MERIDIAN
TECHNOLOGIES

One Bi-directional RS-232 Data over Two Optical Fibers

HX-1D/1D-x
w/ Screw Terminal
Connector

HX-1D/1D-xN
w/ DB-9 Connector

RS-232 DATA

FEATURES:

- One Bi-directional RS-232 Data Channel

- DC to 250 Kb/s Data Rate

- Surface Mount Technology (SMT) for High Reliability and Repeatability

- SpectraSmart™ Network Management Compatible

- Local LED Status Indicators to Monitor Critical System Diagnostics and Performance Parameters

- ST, FC Optical Connector

- Hot Swappable Rack Cards

- Back - Biased Photo Detector Circuitry for Stable Optical Laser Output Over Full Temperature Range

- Meets NEMA TS1 / TS2 & CALTRANS Specifications Utilizes Internal Switching Power Supplies

- Automatically Resettable Solid-State Current Limiters on All Power Lines: Provides Equipment Protection

- Wide Optical Dynamic Range: Optical Attenuators are Never Needed

- Screw Terminal or DB-9 Type Connectors for Data

DESCRIPTION:

The HX-1D/1D-x series products incorporate a new digital encoding technology. This fiber optic system transmits One Bi-directional RS-232 Data signal with a maximum data rate of 250 Kb/s.
Both, multimode or singlemode two fibers versions are available (See "Part Numbers" section).
The functionality this system is further enhanced by its compatibility with Meridian's PC based SpectraSmart™ Network Management & Diagnostic Software system. SpectraSmart™ supervises the operating parameters of the transmission system such as the status on Digital carrier detect, voltages, temperatures, optical levels etc. See SpectraSmart™ brochure for further details.

CONFIGURATIONS:

The DigiCool™ products are available as rack mount cards that can be installed in Meridian's card chassis, desk chassis and 19" racking frames.
This system can be configured in either star (module to rack) or trunking (rack to rack) configurations. These systems can be made a standalone system by using the SR-500, 1 slot desk / wall mount chassis (87VAC-264VAC).

MARKETS:

- √ Security and surveillance
- √ Access control systems
- √ Intelligent transportation systems (ITS)
- √ SCADA

SPECIFICATIONS:

Data

Format	RS-232 w/ full speed handshake
Data Rate RS-232	DC to 250 Kb/s
Bit Error Rate	10^{-9*}
PWD	10%

Connectors

Data	Screw Terminals or DB-9 Female
Optical	ST - MM(default), FC - SM(default)
Power	See SR-500 data sheet

Optical

Fiber Data Rate	100 Mb/s

Environmental

Operating Temperature	-34°C to +74°C
Storage Temperature	-55°C to +85°C
Relative Humidity	0 to 95% Non-condensing

Power

Card	4 Watts

Indicators (LEDs)

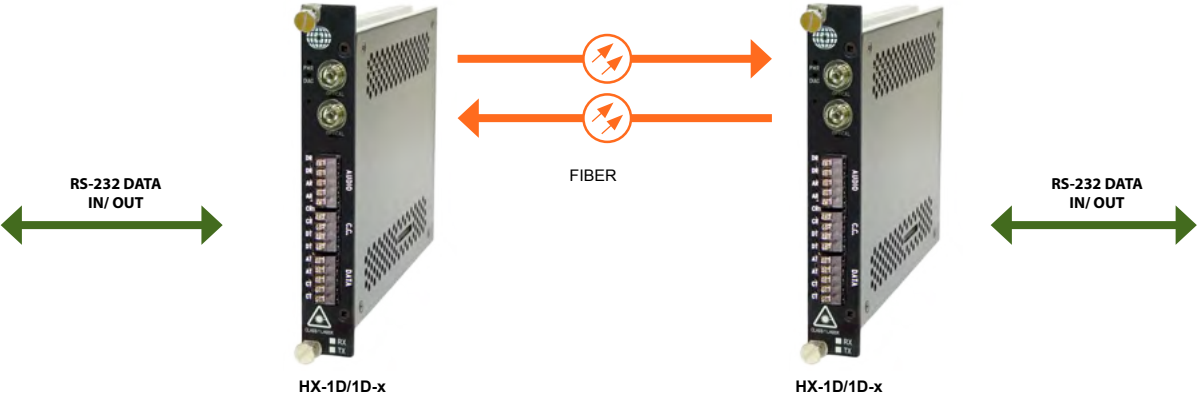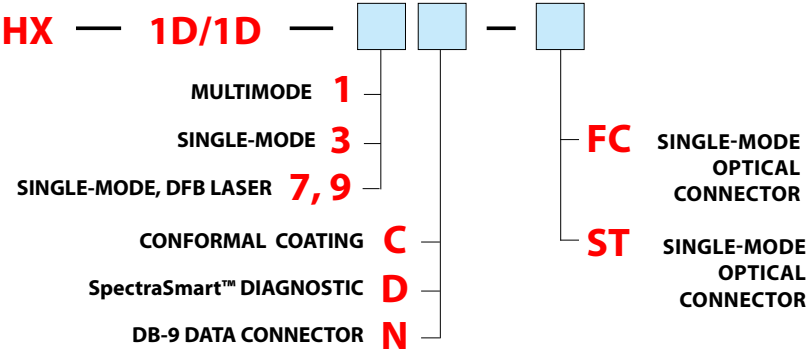|	
1 - Green	Power On
1 - Bi-color	TX Carrier/ Laser Over Current
1 - Bi-color	RX optical signal - Present / Error
1 - Green	TX Data Present
1 - Green	RX Data Present
1 - Bi-color (Optional)	Card Diagnostics

Physical

Dimensions (Card)	20 (W) x 127 (H) x 160 (D) mm (0.8 x 5.0 x 6.3 inch)
Weight (Card)	450 gms (16 Oz)
No. of Slots	1
Module	See SR-500 data sheet

Quality

MTBF	>200,000 hours, @ 35°C Ground Fix as per MIL 217F

*   measured @ max. optical budget
** Due to variations of drivers and diagnostic options, power shown @ max value

Part Numbers:

HX — 1D/1D — ☐ ☐ — ☐

MULTIMODE **1**
SINGLE-MODE **3**
SINGLE-MODE, DFB LASER **7, 9**
CONFORMAL COATING **C**
SpectraSmart™ DIAGNOSTIC **D**
DB-9 DATA CONNECTOR **N**

FC SINGLE-MODE OPTICAL CONNECTOR
ST SINGLE-MODE OPTICAL CONNECTOR

RS-232 DATA IN/ OUT ← → HX-1D/1D-x — FIBER — HX-1D/1D-x ← → RS-232 DATA IN/ OUT

OPTICAL:

Meridian Optical Code	Fiber Type/Size (um)	Optical Output (dBm)	Receiver Sensitivity (dBm)	Optical Budget (dB)	Wavelength (nm)	Optical Connector	Optical Dynamic Range (dB)	Max Distance (Km)
1	Multimode (Laser) 62.5 / 125	-5	-27	22	1300	ST	27	7
3	Singlemode (FP Laser) 9 / 125	-5	-27	22	1310	ST, FC	27	60
7, 9	Singlemode (DFB Laser) 9 / 125	+1	-27	28	1310, 1550	ST, FC	27	80

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