

# Custom Power & Grounding Cable Assemblies



Assemblies with a variety of terminal lug styles

## INTRODUCTION

Carlisle Interconnect Technologies (CarlisleIT) engineers custom cable assembly systems that meet the most demanding of specifications, qualifies products to those specifications, and manufactures to meet uncompromising delivery schedules.

Available for both power and grounding applications, CarlisleIT has the experience and breadth of offering to solve your most challenging cable assembly concerns.

## SPECIFICATIONS

- » Depending upon the cable construction, aluminum provides up to a 60% weight savings versus copper assemblies and is rated up to 175 °C
- » Typical applications range in gauge sizes from #14 AWG to 4/0 (2.0mm<sup>2</sup> to 120mm<sup>2</sup>)
- » Length tolerances:
  - » 0.25 inches for assemblies ≤ 50 inches
  - » 0.50 inches for assemblies > 50 inches
- » Clocking tolerance ± 10°

## BENEFITS

- » Cable assemblies provide a convenient and fast bolt-on solution to power and grounding cabling needs
- » Utilizing assemblies eliminates the need to purchase and maintain expensive terminal lug installation tooling and the need to train installers on crimping procedures
- » Standardizing cable assemblies facilitates design to exacting standards, pre-determined cable dressing and assurance of proper fit
- » Can be combined with other CarlisleIT products into kits that facilitate assembly on the factory floor

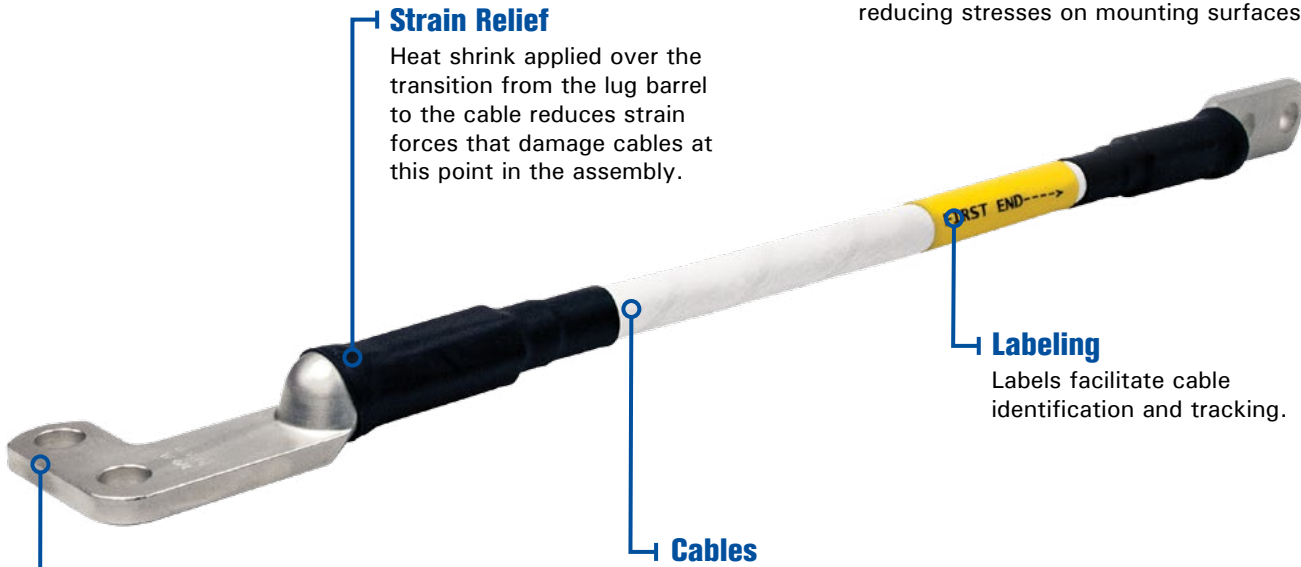


Cable assemblies can be combined and certified with terminal blocks, providing a complete solution to engine power feeder requirements.

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## Terminal Lug Clocking

CarlisleIT can provide cable assemblies that have terminal lugs oriented with respect to each other at a pre-determined angle. Clocking reduces installation effort and time, while reducing stresses on mounting surfaces.



### Strain Relief

Heat shrink applied over the transition from the lug barrel to the cable reduces strain forces that damage cables at this point in the assembly.

### Labeling

Labels facilitate cable identification and tracking.

### Cables

CarlisleIT offers a variety of airframe cables including:

- » **Tufflite® TLS – Thick wall, Abrasion Resistant**  
An increased wall version of the Tufflite® family of products, TLS can be utilized in applications requiring superior mechanical capabilities such as abrasion resistance and dynamic cut-through. This insulation system may be used as a reduced size and weight replacement for MIL-W-22759/5 to /8. TLS is rated at 260°C.
- » **Tufflite® TLA – Aluminum Conductor**  
An increased wall version of the Tufflite® family of products, TLA utilizes aluminum conductor for power feeder applications. Improved mechanical performance including superior flexibility as compared to traditional polyimide insulated power feeder cables. TLA is rated at 175°C.

### Terminal Lugs

Environmentally-sealed terminal lugs are designed for demanding power and grounding applications. Available in a wide variety of configurations such as one-hole, two-hole, angled tongue and narrow tongue configurations, CarlisleIT terminal lugs can be selected to facilitate a wide range of termination and cable assembly installation needs. Standard connector body materials include lightweight aluminum for applications up to 175°C and nickel-plated copper for applications up to 260°C.

## PERFORMANCE

CarlisleIT power and grounding cable assemblies are designed for the most demanding power and grounding aerospace applications and qualified to demanding specifications. In the sequence provided below, millivolt drop testing was performed both initially and after each test and proved negligible degradation of the cable assembly.

- 1) Salt Spray, 500 hour duration
- 2) Humidity/Temperature Cycling for 400 cycles, cycling from 82°C at 95% RH to 54°C
- 3) Vibration in X, Y and Z axes
- 4) Tensile testing following the environmental and vibration testing. As an example of a popular configuration, all #2 AWG samples exceed 500 Lb<sub>f</sub>
- 5) Environmentally sealed and hydrostatically tested to 80 psi for twenty-five five minute cycles with no leaking