-232 to Fiber Converter
 R = RS-485/422 to Fiber Converter

RS-485/422/Power TERMINATION PLUG

P = Parallel Entry
 V = Vertical (Perpendicular) Entry

OPTICAL TRANSMITTER (CONNECTOR)

M = 820 nm Standard Power (ST)
 E = 820 nm High Power (ST)
 A = 650 nm (SMA)
 T = 650 nm (ST)

Optional Equipment

| Part No. | Description |
|-----------------|---|
| DA-01 | DIN Rail Adapter Kit |
| BM-PS120 | Wall Plug Adapter, 120VAC @ 3W |
| BM-PS220 | Wall Plug Adapter, 220VAC @ 3W |
| BM-PSU | Wall Plug Adapter, Universal 90-264VAC @ 3W |
| GC-9M | Gender Changer, 9 pin D-sub Male/Male |
| CA-9F9M | Cable, DB-9 Serial Male/Female (for RS-232) |