RUGGED MULTI-CHANNEL RS-422
CONCENTRATOR & EXTENDER (CF-020010-61X)

Amphenol Aerospace

PDS-283

DESCRIPTION

Amphenol High Speed Solutions is pleased to introduce a new multi-channel RS-422 data concentrator and extender. This is a stand-alone unit with 13-32VDC power interface to the system. Its 6X bi-directional channels of RS-422 are electro-optically isolated from system interfaces and concentrated onto a single channel of 850nm multi-mode fiber optics at 1Gbps. Two units can be connected for seamless plug and play extension of the RS-422 interfaces. A separate RS-422 interface from the unit gives built-in-test and diagnostics information.

CF-020010-61X

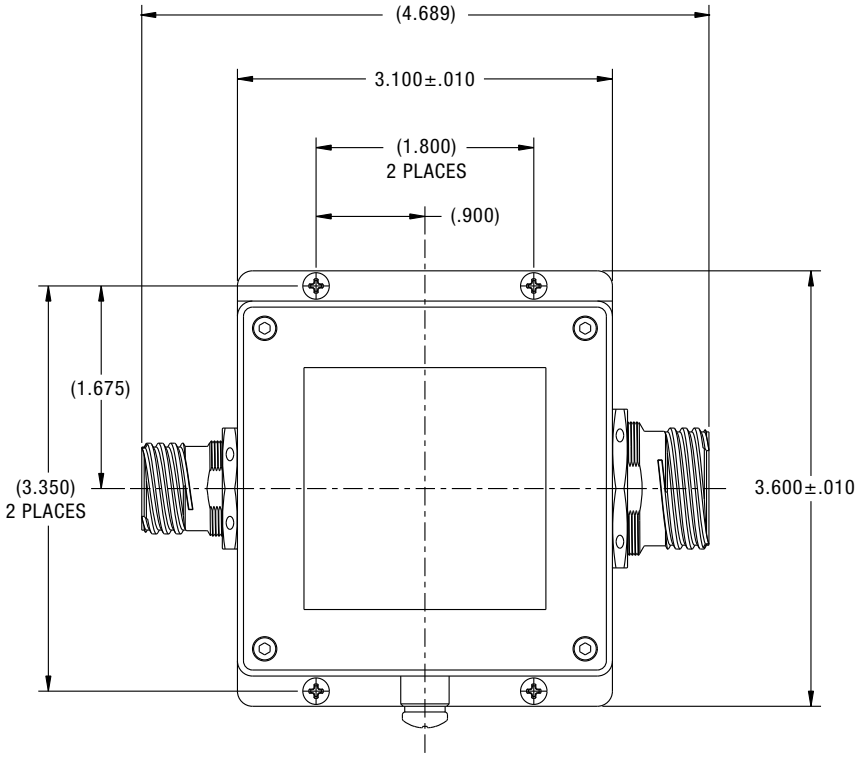
MIL-DTL-38999 with power and RS-422 interfaces (all copper)

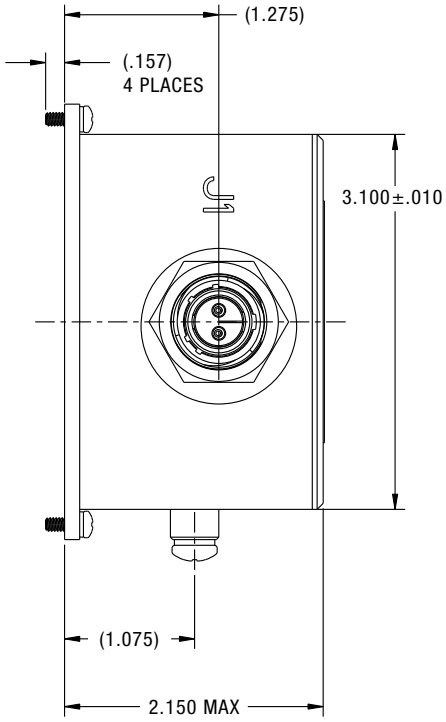
Rugged and stand-alone unit for plug and play system solution

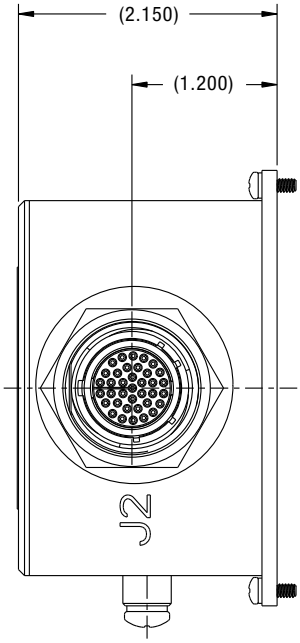
Fiber MIL-DTL-38999 for concentrated RS-422 interfaces onto 850nm milti mode fiber
(unit is easily configured for single mode if needed)

Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com

DIMENSIONS



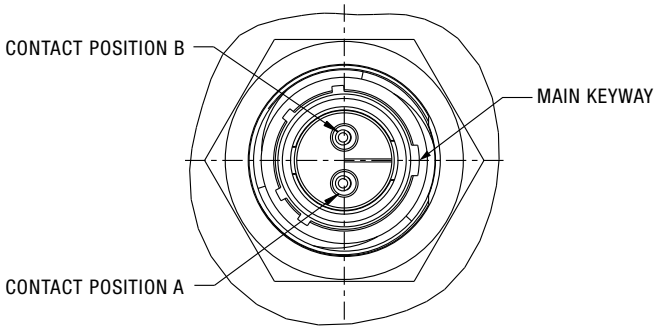




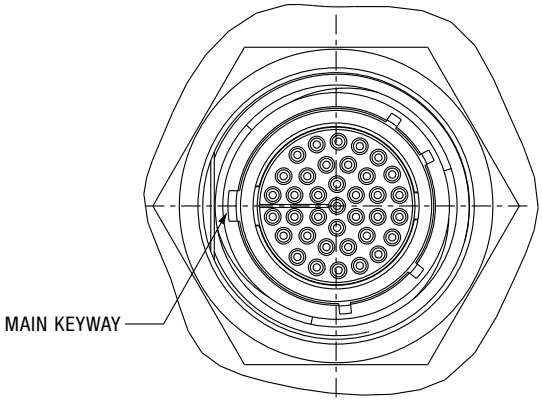
Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com

CONNECTORS AND PINOUT

Amphenol Aerospace



J1 CONNECTOR



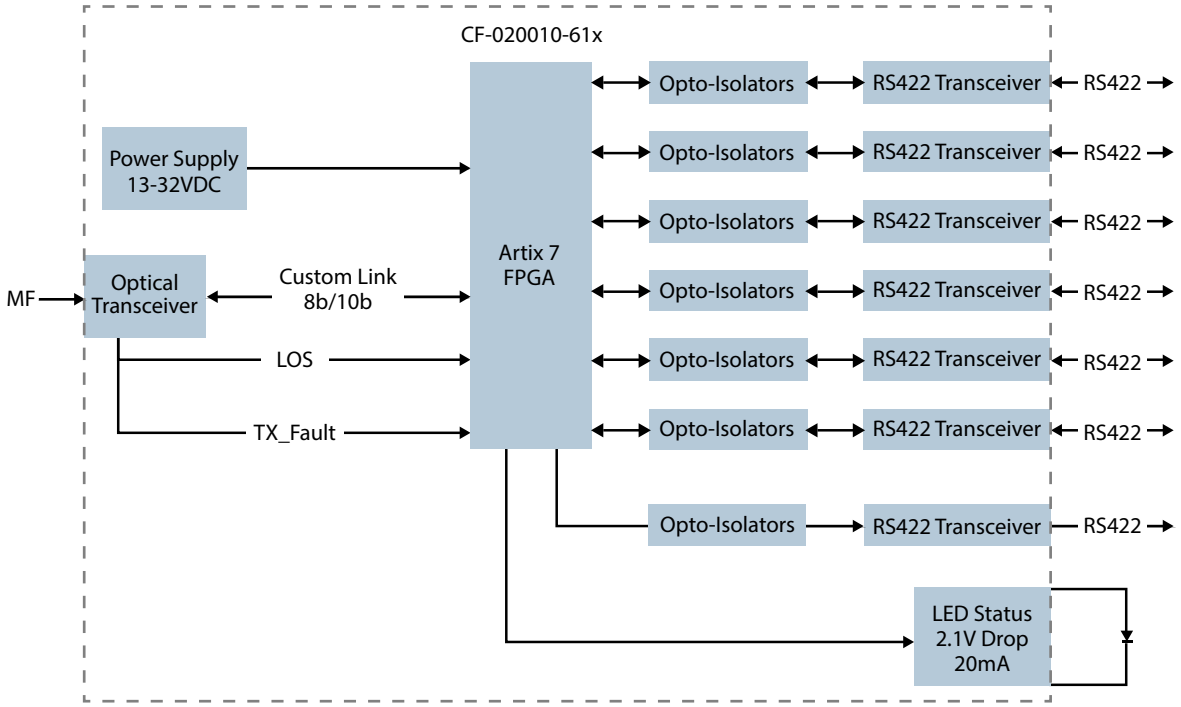
J2 CONNECTOR

Electrical Interconnection List		
Connector	Pin	Comments
J1	A	Fiber Optic Transmitter, 850nm 1.25 Gbps
J1	B	Fiber Optic Reciever 850nm 1.25 Gbps
J2	1	Port 1 out P , RS422 Port 1 Tx Pos
J2	2	Port 1 out N , RS422 Port 1 Tx Neg
J2	3	Port 1 in P , RS422 Port 1 Rx Pos
J2	4	Port 1 in N , RS422 Port 1 Rx Neg
J2	5	Not Connected
J2	6	Port 2 out P , RS422 Port 2 Tx Pos
J2	7	Port 2 out N , RS422 Port 2 Tx Neg
J2	8	Port 2 in P , RS422 Port 2 Rx Pos
J2	9	Port 2 in N , RS422 Port 2 Rx Neg
J2	10	Not Connected
J2	11	Port 3 out P , RS422 Port 3 Tx Pos
J2	12	Port 3 out N , RS422 Port 3 Tx Neg
J2	13	Port 3 in P , RS422 Port 3 Rx Pos
J2	14	Port 3 in N , RS422 Port 3 Rx Neg
J2	15	Not Connected
J2	16	Port 4 out P , RS422 Port 4 Tx Pos
J2	17	Port 4 out N , RS422 Port 4 Tx Neg
J2	18	Port 4 in P , RS422 Port 4 Rx Pos
J2	19	Port 4 in N , RS422 Port 4 Rx Neg
J2	20	Not Connected
J2	21	Port 5 out P , RS422 Port 5 Tx Pos
J2	22	Port 5 out N , RS422 Port 5 Tx Neg
J2	23	Port 5 in P , RS422 Port 5 Rx Pos
J2	24	Port 5 in N , RS422 Port 5 Rx Neg
J2	25	Not Connected
J2	26	Port 6 out P , RS422 Port 6 Tx Pos
J2	27	Port 6 out N , RS422 Port 6 Tx Neg
J2	28	Port 6 in P , RS422 Port 6 Rx Pos
J2	29	Port 6 in N , RS422 Port 6 Rx Neg
J2	30	Bit out P , RS422 Bit Output
J2	31	Bit out N , RS422 Bit Output
J2	32	Bit_Led_An, Bit Led Output Anode
J2	33	Bit_Led_Ca, Bit Led Output Cathode
J2	34	Power, 13-32VDC Power Input
J2	35	Power_RTN, 13-32VDC Power Input
J2	36	Not Connected
J2	37	Not Connected

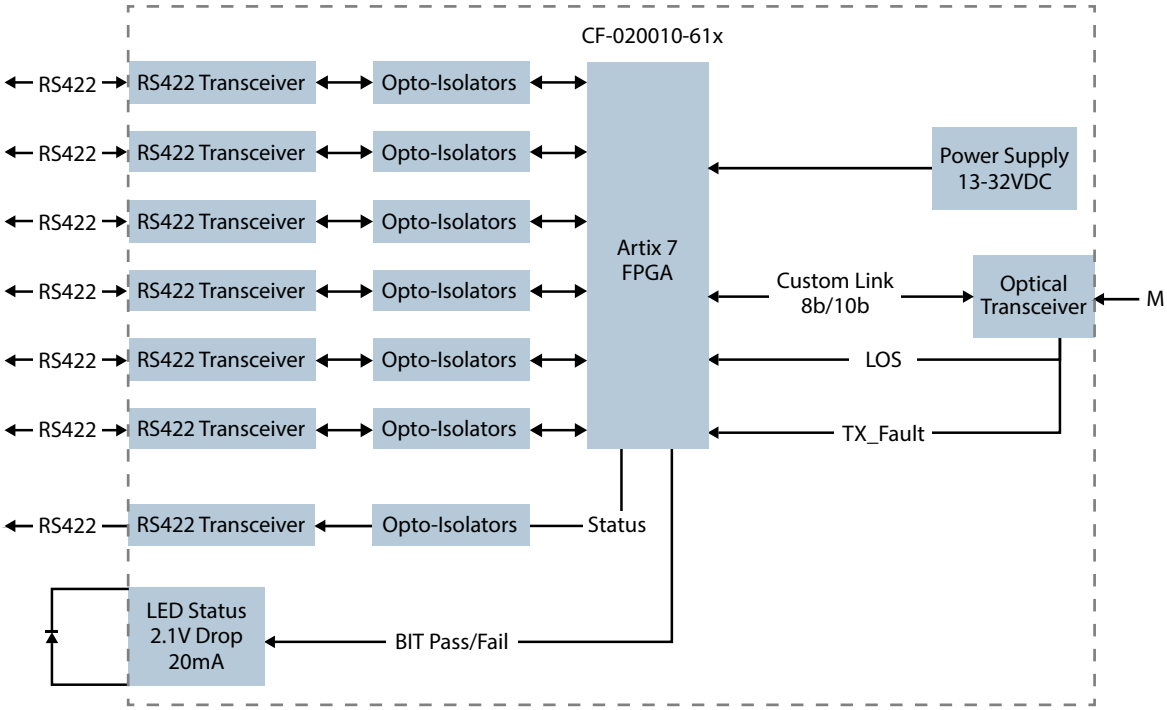
Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com

BLOCK DIAGRAMS

A.



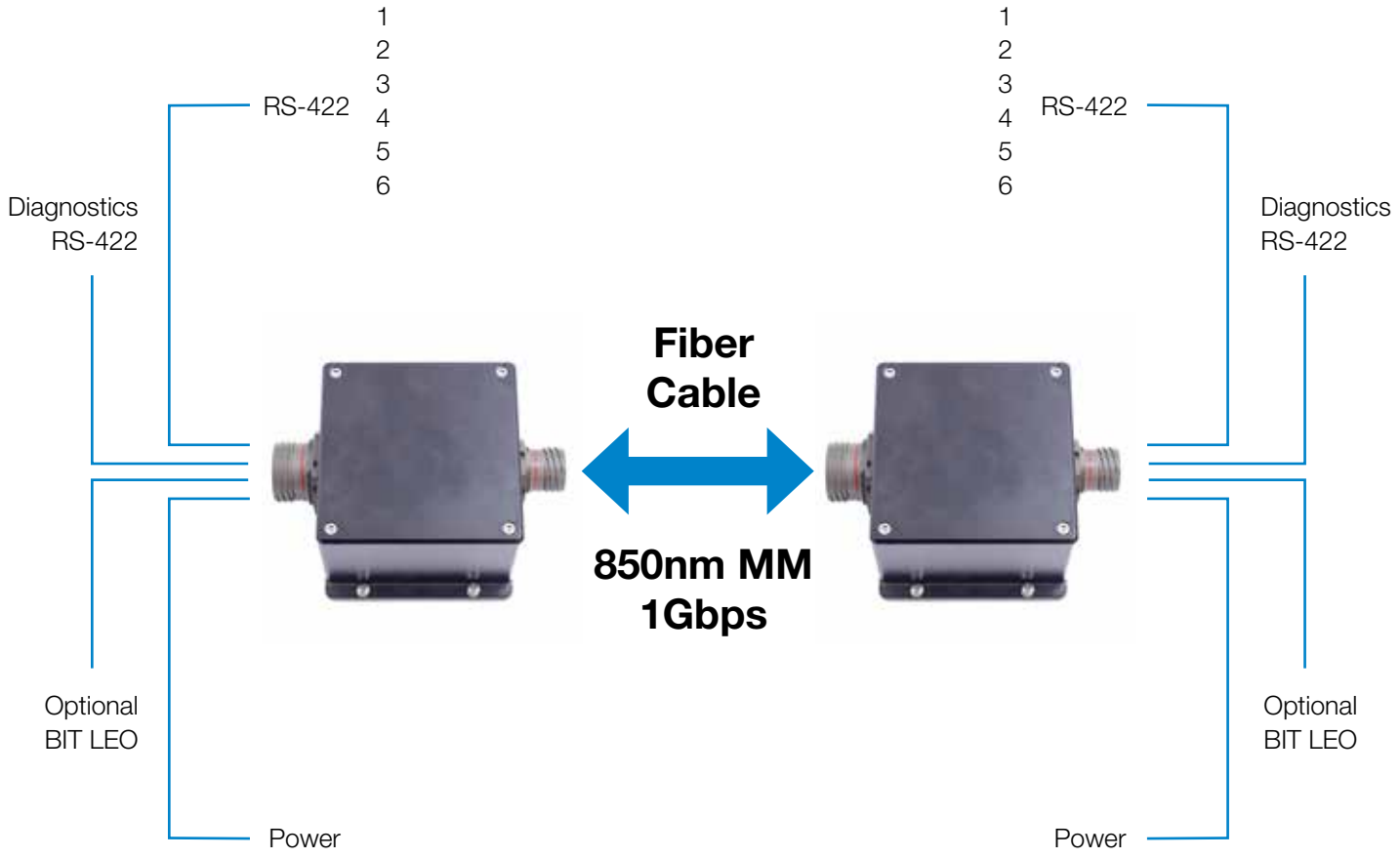
B.



Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com

SYSTEM BLOCK DIAGRAM

Amphenol Aerospace



Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com

TECH SPECS
Rugged RS-422 Concentrator

Power	13V-32-V DC power interface; 5 Watts Max
Copper RS-422	6 fully compliant optically isolated interfaces for concentration; 1 fully compliant optically isolated interface for built-in-test and diagnostics
Ethernet Fiber Connectivity	1 transmitter; 1 receiver 850nm multi-mode 1Gbps transmitter/receiver Min power output -4dBm; Max receiver sensitivity -20dBm

Temperature
- Operating Temperature - Thermal Cycles between -40°C and 85°C while device is operating
- Temperature is measured at chassis housing or card edge
- Storage Temperature - Thermal Cycles between -55°C and 125°C

Humidity
- Operating Humidity – Humidity cycle between 0-100% non-condensing humidity while device is operating
- Storage Humidity – Humidity cycle between 0-100% condensing humidity

Sealing
- Sealing can be optionally provided at the MIL-DTL-38999 interface with up to 10-5 cc/sec performance

Fluids Susceptibility
- MIL-DTL-38999 receptacle interface per EIA-364-10E

Vibration & Shock
- Sine Vibration – 10 g Peak, 5-2,000Hz
  -Based on a sine sweep duration of 10 minutes per axis in each of three mutually perpendicular axes. May be displacement limited from 5 to 44 Hz, depending on specific test.
- Random Vibration - 0.005@5Hz, 0.1@15Hz, 0.1@2,000Hz
  -60 minutes per axis, in each of three mutually perpendicular axes.
- 40 G Peak Shock Cycle
  -Three hits in each axis, both directions, ½ sine and terminal-peak saw tooth, Total 36 hits.

Altitude
- -1,500 to 60,000 ft Altitude Testing w/ Rapid Depressurization

Electromagnetic Compatibility
- Designed to comply with MIL-STD-461E

Printed Circuit Board Assemblies
- Conformal Coat
  -Amphenol performs Conformal Coating to both sides of printed circuit board assemblies using HUMISEAL IB31 in accordance with IPC-610, Class 3.
- Printed Circuit Board Rigidity
  -Amphenol printed circuit boards are fabricated in accordance with IPC-6012, Class 3.
- Printed Circuit Board Fabrication
  -Amphenol printed circuit boards acceptance criteria is in accordance with IPC-610, Class 3.

Reliability Predictions (MTBF)
Amphenol can perform Mean Time Between Failure (MTBF) reliability analysis in full compliance with MIL-HDBK-217F-1 Parts Count Prediction and MIL-HDBK-217F-1 Parts Stress Analysis Prediction. We can also perform reliability analyses in full compliance of ANSI/VITA 51.1 if it is required or preferred over the later method.

Jared Sibrava • Phone: (607) 643 - 1845 • Email: jsibrava@amphenol-aao.com