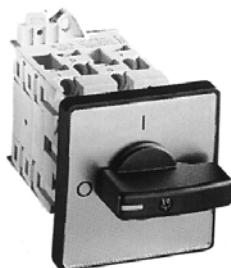




*Bulletin 194C
ON-OFF switch*



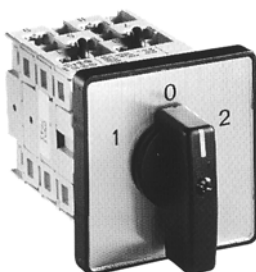
*Bulletin 194L
ON-OFF switch*



*Bulletin 194E
ON-OFF switch*



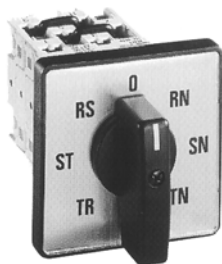
*Bulletin 194E
ON-OFF switch*



*Bulletin 194L
Reversing switch*



*Bulletin 194L
Ammeter selector switch*



*Bulletin 194L
Voltmeter selector switch*



*Bulletin 194L
Step switch*

Control and Load Switches

Bulletin 194C control switches, Bulletin 194L control and load switches, and Bulletin 194E load switches are flexible and adaptable time- and space-saving devices. These switches can be front-mounted (door) or base/DIN Rail-installed. The control and load switches are suitable for a wide range of applications, offer flexibility, and have an attractive, uniform design. The many possible combinations of control and load switches make them adaptable for almost any application.

ON-OFF Switches

Rugged switch used to switch the power supply on and off. They are used in a variety of control and power applications. Typical control applications include energising solenoids, actuators, valves, magnetic starters, and contactors. Power applications include manual control of direct-on-line motors as well as isolation of motor branch circuits.

Changeover Switches

Three-position switch for switching between two power sources. Changeover switches are frequently used to switch to an emergency power supply in case of main power supply failure.

Star-Delta Switches

Three-position switch (OFF, Star, Delta) used to manually control the reduced voltage starting of a motor. As soon as the operator determines that the motor is up to speed, operating the switch changes the motor's electrical configuration from a star to a delta configuration.

Reversing Switches

Three-position switch to manually control the direction of rotation of a motor. Operating the switch changes the direction of the motor rotation between forward and reverse.

Ammeter Selector Switches

Multi-position switch used to connect one or more phases of an electrical supply to an ammeter so that the current in each phase can be displayed on one ammeter.

Voltmeter Selector Switches

Multi-position switch used to connect the two lines of an electrical supply system to a voltmeter so that the voltage between the lines (phase-to-phase or phase-to-neutral) can be displayed on one voltmeter.

Step Switches

Multi-position switch used to connect a variety of loads to an electrical supply in a pre-determined logical sequence. A Typical application would be temperature control of a heating oven or furnace.

Disconnect Switch

The Bulletin 194E Load Switch fulfils the safety requirements for disconnect switches. Protect the switching off and separation functions by allowing a large isolation distance between the opened contacts.

AC-21 A Switching of resistive loads with slight overload per IEC/VDE/BS

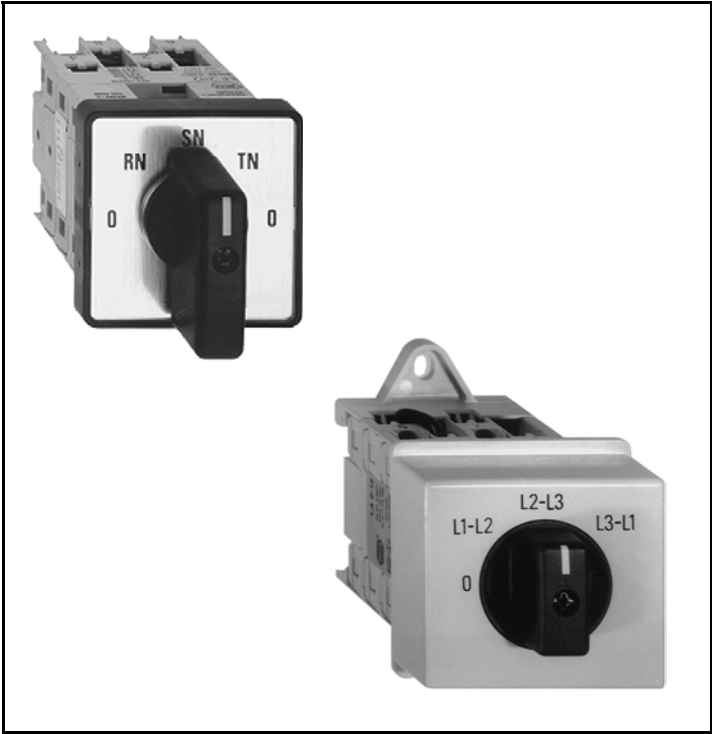
440 V [A]	690 V [A]	Type	Selection Pages for Switches	
			ON-OFF	Changeover
10	—	194C-10	10-13	10-13
—	12	194L-12	10-20	10-22
—	16	194L-16	10-20	10-22
—	20	194L-20	10-20	10-22
—	25	194L-25	10-20	10-22
—	25	194E-25	10-76	
—	32	194E-32	10-76	
—	40	194E-40	10-76	
—	63	194E-63	10-76	
—	80	194E-80	10-76	
—	100	194E-100	10-76	

AC-23 A Occasional switching of motors or other highly inductive loads

3-phase / 3 poles				1-phase / 2-poles			Type	Selection Pages for Switches	
220...240 V [kW]	380...440 V [kW]	500 V [kW]	690 V [kW]	110 V [kW]	220...240 V [kW]	380...440 V [kW]		ON-OFF	Changeover
1.8	3	—	—	0.37	0.75	1.1	194C-10	10-13	10-13
2.2	4	5.5	5.5	0.75	1.3	2.2	194L-12	10-20	10-22
3	5.5	7.5	7.5	1.1	2.2	3.7	194L-16	10-20	10-22
4.5	7.5	10	8	1.2	2.5	4.5	194L-20	10-20	10-22
5.5	11	13	11	1.6	3.2	5.5	194L-25	10-20	10-22
7.5	11	—	11	—	—	—	194E-25	10-76	
7.5	15	—	15	—	—	—	194E-32	10-76	
15	18.5	—	18.5	—	—	—	194E-40	10-76	
18.5	22	—	22	—	—	—	194E-63	10-76	
22	37	—	37	—	—	—	194E-80	10-76	
30	45	—	45	—	—	—	194E-100	10-76	

DC-1/DC-21 A Switching of resistive loads, $T \leq 1$ ms (1 contact in series)

24 V [A]	48 V [A]	60 V [A]	110 V [A]	220 V [A]	440 V [A]	Type	Selection Pages for Switches	
							ON-OFF	Changeover
10	6	2.5	0.7	0.3	0.2	194C-10	10-13	10-13
12	10	8	2	0.5	0.35	194L-12	10-20	10-22
16	12	10	2.5	0.6	0.4	194L-16	10-20	10-22
20	16	12	4	0.7	0.45	194L-20	10-20	10-22
22	18	14	5	0.8	0.5	194L-25	10-20	10-22



Bulletin 194L

Control and Load Switches

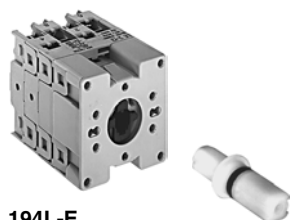
- Rated current up to 25 A
- Wide selection of functions and switching positions
- Screw and central fixture
- Front- and base mounting
- Finger-proof switch bodies per IP20
- Water spray and dust-proof actuator per IP65
- Easily accessible terminals
- Clearly marked terminals

Table of contents

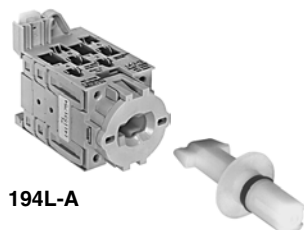
Description	Page	Description	Page
Overview	10-2	Star-Delta Reversing Switches.	10-28
Product Description	10-4	Dahlander Switches	10-28
Preselection.	10-5	Reversing Switches	10-28
Complete Switches		Starters.	10-30
Bulletin 194L Disconnect Switch / Emergency Stop.	10-6	Voltmeter Selector Switches.	10-30
Panel-Mounted Load Switch, Type Q	10-7	Ammeter Selector Switches	10-32
Individual Components: Type Description	10-18	Group Switches	10-32
Individual Components: Product Selection		Special Switches	10-34
ON-OFF Switches.	10-20	Accessories.	10-45
Changeover Switches.	10-22	Specifications	10-56
Step Switches.	10-22	Standards and Approvals.	10-59
Star-Delta Switches	10-26	Switching Diagrams	10-36
		Dimensions	10-64

Bulletin 194L
Control and Load Switches
Individual Components: Type Description

Switch Bodies



194L-E



194L-A

+

Actuators



A



B



C



D



E



G



I



N



L

For Front/Door Mounting		Cat. No.	
Switch bodies for screw fixture		194L-E	-
Also for central fixture in conjunction with Bulletin 194L-HC actuators			
For Base/DIN Rail Mounting			
Switch bodies for screw fixture or for DIN Rail (EN 50 022-35) mounting		194L-A	-
(includes door linkage, ON-OFF switch with door interlock)			
Rated operating current of the switching elements	12 A	12	XXXX
	16 A	16	
	20 A	20	
	25 A	25	
Circuit diagram no. (from pages 10-20...10-33)			

Protection Class IP65

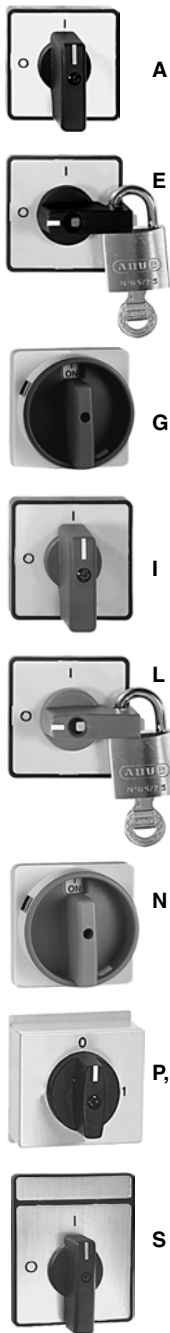
		Cat. No.	
Actuator with Central Fixture for Bulletin 194L-E (installed with included module)		194L-HC	-
Standard Switch, Type A Black front frame 48 x 48 mm, black knob, silver-grey legend plate		4A	
Standard Switch, Type B With front ring, black knob, without legend plate		B	001
Lock Actuator, Type C Black front frame 48 x 48 mm, silver-grey legend plate, RONIS lock No. 152	Control knob position:	4CC	
		4CD	
		4CG	
		4CH	
		4CK	
Lock Actuator, Type D With front ring, without legend plate, RONIS lock No. 152	Control knob position:	DC	001
		DD	001
		DG	001
		DH	001
		DK	001
Disconnect Switch, Type E Black front frame and knob, provision for 1 padlock, silver-grey legend plate 48 x 48 mm		4E	
Disconnect Switch, Type G Gray legend plate, black knob, provision for 3 padlocks, size 67 x 67 mm		6G	
NOT-AUS, Type I Black frame, red knob, yellow legend plate 48 x 48 mm		4I	
Disconnect Switch / Emergency Stop, Type L Black frame, red knob, provision for 1 padlock, yellow legend plate 48 x 48 mm		4L	
Disconnect Switch / Emergency Stop, Type N Yellow legend plate, red knob, provision for 3 padlocks, size 67 x 67 mm		6N	
Legend Plate No. (from pages 10-20...10-33) Actuator without legend plate		xxxz ^❶ 001	

Special Switches see pages 10-34 and 10-35

❶ The letter "z" indicates a different inscription with the same diagram (e.g. 175 I for ON/OFF instead of 175 for 0-1)

Actuators

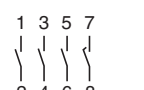
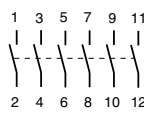
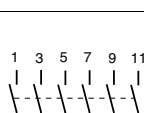
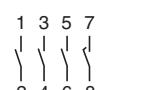
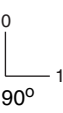
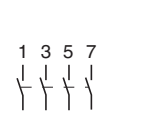
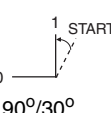
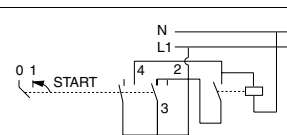
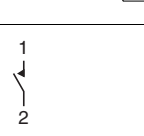
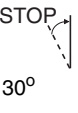
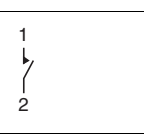
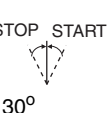
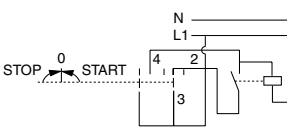
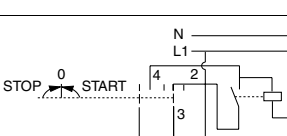
Protection Class IP65



		Cat. No.	
Actuators with Screw Fixtures		194L-HE	-
for Bulletin 194L-E and 194L-A switches			
Standard Switch, Type A			
Black front frame, black knob,			4A
silver-grey legend plate 48 x 48 mm			6A
Disconnect Switch, Type E			
Black front frame and knob,			4E
provision for 1 padlock,			6E
silver-grey legend plate 48 x 48 mm			
silver-grey legend plate 64 x 64 mm			
Disconnect Switch, Type G			
Grey legend plate, black knob ring,			6G
provision for 3 padlocks, size: 67 x 67 mm			
Emergency Stop, Type I			
Black frame, red knob,			4I
yellow legend plate 48 x 48 mm			6I
yellow legend plate 64 x 64 mm			
Disconnect Switch / Emergency Stop, Type L			
Black frame, red knob,			4L
provision for 1 padlock,			6L
yellow legend plate 48 x 48 mm			
yellow legend plate 64 x 64 mm			
Disconnect Switch / Emergency Stop, Type N			
Yellow legend plate, red knob ring,			6N
provision for 3 padlocks, size: 67 x 67 mm			
With 45 mm Panel Cut-out, Type P			
Grey cap, black knob, size: 45 x 54 mm			4P
With 45 mm Panel Cut-out, Total Depth 69 mm, Type Q			
Grey cap, black knob, for rated currents of 12 and 16 A			
with up to 6 poles (see Page 10-7)			
Standard Switch, Type A, with Silver-grey Label, Type S			
Black front frame, silver-grey legend plate, black knob,			4S
silver-grey legend plate 48 x 62 mm			6S
silver-grey legend plate 64 x 78 mm			
Legend Plate No.			
(from pages 10-20...10-33)			
Actuator without legend plate			xxxz ^❶ 001

❶ The letter "z" indicates a different inscription with the same diagram (e.g. 175 I for ON/OFF instead of 175 for 0-1)

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting				For Base/DIN Rail Mounting					
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Cat. No.				PQ	Cat. No.				PQ
					194L-E					194L-A				
					Rated current [A]					Rated current [A]				
					12-	16-	20-	25-		12-	16-	20-	25-	
ON-OFF switches  60°  90° 1 pole leading  3 poles leading 		1	1	1501	12-	16-	20-	25-	1					
		2	1	1502	12-	16-	20-	25-						
		3	2	1503	12-	16-	20-	25-						
		4	2	1504	12-	16-	20-	25-						
		5	3	1505	12-	16-	20-	25-						
		6	3	1506	12-	16-	20-	25-						
		1	1	1751	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		2	1	1752	12-	16-	20-	25-		12-	16-	20-	25-	
		3	2	1753	12-	16-	20-	25-		12-	16-	20-	25-	
		4	2	1754	12-	16-	20-	25-		12-	16-	20-	25-	
		5	3	1755	12-	16-	20-	25-		12-	16-	20-	25-	
		6	3	1756	12-	16-	20-	25-		12-	16-	20-	25-	
	1 pole leading 	4	2	1764	12-	16-	20-	25-	1	12-	16-	20-	25-	1
	3 poles leading 	4	2	1774	12-	16-	20-	25-	1	12-	16-	20-	25-	1
5		3	1765	12-	16-	20-	25-	12-		16-	20-	25-		
 90°		1	1	1781	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		2	1	1782	12-	16-	20-	25-		12-	16-	20-	25-	
		3	2	1783	12-	16-	20-	25-		12-	16-	20-	25-	
		4	2	1784	12-	16-	20-	25-		12-	16-	20-	25-	
 90°/30°		1	1	9751	12-	16-	20-	25-	1	12-	16-	20-	25-	1
 30°		1	1	9001	12-	16-	20-	25-	1	12-	16-	20-	25-	
 30°		1	1	9011	12-	16-	20-	25-	1	12-	16-	20-	25-	1
 30°		1	1	9021	12-	16-	20-	25-	1	12-	16-	20-	25-	1
 45°		1	1	9251	12-	16-	20-	25-	1	12-	16-	20-	25-	1

Ordering examples: Bulletin 194L-E12-1501 switch bodies for front/door mounting; Bulletin 194L-A25-1751 switch bodies for base DIN rail mounting
 PQ = Package Quantity

Type Description - Page 10-18
 Accessories - Page 10-45
 Specifications - Page 10-56
 Dimensions - Page 10-64

Control and Load Switches

Individual Components: Product Selection

Actuators			For Screw Fixture										For Central Fixture									
			Cat. No. 194L-HE								PQ	Cat. No. 194L-HC								PQ		
Switch position	Legend plate size	Legend plate no.	Actuator type									Actuator type										
			A-	E-	G-	I-	L-	N-	P-	S-		A-	B-	C.-①	D.-①	E-	I-	L-	G-		N-	
All	none	001																				
	4 6	001 150 150	A- A- A-	E- E- E-		I- I-					1	A-	B-	C.-	D.-					1		
 	4 6 4 6	001 175 175 175I 175I	A- A- A- A- A-	E- E- E- E- E-		I- I- G-②	L-	N-②	P- S- S-	1	A A-	B- A-	C.- C.-	D.- E-	E- I-	L- L-	G-②	N-②	1			
 	4 6 4 6	001 178 178 178I 178I	A- A- A- A- A-	E- E- E- E- E-				N-②		1	A- A-	B- A-	C.- C.-	D.- C.-					1			
	4 6	001 975 975	A- A- A-	E- E- E-						1	A-	B-		D.-					1			
	4 6	001 900 900	A- A- A-	E- E- E-						1	A-	B-		D.-					1			
	4 6	001 901 901	A- A- A-	E- E- E-						1	A-	B-		D.-					1			
	4 6	001 902 902	A- A- A-	E- E- E-						1	A-	B-		D.-					1			
	4 6	001 925 925	A- A- A-	E- E- E-						1	A-	B-		D.-					1			

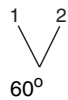
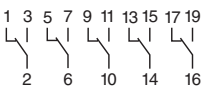
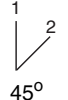
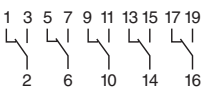
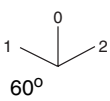
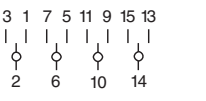
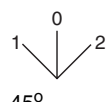
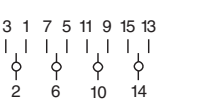
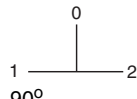
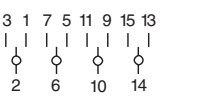
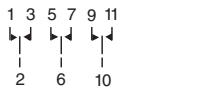
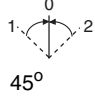
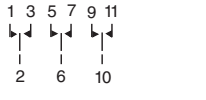
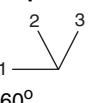
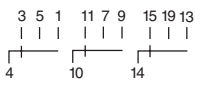
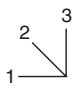
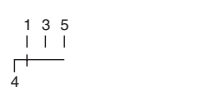
Ordering examples: Bulletin 194L-HE4A-150 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDC-001 lock actuator for central fixture of 194L-E

① Control knob positions see page 10-18

② With both 0-1 and OFF/ON inscriptions

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting				For Base/DIN Rail Mounting					
					Cat. No.		194L-E			Cat. No.		194L-A		
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Rated current [A]				PQ	Rated current [A]				PQ
					12-	16-	20-	25-		12-	16-	20-	25-	
Changeover switches														
 60°		1	1	2501	12-	16-	20-	25-	1					
		2	2	2502	12-	16-	20-	25-						
		3	3	2503	12-	16-	20-	25-						
		4	4	2504	12-	16-	20-	25-						
		5	5	2505	12-	16-	20-	25-						
 45°		1	1	2251	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		2	2	2252	12-	16-	20-	25-						
		3	3	2253	12-	16-	20-	25-						
		4	4	2254	12-	16-	20-	25-						
		5	5	2255	12-	16-	20-	25-						
 60°		1	1	3501	12-	16-	20-	25-	1					
		2	2	3502	12-	16-	20-	25-						
		3	3	3503	12-	16-	20-	25-						
		4	4	3504	12-	16-	20-	25-						
 45°		1	1	3251	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		2	2	3252	12-	16-	20-	25-						
		3	3	3253	12-	16-	20-	25-						
		4	4	3254	12-	16-	20-	25-						
 90°		1	1	3751	12-	16-	20-	25-	1					
		2	2	3752	12-	16-	20-	25-						
		3	3	3753	12-	16-	20-	25-						
		4	4	3754	12-	16-	20-	25-						
 30°		1	1	3001	12-				1					
		2	2	3002	12-									
		3	3	3003	12-									
 45°		1	1	3261	12-				1					
		2	2	3262	12-									
		3	3	3263	12-									
Step switches														
 60°		1	2	4501	12-	16-	20-	25-	1					
		2	3	4502	12-	16-	20-	25-						
		3	5	4503	12-	16-	20-	25-						
 45°		1	2	4251	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		2	3	4252	12-	16-	20-	25-						
		3	5	4253	12-	16-	20-	25-						

Ordering examples: Bulletin **194L-E12-2501** switch bodies or front/door mounting; Bulletin **194L-A25-2251** switch bodies for base/DIN rail mounting

PQ = Package Quantity

Type Description - Page 10-18

Accessories - Page 10-45

Specifications - Page 10-56

Dimensions - Page 10-64

Actuators			For Screw Fixture									For Central Fixture									
Switch position	Legend plate size	Legend plate no.	Cat. No.		194L-HE						PQ	Cat. No.		194L-HC						PQ	
			Actuator type									Actuator type									
			A-	E-	G-	I-	L-	N-	P-	S-		A-	B-	C.- 	D.- 	E-	I-	L-			
All	none	001																			
	4 6	001 250 250	A- A- A-									1	A-	B-	C.-				1		
	4 6	001 225 225	A- A- A-							P-		1	A-	B-	C.-	D.-			1		
	4 6	001 350 350	A- A- A-									1	A-	B-	C.-	D.-			1		
 	4 6 4 6	001 325 325 325R 325R	A- A- A- A- A-							P- P-	S- S-	1	A- A-	B-	C.- C.-	D.-			1		
	4 6	001 375 375	A- A- A-							P-		1	A-	B-	C.-	D.-			1		
	4 6	001 300 300	A- A- A-									1	A-	B-		D.-			1		
	4 6	001 325 325	A- A- A-								S- S-	1	A-	B-	C.-	D.-			1		
	4 6	001 450 450	A- A- A-									1	A-	B-	C.-	D.-			1		
	4 6	001 425 425	A- A- A-									1	A-	B-	C.-	D.-			1		

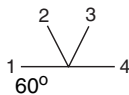
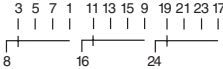
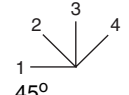
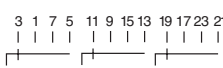
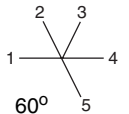
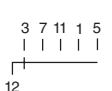
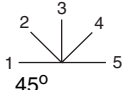
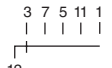
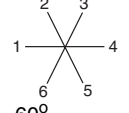
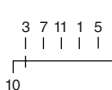
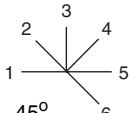
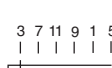
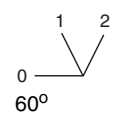
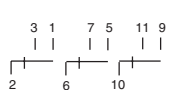
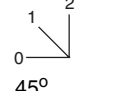
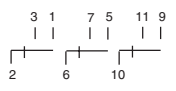
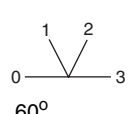
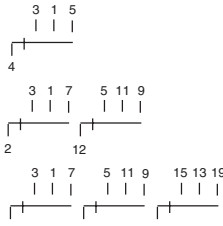
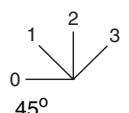
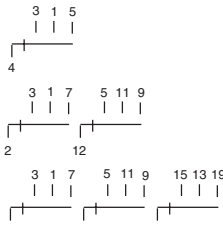
Ordering examples: Bulletin 194L-HE6A-250 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDC-001 lock actuator for central fixture of 194L-E,

 Control knob positions see page 10-18

PQ = Package Quantity

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting					For Base/DIN Rail Mounting				
					Cat. No.				PQ	Cat. No.				PQ
					194L-E					194L-A				
Function	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Rated current [A]					Rated current [A]				
Switching angle					12-	16-	20-	25-		12-	16-	20-	25-	
Step switches														
		1 2 3	2 4 6	4511 4512 4513	12-	16-	20-	25-	1					
		1 2 3	2 4 6	4261 4262 4263	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		1	3	4521	12-	16-	20-	25-	1					
		1	3	4271	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		1	3	4531	12-	16-	20-	25-	1					
		1	3	4281	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		1 2 3	1 2 3	5501 5502 5503	12-	16-	20-	25-	1					
		1 2 3	1 2 3	5251 5252 5253	12-	16-	20-	25-	1					
		1 2 3	2 3 5	5511 5512 5513	12-	16-	20-	25-	1					
		1 2 3	2 3 5	5261 5262 5263	12-	16-	20-	25-	1	12-	16-	20-	25-	1

Ordering examples: Bulletin 194L-E12-4511 switch bodies for front/door mounting; Bulletin 194L-A25-4262 switch bodies for base/DIN rail mounting
PQ = Package Quantity

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

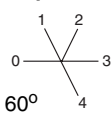
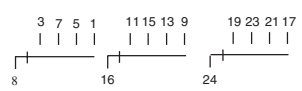
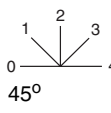
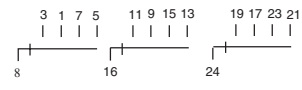
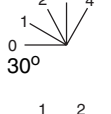
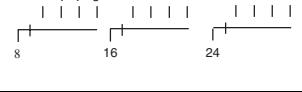
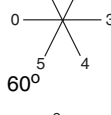
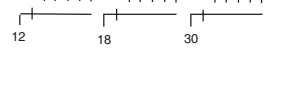
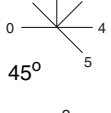
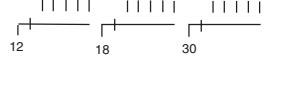
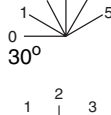
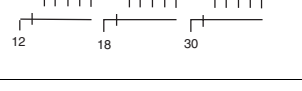
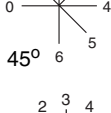
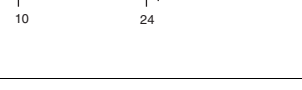
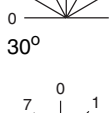
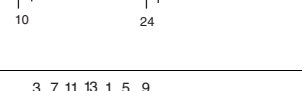
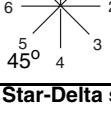
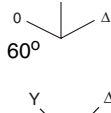
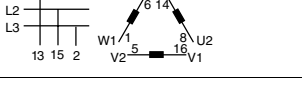
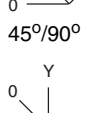
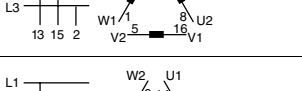
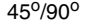
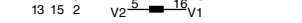
Actuators			For Screw Fixture									For Central Fixture									
Switch position	Legend plate size	Legend plate no.	Cat. No.		194L-HE						PQ	Cat. No.		194L-HC						PQ	
			Actuator type									Actuator type									
			A-	E-	G-	I-	L-	N-	P-	S-		A-	B-	C.- 	D.- 	E-	I-	L-			
All	none	001																			
	4 6	001 451 451	A- A- A-									1	A-	B-		D.-				1	
	4 6	001 426 426	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 452 452	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 427 427	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 453 453	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 428 428	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 550 550	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 525 525	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 551 551	A- A- A-									1	A-	B-	C.-	D.-				1	
	4 6	001 526 526	A- A- A-									1	A-	B-	C.-	D.-				1	

Ordering examples: Bulletin 194L-HE4A-451 actuator for screw fixture or 194L-E or 194L-A; Bulletin 194L-HCDC-001 lock actuator for central fixture of 194L-E
 Control knob positions see page 10-18

Type Description - Page 10-18
 Accessories - Page 10-45
 Specifications - Page 10-56
 Dimensions - Page 10-64

Bulletin 194L
Control and Load Switches
Individual Components: Product Selection

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting				For Base/DIN Rail Mounting					
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit dia- gram no.	Cat. No.				PQ	Cat. No.				PQ
					194L-E					194L-A				
					Rated current [A]					Rated current [A]				
					12-	16-	20-	25-		12-	16-	20-	25-	
Step switches														
		1 2 3	2 4 6	5521 5522 5523	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1					
		1 2 3	2 4 6	5271 5272 5273	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1	12-	16-	20-	25-	1
		1 2 3	2 4 6	5001 5002 5003	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1					
		1 2 3	3 5 8	5531 5532 5533	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1					
		1 2 3	3 5 8	5281 5282 5283	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1	12-	16-	20-	25-	1
		1 2 3	3 5 8	5011 5012 5013	12- 12- 12-	16- 16- 16-	20- 20- 20-	25- 25- 25-	1					
		1 2 3	3 6	5291 5292	12- 12-	16- 16-	20- 20-	25- 25-	1	12-	16-	20-	25-	1
		1 2	3 6	5021 5022	12- 12-	16- 16-	20- 20-	25- 25-						
		1	4	5341	12-	16-	20-	25-	1					
Star-Delta switches														
		3	4	7503	12-	16-	20-	25-	1					
		3	4	7253	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		3	4	7323	12-	16-	20-	25-	1	12-	16-	20-	25-	1

Ordering examples: Bulletin 194L-E12-5521 switch bodies for front/door mounting; Bulletin 194L-A25-5271 switch bodies for base/DIN rail mounting
 PQ = Package Quantity

Type Description - Page 10-18
 Accessories - Page 10-45
 Specifications - Page 10-56
 Dimensions - Page 10-64

Control and Load Switches

Individual Components: Product Selection

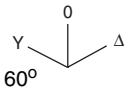
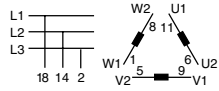
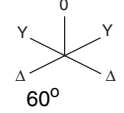
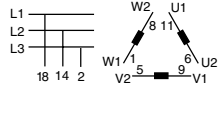
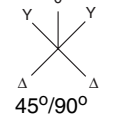
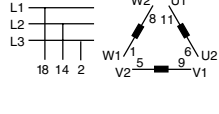
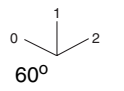
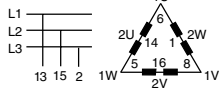
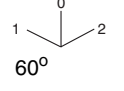
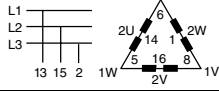
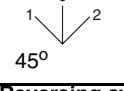
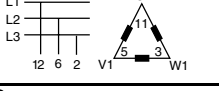
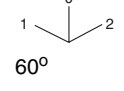
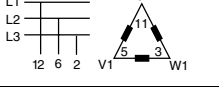
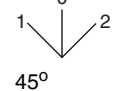
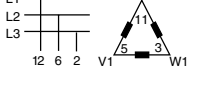
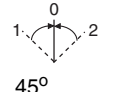
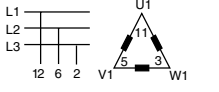
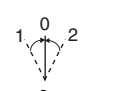
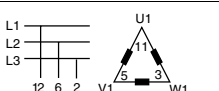
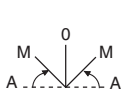
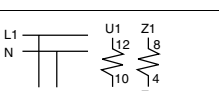
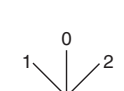
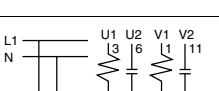
Actuators			For Screw Fixture										For Central Fixture									
Switch position	Legend plate size	Legend plate no.	Cat. No. 194L-HE										PQ	Cat. No. 194L-HC								PQ
			Actuator type											Actuator type								
			A-	E-	G-	I-	L-	N-	P-	S-	A-	B-		C.- 	D.- 	E-	I-	L-				
All	none	001																				
	4 6	001 552 552	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 527 527	A- A- A-									1	A-	B-	C.-	D.-				1		
	4 6	001 500 500	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 553 553	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 528 528	A- A- A-									1	A-	B-	C.-	D.-				1		
	4 6	001 501 501	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 529 529	A- A- A-									1	A-	B-	C.-	D.-				1		
	4 6	001 502 502	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 534 534	A- A- A-									1	A-	B-	C.-	D.-				1		
	4 6	001 750 750	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 725 725	A- A- A-									1	A-	B-	C.-	D.-				1		
	4 6	001 732 732	A- A- A-									1	A-	B-		D.-				1		

Ordering examples: Bulletin 194L-HE6A-552 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDD-001 lock actuator for central fixture of 194L-E

❶ Control knob positions see page 10-18

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting					For Base/DIN Rail Mounting				
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Cat. No.				PQ	Cat. No.				PQ
					194L-E					194L-A				
					Rated current [A]					Rated current [A]				
					12-	16-	20-	25-		12-	16-	20-	25-	
Star-Delta switches														
		3	4	7553	12-	16-	20-	25-	1	12-	16-	20-	25-	1
Star-Delta reversing switches														
		3	5	7513	12-	16-	20-	25-	1					
		3	5	7283	12-	16-	20-	25-	1					
Dahlander switches														
		3	4	7523	12-	16-	20-	25-	1					
		3	4	7533	12-	16-	20-	25-	1					
		3	4	7293	12-	16-	20-	25-	1	12-	16-	20-	25-	1
Reversing switches														
		3	3	7543	12-	16-	20-	25-	1					
		3	3	7303	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		3	3	7313	12-	16-	20-	25-	1	12-	16-	20-	25-	1
		3	3	7003	12-	16-	20-	25-	1					
		3	3	7342	12-	16-	20-	25-	1					
		2	3	7352	12-	16-	20-	25-	1					

Ordering examples: Bulletin 194L-E12-7553 switch bodies for front/door mounting; Bulletin 194L-A25-7553 switch bodies for base/DIN rail mounting
PQ = Package Quantity

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Actuators			For Screw Fixture									For Central Fixture										
			Cat. No.		194L-HE							PQ	Cat. No.		194L-HC							PQ
Switch position	Legend plate size	Legend plate no.	Actuator type								Actuator type											
			A-	E-	G-	I-	L-	N-	P-	S-	A-		B-	C.-⓪	D.-⓪	E-	I-	L-				
All	none	001																				
	4 6	001 755 755	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 751 751	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 728 728	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 752 752	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 350 350	A- A- A-								1	A-	B-	C.-	D.-				1			
	4 6	001 325 325	A- A- A-							S- S-	1	A-	B-		D.-				1			
	4 6	001 350 350	A- A- A-								1	A-	B-	C.-	D.-				1			
	4 6	001 325 325	A- A- A-							S- S-	1	A-	B-	C.-	D.-				1			
	4 6	001 325 325	A- A- A-							S- S-	1	A-	B-	C.-	D.-				1			
	4 6	001 300 300	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 734 734	A- A- A-								1	A-	B-		D.-				1			
	4 6	001 325 325	A- A- A-							S- S-	1	A-	B-		D.-				1			

Ordering examples: Bulletin 194L-HE4A-755 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDC-001 lock actuator for central fixture of 194L-E

① Control knob positions see page 10-18

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting					For Base/DIN Rail Mounting				
					Cat. No.				194L-E	Cat. No.				194L-A
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Rated current [A]				PQ	Rated current [A]				PQ
					12-	16-	20-	25-		12-	16-	20-	25-	
Starters														
		2	2	7332	12-	16-	20-	25-	1					1
Voltmeter selector switches														
		-	3	8251	12-				1	12-				1
		-	2	8261	12-				1	12-				1
		-	2	8271	12-				1	12-				1
		-	2	8281	12-				1	12-				1
		-	2	8291	12-				1	12-				1
		-	4	8322	12-				1	12-				1
		-	3	8332	12-				1	12-				1

Ordering examples: Bulletin 194L-E12-7332 switch bodies for front/door mounting; Bulletin 194L-A12-8251 switch bodies for base/DIN rail mounting

PQ = Package Quantity

Type Description - Page 10-18
 Accessories - Page 10-45
 Specifications - Page 10-56
 Dimensions - Page 10-64

Actuators			For Screw Fixture									For Central Fixture										
			Cat. No.		194L-HE							PQ	Cat. No.		194L-HC							PQ
Switch position	Legend plate size	Legend plate no.	Actuator type								Actuator type											
			A-	E-	G-	I-	L-	N-	P-	S-	A-		B-	C.- ⓪	D.- ⓪	E-	I-	L-				
All	none	001																				
	4 6	001 733 733	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 825 825	A- A- A-							P-		1	A-	B		D.-				1		
	4 6	825A 825A	A- A-							P-			A-									
	4 6	001 826 826	A- A- A-							P-		1	A-	B-		D.-				1		
	4 6	001 827 827	A- A- A-									1	A-	B		D.-				1		
	4 6	827A 827A	A- A-							P-			A-									
	4 6	001 828 828	A- A- A-									1	A-	B-		D.-				1		
	4 6	001 829 829	A- A- A-									1	A-	B		D.-				1		
	4 6	829A 829A	A- A-							P-			A-									
	4 6	001 832 832	A- A- A-									1	A-	B		D.-				1		
	4 6	832A 832A	A- A-							P-			A-									
	4 6	001 833 833	A- A- A-									1	A-	B		D.-				1		
	4 6	833A 833A	A- A-							P-			A-									

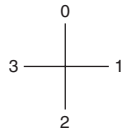
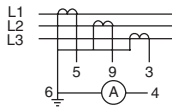
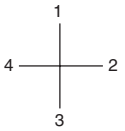
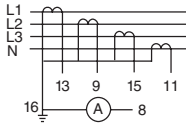
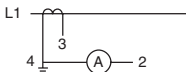
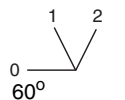
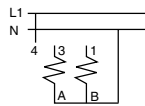
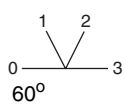
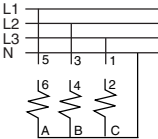
Ordering examples: Bulletin 194L-HE6A-733 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDC-001 lock actuator for central fixture of 194L-E

① Control knob positions see page 10-18

PQ = Package Quantity

Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Body and Actuator Combinations

Switch Bodies					For Front/Door Mounting					For Base/DIN Rail Mounting				
Function Switching angle	Circuit diagram	Poles	Switch banks	Circuit diagram no.	Cat. No.				PQ	Cat. No.				PQ
					194L-E					194L-A				
					Rated current [A]					Rated current [A]				
					12-	16-	20-	25-		12-	16-	20-	25-	
Ammeter selector switches														
3 c.t.s 		1	3	8751	12-				1	12-				1
90°		2	5	8752	12-									
4 c.t.s 		1	4	8761	12-				1	12-				1
90°														
1 c.t. 		1	1	8771	12-				1	12-				1
90°														
Group switches														
2 groups O-A-(A+B) 		-	1	6501	12-	16-	20-	25-	1					
3 groups O-A-(A+B)-(A+B+C) 		-	2	6511	12-	16-	20-	25-	1					

Ordering examples: Bulletin 194L-E12-8751 switch bodies for front/door mounting; Bulletin 194L-A12-8751 switch bodies for base/DIN rail mounting

PQ = Package Quantity

Type Description - Page 10-18
 Accessories - Page 10-45
 Specifications - Page 10-56
 Dimensions - Page 10-64

Actuators			For Screw Fixture									For Central Fixture									
			Cat. No.		194L-HE							PQ	Cat. No.		194L-HC						PQ
Switch position	Legend plate size	Legend plate no.	Actuator type										Actuator type								
			A-	E-	G-	I-	L-	N-	P-	S-		A-	B-	C.-❶	D.-❶	E-	I-	L-			
All	none	001																			
	4 6	001 875 875	A- A- A-						P-		1	A-	B-		D-				1		
	4 6	001 876 876	A- A- A-								1	A-	B-		D-				1		
	4 6	001 178 178	A- A- A-								1	A-	B-	C.-	D-				1		
	4 6	001 550 550	A- A- A-								1	A-	B-		D-				1		
	4 6	001 551 551	A- A- A-								1	A-	B-		D-				1		

Ordering examples: Bulletin 194L-HE4A-875 actuator for screw fixture of 194L-E or 194L-A; Bulletin 194L-HCDG-001 lock actuator for central fixture of 194L-E
❶ Control knob positions see page 10-18

PQ = Package Quantity

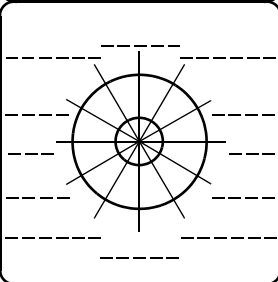
Type Description - Page 10-18
Accessories - Page 10-45
Specifications - Page 10-56
Dimensions - Page 10-64

Switch Specifications for Special Versions of Bulletin 194L Switches

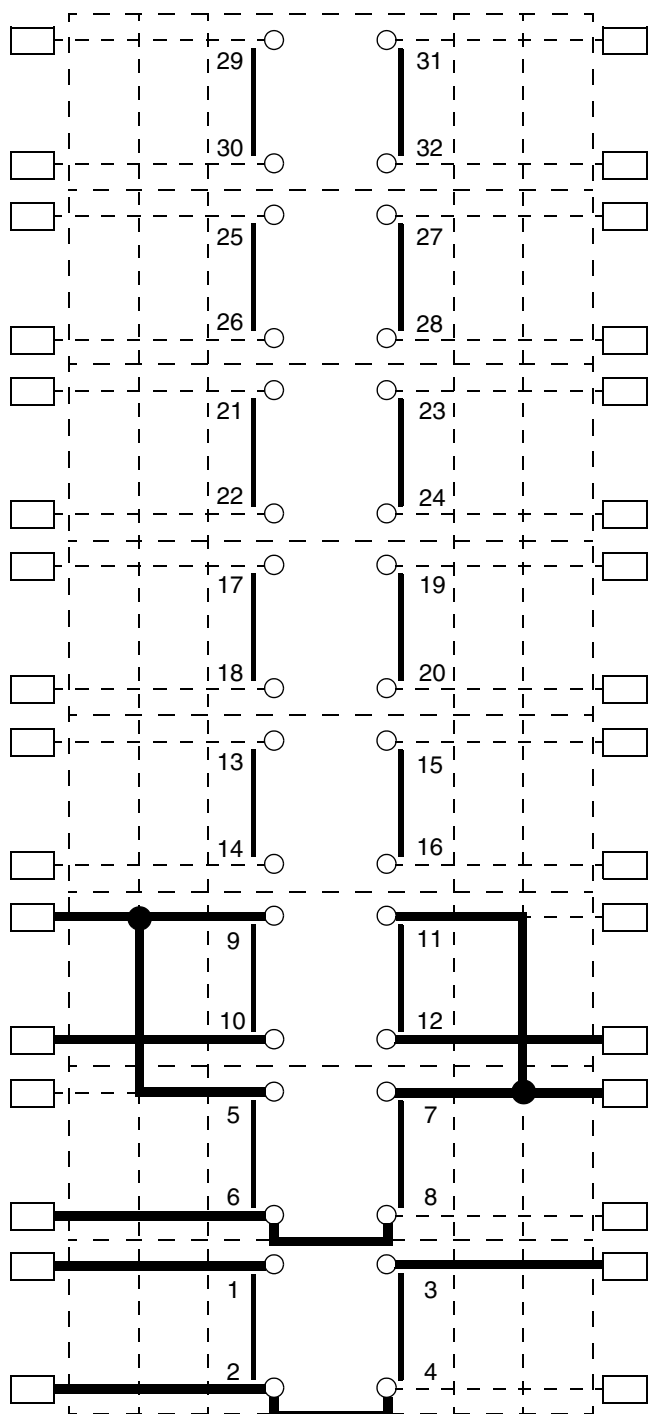
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Ordering Example for Special Bulletin 194L Switches

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Quantity: 50 pcs.		Delivery Date: week 36 Customer order no.: 99.999.999			

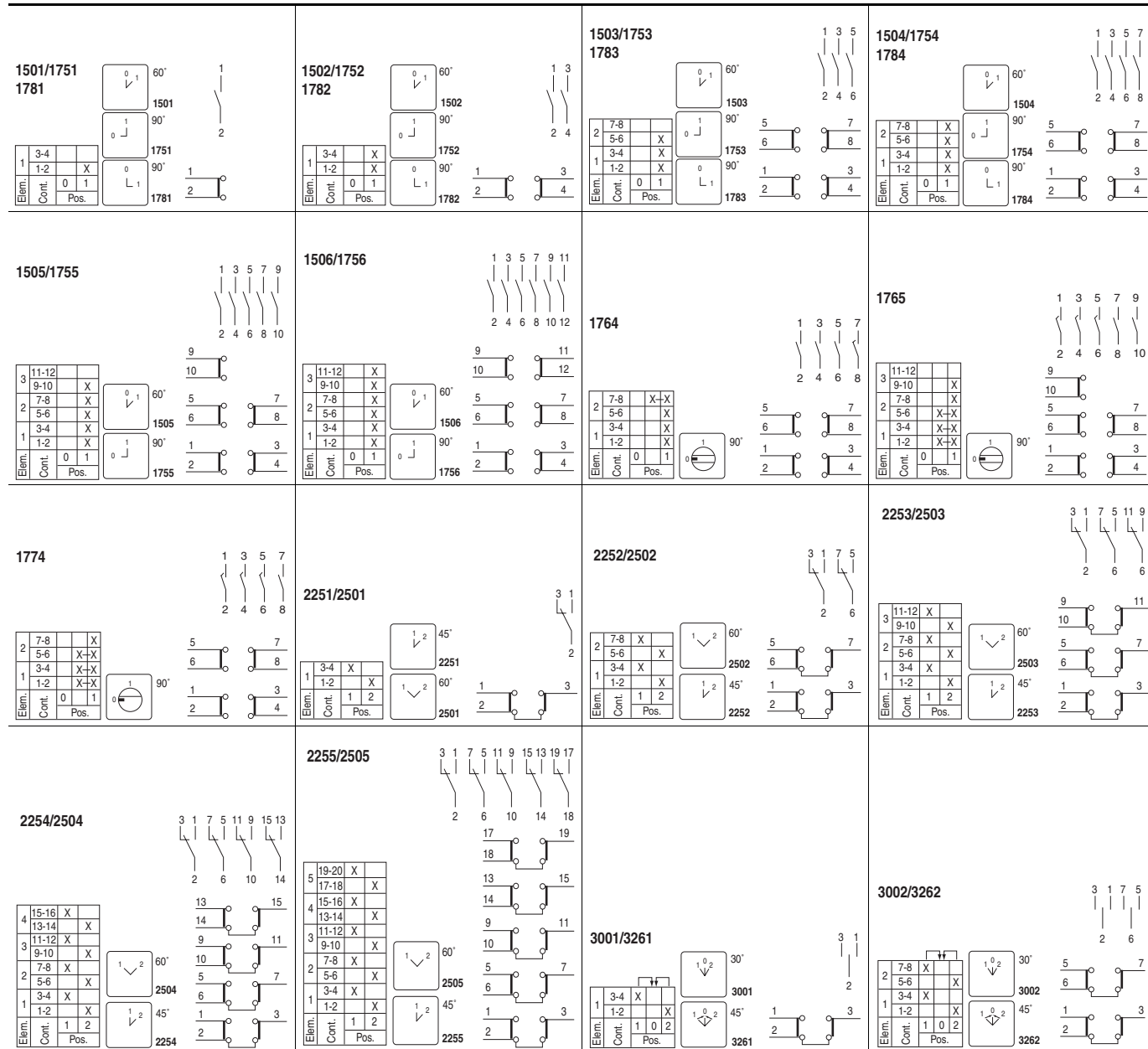
Legend plate Quantity											
											
30° 60° ☒ 45° 90°											
8	31-32 29-30										
7	27-28 25-26										
6	23-24 21-22										
5	19-20 17-18										
4	15-16 13-14										
3	11-12 9-10			X							
2	7-8 5-6	X		X							
1	3-4 1-2			X	X						
Switch elements	Contacts	O	M A N	1	A U T						
X Closed contacts ↶ Return X - X Contacts closed in several positions											
Notes											
Switch type						Rated current					
1	9	4	L	E	1	2	A	12			

Actuators											
1	9	4	L	H	E	4	A				

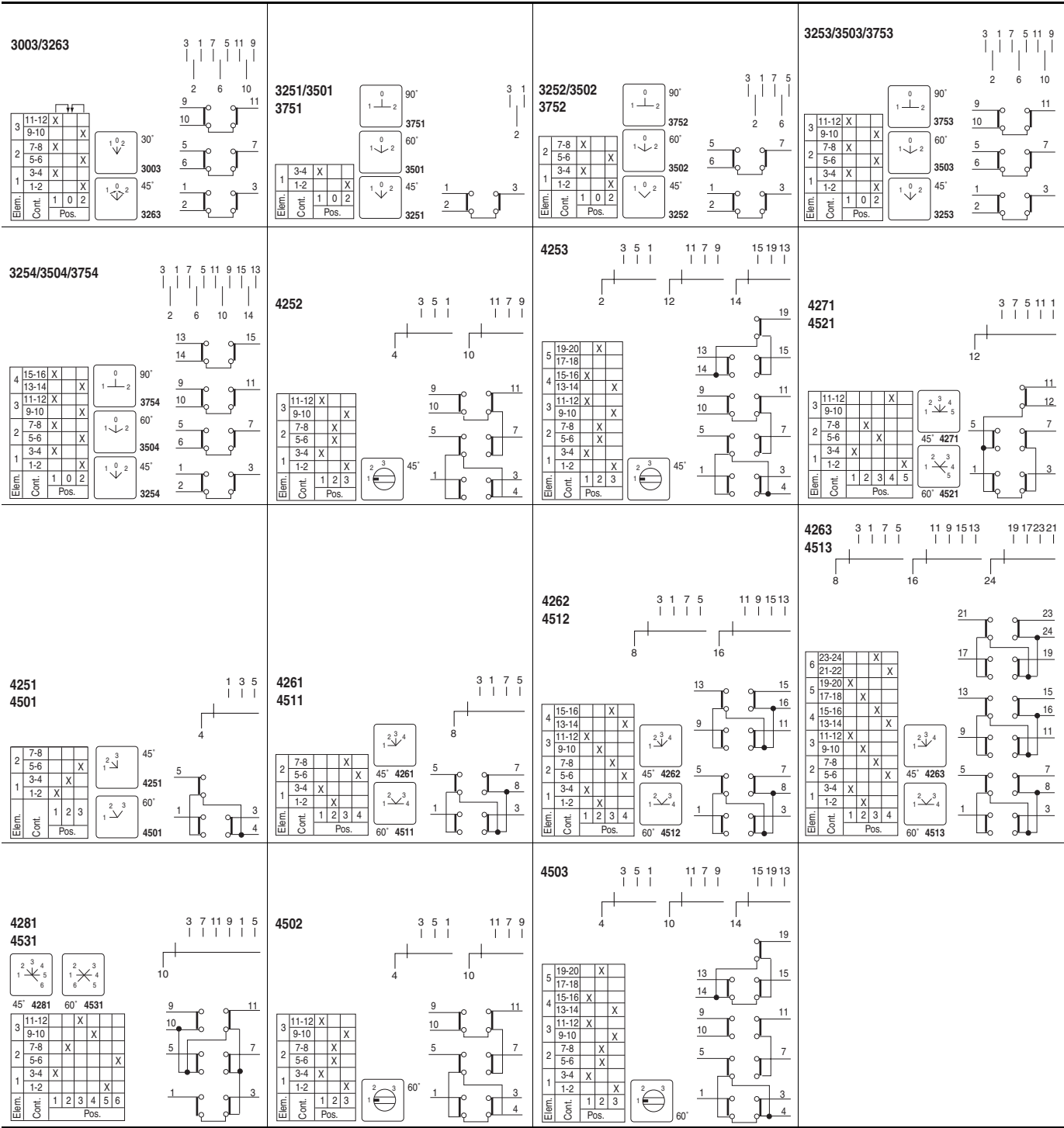


10

Circuit Diagram No. 1501...3002/3262



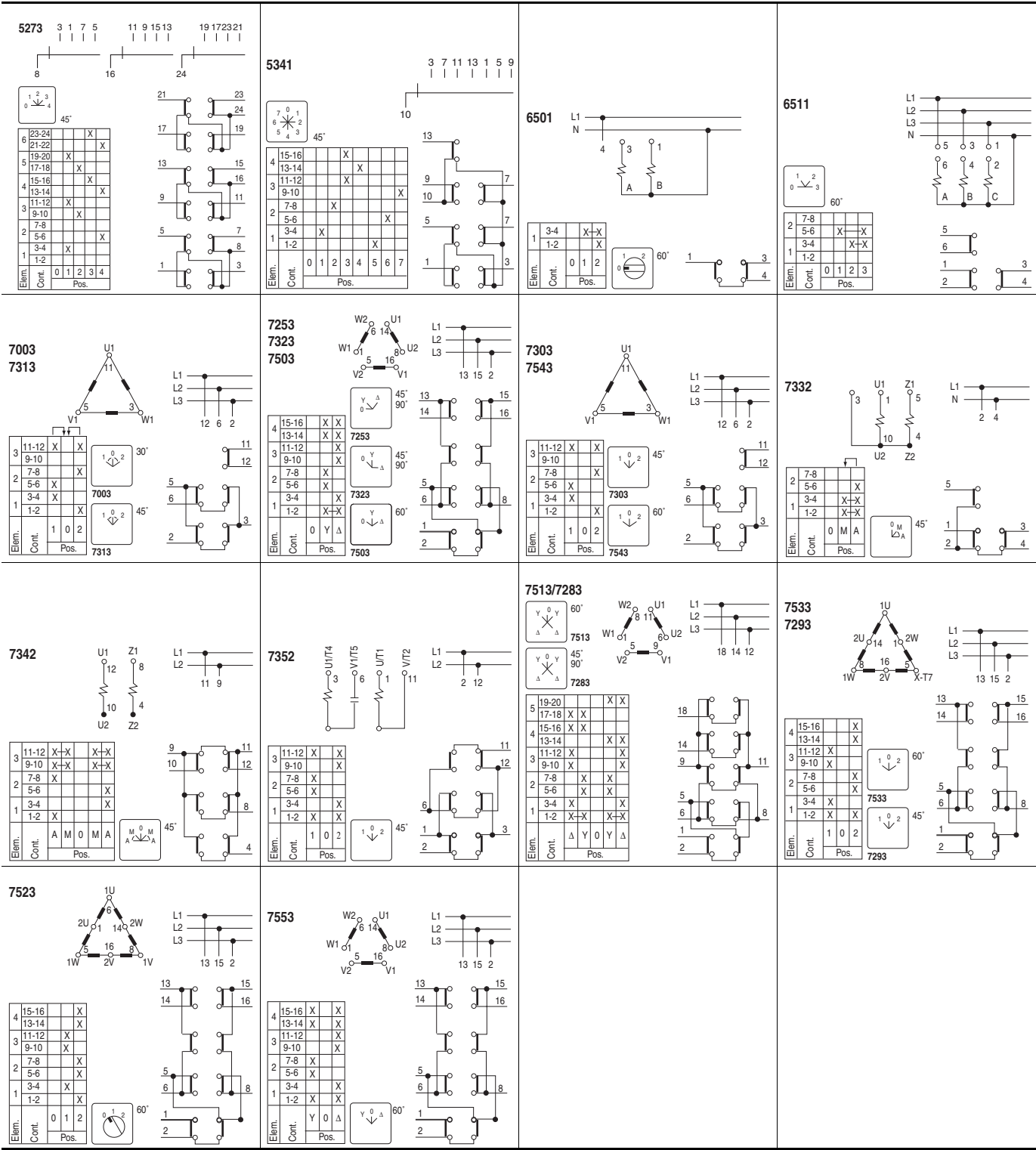
Circuit Diagram No. 3003...4503



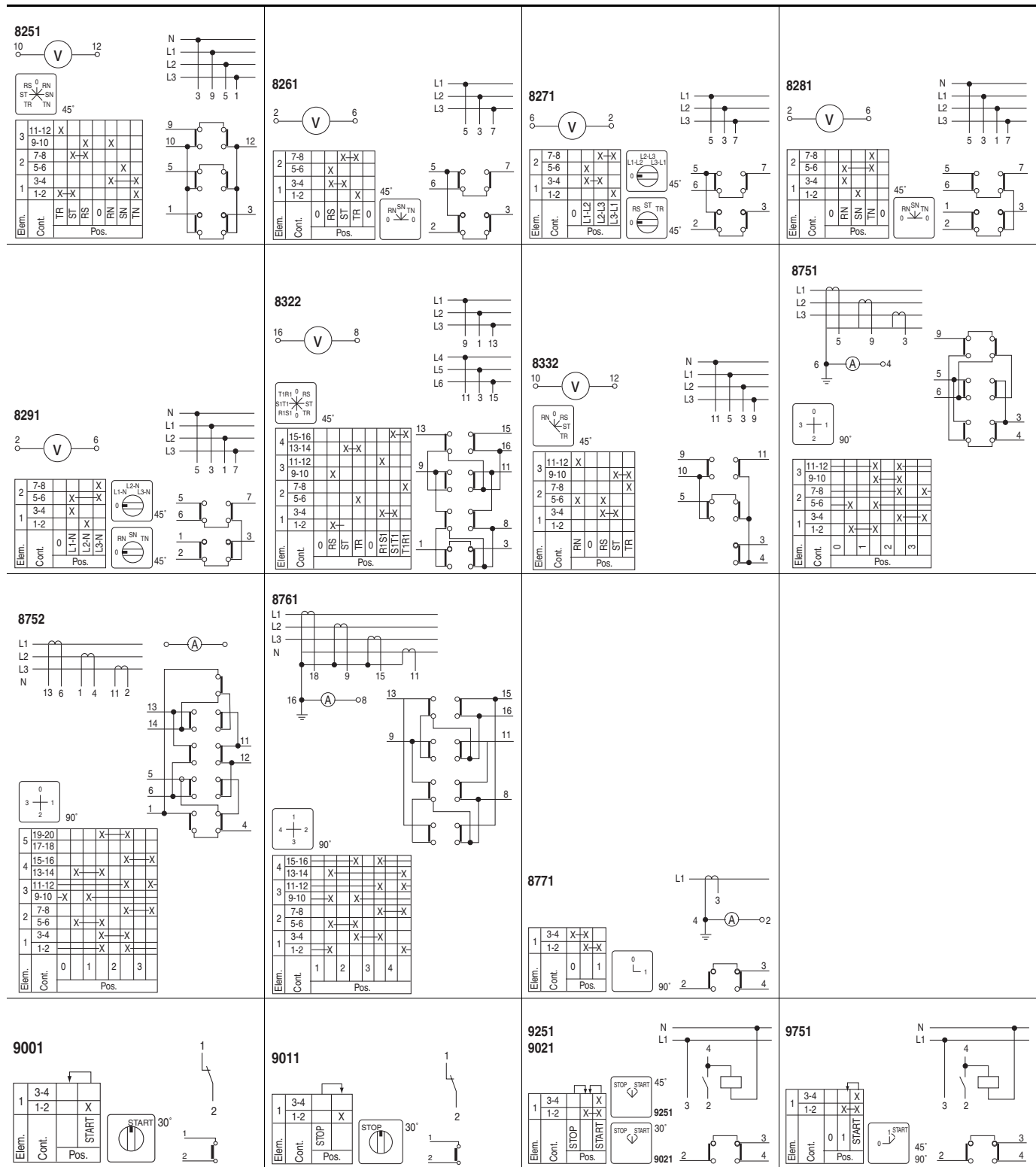
Circuit Diagram No. 5001...5272



Circuit Diagram No. 5273...7553



Circuit Diagram No. 8251...9751



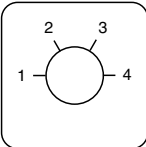
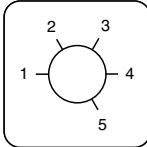
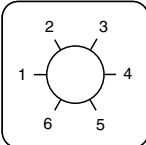
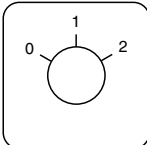
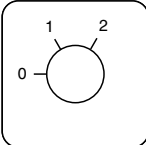
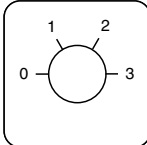
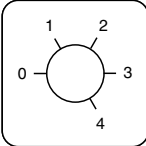
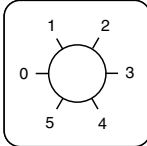
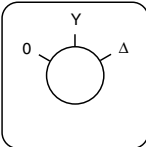
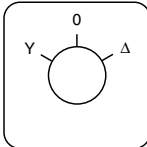
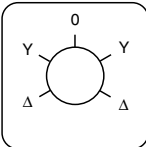
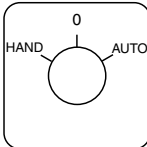
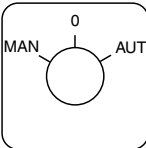
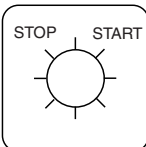
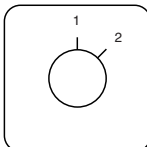
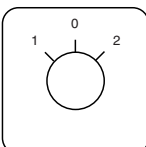
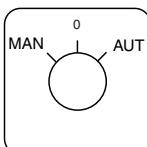
Legend Plates for Actuators (Types A, C, E, I, L, P, S)

Legend Plate	For Use with	Cat. No.	PQ		Legend Plate	For Use with	Cat. No.	PQ
Neutral								
	194C	194C-C3-000	10	① ② ① ②		194L	194L-P4-000	10
	194L, 194E	194L-A4-000 194L-I4-000 194L-A6-000 194L-I6-000						
	194E	194L-A8-000 194L-I8-000	10	① ②				
30°								
	194C	194C-C3-900	10			194C	194C-C3-901	10
	194L	194L-A4-900 194L-A6-900	10			194L	194L-A4-901 194L-A6-901	10
	194C	194C-C3-902	10			194C	194C-C3-300	10
	194L	194L-A4-902 194L-A6-902	10			194L	194L-A4-300 194L-A6-300	10
	194C	194C-C3-500	10			194C	194C-C3-501	10
	194L	194L-A4-500 194L-A6-500	10			194L	194L-A4-501 194L-A6-501	10
	194C	194C-C3-502	10					
	194L	194L-A4-502 194L-A6-502	10					
60°								
	194C	194C-C3-150	10			194C	194C-C3-250	10
	194L	194L-A4-150 194L-A6-150	10			194L	194L-A4-250 194L-A6-250	10
	194C	194C-C3-350	10			194C	194C-C3-450	10
	194L	194L-A4-350 194L-A6-350	10			194L	194L-A4-450 194L-A6-450	10

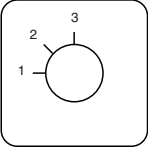
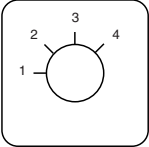
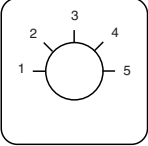
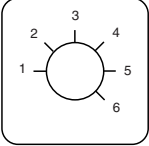
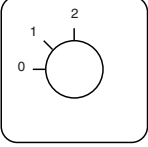
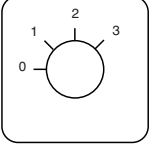
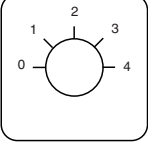
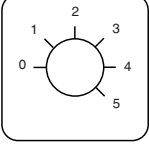
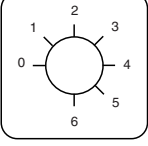
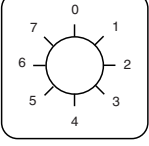
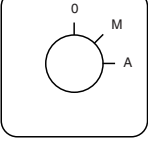
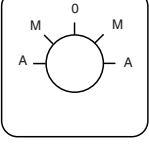
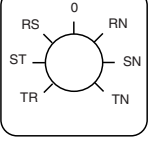
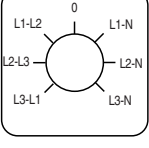
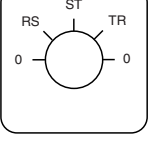
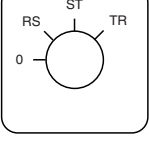
- ① Grey legend plate
② Yellow legend plate

PQ = Package Quantity

Legend Plates for Actuators (Types A, C, E, I, L, P, S)

Legend Plate	For Use with	Cat. No.	PQ		Legend Plate	For Use with	Cat. No.	PQ
60°								
	194C	194C-C3-451	10			194C	194C-C3-452	10
	194L	194L-A4-451 194L-A6-451	10			194L	194L-A4-452 194L-A6-452	10
	194C	194C-C3-453	10			194L	194L-A4-752 194L-A6-752	10
	194L	194L-A4-453 194L-A6-453	10					
	194C	194C-C3-550	10			194L	194L-A4-551 194L-A6-551	10
	194L	194L-A4-550 194L-A6-550	10					
	194L	194L-A4-552 194L-A6-552	10			194L	194L-A4-553 194L-A6-553	10
	194L	194L-A4-750 194L-A6-750	10			194L	194L-A4-755 194L-A6-755	10
	194L	194L-A4-751 194L-A6-751	10			194C	194C-C3-350A	10
						194L	194L-A4-350A 194L-A6-350A	10
	194L	194L-A4-350R 194L-A6-350R	10					
45°								
	194L	194L-A4-925 194L-A6-925	10			194L	194L-A4-225 194L-A6-225 194L-P4-225	10
	194L	194L-A4-325 194L-A6-325 194L-P4-325	10			194L	194L-A4-325R 194L-A6-325R 194L-P4-325R	10

Legend Plates for Actuators (Types A, C, E, I, L, P, S)

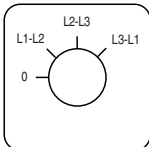
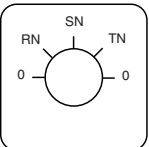
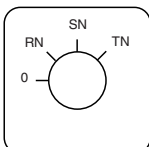
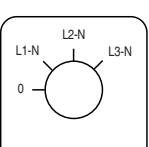
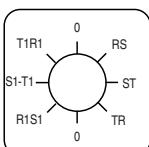
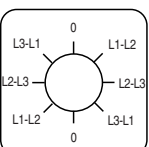
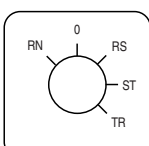
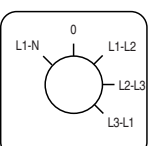
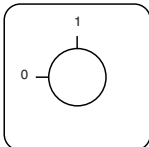
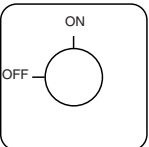
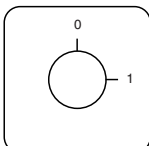
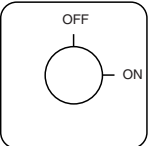
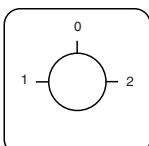
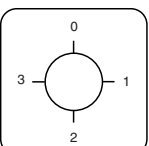
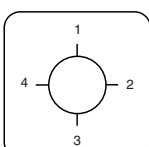
Legend Plate	For Use with	Cat. No.	PQ	Legend Plate	For Use with	Cat. No.	PQ
45°							
	194L	194L-A4-425 194L-A6-425	10		194L	194L-A4-426 194L-A6-426	10
	194L	194L-A4-427 194L-A6-427	10		194L	194L-A4-428 194L-A6-428	10
	194L	194L-A4-525 194L-A6-525	10		194C	194C-C3-526	10
					194L	194L-A4-526 194L-A6-526	10
	194L	194L-A4-527 194L-A6-527	10		194L	194L-A4-528 194L-A6-528	10
	194L	194L-A4-529 194L-A6-529	10		194L	194L-A4-534 194L-A6-534	10
	194L	194L-A4-733 194L-A6-733	10		194L	194L-A4-734 194L-A6-734	10
	194C	194C-C3-825	10		194C	194C-C3-825A	10
	194L	194L-A4-825 194L-A6-825 194L-P4-825	10		194L	194L-A4-825A 194L-A6-825A 194L-P4-825A	10
	194L	194L-A4-826 194L-A6-826 194L-P4-826	10		194C	194C-C3-827	10
					194L	194L-A4-827 194L-A6-827	10

10

PQ = Package Quantity

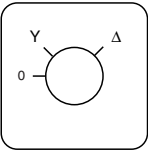
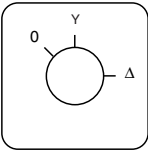
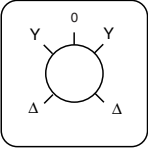
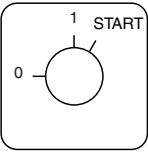
Bulletin 194C, 194L, 194E
Control and Load Switches
Accessories

Legend Plates for Actuators (Types A, C, E, I, L, P, S)

Legend Plate	For Use with	Cat. No.	PQ	Legend Plate	For Use with	Cat. No.	PQ
45°							
	194C	194C-C3-827A	10		194L	194L-A4-828 194L-A6-828	10
	194L	194L-A4-827A 194L-A6-827A 194L-P4-827A	10				
	194C	194C-C3-829	10		194C	194C-C3-829A	10
	194L	194L-A4-829 194L-A6-829	10		194L	194L-A4-829A 194L-A6-829A 194L-P4-829A	10
	194L	194L-A4-832 194L-A6-832	10		194L	194L-A4-832A 194L-A6-832A 194L-P4-832A	10
	194L	194L-A4-833 194L-A6-833	10		194L	194L-A4-833A 194L-A6-833A 194L-P4-833A	10
90°							
	194C	194C-C3-175	10		194C	194C-C3-175I	10
	194L	194L-P4-175	10		194L	194L-P4-175I	10
	194L, 194E	194L-A4-175 194L-A6-175 194L-I4-175 194L-I6-175	10		194L, 194E	194L-A4-175I 194L-A6-175I 194L-I4-175I 194L-I6-175I	10
	194E	194L-A8-175 194L-I8-175	10		194E	194L-A8-175I 194L-I8-175I	10
	194C	194C-C3-178	10		194L	194L-A4-178I 194L-A6-178I 194L-I4-178I 194L-I6-178I 194L-P4-178I	10
	194L	194L-A4-178 194L-A6-178 194L-I4-178 194L-I6-178 194L-P4-178	10				
	194L	194L-A4-375 194L-A6-375	10		194C	194C-C3-875	10
					194L	194L-A4-875 194L-A6-875 194L-P4-875	10
	194C	194C-C3-876	10				
	194L	194L-A4-876 194L-A6-876	10				

PQ = Package Quantity

Legend Plates for Actuators (Types A, C, E, I, L, P, S)

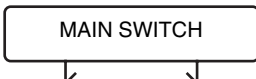
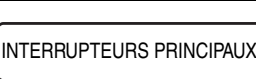
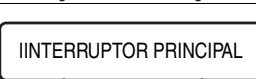
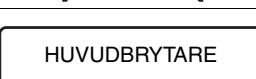
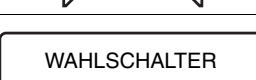
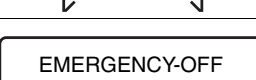
Legend Plate	For Use with	Cat. No.	PQ		Legend Plate	For Use with	Cat. No.	PQ
90°/45°								
	194L	194L-A4-725 194L-A6-725	10			194L	194L-A4-732 194L-A6-732	10
	194L	194L-A4-728 194L-A6-728	10					
90°/30°								
	194C	194C-C3-975	10					
	194L	194L-A4-975 194L-A6-975	10					

PQ = Package Quantity

Bulletin 194C, 194L, 194E
Control and Load Switches
Accessories

	Description			For Use with	Cat. No.	PQ
	Shaft	Length: 34 mm Length: 34 mm	plastic metal	194L-E 194E-E	194L-G3380 194E-G3688	5
	Shafts	Length: 44 mm Length: 52 mm Length: 57 mm Length: 44 mm Length: 52 mm	plastic plastic plastic metal metal	194L-A, 194E-A	194L-G2830 194L-G3194 194L-G3195 194E-G3687 194E-G3707	5
	Shaft Extensions (and enclosure extensions) (Max. 4 pieces) 2 pieces each L = 24 mm			194L-A, 194E-A	194L-G2853	10
	Metal Shaft Extensions Locking possibility with provision for locking in position „0“ with padlock 			194L-A, 194E-A	194L-G3393 194L-G3394	1
	Inserts for modifying Bulletin 194L-G3393 and 194L-G3394 metal shaft extensions with switch position: Provision for padlock in position "0" 			194L-A	194L-G3398	10
	Inserts for modifying Bulletin 194L-G3393 and 194L-G3394 metal shaft extensions for all switch positions (360°)			194L-A	194L-G3399	10
	Mechanical Interlock for 6-pole Switches for 194E-25/32 for 194E-40/63 for 194E-80/100			194E	194E-G3660 194E-G3661 194E-G3662	1
	Standard Black Knob			194C	194C-G3381	10
	Lever Knobs	Length: 37.5 mm	black red	194L, 194E	194L-G3154N 194L-G3154R	5
		Length: 48 mm	black red	194L, 194E	194L-G3155N 194L-G3155R	
	Lever Knobs with Locking Device black red			194L, 194E	194L-G2864N 194L-G2864R	5
	Flat Knob and Shaft for Bulletin 194E-A Flat knob with door interlock Protection class IP66 black red / yellow			194E-A	194R-HS4 194R-HS4E	1
	Metal shaft Length 300 mm				194E-G3675	

PQ = Package Quantity

	Description		For Use with	Cat. No.	PQ
	Flat Knobs ø 31 mm	Protection class IP40 black red	194L-A with type "P" actuator	194L-G2888N 194L-G2888R	5
	Flat Knobs ø 41 mm, black	Protection class IP40	194L-E	194L-G2851N	50
		Protection class IP65	194L-E	194L-G2854N	10
	Legend Holder Secured by legend plate Protection class IP 65 with Bulletin 194E switch	Size: 30 x 40 mm Size: 30 x 50 mm	with 194L-HCB, 194L-HCD actuators	800E-110 800E-120	10
	Blank Legend Insert For size 30 x 40 mm label holders For size 30 x 50 mm label holders For legend inserts with text, see catalogue Bulletin 800E		194L	800E-17BE100 800E-18BE100	10
	Label Holder blank, for engraving by user Label size: 27.5 x 7.5 mm 27.5 x 17.5 mm	Size: 30 x 39 mm Size: 30 x 50 mm	194C	194C-G3382 194C-G3383	5
	Additional Nameplates with and without Engraved Text For 48 x 48 mm, 64 x 64 mm and 67 x 67 mm actuators	Size: 48 x 15 mm	194L-E	194L-G3667	5
	For 88 x 88 mm, 90 x 90 mm, 130 x 130 mm and 135 x 135 mm actuators	Size: 88 x 18 mm		194L-G3515	
	MAIN SWITCH	Size: 48 x 15 mm Size: 88 x 18 mm	194L-E	194L-G3667A 194L-G3515A	5
	HAUPTSCHALTER	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667B 194L-G3515B	5
	INTERRUTTORE PRINCIPALE	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667C 194L-G3515C	5
	INTERRUPTEURS PRINCIPAUX	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667D 194L-G3515D	5
	IINTERRUPTOR PRINCIPAL	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667E 194L-G3515E	5
	HUVUDBRYTARE	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667F 194L-G3515F	5
	WAHLSCHALTER	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667G 194L-G3515G	5
	EMERGENCY-OFF	Size: 48 x 15 mm Size: 88 x 18 mm		194L-G3667H 194L-G3515H	5

Bulletin 194C, 194L, 194E
Control and Load Switches
Accessories

	Description	For Use with	Cat. No.	PQ
	Rectangular Front Frame with additional blank label, without knob and legend plate			
	Size 48 x 62 mm Size 64 x 78 mm	194L, 194E 194L, 194E	194L-G3196 194L-G3197	10
	Terminal Covers 3-/4-poles	194L-E12/16 194L-E20/25 194L-A12/16 194L-A20/25	194L-E12-C34 194L-E20-C34 194L-A12-C34 194L-A20-C34	2
	Terminal Cover 1 pole	194E-25/32 194E-40/63 194E-80/100	194E-25-C1 194E-40-C1 194E-80-C1	2
	Terminal Cover 3 poles	194E-25/32 194E-40/63 194E-80/100	194E-25-C3 194E-40-C3 194E-80-C3	2
	Terminal Cover 4 poles	194E-25/32 194E-40/63 194E-80/100	194E-25-C4 194E-40-C4 194E-80-C4	2
	Installation Tool (Locking Ring Wrench) for fastening the nut during central attachment	194C, 194L, 194E	800E-AW2	1
	Thermo-Plastic Enclosure Dimensions: 95 x 150 x 86 mm, protection class IP65. For use with 194L-A 12/16/20/25 with max. 2 switch banks, and 194E-25/32 with max. 4 poles. Enclosure with holes ABS Noryl	194L-A, 194E	194L-G3572★ 194L-G3576★	1
	Enclosure without holes ABS Noryl	194L-A	194L-G3574★ 194L-G3578★	1
	Dimensions: 95 x 150 x 111 mm, Protection Class IP65. For use with 194L-A 12/16 with max. 5 switch banks and 194L-A 20/25 with max. 4 switch banks. Enclosure with holes ABS Noryl	194L-A	194L-G3573★ 194L-G3577★	1
	Enclosure without holes ABS Noryl		194L-G3575★ 194L-G3579★	
	Dimensions: 125 x 180 x 105 mm, protection class IP65 for use with 194E-40/63 (3-4 Poles) and 194E-25/32 (6 poles). Enclosure ABS Noryl	194E-A	194E-G3663★ 194E-G3664★	1
	Dimensions: 175 x 230 x 120 mm, protection class IP65 for use with 194E-80/100 (3-4 poles) and 194E-40/63 (6 poles). Enclosure ABS Noryl	194E-A	194E-G3665★ 194E-G3666★	1
	Additional Ground- and Neutral Conductor Terminals for Use with Thermoplastic Enclosure for use with 194L-G3572 and 194L-G3576 for use with 194E-G3663, 194E-G3664, 194E-G3665 and 194E-G3666	194E-A	194E-G3653 194E-G3673	5

Options	Cat. No. Suffix	Description	Ordering Example
★ Screw-down Wiring	Blank	⌵ For screw-down wiring PG	194L-G3572
	M	⌵ For metric screw-down wiring	194L-G3572M

PQ = Package Quantity

Selection of matching Shaft for Enclosure

Enclosure Type	Suitable for			Suitable for		
	194L	No. Contacts	Shaft	194E-B	No. Contacts	Shaft
194L-G3572 194L-G3576 (95 x 150 x 86 mm)	194L-A12 (16) 194L-A12 (16) 194L-A20 (25) 194L-A20 (25)	1 2 1 2	194L-G3195 Standard 194L-G3194 Standard	194E-A25 (32)	3 and 4P	194L-G3194
194L-G3573 194L-G3577 (95 x 150 x 111 mm)	194L-A12 (16) 194L-A12 (16) 194L-A12 (16) 194L-A20 (25) 194L-A20 (25)	3 4 5 3 4	194L-G3195 194L-G3194 Standard 194L-G3194 Standard			
194E-G3663 194E-G3664 (125 x 180 x 105 mm)				194E-A40 (63) 194E-A25 (32)	3 and 4P 6P	194L-G3194 Standard
194E-G3665 194E-G3666 (175 x 230 x 120 mm)				194E-A80 (100) 194E-A40 (63)	3 and 4P 6P	194E-G3707 Standard

Maximum Accessories in Enclosure

Enclosure Type	Switch	Poles	Shaft	Auxiliary Contacts (single or double)	Fourth Poles	Neutral Terminal	Ground Terminal	Neutral Terminal	Ground Terminal
					on switch			in enclosure	
194L-G3572 194L-G3576 (95 x 150 x 86 mm)	194E-A25 (32)	3P	194L-G3194	•	•				
				•					
				•			•		
					•		•		
				•		•	•		
				•				•	•
194E-G3663 194E-G3664 (125 x 180 x 105 mm)	194E-A40 (63)	3P	194L-G3194	•	•			•	•
				•		•		•	•
				•			•	•	•
					•		•	•	•
						•	•	•	•
	194E-A25 (32)	6P	Standard		•		•	•	•
194E-G3665 194E-G3666 (175 x 230 x 120 mm)	194E-A80 (100)	3P	194E-G3707	•	•			•	•
				•		•		•	•
				•			•	•	•
					•		•	•	•
						•	•	•	•
	194E-A40 (63)	6P	Standard	1L + 1R			•	•	•

Serie 194C, 194L
Control and Load Switches
Specifications

IEC Performance Data for 194C, 194L

			194C	194L				
			10 A	12 A	16 A	20 A	25 A	
Rated Voltage U_e	IEC 947	[V]	440	690	690	690	690	
	SEV max.	[V]	380	660	660	660	660	
	CEE 24/NEMKO	[V]	380	500	500	500	500	
Principal Switching Characteristics								
Isolating conditions per VDE fulfilled up to rated impulse voltage U_{imp}		[V] [kV]	250 4	690 6	690 6	690 6	690 6	
Thermal Rated Current I_{th}	IEC 947	[A]	10	16	20	25	30	
Thermal Rated Current I_{the}	IEC 947	[A]	—	12	16	20	25	
Rated Current I_e								
AC-1/ Non- or slightly inductive loads								
AC-21A Switching of inductive loads with slight overload	IEC 947	690 V[A]	10 ❶	12	16	20	25	
AC-22A Switching of mixed resistive and inductive loads with slight overload	IEC 947	220...500 V	[A]	—	12	16	20	25
		690 V	[A]	—	12	16	20	25
AC-15 Switching of magnetic drives, motors, valves, and pull-type electromagnet	IEC 947	220...240 V	[A]	2.5	5	6	7	8
		380...440 V	[A]	1.5	3	4	5	6
		500 V	[A]	—	2	2.5	3	4
DC Switching Capacity								
Contacts in series:								
1 2 3 4 5 6 8								
Rated Current I_e								
DC-21A For resistive loads $T \leq 1$ ms $U_{e\ max} = 660$ V	Rated voltage [V]	24 48 72 96 120 144 192 [A]	10	12	16	20	22	
		48 96 144 192 240 288 384 [A]	6	10	12	16	18	
		60 120 180 240 300 360 450 [A]	2.5	8	10	12	14	
		110 220 330 440 550 660 — [A]	0.7	2	2.5	4	5	
		220 440 660 — — — — [A]	0.3	0.5	0.6	0.7	0.8	
		440 — — — — — — [A]	0.2	0.35	0.4	0.45	0.5	
Rated Making/Breaking Capacity ($=1.5 \times I_e$)								
For resistive loads $T \leq 1$ ms $U_{e\ max} = 660$ V	1.05 x rated voltage [V]	25.2 50.4 75.6 100.8 126 151.2 201.6 [A]	—	18	24	30	33	
		50.4 100.8 151.2 201.6 252 302.4 403.2 [A]	—	15	21	24	27	
		63 126 189 252 315 378 504 [A]	—	12	18	18	21	
		115.5 231 346.5 462 577.5 — — [A]	—	3	4.5	6	7.5	
		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								
For inductive loads $T = 50$ ms $U_{e\ max} = 660$ V	Rated voltage [V]	24 48 72 96 120 144 192 [A]	6	8	10	12	14	
		30 60 90 120 150 180 240 [A]	3	4.5	5.5	7	8	
		48 96 144 192 240 288 384 [A]	1	1.5	2	2.5	3	
		60 120 180 240 300 360 450 [A]	0.7	1	1.2	1.5	1.8	
		110 220 330 440 550 660 — [A]	0.3	0.4	0.5	0.6	0.7	
Rated Making/Breaking Capacity ($=1.1 \times I_e$)								
For inductive loads $T = 50$ ms $U_{e\ max} = 660$ V	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	
		33 66 99 132 165 198 231 [A]	—	4.95	6.05	7.7	8.8	
		52.8 105.6 158.4 211.2 264 316.8 369.6 [A]	—	1.65	2.2	2.75	3.3	
		66 132 198 264 330 396 462 [A]	—	1.1	1.32	1.65	1.98	
		121 242 363 484 605 — — [A]	—	0.44	0.55	0.66	0.77	

❶ Only at 380 V

IEC Performance Data for 194C, 194L

						194C	194L				
						10 A	12 A	16 A	20 A	25 A	
Rated Power P_e											
	Rated voltage [V]	Contacts in series									
	24	1	[kW]	—		0.12	0.15	0.20	0.25		
DC-23A, DC-3, DC-5	24	2	[kW]	—		0.20	0.25	0.30	0.37		
For inductive loads $T \leq 7.5$ ms	48	2	[kW]	—		0.25	0.30	0.37	0.50		
	48	3	[kW]	—		0.30	0.37	0.50	0.75		
	60	2	[kW]	—		0.25	0.30	0.37	0.50		
	60	4	[kW]	—		0.37	0.50	0.75	1.00		
	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		
Rated Making/Breaking Capacity ($=4 \times I_e$)											
	1.05 x rated voltage [V]	Contacts in series									
	25.2	1	[A]	—		20.0	25.0	33.3	41.6		
DC-23A, DC-3, DC-5	25.2	2	[A]	—		33.3	41.6	50.0	61.6		
For inductive loads $T \leq 15$ ms	50.4	2	[A]	—		21.0	25.0	30.8	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		
	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 220 V		[A]	60		72	96	128	176		
			[cos ϕ]	0.65		0.65	0.65	0.65	0.35		
	at 400 V		[A]	55		72	96	128	176		
			[cos ϕ]	0.65		0.65	0.65	0.65	0.35		
	at 690 V		[A]	—		53	72	86	112		
			[cos ϕ]	—		0.65	0.65	0.65	0.35		
Rated Power P_e											
	IEC 947	240 V	[kW]	2.5		3	4	5.5	5.5		
AC-2 Slip-ring motors: starting, reversing, and regenerative braking Star-Delta starting	3-phase / 3-poles	380 V	[kW]	4.5		5.5	7.5	9	13		
		415 V	[kW]	4.5		5.5	7.5	9	13		
		440 V	[kW]	4.5		5.5	7.5	9	13		
		500 V	[kW]	5.5		7.5	10	11	15		
		690 V	[kW]	—		7.5	10	11	15		
AC-3 Squirrel-cage motors: starting and stopping of running motors	3-phase / 3 poles	220...240 V	[kW]	1.5		2.2	3	4.5	5.5		
		380...440 V	[kW]	2.2		4	5.5	7.5	11		
		500 V	[kW]	—		5.5	7.5	10	13		
		690 V	[kW]	—		5.5	7.5	8	11		
	1-phase / 2 poles	110 V	[kW]	0.3		0.75	1.1	1.2	1.6		
	2 poles	220...240 V	[kW]	0.55		1.3	2.2	2.5	3.2		
		380...440 V	[kW]	0.75		2.2	3.7	4.5	5.5		

Serie 194C, 194L
Control and Load Switches
Specifications

IEC Performance Data for 194C, 194L

					194C	194L				
					10 A	12 A	16 A	20 A	25 A	
Rated Power P_e		IEC 9472	20...240 V	[kW]	0.37	0.75	1.5	3	4	
AC-4	Squirrel-cage motors: Starting, inching, reversing and regenerative braking	3-phase/ 3 poles	380...415 V	[kW]	0.55	1.5	2.2	3.7	5.5	
			440...500 V	[kW]	0.55	1.5	2.2	3.7	5.5	
		1-phase/ 2 poles	110 V	[kW]	0.15	0.18	0.37	0.55	0.75	
			240 V	[kW]	0.25	0.37	0.75	1.5	2.2	
			380 V	[kW]	0.5	0.75	1.1	1.8	3	
			440 V	[kW]	0.5	0.75	1.1	1.8	3	
AC-23A	Occasional switching of motors and other highly inductive loads (criterion for selecting disconnect switches)	3-phase/ 3 poles	220...240 V	[kW]	1.8	2.2	3	4.5	5.5	
			380...440 V	[kW]	3	4	5.5	7.5	11	
		1-phase/ 2 poles	500 V	[kW]	—	5.5	7.5	10	13	
			690 V	[kW]	—	5.5	7.5	8	11	
			110 V	[kW]	0.37	0.75	1.1	1.2	1.6	
			220...240 V	[kW]	0.75	1.3	2.2	2.5	3.2	
		380...440 V	[kW]	1.1	2.2	3.7	4.5	5.5		
Short-Circuit Withstand										
Rated short-time current (1 s)				[kA _{rms}]	0.3	0.48	0.48	0.6	0.75	
Maximum back-up fuse		(gL Characteristic)			[A]	10	20	20	20	25
Rated conditional short-circuit current				[kA]	—	6	6	5	5	
Switching Rate		Electrical	[operations/h]		150	120	120	120	120	

UL/CSA Performance Data for 194C, 194L

					194C	194L			
					10 A	12 A	16 A	20 A	25 A
Rated Voltage U_e			[VAC]		300	600	600	600	600
Heavy Pilot Duty Ampere Rating	Contact Class				A300	A600	A600	—	—
	Non- or slightly inductive loads ❶				[A]	10	12	16	20
Rated Power P_e	UL/CSA							(FLA)	(FLA)
Standard motor load DOL rating (similar to AC-3)	3-phase/ 3 poles	120 V	[HP]		7.5	1	1.5	2 (13.6)	3 (19.2)
		240 V	[HP]		1	2	3	4 (12.4)	6 (18)
		480 V	[HP]		—	5	7.5	8 (11.6)	12 (17)
		600 V	[HP]		—	5	7.5	10 (11)	15 (17)
	1-phase/ 2 poles	120 V	[HP]		0.33	0.5	0.75	1 (16)	1.5 (20)
		240 V	[HP]		0.75	1	1.5	2 (12)	3 (17)
		277 V	[HP]		0.75	—	—	—	—
		480 V	[HP]		—	2	3	4 (11.2)	6 (17)
	3-phase/ 3 poles	600 V	[HP]		—	3	3	5 (11.2)	7.5 (16)
		120 V	[HP]		0.33	—	—	—	—
Motor-Schwerlast, Reversing Rating (similar AC-4)	3-phase/ 3 poles	240 V	[HP]		0.76	—	—	—	—
Max. back-up fuse	(gG Characteristic)				[A]	25	35	55	60
Switching Rate	Electrical		[operations/h]		150	120	120	120	120
Max. Terminal Cross Section									
 single-wire or stranded				[mm ²]	2 x 1.5	2 x 2.5	2 x 2.5	6	6
				[AWG]	14	12	12	10	10
 fine strands (with ferrule)				[mm ²]	1.5 ❷	2 x 2.5	2 x 2.5	2 x 4	2 x 4
				[AWG]	16	14	14	12	12

❶ Suitable for load-free switching (AC-20) over 660V. With rear fixing bolts max. 660V.

❷ Without ferrule

Mechanical Data

				194C	194L			
				10 A	12 A	16 A	20 A	25 A
Protection Class per IEC 529								
Actuator				IP65				
Switch Body				IP20				
Life Span								
mechanical		[Mio. operations]	1	1	1	1	1	
Switching Frequency								
mechanical		[operations/h]	2000	1200				
Max. Terminal Cross Section								
		single wire or	min. [mm ² /AWG]	—	2 x 1/18	2 x 1/18	2 x 1.5/16	2 x 1.5/16
		multi-stranded	max. [mm ² /AWG]	2 x 1.5/14	2 x 2.5/12	2 x 2.5/12	6/10	6/10
		fine strands	min. [mm ² /AWG]	—	2 x 0.75/20	2 x 0.75/20	2 x 1.5/16	2 x 1.5/16
		(with ferrule)	max. [mm ² /AWG]	1.5 ① /16	2 x 2.5/14	2 x 2.5/14	2 x 4/12	2 x 4/12

Temperature Data

		194C	194L			
		10 A	12 A	16 A	20 A	25 A
Ambient Temperature						
Operation	[°C]	-20 ... +55	-20 ... +60			
	[°F]	-4 ... +131	-4 ... +140			
Storage	[°C]	-30...+100	-30 ... +70			
	[°F]	-22...+212	-22 ... +158			

① Without ferrule

Approvals

	194C	194L			
	10 A	12 A	16 A	20 A	25 A
Testing Institutions					
CE	K	K			
UL Listed	—	A			
UL Recognized	A	—			
CSA	A	A			
Germanisch Lloyd	—	A			
Lloyds Register of Shipping	—	A			
RINA	—	A			

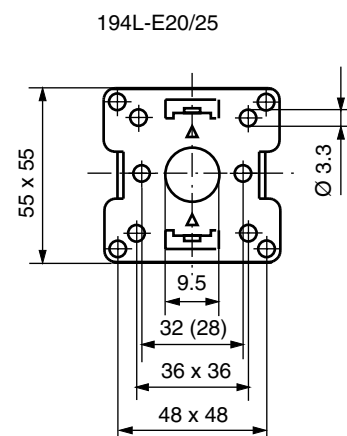
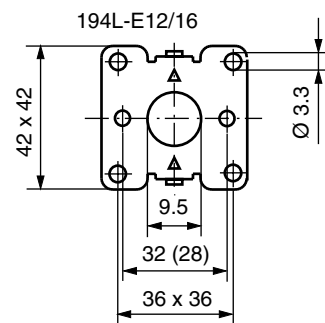
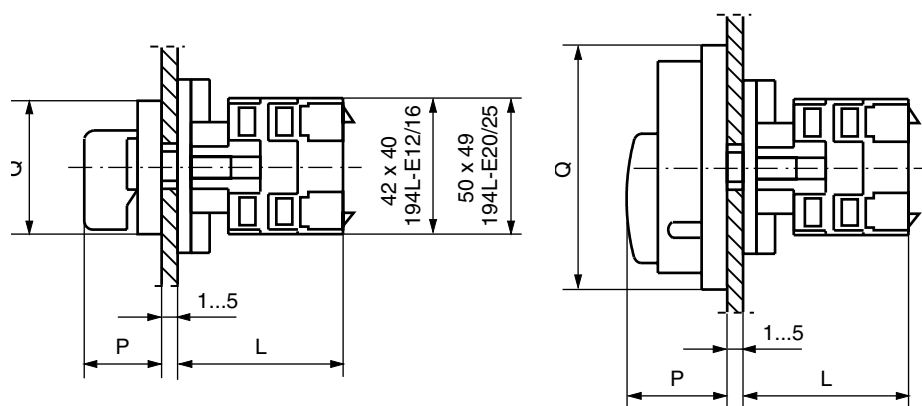
A = Approved or test passed

K = CE compliant

Front Mounting

Dimensions [mm]

Bulletin 194L-E Switch Bodies with 194L-HE Actuator for Screw Fixture

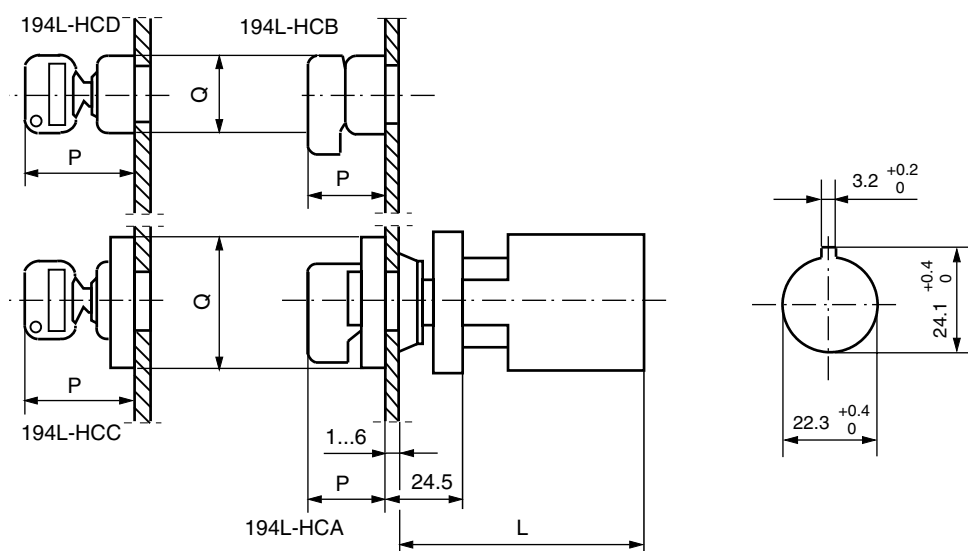


Actuators

Type	P	Q
194L-HE4A	28	48 x 48
194L-HE4I	28	48 x 48
194L-HE4S	28	48 x 62
194L-HE6A	28	64 x 64
194L-HE6I	28	64 x 64
194L-HE6S	28	64 x 78
194L-HE6N	34	67 x 67
194L-HE6G	34	67 x 67

Switch Banks	1	2	3	4	5	6	7	8
L for 194L-E12/16	44	54	64	74	84	94	104	114
L for 194L-E20/25	44.5	57	69.5	82	94.5	107	119.5	132

Bulletin 194L-E Switch Body with 194L-HC Actuator for Screw Fixture



Actuators

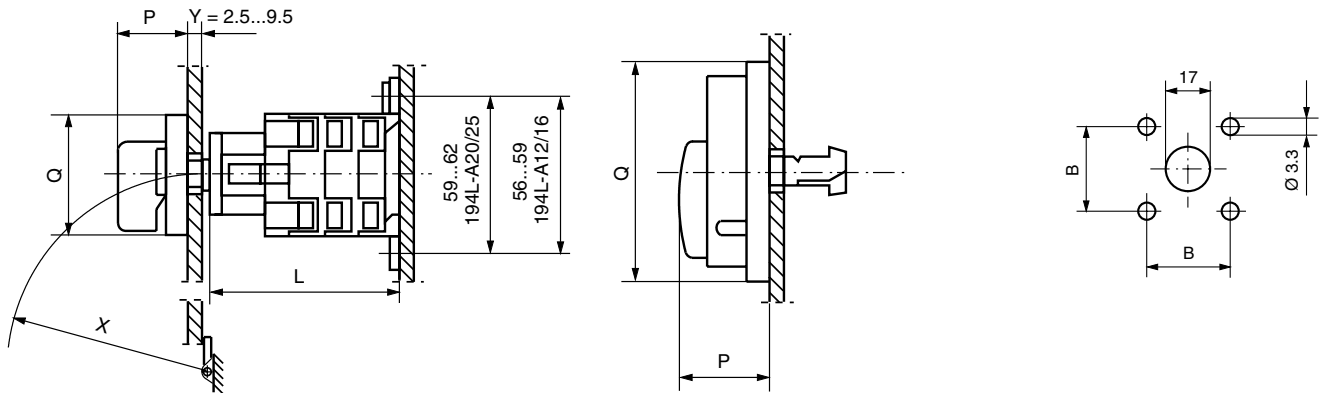
Type	P	Q
194L-HC4A	28	48 x 48
194L-HC4E	28	48 x 48
194L-HC4I	28	48 x 48
194L-HC4L	28	48 x 48
194L-HC4C	41	48 x 48
194L-HC4D	41	Ø30
194L-HC4B	28	Ø30
194L-HC6N	34	67 x 67
194L-HC6G	34	67 x 67

Switch Banks	1	2	3	4	5	6	7	8
L for 194L-E12/16	67.5	77.5	87.5	97.5	107.5	117.5	127.5	137.5
L for 194L-E20/25	69	81.5	94	106.5	119	131.5	144	156.5

Base Mounting

Dimensions [mm]

Bulletin 194L-A Switch Body with 194L-HE Actuator for Screw Fixture



Y min.	X ≤	Y max.	X ≤
2.5	150	9.5	90

Switch Banks	1	2	3	4
L for 194L-A12/16	58	68	78	88
L for 194L-A20/25	58	71.5	84	96.5

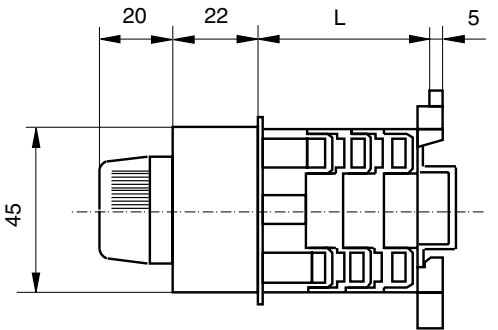
+ 2.5 mm for mounting on 35 mm DIN rail

Actuators

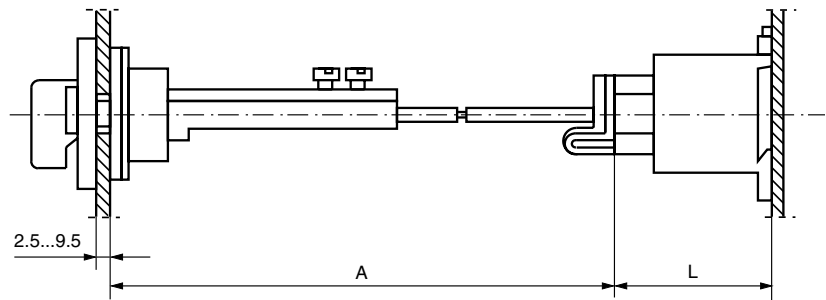
Type	P	B	Q
194L-HE4A	28	36	48 x 48
194L-HE4I	28	36	48 x 48
194L-HE4S	28	36	48 x 62
194L-HE6A	28	48	64 x 64
194L-HE6I	28	48	64 x 64
194L-HE6S	28	48	64 x 78
194L-HE6N	34	48	67 x 67
194L-HE6G	34	48	67 x 67

Bulletin 194L-A Switch Body with 194L-HE4P-... Actuator

Switch Banks	1	2	3	4
L for 194L-A12/16	54	64	74	84
L for 194L-A20/25	55	67.5	80	92.5



Bulletin 194L-A Switch Body with Metal Shaft Extension

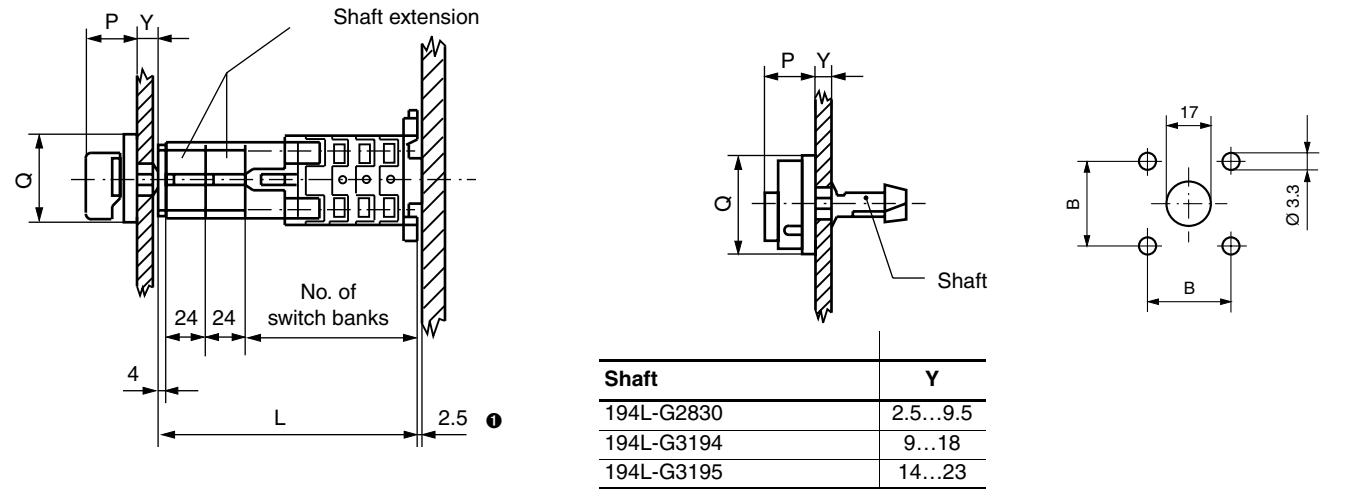


Switch Banks	1	2	3	4
L for 194L-A12/16	54	64	74	84
L for 194L-A20/25	55	67.5	80	92.5

+ 2.5 mm for mounting on 35 mm DIN rail

Type	A
194L-G3393	110...235
194L-G3394	230...350

Bulletin 194L-A Switch Body with 194L-HE Actuator and 194L-G2853 Shaft Extension



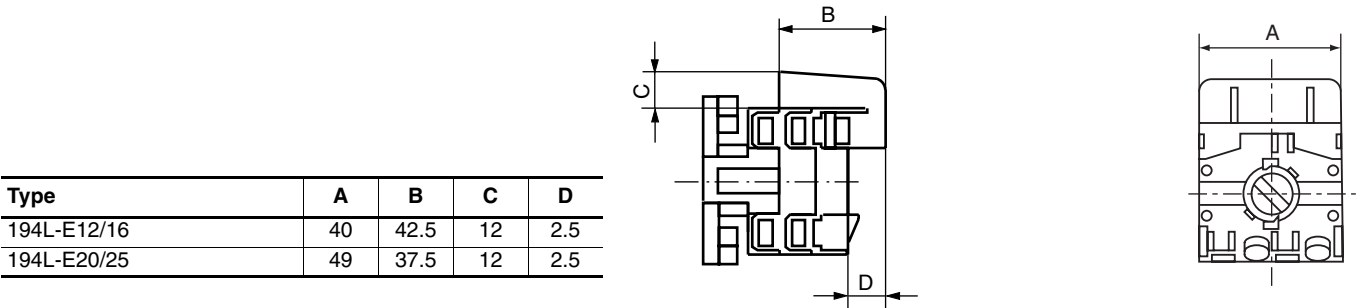
Switch Body	194L-A12/16			
No. Switch Banks	1	2	3	4
L with 1 shaft extension	82	92	102	112
L with 2 shaft extensions	106	116	126	136
L with 3 shaft extensions	130	140	150	160
L with 4 shaft extensions	154	164	174	184
L with 5 shaft extensions	178	188	198	208
L with 6 shaft extensions	202	212	222	232

● Mounting on 35 mm DIN rail

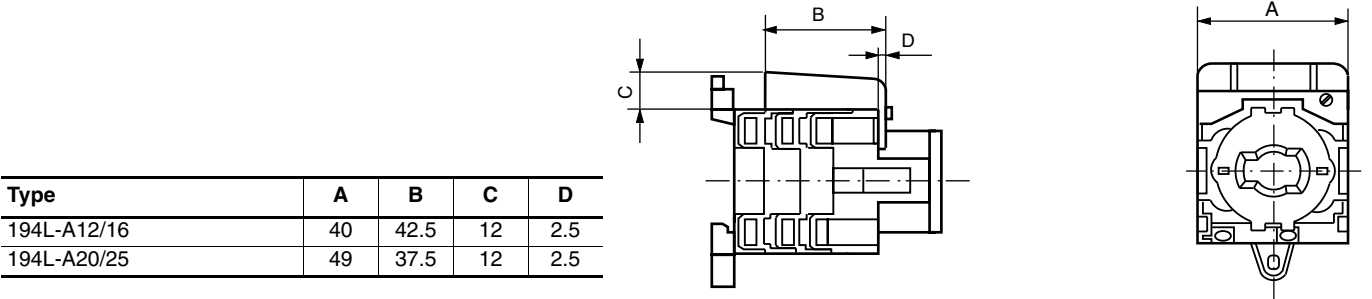
194L-A20/25			
1	2	3	4
83	95.5	108	120.5
107	119.5	132	144.5
131	143.5	156	168.5
155	167.5	180	192.5
179	191.5	204	216.5
203	215.5	228	240.5

Actuators	P	B	Q
Type			
194L-HE4A	28	36	48 x 48
194L-HE4I	28	36	48 x 48
194L-HE6A	28	48	64 x 64
194L-HE6I	28	48	64 x 64
194L-HE6N	34	48	67 x 67
194L-HE6G	34	48	67 x 67

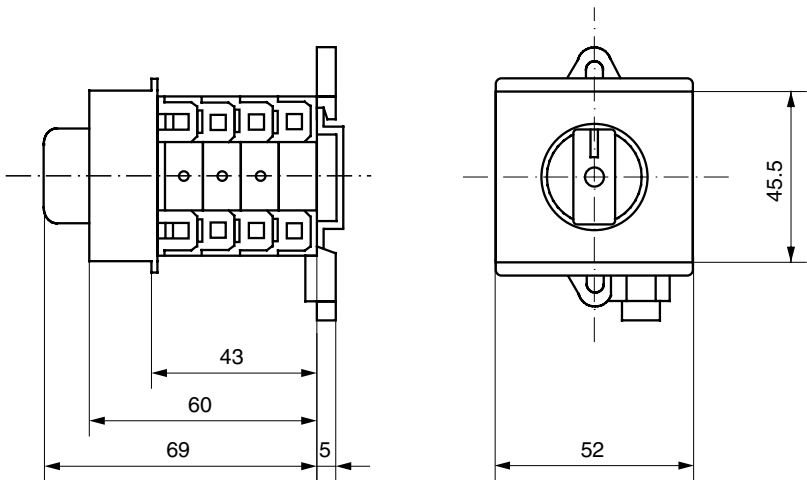
Bulletin 194 L-E Switch Body with Terminal Cover



Bulletin 194L-A Switch Body with Terminal Cover

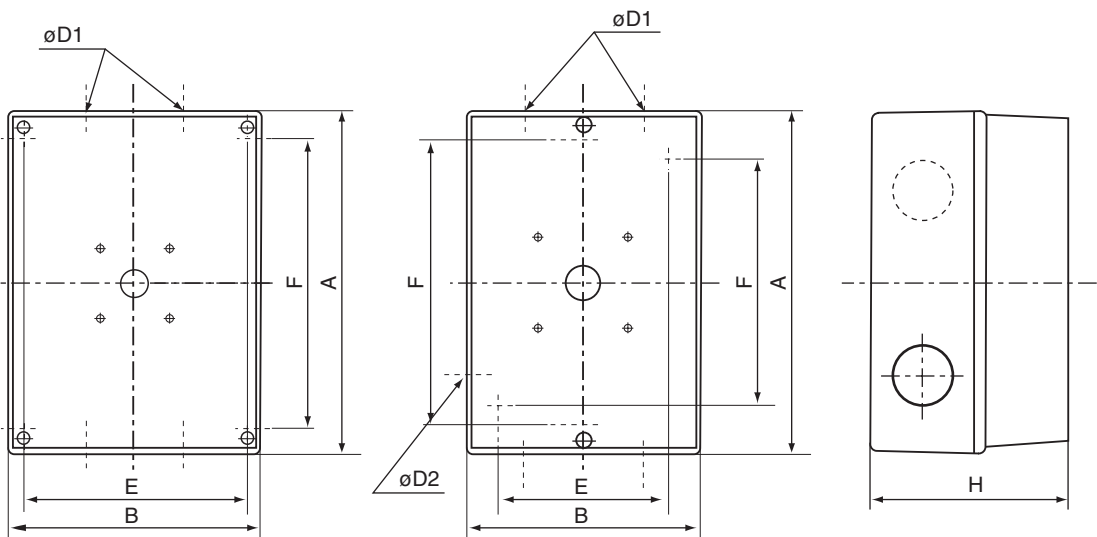


Bulletin 194L-A12(16) ...-Q Switch



Bulletin 194L-A Base Mounting

Thermoplastic Enclosure



For Switch		Enclosure		A	B	ØD1		ØD2		E	F	H
Type	Switch banks	ABS	Noryl			PG	metric	PG	metric			
194L-A12...25	1 and 2	194L-G3572 (M)	194L-G3576 (M)	150	95	22.5 (4 x PG16)	20.5 (4 x M20)	22.5 (2 x PG16)	20.5 (2 x M20)	60	115	86
194L-A12/16	3, 4 and 5	194L-G3573 (M)	194L-G3577 (M)	150	95	22.5 (4 x PG16)	20.5 (4 x M20)	22.5 (2 x PG16)	20.5 (2 x M20)	60	115	111
194L-A20/25	3 and 4											