

Video, Ethernet and Serial Data Multiplexer

Model 907E

Focal Technologies Corporation, a Moog Inc. company, has over 30 years of expertise in supplying standard and custom marine products for harsh environments and is a leading manufacturer of high performance and high quality multiplexers. Contact Focal for any assistance in selecting the best solution for your requirements.



The 907E is an expandable video, Ethernet and serial data multiplexer providing two (2) analog video channels, one (1) 10/100 Mbps Ethernet (10/100/1000 Mbps option) port and four (4) galvanically isolated RS-232/422/485 serial channels. This combination of signals makes the 907E an ideal single-card solution for applications with mixed signals and limited space while also supporting future growth using standard 907 expansion cards. In addition to on-board status LEDs for optical link, video, Ethernet and serial channels, the 907E includes real-time Ethernet diagnostics when used with the 907-DIAG-E card and graphical user interface (GUI) software.

Expansion cards may be stacked on the 907-E to add up to 48 data channels in a variety of formats, including RS-232/422/485, TTL, Ethernet, CAN Bus, hydrophone, audio, responders, and various analog and digital sonar signals. The 907E runs from a +5 VDC power supply, as normally required for the 907 product family, but is also available in a version for +12 VDC power.

Small form-factor pluggable (SFP) optical transceivers allow for a wide variety of optical wavelengths, fiber types, and link distances. Common transceiver options provide optical power budgets of 16 - 24 dB with up to 10 km of singlemode fiber or 2 km of multimode fiber. Coarse wave division multiplexer (CWDM) transceivers and optical cards are used to combine the 907E with multiple 907 media converters or other multiplexers. Redundant fiber operation is also supported with splitters and fiber optic switch cards.

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Features

- 2 Analog composite video channels
- 1 10/100 BASE-T(X) channel (1000 BASE-T optional)
- 4 RS232/485/422 dip switch and software configurable serial channels
- Interchangeable SFP optical transceiver
- Supports up to six (6) 907 expansion cards
- Rugged design for harsh environments, including pressure tolerant version
- Compatible with 907-DIAG-E diagnostic card and Graphical User Interface (GUI) software
- On-board diagnostic LEDs for power, optical link, video sync present, serial data Tx/Rx, and Ethernet port status
- Supports +5 VDC input or +12 VDC input voltage (not on same card)

Benefits

- Reduces cost and size of systems using video, sonar and serial controls
- Supports a wide range of optical options, including CWDM wavelengths and multimode configurations
- Simplifies troubleshooting with advanced diagnostics
- Isolated Ethernet and serial data channels provide a more robust interface to external equipment

Applications

- Remotely Operated Vehicles (ROVs) and Tether Management Systems
- Pipe Inspection Robots
- Bomb Disposal Robots
- Industrial Security Systems
- Remote Monitoring Stations

For systems with a low channel count, a single 907E card can replace separate video, Ethernet, data and optical CWDM cards.

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Specifications

Video	
No. of channels	2
Digitization	8-bit
Bandwidth	6.0 MHz
SNR	> 54 dB
Impedance	75 Ohms
Options	10-bit digitization
Ethernet	
No. Copper Ports	1
Data Rates	10/100 Base-T(X)
Latency	10 Base-T < 200 μ s, 100 Base-TX < 32 μ s (not including fiber, \sim 5 μ s/km)
Options	10/100/1000 Base-T(X) (2.5 G version)
Data	
No. of Channels	4
Format	RS-232/422/485 (switch selectable)
Data Rate	RS-232: 115 kbps NRZ max RS-422: 2.5 Mbps NRZ max RS-485: 2.5 Mbps NRZ max
Options	Expansion cards
Electrical	
Power Voltage	+5.0 VDC +/- 10%, regulated
Power Current	1.0 A typical (1.5 A max.)
Protection	Overvoltage / undervoltage, reverse polarity, 3A time-delay fuse
Options	+ 12 VDC Input
Mechanical	
Dimensions	PC/104 standard, 3.550" x 3.775"
Weight	< 120 g (0.26lb) including SFP
Options	Custom enclosures
Mounting Holes	PC/104 standard
Backplane connector	Proprietary (non-standard) pinout

Optical	
Optical Fiber	1 or 2 singlemode (9/125 m) or multimode (50/125 μ m)
Baud Rate	625 Mbaud
Wavelength	1310/1550 nm standard (CWDM optional, 1471-1611 nm)
Optical Budget	> 16 dB (20 dB typical)
Options	Bidi (bidirectional) transceivers, higher / lower budget transceivers, 2.5 Gbaud
Diagnostics	
LEDs	Power good, power fault, optical link, optical fault, Ethernet port status, serial Tx/Rx, video status
Ethernet to PC	Diagnostics from remote and console through 907-DIAGE-E card at console
Connectors	
Optical	1 or 2 LC (SFP)
Video	2 x SMB
Ethernet	1 x RJ-45
Serial	2 x 8-pin Molex (Micro-Fit Series)
Power	2-pin Molex, 0.156 inch spacing
Options	2-pin Wago (+12 VDC)
Environmental	
Temperature	-10°C to +60°C (operational) -40°C to +85°C (storage)
Humidity	85% RH, non-condensing
Vibration	5 g, 25 - 1000 Hz, 3 axes
Shock	30 g, 11 ms half sine, 3 axes
Options	3000/6000 psi pressure tolerant version, extended temperature, stress screened or qualified

All specifications and information are subject to change without notice. Please contact Focal for the latest updates.

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