

UL & CSA Application Groups

UL Specification:

Application group and distances between the metal parts determine the voltage rating for terminal blocks. An application group can be marked by the letter A, B, C or D, depending on the environment pollution degree. UL standards for terminal blocks (UL1059) represent the minimum distances in the following table.

Table: Minimum Acceptable Spacings

Application	Volts	Spacings, in inches (mm) between uninsulated live parts of opposite polarity; and between an uninsulated live part and a grounded part including any mounting surface			
		Through air or oil		Over surface	
A. Service (power circuits), including dead-front switchboards, panelboards, service equipment, etc.	51 – 150	1/2	(12.7)	3/4	(19.1)
	151 – 300	3/4	(19.1)	1 – 1/4	(31.8)
	301 – 600	1	(25.4)	2	(50.8)
B. Commercial appliances, including business equipment, electronic data processing equipment, etc.	51 – 150	1/16 ^a	(1.6) ^a	1/16 ^a	(1.6) ^a
	151 – 300	3/32 ^a	(2.4) ^a	3/32 ^a	(2.4) ^a
	301 – 600	3/8	(9.5)	1/2	(12.7)
C. General industrial	51 – 150	1/8 ^a	(3.2) ^a	1/4	(6.4)
	151 – 300	1/4	(6.4)	3/8	(9.5)
	301 – 600	3/8	(9.5)	1/2	(12.7)
D. Industrial devices having limited ratings ^b	51 – 300	1/16 ^a	(1.6) ^a	1/8 ^a	(3.2) ^a
	301 – 600	3/16 ^a	(4.8) ^a	3/8	(9.5)
E. Terminal blocks rated 601-1500 V	601 – 1000	0.55	(14.0)	0.85	(21.6)
	1001 – 1500	0.70	(17.8)	1.20	(30.5)

NOTES

- 1) A slot, groove, or similar spacing, 0.013 inch (0.33 mm) wide or less in the contour of insulating material is to be disregarded.
- 2) An air space of 0.013 inch (0.33 mm) or less between a live part and an insulating surface is to be disregarded for the purpose of measuring over surface spacings.
 - a The spacing between field wiring terminals of opposite polarity and the spacing between a field wiring terminal and a grounded dead metal part shall not be less than 1/4 inch (6.4 mm) if short-circuiting or grounding of such terminals may result from projecting strands of wire. Examples of means that prevent stray wire strand contact include rating the terminal block for solid wire only, and design features such as recessed terminal pockets.
 - b The spacings are applicable to a terminal block for use only in or with industrial control equipment where the load on any single circuit of the terminal block does not exceed 15 amperes at 51 – 150 volts, 10 amperes at 151 – 300 volts, 5 amperes at 301 – 600 volts, or the maximum ampere rating, whichever is less.

CSA Specification:

An application group is determined by the pollution degree and by the distances between the terminals. A group can be marked by the letter A, B, C, D or E, depending on the environment pollution degree. CSA standards for terminal blocks (CSA C22.2 No.158) represent the minimum distances in following table.

Table: Minimum Acceptable Spacings

Application	Volts	Spacings, in mm, between uninsulated live parts of opposite polarity, uninsulated live parts, and uninsulated grounded parts other than the enclosure or exposed metal part	
		Through air or oil	Over surface
A. Service (power circuits), including dead-front switchboards, panel-boards, service equipment, etc.	0 – 150	12.5	19 ^a
	151 – 300	19 ^a	31 ^a
	301 – 600	25	50 ^a
B. Commercial appliances, including business equipment, electronic data processing equipment, etc.	0 – 150	1.6 ^b	1.6 ^b
	151 – 300	2.4 ^b	2.4 ^b
	301 – 600	9.5	12.5
C. General industrial	0 – 150	3.2 ^b	6.3
	151 – 300	6.3	9.5
	301 – 600	9.5	12.5
	601 – 1000	14	21.5
	1001 – 1500	17.8	30.5
D. Industrial, devices having limited ratings	51 – 300	1.5 ^b	3.0 ^b
	301 – 600	4.6 ^b	9.4
E. Special components ^c	0 – 150	1.6 ^b	1.6 ^b
	151 – 300	1.6 ^b	3.2 ^b
	301 – 600	4.7 ^b	9.5

NOTES

a The spacing through air and over surface between live parts and grounded metal parts, including the enclosure, shall be not less than 12.5 mm for 51–250 V and 25 mm for 251–600 V.

b The spacing between conductor terminals of opposite polarity and the spacing between a conductor terminal and a grounded non-current-carrying metal part shall be not less than 6.3 mm if short circuiting or grounding of such terminals can result from projecting strands of conductor.

c The special components spacings shall be applicable to a terminal block for use with equipment of limited rating, as permitted by the applicable Part II Standard covering the end product in which the terminal block is used.