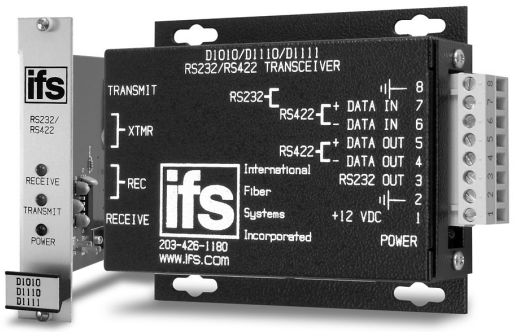
PRODUCT SPECIFICATION
D1000 SERIES
RS-232/422 POINT-TO-POINT DATA TRANSCEIVER



DESCRIPTION

The IFS D1000 series data transceivers provide point-to-point transmission of simplex or duplex EIA RS232/RS-422 data signals over one or two optical fibers. The transceivers are transparent to data encoding allowing for broad-range compatibility. The transceivers are also compatible with the IFS D2100 series drop and repeat data transceivers when used as line terminating devices. Models within this series are available for use with multimode or single-mode optical fiber. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments. Each transceiver incorporates power and transmit/receive data status indicating LED's for monitoring proper system operation. The modules are available in either stand-alone or rack mount versions.

APPLICATION EXAMPLES

- Access Control Systems
- Building Automation and Environmental Control Systems
- Computer/Data Equipment
- Fire & Alarm Systems
- Traffic Signal Control Equipment

FEATURES

- Meets EIA RS-232/422 Specifications (Simplex or Duplex)
- Meets NEMA TS-1/TS-2 & Caltrans Specifications (Temperature/Humidity, Shock/Vibration, and Voltage Transient Protection)
- Point-to-Point Topology
- Transparent to Data Encoding / Compatible with Major Data Protocols
- Data rates up to 1.5 Mbps
- No In-field Electrical or Optical Adjustments Required
- Power, Transmit and Receive Data Status LED Indicators
- Integrated WDM for Greater Product Reliability
- Automatic Resettable Solid-State Current Limiters
- Hot-Swappable Rack Modules
- Distances up to 37 Miles (60 km)
- Lifetime Warranty

ORDERING INFORMATION

	PART NUMBER	DESCRIPTION	FIBERS REQUIRED	OPTICAL PWR BUDGET	MAX. DISTANCE*
MULTIMODE 62.5/125µm**	D1010	RS-232/RS-422 Transceiver (850 nm)	2	14 dB	2 miles (3.5 km)
	D1010WDMA D1010WDMB	RS-232/RS-422 Transceiver (850/1310 nm) RS-232/RS-422 Transceiver (1310/850 nm)	1	14 dB	2 miles (3.5 km)
	D1020	RS-232/RS-422 Transceiver (1310 nm)	2	13 dB	8 miles (13 km)
SINGLE-MODE 9/125µm	D1030	RS-232/RS-422 Transceiver (1310 nm)	2	20 dB	37 miles (60 km)
	D1030WDMA	RS-232/RS-422 Transceiver (1310 nm)	1	20 dB	37 miles (60 km)
	D1030WDMB	RS-232/RS-422 Transceiver (1550 nm)		20 dB	37 miles (60 km)
OPTIONS	PS-12VDC 12 Volt DC Plug-in Power Supply (Included) PS-12VDC-230 12 Volt DC Plug-in Power Supply, 230 VAC Input (Included if specified at time of order) Add '-R3' to Model Number for R3 Rack Mount - No Charge (Requires R3 Rack purchased separately) Add '-C' for Conformally Coated Printed Circuit Boards (Extra charge, consult factory)				

*** Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels. Distance can also be limited by fiber bandwidth. ** For 50/125 Fiber, subtract 4 dB from Optical Power Budget.**

TECHNICAL SPECIFICATION — D1000 SERIES
RS-232/422 POINT-TO-POINT DATA TRANSCEIVER

SPECIFICATIONS

DATA

Data Interface:	RS-232 (data lines only) or RS-422 (See note)
Data Rate:	DC-1.5 Mbps (NRZ)
Operating Mode:	Asynchronous, simplex or full duplex
Bit Error Rate:	<1 in 10^9

WAVELENGTH

D1010:	850 nm, Multimode
D1010WDMA:	850/1310 nm, Multimode
D1010WDMB:	1310/850 nm, Multimode
D1020:	1310 nm, Multimode
D1030:	1310 nm, Single-mode
D1030WDMA:	1310 nm, Single-mode
D1030WDMB:	1550 nm, Single-mode

NUMBER OF FIBERS

D1010:	2	D1030:	2
D1010WDMA:	1	D1030WDMA:	1
D1010WDMB:	1	D1030WDMB:	1
D1020:	2		

CONNECTORS

Optical:	ST
Data and Power:	Terminal Plug with screw clamps

ELECTRICAL & MECHANICAL

Surface Mount:	12 VDC @ 150 mA
Rack:	From Rack
Number of Rack Slots:	1
Current Protection:	Automatic Resettable Solid-State Current Limiters
Circuit Board:	Meets IPC Standard
Size (in./ cm.) (LxWxH):	
Surface Mount:	4.2 x 3.5 x 1.0 in., 10.7 x 8.9 x 2.5 cm.
Rack Mount:	7.0 x 4.9 x 1.0 in., 17.8 x 12.5 x 2.5 cm.
Shipping Weight:	< 2 lbs./0.9 kg

ENVIRONMENTAL

MTBF:	> 100,000 hours
Operating Temp:	-40° C to +74° C
Storage Temp:	-40° C to +85° C
Relative Humidity:	0% to 95% (non-condensing)†

NOTE: The D1010 Series is compatible with some RS-485 (4 wire) systems. Consult factory for application.

† May be extended to condensation conditions by adding suffix '–C' to model number for conformal coating.

AGENCY COMPLIANCE

FCC PART 15 COMPLIANT

MADE IN THE USA

GSA Federal Supply Schedule Contract No. GS-07F-0049M

OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSCEIVER			OPTICAL PWR BUDGET	MAX. DISTANCE*
		MODEL	OUTPUT	SENSITIVITY		
Multimode 62.5/125µm**	850 nm	D1010 D1010WDMA D1010WDMB	25 µw (-16 dBm)	1 µw (-30 dBm)	14 dB	2 miles (3.5 km)
	1310 nm	D1020	20 µw (-17 dBm)		13 dB	8 miles (13 km)
Single-mode 9/125µm		D1030	100 µw (-10 dBm)		20 dB	37 miles (60 km)
		D1030WDMA			20 dB	37 miles (60 km)
		D1030WDMB			20 dB	37 miles (60 km)

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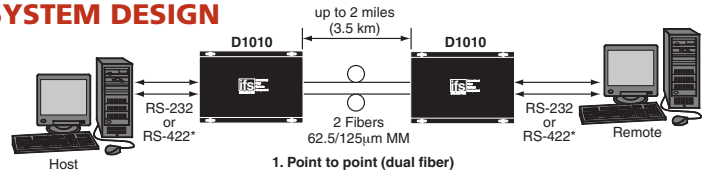
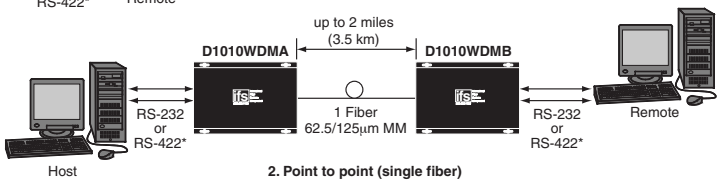
SYSTEM DESIGN



1. Point to point (dual fiber)

*Note: Unit can be used for transmission of RS-232 or RS-422, but not simultaneously



2. Point to point (single fiber)

Due to our continued effort to advance technology, product specifications are subject to change without notice.

06/16/03