

Control and Load Switch Specifications

Bulletin Number 194E, 194L

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Additional Resources

These documents contain additional information concerning related products from Rockwell Automation.

| Resource | Description |
|---|---|
| Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1 | Provides general guidelines for installing a Rockwell Automation industrial system. |
| Product Certifications website, http://www.ab.com | Provides declarations of conformity, certificates, and other certification details. |

You can view or download publications at <http://www.rockwellautomation.com/literature/>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.



| | | | |
|--|--|---|---|
| |  |  |  |
| | Bulletin 194E | | Bulletin 194L |
| Product Type | Inductive load-rated load switch | | Inductive load-rated control/load switch |
| Current Range | 16...100 A | | 12...40 A |
| Main Applications | UL, CSA ratings "suitable as at-motor disconnect" | | UL, CSA ratings "suitable as at-motor disconnect" |
| Functionality | <ul style="list-style-type: none"> 3- or 6-pole switch configurations for OFF-ON or changeover applications (16...100 A switches) | <ul style="list-style-type: none"> 1- to 6-pole multifunction switch control configurations for OFF-ON, changeover, Star-Delta (Wye-Delta), reversing, ammeter, voltmeter, and step switch applications Also available in custom control configurations up to 16 circuits for any unique control switching application. | |
| Mounting Styles | Front/door or base/DIN Rail mounting | | Front/door or base/DIN Rail mounting |
| Handles | <ul style="list-style-type: none"> Handle colors in grey/black and red/yellow and padlockable versions Legend plates available in 0-I international markings and text styles | <ul style="list-style-type: none"> Uniformly styled handles: selector knob, disk style, rectangular style, and key-operated versions (Type 1/12, IP66) Handle colors in grey/black and red/yellow and padlockable versions Legend plates available in 0-I international markings and text styles | |
| Open Switch or Enclosed | <ul style="list-style-type: none"> Open switch (large frame Bul. 194E — open style only) Enclosed: IP66 thermoplastic enclosure or UL/CSA rated enclosure | Open switch | |
| UL/CSA Electrical Ratings: Rated Voltage U_e | 600V AC | | 600V AC |
| Rated Current I_e | 16...100 A @ 600V | | 12...40 A @ 600V |
| Rated Power P_e [FLA] | Varies w/ 1- or 3-phase switch, voltage | | Varies w/ 1- or 3-phase switch, voltage |
| Short-Circuit Ratings | 5 kA | | 5 kA |
| Switching Rate [ops/h] | 120 | | 120 |
| Mechanical Life [ops] | 0.2 million (16...100 A switches) | | 1 million |
| IEC Rated Current I_e | | | |
| AC-1 | 16...100 A @ 600V | | 12...40 A @ 600V |
| AC-21A | 16...100 A @ 600V | | 12...40 A @ 600V |
| AC-22A | 16...100 A @ 600V | | 12...40 A @ 600V |
| Ambient Operational Temp. | -25...+60 °C (-13...+140 °F) | | -25...+60 °C (-13...+140 °F) |
| Ambient Enclosed Temp. | -20...+60 °C (-4...+140 °F) | | -20...+60 °C (-4...+140 °F) |
| Ambient Storage Temp. | -40...+80 °C (-40...+176 °F) | | -40...+80 °C (-40...+176 °F) |
| Protection class per IEC 529 | Switch bodies: IP2 | | Switch bodies: IP2 |
| Optional Accessories | <ul style="list-style-type: none"> IP66 handles Multi-length shafts and shaft extension kits Terminal covers | <ul style="list-style-type: none"> Multi-length shafts and shaft extension kits Terminal covers | |
| Standards/Certifications | <ul style="list-style-type: none"> UL 508 CSA C22.2, No. 14 IEC 60947-3 Low Voltage Switchgear and Controlgear part 3 CE | <ul style="list-style-type: none"> UL 508 CSA C22.2, No. 14 IEC 60947-3 Low Voltage Switchgear and Controlgear part 3 CE | |

Electrical Ratings

| Performance Data | | | 16 A | 25 A | 32 A | 40 A | 63 A | 80 A | 100 A | Aux. Contacts | |
|---|--|--------|--------------|---------|---------|---------|---------|---------|---------|---------------|---------|
| IEC Applications | | | | | | | | | | | |
| Rated operational voltage (U_g): IEC★ | | | [V] | 690 | 690 | 690 | 690 | 690 | 690 | 690 | 690 |
| Rated operational voltage (U_g): UL, CSA | | | [V] | 600 | 600 | 600 | 600 | 600 | 600 | 600 | 600 |
| Rated isolation voltage (U_i): IEC/UL, CSA | | | [V] | 690/600 | 690/600 | 690/600 | 690/600 | 690/600 | 690/600 | 690/600 | 690/600 |
| Rated impulse voltage (U_{imp}): UL, CSA | | | [kV] | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Test voltage, (U_i) 1 minute | | | [kV] | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 |
| Lost power per pole | | | [W] | 0.58 | 1.0 | 1.5 | 1.6 | 2.4 | 3.6 | 5.5 | 0.4 |
| Rated frequency | | | [Hz] | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 | 50/60 |
| Conventional free air thermal current I_{th} ★ | | | [A] | 25 | 40 | 50 | 63 | 75 | 100 | 120 | 12 |
| Conventional enclosed thermal current I_e ★ | | | [A] | 20 | 32 | 40 | 50 | 63 | 80 | 100 | 10 |
| Rated current I_e★ | | | | | | | | | | | |
| AC-1/ | Non-inductive or only slightly inductive loads | [A] | 16 | 25 | 32 | 40 | 63 | 80 | 100 | 10 | |
| AC-21A | Switching of resistive loads with slight overload | | | | | | | | | | |
| Rated power P_e | | | | | | | | | | | |
| AC-23A | Occasional switching of 3Ø motors and other highly inductive loads (criterion for selecting main switches) | 230V | [kW] | 5.5 | 7.5 | 7.5 | 15 | 18.5 | 22 | 30 | — |
| | | 400V | [kW] | 7.5 | 11 | 15 | 22 | 30 | 37 | 55 | — |
| | | 690V | [kW] | 7.5 | 11 | 15 | 18.5 | 22 | 37 | 45 | — |
| AC-3 | Squirrel-cage motors; starting and stopping of running motors | 230V | [kW] | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 22 | — |
| | | 400V | [kW] | 5.5 | 7.5 | 11 | 15 | 18.5 | 30 | 37 | — |
| | | 690V | [kW] | 5.5 | 7.5 | 11 | 15 | 18.5 | 30 | 22 | — |
| Short circuit current (co-ordination type 2) | | | [kA] | 20 | 20 | 15 | 20 | 15 | 30 | 25 | — |
| Rated conditional short-circuit current | | | 400/415V [A] | 20 | 25 | 35 | 50 | 63 | 80 | 100 | — |
| Maximum fuse rating of circuit (type g,G) | | | [A] | 800 | 900 | 900 | 1300 | 1300 | 2500 | 2500 | — |
| Rated short-time current I_{cw} (1 s) | | | | | | | | | | | |
| Rated breaking capacity AC23A (cosφ 0.45) | | | | | | | | | | | |
| 230V | | | [A] | 156 | 296 | 296 | 484 | 484 | 780 | 780 | — |
| 400V | | | [A] | 120 | 256 | 256 | 504 | 504 | 800 | 800 | — |
| 690V | | | [A] | 70 | 136 | 136 | 196 | 196 | 376 | 376 | — |
| DC switching capacity | | | | | | | | | | | |
| Rated current I_e | 1 pole | 24/48V | [A] | 20 | 25 | 32 | 40 | 63 | 80 | 100 | |
| | | 110V | [A] | 5 | 5 | 6 | 8 | 10 | 16 | 20 | — |
| | | 220V | [A] | 1 | 1 | 1 | 1.5 | 15 | 3 | 3 | |
| | | 440V | [A] | 0.5 | 0.5 | 0.5 | 0.6 | 0.6 | 0.7 | 0.7 | |
| DC-21A | 2 poles in series | 96V | [A] | 20 | 25 | 32 | 40 | 63 | 80 | 100 | |
| | | 110V | [A] | 20 | 23 | 25 | 32 | 50 | 70 | 80 | — |
| | | 220V | [A] | 5 | 5 | 6 | 8 | 10 | 16 | 20 | |
| | | 440V | [A] | 1 | 1 | 1 | 1.5 | 1.5 | 3 | 3 | |
| DC-21A | 3 poles in series | 600V | [A] | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 1 | 1 | |
| | | 110V | [A] | 20 | 25 | 32 | 40 | 63 | 80 | 100 | |
| | | 220V | [A] | 13 | 13 | 15 | 20 | 28 | 50 | 63 | — |
| | | 440V | [A] | 2.2 | 2.2 | 2.2 | 3.6 | 3.6 | 6.5 | 6.5 | |
| Rated power P_e | 3 poles in series | 600V | [A] | 1.3 | 1.5 | 1.5 | 2 | 2 | 3 | 3 | |
| | | 90V | [kW] | 1 | 1.3 | 1.5 | 2.9 | 4.1 | 5.1 | 7.2 | |
| | | 110V | [kW] | 1 | 1.1 | 1.3 | 2.2 | 3.3 | 5.5 | 7 | — |
| | | 220V | [kW] | 0.8 | 0.9 | 1.1 | 1.7 | 2 | 3.5 | 4.4 | |
| DC-23A, DC-3, DC-5 | For inductive loads, $T \leq 15$ ms | 440V | [kW] | 0.6 | 0.6 | 0.6 | 0.9 | 0.9 | 1.1 | 1.1 | |
| | | 600V | [kW] | 0.4 | 0.4 | 0.4 | 0.5 | 0.5 | 0.9 | 0.9 | |

★ See standards compliance listed on <http://ab.rockwellautomation.com/Circuit-and-Load-Protection/Disconnect-Switches/Non-Visible-Blade/194R-Fused-Non-Fused-Disconnect-Switches#specifications>

Electrical Ratings, Continued

| Performance Data | | 16 A | 25 A | 32 A | 40 A | 63 A | 80 A | 100 A | Aux. Contacts | | | |
|---------------------------|------------------------|----------|-------|------|------|------|------|-------|---------------|------|---|---|
| UL/CSA Applications | | | | | | | | | | | | |
| Continuous current | | [A] | 16 | 25 | 32 | 40 | 63 | 80 | 100 | — | | |
| Heavy Pilot Duty | | [AC] | A600 | A600 | A600 | — | — | — | — | A600 | | |
| Standard Duty | | [DC] | — | — | — | — | — | — | — | Q600 | | |
| Motor rating 60 Hz | Single-phase (2 poles) | 120V, 1P | [FLA] | 16 | 16 | 16 | 24 | 34 | 56 | 80 | — | |
| | | | [Hp] | 1 | 1 | 1 | 2 | 3 | 5 | 7.5 | | |
| | | 240V, 1P | [FLA] | 12 | 12 | 17 | 17 | 28 | 50 | 68 | | |
| | | | [Hp] | 2 | 2 | 3 | 3 | 5 | 10 | 15 | | |
| | | 480V, 1P | [FLA] | 8.5 | 8.5 | 14 | 21 | 26 | 34 | 68 | | |
| | | | [Hp] | 3 | 3 | 5 | 7.5 | 10 | 15 | 30 | | |
| | 600V, 1P | [FLA] | 11.2 | 11.2 | 11.2 | 16 | 20 | 27 | 44 | | | |
| | | [Hp] | 5 | 5 | 5 | 7.5 | 10 | 15 | 25 | | | |
| | Three-phase | 120V, 3P | [FLA] | 13.6 | 13.6 | 19.2 | 30.4 | 40 | 56 | 84 | | — |
| | | | [Hp] | 2 | 2 | 3 | 5 | 7.5 | 10 | 15 | | |
| | | 240V, 3P | [FLA] | 9.6 | 15.2 | 22 | 28 | 42 | 68 | 80 | | |
| | | | [Hp] | 3 | 5 | 7.5 | 10 | 15 | 25 | 30 | | |
| 480V, 3P | | [FLA] | 11 | 14 | 21 | 27 | 34 | 52 | 65 | | | |
| | | [Hp] | 7.5 | 10 | 15 | 20 | 25 | 40 | 50 | | | |
| 600V, 3P | | [FLA] | 11 | 11 | 17 | 22 | 27 | 52 | 52 | | | |
| | | [Hp] | 10 | 10 | 15 | 20 | 25 | 50 | 50 | | | |

Mechanical Data

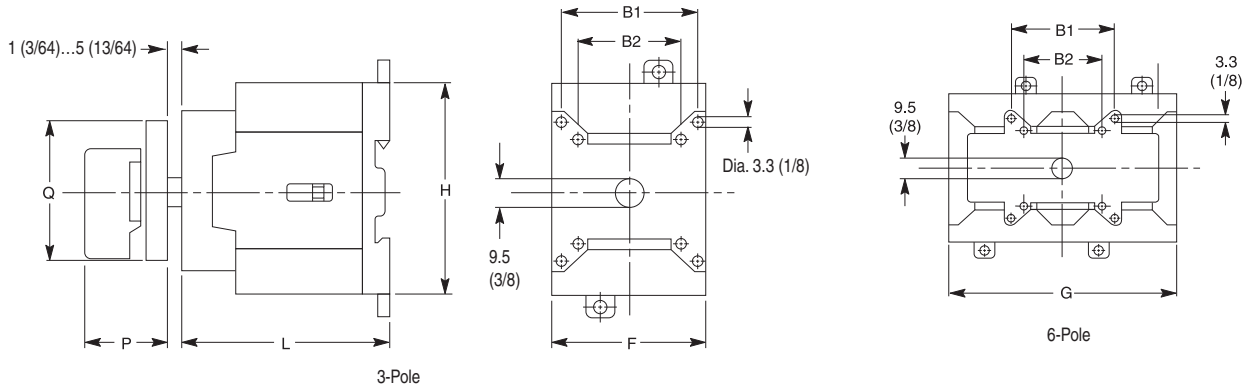
| Performance Data | | 16 A | 25...32 A | 40...63 A | 80...100 A | Aux. Contacts |
|---------------------------------------|----------------------|----------|-----------|-----------|------------|---------------|
| Protection class according to IEC 529 | | | | | | |
| Motor rating 60 Hz | | | | | | |
| handles | | IP66 | IP66 | IP66 | IP66 | IP66 |
| switch bodies | | IP20 | IP20 | IP20 | IP20 | IP20 |
| Mechanical life | [million operations] | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Max wire gauges | | | | | | |
| Terminal size per IEC 947-1 | | | | | | |
| rigid wire | [AWG] | 16...10 | 14...8 | 12...4 | 10...1 | 18...14 |
| | [mm ²] | 1...10 | 1.5...16 | 2.5...25 | 4...50 | 0.75...2.5 |
| fine strands | [AWG] | 16...8 | 14...8 | 12...4 | 10...1 | 18...14 |
| | [mm ²] | 1.5...6 | 1.5...10 | 2.5...16 | 4...35 | 0.5...2.5 |
| Tightening torque | [N•m]/[lb•in] | 1.4/12.2 | 1.4/12.2 | 2.8/24.5 | 5.6/50 | 1/8.8 |

Environmental Data

| | |
|-----------|------------------------------|
| Storage | -40...+80 °C (-40...+176 °F) |
| Operation | -25...+60 °C (-13...+140 °F) |

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Front Installation Cat. No. 194E-E...



Handles

| Cat. No. | P | Q |
|-----------|--------------|-----------------------------|
| 194L-HE4A | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194L-HE4I | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194E-HE4N | 34 (1-11/32) | 54 x 54 (2-1/8 x 2-1/8) |
| 194E-HE4G | 34 (1-11/32) | 54 x 54 (2-1/8 x 2-1/8) |
| 194L-HE6A | 28 (1-7/64) | 64 x 64 (2-33/64 x 3-5/64) |
| 194L-HE6I | 28 (1-7/64) | 64 x 64 (2-33/64 x 3-5/64) |
| 194L-HE6N | 34 (1-11/32) | 67 x 67 (2-41/64 x 2-41/64) |
| 194L-HE6G | 34 (1-11/32) | 67 x 67 (2-41/64 x 2-41/64) |

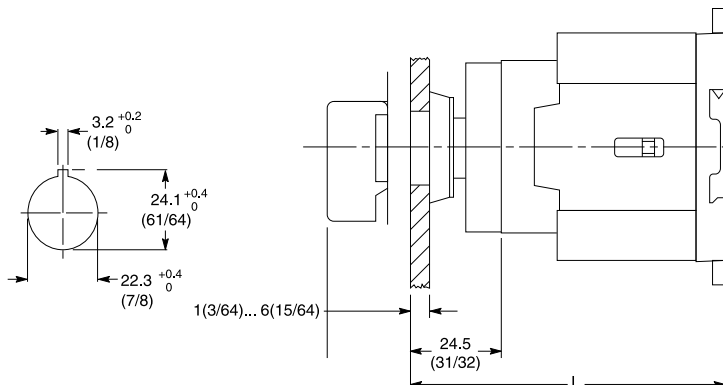
Switch Body

| Use with Cat. No. | B1 ★ | B2 | F | H | L ‡ | G |
|-------------------|--------------|--------------|--------------|--------------|--------------|---------------|
| 194E-E16 | 28 (1-7/64) | N/A | 36 (1-37/64) | 63 (2-31/64) | 51 (2) | 90 (3-35/64) |
| 194E-E25/32 | 36 (1-27/64) | N/A | 45 (1-25/32) | 64 (2-33/64) | 60 (2-3/8) | 90 (3-1/2) |
| 194E-E40/63 | 48 (1-57/64) | 36 (1-27/64) | 54 (2-1/8) | 72 (2-27/32) | 74 (2-29/32) | 108 (4-1/4) |
| 194E-E80/100 | 48 (1-57/64) | 36 (1-27/64) | 72 (2-27/32) | 90 (3-35/64) | 90 (3-35/64) | 144 (5-11/16) |

★ Does not apply to 194E-40/63A, 6-Pole Switches. Use B2 dimensions for 6-pole devices.

‡ For 6-pole switches, add 1 in. to the "L" dimension.

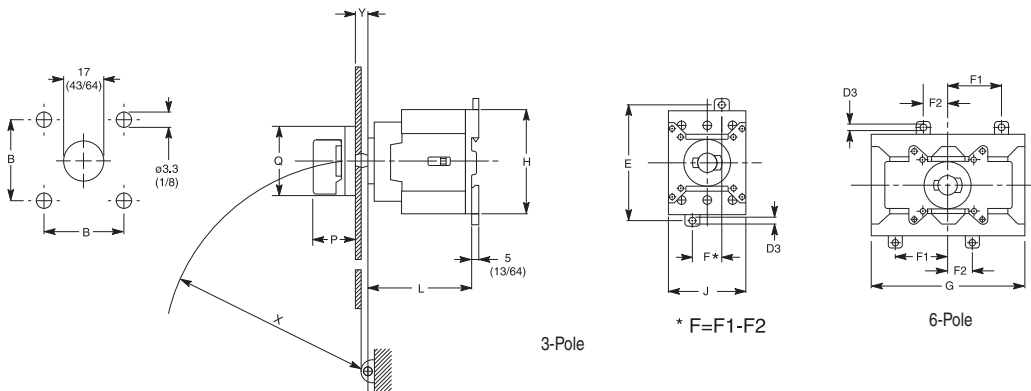
Cat. No. 194E-E Switch Body with Cat. No. 194L-HC4A Handle for 22.5 mm Hole Mounting Style



| Type | L |
|--------------|-----------------|
| 194E-E16 | 76 (3) |
| 194E-E25/32 | 84.5 (3-21/64) |
| 194E-E40/63 | 98.5 (3-7/8) |
| 194E-E80/100 | 114.5 (4-33/64) |

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Base Mounting Cat. No. 194E-A...



Handles

| Cat. No. | P | Q |
|-----------|--------------|-----------------------------|
| 194L-HE4A | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194L-HE4I | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194L-HE4S | 28 (1-7/64) | 48 x 62 (1-57/64 x 2-7/16) |
| 194E-HE4N | 34 (1-11/32) | 54 x 54 (2-1/8 x 2-1/8) |
| 194E-HE4G | 34 (1-11/32) | 54 x 54 (2-1/8 x 2-1/8) |
| 194L-HE6A | 28 (1-7/64) | 64 x 64 (2-33/64 x 3-5/64) |
| 194L-HE6I | 28 (1-7/64) | 64 x 64 (2-33/64 x 3-5/64) |
| 194L-HE6S | 28 (1-7/64) | 64 x 78 (2-33/64 x 3-5/64) |
| 194L-HE6N | 34 (1-11/32) | 67 x 67 (2-41/64 x 2-41/64) |
| 194L-HE6G | 34 (1-11/32) | 67 x 67 (2-41/64 x 2-41/64) |

Cover Requirements

| For Use With | Y min. | X ≥ | Y max. | X ≥ |
|--------------|------------|---------------|-----------|--------------|
| 194E-A16 | 5 (13/64) | 142 (5-19/32) | 9.5 (3/8) | 90 (3-35/64) |
| 194E-A25/32 | 5 (13/64) | 142 (5-19/32) | 9.5 (3/8) | 90 (3-35/64) |
| 194E-A40/63 | 2.5 (7/64) | 150 (5-29/32) | 9.5 (3/8) | 90 (3-35/64) |
| 194E-A80/100 | 2.5 (7/64) | 150 (5-29/32) | 9.5 (3/8) | 90 (3-35/64) |

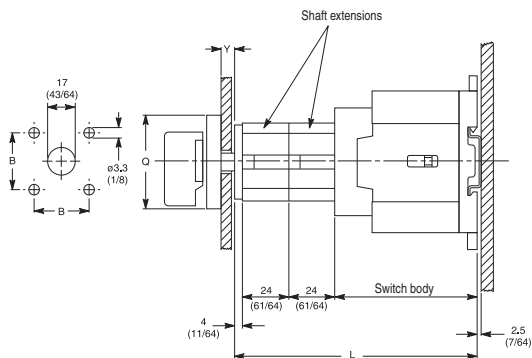
Switch Body

| Use With Cat. No. | D3 | E | F1 | F2 | G | H | L ‡ | J |
|-------------------|------------|--------------|----------------|--------------|---------------|--------------|--------------|--------------|
| 194E-A16 | 4.5 (3/16) | 70 (2-49/64) | 12.5 (31/64) | 23.5 (59/64) | 90 (3-35/64) | 63 (2-31/64) | 80 (3-5/32) | 36 (1-27/64) |
| 194E-A25/32 | 4.5 (3/16) | 70 (2-49/64) | 30 (1-3/16) | 15 (19/32) | 90 (3-1/2) | 64 (2-33/64) | 59 (2-5/16) | 45 (1-25/32) |
| 194E-A40/63 | 4.5 (3/16) | 80 (3-5/32) | 37 (1-15/32) | 17 (43/64) | 108 (4-1/4) | 72 (2-27/32) | 73 (2-55/64) | 54 (2-1/8) |
| 194E-A80/100 | 5.6 (7/32) | 95 (3-3/4) | 48.5 (1-29/32) | 23.5 (59/64) | 144 (5-11/16) | 90 (3-35/64) | 89 (3-1/2) | 72 (2-27/32) |

‡ For 6-pole switches, add 1 in. to the "L" dimension.

Base Mounting Cat. No. 194E-A...

Cat. No. 194E-A... Switch Body with Cat. No. 194L-G2853 Shaft Extension



Switch Body

| L ★ | Cat. No. | | | |
|-------------------------|------------------|------------------|------------------|------------------|
| | 194E-A 16 | 194E-A 25/32 | 194E-A 40/63 | 194E-A 80/100 |
| With 1 shaft extension | 79 (3-7/64) | 88 (3-15/32) | 102 (4-1/32) | 118 (4-21/32) |
| With 2 shaft extensions | 103 (4-37/64) | 112 (4-27/64) | 126 (4-31/32) | 142 (5-19/32) |
| With 3 shaft extensions | 127 (5) | 136 (5-23/64) | 150 (5-29/32) | 166 (6-35/64) |
| With 4 shaft extensions | 151 (6-61/64) | 160 (6-5/16) | 174 (6-55/64) | 190 (7-31/64) |
| With 5 shaft extensions | 175 (7-57/64) | 184 (7-1/4) | 198 (7-51/64) | 214 (8-7/16) |
| With 6 shaft extensions | 199 (8-27/32) | 208 (8-13/64) | 222 (8-3/4) | 238 (9-3/8) |

★ For 6-pole switches, add 1 in. to the "L" dimension.

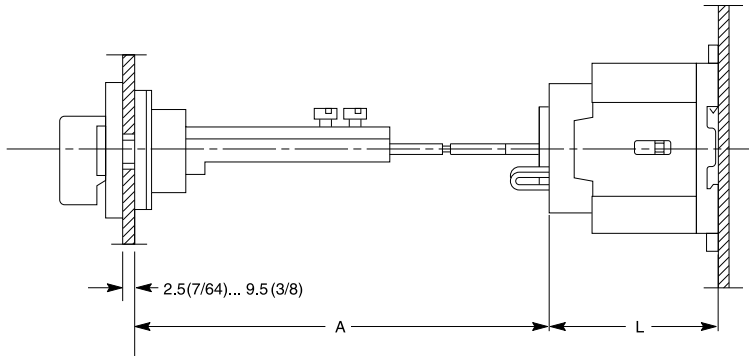
| Shaft | Y |
|------------|-----------------------------|
| 194L-G2830 | 2.5...9.5 (7/64...3/8) |
| 194L-G3194 | 9...18 (23/64...23/32) |
| 194L-G3195 | 14...23 (9/16)...(29/32) |

| Type | Handles | | |
|-----------|-----------------|--------------------------------|-----------------|
| | B | Q | P |
| 194L-HE4A | 36 (1-27/64) | 48 x 48 (1-57/64 x 1-57/64) | 28 (1-7/64) |
| 194L-HE4I | 36 (1-27/64) | 48 x 48 (1-57/64 x 1-57/64) | 28 (1-7/64) |
| 194E-HE4G | 28 (1-7/64) | 54 x 54 (2-1/8 x 2-1/8) | 34 (1-11/32) |
| 194E-HE4N | 28 (1-7/64) | 54 x 54 (2-1/8 x 2-1/8) | 34 (1-11/32) |
| 194L-HE6A | 48 (1-57/64) | 64 x 64 (2-33/64 x 2-33/64) | 28 (1-7/64) |
| 194L-HE6I | 48 (1-57/64) | 64 x 64 (2-33/64 x 2-33/64) | 28 (1-7/64) |
| 194L-HE6N | 48 (1-57/64) | 67 x 67 (2-41/64 x 2-41/64) | 34 (1-11/32) |
| 194L-HE6G | 48 (1-57/64) | 67 x 67 (2-41/64 x 2-41/64) | 34 (1-11/32) |

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Base Installation Cat. No. 194E-A...

Cat. No. 194E-A Switch Body with Metal Shaft Extension



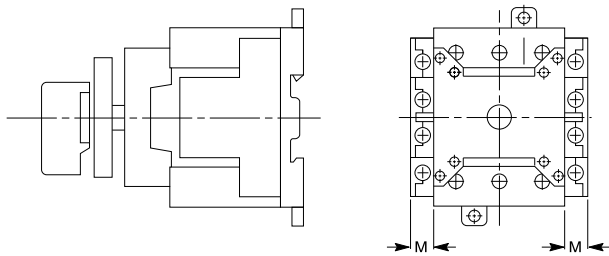
| Cat. No. | A |
|------------|----------------------------------|
| 194L-G3393 | 110...235 (4-11/32...9-1/4) |
| 194L-G3394 | 230...350 (9-1/16...13-25/32) |

| Cat. No. | L★ |
|--------------|-----------------|
| 194E-A16 | 51 (2) |
| 194E-A25/32 | 60 (2-3/8) |
| 194E-A40/63 | 74 (2-59/64) |
| 194E-A80/100 | 90 (3-35/64) |

★ For 6-pole switches, add 1 in. to the "L" dimension.

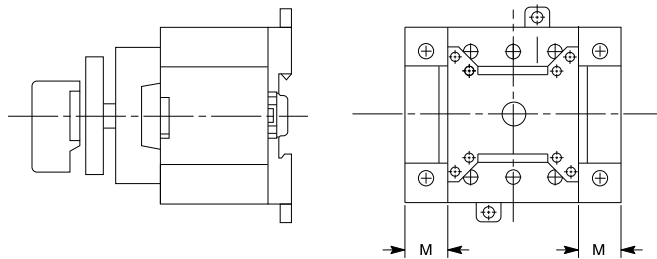
Base and Front Installation

Cat. No. 194E... with Auxiliary Contact Block Installed



| Contacts | M |
|-----------------|---------------|
| 1 N.O. + 1 N.C. | 9 (23/64) |
| 2 N.O. + 2 N.C. | 18 (23/32) |

Cat. No. 194E... with 4-Pole, Ground and Neutral Terminals

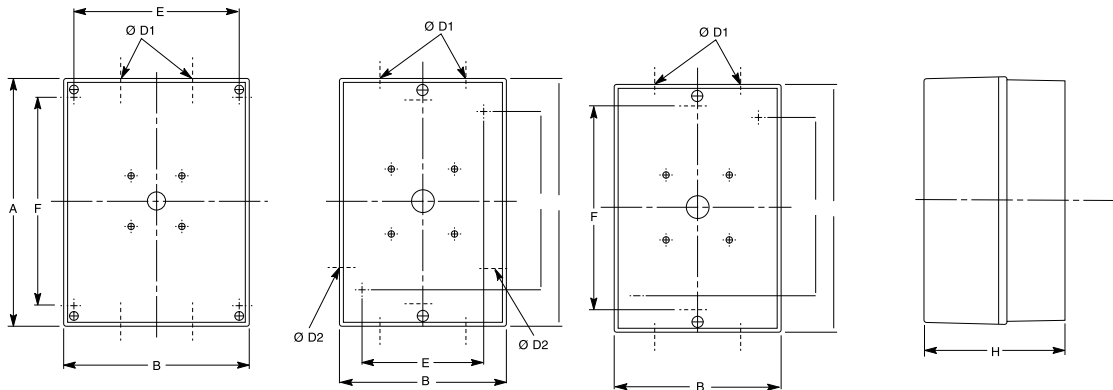


| Cat. No. | M |
|-------------|-----------------|
| 194E-16 | 12.5 (31/64) |
| 194E-25/32 | 14 (9/16) |
| 194E-40/63 | 17.5 (11/16) |
| 194E-80/100 | 22 (7/8) |

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Base Mounting Cat. No. 194E-A...

Thermoplastic Enclosures



| Cat. No. 194L-3665 | | Cat. No. 194L-3572 | | Cat. No. 194L-3563 | | Enclosure Base View | | Mounting Holes§ | | Depth H |
|--------------------|---------|--------------------|------------|--------------------|------------------|---------------------------|---------------------------|-----------------|------------------|------------------|
| Complete Switches | | Enclosures | | Height A | Width B | Knockouts‡ | | E | F | |
| Cat. No. | Poles | ABS | Noryl | | | ØD1 | ØD1 | | | ØD1 |
| 194E-Y16 | 3 and 4 | ★ | ★ | 120 (4-23/32) | 70 (2-3/4) | M16/M20 16/20 mm | PG11/PG16 18.5/22.5 mm | 50 (1-31/32) | 105 (4-9/64) | 70 (2-49/65) |
| | 6 | 194E-G3663 | 194E-G3664 | 180 (7-3/32) | 125 (4-59/64) | M25/M30 25/30 mm | PG21/PG29 28.5/37.5 mm | On Center | 145 (5-23/32) | 105 (4-1/8) |
| 194E-Y25/32 | 3 and 4 | 194L-G3572 | 194L-G3576 | 150 (5-29/32) | 95 (3-3/4) | PG16/PG21 22.5/28.5 mm | | 60 (2-3/8) | 115 (4-17/32) | 86 (3-3/8) |
| | 6 | 194E-G3663 | 194E-G3664 | 180 (7-3/32) | 125 (4-59/64) | PG21/PG29 28.5/37.5 mm | | On Center | 145 (5-23/32) | 105 (4-1/8) |
| 194E-Y40/63 | 3 and 4 | 194E-G3663 | 194E-G3664 | 180 (7-3/32) | 125 (4-59/64) | PG21/PG29 28.5/37.5 mm | | On Center | 145 (5-23/32) | 105 (4-1/8) |
| | 6 | 194E-G3665 | 194E-G3666 | 230 (9-1/16) | 175 (6-57/64) | PG29/PG36 37.5/47.5 mm | | 155 (6-3/32) | 195 (7-43/64) | 120 (4-47/64) |
| 194E-Y80/100 | 3 and 4 | 194E-G3665 | 194E-G3666 | 230 (9-1/16) | 175 (6-57/64) | PG29/PG36 37.5/47.5 mm | | 155 (6-3/32) | 195 (7-43/64) | 120 (4-47/64) |

★ Empty enclosures not available for purchase.

‡ Cat. No. 194E-A16 units have 1 knockout on each end. all others have 2 knockouts on each end. A letter "M" in the catalog number indicates metric knockouts; the unit is otherwise supplied with PG knockouts.

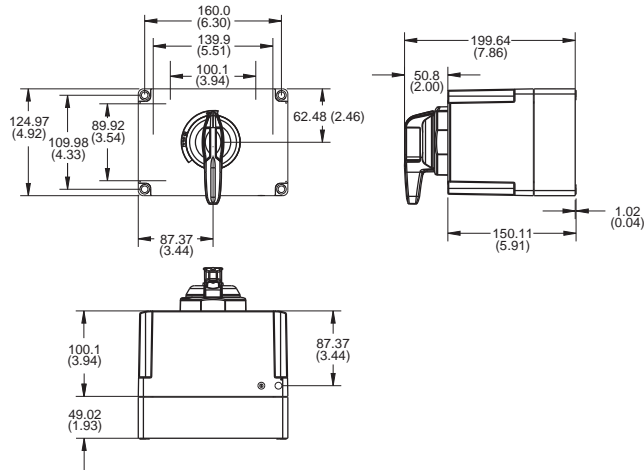
§ All mounting holes have a 4.2 mm (5/32 in.) diameter.

| No. of Extensions | Cat. No. 194E-A 20/32... | Cat. No. 194E-A 40/63... | Cat. No. 194E-A 80/00... |
|--------------------|--------------------------|--------------------------|--------------------------|
| With 1 extension | 96 (3-25/32) | 107 (4-7/32) | 114 (4-31/64) |
| With 2 extensions | 120 (4-23/32) | 131 (5-5/32) | 138 (5-7/16) |
| With 3 extensions | 144 (5-43/64) | 155 (6-7/64) | 162 (6-3/8) |
| With 4♣ extensions | 168 (6-39/64) | 179 (7-3/64) | 186 (7-21/64) |
| With 5♣ extensions | 192 (7-9/16) | 203 (8) | 210 (8-17/64) |
| With 6♣ extensions | 216 (8-1/2) | 227 (8-15/16) | 234 (9-7/32) |

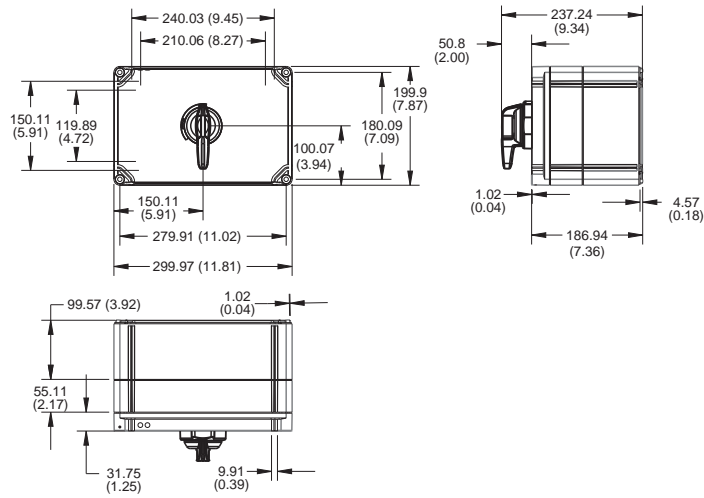
♣ When more than four modules are used, attach the first one to the switch body using the screws supplied with the extension (Cat. No. 194L-G2853).

Dimensions are shown in (millimeters) inches. Dimensions are not intended to be used for manufacturing purposes.

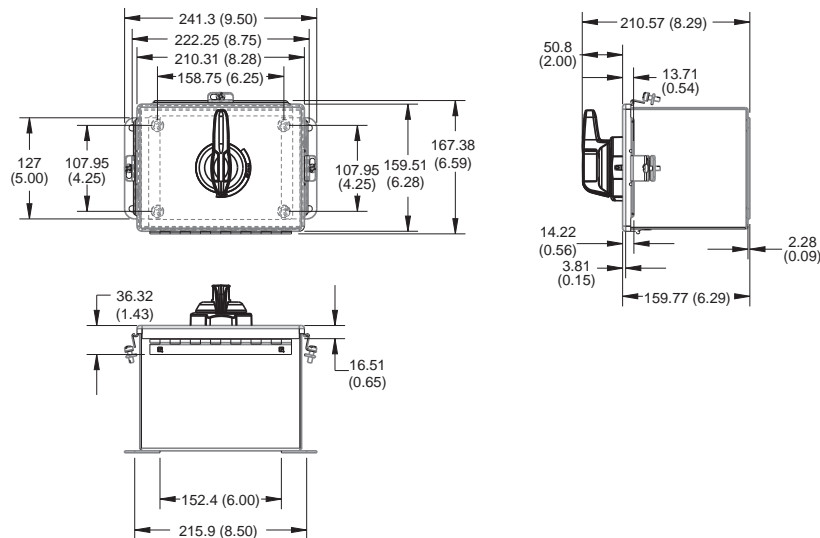
194E Enclosed Switches with 194R Handles



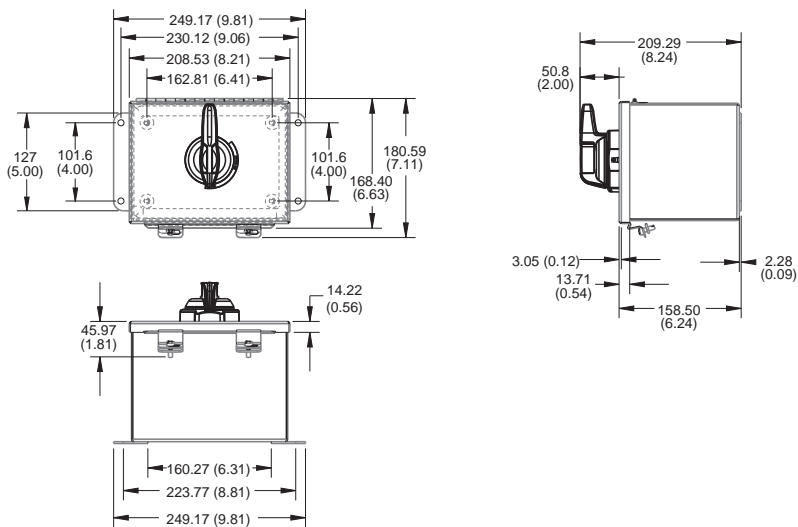
Cat. Nos. 194E-KA-16..63



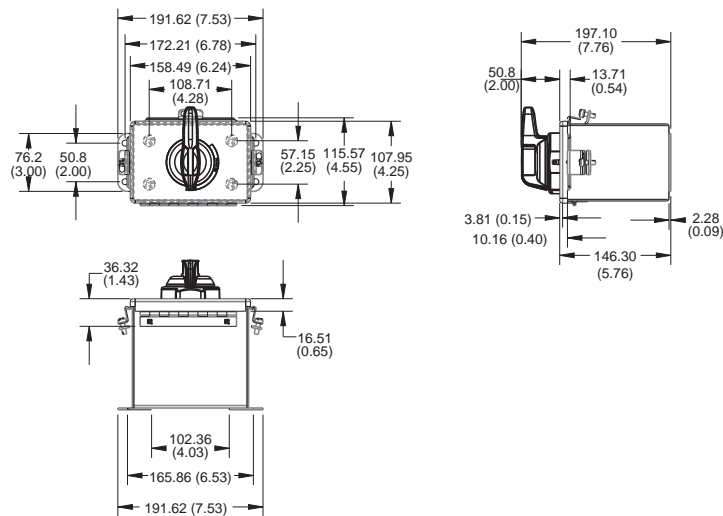
Cat. Nos. 194E-KA-16X...63X, 194E-KA-80...00



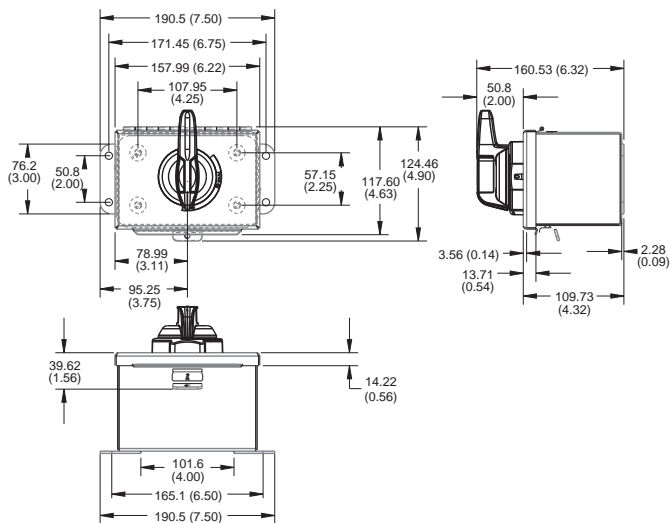
Cat. Nos. 194E-AA-16X...63X, 194E-AA-80...00,
194E-FA-16X...63X, 194E-FA-80...00



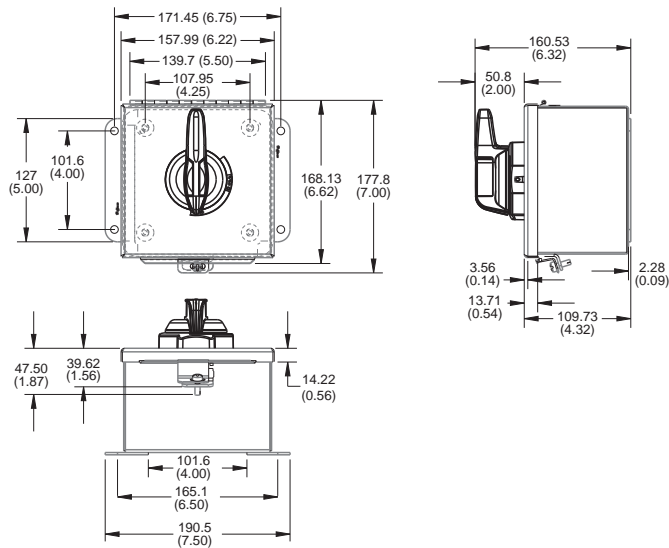
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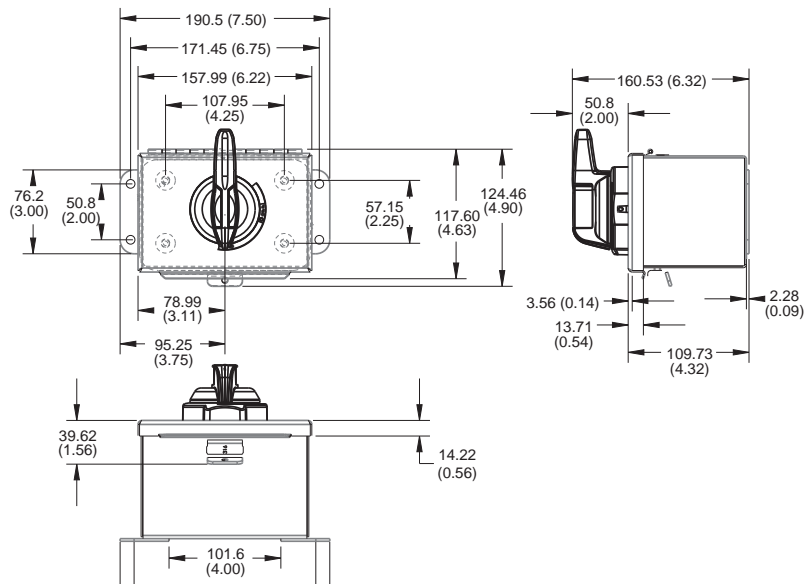
Cat. Nos. 194E-AA-16...63, 194E-FA-16...63



Cat. Nos. 194E-CA-16...63



Cat. Nos. 194E-DA-16...63



Cat. Nos. 194E-GA-16...63

Switching Diagrams

Contact target tables: X = Contact Closed
[Blank] = Contact Open

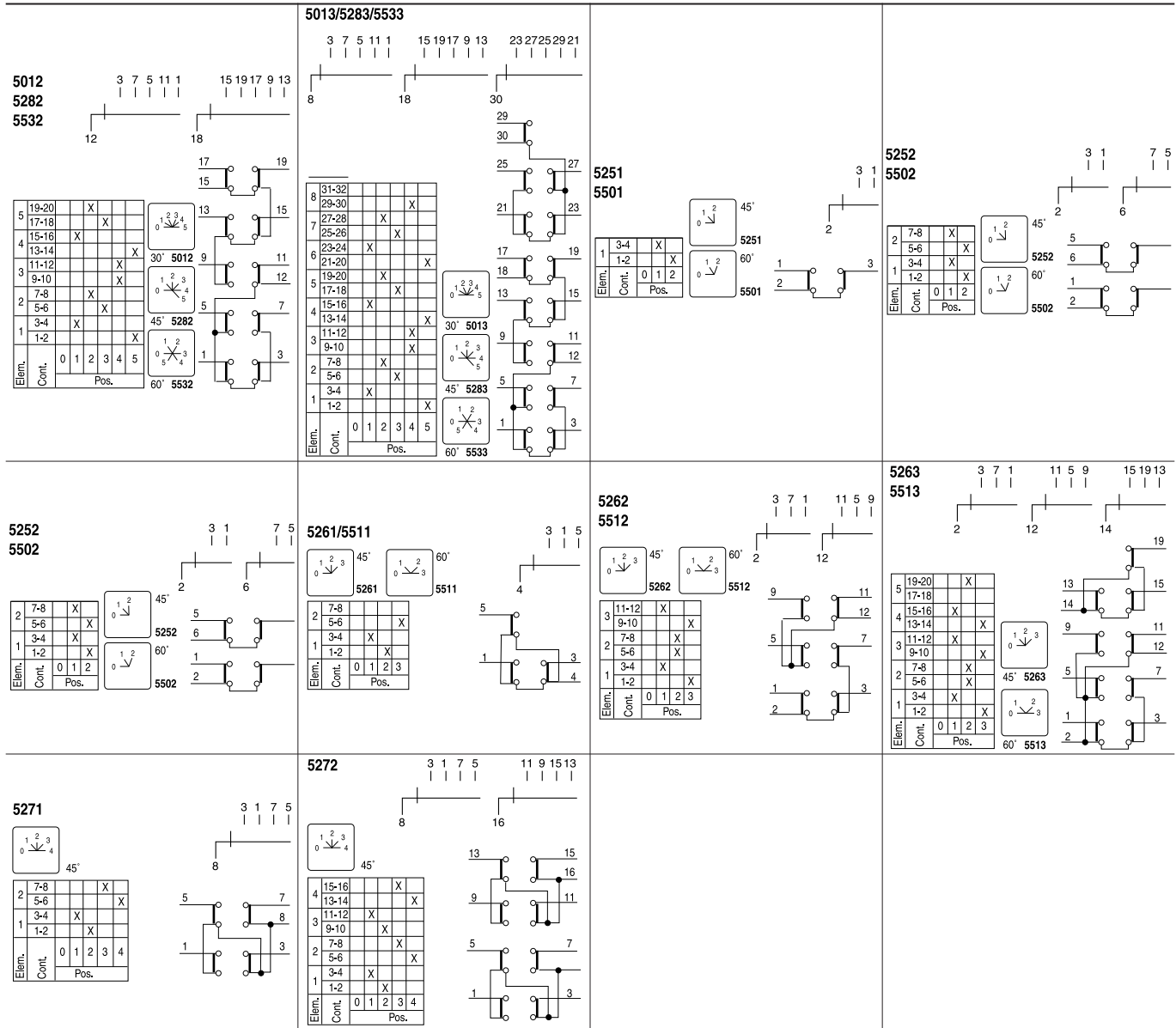
Circuit Diagram Nos. 1501...4253

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>1501/1751 1781</p> <table border="1"> <tr><td>Elem.</td><td>1</td><td>3-4</td><td></td><td></td></tr> <tr><td>Cont.</td><td>1-2</td><td>0</td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 1 | 3-4 | | | Cont. | 1-2 | 0 | X | | Pos. | 0 | 1 | | | <p>1502/1752 1782</p> <table border="1"> <tr><td>Elem.</td><td>1</td><td>3-4</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>1-2</td><td>0</td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 1 | 3-4 | X | | Cont. | 1-2 | 0 | X | | Pos. | 0 | 1 | | | <p>1503/1753 1783</p> <table border="1"> <tr><td>Elem.</td><td>2</td><td>7-8</td><td></td><td></td></tr> <tr><td>Cont.</td><td>3-4</td><td>5-6</td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td></td><td></td></tr> </table> | Elem. | 2 | 7-8 | | | Cont. | 3-4 | 5-6 | X | | Pos. | 1 | 2 | | | <p>1505/1755</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td></td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 3 | 11-12 | | | Cont. | 9-10 | | X | | Pos. | 0 | 1 | | |
| Elem. | 1 | 3-4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | 0 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | 0 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 3-4 | 5-6 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>1505/1755</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td></td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 3 | 11-12 | | | Cont. | 9-10 | | X | | Pos. | 0 | 1 | | | <p>1506/1756</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 3 | 11-12 | X | | Cont. | 9-10 | | X | | Pos. | 0 | 1 | | | <p>2251/2501</p> <table border="1"> <tr><td>Elem.</td><td>1</td><td>3-4</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>1-2</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td></td><td></td></tr> </table> | Elem. | 1 | 3-4 | X | | Cont. | 1-2 | | X | | Pos. | 1 | 2 | | | <p>2252/2502</p> <table border="1"> <tr><td>Elem.</td><td>2</td><td>7-8</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td></td><td></td></tr> </table> | Elem. | 2 | 7-8 | X | | Cont. | 5-6 | | X | | Pos. | 1 | 2 | | |
| Elem. | 3 | 11-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>2253/2503</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>0</td><td>1</td><td></td><td></td></tr> </table> | Elem. | 3 | 11-12 | X | | Cont. | 9-10 | | X | | Pos. | 0 | 1 | | | <p>2254/2504</p> <table border="1"> <tr><td>Elem.</td><td>4</td><td>15-16</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>13-14</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td></td><td></td></tr> </table> | Elem. | 4 | 15-16 | X | | Cont. | 13-14 | | X | | Pos. | 1 | 2 | | | <p>2255/2505</p> <table border="1"> <tr><td>Elem.</td><td>5</td><td>19-20</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>17-18</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td></td><td></td></tr> </table> | Elem. | 5 | 19-20 | X | | Cont. | 17-18 | | X | | Pos. | 1 | 2 | | | <p>3001/3261</p> <table border="1"> <tr><td>Elem.</td><td>1</td><td>3-4</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>1-2</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 1 | 3-4 | X | | Cont. | 1-2 | | X | | Pos. | 1 | 0 | 2 | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 4 | 15-16 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 13-14 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 5 | 19-20 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 17-18 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>3002/3262</p> <table border="1"> <tr><td>Elem.</td><td>2</td><td>7-8</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 2 | 7-8 | X | | Cont. | 5-6 | | X | | Pos. | 1 | 0 | 2 | | <p>3003/3263</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 3 | 11-12 | X | | Cont. | 9-10 | | X | | Pos. | 1 | 0 | 2 | | <p>3251/3501 3751</p> <table border="1"> <tr><td>Elem.</td><td>1</td><td>3-4</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>1-2</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 1 | 3-4 | X | | Cont. | 1-2 | | X | | Pos. | 1 | 0 | 2 | | <p>3252/3502 3752</p> <table border="1"> <tr><td>Elem.</td><td>2</td><td>7-8</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 2 | 7-8 | X | | Cont. | 5-6 | | X | | Pos. | 1 | 0 | 2 | |
| Elem. | 2 | 7-8 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>3254/3504/3754</p> <table border="1"> <tr><td>Elem.</td><td>4</td><td>15-16</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>13-14</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 4 | 15-16 | X | | Cont. | 13-14 | | X | | Pos. | 1 | 0 | 2 | | <p>3253/3503/3753</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>0</td><td>2</td><td></td></tr> </table> | Elem. | 3 | 11-12 | X | | Cont. | 9-10 | | X | | Pos. | 1 | 0 | 2 | | <p>4252</p> <table border="1"> <tr><td>Elem.</td><td>3</td><td>11-12</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td>3</td><td></td></tr> </table> | Elem. | 3 | 11-12 | X | | Cont. | 9-10 | | X | | Pos. | 1 | 2 | 3 | | <p>4253</p> <table border="1"> <tr><td>Elem.</td><td>5</td><td>19-20</td><td>X</td><td></td></tr> <tr><td>Cont.</td><td>17-18</td><td></td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1</td><td>2</td><td>3</td><td></td></tr> </table> | Elem. | 5 | 19-20 | X | | Cont. | 17-18 | | X | | Pos. | 1 | 2 | 3 | |
| Elem. | 4 | 15-16 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 13-14 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Elem. | 5 | 19-20 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 17-18 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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Circuit Diagram Nos. 4271...5531

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| 2 | 7-8 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 1 | 3-4 | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13-14 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Elem. | Cont. | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p>4263 4513</p> <table border="1"> <tr><td>6</td><td>23-24</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>21-22</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>5</td><td>19-20</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>17-18</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>15-16</td><td></td><td>X</td><td></td><td></td></tr> <tr><td></td><td>13-14</td><td></td><td>X</td><td></td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td></tr> </table> <p>45° 4263 60° 4513</p> | 6 | 23-24 | | | | X | | 21-22 | | | | X | 5 | 19-20 | X | | | | | 17-18 | X | | | | 4 | 15-16 | | X | | | | 13-14 | | X | | | 3 | 11-12 | X | | | | | 9-10 | X | | | | 2 | 7-8 | | | | X | | 5-6 | | | | X | 1 | 3-4 | X | | | | | 1-2 | X | | | | Elem. | Cont. | 1 | 2 | 3 | 4 | | Pos. | | | | | <p>4281 4531</p> <table border="1"> <tr><td>3</td><td>11-12</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>9-10</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td></td><td>X</td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p>45° 4281 60° 4531</p> | 3 | 11-12 | | | | X | | 9-10 | | | | X | 2 | 7-8 | X | | | | | 5-6 | | X | | | 1 | 3-4 | X | | | | | 1-2 | | | X | | Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | 6 | | Pos. | | | | | | | <p>4502</p> <table border="1"> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td>X</td><td></td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td></td><td>X</td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>1</td><td>2</td><td>3</td><td></td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td></tr> </table> <p>60°</p> | 3 | 11-12 | X | | | | | 9-10 | X | | | | 2 | 7-8 | | X | | | | 5-6 | | X | | | 1 | 3-4 | X | | | | | 1-2 | | | X | | Elem. | Cont. | 1 | 2 | 3 | | | Pos. | | | | | <p>4503</p> <table border="1"> <tr><td>5</td><td>19-20</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>17-18</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>4</td><td>15-16</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>13-14</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>1</td><td>2</td><td>3</td><td></td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td></tr> </table> <p>60°</p> | 5 | 19-20 | | | | X | | 17-18 | | | | X | 4 | 15-16 | X | | | | | 13-14 | X | | | | 3 | 11-12 | X | | | | | 9-10 | X | | | | 2 | 7-8 | | | | X | | 5-6 | | | | X | 1 | 3-4 | X | | | | | 1-2 | X | | | | Elem. | Cont. | 1 | 2 | 3 | | | Pos. | | | | |
| 6 | 23-24 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 21-22 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| | 17-18 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13-14 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 19-20 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 17-18 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13-14 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>5001 5271 5521</p> <table border="1"> <tr><td>2</td><td>7-8</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td></td><td>X</td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p>30° 5001 45° 5271 60° 5521</p> | 2 | 7-8 | | | | X | | 5-6 | | | | X | 1 | 3-4 | X | | | | | 1-2 | | | X | | Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | Pos. | | | | | | <p>5002 5272 5522</p> <table border="1"> <tr><td>4</td><td>15-16</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>13-14</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p>30° 5002 45° 5272 60° 5522</p> | 4 | 15-16 | | | | X | | 13-14 | | | | X | 3 | 11-12 | X | | | | | 9-10 | X | | | | 2 | 7-8 | | | | X | | 5-6 | | | | X | 1 | 3-4 | X | | | | | 1-2 | X | | | | Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | Pos. | | | | | | <p>5003/5273/5523</p> <table border="1"> <tr><td>6</td><td>23-24</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>21-22</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>5</td><td>19-20</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>17-18</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>15-16</td><td></td><td>X</td><td></td><td></td></tr> <tr><td></td><td>13-14</td><td></td><td>X</td><td></td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td></td><td>X</td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p>30° 5003 45° 5273 60° 5523</p> | 6 | 23-24 | | | | X | | 21-22 | | | | X | 5 | 19-20 | X | | | | | 17-18 | X | | | | 4 | 15-16 | | X | | | | 13-14 | | X | | | 3 | 11-12 | X | | | | | 9-10 | X | | | | 2 | 7-8 | | | | X | | 5-6 | | | | X | 1 | 3-4 | X | | | | | 1-2 | | | X | | Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | Pos. | | | | | | <p>5011 5281 5531</p> <table border="1"> <tr><td>3</td><td>11-12</td><td></td><td></td><td></td><td>X</td></tr> <tr><td></td><td>9-10</td><td></td><td></td><td></td><td>X</td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>5-6</td><td>X</td><td></td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td></td><td>X</td><td></td></tr> <tr><td>Elem.</td><td>Cont.</td><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td></tr> <tr><td></td><td>Pos.</td><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table> <p>30° 5011 45° 5281 60° 5531</p> | 3 | 11-12 | | | | X | | 9-10 | | | | X | 2 | 7-8 | X | | | | | 5-6 | X | | | | 1 | 3-4 | X | | | | | 1-2 | | | X | | Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | 5 | | Pos. | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13-14 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | 23-24 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 21-22 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 19-20 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 17-18 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 13-14 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 0 | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Circuit Diagram Nos. 5012...5272



Circuit Diagram Nos. 5273...8771

5273

| | | | | | |
|---|-------|---|---|---|---|
| 6 | 23-24 | | | X | |
| 5 | 19-20 | X | | | X |
| 4 | 15-16 | | X | | |
| 3 | 11-12 | X | X | | |
| 2 | 7-8 | | | | X |
| 1 | 3-4 | X | X | | X |
| 0 | 1-2 | | | | |

7253
7323
7503

| | | | | |
|---|-------|---|---|--|
| 4 | 15-16 | X | X | |
| 3 | 11-12 | X | X | |
| 2 | 7-8 | X | | |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | X | X | |

7303
7543

| | | | | |
|---|-------|---|---|--|
| 3 | 11-12 | X | X | |
| 2 | 7-8 | X | | |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | X | X | |

8251

| | | | | |
|---|-------|---|---|--|
| 3 | 11-12 | X | X | |
| 2 | 7-8 | X | X | |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | X | X | |

8271

| | | | | |
|---|-----|---|---|---|
| 2 | 7-8 | | X | X |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | | | |

8751

| | | | | |
|---|-------|---|---|---|
| 3 | 11-12 | | X | X |
| 2 | 7-8 | | X | X |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | X | X | |

8761

| | | | | |
|---|-------|---|---|---|
| 4 | 15-16 | | X | X |
| 3 | 11-12 | | X | X |
| 2 | 7-8 | X | X | |
| 1 | 3-4 | X | X | |
| 0 | 1-2 | X | X | |

8771

| | | | |
|---|-----|---|---|
| 1 | 3-4 | X | X |
| 0 | 1-2 | X | X |

Electrical Ratings

| Performance Data | | 12 A | 16 A | 20 A | 25 A | 32 A | 40 A | | | | | | | | |
|--|---|--|-------|-------------|---------------|-------------|-------------|-------|------|------|------|------|------|------|------|
| IEC Applications | | | | | | | | | | | | | | | |
| Rated voltage U_e ★ | IEC-947 | [V] | 690 | 690 | 690 | 690 | 690 | | | | | | | | |
| Isolating conditions acc. to VDE fulfilled up to rated impulse voltage U_{imp} | | [kV] | 6 | 6 | 6 | 8 | 8 | | | | | | | | |
| Thermal rated current I_{th} ★ | 40 °C IEC-947 | [A] | 16 | 20 | 25 | 30 | 45 | | | | | | | | |
| Thermal rated current I_{the} | 60 °C IEC-947 | [A] | 12 | 16 | 20 | 25 | 32 | | | | | | | | |
| Rated current I_e ★ | | | | | | | | | | | | | | | |
| AC-1/ AC-21A | Non-inductive or slightly inductive loads/ switching of resistive loads with slight overload | IEC-947 690V | [A] | 12 | 16 | 20 | 25 | 32 | 40 | | | | | | |
| AC-1 | Non-inductive or slightly inductive loads | SEV 660V | [A] | 12 | 16 | 20 | 25 | 32 | 40 | | | | | | |
| AC22A | Switching of mixed resistive and inductive loads with slight overload | IEC-947 220...500V 690V | [A] | 12 | 16 | 20 | 25 | 32 | 40 | | | | | | |
| AC-15 | Switching of inductive drives, motors, valves, and electromagnets. | IEC-947 220...240V 380...415V 500V | [A] | 5 3 2 | 6 4 2.5 | 7 5 3 | 8 6 4 | — | — | | | | | | |
| DC switching capacity | Contacts in series | | | | | | | | | | | | | | |
| Rated current I_e | | | | | | | | | | | | | | | |
| Rated Voltage [V] | 1 | 2 | 3 | 4 | 5 | 6 | 8 | | | | | | | | |
| | 24 | 48 | 72 | 96 | 120 | 144 | 192 | [A] | 12 | 16 | 20 | 22 | — | — | |
| | 48 | 96 | 144 | 192 | 240 | 288 | 384 | [A] | 10 | 12 | 16 | 18 | — | — | |
| | 60 | 120 | 180 | 240 | 300 | 360 | 450 | [A] | 8 | 10 | 12 | 14 | 32 | 40 | |
| DC-21A | For resistive loads, $T \leq 1ms$ | 110 | 220 | 330 | 440 | 550 | 660 | — | [A] | 2 | 2.5 | 4 | 5 | — | — |
| | | 220 | 440 | 660 | — | — | — | — | [A] | 0.5 | 0.6 | 0.7 | 0.8 | — | — |
| | U_e max = 600V | 440 | — | — | — | — | — | — | [A] | 0.4 | 0.4 | 0.5 | 0.5 | — | — |
| Rated making/breaking capacity (= $1.5 \times I_e$) | | | | | | | | | | | | | | | |
| | | 25.2 | 50.4 | 75.6 | 100.8 | 126 | 151.2 | 201.6 | [A] | 18 | 24 | 30 | 33 | — | — |
| | 1.05 x Rated voltage [V] | 50.4 | 100.8 | 151.2 | 201.6 | 252 | 302.4 | 403.2 | [A] | 15 | 21 | 24 | 27 | — | — |
| | For resistive loads, $T_{th} 1ms$ | 63 | 126 | 189 | 252 | 315 | 378 | 504 | [A] | 12 | 18 | 18 | 21 | 48 | 60 |
| | | 115.5 | 231 | 346.5 | 462 | 577.5 | — | — | [A] | 3 | 4.5 | 6 | 7.5 | — | — |
| | U_e max = 600V | 231 | 462 | — | — | — | — | — | [A] | 0.75 | 1.12 | 1.05 | 1.2 | — | — |
| | | 462 | — | — | — | — | — | — | [A] | 0.52 | 0.78 | 0.47 | 0.75 | — | — |
| Rated current I_e | | | | | | | | | | | | | | | |
| Rated voltage [V] | | 24 | 48 | 72 | 96 | 120 | 144 | 192 | [A] | 8 | 10 | 12 | 14 | 16 | 16 |
| | | 30 | 60 | 90 | 120 | 150 | 180 | 240 | [A] | 4.5 | 5.5 | 7 | 8 | — | — |
| | For inductive loads $T = 50 ms$ | 48 | 96 | 144 | 192 | 240 | 288 | 384 | [A] | 1.5 | 2 | 2.5 | 3 | 8 | 8 |
| | Rated voltage [V] | 60 | 120 | 180 | 240 | 300 | 360 | 450 | [A] | 1 | 1.2 | 1.5 | 1.8 | 4.8 | 4.8 |
| | | 110 | 220 | 330 | 440 | 550 | 660 | — | [A] | 0.4 | 0.5 | 0.6 | 0.7 | 2 | 2 |
| | | 220 | — | — | — | — | — | — | [A] | — | — | — | — | 0.6 | 0.6 |
| Rated making/breaking capacity (= $1.1 \times I_e$) | | | | | | | | | | | | | | | |
| | 1.1 x Rated voltage [V] | 26.4 | 52.8 | 79.2 | 105.6 | 132 | 158.4 | 184.8 | [A] | 8.8 | 11 | 13.2 | 1.54 | — | 17.6 |
| | | 33 | 66 | 99 | 132 | 165 | 198 | 231 | [A] | 4.95 | 6.05 | 7.7 | 8.8 | — | — |
| | For inductive loads $T = 50 ms$ | 52.8 | 105.6 | 158.4 | 211.2 | 264 | 316.8 | 369.6 | [A] | 1.65 | 2.2 | 2.75 | 3.3 | 8.8 | 8.8 |
| | U_e max = 600V | 66 | 132 | 198 | 264 | 330 | 396 | 462 | [A] | 1.1 | 1.32 | 1.65 | 1.98 | 5.28 | 5.28 |
| | | 121 | 242 | 363 | 484 | 605 | — | — | [A] | 4.95 | 6.05 | 7.7 | 8.8 | 2.2 | 2.2 |
| Power Lost | | | | | | | | | [W] | 0.3 | 0.5 | 0.6 | 0.9 | 0.8 | 1.4 |
| Rated power P_e | Contacts in series | | | | | | | | | | | | | | |
| | | 24 | | | | 1 | | | [kW] | 0.12 | 0.15 | 0.20 | 0.25 | 0.30 | 0.30 |
| | | 24 | | | | 2 | | | [kW] | 0.20 | 0.25 | 0.30 | 0.37 | — | — |
| | | 48 | | | | 2 | | | [kW] | 0.25 | 0.30 | 0.37 | 0.50 | 0.50 | 0.50 |
| | | 48 | | | | 3 | | | [kW] | 0.30 | 0.37 | 0.50 | 0.75 | — | — |
| Rated voltage [V] | | 60 | | | | 2 | | | [kW] | 0.25 | 0.30 | 0.37 | 0.50 | 1.00 | 1.00 |
| DC-23A, DC-3, DC-5 | | 60 | | | | 4 | | | [kW] | 0.37 | 0.50 | 0.75 | 1.00 | — | — |
| For inductive loads, $T \leq 1 ms$ | | 110 | | | | 4 | | | [kW] | 0.50 | 0.75 | 1.00 | 1.20 | — | — |
| | | 110 | | | | 6 | | | [kW] | 1.00 | 1.20 | 1.40 | 1.60 | — | — |
| | | 220 | | | | 4 | | | [kW] | 0.37 | 0.50 | 0.75 | 1.00 | — | — |
| | | 220 | | | | 6 | | | [kW] | 1.00 | 1.20 | 1.40 | 1.50 | — | — |

★ See standards compliance listed on <http://ab.rockwellautomation.com/Circuit-and-Load-Protection/Disconnect-Switches/Non-Visible-Blade/194R-Fused-Non-Fused-Disconnect-Switches#specifications>

| Performance Data, Continued | | | | 12 A | 16 A | 20 A | 25 A | 32 A | 40 A | |
|---|-------------------|--------------------|------|------|------|------|------|------|------|--|
| IEC Applications, Continued | | | | | | | | | | |
| Rated making/breaking capacity (= 4 x I _a) | | Contacts in series | | | | | | | | |
| | Rated Voltage [V] | | | [A] | | | | | | |
| DC-23A, DC-3, DC-5 For inductive loads, T ≤ 7.5 ms | 25.2 | 1 | [A] | 20.0 | 25.0 | 33.3 | 41.6 | 50.0 | 50.0 | |
| | 25.2 | 2 | [A] | 33.3 | 41.6 | 50.0 | 61.6 | — | — | |
| | 50.4 | 2 | [A] | 21.0 | 25.0 | 30.8 | 41.6 | 41.6 | 41.6 | |
| | 50.4 | 3 | [A] | 25.0 | 30.8 | 42.0 | 62.4 | — | — | |
| | 63 | 2 | [A] | 16.6 | 20.0 | 24.6 | 33.2 | 66.6 | 66.6 | |
| | 63 | 4 | [A] | 24.6 | 33.3 | 50.0 | 66.4 | — | — | |
| | 115.5 | 4 | [A] | 18.1 | 27.2 | 36.4 | 44.0 | — | — | |
| | 115.5 | 6 | [A] | 36.4 | 43.6 | 51.0 | 58.2 | — | — | |
| 231 | 4 | [A] | 6.7 | 9.1 | 13.6 | 18.2 | — | — | | |
| 231 | 6 | [A] | 18.1 | 21.8 | 25.2 | 27.2 | — | — | | |
| Rated breaking capacity | | at 220V | [A] | 72 | 96 | 128 | 176 | 296 | 296 | |
| | | 0.45 [cos φ] | [A] | 72 | 96 | 128 | 176 | 280 | 336 | |
| | | at 380V | [A] | 72 | 96 | 128 | 176 | 280 | 336 | |
| | | 0.45 [cos φ] | [A] | 53 | 72 | 86 | 112 | 196 | 196 | |
| Rated power P _e ★ | IEC-947 | | | | | | | | | |
| | | | | | | | | | | |
| AC-2 Slip-ring motors: starting, reversing and electric braking; star/delta starting | 3-phase 3-pole | 240V | [kW] | 3 | 4 | 5.5 | 5.5 | — | — | |
| | | 380V | [kW] | 5.5 | 7.5 | 9 | 13 | — | — | |
| | | 415V | [kW] | 5.5 | 7.5 | 9 | 13 | — | — | |
| | | 440V | [kW] | 5.5 | 7.5 | 9 | 13 | — | — | |
| | | 500V | [kW] | 7.5 | 10 | 11 | 15 | — | — | |
| | | 660V | [kW] | 7.5 | 10 | 11 | 15 | — | — | |
| AC-3 Squirrel-cage motors: starting and stopping of running motors | 3-phase 3-pole | 220...240V | [kW] | 2.2 | 3 | 4.5 | 5.5 | 7.5 | 7.5 | |
| | | 380...440V | [kW] | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | |
| | | 500V | [kW] | 5.5 | 7.5 | 10 | 13 | — | — | |
| | | 660V | [kW] | 5.5 | 7.5 | 8 | 11 | 18.5 | 18.5 | |
| | 1-phase 2-pole | 110V | [kW] | 0.75 | 1.1 | 1.2 | 1.6 | — | — | |
| | | 220...240V | [kW] | 1.3 | 2.2 | 2.5 | 3.2 | 4 | 4 | |
| | 380...440V | [kW] | 2.2 | 3.7 | 4.5 | 5.5 | 8 | 16 | | |
| AC-4 Squirrel-cage motors: starting, reversing, electric braking, inching | 3-phase 3-pole | 220...240V | [kW] | 0.75 | 1.5 | 3 | 4 | 5.5 | 5.5 | |
| | | 380...415V | [kW] | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 7.5 | |
| | | 440...550V | [kW] | 1.5 | 2.2 | 3.7 | 5.5 | 7.5 | 11 | |
| | 1-phase 2-pole | 110V | [kW] | 0.18 | 0.37 | 0.55 | 0.75 | — | — | |
| | | 240V | [kW] | 0.37 | 0.75 | 1.5 | 2.2 | — | — | |
| | | 380V | [kW] | 0.75 | 1.1 | 1.8 | 3 | — | — | |
| | 440V | [kW] | 0.75 | 1.1 | 1.8 | 3 | — | — | | |

★ See standards compliance listed on <http://ab.rockwellautomation.com/Circuit-and-Load-Protection/Disconnect-Switches/Non-Visible-Blade/194R-Fused-Non-Fused-Disconnect-Switches#specifications>

Specifications

194L Control and Load Switches

| Performance Data, Continued | | | | 12 A | 16 A | 20 A | 25 A | 32 A | 40 A |
|---|---|------------------------------|----------------------|------------|------------|----------|----------|----------|----------|
| IEC Applications, Continued | | | | | | | | | |
| AC-23A | Occasional switching of motors and other highly inductive loads (criterion for selecting main switches) | IEC-947 3-phase 3-pole | 220...240V [kW] | 2.2 | 3 | 4.5 | 5.5 | 11 | 11 |
| | | | 380...440V [kW] | 4 | 5.5 | 7.5 | 11 | 18.5 | 22 |
| | | | 500V [kW] | 5.5 | 7.5 | 10 | 13 | — | — |
| | | | 660V [kW] | 5.5 | 7.5 | 8 | 11 | 22 | 22 |
| | 1-phase 2-pole | | 110V [kW] | 0.75 | 1.1 | 1.2 | 1.6 | — | — |
| | | | 220...240V [kW] | 1.3 | 2.2 | 2.5 | 3.2 | 5.5 | 5.5 |
| Short-circuit ratings | Rated short-time current (1s) Strongest series fuse, not in enclosure Conditional rated short-circuit | (gL characteristic) | [kA _{rms}] | 0.48 | 0.48 | 0.6 | 0.75 | 0.8 | 0.8 |
| | | | [A] | 20★ | 20★ | 20★ | 25★ | 35 | 40 |
| | | | [kA] | 6 | 6 | 5 | 5 | 5 | 5 |
| Switch Rate | electrical | | [ops/h] | 120 | 120 | 120 | 120 | 120 | 120 |
| CSA and UL Applications | | | | | | | | | |
| Rated Voltage U _e | | | [V AC] | 600 | 600 | 600 | 600 | 600 | 600 |
| Ampere Rating | Pilot Duty General Use | Contact class | [A] | A600 12 | A600 16 | — 20 | — 25 | — 32 | — 40 |
| Rated power P _e § | | UL (CSA) | | (FLA) | (FLA) | (FLA) | (FLA) | | |
| Standard motor DOL rating (similar to AC-3) | | 3-phase 3-pole | 120V [Hp] | 1 (7.2) | 1.5 (12) | 2 (13.6) | 3 (19.2) | 5 (30.4) | 5 (30.4) |
| | | | 240V [Hp] | 2 (6.8) | 3 (9.6) | 4 (12.4) | 6 (18) | 7.5 (22) | 10 (28) |
| | | | 480V [Hp] | 5 (7.6) | 7.5 (11) | 8 (11.6) | 12 (17) | 20 (27) | 25 (34) |
| | | | 600V [Hp] | 5 (6.1) | 7.5 (9) | 10 (11) | 15 (17) | 20 (22) | 25 (27) |
| | | 1-phase 2-pole | 120V [Hp] | 0.5 (9.8) | .75 (13.8) | 1 (16) | 1.5 (20) | 2 (24) | 2 (24) |
| | | | 240V [Hp] | 1 (8.0) | 1.5 (10.0) | 2 (12) | 3 (17) | 5 (28) | 5 (28) |
| | | | 480V [Hp] | 2 (6.0) | 3 (8.5) | 4 (11.2) | 6 (17) | 7.5 (21) | 10 (26) |
| | | | 600V [Hp] | 3 (6.8) | 3 (6.8) | 5 (11.2) | 7.5 (16) | 10 (20) | 15 (27) |
| Heavy motor load, reversing Rating (similar to AC-4) Max. back-up fuse | 3-phase 3-pole | 120V [Hp] 240V [Hp] | — — | — — | — — | — — | — — | — — | |
| Short Circuit Ratings | Maximum Short Circuit Prospective Fault Current Maximum Fuse Size | | [kA] | 5 | 5 | 5 | 5 | | |
| | | | [A] | 35 | 55 | 60 | 80 | | |
| Switching Rate | electrical | | [ops/h] | 120 | 120 | 120 | 120 | 120 | 120 |

Mechanical Data

| Performance Data | | 12/16 A | 20/25 A | 32/40 A |
|----------------------------------|--------------------------|---|--------------------------|--------------------------|
| Protection class acc. to IEC 529 | Handles Switch Bodies | IP66 IP20 | IP66 IP20 | IP66 IP20 |
| Mechanical Endurance | [mil.ops] | 1 | 1 | 1 |
| Switching rate | mechanical [ops/h] | 1200 | 1200 | 1200 |
| Maximum Wire Gauges | | | | |
| | rigid wire | AWG (2)18...12 [mm ²] (2)1...2.5 | (2)16...10 (2)1.5...6 | (2)12...8 (2)4...10 |
| | fine strands | AWG (2)18...12 [mm ²] (2)1...2.5 | (2)16...10 (2)1.5...4 | (2)14...10 (2)2.5...6 |

Environmental Data

| Performance Data | | 12/16/20/25 A | 32/40 A |
|---------------------|-----------|---------------------------------|---------------------------------|
| Ambient temperature | | | |
| | Operation | -25...+60 °C (-13...+140 °F) | -25...+60 °C (-13...+140 °F) |
| | Storage | -40...+80 °C (-40...+176 °F) | -40...+80 °C (-40...+176 °F) |

★ Does not apply to switches in enclosure.

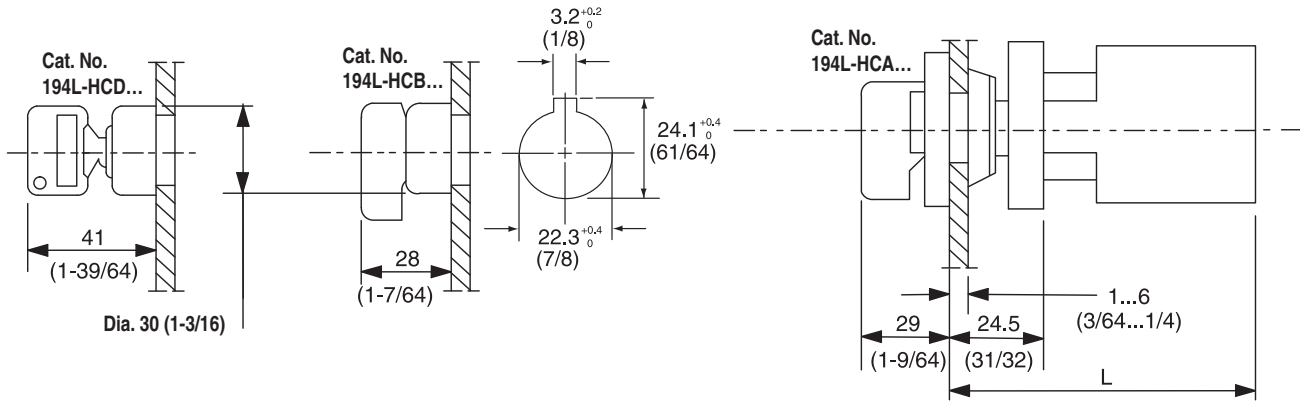
‡ Suitable for switching off-load (AC-20) above 660V, but only up to 660V for switches with screws at the rear.

§ See standards compliance listed on <http://ab.rockwellautomation.com/Circuit-and-Load-Protection/Disconnect-Switches/Non-Visible-Blade/194R-Fused-Non-Fused-Disconnect-Switches#specifications>

Approximate Dimensions

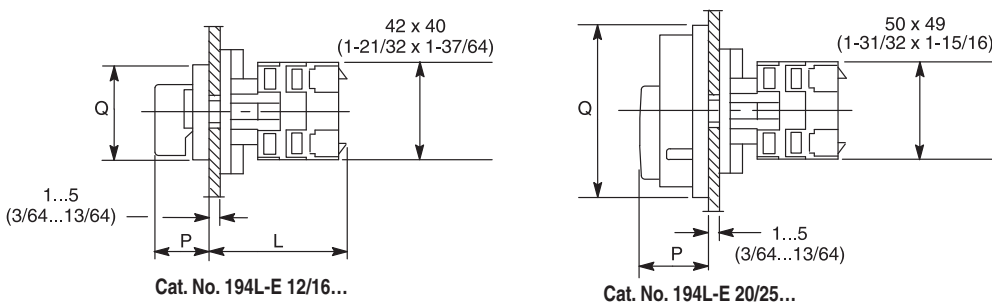
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Cat. No. 194L-C... for Central Fixing (194L-HC...)

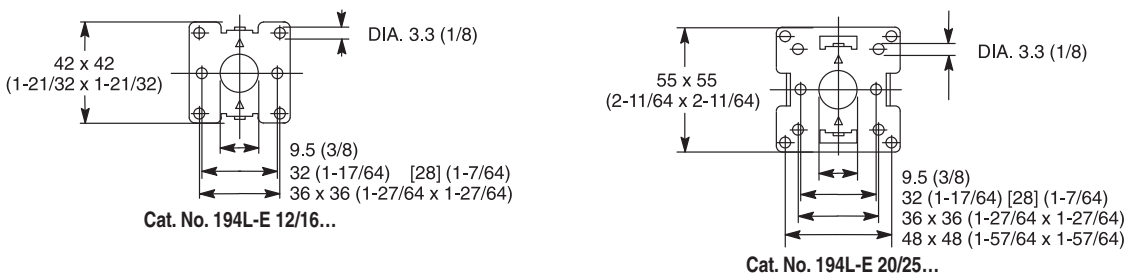


| Cat. No. | L | | | | |
|----------------|-----------------|----------------|---------------|-----------------|--------------|
| | No. of Contacts | | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 | 9...10 |
| 194L-C32/40... | 86 (3-25/64) | 103.5 (4-5/64) | 121 (4-49/64) | 138.5 (5-29/64) | 156 (6-9/64) |

Cat. No. 194L... for Front (Door) Installation



Mounting Dimensions



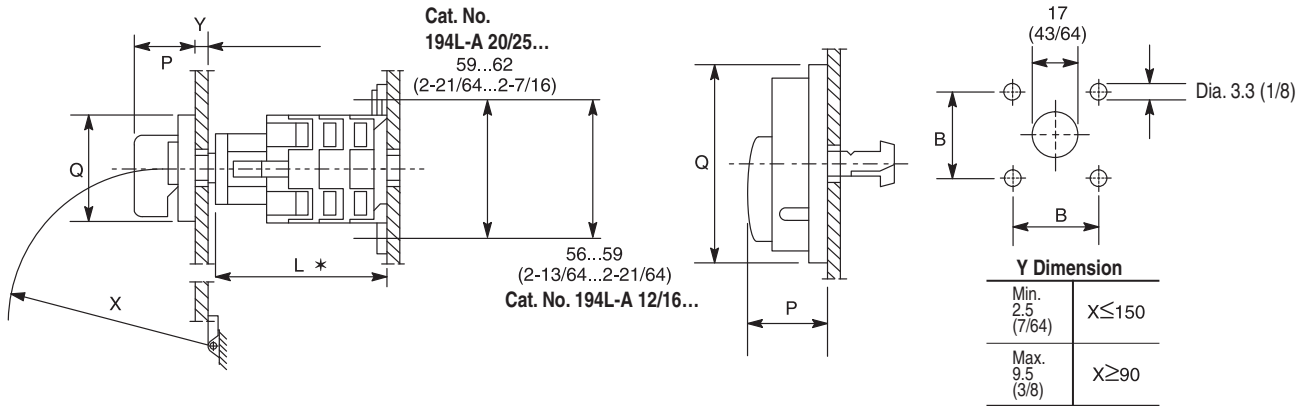
| Cat. No. | L | | | | |
|----------------|-----------------|---------------|--------------|----------------|----------------|
| | No. of Contacts | | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 | 9...10 |
| 194L-E12/16... | 44 (1-47/64) | 54 (2-1/8) | 64 (2-33/64) | 74 (2-29/32) | 84 (3-5/16) |
| 194L-E20/25... | 44.5 (1-3/4) | 57 (2-1/4) | 69.5 (2-3/4) | 82 (3-15/64) | 94.5 (3-23/32) |
| 194L-E32/40... | 43 (1-11/16) | 58.5 (2-5/16) | 76 (2-63/64) | 93.5 (3-11/16) | 111 (4-3/8) |

Control Knob

| Cat. No. | P | Q |
|--------------|--------------|-----------------------------|
| 194L-HE4A... | 28 (1-7/64) | 48 (1-57/64) x 48 (1-57/64) |
| 194L-HE4I... | | 48 (1-57/64) x 62 (2-7/16) |
| 194L-HE4S... | | 64 (2-33/64) x 64 (2-33/64) |
| 194L-HE6A... | | 64 (2-33/64) x 78 (3-5/64) |
| 194L-HE6I... | | 67 (2-41/64) x 67 (2-41/64) |
| 194L-HE6S... | | |
| 194L-HE6N... | 34 (1-11/32) | 67 (2-41/64) x 67 (2-41/64) |
| 194L-HE6G... | | |

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Cat. No. 194L-A... for Base/DIN Rail Installation



| Cat. No. | L * | | | |
|----------------|-----------------|----------------|----------------|----------------|
| | No. of Contacts | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 |
| 194L-A12/16... | 58 (2-9/32) | 68 (2-11/16) | 78 (3-5/64) | 88 (3-15/32) |
| 194L-A20/25... | 58 (2-9/32) | 71.5 (2-13/16) | 84 (3-5/16) | 96.5 (3-51/64) |
| 194L-A32/40... | 67.5 (2-21/32) | 85 (3-11/32) | 102.5 (4-1/32) | 120 (4-47/64) |

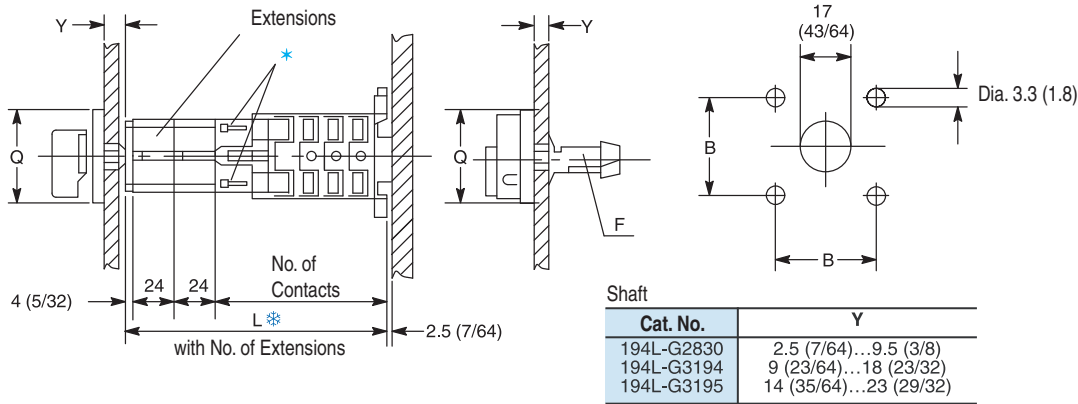
Control Knob

| Cat. No. | P | B | Q |
|--------------|-----------------------------|--------------|-----------------------------|
| 194L-HE4A... | 28 (1-7/64) | 36 (1-27/64) | 48 (1-57/64) x 48 (1-57/64) |
| 194L-HE4I... | | | 48 (1-57/64) x 62 (2-7/16) |
| 194L-HE4S... | | 34 (1-11/32) | 48 (1-57/64) |
| 194L-HE6A... | 64 (2-33/64) x 78 (3-5/64) | | |
| 194L-HE6I... | 67 (2-41/64) x 67 (2-41/64) | | |
| 194L-HE6S... | | | |
| 194L-HE6N... | | | |
| 194L-HE6G... | | | |

★ With DIN 46 277 (35) Rail + 2.5 mm (7/64)

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Cat. No. 194L-A... With Shaft Extension Cat. No. 194L-G2853



| No. of Extensions | Cat. No. 194L-A12/16... 10mm (0.39) | | | | Cat. No. 194L-A20/25... 12.5mm (0.49) | | | | Cat. No. 194L-A32/40 | | | |
|---------------------|-------------------------------------|------------------|------------------|------------------|---------------------------------------|--------------------|------------------|--------------------|----------------------|------------------|---------------------|-------------------|
| | L | | | | | | | | | | | |
| | No. of Contacts | | | | | | | | | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 | 1...2 | 3...4 | 5...6 | 7...8 | 1...2 | 3...4 | 5...6 | 7...8 |
| With 1 extension | 82 (3-15/64) | 92 (3-5/8) | 102 (4-1/64) | 112 (4-13/32) | 83 (3-17/64) | 95.5 (3-49/64) | 108 (4-1/4) | 120.5 (4-3/4) | 91.5 (3-15/64) | 108 (4-1/4) | 126.5 (5-63/64) | 144 (6-43/64) |
| With 2 extensions | 106 (4-11/64) | 116 (4-37/64) | 126 (4-31/32) | 136 (5-23/64) | 107 (4-7/32) | 119.5 (4-45/64) | 132 (5-13/64) | 144.5 (5-11/16) | 115.5 (5-35/64) | 133 (5-15/64) | 150.5 (6-5/16) | 168 (7-5/8) |
| With 3 extensions | 130 (5-1/8) | 140 (5-33/64) | 150 (5-29/32) | 160 (6-19/64) | 131 (5-5/32) | 143.5 (5-21/32) | 156 (6-9/64) | 168.5 (6-5/8) | 135.5 (5-11/32) | 157 (6-3/16) | 174.5 (7-7/8) | 182 (8-9/16) |
| With 4 ★ extensions | 154 (6-1/16) | 164 (6-15/32) | 174 (6-55/64) | 184 (7-15/64) | 155 (6-7/64) | 167.5 (6-19/32) | 180 (7-3/32) | 192.5 (7-37/64) | 163.5 (6-7/16) | 181 (7-1/8) | 198.5 (8-53/64) | 216 (9-33/64) |
| With 5 ★ extensions | 178 (7-1/64) | 188 (7-13/32) | 198 (7-51/64) | 208 (8-3/16) | 179 (7-3/64) | 191.5 (7-35/64) | 204 (8-1/32) | 216.5 (8-33/64) | 187.5 (7-3/8) | 205 (8-5/64) | 222.5 (9-49/64) | 240 (9-29/64) |
| With 6 ★ extensions | 202 (7-61/64) | 212 (8-23/64) | 222 (8-3/4) | 232 (9-1/8) | 203 (7-63/64) | 215.5 (8-31/64) | 228 (8-63/64) | 240.5 (9-15/32) | 211.5 (8-21/64) | 229 (12) | 246.5 (10-23/32) | 264 (10-13/32) |

Control Knob

| Cat. No. | Q | B |
|--------------|-----------------------------|--------------|
| 194L-HE4A... | 48 (1-57/64) x 48 (1-57/64) | 36 (1-27/64) |
| 194L-HE4I... | | |
| 194L-HE6A... | 64 (2-33/64) x 64 (2-33/64) | 48 (1-57/64) |
| 194L-HE6I... | | |
| 194L-HE6N... | | |
| 194L-HE6G... | 67 (2-41/64) x 67 (2-41/64) | |

★ When more than four modules are used, attach the first one to the switch body using the screws supplied with the extension (Cat. No. 194L-G2853).

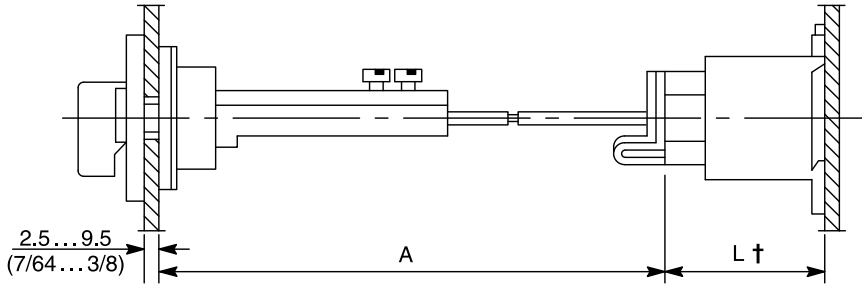
‡ Mounting on DIN 46 277 (35) Rails.

Approximate Dimensions

194L Control and Load Switches

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Cat. No. 194L-A... With Metal Shafts



| Cat. No. | A |
|---------------|-------------------------------|
| 194L-G3393... | 110 (4-21/64)...235(9-1/4) |
| 194L-G3394... | 230 (9-1/16)...350 (13-25/32) |

| Cat. No. | L* No. of Contacts | | | |
|----------------|-----------------------|----------------|--------------|----------------|
| | 1...2 | 3...4 | 5...6 | 7...8 |
| | 194L-A12/16... | 54 (2-1/8) | 64 (2-33/64) | 74 (2-29/32) |
| 194L-A20/25... | 55 (2-11/64) | 67.5 (2-21/32) | 80 (3-5/32) | 92.5 (3-41/64) |
| 194L-A32/40... | 63.5 (2-31/64) | 81 (3-3/16) | 88.5 (3-7/8) | 116 (4-9/16) |

| No. of Extension Modules | Required End Shaft | Enclosure Mounting Depth§ | |
|--------------------------|--------------------|-----------------------------------|---------------------------------|
| | | Cat. No. 194L-A12/16... | Cat. No. 194L-A20/25... |
| 0 | 44 (1-47/64) * | 71.5...77.5 (2-13/16...3-1/16) | 75...80.5 (2-61/64...3-11/64) |
| | 52 (2-3/64) | 77...87 (3-1/32...3-27/64) | 80...90 (3-5/32...3-35/64) |
| | 57 (2-1/4) | 82...92 (3-15/64...3-5/8) | 85...95 (3-11/32...3-3/4) |
| 1 | 44 (1-47/64) * | 95.5...101.5 (3-49/64...4) | 99...105 (3-29/32...4-9/64) |
| | 52 (2-3/64) | 97.5...111 (3-27/32...4-3/8) | 101...114.5 (3-63/64...4-33/64) |
| | 57 (2-1/4) | 102.5...116 (4-3/64...4-37/64) | 106...119.5 (4-11/64...4-45/64) |
| 2 | 44 (1-47/64) * | 119.5...125.5 (4-45/64...4-61/64) | 123...129 (4-27/32...5-5/64) |
| | 52 (2-3/64) | 121.5...135 (4-51/64...5-5/16) | 125...138.5 (4-59/64...5-29/64) |
| | 57 (2-1/4) | 126.5...140 (4-63/64...5-33/64) | 130...143.5 (5-1/8...5-21/32) |
| 3 | 44 (1-47/64) * | 143.5...149.5 (5-21/32...5-57/64) | 147...153 (5-51/64...6-1/32) |
| | 52 (2-3/64) | 145.5...159 (5-47/64...6-17/64) | 149...162.5 (5-7/8...6-13/32) |
| | 57 (2-1/4) | 150.5...164 (5-15/16...6-15/32) | 154...167.5 (6-1/16...6-19/32) |
| 4 | 44 (1-47/64) * | 167.5...173.5 (6-19/32...6-27/32) | 171...177 (6-47/64...6-31/32) |
| | 52 (2-3/64) | 169.5...183 (6-43/64...7-13/64) | 173...186.5 (6-13/16...7-11/32) |
| | 57 (2-1/4) | 174.5...188 (6-7/8...7-13/32) | 178...191.5 (7-1/64...7-35/64) |
| 5 | 44 (1-47/64) * | 191.5...197.5 (7-35/64...7-25/32) | 195...201 (7-43/64...7-59/64) |
| | 52 (2-3/64) | 193.5...207 (7-5/8...8-5/32) | 197...210.5 (7-49/64...8-19/64) |
| | 57 (2-1/4) | 198.5...212 (7-53/64...8-23/64) | 202...215.5 (7-61/64...8-31/64) |
| 6 | 44 (1-47/64) * | 215.5...221.5 (8-31/64...8-23/32) | 219...225 (8-5/8...8-55/64) |
| | 52 (2-3/64) | 217.5...231 (8-37/64...9-3/32) | 221...234.5 (8-45/64...9-15/64) |
| | 57 (2-1/4) | 222.5...236 (8-49/64...9-19/64) | 226...239.5 (8-29/32...9-7/16) |

* When more than 4 modules are used, attach the first one to the switch body using the screws supplied with the extension (Cat. No. 194L-G2853).

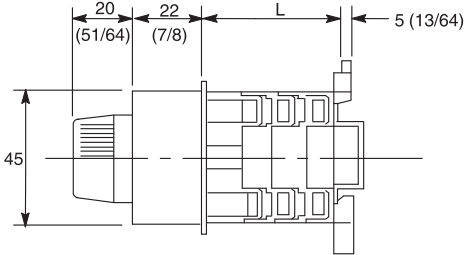
§ For DIN Rail-mounted devices, remember to deduct the offset distance provided by the rail. For example, deduct 2.5 mm (7/64 in.) from the mounting depth for Bulletin 194L switch body mounted on DIN 46277 rail.

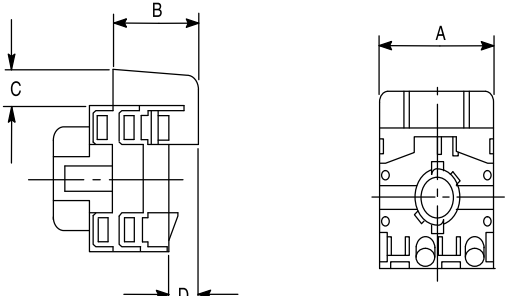
* One 44 mm (1-47/64 in) end shaft is supplied with all Bulletin 194L Switch Bodies.

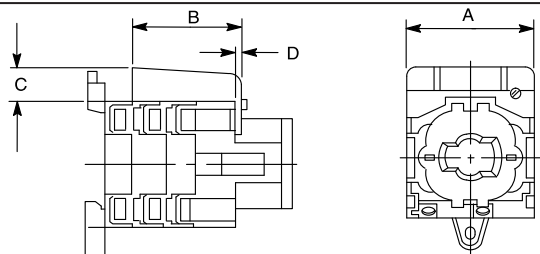
Modular Shaft Extensions (Cat. No. 194L-G2853)

Select No. of Extension Modules and Shaft for use with enclosures.

Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

| Cat. No. 194L-A... With Cat. No. 194L-HE4P... Installation on DIN 46277 (35 mm) Rails + 2.5 mm (7/64 in.)  | Cat. No. | L | | | |
|--|-----------------------|------------------------|--------------|--------------|--------------|
| | | No. of Contacts | | | |
| | | 1...2 | 3...4 | 5...6 | 7...8 |
| | 194L-A12/16... | 35 (1-3/8) | 45 (1-49/64) | 55 (2-11/64) | 65 (2-9/16) |
| | 194L-A20/25... | 33.5 (1-21/64) | 48 (1-57/64) | 60.5 (2-3/8) | 73 (2-7/8) |
| | 194L-A32/40... | 43 (1-11/16) | 61 (2-13/32) | 79 (3-7/64) | 97 (3-53/64) |

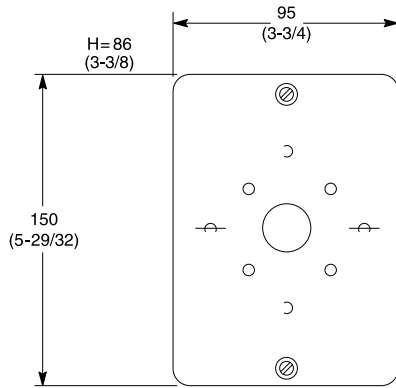
| Cat. No. 194L-E... With Terminal Cover  | Cat. No. | A | B | C | D | |
|---|-----------------------|-----------------------|--------------|----------------|------------|------------|
| | | 194L-E12/16... | 40 (1-37/64) | 42.5 (1-43/64) | 12 (15/32) | 2.5 (7/64) |
| | | 194L-E20/25... | 49 (1-15/16) | 37.5 (1-31/64) | 12 (15/32) | 2.5 (7/64) |
| | 194L-E32/40... | 59 (2-21/64) | 50 (1-31/32) | 15 (19/32) | 2.5 (7/64) | |

| Cat. No. 194L-A... With Terminal Cover  | Cat. No. | A | B | C | D | |
|--|-----------------------|-----------------------|--------------|----------------|------------|------------|
| | | 194L-A12/16... | 40 (1-37/64) | 42.5 (1-43/64) | 12 (15/32) | 2.5 (7/64) |
| | | 194L-A20/25... | 49 (1-15/16) | 37.5 (1-31/64) | 12 (15/32) | 2.5 (7/64) |
| | 194L-A32/40... | 63.5 (2-1/2) | 49 (1-53/64) | 12 (15/32) | 2 (5/64) | |

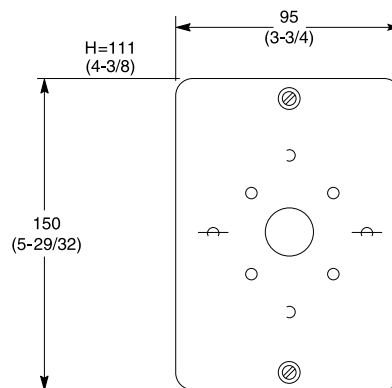
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

Enclosure

Cat. No. 194L-G3572...Cat. No. 194L-G3579



**Cat. No. 194L-G3572/G3576
G3574/G3578**



**Cat. No. 194L-G3573/G3577
G3575/G3579**

Important User Information

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

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Publication 194-TD002B-EN-P — May 2017

Supersedes Publication 194-TD002A — August 2014

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