



U.S. Department
of Transportation

Federal Aviation
Administration

Advisory Circular

Subject: FAA SPECIFICATION FOR L-823 **Date:** 9/30/08 **AC No.:** 150/5345-26D
PLUG AND RECEPTACLE, **Initiated** AAS-100 **Change:**
CABLE CONNECTORS **by:**

1. **PURPOSE.** This advisory circular (AC) contains the specification for plug and receptacle (cable connectors) used with underground power cables, isolation transformer leads, and light fixture leads for airport lighting systems.
2. **EFFECTIVE DATE.** Effective six months after the issue date of this AC, only that equipment qualified per the specifications herein will be listed per AC 150/5345-53, Airport Lighting Equipment Certification Program.
3. **CANCELLATION.** AC 150/5345-26C, FAA Specification for L-823 Plug and Receptacle, Cable Connectors, dated April 17, 2000, is canceled.
4. **APPLICATION.** The Federal Aviation Administration (FAA) recommends the guidance and specifications in this Advisory Circular for Plug and Receptacle, Cable Connectors. In general, use of this AC is not mandatory. However, use of this AC is mandatory for all projects funded with federal grant monies through the Airport Improvement Program (AIP) and with revenue from the Passenger Facility Charges (PFC) Program. See Grant Assistance No. 34, "Policies, Standards, and Specifications," and PFC Assurance No.9, "Standards and Specifications."
5. **PRINCIPAL CHANGES.** The changes in this AC include the following:
 - a. Update drawings to .DWG format. All dimensions remain the same.
 - b. Sources for referenced documents are updated.
 - c. Shall statements are updated to "must" statements.
 - d. Paragraph 3.3.2 is updated to clarify requirements for the calculation of tensile strength of the conductor.
 - e. Paragraph 4.2.1 is reworded to clarify pass/fail criteria.
 - f. Paragraph 4.2.6 now references Section 1200.15 vice 1200.9 of UL-1581 to better address the current edition of the UL standard.
 - g. Paragraph 5.1 is updated to correct the insulation resistance value to 75,000 megohms.
6. **METRIC UNITS.** To promote an orderly transition to metric units, this specification includes both English and metric dimensions. The metric conversions may not be exact metric equivalents, and until there is an official changeover to the metric system, the English dimensions will govern.
7. **COMMENTS OR SUGGESTIONS** for improvements to this AC should be sent to:

Manager, Airport Engineering Division
Federal Aviation Administration
ATTN: AAS-100
800 Independence Avenue, S.W.
Washington, DC 20591

8. COPIES OF THIS AC. The Office of Airport Safety and Standards is in the process of making ACs available to the public through the Internet. These ACs may be accessed through the FAA website: www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/. A printed copy of this AC and other ACs can be ordered from:

U.S. Department of Transportation
Subsequent Distribution Office
Ardmore East Business Center
3341 Q 75th Avenue
Landover, MD 20785.

A handwritten signature in black ink, appearing to read "Michael J. O'Donnell". The signature is stylized and cursive, with a large initial "M" and "J".

Michael J. O'Donnell
Director, Office of Airport Safety and Standards

FAA SPECIFICATION FOR L-823 PLUG AND RECEPTACLE, CABLE CONNECTORS

1. SCOPE AND CLASSIFICATION.

1.1 Scope. This specification contains requirements for plugs and receptacles (cable connectors) to be used for underground cable connections, for power cables, isolation transformer leads, and light fixture leads for airport systems.

1.2 Classification. Cable connectors are classified by this specification into two types, two classes, and six styles of plugs and two types, two classes, and six styles of receptacles. Formerly, cable connectors were classified only by a figure number. Figures in this specification are now numbered consecutively

1.2.1 Type. Plugs and receptacles with the following electrical characteristics are covered by the specification:

Type I	1 conductor, 25 ampere, 5000 volt
Type II	2 conductor, 20 ampere, 600 volt

1.2.2 Class. Plugs and receptacles with the following attachment methods are covered by this specification:

Class A	Factory molded to conductor(s)
Class B	Field attached to conductor(s)

1.2.3 Style. Plugs and receptacles with following styles of housing are covered by this specification:

Style 1	Plug, figure 1(a)
Style 2	Plug, figure 2(a)
Style 3	Plug, figures 3(a), & 3(c)
Style 4	Plug, figures 4(a), 4(b) & 4(c)
Style 5	Plug, figures 7(a), 7(b), & 7(c)
Style 6	Plug, figure 8
Style 7	Receptacle, figure 1(b)
Style 8	Receptacle, figure 1(c)
Style 9	Receptacle, figure 2(b)
Style 10	Receptacle, figures 3(b), & 3(d)
Style 11	Receptacle, figures 5(a), 5(b), & 5(c)
Style 12	Receptacle, figures 6(a), 6(b), & 6(c)

2. REFERENCED DOCUMENTS.

2.1 General. The following documents, of the issue in effect on the date of application for qualification, are applicable to the extent specified in this AC.

2.2 Federal Aviation Administration (FAA) Standards.

AC 150/5345-53	Airport Lighting Equipment Certification Program
AC-150/5345-7	L-824 Underground Electrical Cable for Airport Lighting Circuits, Specification for

2.3 American Society for Testing and Materials (ASTM) Standards.

B 33	Tinned Soft or Annealed Copper Wire for Electrical Purposes, Specification for
B 189	Lead-Coated and Lead Alloy Coated Soft Copper Wire for Electrical Purpose, Specification for
D 1149	Rubber Deterioration-Surface Ozone Cracking in a Chamber (Flat Specimens), Test for

2.4 Underwriters Laboratories (UL) Publication.

UL 1581	Reference Standard for Electrical Wires, Cables, and Flexible Cords
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2.5 American National Standards

ANSI/ASQC Z1.4	Sampling Procedures and Tables for Inspection by Attributes
ANSI/EIA557A	Statistical Process Control Systems

Copies of FAA standards may be obtained from:

U.S. Department of Transportation
Subsequent Distribution Office
Ardmore East Business Center
3341 Q 75th Ave.
Landover, MD 20785

Telephone: (301) 322-4961
FAX: (301) 386-5394
Website: www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars/

Copies of ASTM Standards may be obtained from:

ASTM International
100 Barr Harbor Drive
PO Box C700
West Conshohocken, PA 19428-2959

Telephone: (610) 832-9585
FAX: (610) 832-9555
Website: www.astm.org/cgi-bin/SoftCart.exe/index.shtml?E+mystore

Copies of ANSI Standards may be obtained from:

ANSI
1819 L Street NW

(between 18th and 19th Streets)
6th Floor
Washington, DC 20036
Customer Service/Document Sales

Telephone: (212) 642-4980
Website: webstore.ansi.org/ansidocstore/default.asp

Copies of UL publications may be obtained from:

Customer Service
1285 Walt Whitman Road
Melville, NY 11747-3081

Telephone: (877) 854-3577
FAX: (631) 439-6464
Website: ulstandardsinfontet.ul.com

3. EQUIPMENT REQUIREMENTS.

3.1 General. Plugs and receptacles (cable connectors) must be fabricated per all specification requirements.

3.2 Environmental Requirements. The plugs and receptacles (cable connectors) must be designed for continuous use within a temperature range of -67° Fahrenheit (F) (-55° Celsius (C)) to +149°F (+65°C) while exposed to weather, submerged in water, or buried in the earth.

3.3 Performance Requirements.

3.3.1 Electrical Connection. The electrical rating of each connector must not be less than 5000 Volts (V) for type I connectors, or 600 V for type II connectors. The voltage drop across the contacts of a connected plug and receptacle must not exceed 7.5 millivolts (mV) for the Type I connectors and must not exceed 6.0 mV for the Type II connectors.

3.3.2 Bonding Strength. The completed Class A connector assembly must withstand a longitudinal pull of at least 30,000 pounds per square inch (psi) (207 Megapascals (MPa)), 75 percent of an average tensile strength of 40,000 psi, (276 MPa) for all wire sizes. Calculation of tensile strength should be done by considering the cross-sectional area of the conductor only. Separation between the molded on connector and the cable must not exceed 0.03 inches (0.8 mm). The wires must be per with ASTM Specification B 33 and B 189.

3.3.3 Mechanical Connection. Each connected plug and receptacle must withstand a static pull load of 10 pounds (44 N) without showing evidence of separation. No damage must occur to the mating components when the connected plug and receptacle are separated by a greater static pull load.

3.3.4 Seal. A watertight seal must be provided between the mated plug and receptacle and between the rubber and metal parts of the plug and receptacle.

3.4 Fabrication and Materials.

3.4.1 General. Each plug and receptacle (cable connector), type, class, and style must be per the dimensions and construction requirements shown on the applicable figures in Appendix I of this specification.

3.4.2 Housing. The connector housing must be molded from natural and/or synthetic elastomeric materials serving both as insulation and sheath to fully enclose the pins of the plug and sockets of the receptacle. The housing material must be suitable for direct earth burial, submergence in water, and capable of withstanding limited attack from chemicals, typically present on the airfield, including but not limited to, oil, de-icing fluids and/or gasoline. Material compounds used in connector housings must not contain more than 25 pounds (11 kilograms (kg)) of carbon black per 100 pounds (45 kg) of elastomer. Housings for Class A connectors must be fabricated from materials capable of bonding to cable sheaths or conductor insulation, during the manufacturing process, to provide a watertight bond.

3.4.3 Pins and Sockets. The pins and sockets must conform to all dimensions and construction requirements per the applicable figures in Appendix I of this specification. Pins and sockets must be made of materials that contain at least 98 percent copper, or free cutting brass alloy 360 (AMS C36000) and in either case must be made of material at least "half hard". The contact portion of the pin and socket must be left "stock hard" and the crimping section, when necessary, fully annealed. The hardness transition must be limited to the locking section of the pin and socket. The pin and socket must be electroplated with tin or other suitable material to provide good electrical contact per paragraph 3.3.1. The sockets must be spring loaded or slotted and spring loaded to insure good electrical contact per paragraph 3.3.1, and Class A sockets must have a means that protects the sockets slots from filling with insulating compound during molding. The pin for the Style 3 connector must be provided with a visual indication that verifies proper assembly position. Pins and sockets provided for Class B connectors must have provisions for crimping to the cable conductor(s), and must not exhibit damage after crimping.

3.4.4 Connector Assemblies.

3.4.4.1 Class A. Pins and sockets must be held perpendicular to the face of the block. Suitable electrical conductors must be mechanically and electrically connected to the pin(s) or socket(s). The connector housing must be molded per paragraph 3.4.2. Primary connectors must be molded to an electrical conductor having a voltage rating equal to or less than the specified voltage rating of the connector. Secondary connectors must be molded to an electrical conductor having a voltage rating equal to or less than the specified voltage rating of the connector with the preferred being equal to the connector rating. A connector must never be molded to an electrical conductor or cable having a higher voltage rating than the specification requirements for the connector. After molding, the space between the pins of Type II plugs must not be less than 1/8 inch (3 mm) when the pins are pinched together with a force of 6 pounds (27 N) applied 1/2 inch (12.7 millimeters (mm)) out from the face of the plug. Also, the space between the ends of the pin of the Type II plugs must not be greater than 9/16 inch (14.3 mm) when the pins are pulled apart with a force of 6 pounds (27 N) applied 1/2 inch (12.7 mm) out from the face of the plug. The force is applied to the pins only. During testing for the above mentioned requirements, the plug is to be held only to keep it from turning.

3.4.4.2 Class B.

3.4.4.2.1 Type I. Each receptacle must be equipped with a disposable sleeve fitted into the receptacle's water seal to catch surplus silicone compound upon assembly. Each socket must be equipped with a disposable pin fitted tightly into the pin end of the socket to prevent entry of silicone compound on assembly and to provide a visual indication of proper socket position after assembly. The pin design must be such that proper internal dispersion of silicone compound in the assembly is assured. An adequate amount of silicone insulating compound must be furnished with each connector to insure filling all internal voids when the connector is assembled. Each housing must be capped with a disposable shipping cap on the cable entrance end.

3.4.4.2.2 Type II. Connector assemblies must be composed of two parts, an insert assembly and a housing.

Pins or sockets must be held perpendicular to the face of each end of the molded insert assembly and fastened. After proper assembly, the space between the pins of the plug must not be less than 1/8 inch (3 mm) when the pins are pinched together with a force of 6 pounds (27 N) applied 1/2 inch (12.7 mm) out from the face of the plug. Also, the space between the ends of the pin must not be greater than 9/16 inch (14.3 mm) when the pins are pulled apart with a force of 6 pounds applied 1/2 inch (12.7 mm) out from the face of the plug. Inserts and housing must be molded as specified in paragraph 3.4.2, and must comply with the dimensions and styles per the applicable figures in Appendix I of this AC. When assembled the plug and receptacle assemblies must provide a watertight seal to prevent moisture from entering the housing.

3.4.5 Marking. Each plug and receptacle must be marked with manufacturer's identification and L-823 designation with style number, e.g., L-823, Style 3.

3.4.6 Caps. Caps must be supplied with Class A connectors (unless requested otherwise by the buyer) to protect plugs and receptacles prior to final connection. Caps must be made of a plastic material compatible with the housing materials per paragraph 3.4.2. When a series short circuiting plug type cap with internal jumpers is required for Type II receptacles, jumpers must be connected to the proper pins. The mating dimensions must be the same as the corresponding plug. The short circuiting cap must be permanently marked with an "S".

3.4.7 Instructions. Installation instructions must be furnished by the manufacturer with each Class B connector.

4. EQUIPMENT QUALIFICATION REQUIREMENTS.

4.1 Qualification Procedures. Procedures for qualifying equipment to be furnished under the Federal grant assistance program for airports are contained in Advisory Circular 150/5345-53, Airport Lighting Equipment Certification Program.

4.2 Qualification Tests. The following tests must be performed on each unit submitted for qualification to demonstrate compliance with all specifications in this AC. Should a conflict exist between this AC and referenced documents, the specification in this AC must apply.

4.2.1 General. Assembled connectors, with conductors attached, must be subjected to electrical and physical tests. Class B connectors must be assembled per the manufacturer's instructions to lengths of wire or cable, as appropriate, of at least 24 inches (0.6 m) for all tests. Six pairs of mated connectors must be selected at random from a production run for each type of connector to be tested for approval. Each tested connector must pass all qualification tests. Failure of any one of the connectors in any one of the qualification tests causes rejection and indicates failure to comply with this specification.

4.2.2 Dielectric Tests.

4.2.2.1 Plugs and Receptacles. Six test insert plugs made of nylon or equal material of suitable dielectric strength must be provided for the test. The test plugs must meet the mating dimensions of the corresponding standard plug intended for use with the receptacle being tested. Each plug must be checked with "go" and "no go" ring gauges to insure compliance with specified dimensions. Each connector receptacle under test must be mated with one of the test plugs and allowed to soak for 24 hours in a tap water bath at room temperature, (68 - 77° F (20-25 °C)). At the end of the soaking period, with the receptacle still immersed, apply a test voltage of 4.7 kilovolts (kV) dc for 5 minutes to Type II connectors and 15 kV dc to Type I connectors. One minute after the test voltage has been applied the minimum insulation resistance between the conductors and water, and between conductors measured with a 500-volt source must be 25,000 megohms minimum. Receptacles that have passed this test will then be used for testing the corresponding plugs in a like test.

4.2.2.2 Connector Assembly. After the conclusion of the test in paragraph 4.2.2.1, each plug and receptacle being tested must be mated and immersed in a tap water bath at room temperature, (68 - 77° F (20-25 °C)). Immerse not more than 2 feet (0.6 m) of cable, 1 foot (0.3 m) of the plug, and 1 foot (0.3 m) of the receptacle. While immersed, each connector assembly must be manually flexed for 2 minutes and then left immersed for a minimum of 24 hours with its cable leads flexed and maintained 180° from its longitudinal axis. Measure the insulation resistance between conductors of each connected assembly after the 24 hour soaking period. The resistance measurements must be taken 1 minute after a test voltage of 4.7 kV dc has been applied for 5 minutes to Type II connectors and 15 kV dc to Type I connectors. The minimum resistance between conductors must be 25,000 megohms. Heat the tap water to 149° F (65 °C) without removing the assemblies and maintain this temperature for at least 1 hour. Again measure the resistance between the conductor(s) and water, and between conductors with a 500-volt source. The minimum acceptable resistance after the heated soaking period must be 10,000 megohms.

4.2.3 Bond Test. The molded bond between cable and Class A connector must be subjected to a static longitudinal pull load of the magnitude per paragraph 3.3.2. When testing Class A, Type II, connectors of any Style the two conductors must be pulled as a single cable, not as individual conductors. The connector must be held in a manner that does not impart a crimping or clamping action to the connector that would affect the pull test. The connector molding cavity, or a similarly shaped fixture, is acceptable for holding the connector. Separation between the molded on connector and the cable jacket or conductor insulation exceeding .03 inches must be cause for rejection.

4.2.4 Mechanical Connection Test. Each plug and receptacle intended for mating must be connected together and subjected to the static pull load per paragraph 3.3.3. Any evidence of separation of the connection must be cause for rejection. An increasing load must be applied to the connector assembly until separation occurs. No damage must occur to the mating components when the connected plug and receptacle are separated by the greater static pull load. Any evidence of damage to plugs, receptacles, conductors, and/or the connector bond will be cause for rejection.

4.2.5 Electrical Connection Test. Voltage drop measurements must be made across mated connectors while conducting their rated current. Voltage drops in excess of those in paragraph 3.3.1 must be cause for rejection. This test may be performed using unmolded contacts conducting rated current. This would permit the measurement to be made without damaging the molded connectors. This test must be performed on the equivalent of six connectors (six contact pairs for Type I connectors and twelve contact pairs for Type II connectors).

4.2.6 Weathering Test. A slab of connector housing material and sample pairs of connectors must be subjected to simulated sunlight by conditioning with carbon-arc or xenon-arc radiation for 720 hours as described in Section 1200.15 of UL-1581. The conditioned and unconditioned slabs of connector housing material must then be evaluated to Section 1200.9 of UL-1581. Failure of the test slab samples and/or the connectors to meet the ratio requirements of Section 1200.9 of UL-1581 must be cause for rejection.

Additionally, a slab of connector housing material and sample pairs of connectors must be exposed to ozone per ASTM D1149, with 50 parts per million (ppm) ozone, 100.4° F (38° C), 20 percent sample extension, and 100 hours exposure. Cracking of the connectors, or test slab, as a result of weathering test will be cause for rejection.

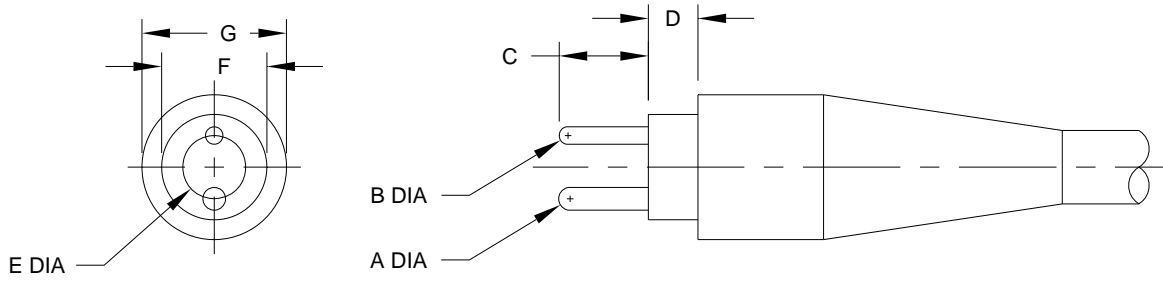
4.2.7 Metal Bond Test. Class A assemblies must have their connector plug and receptacle placed in water, with 20 psi air pressure applied from the free end of the cable, for 10 minutes. There must be no air bubbles emanating from the assembly observed in the water.

5. PRODUCTION TEST REQUIREMENTS.

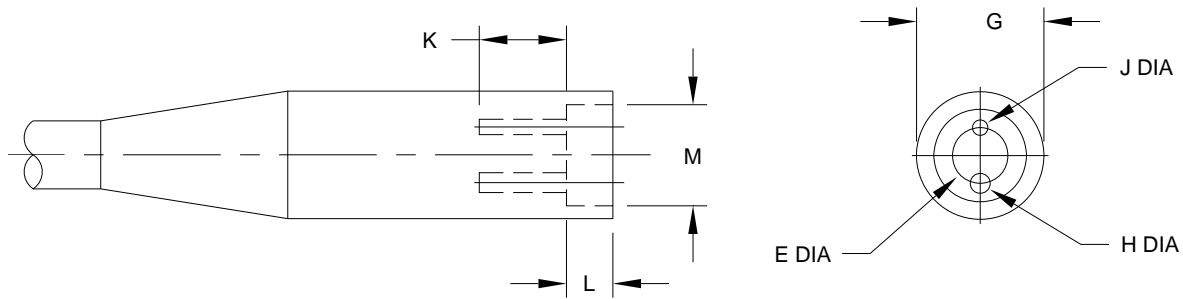
5.1 Production Tests. Each connector must be visually inspected and interface dimensions checked per the process control below. Each plug and receptacle, cable connector (Class A) must be subjected to a dielectric and continuity test during the validation of a production run. The test voltage must be 4.7 kV dc for Type II connectors and 15 kV dc for Type I connectors. The minimum insulation resistance between the conductors must be 23,500 megohms for Type II connectors and 75,000 megohms for Type I connectors (0.2 micro amps leakage current). The application of the test voltage may be reduced to 1 second. For conventional testing, sampling is defined by ANSI/ASQC Z1.4-1993, Inspection Level II, AQL 2.5. For SPC systems, sampling shall be per ANSI/EIA557A 1995 and shall show statistical capability with a $C_{pk} \geq 1.0$ and $\sigma \geq 3.0$.

APPENDIX I

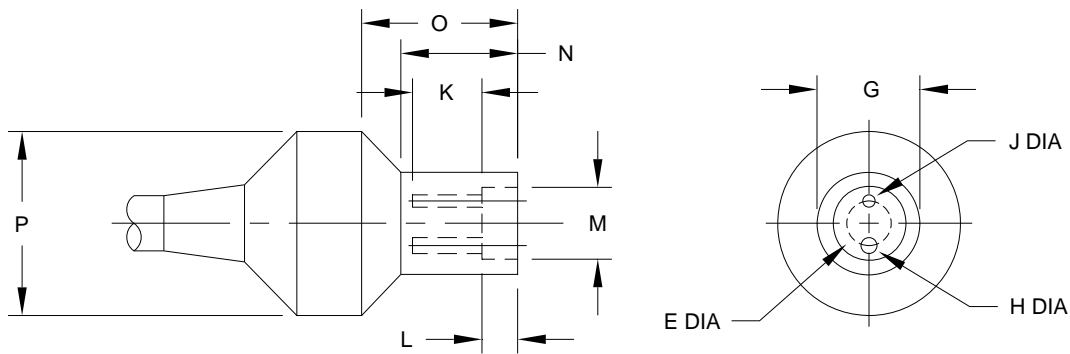
Cable Connector Figures



(A) PLUG-CLASS A, TYPE II, STYLE I



(B) RECEPTACLE-CLASS A, TYPE II, STYLE 7



(C) RECEPTACLE-CLASS A, TYPE II, STYLE 8

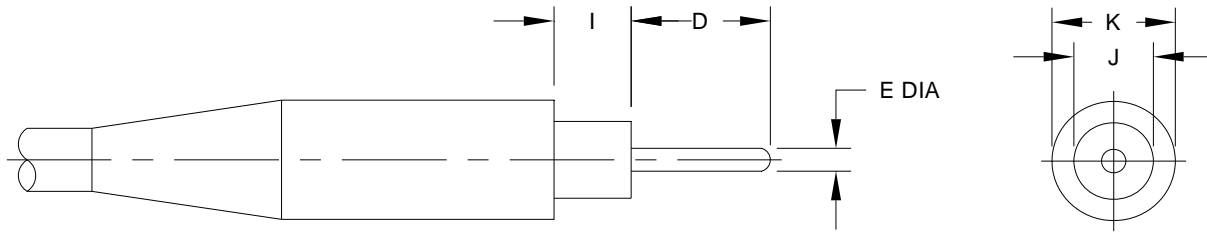
NOTE:
DIMENSIONS ARE DEFINED ON FIGURE 1A.

Figure 1 Class A, Type II, Plugs and Receptacles – Two Conductor, 20 Ampere,

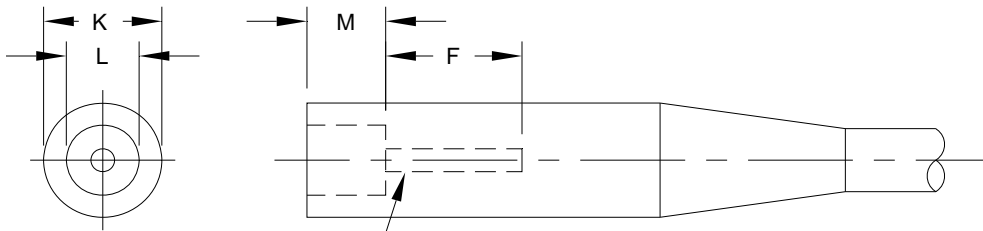
600 Volts Between Contacts, 1500 Volts to ground

DIMENSIONS	INCHES	MILLIMETERS	REFERENCES
A	.155 ± .001	3.937 ± .025	CONNECTOR
B	.124 ± .001	3.150 ± .025	CONNECTOR
C	.625 ± .015	15.875 ± .381	PLUG, PIN
D	.343 + .031, -.000	8.712 + .787, -.000	PLUG
E	.435 ± .010	11.049 ± .254	PLUG, RECEPTACLE
F	.725 + .020, -.000	18.415 + .508, -.000	PLUG
G	1.000 + .000, -.031	25.40 + .000, -.787	PLUG, RECEPTACLE
H	.1570 + .0010, -.0007	3.988 + .0254, -.018	SOCKET, DIA. BEFORE SPLITTING
J	.1260 + .0010, -.0007	3.2004 + .0254, -.018	RECEPTACLE
K	.641 MIN.	16.28 MIN.	DEPTH OF SOCKET INCLUDES .125 " [3.18 mm] RECESS BELOW INSIDE FACE OF RECEPTACLE
L	.358 + .000, -.015	9.093 + .000, -.381	RECEPTACLE
M	.694 ± .010	17.628 ± .254	RECEPTACLE
N	1.125 ± .031	28.575 ± .787	RECEPTACLE
O	1.500 ± .031	38.10 ± .787	RECEPTACLE
P	1.750 ± .031	44.45 ± .787	RECEPTACLE

FIGURE 1A. Class A and B, Plugs and Receptacles – Dimensions



(A) PLUG-CLASS A, TYPE I, STYLE 2

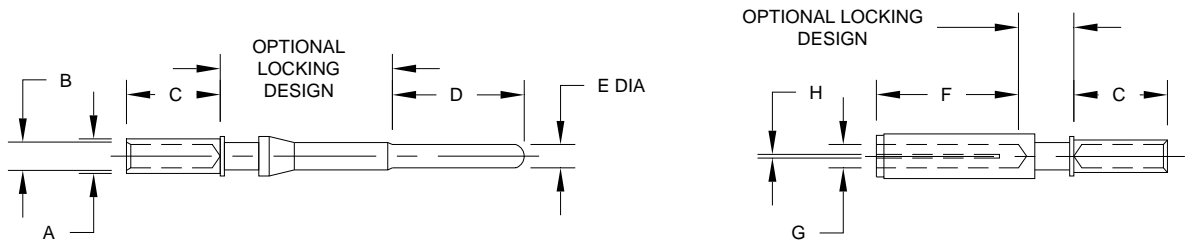


NOTE: METAL SOCKET SHALL BE RECESSED NOT MORE THAN 1/8 INCH [3.175 mm] BELOW INSIDE FACE OF RECEPTACLE AND BEFORE SPLITTING SHALL HAVE AN I.D. OF .188 +.001, -.0007 INCH (4.775 + 0.254, - 0.0178 mm)

(B) RECEPTACLE-CLASS A, TYPE I, STYLE 9

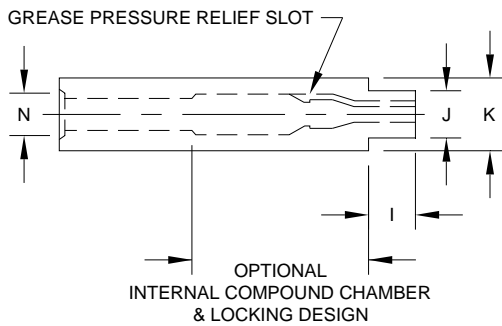
DIMENSIONS	INCHES	MILLIMETERS
D	1.062 ± .015	26.975 ± .381
E	.186 ± .001	4.7244 ± .0254
F	1.080 Min.	27.432 Min.
I	.593 + .015, - .000	15.062 + .381, - .000
J	.604 + .010, - .000	15.342 + .254, - .000
K	.937 + .000, - .031	23.800 + .000, - .787
L	.573 ± .010	14.554 ± .254
M	.608 + .000, - .015	15.443 + .000, -.381

FIGURE 2. Class A, Type I, Plugs and Receptacles – Single Conductor, 25 Ampere, 5000 Volts to Ground

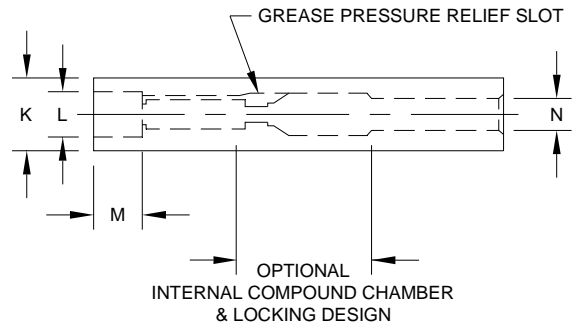


(A) PIN-STYLE 3, PLUG

(B) SOCKET-STYLE 10, RECEPTACLE



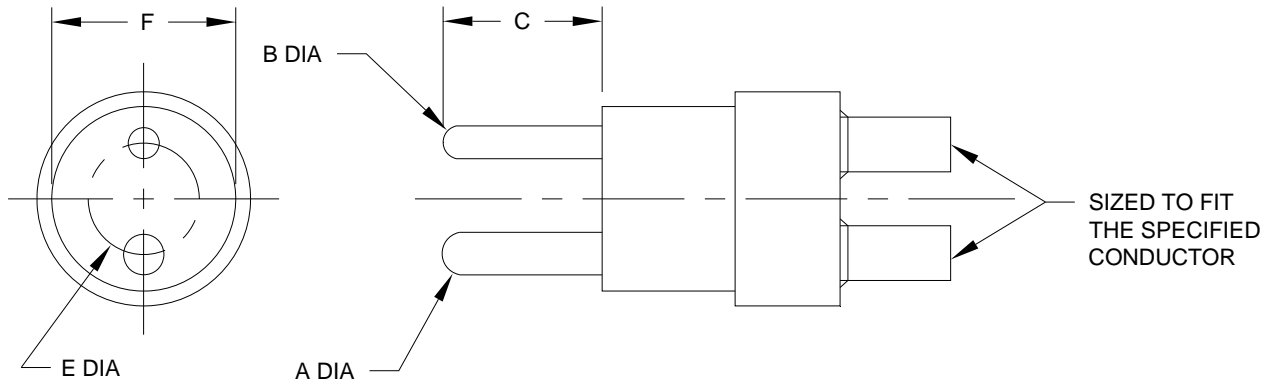
(C) PLUG-CLASS B, TYPE I, STYLE 3



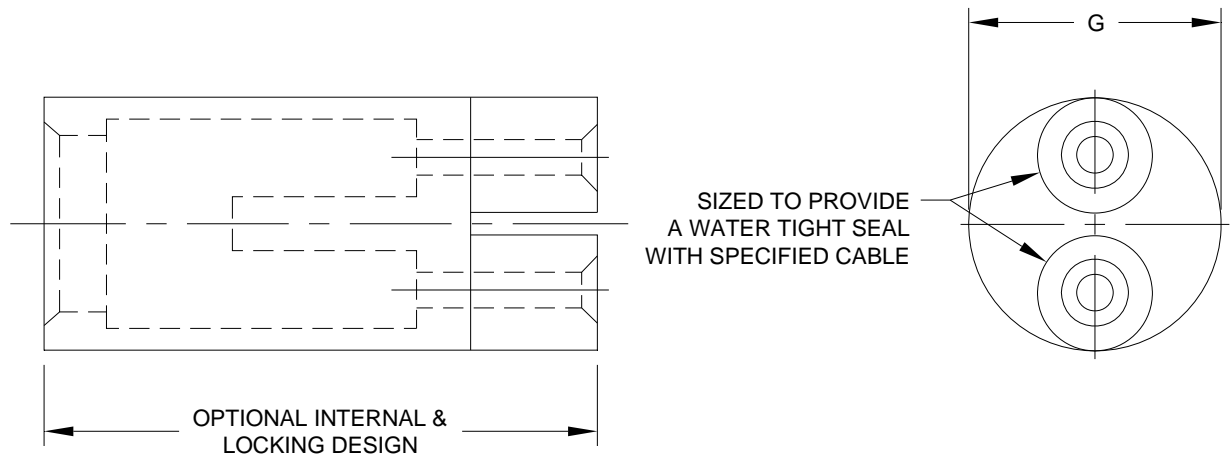
(D) RECEPTACLE-CLASS B, TYPE I, STYLE 10

DIMENSIONS	INCHES	MILLIMETERS	REFERENCES
A, B, C	DIMENSIONED TO PROVIDE A COMPRESSION FITTING FOR THE SPECIFIED CABLE SIZE		
D	1.062 ± .015	26.975 ± .381	PIN
E	.186 ± .001	4.7244 ± .0254	PIN
F	1.080 MIN.	27.432 MIN.	DEPTH OF SOCKET INCLUDES .125" [3.175 mm] RECESS BELOW INSIDE FACE OF RECEPTACLE
G	.188 + .001, - .0007	4.7752 + .0254, - .0178	SOCKET (BEFORE SPLITTING)
H	.025 ± .010	.635 ± .254	SOCKET (2 SAW SLOTS MIN) IF REQ.
I	.593 + .015, -.000	15.062 + .381, - .000	PLUG
J	.604 + .010, -.000	15.342 + .254, - .000	PLUG
K	.937 + .000, - .031	23.800 + .000, - .787	PLUG, RECEPTACLE (NOTE : K DIMENSION MAY VARY EXCEPT WITHIN 1" [25.4 mm] OF THE MATING ENDS MEASURED FROM THE CONNECTOR TIP)
L	.573 ± .010	14.554 ± .254	RECEPTACLE
M	.608 + .000, - .015	15.443 + .000, - .381	RECEPTACLE
N	DIMENSIONED TO PROVIDE A WATERPROOF SEAL WITH THE CABLE INSULATION		

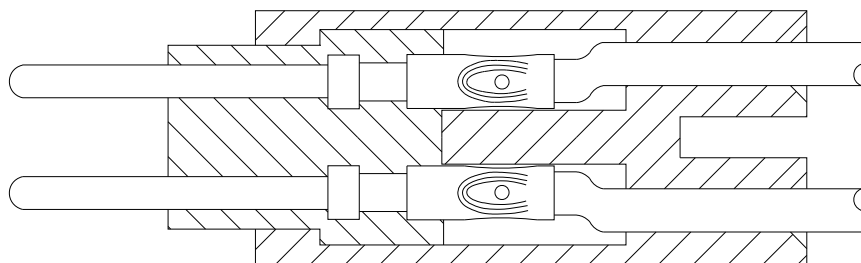
**FIGURE 3. Class B, Type I, Style 3, Plugs and Class B, Style 10, Receptacle –
Single Conductor, 5000 Volts, 25 Ampere**



(A) INSERT ASSEMBLY



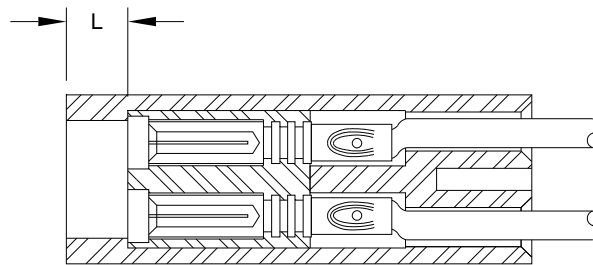
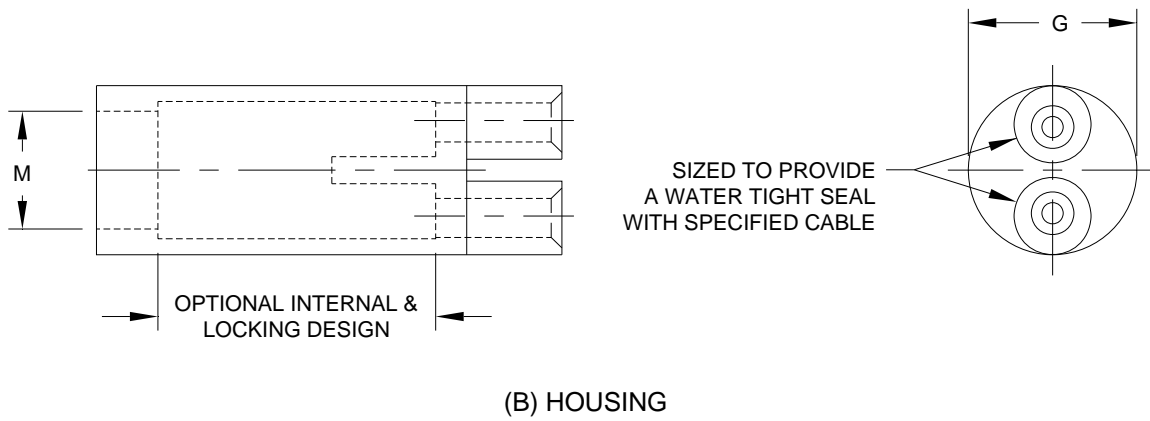
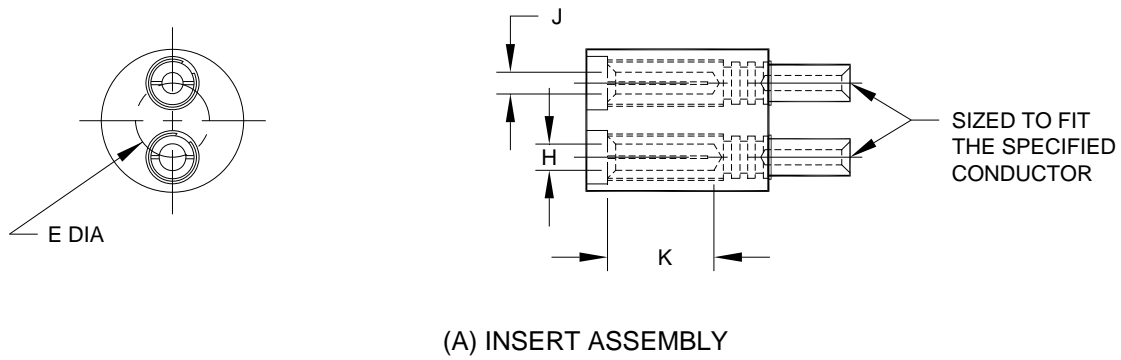
(B) HOUSING



(C) PLUG, A & B ASSEMBLED, STYLE 4

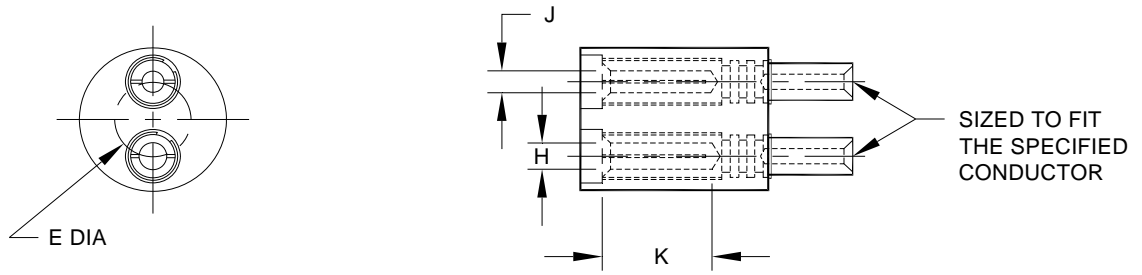
NOTE:
DIMENSIONS ARE DEFINED ON FIGURE 1A.

Figure 4. Class B, Type II, Style 4 Plug –
Two Conductor, 20 Ampere, 600 Volts Between Contacts, 1500 Volts to Ground

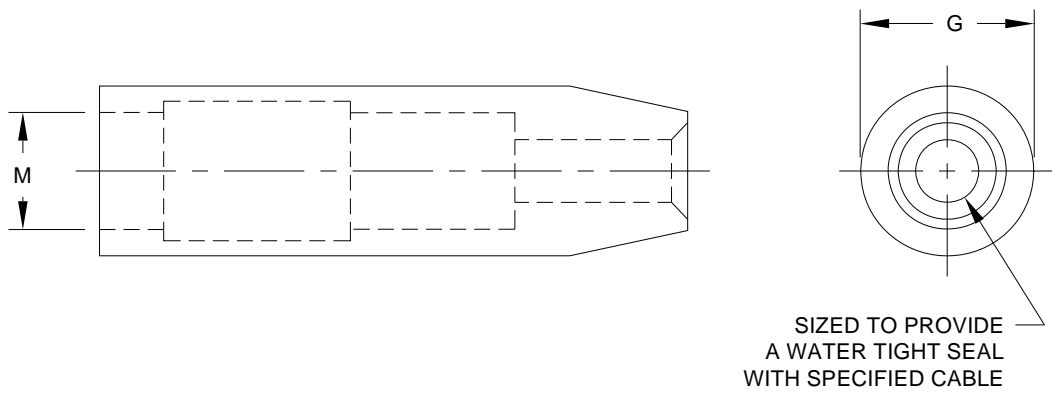


NOTE:
DIMENSIONS ARE DEFINED ON FIGURE 1A.

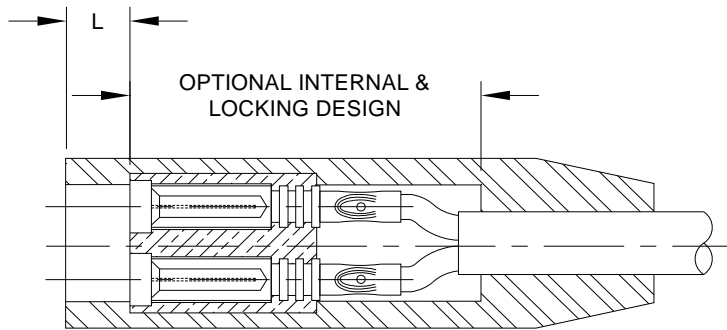
Figure 5. Class B, Type II, Style 11, Receptacle –
Two Conductor, 20 Ampere, 600 Volts Between Contacts, 1500 Volts to Ground



(A) INSERT ASSEMBLY



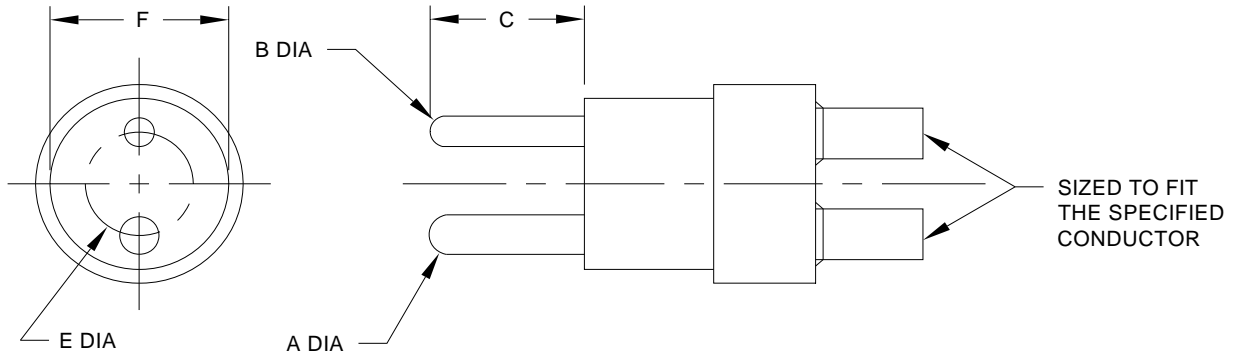
(B) HOUSING



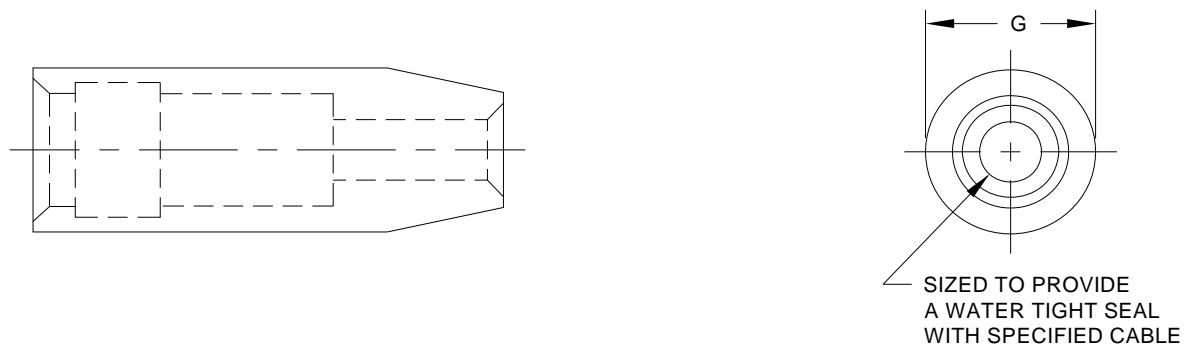
(C) RECEPTACLE, A & B ASSEMBLED, STYLE 12

NOTE:
DIMENSIONS ARE DEFINED ON FIGURE 1A.

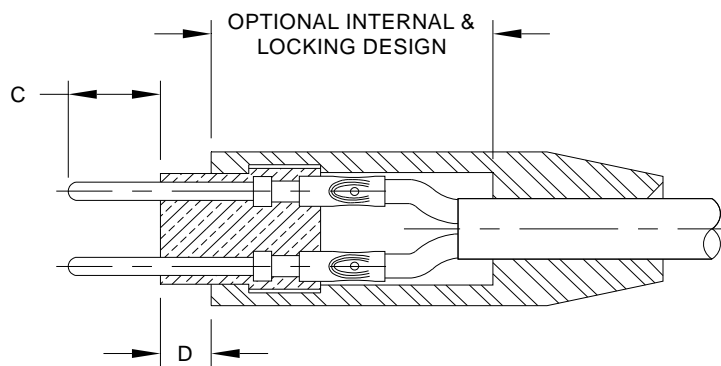
Figure 6. Class B, Type II, Style 12, Receptacle –
Single Conductor, 20 Ampere, 600 Volts Between Contacts, 1500 Volts to Ground



(A) INSERT ASSEMBLY



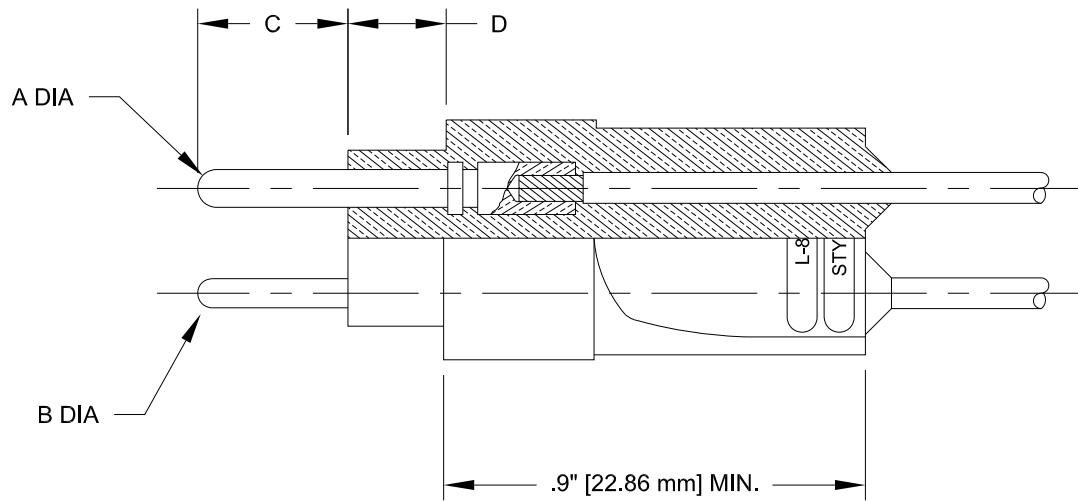
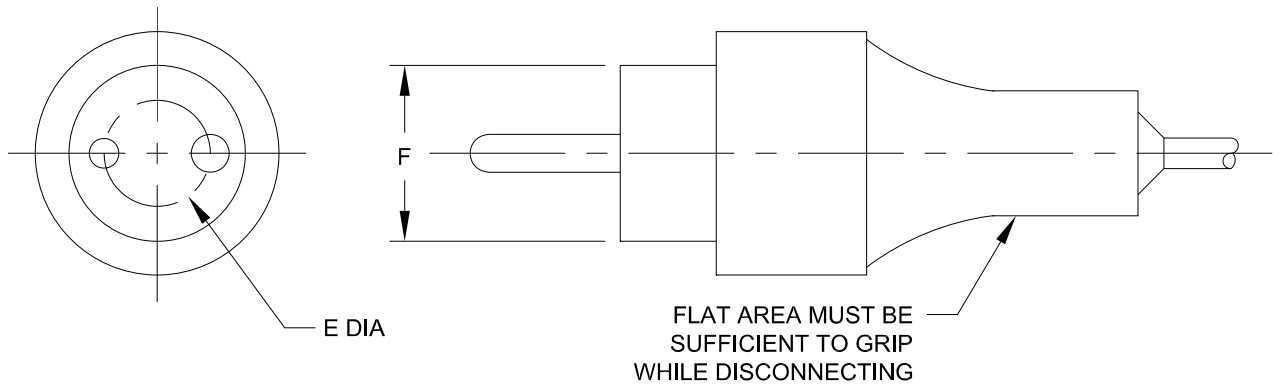
(B) HOUSING



(C) PLUG, A & B ASSEMBLED, STYLE 5

NOTE:
DIMENSIONS ARE DEFINED ON FIGURE 1A.

Figure 7. Class B, Type II, Style 5, Plug –
Single Conductor, 20 Ampere, 600 Volts Between Contacts, 1500 Volts to Ground



DIMENSIONS ARE DEFINED ON FIGURE 1A.

Figure 8. Class A, Type II, Style 6, Plug –
Two Conductor, 20 Ampere, 600 Volts Between Contacts, 1500 Volts to Ground