CSA STANDARDS

C22.2 No. 1691-12
(reaffirmed 2016)

Single pole locking-type separable connectors

Update No. 4
C22.2 No. 1691-12
July 2018

Note: *For information about the **Standards Update Service** or if you are missing any updates, go to **store.csagroup.org** or e-mail **techsupport@csagroup.org.***

Title: *Single pole locking-type separable connectors* — originally published February 2012

Revisions issued: Update No. 1 — January 2013
Update No. 2 — September 2014
Update No. 3 — January 2018

The following revisions have been formally approved and are marked by a vertical line in the margin on the attached replacement pages:

Revised	Title page, copyright page, Contents, Preface, Clauses 2.2 and 6.11.7, and Table 4
New	Supplement SA
Deleted	None

Note: *The pagination has changed for Annexes A and B; however, these Annexes have not been revised.*

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

CSA Group
CSA C22.2 No. 1691-12
First Edition

Underwriters Laboratories Inc.
UL 1691
First Edition

Single Pole Locking-Type Separable Connectors

February 29, 2012

(Title Page Reprinted: July 27, 2018)

ANSI/UL 1691-2018

Commitment for Amendments

This standard is issued jointly by the Canadian Standards Association (operating as "CSA Group") and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

ISBN 978-1-55491-873-7 © 2012 Canadian Standards Association

This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquires@csagroup.org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

To purchase CSA Group Standards and related publications, visit CSA Group's Online Store at shop.csa.ca or call toll-free 1-800-463-6727 or 416-747-4044.

This ANSI/UL Standard for Safety consists of the First Edition including revisions through July 27, 2018. The most recent designation of ANSI/UL 1691 as an American National Standard (ANSI) occurred on July 27, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

To purchase UL Standards, visit UL's Standards Sales Site at http://www.shopulstandards.com/HowToOrder.aspx or call toll-free 1-888-853-3503.

CONTENTS

SUPPLEMENT SA - REPLACEMENT ENCLOSURE FOR USE WITH SPECIFIC MANUFACTURER'S SINGLE POLE LOCKING-TYPE SEPARABLE ATTACHMENT PLUG and CABLE CONNECTOR

INTRODUCTION

CONSTRUCTION

PERFORMANCE

MARKINGS

INSTRUCTIONS

Preface

This is the harmonized CSA Group and UL Standard for Single Pole Locking-Type Separable Connectors. It is the First edition of CSA C22.2 No. 1691 and the First edition of UL 1691. This harmonized standard has been jointly revised on July 27, 2018. For this purpose, CSA Group and UL are issuing revision pages dated July 27, 2018.

This harmonized standard was prepared by CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the Single-Conductor Pin and Sleeve Connectors Committee of the Council on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA) are gratefully acknowledged.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This standard was reviewed by the CSA Integrated Committee on Wiring Devices, under the jurisdiction of the CSA Technical Committee on Wiring Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

Where reference is made to a specific number of specimens to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard uses the IEC format but is not based on, nor is considered equivalent to, an IEC standard.

This standard is published as an equivalent standard for CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

This standard provides requirements for single pole locking-type separable connectors for use in accordance with the electrical installation codes of Canada and the United States. At present there is no IEC standard for these products for use in accordance with these codes. Therefore, this standard does not employ any IEC standard for base requirements.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

UL Standards

UL 50E
Standard for Enclosures for Electrical Equipment, Environmental Considerations

UL 94
Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

UL 486A-486B
Wire Connectors

UL 486E
Equipment Wiring Terminals for Use with Aluminum and/or Copper Conductors

UL 746A
Polymeric Materials - Short Term Property Evaluations

UL 746B
Polymeric Materials - Long Term Property Evaluations

UL 1640
Portable Power Distribution Units

ASTM (American Society for Testing and Materials)

D 570
Standard Test Method for Water Absorption of Plastics

E28
Standard Test Methods for Softening Point of Resins Derived from Naval Stores by Ring-and-Ball Apparatus

IEEE Standards

IEEE 837
Standard for Qualifying Permanent Connections Used in Substation Grounding

NFPA (National Fire Protection Association)

NFPA 70
National Electrical Code

3 General

3.1 Components

3.1.1 Except as indicated in 3.1.2, a component of a product covered by this Standard shall comply with the requirements for that component. See Clause 2 for a list of standards covering components generally used in the products covered by this Standard. A component shall comply with the CSA or UL standards as appropriate for the country where the product is to be used.

3.1.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this Standard, or

b) Is superseded by a requirement in this Standard.

3.1.3 A component shall be used in accordance with its rating established for the intended conditions of use.

3.1.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

3.2 Units of measurements

3.2.1 The values given in SI (metric) units shall be normative. Any other values given shall be for information purposes only.

4 Definitions

4.1 The following terms and definitions apply in this Standard.

Attachment plug – a device consisting of a male contact and a housing, intended to be attached to one cable.

Configuration, Locking-type – a configuration that requires a motion other than a straight push or pull or requires a deliberate mechanical action such as that required by a threaded collar, a cam, or a bayonet, to connect or separate it when used with its mating part.

Cord connector – a device consisting of a female contact and a housing, intended to be attached to one cable and intended to supply electrical equipment.

Contact – a conductive element in a wiring device that mates with a corresponding element to provide an electrical path.

Enclosure – the part of a wiring device or accessory which renders inaccessible all or any parts of the device that may otherwise present a risk of electrical shock and which provides protection to internal components against specified external conditions.

Grounding path – a path between the grounding pin, or contact and the grounding terminal.

Inlet (Power Inlet) – a device consisting of a male contact and a housing, incorporated in, or fixed to, the utilization equipment.

Insulation, Electrical – the insulation necessary for the proper functioning of the product wiring device and for basic protection against electrical shock.

Insulator – that portion of a device that provides for separation and for support of live parts.

Mounting housing – that portion of a panel inlet or outlet that is used to affix the inlet or outlet to a panel.

6.11 Short-time current test

6.11.1 All devices that are designated and so identified for connection to the identified grounding (green/grounding) circuit conductor shall not crack, break, or melt when subjected to the test current and time as specified in Table 4. In addition, the mated pairs shall maintain electrical continuity after the application of the short-time current.

6.11.2 To determine compliance with the requirement in 6.11.1, three representative mated pairs shall be tested.

6.11.3 Devices shall be wired according to the manufacturer's instructions using the maximum specified conductor gauge size (AWG or kcmil), and not less than 610 mm (2 ft) in length.

6.11.4 If the device is designed to be assembled to a conductor by means of more than one type of identified tool, the device shall be additionally tested using all identified tool assembly methods.

6.11.5 If the device is designed to be assembled to a conductor by means of a wire connector (lug), the device shall be installed on a length of cable of a conductor gauge size (AWG or kcmil) corresponding to the maximum continuous current-carrying capacity for the device and not less than 610 mm (2 ft) long. The wire connector (lug) used shall be suitable for the application.

6.11.6 For the purpose of this test, each device shall be mated as intended to create one path of current flow. Devices such as adapters and multiple-inlet or multiple-outlet or gender-adapting devices shall be wired or mated to create one path of current flow.

6.11.7 Each assembly shall be subjected to the test current and associated time as shown in Table 4. All three mated pairs shall be tested individually. When the conductor cannot maintain minimum current as defined in Table 4, the current may be reduced to a lesser value, but not less than 5000 A, provided the test time is increased to a higher value, not to exceed 1 min. The values for test current and time shall be calculated using the formula in Table 4.

Table 4
Short-time test currents

Equipment grounding conductor size		Time, s	Current, a
AWG or kcmil	(mm^2)		
6	(13.3)	6	1530
4	(21.2)	6	2450
3	(26.7)	6	3100
2	(33.6)	6	3900
1	(42.4)	6	4900
1/0	(53.5)	9	5050
2/0	(67.4)	9	6400
3/0	(85.0)	9	8030
4/0	(107)	9	10100
250 kcmil	(127)	9	12000
300	(152)	9	14300
350	(177)	9	16700
400	(203)	9	19100
500	(253)	9	23900
600	(304)	9	28700
700	(355)	9	33500

Table 4 Continued on Next Page

Table 4 Continued

Equipment grounding conductor size		Time, s	Current, a
AWG or kcmil	(mm^2)		
750	(380)	9	35900
800	(405)	9	38300
900	(456)	9	43100
1000	(507)	9	47900

Note: Test current values are derived from the following formula and have been rounded. To derive test current values for electrode materials other than the ones listed above, see Annex C of the Standard for Qualifying Permanent Connections Used in Substation Grounding, IEEE 837.

$$I = A\sqrt{\frac{tn\ \frac{K_o + T_m}{K_o + T_a}}{\beta * t}}$$

in which:

T_m = 1083°C for melting point for copper

T_a = 40°C = ambient temperature

I = short-time current (amperes) in kA

A = conductor cross-section in mm^2

t = time (s)

K_o = reciprocal of thermal coefficient of resistivity at 0°C = 234 for copper

β = material constant = 19.8 for copper

6.11.8 Upon completion of the applied test current and time, each individually tested assembly shall maintain continuity, when measured between a point on the mating surface of the device contact and a point 6.4 mm (1/4 in) from the point of entry of the cable into the device or the wire connector (lug). For devices such as adapters and multiple-inlet or multiple-outlet or gender-adapting devices, continuity is checked between corresponding points that were subjected to short-time current flow, on the mating surface of the device contacts.

6.11.9 Indicating means, such as an ohmmeter, battery-and-buzzer combination, or the like, may be used to determine whether continuity exists.

6.11.10 If the test conductor carrying the short-time current opens and fails to carry the required test current for the specified time in Table 4, the test is considered inconclusive. The test shall be repeated using an alternate grounding conductor capable of carrying the required current for the specified time.

6.12 Temperature test

6.12.1 The temperature rise of a device measured at the points described in 6.12.2 shall not exceed 30°C when the device is carrying its maximum rated current. This temperature rise is based on devices intended to be wired with conductors rated 60°C or 75°C. A temperature rise of 45°C is permitted when the device is intended to be wired with conductors rated 90°C or higher and so marked. Devices intended for use with conductors rated 90°C or higher and so marked shall not intermate with similar devices not so marked. See 7.5.1.

6.12.1.1 When a busbar is used in temperature testing, the size of the busbar shall be selected as shown in Table 4A for the ampere rating of the device under test.

Table 4A
Busbar dimensions

Range of test current, A	Maximum cross-section, mm (in)
0 – 50	3.2 X 12.7 (1/8 X 1/2)
51 – 125	3.2 X 25 (1/8 X 1)
126 – 225	3.2 X 48 (1/8 X 1-7/8)
226 – 400	6.4 X 38 (1/4 X 1-1/2)
401 – 600	6.4 X 50 (1/4 X 2)
601 – 800	6.4 X 76 (1/4 X 3)

6.12.2 The temperature measurement mentioned in 6.12.1 shall be made on the wiring terminals of the device if they are accessible for the mounting of thermocouples. If the wiring terminals are inaccessible, or if the device has no wiring terminals, temperatures shall be measured at points as close to the face of the device as possible on the pin of an attachment plug inserted in the connector or panel outlet.

6.12.3 The temperature test shall continue for 4 hours even through stabilized temperatures can be attained in a somewhat shorter interval of time. The generation of heat from sources other than the female contact shall be minimized as much as possible. The contact of the device being tested shall be mated to its mating device. The terminal shall be tightened to the manufacturer's specified torque, see 8.1.1, or using the manufacturer's specified crimping tool, see 8.2.1.

6.12.4 Temperature readings shall be obtained by means of thermocouples consisting of 28 – 32 AWG (0.08 – 0.032 mm^2) iron and constantan wires. It is a common practice to employ thermocouples consisting of 30 AWG (0.05 mm^2) iron and constantan wires with a potentiometer type of indicating instrument. This equipment will be used if a referee measurement of temperature is necessary.

No Text on This Page

SUPPLEMENT SA - REPLACEMENT ENCLOSURE FOR USE WITH SPECIFIC MANUFACTURER'S SINGLE POLE LOCKING-TYPE SEPARABLE ATTACHMENT PLUG and CABLE CONNECTOR

INTRODUCTION

SA1 Scope

SA1.1 These requirements cover replacement enclosure (housing) (see SA3.1) intended for use in the specific manufacturer's single pole locking-type separable attachment plug and cable connector.

SA2 General

SA2.1 In addition to complying with SA3 – SA8 of these requirements, the replacement enclosure (housing) alone, and in combination with the complete device (attachment plug and cable connector, respectively), shall comply with the applicable Construction and Performance requirements in the main body of this Standard.

SA3 Definitions

SA3.1 REPLACEMENT ENCLOSURE (PART) – An individual replacement enclosure (housing) identified by the manufacturer for use in the same manufacturer's complete device (single pole locking-type separable attachment plug and cable connector, respectively).

Note: The replacement part is packaged as a "kit" containing the individual part and installation instructions (see SA8).

CONSTRUCTION

SA4 General

SA4.1 The replacement enclosure (housing) shall be formed and assembled so that it can be installed, in accordance with the installation instructions, into its specified single pole locking-type separable attachment plug and cable connector without risk of fire or electric shock. Risk of fire or electric shock is determined by compliance with the construction and performance requirements herein and the applicable requirements of the main body of this Standard.

SA4.2 A replacement enclosure (housing) part shall only be installed using commonly used tools such as a screw driver or a wrench. A replacement enclosure (housing) shall not be permitted that requires the installer to remove or defeat or replace a factory installed securement means such as a rivet or drive pin.

PERFORMANCE

SA5 General

SA5.1 If the replacement enclosure (housing) is recommended for use with more than one device, each representative combination of replacement enclosure (housing) and device shall be evaluated.

SA6 Replacement Part Assembly Test

SA6.1 The replacement enclosure (housing) shall be able to be installed in the specified device and shall be reliably retained in place without causing an increased risk of fire or electric shock. Compliance is determined by inspection and the test of SA6.2 shall be performed.

SA6.2 A sample of the replacement enclosure (housing) shall be assembled to its specified device using the manufacturer's installation instructions. Upon completion of the assembly, the integrity of the completed assembly shall be examined and if necessary, subjected to the applicable performance testing necessary to maintain continued compliance with this Standard.

MARKINGS

SA7 General

SA7.1 The replacement enclosure (housing) shall be provided in the form of a kit, including marking as detailed in SA7.2 – SA7.4.

SA7.2 A required marking shall be molded, die-stamped, paint-stenciled, stamped or etched metal that is permanently secured, or indelibly stamped lettering on a pressure-sensitive label secured by adhesive that, upon investigation, meets the intent of the requirement for the application.

SA7.3 The replacement enclosure (housing) shall be provided with the following identification markings:

a) Manufacturer's name,

b) Specific catalog or series number, and

c) The date or other dating period of manufacture not exceeding any three consecutive months.

Abbreviation of the date of manufacture, or provision in a nationally accepted conventional code or in a code affirmed by the manufacturer, meets the intent of the requirement.

SA7.4 The replacement enclosure (housing) packaging shall be marked with the following marking or equivalent: ″WARNING – Use only replacement part (Catalog Number) with (+) Attachment Plug or Cord Connector″, where ″(+)″ is to be replaced with the specific manufacturer name and model/catalog number of the intended device(s).

Note: In Canada, the equivalent French wording is ″AVERTISSEMENT – Utiliser uniquement la pièce de rechange (Cat. N^{o}) avec (+) fiche ou connecteur de cordon″.

INSTRUCTIONS

SA8 General

SA8.1 The replacement enclosure (housing) shall be provided with instructions pertaining to its installation, operation, and maintenance, as applicable.

SA8.2 An illustration may be used to clarify the intent of a required instruction but shall not replace the written instruction.

SA8.3 Instructions shall include the following statements or their equivalent:

IMPORTANT SAFETY INSTRUCTIONS

″WARNING – Use only replacement enclosure (housing) (Catalog Number) with (+) Attachment Plug or Cord Connector Only″, where (+) is to be replaced with the specific manufacturer name and model/catalog number of the intended device (s).″

Note 1: In Canada, the equivalent French wording is ″AVERTISSEMENT – Utiliser uniquement le boîtier de rechange (Cat. Nº) avec (+) fiche ou connecteur de cordon uniquement″.

″WARNING – Risk of Fire or Electric Shock. Do not use this replacement enclosure (housing) with any attachment plug or cord connector (as appropriate), other than the one specified on the replacement mark packaging and in these instructions.″

Note 2: In Canada, the equivalent French wording is ″AVERTISSEMENT – Risque d'incendie ou de choc électrique. Ne pas utiliser ce boîtier de rechange avec quelque fiche ou connecteur de cordon (selon le cas), autre que la fiche ou le connecteur de cordon spécifié sur l'emballage et dans ces instructions.″

SAVE THESE INSTRUCTIONS

SA8.4 The opening and closing statements of the instructions specified in SA8.3 – ″IMPORTANT SAFETY INSTRUCTIONS″ and ″SAVE THESE INSTRUCTIONS″ or the equivalent shall be entirely in upper case letters or shall be emphasized to distinguish them from the rest of the text.

Annex A (Normative)
Mandatory English and French Markings for Canada

Clause 7.1:

″CAUTION - Risk of Electric Shock. Do Not Disconnect Under Load″.

″ATTENTION - Risque de chocs électriques. Ne pas débrancher sous charge.″

Clause 7.3:

″AC″.

″C.A.″.

″AC Only″.

″C.A. seulement″.

″60 Hertz″.

″60 hertz″.

Annex B (Normative)
Single Pole Locking-Type Separable Connector Configurations

B1 General

B1.1 These requirements cover Single Pole Locking-Type Separable Connector Configurations used to form attachment plugs, cord connectors, inlets and outlets, for use in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, and the Canadian Electrical Code (CEC), Part 1, C22.1.

B1.2 These requirements cover devices rated as shown on each individual configuration sheet and for 600 V or less.

B1.3 Devices of the configurations shown in this Annex shall also comply with the requirements contained elsewhere in this Standard.

B1.4 The information given in B1.4 (a) – (e) applies to each configuration in this Annex.

a) All dimensions are in millimeters (inches).

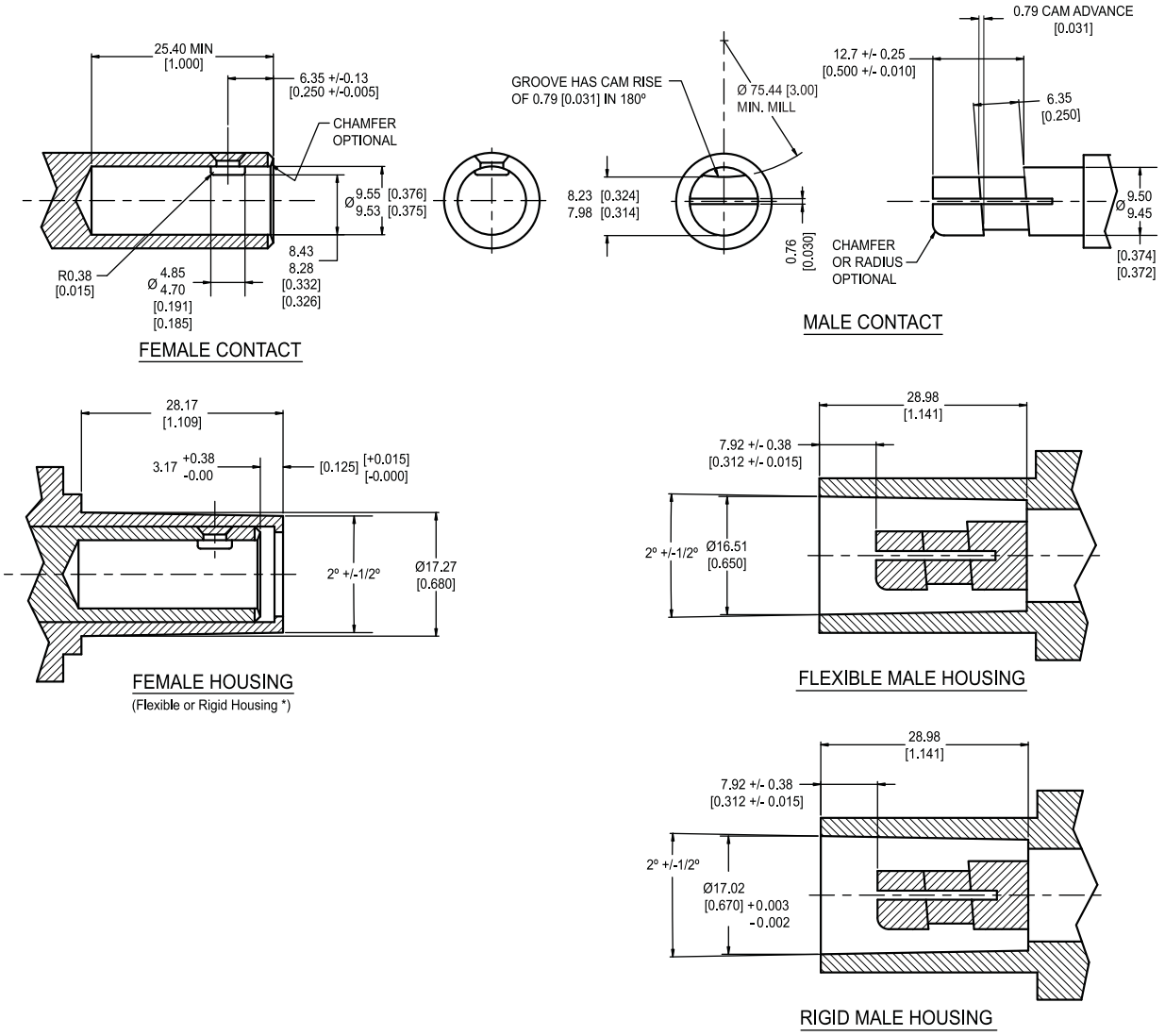
b) Decimal dimensions without tolerances shall be subject to a ±0.13 mm (±0.005 inch) tolerance.

c) Angular dimensions without tolerances shall be subject to a ±1/2 degree tolerance.

d) Where two values are given for the same dimension, the larger is the maximum value and the smaller the minimum value.

e) Leading edges of pins and sleeves shall be free of burrs and sharp edges.

Figure B1.1
Series 15 male and female contact and housing rated 150 A MAX., 600 V MAX.



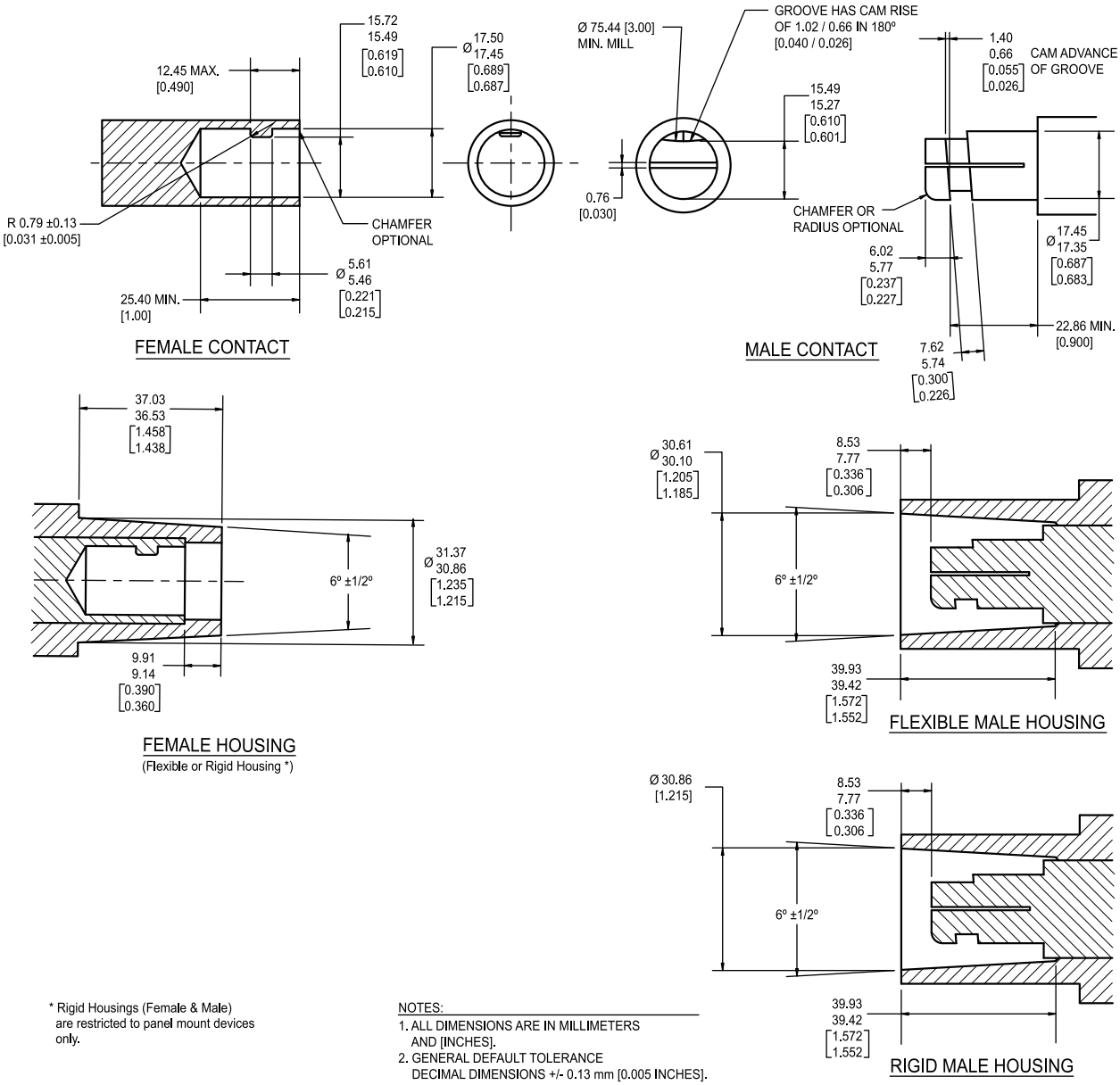
* Rigid Housings (Female & Male) are restricted to panel mount devices only.

NOTES:

1. ALL DIMENSIONS ARE IN MM [INCHES]
2. GENERAL DEFAULT TOLERANCE
   +/- 0.13 MM
   +/- 0.005 INCHES

su0679c

Figure B1.2
Series 16 male and female contact and housing rated 400 A MAX., 600 V MAX.

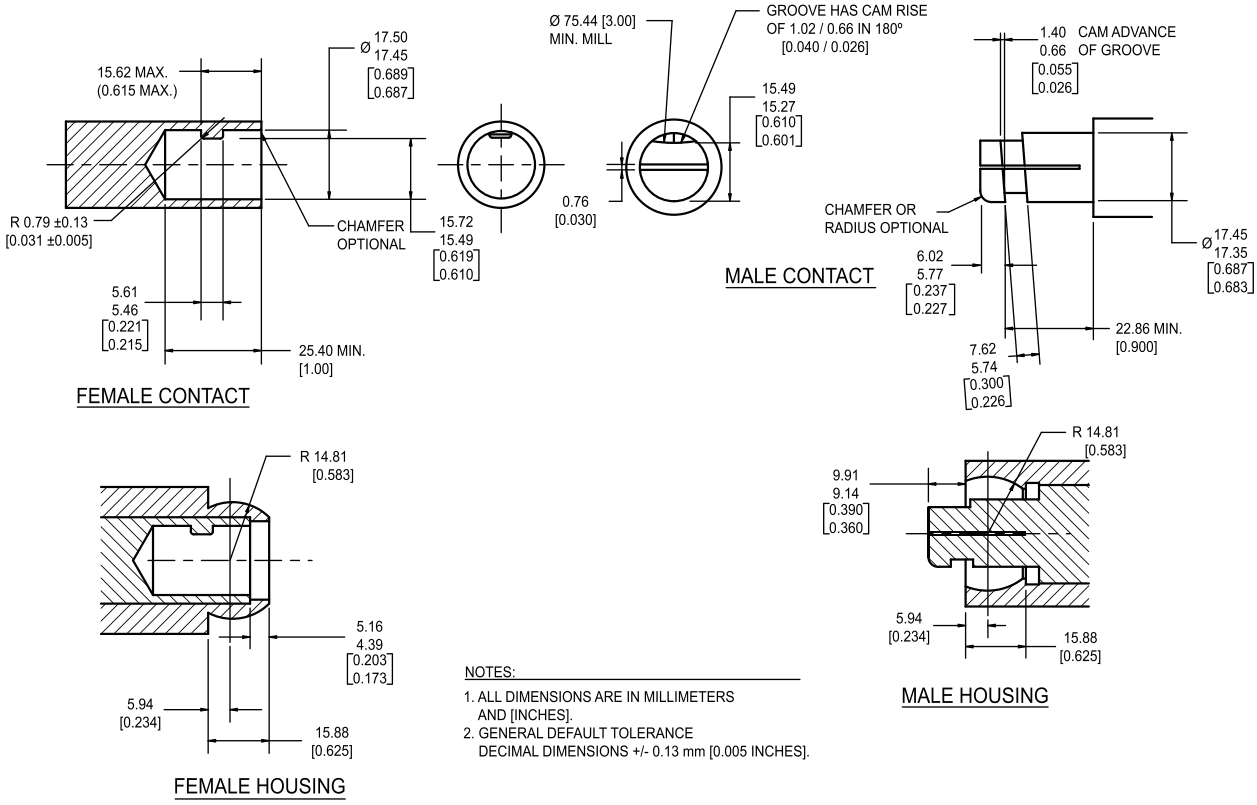


* Rigid Housings (Female & Male) are restricted to panel mount devices only.

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS AND [INCHES].
2. GENERAL DEFAULT TOLERANCE DECIMAL DIMENSIONS +/- 0.13 mm [0.005 INCHES].

su0680d

Figure B1.3
Series 18 male and female contact and housing rated 400 A MAX., 600 V MAX.



su0681c

Update No. 3
C22.2 No. 1691-12
January 2018

Note: *For information about the **Standards Update Service** or if you are missing any updates, go to **shop.csa.ca** or e-mail **techsupport@csagroup.org**.*

Title: *Single pole locking-type separable connectors* — originally published February 2012

Revisions issued: Update No. 1 — January 2013
Update No. 2 — September 2014

The following revisions have been formally approved and are marked by the symbol delta (Δ) in the margin on the attached replacement pages:

Revised	Cover, copyright page, Preface, Clauses 6.2.1 and 6.12.2, and Figures B1.1 and B1.2
New	Clauses 5.2.1.1, 5.3.10.1, and 6.12.1.1 and Table 4A
Deleted	None

- Update your copy by inserting these revised pages.
- Keep the pages you remove for reference.

CSA Group
CSA C22.2 No. 1691-12
First Edition

Underwriters Laboratories Inc.
UL 1691
First Edition

Single Pole Locking-Type Separable Connectors

February 29, 2012

(Title Page Reprinted: January 26, 2018)

ANSI/UL 1691-2018

Commitment for Amendments

This standard is issued jointly by the Canadian Standards Association (operating as ″CSA Group″) and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at any time. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

ISBN 978-1-55491-873-7 © 2018 CSA Group

This Standard is subject to periodic review, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change to CSA Group Standards, please send the following information to inquires@csagroup.org and include ″Proposal for change″ in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

To purchase CSA Group Standards and related publications, visit CSA Group's Online Store at shop.csa.ca or call toll-free 1-800-463-6727 or 416-747-4044.

This ANSI/UL Standard for Safety consists of the First Edition including revisions through January 26, 2018. The most recent designation of ANSI/UL 1691 as an American National Standard (ANSI) occurred on January 26, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

To purchase UL Standards, visit UL's Standards Sales Site at http://www.shopulstandards.com/HowToOrder.aspx or call toll-free 1-888-853-3503.

CONTENTS

Preface

This is the harmonized CSA Group and UL Standard for Single Pole Locking-Type Separable Connectors. It is the First edition of CSA C22.2 No. 1691 and the First edition of UL 1691. This harmonized standard has been jointly revised on January 26, 2018. For this purpose, CSA Group and UL are issuing revision pages dated January 26, 2018.

This harmonized standard was prepared by CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the Single-Conductor Pin and Sleeve Connectors Committee of the Council on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA) are gratefully acknowledged.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This standard was reviewed by the CSA Integrated Committee on Wiring Devices, under the jurisdiction of the CSA Technical Committee on Wiring Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of specimens to be tested, the specified number is to be considered a minimum quantity.

Note: Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.

Level of harmonization

This standard uses the IEC format but is not based on, nor is considered equivalent to, an IEC standard.

This standard is published as an equivalent standard for CSA Group and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

This standard provides requirements for single pole locking-type separable connectors for use in accordance with the electrical installation codes of Canada and the United States. At present there is no IEC standard for these products for use in accordance with these codes. Therefore, this standard does not employ any IEC standard for base requirements.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

CSA Group effective date

The effective date for CSA Group will be announced through *CSA Informs* or a CSA Group certification notice.

SINGLE POLE LOCKING-TYPE SEPARABLE CONNECTORS

1 Scope

1.1 These requirements cover single pole locking-type separable attachment plugs, cord connectors, panel inlets, and panel outlets, adapters, and accessories, rated up to a maximum of 800 amperes and up to 600 volts ac or dc and not intended for connection or disconnection under load conditions.

1.2 These devices are intended to provide power from feeders or branch circuits, or are for direct connection to feeders or branch circuits in accordance with the Canadian Electrical Code (CEC), Part I, C22.1, and the National Electrical Code (NEC), ANSI/NFPA-70 for the following applications:

CEC

Amusement parks, midways, carnivals, film and TV sets, TV remote broadcasting locations, traveling shows (Section 66) and similar venues and installations where such temporary connections could be used.

NEC

a) Places of assembly (assembly occupancies) (Article 518)

b) Theaters, audience areas of motion picture and television studios, performance areas, and similar locations (Article 520)

c) Carnivals, circuses, fairs and similar events (Article 525)

d) Motion pictures and television studios and similar locations (Article 530)

e) Motion picture projection rooms (Article 540)

f) Temporary installations such as construction sites (Article 590)

1.3 These devices are not intended for use in hazardous locations.

1.4 Attachment plugs and cord connectors are intended for use with cables, as defined in applicable electrical codes, having copper conductors only, for use in either outdoor or indoor locations.

1.5 Inlets and outlets are intended for use with cables or bus bars, as defined in applicable electrical codes, having copper conductors only, for use in either outdoor or indoor locations.

1.6 This Standard does not apply to:

a) Plugs, Receptacles, and Cable Connectors, of the Pin and Sleeve Type covered by UL 1682 and CSA C22.2 No. 182.1.

b) Devices molded integrally with flexible cord or cable that are covered by the Standard for Cord Sets and Power-Supply Cords, UL 817, and Cord Sets and Power Supply Cords, CSA C22.2 No. 21.