

Control Circuit Classifications

AC-Control Circuit Classifications—NEMA

NEMA designates Control Circuit Rating with a code letter (for current) and a voltage code.

Ratings & Test Values for AC Control Circuit Contacts at 50 or 60Hz											
Contact Rating Designation	Thermal Continuous Test Current, Amperes	Maximum Current, Amperes								Vollamperes	
		120 Volts		240 Volts		480 Volts		600 Volts			
		Make	Break	Make	Break	Make	Break	Make	Break	Make	Break
A150	10	60	6	—	—	—	—	—	—	7200	720
A300	10	60	6	30	3	—	—	—	—	7200	720
A600	10	60	6	30	3	15	1.5	12	1.2	7200	720
B150	5	30	3	—	—	—	—	—	—	3600	360
B300	5	30	3	15	1.5	—	—	—	—	3600	360
B600	5	30	3	15	1.5	7.5	0.75	6	0.6	3600	360
C150	2.5	15	1.5	—	—	—	—	—	—	1800	180
C300	2.5	15	1.5	7.5	0.75	—	—	—	—	1800	180
C600	2.5	15	1.5	7.5	0.75	3.75	0.375	3	0.3	1800	180
D150	1	3.6	0.6	—	—	—	—	—	—	432	72
D300	1	3.6	0.6	1.8	0.3	—	—	—	—	432	72
E150	0.5	1.8	0.3	—	—	—	—	—	—	216	36

DC-Control Circuit Classifications—NEMA

Rating codes for DC Control Circuit Contacts					
Contact Rating Designation ^①	Thermal Continuous Test Current, Amperes	Maximum Make or Break ^② Current, Amperes			Maximum Make or Break Vollamperes at 300 Volts or Less
		125 Volt	250 Volt	301 to 600 Volt	
N150	10	2.2	—	—	275
N300	10	2.2	1.1	—	275
N600	10	2.2	1.1	0.4	275
P150	5	1.1	—	—	138
P300	5	1.1	0.55	—	138
P600	5	1.1	0.55	0.2	138
Q150	2.5	0.55	—	—	69
Q300	2.5	0.55	0.27	—	69
Q600	2.5	0.55	0.27	0.1	69
R150	1	0.22	—	—	28
R300	1	0.22	0.11	—	28

Control Circuit Classifications—IEC^③

IEC 947-5-1 Uses Utilization Categories AC-15 to Specify Control Circuit Ranges. Current at each voltage is specified by the manufacturer, not by the standard.

AC Control Circuit Utilization Categories per IEC 947-5-1	Make		Break	
	I/I _e	U/U _e	I/I _e	U/U _e
AC-12	1	1	1	1
AC-13	2	1	1	1
AC-14	6	1	1	1
AC-15	10	1	1	1

DC Control Circuit Utilization Categories per IEC 947-5-1	Make		Break	
	I/I _e	U/U _e	I/I _e	U/U _e
DC-12	1	1	1	1
DC-13	1	1	1	1
DC-14	10	1	1	1

Example of a Typical IEC Control Circuit Ratings Table^④

AC

I _e /AC-12 (Continuous Amps)	U _e AC Voltage	I _e /AC-15 Amps
10	24V	6A
	110V	6A
	220/230V	6A
	380/440V	4A

DC

Voltage	I _e /DC-12	I _e /DC-13
24	6A	3A
60	5A	1.5A
110	2.5A	0.7A
230	1A	0.3A

①The numerical suffix designates the maximum voltage design values, which are to be 600, 300, and 150 volts for suffixes 600, 300, and 150 respectively. Test voltage shall be 600, 250, or 125 volts. MLLDLL.

②For maximum ratings at 300 volts or less, the maximum make and break ratings are to be obtained by dividing the volt-ampere rating by the application voltage, but the current value is not to exceed the thermal continuous test current.

③I_e Rated operational current
U_e Rated operational voltage
I Current to be made or broken
U Voltage before make

④Example: A control circuit contact having an AC-15 rating of 6 amps at 230 volts is capable of making 60 amps and breaking 6 amps at 230 volts. KRE.

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Application Data