Camlok 8760

Camlok Belden 8760 18/2 Shielded Cable User Manual

Model: 8760 | Brand: Camlok

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Camlok Belden 8760 18/2 Shielded Cable. This cable is designed for various industrial and scientific applications requiring reliable signal transmission with protection against electromagnetic interference. The Belden 8760 features a twisted pair of 18 AWG stranded (16x30) tinned copper conductors, polyethylene insulation, an overall Beldfoil shield (100% coverage), and a 20 AWG stranded tinned copper drain wire, all encased in a durable PVC jacket. This construction ensures signal integrity and durability.

2. Setup and Installation

Proper installation is crucial for the optimal performance of the Belden 8760 shielded cable. Follow these guidelines for setup:

1. **Cable Preparation:** Carefully cut the cable to the required length using appropriate wire cutters. Ensure clean, straight cuts to avoid damage to the conductors or jacket.
2. **Jacket Stripping:** Use a wire stripper to remove the outer PVC jacket. Exercise caution to avoid nicking the shield or insulation beneath. The length of the stripped jacket depends on the connector or terminal block being used.
3. **Shield Management:** Once the jacket is removed, the Beldfoil shield and drain wire will be exposed. The shield provides protection against electromagnetic interference. For effective shielding, the drain wire should be properly terminated and grounded at one end of the cable run, typically at the signal source or receiving equipment. Avoid grounding both ends unless specifically required by the application to prevent ground loops.
4. **Conductor Termination:** Strip the polyethylene insulation from the 18 AWG tinned copper conductors. Connect the conductors to the appropriate terminals or connectors according to the system's wiring diagram. Ensure secure and reliable connections.
5. **Routing:** Route the cable away from sources of high electromagnetic interference (EMI) such as

power lines, motors, and transformers, whenever possible. Use cable trays or conduits for protection and organization.

6. **Bending Radius:** Adhere to the minimum bending radius specified for the cable to prevent damage to the conductors or shield. Excessive bending can compromise cable performance.

Figure 1: A section of the Belden 8760 cable with its outer PVC jacket removed, revealing the internal structure. Visible components include the twisted pair of insulated conductors, the metallic foil shield, and the bare drain wire. This image illustrates the cable's construction for proper termination.

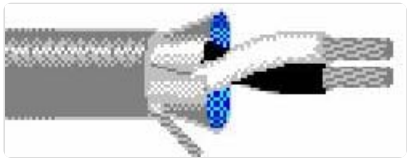

Figure 2: A simplified diagram illustrating the cross-section of a shielded twisted pair cable. It shows the outer jacket, the shield layer, and the two insulated conductors twisted together. This visual representation helps understand the protective layers of the cable.

3. Operating Guidelines

Once installed, the Belden 8760 cable operates passively as a signal transmission medium. Adhere to the following guidelines for optimal performance:

- **Signal Integrity:** Ensure that the connected equipment is properly configured for the signal type and

voltage levels being transmitted. The twisted pair construction helps minimize crosstalk and maintain signal integrity over distance.

- **Shielding Effectiveness:** The Beldfoil shield provides excellent protection against external electrical noise. Verify that the drain wire is correctly terminated and grounded to maximize this shielding benefit.
- **Environmental Conditions:** Operate the cable within its specified temperature and environmental ratings. Avoid exposing the cable to extreme temperatures, direct sunlight for prolonged periods, or harsh chemicals that could degrade the PVC jacket.
- **Load Capacity:** While this cable is for signal transmission, ensure that any current flowing through the conductors does not exceed the cable's rated capacity for 18 AWG wire, especially in power-over-signal applications.

4. Maintenance

The Belden 8760 shielded cable requires minimal maintenance. Regular inspections can help ensure its longevity and continued performance:

- **Visual Inspection:** Periodically inspect the cable jacket for any signs of physical damage, such as cuts, abrasions, or cracks. Check connectors and termination points for corrosion or loose connections.
- **Cleaning:** If necessary, gently clean the exterior of the cable with a soft, damp cloth. Avoid using harsh solvents or abrasive cleaners that could damage the PVC jacket.
- **Connection Integrity:** Ensure all connections remain tight and secure. Loose connections can lead to signal degradation or intermittent operation.
- **Storage:** If storing unused cable, keep it in a cool, dry place, away from direct sunlight and extreme temperatures. Coil the cable neatly to prevent kinks or damage.

5. Troubleshooting

Should you encounter issues with signal transmission, consider the following troubleshooting steps:

- **No Signal or Intermittent Signal:**
  - Check all connections for tightness and proper termination.
  - Inspect the cable for visible damage (cuts, kinks, severe bends).
  - Verify continuity of conductors using a multimeter.
- **Signal Interference or Noise:**
  - Ensure the shield drain wire is properly terminated and grounded at one end.
  - Check for nearby sources of strong electromagnetic interference.
  - Verify that the cable is not running parallel to high-voltage power lines for extended distances.
- **Incorrect Polarity:**
  - Confirm that the conductors are connected with the correct polarity at both ends, especially for differential signals.

6. Specifications

Detailed technical specifications for the Camlok Belden 8760 18/2 Shielded Cable:

Feature	Specification
Model Number	8760
Conductor Gauge	18 AWG
Conductor Type	Stranded (16x30) Tinned Copper
Number of Pairs	1 Twisted Pair
Insulation Material	Polyethylene
Shield Type	Overall Beldfoil Shield (100% Coverage)
Drain Wire	20 AWG Stranded Tinned Copper
Jacket Material	PVC
Length	500 feet
Material	Copper (conductors)
Approximate Item Weight	1 pound (for the specified packaging/unit)
Manufacturer	WNC
Available Jacket Colors	Black, Grey, White (as listed for product variant)

7. Warranty and Support

For specific warranty information regarding your Camlok Belden 8760 18/2 Shielded Cable, please refer to the documentation provided at the time of purchase or contact your seller directly. Warranty terms typically cover manufacturing defects.

For technical support or further inquiries, please contact the manufacturer or your authorized distributor. Ensure you have your product model number (8760) and purchase details available when seeking support.