

Introduction

Belden® flat cables are designed using the same expertise and design sophistication that made Belden a leader in round cable. Whatever your application, Belden is committed to offering quality flat cable products at a competitive price. Our extensive line includes Gray Ribbon, Rainbow, Vari-Twist® and Shielded and Jacketed Flat Cable options. Many of these are available off the shelf from local distributors. If you have a new or unusual application or you cannot find a flat cable in this catalog section that meets your technical requirements, contact Technical Support at 1-800-BELDEN-1.

Benefits of Flat Cable

- **Mass Termination** Terminating flat cable is done with the entire group of conductors as a unit, which is more efficient than working with individual conductors at one time.
- **Reliability** The simplicity of flat cable with its parallel conductor geometry eliminates many of the common sources of wiring error and malfunction. Registration of the conductors is one-to-one with the terminating connector or board so that proper contact assignment is almost automatic.
- **Space and Weight Reduction** The use of flat cable often eliminates much of the conventional wire weight and bulk. Such things as redundant insulating materials, fillers and tapes are not required. In addition, the composite flat cable construction is so mechanically strong that it is not necessary to have large conductors for strength. The copper cross-section can thus be reduced to what's required to carry the current load or to satisfy voltage drop requirements.
- **Flexibility** Flat cable is extremely flexible when bent in the plane of its thin cross-section. This flexibility has been utilized in applications where continuous or high flexing is necessary, e.g. drawers, doors, rotating arms, etc.
- **Greater Strength** Strength is enhanced by the fact that all conductors and insulation equally share tensile loads.
- **Consistent Electrical Characteristics** Because the conductor spacing is fixed and the geometry of the cable is constant, the electrical characteristics, such as impedance, capacitance, inductance, time delay, crosstalk and attenuation, are consistent.
- **Greater Current Carrying Capacity** Flat cables have greater surface-to-volume ratio than their round cable counterparts, consequently having higher efficiency in dissipating heat. This allows a higher current level for a given temperature rise and conductor cross-section.

- **Reduced Skewing Effects** Due to the conductors having the exact physical and electrical length, along with a continuous and consistent dielectric, time delays between signals within a given flat cable are minimized.
- **High-Density Interconnections** The cabling density achievable using flat cable is superior to that using conventional cable because of the high wire-to-cable cross-sectional density. Layers of flat cable are more effectively packed for higher conductor density than round cable.
- **Ease of Handling** Flat cable folds and bends readily, conforms to the mounting area, fastens easily with clamps, adhesive, or double-faced tape, and eliminates the installation and lacing difficulties associated with round wire cabling. Visible conductors in a fixed position within the dielectric simplify coding, inspection and circuit tracing.

Flat Cable Packaging

Packaging of flat cable is offered in one or more of the following configurations, as noted in the Physical Specifications table for each product:

- 100: 100' put-up in a cardboard container. May contain more than one piece.
- H100: A one-piece 100' length, in a cardboard container.
- H300: 300' length in a cardboard container may contain more than one piece.
- R300: 300' length put-up on a reel may contain more than one piece. It is designed for use by assemblers who use automated terminating equipment. An additional feature is the 9" inner tail exposed through the flange. This enables users to terminate the cable end to a device, which is necessary for in-line testing.

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