

**Thomas and Betts Corporation  
Product Guide Specification**

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice, Fifth Edition*.

This section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" after editing this section.

Section numbers are from *MasterFormat 2010 Update*.

**SECTION 26 05 83.16  
WIRING CONNECTIONS: MECHANICAL CONNECTORS**

Specifier Notes: Delete any information below in Parts 1, 2 or 3 which is not required or relevant for the project.

**PART 1 – GENERAL**

**1.01 SUMMARY**

- A. This section includes Blackburn® aluminum and copper mechanical connectors for wire termination, grounding and low voltage power distribution.

**1.02 REFERENCES**

- A. Underwriters Laboratories, Inc. (UL):
1. UL467 Grounding and Bonding Equipment
  2. UL486A-486B Wire Connectors
  3. UL486C Splicing Wire Connectors
  4. UL1059 Terminal Blocks
- B. Canadian Standard Association (CSA):
1. CSA C22.2-65 Wire Connectors
  2. CSA C22.2-188 Splicing Wire Connectors
  3. CSA C22.1 Canadian Electrical Code Part I (CEC)
- C. National Fire Protection Association (NFPA):
1. NFPA 70 National Electrical Code (NEC)
- D. American National Standard Institute (ANSI):
1. ANSI C119.4 Electric connectors - connectors to use between aluminum-to-aluminum or aluminum-to-copper conductors

**1.03 SUBMITTALS**

- A. Comply with Section 01 33 00 – Submittal Procedures.
- B. Product Data:
1. Submit manufacturer's descriptive literature and product specifications for each product.
  2. Manufacturer's product drawings.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Products shall be free of defects in material and workmanship.

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- B. Furnished products are listed, classified or approved by third party agencies as suitable for the intended purpose.

**1.05 WARRANTY**

- A. Product is warranted to be free of defects in material and workmanship.
- B. Product is warranted to perform the intended function within design limits.

**PART 2 – PRODUCTS**

**2.01 GENERAL**

- A. The connectors defined in this section shall be:
  - 1. Split Bolt Connectors
  - 2. Insulation Piercing Connectors
  - 3. AMT Connectors
  - 4. Power Distribution Blocks
  - 5. Aluminum Dual-rated Mechanical Connectors
  - 6. Copper Mechanical Connectors
  - 7. Two-bolt Connectors

**2.02 MANUFACTURERS**

- A. Acceptable Manufacturers:  
Thomas & Betts Corporation  
8155 T&B Blvd  
Memphis, TN 38125  
800-816-7809, 901-252-5000  
[www.tnb.com](http://www.tnb.com)

Products:

- 1. Blackburn® Mechanical Connectors

**2.03 DESIGN AND PERFORMANCE REQUIREMENTS**

- A. Split bolt connectors:
  - 1. H series
    - a. H series split bolt connectors shall be UL listed and CSA certified.
    - b. H series split bolt connectors shall have a bolt and nut made from high strength corrosion resistant bronze alloy.
    - c. H series split bolt connectors shall have a pressure bar made from copper alloy.
    - d. H series split bolt connectors shall be listed to UL486C and UL467 for grounding and direct burial up to catalog number 40H.
    - e. H3 version split bolts shall accommodate up to three wire.
    - f. H3 version split bolts are not UL listed or CSA certified.
    - g. H series split bolt connectors shall have a wire range of #10 to 1000 kcmil.
  - 2. HPS series
    - a. HPS series split bolts shall be UL listed and CSA certified up to catalog number 350HPS for copper conductors.
    - b. HPS series split bolts shall be used for aluminum and copper conductors, and for use with ACSR cable,
    - c. HPS series split bolts shall have the bolt, nut, pressure bar and spacer made from copper alloy.
    - d. HPS series split bolts shall have a tin plated bolt, pressure bar and spacer.

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- e. HPS series split bolts shall use Blackburn® Contax® paste when used with aluminum conductors to inhibit galvanic corrosion.
  - f. HPS series split bolts shall have a wire range of #10 to 1000 kcmil copper or aluminum and #8 to 900 ACSR.
3. APS series
- a. APS series split bolts shall be UL listed and CSA certified up to catalog number APS41.
  - b. APS series split bolts shall be made from corrosion resistant tin plated aluminum.
  - c. APS series split bolts shall handle a wire range of #10 to 500 kcmil.
4. HPW series
- a. HPW series split bolts shall be UL listed and CSA certified.
  - b. HPW series split bolts shall be made from tin plated copper alloy for high strength and corrosion resistance.
  - c. HPW series split bolts shall have a contoured spacer and bell-mouth washer to distribute pressure over much of the conductor.
  - d. HPW series split bolts shall have the following wire range:
    - 1) ACSR: #8 to 4/0 AWG
    - 2) Main and tap: #12 to 4/0 AWG
- B. Insulating Piercing Connectors
1. Talon™ series
- a. Talon™ series insulation piercing connectors shall be the IPC series.
  - b. Talon™ series insulation piercing connectors shall be rated 600V, 90°C.
  - c. Talon™ series insulation piercing connectors shall be for copper to copper, copper to aluminum and aluminum to aluminum applications.
  - d. Talon™ series insulation piercing connectors shall not require the conductor to be stripped prior to making connection.
  - e. Talon™ series insulation piercing connectors shall be used for either tap or splice applications.
  - f. Talon™ series insulation piercing connectors shall be self-insulated for hot line applications.
  - g. Talon™ series insulation piercing connectors shall have a wire range of #10 to 500 kcmil.
- C. AMT Connectors
1. AMT series
- a. AMT series connectors shall be of the AMTS (same side) or AMTD (double side).
  - b. AMT series connectors shall be used in multi-tap and splice low-voltage power distribution applications.
  - c. AMT series connectors shall be made from high conductive aluminum alloy.
  - d. AMT series connectors shall have encapsulated PVC insulation rated for 90°C, 600V.
  - e. AMTS series connectors shall be prefilled with oxide inhibitor.
  - f. AMT series connectors shall be UL listed and meet or exceed ANSI C119.4 requirements.
  - g. AMT series connectors shall have a wire range of #14 to 750 kcmil.
- D. Power Distribution Blocks
1. PDS series
- a. PDS series power distribution blocks shall be available as terminal blocks or tapping blocks for use in low-voltage power distribution applications.
  - b. PDS series power distribution blocks shall be UL listed.
  - c. PDS series power distribution blocks shall be rated 80°C, 600V.
  - d. PDS series power distribution blocks connector bodies shall be made from high conductive aluminum alloy.

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- e. PDS series power distribution blocks shall have a plastic insulated housing with a flammability rating of UL94-V2.
- f. PDS series power distribution blocks shall be dual rated for both aluminum and copper conductors.
- g. PDS series power distribution blocks shall be available for DIN rail or screw down panel mounting.
- h. PDS series power distribution blocks shall have a wire range of 1/0 to 500 kcmil.

**E. Dual-rated Mechanical Connectors.**

- 1. Dual-rated mechanical connectors shall be dual rated for both aluminum and copper conductors.
- 2. Dual-rated mechanical connectors shall be made from corrosion resistant tin plated aluminum alloy.
- 3. Dual-rated mechanical connectors shall be UL listed and CSA certified.
- 4. Dual-rated mechanical connectors shall have a slotted set screw on lugs up to 2/0 AWG and a socket set screw for larger lugs.
- 5. Dual-rated mechanical connectors that have two-hole mounting or slotted hole mounting shall be a NEMA spacing of 1-3/4".
- 6. Dual-rated mechanical connectors shall cover a wire range of #14 to 1000 kcmil.
- 7. Dual-rated mechanical connectors shall be one of the following series;
  - a. ADR6 series: single conductor, one-hole mount
  - b. ADR35-12 series: single conductor, two-hole mount
  - c. ADR21-AR series: single and two-conductor, anti-rotational
  - d. ADR25-12S series: single conductor, slotted hole mount
  - e. ADR11-21 series: two-conductor, one-hole mount
  - f. ADR35-22 series: two-conductor, two-hole mount
  - g. ADR02-32 series: three-conductor, two-hole mount
  - h. ADR02-34 series: three-conductor, four-hole mount
  - i. ADR25-44 series: four-conductor, four-hole mount
  - j. ASL30-21: two-conductor, one-hole stepped
  - k. ASL 60-22 series: two-conductor, two-hole mount stepped
  - l. ASL60-32 series: three-conductor, two-hole mount stepped
  - m. ASL60-42 series: four-conductor, two-hole mount stepped
  - n. ASR0214 series: reducing splice with solid wire stop

**F. Copper Mechanical Connectors**

- 1. Copper mechanical connectors shall be UL listed and CSA certified.
- 2. Copper mechanical connectors shall be made from high-strength bronze alloy or electrolytic copper.
- 3. Copper mechanical connectors shall use zinc-plated set screws, socket, hex and/or slotted.
- 4. Copper mechanical connectors shall cover a wire range of #14 to 1000 kcmil copper wiring.
- 5. Copper mechanical connectors shall be one of the following series:
  - a. L35 series: single conductor, one-hole mount
  - b. L1252 and L1252H series: single conductor, two-hole mount
  - c. TL250 series: two-conductor, two-hole mount
  - d. STC014 series: single conductor, one-hole mount, straight tang
    - 1) Catalog number STC014 shall be UL listed only.
  - e. BTC014 series: single conductor, one-hole mount, offset tang
    - 1) Catalog number BTC014 shall be UL listed only.
  - f. LOCKTITE® 31003 series: single conductor, one-hole mount
  - g. LOCKTITE® 31005-AL series: single conductor, one-hole mount, flag type
  - h. LOCKTITE® 31005-UAL series: single conductor, one-hole mount, 90° upright.
  - i. LOCKTITE® 32003 series: single conductor, two-hole mount
  - j. LOCKTITE® 32207 series: single conductor, two-hole mount, NEMA spacing

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- k. LOCKTITE® 32003BD series: two and three-conductor, two and four-hole mount, NEMA spacing
  - l. LOCKTITE® 32503 series: two-way connector/splice
  - m. LOCKTITE® 32007TL series: single conductor, two-hole mount, tandem screw, NEMA spacing
  - n. LOCKTITE® 71003 series: single conductor, one-hole mount, cone screw lug
- G. Two-bolt Connectors
- 1. Two-bolt connectors shall be made from high-strength copper alloy.
  - 2. Two-bolt connector bolts shall be made from high-strength copper alloy.
  - 3. Two-bolt connectors shall have a removable cap and a single piece spacer construction.
  - 4. Two-bolt connectors shall be UL listed and CSA certified for copper conductors.
  - 5. Two-bolt connectors shall have the following main and tap wire ranges:
    - a. Main: #2 to 1000 kcmil
    - b. Tap: 10 to 1000 kcmil
  - 6. Two-bolt connectors shall be one of the following series:
    - a. 2B10 series: two-bolt connector without spacer
    - b. 2B10X series: two-bolt connector without spacer, with one bolt longer than the other
    - c. 2B10W series: two-bolt connector with spacer
    - d. 2BPW series: two-bolt connector with spacer, tin plated for use with copper, aluminum and ACSR conductors.

**PART 3 – EXECUTION**

**3.1 INSTALLATION**

- A. Installation shall be in accordance with the NEC and CEC guidelines where applicable and manufacturer's instructions.
  - 1. All connectors shall have the cable stripped to the proper length as defined by the manufacturer.
  - 2. All connectors shall have the wire termination screws torqued in accordance to UL486A/B, UL486C and the manufacturer's instructions.

**END OF SECTION**