BELDEN
SENDING ALL THE RIGHT SIGNALS

Performance and Warranties Profile for Belden Fiber*Express* System Certified Installations

Overview:

Belden will provide its authorized PartnerAlliance Networking Installers, for the benefit of their end users, with both an extended Belden Component Warranty and a Lifetime Application Assurance Program for all Belden Certified Networking Systems installed by the Certified PartnerAlliance Networking Installer.

The extended Belden Component Warranty and the Lifetime Application Assurance Program are offered to the Certified PartnerAlliance Networking Installer by Belden Inc., in accordance with the following terms and conditions.

This Warranty and this Lifetime Application Assurance Program apply only to Belden Certified Networking Systems installed by the Certified PartnerAlliance Networking Installer in compliance with the PartnerAlliance Networking Agreement.

A Belden Certified Networking System is a structured cabling system that has been engineered, designed and installed by the Certified Belden PartnerAlliance Networking Installer. The engineering, design and installation of the Belden Certified Networking System must be performed in accordance with all applicable Belden guidelines, practices, and other Belden Program Documentation in effect at the time of installation. Belden structured cabling installations that meet these requirements will receive a Certification Registration Number and certification plaque or certificate from Belden and will then be designated as a Belden Certified Networking System, eligible for the extended Belden Component Warranty and Lifetime Application Assurance Program described below.

In order to maintain the validity of the extended Belden Component Warranty and the Lifetime Application Assurance Program, the Belden Certified Networking System must be maintained in accordance with the Belden End User Guide in effect at the time of installation.

Extended Belden Component Warranty:

Belden warrants that;

1. The Belden passive components installed in the Belden Certified Networking System are covered by a manufacturer's warranty against defects in material and workmanship for a period of twenty-five (25) years from the date of installation, at the original installation location.
2. The Belden Certified Networking System will meet or exceed the UTP channel transmission requirements specified by:

   ANSI/TIA/EIA-568-B.1: Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements

   ANSI/TIA/EIA-568-B.3: Commercial Building Telecommunications Cabling Standard, Part 3: Optical Fiber Cabling

   ANSI/TIA/EIA-568-B.3-1: Addendum 1 - Additional Transmission Performance Specifications for 50/125 µm Optical Fiber Cables

Once an installed Belden passive component has been deemed defective by Belden, Belden shall repair or replace, at Belden's discretion, the defective component. Belden may use refurbished materials in either repair or replacement procedures, and the repaired or replaced component will be warranted for the balance of the original twenty five year warranty period, or, ninety (90) days, whichever is longer.

The repair or replacement of a defective component under this warranty includes the reasonable costs of labor required to repair or replace the defective component. The decision of repair or replacement of components, and the selection of labor services to perform the repair or replacement are at the sole discretion of Belden Inc.

Lifetime Application Assurance Program:

Belden's Lifetime Application Assurance Program warrants that the Belden Certified Networking System will be capable of supporting all industry standard applications during its entire installation life at its original installation location.

Industry standard applications include;

1. All Applications identified in the current (at time of installation) Belden Program Documentation, and;
2. Any commercially available Applications introducedat a future date that are designed to operate overANSI/TIA/EIA-568-B.3 and ANSI/TIA/EIA-568-B.3-1compliant optical fiber transmission channels.

In the event that the Belden Certified Networking System is unable to support an existing or future industry standard application as defined above, and such failure can be attributed to a deficiency in the Belden Networking System, Belden will provide at, its expense, reasonable expertise, Belden materials and labor as required to remedy the problem and/or resolve the claim. The decision of repair or replacement of materials, and the selection of labor services to perform the remedial services are at the sole discretion of Belden Inc.

Limitations:

Belden Inc. will not be liable for, nor pay for, any loss of use of the Belden System or products; costs of substitute goods, facilities or services; or for any other economic losses or incidental, consequential or exemplary damages.

This extended Component Warranty and Lifetime Application Assurance Program for the Belden Certified Networking System does not cover any deficiencies in the System which result from failure to comply with Belden Design Guides, Program Documentation and installation procedures as well as ANSI/NECA/BICSI 568-2006, Standard for Installing Commercial Building Telecommunications Cabling. Belden connectivity conforms to requirements of IEC 60603-7 and is interoperable with all connectivity meeting this requirement. This warranty does not cover products not supplied by Belden Inc., including port damage to active equipment.

Belden Inc. shall not be liable for damages or defects resulting from circumstances beyond its control, including but not limited to, any misuse, abuse, neglect, alternation, unauthorized or improper repairs, acts of God or accidental damage or exposure (including without limitation damage by fire, water, paint, chemicals or natural disaster). Repair or replacement of the Belden Certified Networking System by Belden Inc. is your exclusive remedy.

This is the only warranty on the Belden Certified Networking System. There are no other warranties, express or implied, made by Belden Inc.

Belden Fiber*Express* Cabling Solution:

In addition to the extended Belden Component Warranty, the Lifetime Application Assurance Program and full compliance with ANSI/TIA/EIA-568-B Standards, Belden Certified Fiber*Express* Systems that conform with the Belden Fiber*Express* Certified System channel configuration shown below are guaranteed to provide the following optical performance characteristics for the duration of their installed lifetime at the original site of installation. All conditions regarding original design, installation and maintenance for Belden Fiber*Express* Certified Systems must be met in order to validate these optical performance characteristics.

Belden Fiber*Express* (FX) System		Maximum Channel Attenuation (2 mated pair connector topology)		Maxiumim Supportable Distance	
		850 nm	1300 nm	850 nm	1300 nm
FX 300[1]	62.5 µm multimode	3.2 dB	4.0 dB	895 ft (300 m)	1805 ft (550 m)
3.5 dB	1970 ft (600 m	3.9 dB	3.5 dB	1970 ft (600 m)	1970 ft (600 m)
FX 2000[2]	50 µm multimode	2.6 dB	–	985 ft (300 m)	–
Singlemode[3]	Loose tube optical fiber cable	–	4.7 dB	–	16,405 ft (5000 m)

1. Budget and length limitations shown are for 1 Gb/s applications including 1000Base-SX and 1000Base- LX Gigabit Ethernet. Maximum channel attenuation and maximum channel lengthlimitations for other applications are specified in the Belden Optical Fiber Design in effect at the time of installation.
2. Budget and length limitations shown are for 10 Gb/s applications including 10Base-S Ethernet. If 10GBase-LX4 is used, the maximum channel attenuation is 2.0 dB and the maximumchannel length is 985 ft (300 m). Maximum channel attenuation and maximum channel length limitations for other applications are specified in the Belden Optical Fiber Design in effect at the time of installation.
3. Singlemode tight buffer optical fiber cable is available; Budget and length limitations shown are for 1 Gb/s including 1000Base-LX Gigabit Ethernet. Maximum channel attenuation and maximum channel length limitations for other applications are specified in the Belden IBDN Optical Fiber Design Guide in effect at the time of installation.

Belden Fiber*Express* (FX) System Matrix	Fiber Channel Topology			
	Fiber-to-the-Desk (FTTD) and Centralized Fiber	Fiber Backbone (In-Building)	Fiber Backbone (Campus)	FX Pre-terminated Solutions*
FX Cables				
Breakout and Distribution Cable Series: MM & SM	✓	✓		
Interconnect Cable Series: MM & SM	✓			
Loose Tube (Campus) Cable Series: MM & SM, Composite MM/SM		✓	✓	
FX Ribbon Cable Series: MM & SM	✓	✓	✓	✓
Cross-Connect Hardware in the Telecommunications Room				
FX Manager with FX Manager Connector Modules: MM & SM	✓	✓	✓	✓
FX Rack Mount Patch Panel with Universal Adapter Strips: MM & SM	✓	✓	✓	
FX Wall Mount Patch Panel with Universal Adapter Strips: MM & SM	✓	✓	✓	
FX Bar: MM & SM	✓	✓	✓	✓
Patch Cords in the Telecommunications Room and at the Work Area				
FX Patch Cords: MM & SM	✓	✓	✓	✓
Outlets at the Work Area				
MDVO Multimedia Outlets with MDVO Multimedia Modules	✓			
MediaFlex Outlets with MediaFlex Inserts	✓			
FX Bar: MM & SM (as MUTOA)	✓			✓
Fiber Connectivity				
Optimax Connectors: MM & SM	✓	✓	✓	
Epoxy Field Mountable Connectors: MM & SM	✓	✓	✓	
Fiber Pigtails: MM & SM	✓	✓	✓	

MM = Multimode SM = Singlemode

*FX Pre-terminated solutions provide simple-to-install, high performance fiber channels through custom length, high precision factory terminated cables and matching optical connectivity components.