

# High-speed fiber optic transmission of RS-232/422/485 data signals in one compact unit

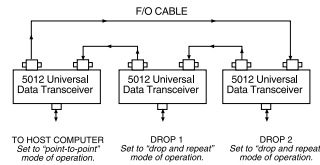
The Math Fiber Optics™ Universal Data Transceiver is designed to transmit and receive all standard data-related signals in accordance with EIA specifications for RS-232, RS-422 or RS-485 via multimode or single mode fiber optic cable. The unit is suitable for simplex, full duplex or drop-and-repeat operation and may be easily user-configured for the protocol desired, or for mixed protocol operation. The transceiver may be used in a low-speed mode for all data rates from DC up to 2.1 mbps (200 kbps for RS-232), or in a high-speed mode for all data rates from 10 kbps to 10 mbps.

LED indicators are provided on each transceiver to continuously monitor the presence of transmitted and received signals as well as operating power. The use of an internal regulator also allows operation from unregulated DC or batteries. Applications include PTZ control systems, LANS, traffic control and point-to-point data transmissions.

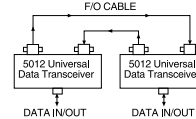
## MODELS AVAILABLE:

- Multimode, 850 nanometers
- Multimode, 1300 nanometers
- Single mode, 1300 nanometers

### RING OR LOOP-TYPE DATA BUS CONFIGURATION



### TYPICAL POINT-TO-POINT DATA LINK CONFIGURATION



## WARRANTY

All Math Fiber Optics Transmission Products are backed by a three-year warranty on parts and labor plus a 30-day satisfaction guarantee.



**5012**  
(Universal Data Transceiver)

## STANDARD FEATURES INCLUDE:

- Wide operating data rate DC to 2.1 mbps (low-speed mode) (200 kbps for RS-232) 10 kbps to 10 mbps (high-speed mode)
- Single or mixed protocol operation
- Adjustment-free
- Extended ambient operating range
- Multimode or single mode versions
- Stand-alone or rackmountable card cage versions
- Loss of data alarm on card cage version
- Data-derived or RTS transmit/receive switching (RS-485)

## EQUIPMENT INCLUDED:

- Transceiver unit
- Power supply (for stand-alone version)
- User's manual

## SPECIFICATIONS

Data Transmission Rate	
Low speed:	RS-232, DC-200 kbps RS-422/485, DC to 2.1 mbps
High speed:	RS-422/485, 10 kbps to 10 mbps
Operating Modes:	Simplex, Duplex, Asynchronous, Drop and Repeat, RTS or Data Derived T/R control (RS-485)
Compatibility:	RS-232, RS-422, RS-485 (2 wire or 4 wire)
Input Signal Voltage:	±5 to ±30 volts per EIA RS-232D 4.5 to 5 volts per RS-422, RS-485
Output Signal Voltage:	±5 to ±10 volts per EIA RS-232D 4.5 to 5 volts per RS-422, RS-485

Optical Loss Budget:	18 dB, 62.5 micron multimode fiber or 8/10 micron single mode fiber
Operating Wavelength:	850 nm, 1300 nm
Optical Connectors:	Industry standard ST, multimode FCPC, Single mode
Transmission Distance:	0-3.5 miles (5.5 km) multimode 0-50 miles (80 km) single mode
Signal Connector:	Removable screw-clamp type terminal block
Operating Power*:	10 to 18 VDC @ 150 ma. peak (Connected via separate power connector)
Operating Temperature Range:	-35 to +75 degrees C
Indicator LEDs:	Pwr, Tx, Rx (Loss of Data Alarm on card cage version)
Physical Size:	4 L x 3.5 W x 1.3 H in. (stand-alone version) (102 x 89 X 33 mm) 1 card cage position (card cage version)

Note that the Universal Data Transceiver is ESD protected to ±10 KV on all signal inputs and outputs.

## ORDERING INFORMATION

Module/Connector	Stand-Alone*	Card Cage **
XCVR/Multimode-850 nm	5012-1	5018-1
XCVR/Multimode-1300 nm	5012-3	5018-3
XCVR/Single Mode-1300 nm	5012-7	5018-7

\* All stand-alone transceiver units are provided with a matching plug-in AC power adaptor.

\*\* Operating power is provided by the model 6000 card cage.

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