GE
Security

D19100SHR Series
IFS Self-Healing Ring/ Full Duplex Data Transceivers

Overview

The IFS D19100SHR series Self-Healing Ring Transceiver unit is a fully-digital transceiver designed for implementing traffic signalization/communications data networks of the highest possible reliability. Unlike competing products, the multiple-master capability of this series provides full protection against the possibility of a single point of failure, significantly enhancing the reliability and availability of the network. Primary and alternate-master transceiver units may be either co-located or diversity located, and the data input/output interconnection to the primary and alternate-master units is achieved by the use of a simple "Y" electrical cable. Full data re-clocking and regeneration permit an almost unlimited number of transceiver/controller units to be used within the network. These environmentally hardened transceivers are ideal for use in unconditioned out-of-plant or roadside installations. Plug-and-play design ensures ease of installation and no electrical or optical adjustments are ever required. LED indicators are provided for rapidly ascertaining equipment operating status, and these units are available in either stand-alone or rack mount configurations.

Application Examples

- High Reliability Traffic Signalization Networks

Self-Healing Ring/ Full Duplex Data Transceivers

Designed for implementing traffic signalization/communications data networks.

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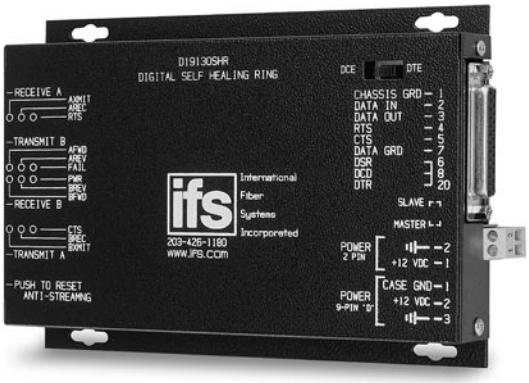
Standard Features

- Unique Multiple-Master Capability Eliminates the Possibility of a Single Point of Failure within the Network; No Need for Costly Node Processors or External Switching Equipment and Custom Software
- Simple "Y" Electrical Cable Provides Data Interconnect Between Primary and Alternate-Master Transceiver Units
- Robust Design Assures Extremely High Reliability In Unconditioned Out-of-Plant/Roadside Environments
- LED Status Indicators Provide Rapid Indication of All Critical Operating Parameters
- Full Data Re-clocking and Regeneration: No Limit as to the Number of Transceiver Units Used Within the Network
- User-Configurable Optical & Electrical Anti-Streaming Provides Network Protection Against Faulty Streaming Controller Operation
- NTCIP Compatible
- 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.
- User-Selectable Local or Master operation and DTE or DCE Interface Ensures Ease of Installation and Maximum Versatility
- Solid-State Current Limiters on All Power Lines Provide Equipment Protection
- Wide Optical Dynamic Range: Optical Attenuators are Never Required
- Comprehensive Lifetime Warranty



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Specifications subject to change without notice

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Agency compliance

FCC PART 15 COMPLIANT CE c UL us 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

Specifications

Data

Data Interface:	RS-232 C/D, RS-422 or RS-485 (2 or 4-wire) with tri-state protocols, user-selectable
Data Rate:	DC - 100 Kbps
Operating Mode:	Asynchronous, Simplex or Full-Duplex
Bit Error Rate:	<1 in 10^{9} @ Maximum Optical Loss Budget
Anti-Streaming Time-out:	4, 8, 16, 32, 64 Seconds, or Infinity (disabled)

Wavelength

850 nm or 1310 nm, Multimode
1310 nm, Single Mode

Number Of Fibers

2 In/2 Out

Optical Emitter

850 nm or 1310 nm, Multimode: LED
1310 nm, Single Mode: Laser Diode

Connectors

Power:	Terminal Block with Screw Clamps•
Optical:	ST or FC (see ordering information)
Data:	Type DB-25S

Electrical & Mechanical

Power:	
Surface Mount:	12 VDC @ 300 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 5.0 x 1.0 in., 17.8 x 12.7 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)†

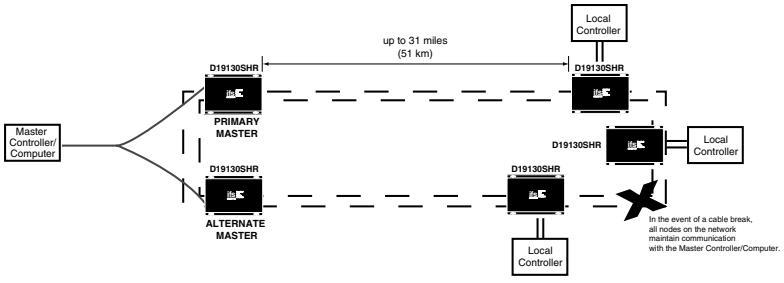
†May be extended to condensation conditions by adding suffix '–C' to model number for conformal coating.
•Optional Type DB-9P; specify connector style at time of order.

Ordering Information

	Part Number	Description	Fibers Required	Opt. Pwr. Budget	Max. Distance*
Multimode 62.5/125µm**	D19110SHR D19120SHR	Data Transceiver (850 nm) Data Transceiver (1310 nm)	2 In/2 Out	10 dB	1.9 miles (3 km) 6 miles (10 km)
Single Mode 9/125µm	D19130SHR	Data Transceiver (1310 nm)	2 In/2 Out	17 dB	31 miles (51 km)
Accessories♦	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)				
Options	Add '-24' for 24 VDC Power (Extra charge, consult factory) Add '-R3' to Model Number for R3 Rack Mount - No Charge (Requires R3 Rack purchased separately) Add '-FC' to Model Number for FC 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.

System Design



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