

PURE DIGITAL One Fiber

Communications Specialties introduces a new concept in fiber optic transmission of analog video, audio and data – the all new *Math Fiber Optics Pure Digital, One Fiber* point-to-point fiber optic transmission system. Designed to support either one or two directions, the system converts incoming analog signals to a pure digital bitstream, optically transmits the stream over a single fiber, and then converts the signals back to their original analog form at the receiving end. Traditional AM and FM systems simply can't compete with the flexibility, performance and price offered by this new *Pure Digital, One Fiber* alternative.

The *Pure Digital, One Fiber* concept revolutionizes the way you'll specify, purchase and use fiber optic transmission systems in surveillance, intelligent transportation, professional video and data gathering applications. Because all signals are converted to a common, digital format for transmission purposes, you can "mix and match" signal types in a single system. Now, you can order products designed specifically for your applications – transmitting any combination of video, audio, data and contact closure information, in one or two directions – with the convenience and economy

afforded by a single fiber system. And any system designed to meet your *current* needs can be easily upgraded in the future to add channels or support for different signal types. The pure digital processing and transmission eliminates all crosstalk and drifting, provides minimal distortion, and delivers a uniform, high-quality signal over the entire transmission distance.

Unbelievably, the *Math Fiber Optics Pure Digital, One Fiber* line is priced competitively with the very AM and FM systems that it renders obsolete! And, because of its cleverly engineered design, Communications Specialties can deliver your "custom-configured" order quickly – often shipping within 48 hours. The inside of this brochure explains our innovative ordering system. Refer to the back page for full product specifications.

Math Fiber Optics Pure Digital, One Fiber systems are made exclusively by Communications Specialties. For more information on "the digital difference," visit www.puredigital-onefiber.com or contact us by phone or fax to request a copy of our educational guide, *The Advantages of Pure Digital, One Fiber Systems*.

Applications for Pure Digital, One Fiber Systems Include:

Surveillance Systems:

- Camera video transmission with PTZ control
- Support for all "up-the-coax" systems
- Optional contact closure and audio support for access control

Intelligent Transportation Systems:

- Video monitoring
- Road and toll sensor transmission
- Traffic control
- Extended distance support

Audio/Visual Systems:

- Two-way videoconferencing with uncompressed video and stereo audio
- Distance learning with two-way video, audio and data

Professional Video Systems:

- Field transmission of video with up to four channels of audio
- Elimination of ground loops and hum in large facilities

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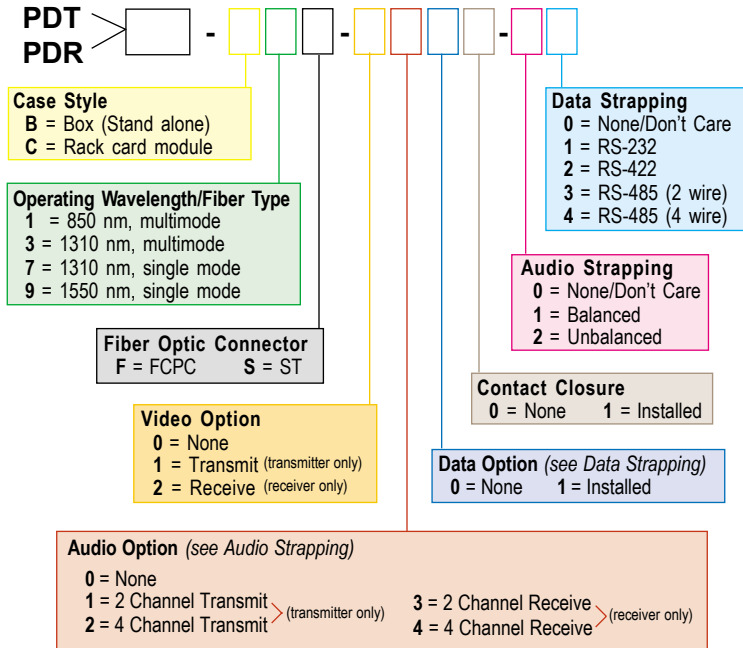
 **Communications
Specialties, Inc.**

PURE DIGITAL, ONE FIBER CUSTOM-CONFIGURED ORDERING SYSTEM

Unlike traditional AM and FM systems that are engineered for one specific purpose, the Pure Digital, One Fiber system is *designed to be customized* for your specific application needs. Our innovative ordering system allows you to “create” a part number that describes the specific signal and directional requirements for your system. Before ordering, use the following guide to determine a part number for the Pure Digital Transmitters (PDTs), Pure Digital Receivers (PDRs) and/or Pure Digital Transceivers (PDXs) that your installation requires. Or, if you prefer, ask your Communications Specialties dealer for assistance.

ONE WAY SYSTEMS:

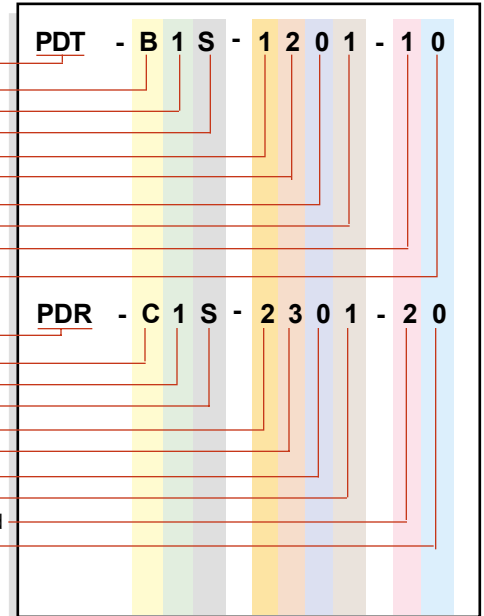
- Any signal or combination of signals transmitted in one and the same direction.
- Requires **ONE TRANSMITTER (PDT)** and **ONE RECEIVER (PDR)**



Sample Order

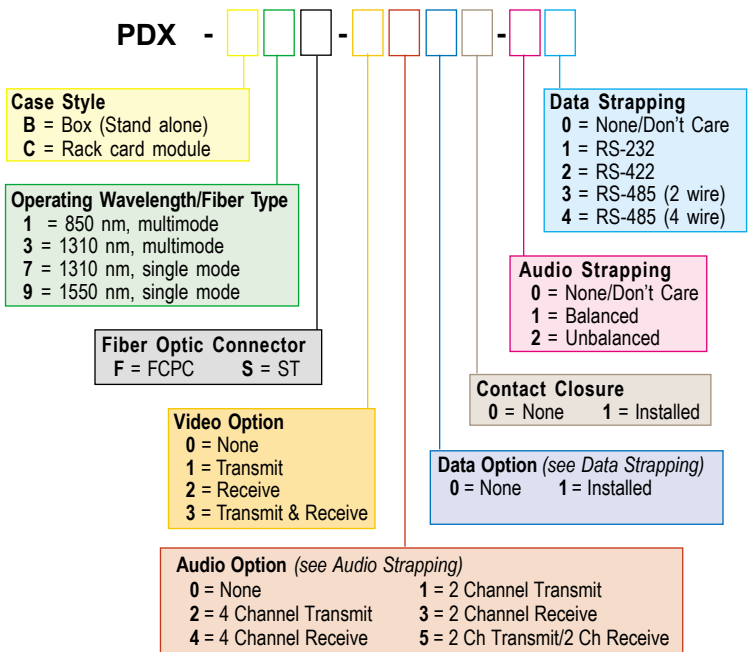
Transmitter

- Box (Stand alone)
- 850 nm, multimode
- ST Connector
- Video Transmit
- 4 Channel Audio Transmit
- Data Option - None
- Contact Closure - Installed
- Audio Strapping - Balanced
- Data Strapping - None



TWO-WAY SYSTEMS:

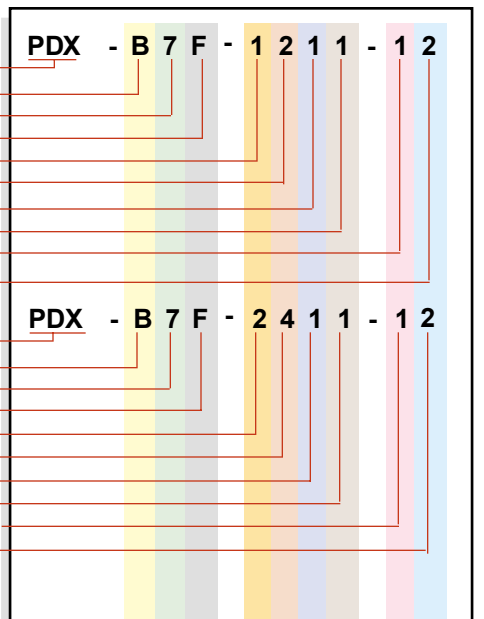
- Any signal or combination of signals transmitted in opposite directions or both directions simultaneously.
- Requires **TWO TRANSCEIVERS (PDX)**; one at each end. Units must be configured in a complementary fashion. (i.e. video transmit on one end and video receive on the other.)



Sample Order

Transceiver

- Box (Stand alone)
- 1310 nm, singlemode
- FCPC Connector
- Video Transmit
- 4 Channel Audio Transmit
- Data Option - Installed
- Contact Closure - Installed
- Audio Strapping - Balanced
- Data Strapping - RS-422



Audio

- 2 Channel one way
- 4 Channel one way
- 2 Channel Bi-Directional
- Balanced and Unbalanced
- Converts Balanced to Unbalanced or Unbalanced to Balanced

Data & PTZ Control

- Configure for bi-directional or one way
- RS-232
- RS-422
- RS-485 (2 wire or 4 wire)
- Pre-selected or field selectable via jumpers
- Supports all Camera PTZ protocols
- Protocol Independent
- High Speed & Low Speed Baud Rates
- Format Conversion Capability

Video

- One Way
- Bi-Directional
- Full Bandwidth Composite

Contact Closure

- Configure for bi-directional or one way
- Remote Switch, buzzer or latch applications
- Pre-selected or field selectable via jumpers

"Up The Coax" PTZ Control

- Use Transceivers Configured with Bi-directional Video
- Supports all manufactures protocol

Power

- 12 - 24 Volts AC or DC
- Power Adapter, External Power or Rack Frame Power

Host Cards

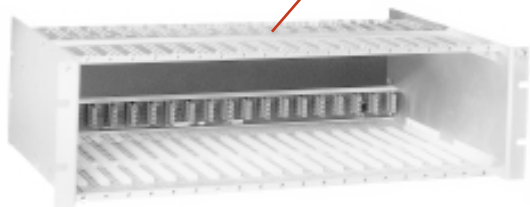
- Transceiver – Bi-directional or Two Way Systems
- Transmit Only – All Signals are sent in one direction
- Receiver Only – All Signals are received from one direction

Optical Transmission and Connectors

- 850nm Multimode - ST
- 1310nm Multimode – ST
- 1310nm Single-mode – FCPC or ST
- 1550nm Single-mode – FCPC or ST

Configurations

- Rack Card Module, up to 20 modules in Model 6001 Card Cage
- Stand Alone Box, wall or enclosure mountable



PURE DIGITAL, ONE FIBER SPECIFICATIONS

Power

Input Voltage: 9 - 24 Volts, AC or DC
Power Consumption: 8 watts, maximum
ESD protection: All signal inputs and outputs ESD protect to y kV

Mechanical

Enclosure size: y"W x y"D x y"H (ycmW x ycmD x ycmH)
Rack Card size: 2 card slots wide for Series 6001 rack enclosure
Operating temperature: 0° to 50° C
Storage temperature: -20° to 80° C
Connectors:
Video: BNC, gold plated center
Audio: 3.5 mm removable terminal block
Data: 3.5 mm removable terminal block
Contact Closure: 3.5 mm removable terminal block
Power: 5.0 mm removable terminal block
Indicators: 1 LED for power, 1 LED for optical carrier and data link

Optical

Pure Digital, One Fiber products operate on a single wavelength regardless of whether operating in a one direction or bi-directional manner.

Four (4) available wavelengths and modes:
850, multimode
1310, multimode
1310, single mode
1550, single mode

Optical budgets:

<u>Wavelength</u>	<u>One Directional</u>	<u>Bi-Directional</u>
850 MM		
1310 MM		
1310 SM		
1550 SM		

Video

Bandwidth: 8 MHz, +0.2dB / -2dB
Signal-to-Noise Ratio: >62 dB, weighted
Differential Gain: <2%
Differential Gain: <0.7°
Tilt: <1%
Input Level: 1Vp-p nominal, 1.3Vp-p max., 75 ohms terminated
Video Standards supported: NTSC, PAL, SECAM (monochrome and color)
Maximum Number of Channels: One (1) in either direction.
Simultaneous bi-directional video with Transceiver configuration

Audio

Bandwidth: 20 Hz to 20 kHz
Total Harmonic Distortion: <0.01%
Maximum Input Level: xx dBm, x.x Vp-p
Dynamic Range: xx dB
Input/Output type: balanced or unbalanced, jumper selectable
Maximum Number of Channels: 2 or 4 in either direction or 2 in both directions simultaneously with Transceiver configuration

Data

Interfaces Supported: RS-232, RS-422, RS-485 (2-wire and 4-wire), jumper selectable
Maximum Baud Rates:
Protocols: NRZ, RZ, Manchester, Bi-Phase
Maximum Number of Channels: One (1) in either direction.
Simultaneous bi-directional video with Transceiver configuration

Contact Closure

Input Voltage Level: External closure to ground or TTL level
Output Closure: Dry contact provided.
Maximum Output Current: xxx mA
Maximum Number of Channels: One (1) in either direction.
Simultaneous bi-directional video with Transceiver configuration

Up-the-Coax Support

Two-way video Transceiver configuration required.
Support is independent of manufacturers' signaling protocol. See TECHniques™ Application Note for configuration details.

Accessories and Options (See catalog for specifications)

110 Vac/60 Hz wall plug-in power supply	P/N: xxxx
220 Vac/ 50 Hz power supply	P/N: xxxx
Rack card cage	P/N: 6001
Power supply for rack card cage	P/N: 6010
Alarm module for rack card cage	P/N: 6020
1 Position filler panel	P/N: 6031
2 Position filler panel	P/N: 6032
4 Position filler panel	P/N: 6034