



Table of Contents

Chapter 4—Equipment for General Use	399	404.15 Switch Marking.....	416
		Article 404 Questions	417
Article 400 Flexible Cords and Flexible Cables	401	Article 406 Receptacles, Cord Connectors, and Attachment Plugs Caps	419
400.1 Scope.....	401	406.1 Scope.....	419
400.3 Suitability	401	406.2 Receptacle Rating and Type	419
400.4 Types of Flexible Cords and Flexible Cables.....	401	406.3 General Installation Requirements	420
400.5 Ampacity of Flexible Cords and Flexible Cables.....	401	406.4 Receptacle Mounting.....	421
400.7 Uses Permitted	402	406.5 Receptacle Faceplates	423
400.8 Uses Not Permitted	403	406.6 Attachment Plugs, Cord Connectors, and Flanged Surface Devices	423
400.10 Pull at Joints and Terminals	404	406.8 Receptacles in Damp or Wet Locations.....	424
400.13 Overcurrent Protection.....	404	406.10 Connecting Receptacle Grounding Terminal to Box.....	425
400.14 Protection from Damage	404	Article 406 Questions	426
Article 400 Questions	405	Article 408 Switchboards and Panelboards	427
Article 402 Fixture Wires	402	Part I. General	427
402.1 Scope.....	407	408.1 Scope.....	427
402.3 Types	407	408.3 Arrangement of Busbars and Conductors.....	427
402.5 Allowable Ampacity of Fixture Wires.....	407	408.4 Circuit Directory or Circuit Identification.....	428
402.6 Minimum Size	407	408.5 Clearance for Conductor Entering Bus Enclosures	428
402.7 Raceway Size	407	408.7 Unused Openings	429
402.8 Grounded Neutral Conductor.....	408	Part III. Panelboards	429
402.10 Uses Permitted	408	408.34 Classification of Panelboards.....	429
402.11 Uses Not Permitted	408	408.35 Number of Overcurrent Protection Devices	429
402.12 Overcurrent Protection.....	408	408.36 Overcurrent Protection of Panelboard	429
Article 402 Questions	409	408.37 Panelboards in Damp or Wet Locations.....	431
Article 404 Switches	411	408.40 Grounding (Bonding) of Panelboards.....	431
404.1 Scope.....	411	408.41 Grounded Neutral Conductor Terminations.....	432
404.2 Switch Connections.....	411	Article 408 Questions	433
404.3 Switch Enclosures.....	412	Article 410 Luminaires, Lampholders, and Lamps	435
404.4 Wet Locations.....	412	Part I. General	435
404.6 Position of Knife Switches	413	410.1 Scope.....	435
404.7 Indicating	413	Part II. Luminaire Locations	435
404.8 Accessibility and Grouping	414		
404.9 Switch Cover Plates (Faceplate).....	415		
404.10 Mounting Snap Switches.....	415		
404.11 Circuit Breakers Used as Switches.....	415		
404.12 Grounding (Bonding) Metal Enclosures.....	415		
404.14 Rating and Use of Snap Switches.....	416		



410.4	Luminaires in Specific Locations.....	435	422.3	Other Articles.....	453
410.8	Clothes Closets.....	437	Part II. Branch-Circuit Requirements	454	
Part III. Luminaire Outlet Boxes and Covers	438		422.10	Branch-Circuit Rating.....	454
410.12	Outlet Boxes to be Covered.....	438	422.11	Overcurrent Protection.....	454
410.14	Connection of Electric-Discharge Luminaires...	438	422.12	Fossil Fuel Heating Equipment (Furnaces)	455
Part IV. Luminaire Supports	439		422.13	Storage Water Heaters.....	455
410.15	Supports.....	439	422.15	Central Vacuum.....	455
410.16	Means of Support.....	440	422.16	Flexible Cords.....	456
Part V. Grounding (Bonding)	442		422.18	Support of Ceiling-Suspended (Paddle) Fans....	457
410.18	Exposed Luminaire Parts.....	442	Part III. Disconnect	457	
Part VI. Wiring of Luminaires	442		422.31	Permanently Connected Appliance Disconnect.....	457
410.23	Polarization of Luminaires.....	442	422.33	Cord-and-Plug Connected Appliance Disconnect ...	457
410.30	Cord-Connected Luminaires.....	442	422.34	Unit Switch as Disconnect.....	458
410.31	Luminaires Used as a Raceway.....	443	422.51	Cord-and-Plug Connected Vending Machines...	458
410.32	Wiring Luminaires Connected Together.....	443		Article 422 Questions.....	459
410.33	Branch-Circuit Conductors and Ballast.....	443	Article 424 Fixed Electric Space-Heating Equipment	461	
Part VIII. Lampholders	443		Part I. General	461	
410.47	Screw-Shell Lampholder.....	443	424.1	Scope.....	461
Part XI. Recessed Luminaires	443		424.3	Branch Circuits.....	461
410.65	Thermally Protected.....	443	424.9	Permanently Installed Electric Baseboard Heaters with Receptacles.....	462
410.66	Recessed Luminaire Clearances.....	444	Part III. Electric Space-Heating Equipment	462	
410.67	Wiring.....	444	424.19	Disconnecting Means.....	462
Part XIII. Electric-Discharge Lighting	444		Part V. Electric Space-Heating Cables	462	
410.73	General.....	444	424.44	Installation of Cables in Concrete or Poured Masonry Floors.....	462
410.76	Luminaire Mounting.....	445	Part VI. Duct Heaters	462	
Part XV. Track Lighting	445		424.65	Disconnect for Electric Duct Heater Controller.....	462
410.100	Definition.....	445		Article 424 Questions.....	464
410.101	Installation.....	445	Article 430 Motors, Motor Circuits, and Controllers	465	
410.104	Fastening.....	446	Part I. General	465	
Part XVI. Decorative Lighting and Similar Accessories ...	446		430.1	Scope.....	465
410.110	Listing of Decorative Lighting.....	446	430.2	Definitions.....	466
	Article 410 Questions.....	447	430.6	Table FLC Versus Motor Nameplate Current Rating.....	466
Article 411 Lighting Systems Operating at 30V or Less	449		430.8	Marking on Controllers.....	467
411.1	Scope.....	449	430.9	Motor Controller Terminal Requirements.....	467
411.2	Definition.....	449	430.14	Location of Motors.....	468
411.3	Listing Required.....	449	430.17	The Highest-Rated Motors.....	468
411.4	Locations Not Permitted.....	449	Part II. Conductor Size	468	
411.5	Secondary Circuits.....	450	430.22	Single Motor—Conductor Size.....	468
	Article 411 Questions.....	451			
Article 422 Appliances	453				
Part I. General	453				
422.1	Scope.....	453			



430.24	Several Motors—Conductor Size	469	440.2	Definitions.....	481
430.28	Motor Feeder Taps.....	469	440.3	Other Articles	481
Part III. Overload Protection		469	440.4	Marking on Hermetic Refrigerant Motor-Compressors and Equipment.....	482
430.31	Overload.....	470	440.6	Ampacity and Rating	482
430.32	Overload Sizing—Continuous-Duty Motors.....	471	Part II. Disconnecting Means		482
430.36	Use of Fuses for Overload Protection	471	440.14	Location	482
430.37	Number of Overload Devices.....	472	Part III. Circuit Protection		483
Part IV. Branch-Circuit Short-Circuit and Ground-Fault Protection		472	440.21	General.....	483
430.51	General.....	472	440.22	Short-Circuit and Ground-Fault Protection Device Size	483
430.52	Branch-Circuit Short-Circuit and Ground-Fault Protection.....	472	Part IV. Conductor Sizing		484
430.55	Single Overcurrent Protective Device	473	440.32	Conductor Size—One Motor-Compressor	484
Part V. Feeder Short-Circuit and Ground-Fault Protection		473	440.33	Conductor Size—Several Motor-Compressors..	485
430.62	Feeder Protection	473	Part VII. Room Air Conditioners		485
Part VI. Motor Control Circuits		474	440.62	Branch-Circuit Requirements	485
430.72	Overcurrent Protection for Control Circuits.....	474	440.63	Disconnecting Means	485
430.74	Disconnect for Control Circuit.....	474	440.64	Supply Cord	485
Part VII. Motor Controllers		475	440.65	Leakage Current Detection and Interruption, and Arc-Fault Circuit Interrupter	485
430.83	Controller Rating	475		Article 440 Questions	486
430.84	Need Not Open All Conductors of the Circuit ..	475	Article 445 Generators		487
430.87	Controller for Each Motor	475	445.1	Scope.....	487
430.91	Motor Controller Enclosure Types.....	476	445.11	Marking	487
Part IX. Disconnecting Means		476	445.12	Overcurrent Protection	487
430.102	Disconnect Requirement	476	445.13	Ampacity of Conductors.....	487
430.103	Disconnect Opens All Conductors	477	445.18	Disconnecting Means	488
430.104	Marking and Mounting.....	477		Article 445 Questions	490
430.107	Readily Accessible	477	Article 450 Transformers and Transformer Vaults		491
430.109	Disconnecting Means Rating.....	477	Part I. General		491
430.111	Combination Controller-Disconnect	477	450.1	Scope.....	491
Part X. Adjustable-Speed Drive Systems		478	450.3	Overcurrent Protection	491
430.120	General.....	478	450.9	Ventilation	493
430.122	Conductors—Minimum Size and Ampacity.....	478	450.11	Marking	493
430.124	Overload Protection	478	450.13	Transformer Accessibility	493
430.128	Disconnecting Means	478	Part III. Transformer Vaults		493
Part XIV. Tables		478	450.41	Location	493
Table 430.248	Full-Load Current, Single-Phase Motors	478	450.42	Walls, Roofs, and Floors	494
Table 430.250	Full-Load Current, Three-Phase Motors.	478	450.43	Doorways	494
Table 430.251	Locked-Rotor Currents	478	450.45	Ventilation Openings	494
	Article 430 Questions	479	450.47	Water Pipes and Accessories.....	494
			450.48	Storage in Vaults	494
				Article 450 Questions	495
Article 440 Air-Conditioning and Refrigeration Equipment		481			
Part I. General		481			
440.1	Scope.....	481			



Article 460 Capacitors 497

460.1 Scope 497

460.2 Enclosing and Guarding..... 497

Part I. 600V, Nominal, and Under 497

460.8 Conductors..... 497

460.9 Rating or Setting of Motor Overload Device 497

Article 460 Questions 498