

Solar Photovoltaic Systems based on 2017 National Electrical Code NEC Quick Card

NATIONAL ELECTRICAL CODE SOLAR PHOTOVOLTAIC (PV) SYSTEMS QUICK CARDS
 BASED ON THE 2017 NATIONAL ELECTRICAL CODE (NEC)

Builder's Book, Inc.
 800.271.9198 • 703.421.1100
 10000 Sunset Blvd., Suite 1000
 Los Angeles, CA 90048
 1-800-271-9198 • 703-421-1100
 www.buildersbook.com

SOLAR PHOTOVOLTAIC (PV) SYSTEMS - GENERAL REQUIREMENTS

TERMS ALERT!

- Allowing Current Imbalance:** The National Electrical Code (NEC) requires that the maximum unbalanced current in any circuit shall not exceed 25% of the rated ampacity of the smallest conductor in the circuit.
- Branch Circuit:** A circuit that originates at the service equipment and extends to the first disconnecting means.
- Disconnecting Means:** A device that is used to disconnect a circuit from the source of power.
- Grounding:** The connection of an electrical circuit or equipment to the earth or to a conductive body that extends to the earth.
- Maximum Unbalanced Current:** The maximum current that can flow in any ungrounded conductor in a circuit.
- Overcurrent Protection:** A device that is used to protect a circuit from damage due to overcurrent.
- Service Equipment:** The equipment that is used to connect a building to the utility service.
- Unbalanced Current:** The current that flows in any ungrounded conductor in a circuit.

SCOPE

- Article 690 applies to solar PV systems, including the array circuits, inverters, and associated electrical systems.
- The systems covered by this article may be installed with other electrical systems, such as lighting, heating, ventilation, and air conditioning (HVAC) systems, or they may be installed in a separate building.
- These PV systems may have an AC or DC output.

GENERAL REQUIREMENTS

- Photovoltaic (PV) systems must be permitted to supply lighting or other electrical loads in the same electrical system, equipment, building, or structure, provided that the PV system is permitted to be installed in or on a single building or structure.
- When the PV system is installed in a building, it must be installed in a separate room or structure, unless it is installed in a building that is used for other purposes, in which case it must be installed in a separate room or structure.
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PV POWER SOURCE COMPONENTS

AC MODULE SYSTEM

INTERACTIVE SYSTEM

ALTERNATING CURRENT (AC) INVERTERS

AC COUPLED MULTIMODE SYSTEM

DC COUPLED MULTIMODE SYSTEM

CIRCUIT REQUIREMENTS

MAX. VOLTAGE

SOURCE & OUTPUT CIRCUITS

PERMISE CONDUCTOR FACTORS FOR DETERMINING & MAXIMUM PERMITTED CIRCUIT BREAKING CAPACITY

Adjusted Temperature (°C)	Factor	Adjusted Temperature (°F)
30 to 35	1.00	86 to 95
35 to 40	0.98	95 to 104
40 to 45	0.96	104 to 113
45 to 50	0.94	113 to 122
50 to 55	0.92	122 to 131
55 to 60	0.90	131 to 140
60 to 65	0.88	140 to 149
65 to 70	0.86	149 to 158
70 to 75	0.84	158 to 167
75 to 80	0.82	167 to 176
80 to 85	0.80	176 to 185
85 to 90	0.78	185 to 194
90 to 95	0.76	194 to 203
95 to 100	0.74	203 to 212
100 to 105	0.72	212 to 221
105 to 110	0.70	221 to 230
110 to 115	0.68	230 to 239
115 to 120	0.66	239 to 248
120 to 125	0.64	248 to 257
125 to 130	0.62	257 to 266
130 to 135	0.60	266 to 275
135 to 140	0.58	275 to 284
140 to 145	0.56	284 to 293
145 to 150	0.54	293 to 302
150 to 155	0.52	302 to 311
155 to 160	0.50	311 to 320
160 to 165	0.48	320 to 329
165 to 170	0.46	329 to 338
170 to 175	0.44	338 to 347
175 to 180	0.42	347 to 356
180 to 185	0.40	356 to 365
185 to 190	0.38	365 to 374
190 to 195	0.36	374 to 383
195 to 200	0.34	383 to 392
200 to 205	0.32	392 to 401
205 to 210	0.30	401 to 410
210 to 215	0.28	410 to 419
215 to 220	0.26	419 to 428
220 to 225	0.24	428 to 437
225 to 230	0.22	437 to 446
230 to 235	0.20	446 to 455
235 to 240	0.18	455 to 464
240 to 245	0.16	464 to 473
245 to 250	0.14	473 to 482
250 to 255	0.12	482 to 491
255 to 260	0.10	491 to 500
260 to 265	0.08	500 to 509
265 to 270	0.06	509 to 518
270 to 275	0.04	518 to 527
275 to 280	0.02	527 to 536
280 to 285	0.00	536 to 545

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Reviews

An exceptional pdf and the typeface employed was fascinating to see. Better than never, though i am quite late in start reading this one. Your daily life span will be transform as soon as you total looking at this publication.
(Dale White)

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