

Control and Load Switch Specifications

Bulletin Number 194E, 194L

| Topic | Page |
|-----------------------------|------|
| Product Line Overview | 2 |
| 194E General Specifications | 3 |
| 194E Approximate Dimensions | 5 |
| 194L Circuit Diagrams | 13 |
| 194L General Specifications | 17 |
| Approximate Dimensions | 20 |




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

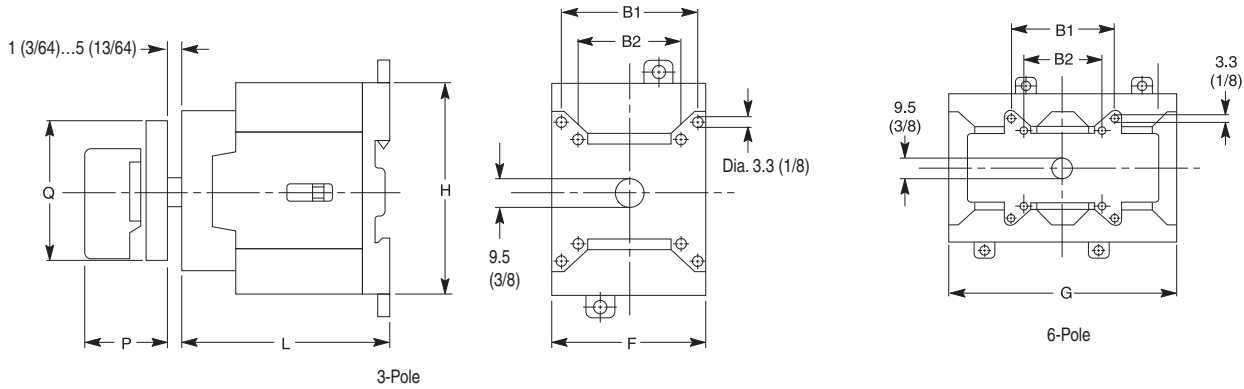
| Performance Data | | 16 A | 25...32 A | 40...63 A | 80...100 A | Aux. Contacts |
|---------------------------------------|----------------------|----------|-----------|-----------|------------|---------------|
| Protection class according to IEC 529 | | | | | | |
| Motor rating 60 Hz | | | | | | |
| 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 | | A4 | A6 | A7 | A9 | 2xA2 |
| 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...



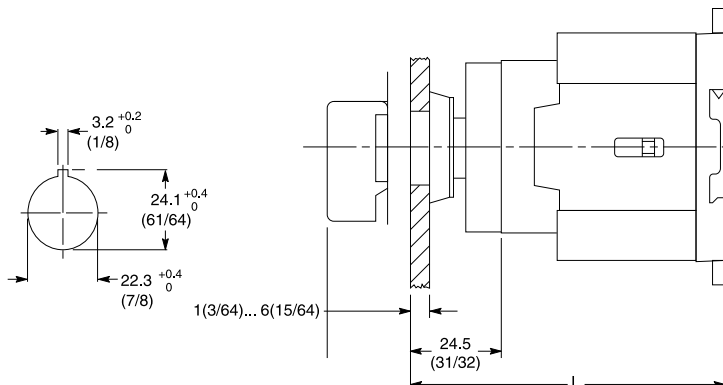
| Handles | | |
|-----------|--------------|-----------------------------|
| Cat. No. | P | Q |
| 194L-HE4A | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194L-HE4I | 28 (1-7/64) | 48 x 48 (1-57/64 x 1-57/64) |
| 194E-HE4N | 34 (1-11/32) | 54 x 54 (2-1/8 x 2-1/8) |
| 194E-HE4G | 34 (1-11/32) | 54 x 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.

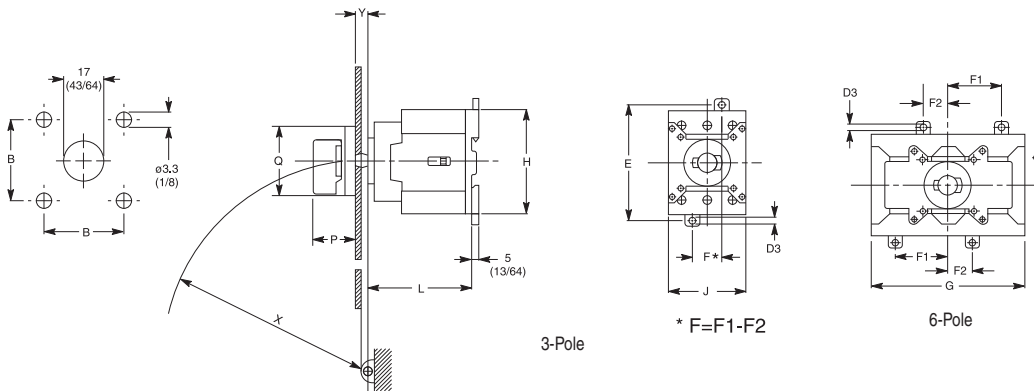
Cat. No. 194E-E Switch Body with Cat. No. 194L-HC4A Handle for 22.5 mm Hole Mounting Style



| 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) |

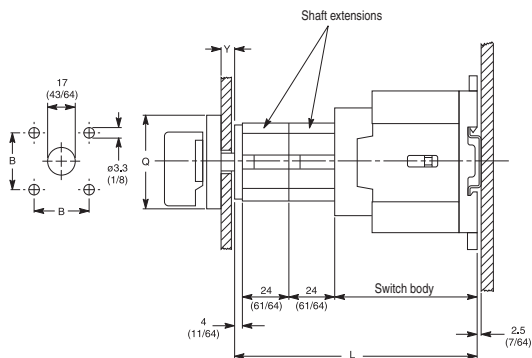
Switch Body

| 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.

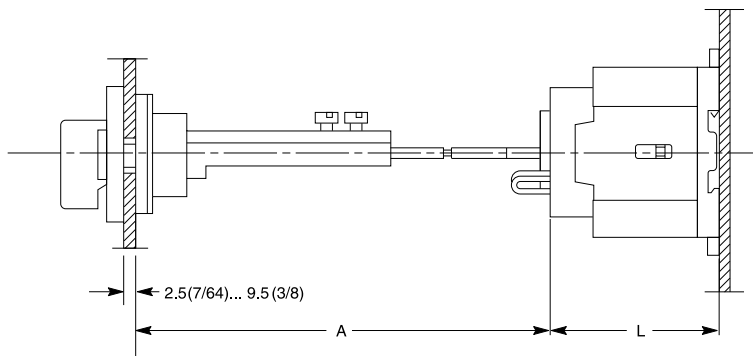
| Shaft | Y |
|------------|-----------------------------|
| 194L-G2830 | 2.5...9.5 (7/64...3/8) |
| 194L-G3194 | 9...18 (23/64...23/32) |
| 194L-G3195 | 14...23 (9/16)...(29/32) |

| 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



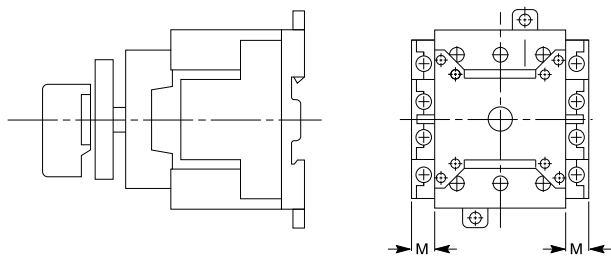
| Cat. No. | A |
|------------|----------------------------------|
| 194L-G3393 | 110...235 (4-11/32...9-1/4) |
| 194L-G3394 | 230...350 (9-1/16...13-25/32) |

| 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.

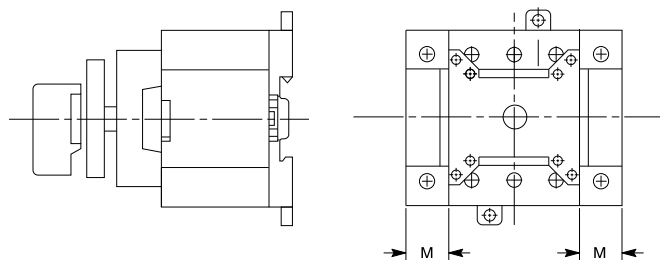
Base and Front Installation

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

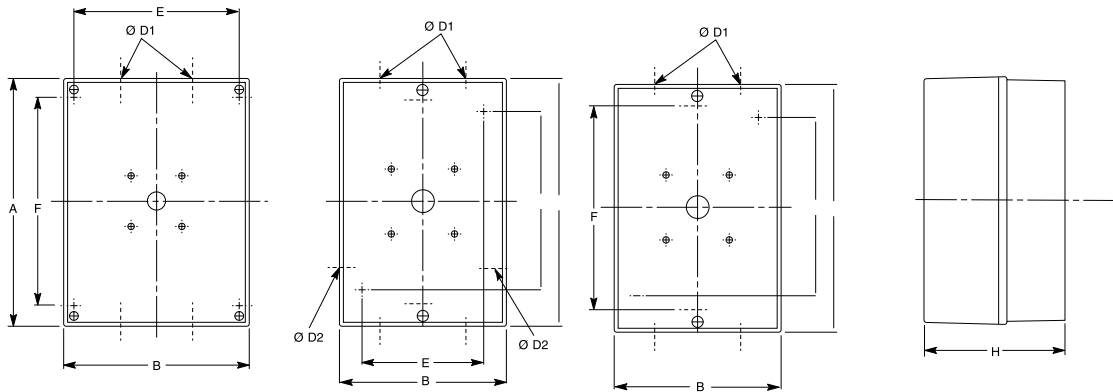


| Cat. No. | M |
|-------------|-----------------|
| 194E-16 | 12.5 (31/64) |
| 194E-25/32 | 14 (9/16) |
| 194E-40/63 | 17.5 (11/16) |
| 194E-80/100 | 22 (7/8) |

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 | | | | |
|--------------------|---------|--------------------|------------|--------------------|------------------|---------------------------|---------------------------|-----------------|------------------|------------------|
| Complete Switches | | Enclosures | | Height A | Width B | Knockouts‡ ØD1 | | Mounting Holes§ | | Depth H |
| Cat. No. | Poles | ABS | Noryl | | | | | E | F | |
| | | Cat. No. | | | | | | | | |
| 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.

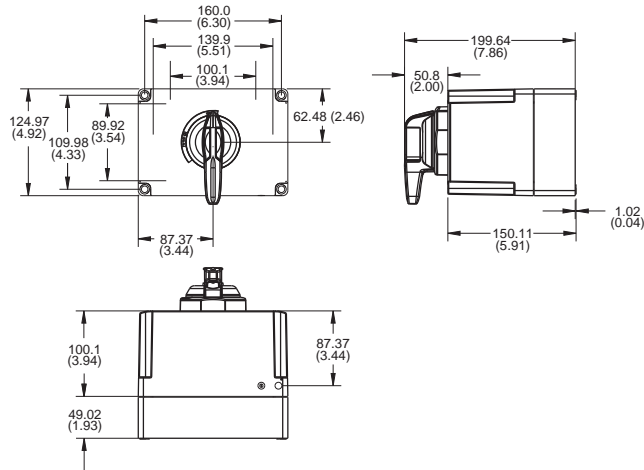
§ All mounting holes have a 4.2 mm (5/32 in.) diameter.

| 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) |

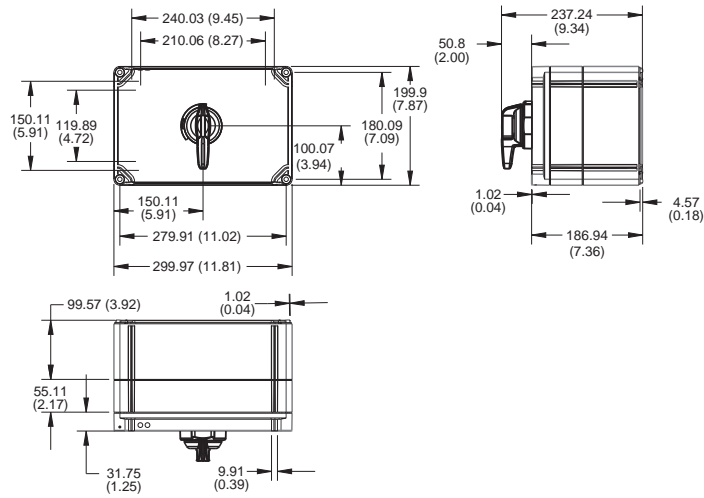
♣ When more than four modules are used, attach the first one to the switch body using the screws supplied with the extension (Cat. No. 194L-G2853).

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

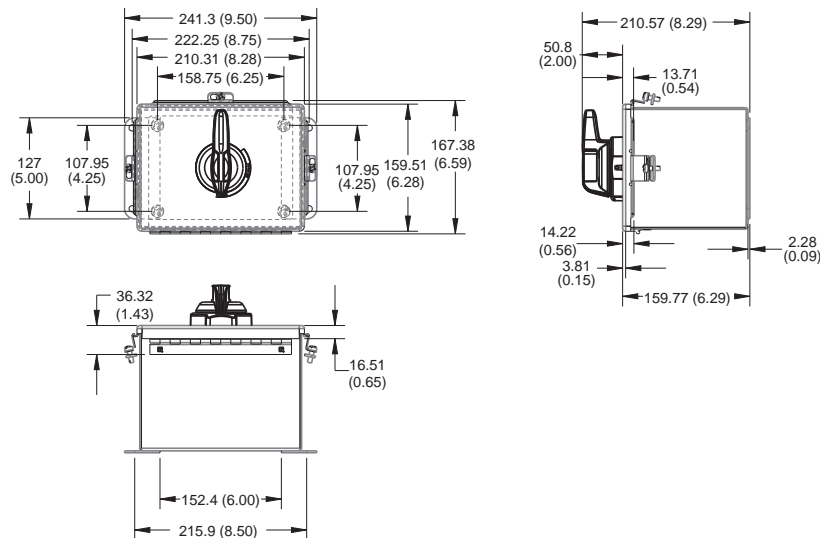
194E Enclosed Switches with 194R Handles



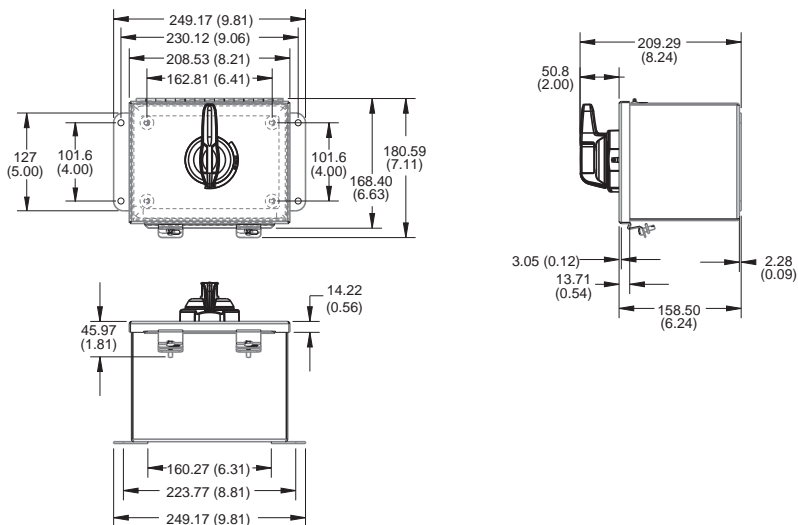
Cat. Nos. 194E-KA-16..63



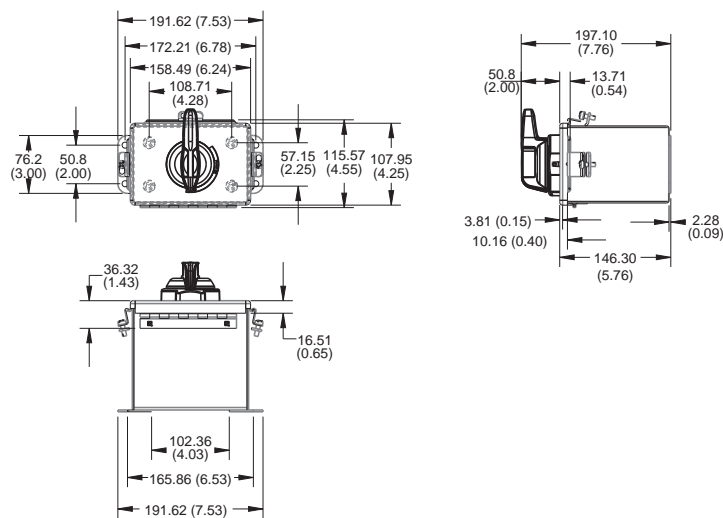
Cat. Nos. 194E-KA-16X...63X, 194E-KA-80...00



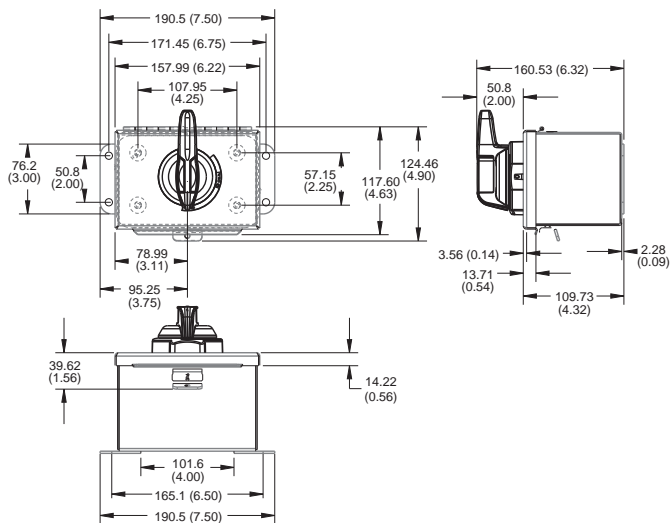
Cat. Nos. 194E-AA-16X...63X, 194E-AA-80...00,
194E-FA-16X...63X, 194E-FA-80...00



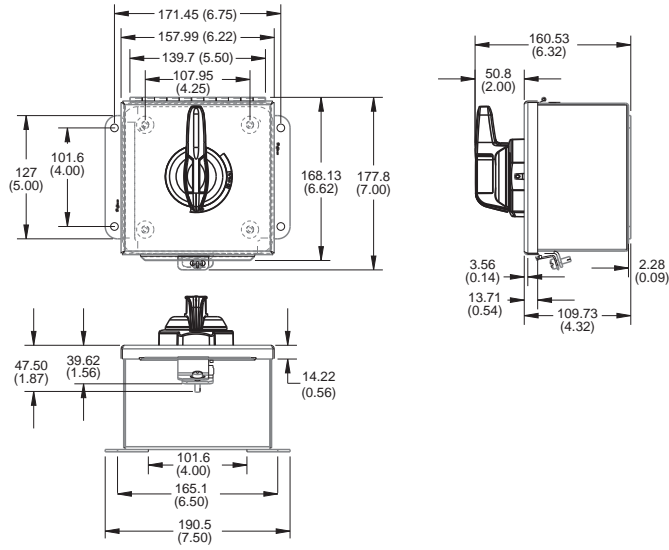
Cat. Nos. 194E-CA-16X...63X, 194E-CA-80...00



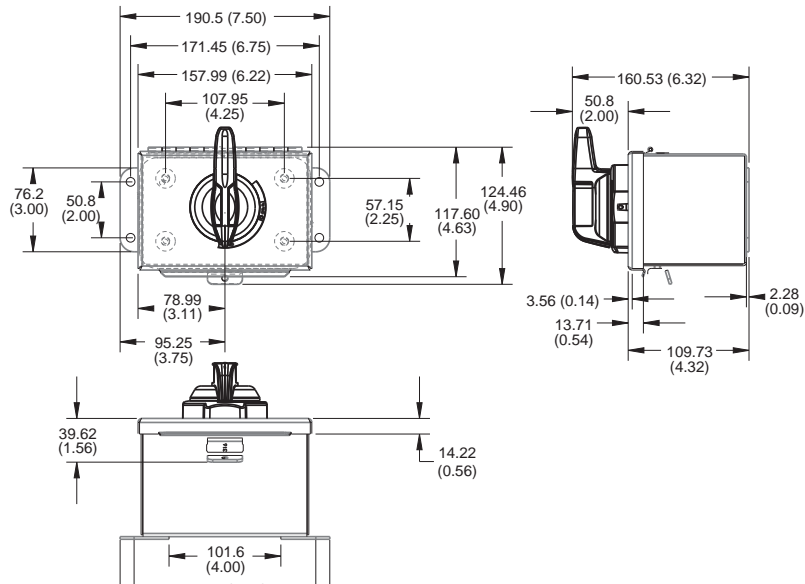
Cat. Nos. 194E-AA-16...63, 194E-FA-16...63



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

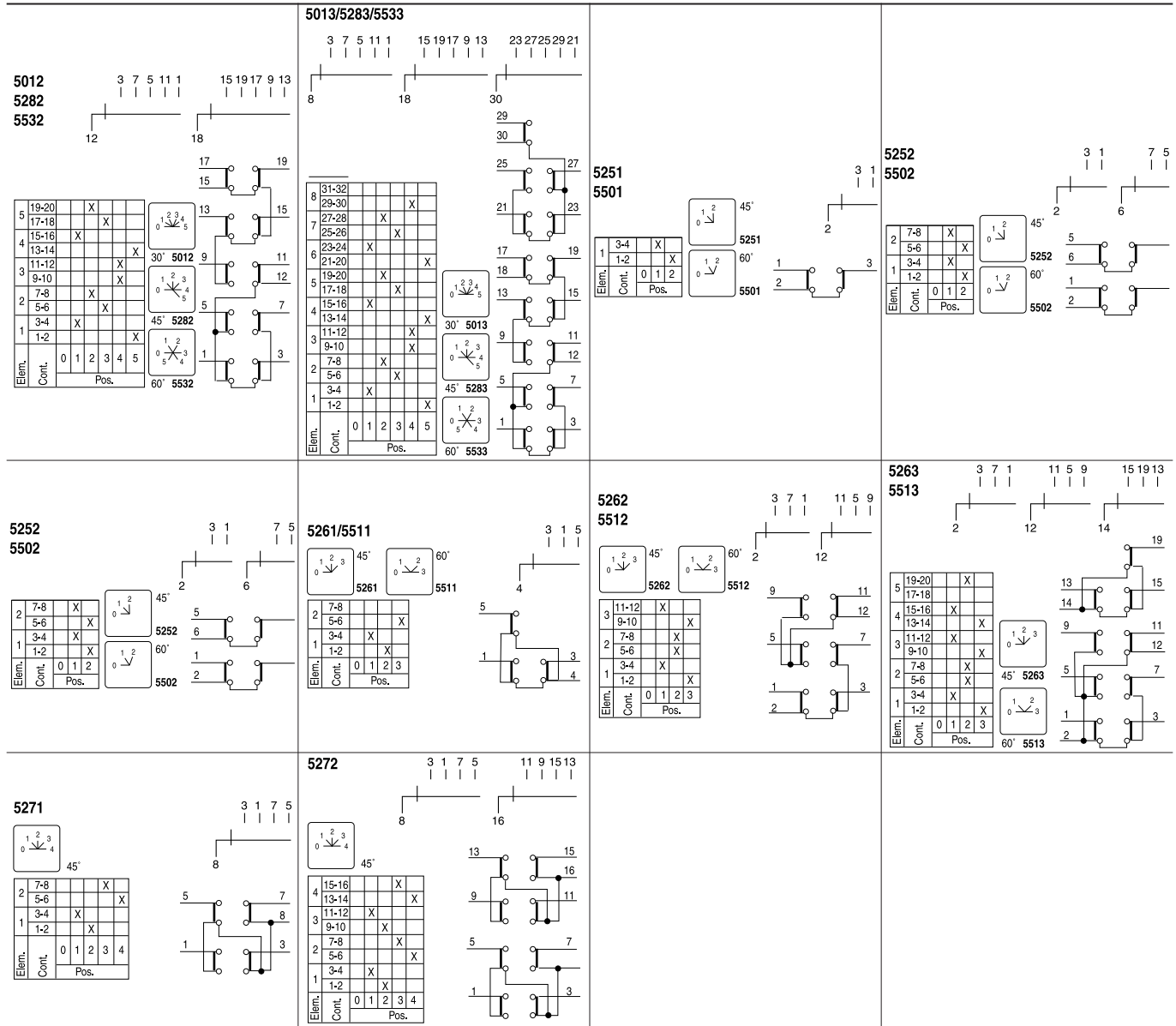
Circuit Diagram Nos. 1501...4253

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-------|-------|-------|---|-------|-------|------|---|---|------|------|---|---|--|---|--|-------|-------|-----|---|-------|-------|-----|---|---|------|------|---|---|--|---|---|-------|-------|-----|---|-------|-------|-----|---|---|------|------|---|---|--|---|-------|---|-------|---|---|-------|------|---|---|--|------|---|---|---|--|
| <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>1</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 | 1 | | 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>X</td><td>X</td><td></td></tr> <tr><td>Pos.</td><td>1-2</td><td>0</td><td>1</td><td></td></tr> </table> | Elem. | 2 | 7-8 | | | Cont. | 3-4 | X | X | | Pos. | 1-2 | 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>X</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 | 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 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 3-4 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1-2 | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>1505/1755</p> | <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>X</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 | 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>X</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 | 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>X</td></tr> <tr><td>Cont.</td><td>5-6</td><td>X</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 | X | Cont. | 5-6 | X | X | | Pos. | 1 | 2 | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | X | 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>X</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 | 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>X</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 | 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>X</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 | 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>X</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 | X | | Pos. | 1 | 0 | 2 | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 4 | 15-16 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 13-14 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 5 | 19-20 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 17-18 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | X | 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>X</td></tr> <tr><td>Cont.</td><td>5-6</td><td>X</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 | X | Cont. | 5-6 | X | 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>X</td></tr> <tr><td>Cont.</td><td>9-10</td><td>X</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 | X | Cont. | 9-10 | X | 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>X</td></tr> <tr><td>Cont.</td><td>1-2</td><td>X</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 | X | Cont. | 1-2 | X | 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>X</td></tr> <tr><td>Cont.</td><td>5-6</td><td>X</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 | X | Cont. | 5-6 | X | X | | Pos. | 1 | 0 | 2 | |
| Elem. | 2 | 7-8 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 1 | 3-4 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 1-2 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 2 | 7-8 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 5-6 | X | 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>X</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 | 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>X</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 | X | | Pos. | 1 | 0 | 2 | | <p>4252</p> | <p>4253</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 4 | 15-16 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 13-14 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Cont. | 9-10 | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pos. | 1 | 0 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Circuit Diagram Nos. 4271...5531

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|-------|---|---|---|---|-------|--|--|---|---|-------|---|--|---|--|-------|---|---|--|-------|-------|---|---|---|---|-------|--|------|---|-------|-------|---|---|--|---|-------|---|------|---|---|-------|--|---|---|---|-------|---|---|--|---|------|-----|--|--|---|-----|---|-----|---|-------|-------|---|---|-----|---|-----|------|--|-------|-------|-----|---|---|-------|-------|-------|---|---|------|---|---|---|------|-----|---|---|---|-----|--|---|-------|---|-----|-----|---|-------|--|-----|-----|---|-------|-------|-------|-------|---|-------|---|---|------|---|-------|------|---|--|---|-------|--|---|---|---|-------|---|--|---|---|-------|---|--|--|---|------|---|---|---|---|-----|---|---|--|---|-----|---|---|--|---|-----|---|---|---|-------|-------|---|---|---|-------|-------|------|------|---|---|--|---|---|---|---|-------|--|--|-------|--|------|--|---|-------|---|-----|---|--|-------|--|-----|---|---|-------|---|-----|---|--|------|---|-----|--|---|-----|-------|-------|---|---|-----|---|---|---|---|------|---|--|--|--|-----|---|--|--|-------|-------|---|---|---|---|--|------|--|--|--|--|
| <p>4271 4521</p> <table border="1"> <tr><td>3</td><td>11-12</td><td></td><td></td><td>X</td></tr> <tr><td></td><td>9-10</td><td></td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td>X</td><td>X</td></tr> <tr><td>Elem.</td><td>Cont.</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></tr> </table> <p>45° 4271 60° 4521</p> | 3 | 11-12 | | | X | | 9-10 | | | | 2 | 7-8 | X | | X | | 5-6 | | X | | 1 | 3-4 | X | | | | 1-2 | | X | X | Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | | Pos. | | | | | | <p>4251 4501</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>X</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>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° 4251 60° 4501</p> | 2 | 7-8 | | | | X | | 5-6 | | | X | | 1 | 3-4 | X | | | | | 1-2 | X | | | | Elem. | Cont. | 1 | 2 | 3 | 4 | | Pos. | | | | | <p>4261 4511</p> <table border="1"> <tr><td>2</td><td>7-8</td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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° 4261 60° 4511</p> | 2 | 7-8 | | | X | | 5-6 | | | X | 1 | 3-4 | X | | | | 1-2 | X | | | Elem. | Cont. | 1 | 2 | 3 | 4 | | Pos. | | | | | <p>4262 4512</p> <table border="1"> <tr><td>4</td><td>15-16</td><td></td><td></td><td>X</td></tr> <tr><td></td><td>13-14</td><td></td><td></td><td>X</td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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° 4262 60° 4512</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. | 1 | 2 | 3 | 4 | | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 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>4263 4513</p> <table border="1"> <tr><td>6</td><td>23-24</td><td></td><td></td><td>X</td></tr> <tr><td></td><td>21-22</td><td></td><td></td><td>X</td></tr> <tr><td>5</td><td>19-20</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>17-18</td><td>X</td><td></td><td></td></tr> <tr><td>4</td><td>15-16</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>13-14</td><td></td><td>X</td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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>X</td><td></td></tr> <tr><td></td><td>9-10</td><td></td><td>X</td><td></td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td>X</td><td>X</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 | | X | | 5-6 | | | X | 1 | 3-4 | X | | | | 1-2 | | X | 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></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td>X</td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td>X</td><td>X</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>60°</p> | 3 | 11-12 | X | | | | 9-10 | X | | | 2 | 7-8 | X | | X | | 5-6 | X | | | 1 | 3-4 | X | | | | 1-2 | | X | X | Elem. | Cont. | 1 | 2 | 3 | 4 | | Pos. | | | | | <p>4503</p> <table border="1"> <tr><td>5</td><td>19-20</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>17-18</td><td></td><td></td><td></td></tr> <tr><td>4</td><td>15-16</td><td>X</td><td></td><td>X</td></tr> <tr><td></td><td>13-14</td><td></td><td>X</td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>5-6</td><td>X</td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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>60°</p> | 5 | 19-20 | X | | | | 17-18 | | | | 4 | 15-16 | X | | 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. | | | | |
| 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. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | 11-12 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 9-10 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | 7-8 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5-6 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 3-4 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1-2 | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Elem. | Cont. | 1 | 2 | 3 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Pos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | 19-20 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 17-18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 15-16 | X | | 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>5001 5271 5521</p> <table border="1"> <tr><td>2</td><td>7-8</td><td></td><td></td><td>X</td></tr> <tr><td></td><td>5-6</td><td></td><td></td><td>X</td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</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>X</td></tr> <tr><td></td><td>13-14</td><td></td><td></td><td>X</td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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>X</td></tr> <tr><td></td><td>21-22</td><td></td><td></td><td>X</td></tr> <tr><td>5</td><td>19-20</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>17-18</td><td>X</td><td></td><td></td></tr> <tr><td>4</td><td>15-16</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>13-14</td><td></td><td>X</td><td></td></tr> <tr><td>3</td><td>11-12</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>9-10</td><td>X</td><td></td><td></td></tr> <tr><td>2</td><td>7-8</td><td></td><td>X</td><td></td></tr> <tr><td></td><td>5-6</td><td></td><td>X</td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td>X</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° 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>X</td></tr> <tr><td></td><td>9-10</td><td></td><td></td><td>X</td></tr> <tr><td>2</td><td>7-8</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>5-6</td><td>X</td><td></td><td></td></tr> <tr><td>1</td><td>3-4</td><td>X</td><td></td><td></td></tr> <tr><td></td><td>1-2</td><td></td><td>X</td><td>X</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 | 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 | 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 | X |
| 1 | 3-4 | X | X | X | X |
| 0 | 1-2 | X | X | X | X |

8761

| | | | | | |
|---|-------|---|---|---|---|
| 4 | 15-16 | | X | X | |
| 3 | 11-12 | X | X | X | X |
| 2 | 7-8 | X | X | X | X |
| 1 | 3-4 | X | X | X | X |
| 0 | 1-2 | X | X | 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] [A] | 12 12 | 16 16 | 20 20 | 25 25 | 32 32 | 40 40 | | | | | |
| AC-15 | Switching of inductive drives, motors, valves, and electromagnets. | IEC-947 220...240V 380...415V 500V | [A] [A] [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, $T \leq 1$ ms | 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) | |
| | | 120V [Hp] | 0.5 (9.8) | 0.75 (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) | |
| Heavy motor load, reversing Rating (similar to AC-4) Max. back-up fuse | 3-phase 3-pole | 120V [Hp] | — | — | — | — | — | — | |
| | | 240V [Hp] | — | — | — | — | — | — | |
| | | (gG characteristic) | [A] | 35 | 55 | 60 | 80 | | |
| | | Short Circuit Ratings | Maximum Short Circuit Prospective Fault Current Maximum Fuse Size | [kA] [A] | 5 35 | 5 55 | 5 60 | 5 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.

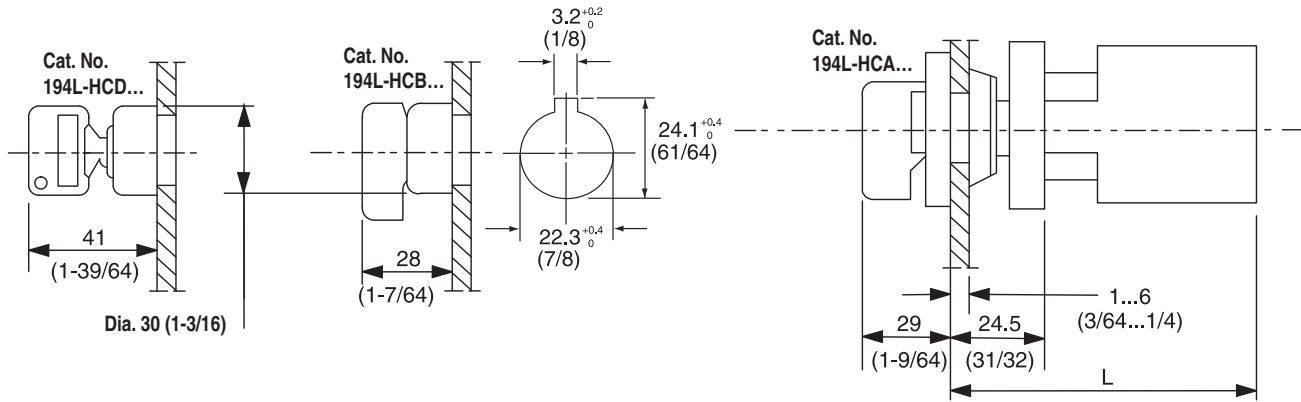
‡ Suitable for switching off-load (AC-20) above 660V, but only up to 660V for switches with screws at the rear.

§ 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

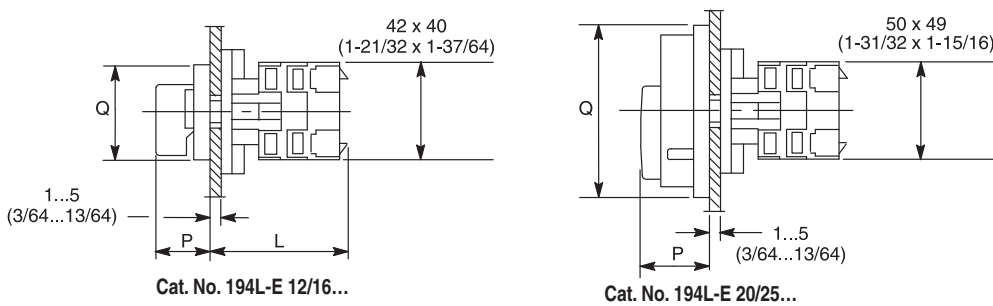
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

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

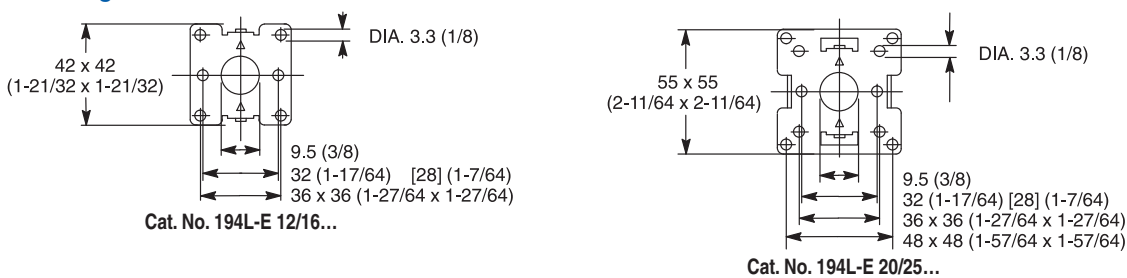


| Cat. No. | L | | | | |
|----------------|-----------------|----------------|---------------|-----------------|--------------|
| | No. of Contacts | | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 | 9...10 |
| 194L-C32/40... | 86 (3-25/64) | 103.5 (4-5/64) | 121 (4-49/64) | 138.5 (5-29/64) | 156 (6-9/64)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

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



Mounting Dimensions



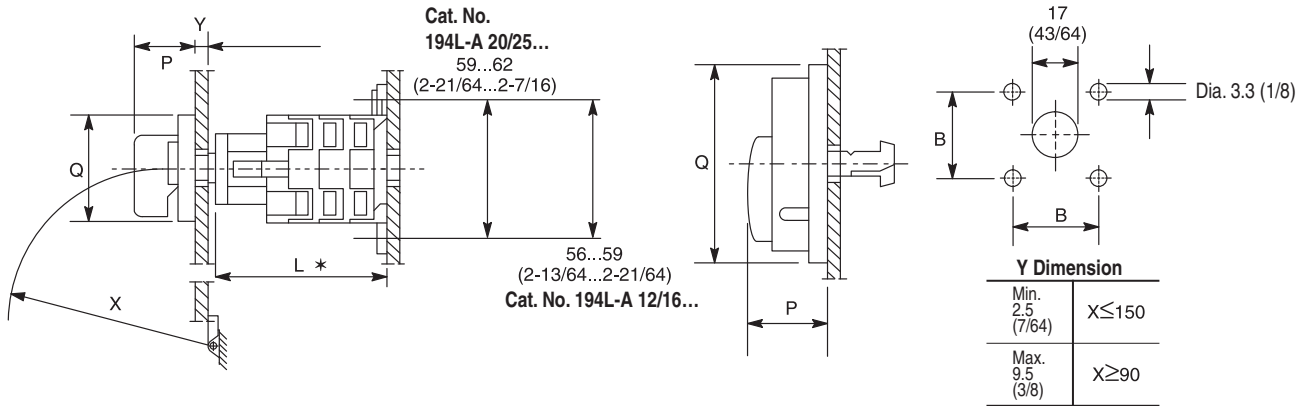
| Cat. No. | L | | | | |
|----------------|-----------------|---------------|--------------|----------------|----------------|
| | No. of Contacts | | | | |
| | 1...2 | 3...4 | 5...6 | 7...8 | 9...10 |
| 194L-E12/16... | 44 (1-47/64) | 54 (2-1/8) | 64 (2-33/64) | 74 (2-29/32) | 84 (3-5/16) |
| 194L-E20/25... | 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) |

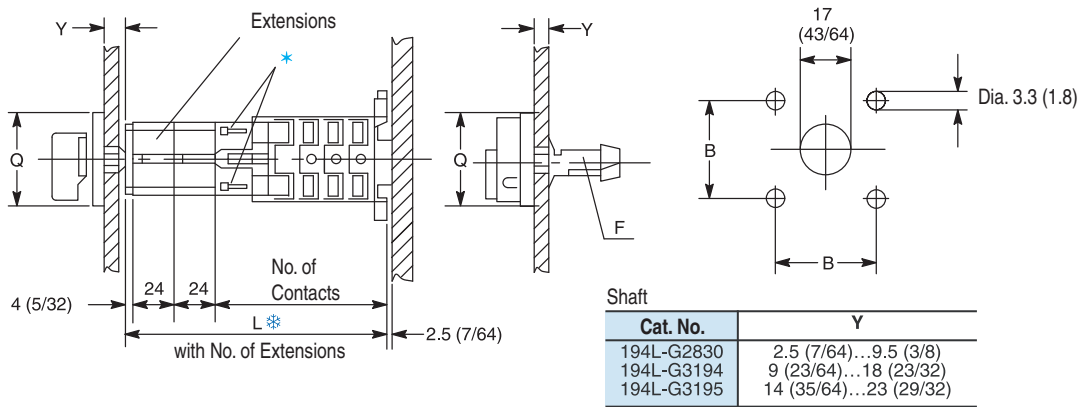
Control Knob

| 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).

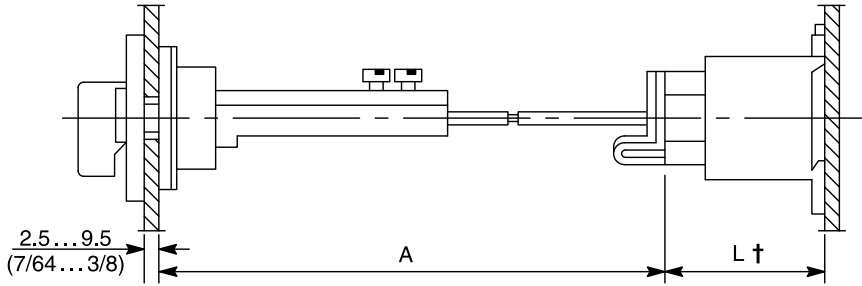
‡ Mounting on DIN 46 277 (35) Rails.

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) |

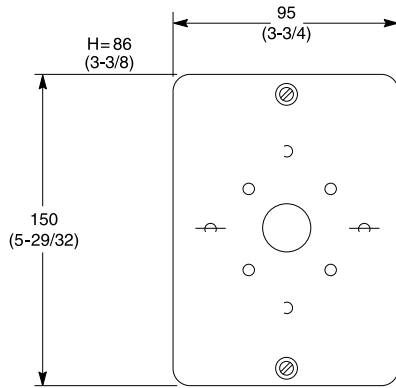
| Cat. No. 194L-E... With Terminal Cover | Cat. No. | A | B | C | D | |
|---|-----------------------|-----------------------|--------------|----------------|------------|------------|
| | | 194L-E12/16... | 40 (1-37/64) | 42.5 (1-43/64) | 12 (15/32) | 2.5 (7/64) |
| | | 194L-E20/25... | 49 (1-15/16)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

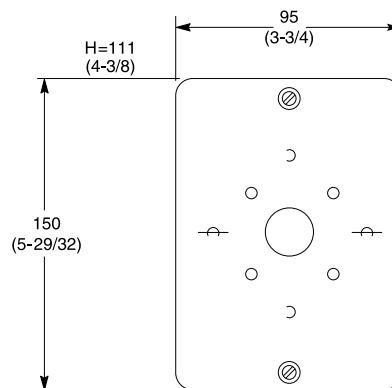
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

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.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

Reproduction of the contents of this manual, in whole or in part, without written permission of Rockwell Automation, Inc., is prohibited.

Documentation Feedback

Your comments will help us serve your documentation needs better. If you have any suggestions on how to improve this document, complete this form, publication [RA-DU002](#), available at <http://www.rockwellautomation.com/literature/>.

Allen-Bradley, Rockwell Software, Rockwell Automation, and LISTEN. THINK. SOLVE are trademarks of Rockwell Automation, Inc.
Trademarks not belonging to Rockwell Automation are property of their respective companies.

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication 194-TD002B-EN-P — May 2017

Supersedes Publication 194-TD002A — August 2014

Copyright © 2017 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.