



UL 1686

STANDARD FOR SAFETY

Pin and Sleeve Configurations

UL Standard for Safety for Pin and Sleeve Configurations, UL 1686

Fourth Edition, Dated August 17, 2012

Summary of Topics

This revision of ANSI/UL 1686 is being issued to update the title page to reflect the reaffirmation of ANSI approval. No changes in requirements have been made.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated April 27, 2018.

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UL 1686

Standard for Pin and Sleeve Configurations

First Edition – December, 1993

Second Edition – July, 1998

Third Edition – January, 2007

Fourth Edition

August 17, 2012

This ANSI/UL Standard for Safety consists of the Fourth edition including revisions through June 25, 2018.

The most recent designation of ANSI/UL 1686 as a Reaffirmed American National Standard (ANS) occurred on June 25, 2018. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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>.

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INTRODUCTION

1 Scope

1.1 These configurations cover attachment plugs, receptacles, and cord connectors, for use in accordance with the National Electrical Code (NEC), ANSI/NFPA 70.

1.2 These configurations do not cover devices rated at more than 800 A or for more than 600 V.

2 General

2.1 The information given in 2.1(a) – 2.1(h) applies to each configuration in Sections C1 – C5.

- a) All dimensions are in inches.
- b) Decimal dimensions without tolerances shall be subject to a ± 0.005 inch tolerance.
- c) Angular dimensions without tolerances shall be subject to a $\pm 1/2$ 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.
- f) A contour, face dimension, yoke construction, or mounting ears and dimensions for any receptacle construction that is shown depicts an acceptable construction; other constructions may also be acceptable if tested and found to be equivalent.
- g) The relationship of recessing of contacts, or internal construction in a receptacle that is shown depicts an acceptable construction; other constructions may also be acceptable if tested and found to be equivalent.
- h) Terminal identification shall comply with the following:
 - 1) The grounded terminal is to be identified in the Figures by the letter "W".
 - 2) The grounding terminal is to be identified in the Figures by the letter "G".

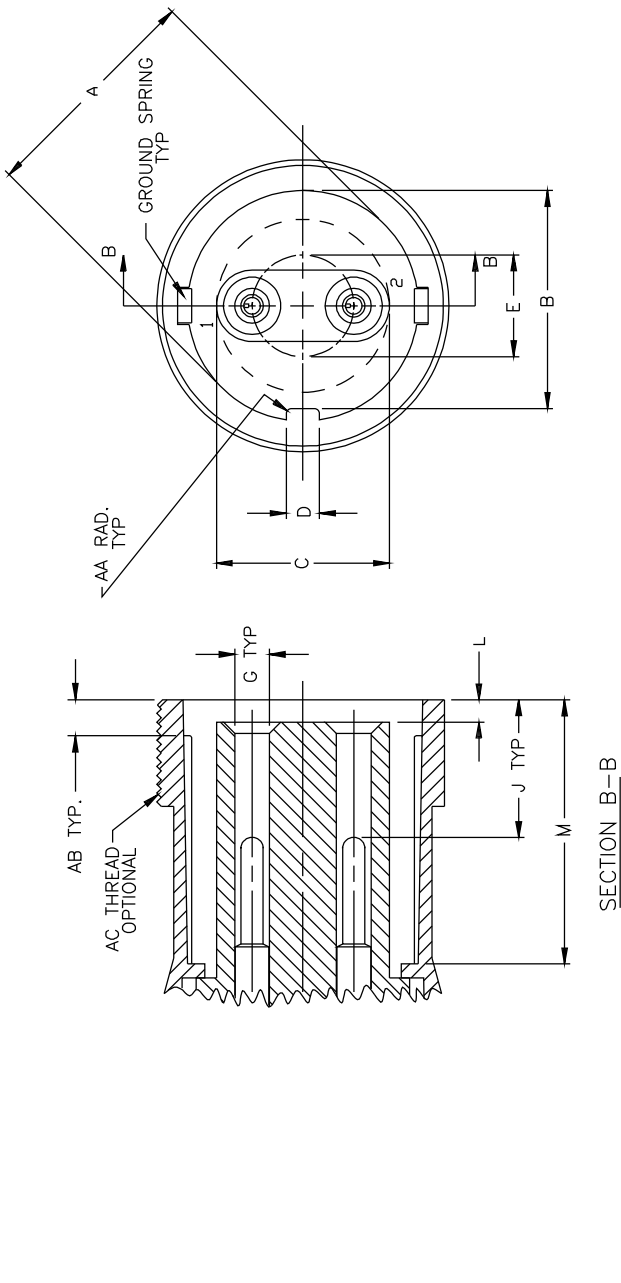
CONFIGURATIONS

C1 Configurations

NOTES

1. Q is the allowable distance measured from the male contact tip to a plane perpendicular to the longitudinal axis where initial electrical engagement with the sleeve contact takes place.
2. The design of the pins shall provide a means of maintaining electrical contact force to their respective sleeve contacts.
3. The design of the ground springs shall provide a means of maintaining electrical contact with the plug sleeve when the plug is mated with the receptacle.
4. Connectors shall be rated for use in ordinary locations only.
5. Receptacles may be rated for use in Hazardous Locations.
6. Plugs shall be rated for use in Hazardous Locations.
7. Inlets shall be rated for use in ordinary locations only.

Figure C1.1
Receptacle and connectors

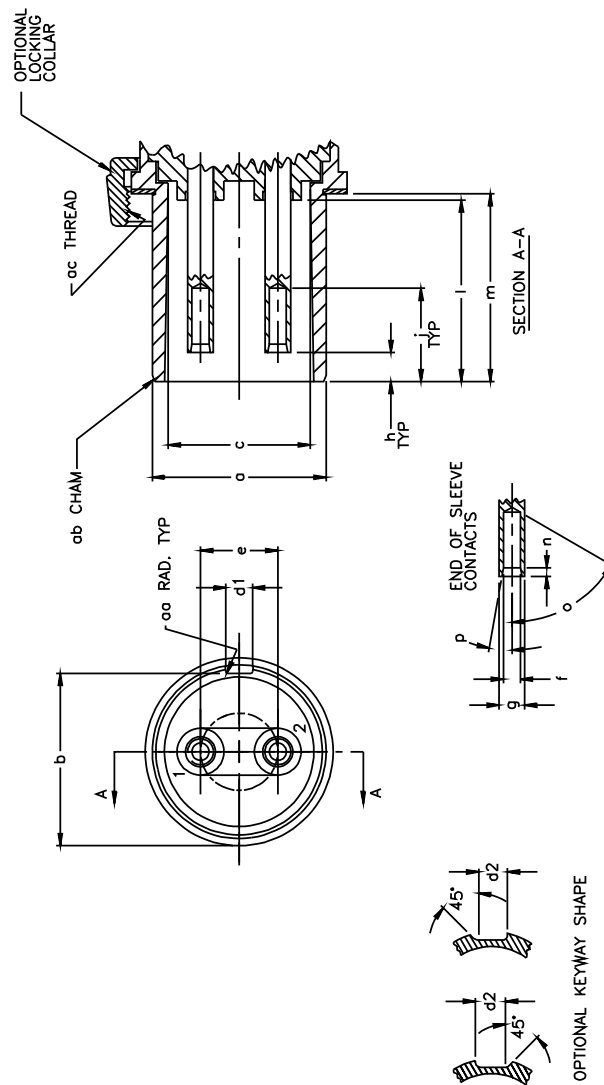


STYLE	TYPE	AMP RATING	A (ϕ)	B	C (ϕ)	D	E (ϕ)	G (ϕ)	J	L	M	Q	AA	AB	AC
1	2P	30	1.929 1.865 1.750	1.818 1.750 1.600	1.440 1.145 1.000	1.98 1.48 1.385	.568 .557 .855	.266 .258 .392	1.115 1.005 1.609	.275 .225 .359	1.734 MIN	.120 .080 .140	.104 .026 .130	.750 .250 1.500	2 9/16-14 UNS-2B
1	2P	60	2.359 2.240 2.116	2.219 2.160 2.015	1.600 1.515 1.375	.385 .314 .302	.855 1.830 1.035	.392 .214 .447	1.609 1.465 1.907	.275 .214 .300	2.891 MIN	.140 .100 .125	.130 .045 .035	1.500 .250 1.250	2 15/16-14 UNS-2B
1	2P	100	2.496 2.431 2.308	2.421 2.368 2.213	1.675 1.575 1.475	.302 .302 .302	1.035 1.025 1.025	.447 .300 .447	1.907 1.807 1.907	.300 .235 .235	3.547 MIN	.125 .125 .125	.035 .035 .035	1.250 1.250 1.250	3 3/16-14 UNS-2B

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F, H, I, K, N-P, R-Z NOT USED

See note 1, 2, 3, 4 and 5.

Figure C1.2
Plugs and Inlets



STYLE	TYPE	AMP RATING	a (ø)	b	c (ø)	d1	d2	e (ø)	f (ø)	g (ø)	h	j	l	m	n	o	p	aa	ab	ac
1	2P	30	1.865 1.848	1.770 1.745	1.540 1.460	2.20 1.99	2.05 1.95	5.68 5.57	.191 .186	.253 .247	.095 .095	.922 .640	1.435 MIN 1.435 MIN	1.655 1.621	.021 .000	60.5° 58.5°	45.5° 38.5°	.107 .011	.05 X 20° .10 X 40°	2 9/16-14 UNS-2B
1	2P	60	2.239 2.220	2.114 2.079	1.890 1.670	4.00 3.83	3.60 3.40	8.55 8.30	.253 .249	.378 .365	.530 .383	1.415 1.300	2.615 MIN 2.615 MIN	2.765 2.672	.130 .058	60.5° 58.5°	15.5° 8.0°	.100 .020	.05 X 20° .10 X 40°	2 15/16-14 UNS-2B
1	2P	100	2.485 2.460	2.365 2.338	2.110 2.030	4.60 3.83	3.60 3.40	10.36 10.23	.315 .311	.442 .432	.595 .393	1.512 1.312	3.305 MIN 3.305 MIN	3.485 3.422	.161 .058	60.5° 58.5°	13.5° 8.0°	.110 .026	.05 X 20° .10 X 40°	3 3/16-14 UNS-2B

i, k, q-z NOT USED

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See notes 6 and 7.