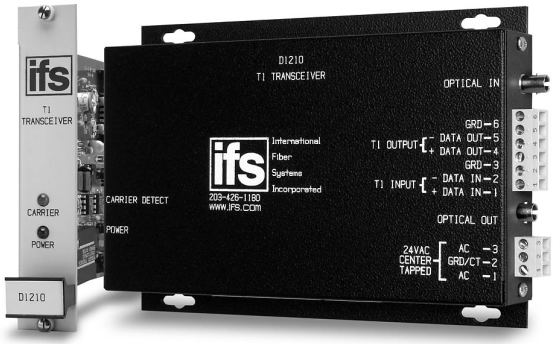
PRODUCT SPECIFICATION
T1, E1 (CCITT) TRANSCEIVER
D1200 SERIES



DESCRIPTION

The IFS D1200 series data transceivers provides point-to-point transmission of simplex or duplex T1, E1 (CCITT) data signals over two optical fibers. Models within this series are available for use with multimode or singlemode optical fiber. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments. Each transceiver incorporates power, carrier detect 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

- E1/T1 Multiplexed Telephony Systems
- Emergency Phone Stations
- Computer/Data Equipment
- ITS Traffic Signalization Networks

FEATURES

- Supports T1, E1 (CCITT) Data
- Tested and Certified by an Independent Testing Laboratory for Full Compliance with the Environmental Requirements (Ambient Operating Temperature, Mechanical Shock, Vibration, Humidity with Condensation, High-Line/Low-Line Voltage Conditions and Transient Voltage Protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment.
- No In-field Electrical or Optical Adjustments Required
- Automatic Resettable Solid-State Current Limiters
- Distances up to 46 Miles (74 km)
- Transparent to AMI and Zero Code Suppression Encoding Schemes
- Point-to-Point Network Architecture
- Hot-Swappable Rack Modules
- Power, Carrier Detect, Transmit and Receive Data Status LED Indicators
- Data rates up to 2.048 Mbps
- Comprehensive Lifetime Warranty

Available at: www.ifs.com

- A & E Specifications, (CSI)
- AutoCAD Drawings
- Operation Manuals
- Technical Bulletins

ORDERING INFORMATION

	PART NUMBER	DESCRIPTION	FIBERS REQUIRED	OPTICAL PWR BUDGET	MAX. DISTANCE*
MULTIMODE 62.5/125µm**	D1210	T1/E1 Compatible Data Link, LED (850 nm)	2	13 dB	1.2 miles (2 km)
	D1220	T1/E1 Compatible Data Link, LED (1310 nm)	2	13 dB	8 miles (13 km)
SINGLEMODE 9/125µm	D1225	T1/E1 Compatible Data Link, LED (1310 nm)	2	14 dB	25 miles (40 km)
	D1230	T1/E1 Compatible Data Link, Laser (1310 nm)	2	23 dB	46 miles (74 km)
ACCESSORIES♦	PS-24ACCT 24 VAC C.T. Transformer (Included)				
OPTIONS	Add '-R3' to Model Number for R3 Rack Mount (Requires R3 Rack purchased separately) Add '-SC' to Model Number for SC Optical Connector (For Single Mode Equipment Only) 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.**

♦ All accessories are third party manufactured.

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TECHNICAL SPECIFICATION
T1, E1 (CCITT) TRANSCEIVER
D1200 SERIES

SPECIFICATIONS

DATA

Data Interface:	T1, E1 (CCITT)
Data Rate:	DC to 2.048 Mbps. Transparent to zero suppression code
Impedance	
T1:	100 ohms (twisted pair)
E1:	120 ohms (twisted pair)
Operating Mode:	Simplex or Full Duplex

WAVELENGTH

D1210:	850 nm
D1220:	1310 nm, Multimode
D1225, D1230:	1310 nm, Singlemode

NUMBER OF FIBERS
2

CONNECTORS

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

ELECTRICAL & MECHANICAL

Power:	
Stand-alone:	24AC CT, 250 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:	7.0 x 4.9 x 1.0 in., 17.8 x 12.5 x 2.5 cm.
Rack Mount:	7.0 x 4.9 x 2.0 in., 17.8 x 12.5 x 5.0 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)†

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

AGENCY COMPLIANCE

FCC PART 15 COMPLIANT CE cUL UL GSA

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

MADE IN THE USA

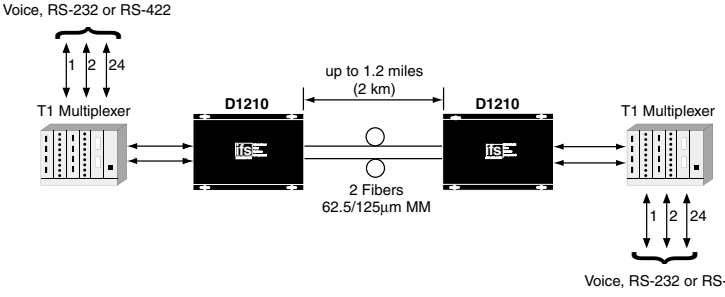
Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J

OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSMITTER			OPTICAL PWR BUDGET	MAX. DISTANCE*
		MODEL	OUTPUT PWR	SENSITIVITY		
Multimode 62.5/125µm**	850 nm	D1210	20 µw (-17 dBm)	1 µw (-30 dBm)	13 dB	1.2 miles (2 km)
	1310 nm	D1220				8 miles (13 km)
Singlemode 9/125µm		D1225	25 µw (-16 dBm)		14 dB	25 miles (40 km)
		D1230	200 µw (-7 dBm)		23 dB	43 miles (69 km)

*** 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.**

SYSTEM DESIGN



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