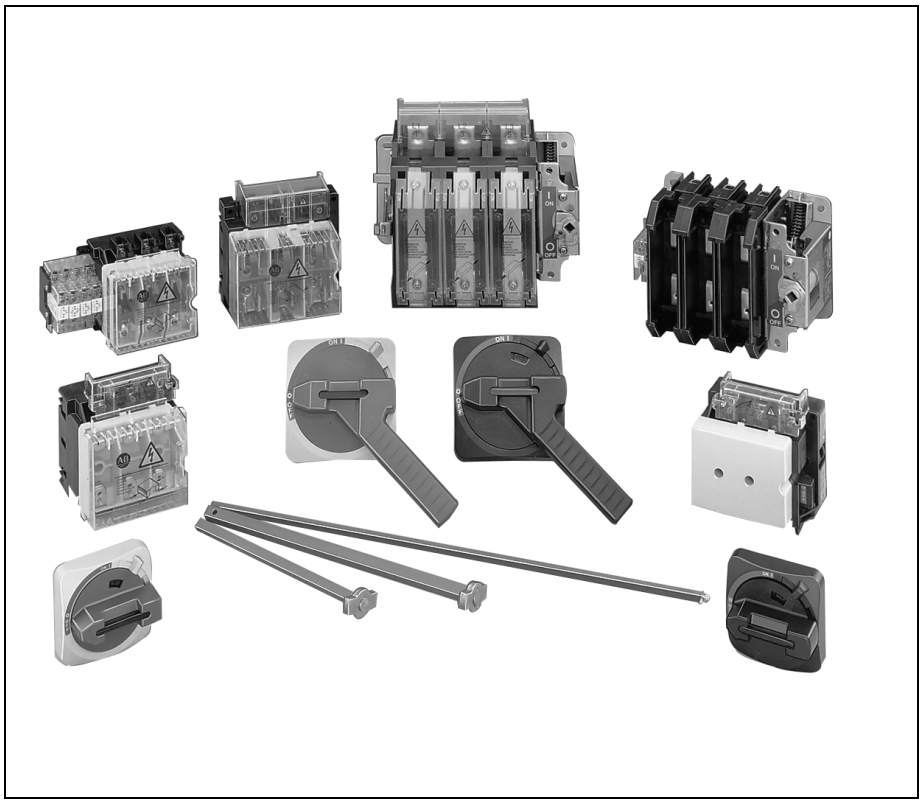


Bulletin 194R

- 20 A…400 A Sizes
- Open or Enclosed Switches
- Fused Switch Versions:
  - BS88
  - DIN
  - CSA HRCII-C
  - CSA HRCI-J
  - UL Class J
  - UL Class CC
- Non-Fused Switches
- Operating Handle Ingress Ratings:
  - IP42 (Type 1)
  - IP66 (Type 3R, 3, 12, 4, 4X)
- Handle with or without Defeater Mechanism
- Padlockable Handle with up to Three Padlocks
- Up to 8 Auxiliary Contacts can be Added Per Switch
- Suitable as Service Entrance Disconnecting Means

TABLE OF CONTENTS

A-B EXPRESS Fast Shipment Program

- Fast Shipment of Bulletin 194R Products to satisfy your unexpected demands
- Make your selection from any of the Cat. Nos. listed in blue and mark your order as

A-B EXPRESS

Description

The Bulletin 194R line of fused and non-fused IEC disconnect switches provides the flexibility to meet worldwide applications. These rod operated disconnect switches incorporate on-board fuse carriers thus reducing panel space requirements and have high short circuit protection ratings. The disconnect switches are UL Listed, CSA, ASTA and LOVAG Certified and are designed to meet IEC 947-3, VDE, DIN, BS and applicable NEMA requirements.

Conformity to Standards:

IEC 947-3/EN60947-3
BS EN60947-3
VDE 0660
CSA 22.2 No. 4
NEMA KS-1
UL 1087/489
UL 98

Approvals:

ASTA Certified
LOVAG Certified
CE (IEC 947-3)
CSA Certified (File No. LR 1234)
UL Listed (File No. E 119349/E 14840)

Bulletin 198 Rotary Circuit Breaker Operating Mechanism — See Page 4-102

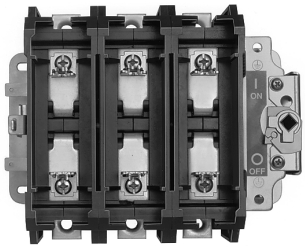
Your order must include:

- The desired disconnect switch Cat. No. Note the disconnect switch dimension reference.
- The appropriate operating handle and operating shaft Cat. No. corresponding to the dimension reference of the disconnect switch.
- The desired accessories Cat. No. (if required) for the application, corresponding to the dimension reference of the disconnect switch.

BS88 Fused Disconnect Switches

Ratings (AC23)												
With Fuse Links					With Shorting Links					Fuse Type	Dim. Ref.	Cat. No.
Load Rating Ie (A)	3∅ Maximum kW (50 Hz)				Load Rating Ie (A)	3∅ Maximum kW (50 Hz)						
	200/ 230V	380/ 400/ 415V	500V	660/ 690V		200/ 230V	380/ 400/ 415V	500V	660/ 690V			
20 ❶	3	7.5	7.5	—	32	7.5	15	18.5	11	BS88 A1	A1	194R-NA100P3
32	7.5	15	18.5	11	—	—	—	—	—	BS88 A2	A1	194R-NA200P3
60	11	30	30	30	63	11	30	30	30	BS88 A3	B1	194R-NA300P3
75	22	37	45	55	75	22	37	45	55	BS88 A3	C1	194R-NA380P3
138	37	75	90	110	138	37	75	90	110	BS88 A4	D1	194R-NA400P3
245	75	132	160	160	245	75	132	160	160	BS88 B1, B2	E1	194R-NB200P3
300	90	160	200	200	300	40	160	200	200	BS88 B1, B2 B3, B4	F1	194R-NB300P3

DIN Fused Disconnect Switches



Ratings (AC23)							
Load Rating Ie (A)	With Fuse Links				Fuse Type	Dim. Ref.	Cat. No.
	3∅ Maximum kW (50 Hz)						
	200/ 230V	380/ 400/ 415V	500V	660/ 690V			
75	22	37	45	55	DIN 00	C2	194R-ND072P3
138	37	75	90	110	DIN 0, 00 ❷	D2	194R-ND138P3
245	75	132	160	160	DIN 1	E2	194R-ND250P3
300	90	160	200	200	DIN 1, 2	F1	194R-ND300P3

❶ Maximum ampere rating is 32 A if shorting links, **Cat. No. 194R-SLA1**, is used. See page 4-71.
❷ Series C only.

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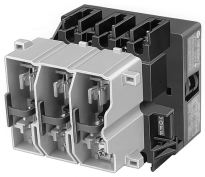
UL/CSA Fused Disconnect Switches

A-B EXPRESS Fast Shipment Program Cat. Nos. are printed in blue.

Cat. No. 194R-NA300P3

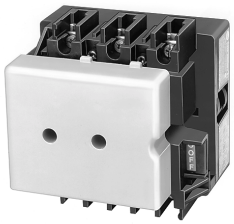


Cat. No. 194R-NC030P3

Cat. No. 194R-NJ100P3

Ampere Rating (A)	Maximum HP Ratings ❶								Fuse Type	Dim. Ref.	Cat. No.
	1∅ (60 Hz)		3∅ (60 Hz)				DC				
	115V	230V	200V	230V	460V	575V	125V	250V			
CSA HRCII-C FUSES											
30	2	3	7-1/2	7-1/2	15	20	—	—	30 A HRCII-C	A1	194R-NA200P3
60	3	10	15	15	30	30	—	—	60 A HRCII-C	B1	194R-NA300P3
100	—	15	25	30	60	75	—	—	100 A HRCII-C	D1	194R-NH100P3
200	—	30	50	60	125	150	—	—	200 A HRCII-C	E1	194R-NH200P3
400	—	50	100	125	250	300	—	—	400 A HRCII-C	F1	194R-NH400P3
UL CLASS CC & J AND CSA HRCI-J FUSES ❷											
30	3/4	2	5	5	10	10	2	3	30 A CLASS CC	A1	194R-NC030P3
30	2	3	7-1/2	7-1/2	15	20	3	5	30 A CLASS J	A1	194R-NJ030P3
60	3	10	15	15	30	50	5	10	60 A CLASS J	B1	194R-NJ060P3
100	7-1/2	15	25	30	60	75	—	20	100 A CLASS J	C1	194R-NJ100P3 ❹
200	—	25	50	60	125	150	—	40	200 A CLASS J	D1	194R-NJ200P3
400	—	50	100	125	250	300	—	50	400 A CLASS J	F1	194R-NJ400P3

UL/CSA Non-Fused Disconnect Switches



Non-Fused											
Fuse Description	Ampere Rating (A)	Maximum HP Ratings								Dim. Ref.	Cat. No.
		1∅ (60 Hz)		3∅ (60 Hz)				DC			
		115V	230V	200V	230V	460V	575V	125V	250V		
❸	30	2	3	7-1/2	7-1/2	15	20	3	5	A2	194R-NN030P3
	60	3	10	15	15	30	50	5	10	B2	194R-NN060P3
	100	7-1/2	15	25	30	60	75	—	20	C1	194R-NN100P3 ❹
	200	—	25	50	60	125	150	—	40	D1	194R-NN200P3
	400	—	—	100	125	250	300	—	50	F1	194R-NN400P3

❶ Time delay fuses may be required to utilize the disconnect switch at its maximum horsepower rating.
❷ Only CSA Certified HRCI-J and UL Listed Class J and CC fuses are suitable for use with these disconnect switches.
❸ Non-fused disconnect switches must use separately installed CSA Certified HRCI-J fuses or UL Listed Class J, CC or T fuses.
❹ Line and Load Terminals use 4 mm Allen-type wrench; will not accept terminal lugs.

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Operating Handles

A-B EXPRESS Fast Shipment Program Cat. Nos. are printed in blue.

	Disconnect Switch Dim. Ref.	Description	Color	Degree of Protection	Cat. No.
 	A1, A2 B1, B2	**With** Defeater	Black	IP42 (Type 1)	194R-HS1
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HS4
			Red/Yellow	IP42 (Type 1)	194R-HS1E
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HS4E
		Without Defeater	Black	IP42 (Type 1)	194R-HS1-N2
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HS4-N2
			Red/Yellow	IP42 (Type 1)	194R-HS1E-N2
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HS4E-N2
 	C1, C2 D1, D2 E1, E2 F1	Standard Orientation **With** Defeater	Black	IP42 (Type 1)	194R-HM1
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4
			Red/Yellow	IP42 (Type 1)	194R-HM1E
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4E
		Standard Orientation **Without** Defeater	Black	IP42 (Type 1)	194R-HM1-N2
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4-N2
			Red/Yellow	IP42 (Type 1)	194R-HM1E-N2
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4E-N2
 		90° Rotated Orientation **With** Defeater	Black	IP42 (Type 1)	194R-HM1-N1
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4-N1
			Red/Yellow	IP42 (Type 1)	194R-HM1E-N1
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4E-N1
		90° Rotated Orientation **Without** Defeater	Black	IP42 (Type 1)	194R-HM1-N3
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4-N3
			Red/Yellow	IP42 (Type 1)	194R-HM1E-N3
				IP66 (Type 3R, 3, 12, 4, 4X)	194R-HM4E-N3

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Operating Shafts

Disconnect Switch Dim. Ref.	Description	Operating Shaft Length Approx. Dim. mm (in.)	Enclosure Working Depth			Cat. No.
			Disconnect Switch Dim. Ref.	Minimum Approx. Dim. mm (in.)	Maximum Approx. Dim. mm (in.)	
A1, A2 B1, B2	Standard Length	263 (10.3)	A1, B1	148 (5.8)	260 (10.2)	194R-R1
			A2, B2	111 (4.4)	260 (10.2)	
	Extended Length	457 (18.0)	A1, B1	148 (5.8)	454 (17.8)	194R-R2
			A2, B2	111 (4.4)	454 (17.8)	
C1, C2 D1, D2	Standard Length	200 (7.9)	C1, C2 D1, D2	183 (7.2)	254 (10.0)	194R-R3
	Extended Length	403 (15.9)		183 (7.2)	457 (18.0)	194R-R4
E1, E2 F1	Standard Length	278 (10.9)	E1, E2, F1	243 (9.6)	356 (14.0)	194R-R5
	Extended Length	532 (20.9)		243 (9.6)	610 (24.0)	194R-R6
A1, A2 B1, B2	Standard Length for Medium Handle	263 (10.3)	A1, B1	148 (5.8)	260 (10.2)	194R-R1M ❶
			A2, B2	111 (4.4)	260 (10.2)	
	Extended Length for Medium Handle	457 (18.0)	A1, B1	148 (5.8)	454 (17.8)	194R-R2M ❶
			A2, B2	111 (4.4)	454 (17.8)	

❶ Use with 194R HM*** Handle and 194R 30 A or 60 A switch.

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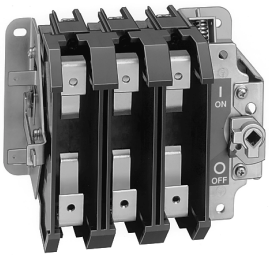
Complete UL/CSA Disconnect Switch Kits

A-B EXPRESS Fast Shipment Program Cat. Nos. are printed in blue.

- Includes Disconnect Switch, Operating Handle and Operating Shaft



Load Rating (A)	Maximum Horsepower Ratings ❶ 3∅ (60 Hz)				Disconnect Switch ❷		Operating Shaft	Operating Handle		Cat. No.
	200V	230V	460V	575V	Fuse Carrier	Dim. Ref.	Type	Degree of Ingress Protection	Color	
30	7.5	7.5	15	20	Non-Fused	A2	Standard Length	IP66 (Type 3R, 3, 12, 4, 4X)	Black	194R-NN030P34R1
									Red/Yellow	194R-NN030P34ER1
	7.5	7.5	15	20	30 A Class J	A1			Black	194R-NJ030P34R1
									Red/Yellow	194R-NJ030P34ER1
	5	5	10	10	30 A Class CC	A1			Black	194R-NC030P34R1
									Red/Yellow	194R-NC030P34ER1
60	15	15	30	50	Non-Fused	B2			Black	194R-NN060P34R1
									Red/Yellow	194R-NN060P34ER1
	15	15	30	50	60 A Class J	B1			Black	194R-NJ060P34R1
									Red/Yellow	194R-NJ060P34ER1
100	25	30	60	75	Non-Fused	C1			Black	194R-NN100P34R3
									Red/Yellow	194R-NN100P34ER3
	25	30	60	75	100 A Class J	C1			Black	194R-NJ100P34R3
									Red/Yellow	194R-NJ100P34ER3
200	50	60	125	150	Non-Fused	D1			Black	194R-NN200P34R3
									Red/Yellow	194R-NN200P34ER3
	50	60	125	150	200 A Class J	D1			Black	194R-NJ200P34R3
									Red/Yellow	194R-NJ200P34ER3
400	100	125	250	300	Non-Fused	F1			Black	194R-NN400P34R5
									Red/Yellow	194R-NN400P34ER5
	100	125	250	300	400 A Class J	F1			Black	194R-NJ400P34R5
									Red/Yellow	194R-NJ400P34ER5

❶ Time delay fuses may be required to utilize the disconnect switch at its maximum horsepower ratings.
❷ Only UL Listed Class J and CC, and CSA Certified HRCI-J fuses are suitable for use with these disconnect switches.

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UL Enclosed Disconnect Switches (Fused and Non-Fused)

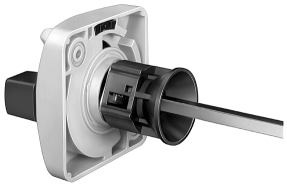
A-B EXPRESS Fast Shipment Program Cat. Nos. are printed in blue.

Stainless Steel Enclosure

Ampere Rating (A)	Maximum Horsepower Ratings						Fuse Description	Dim. Ref.	IP66 (Type 3/4/12) Watertight Dusttight Sheet Metal Enclosure	IP66 (Type 4/4X) Watertight, Corrosion-Resistant Stainless Steel Enclosure	IP66 (Type 4/4X) Watertight, Corrosion-Resistant Non-Metallic Enclosure
	1∅ (60Hz)		3∅ (60Hz)								
	115V	230V	200V	230V	460V	575V			Cat. No. ❶	Cat. No. ❶	Cat. No. ❶
30	3/4	2	5	5	10	10	Class CC Fused	A1	194R-FC030P3	194R-CC030P3	194R-KC030P3
	2	3	7-1/2	7-1/2	15	20	Class J Fused	A1	194R-FJ030P3	194R-CJ030P3	194R-KJ030P3
							Non-Fused	A2	194R-FN030P3	194R-CN030P3	194R-KN030P3
60	3	10	15	15	30	50	Class J Fused	B1	194R-FJ060P3	194R-CJ060P3	194R-KJ060P3
							Non-Fused	B2	194R-FN060P3	194R-CN060P3	194R-KN060P3
100	7-1/2	15	25	30	60	75	Class J Fused	C1	194R-FJ100P3	194R-CJ100P3	194R-KJ100P3
							Non-Fused	C1	194R-FN100P3	194R-CN100P3	194R-KN100P3
200	—	25	50	60	125	150	Class J Fused	D1	194R-FJ200P3	194R-CJ200P3	194R-KJ200P3
							Non-Fused	D1	194R-FN200P3	194R-CN200P3	194R-KN200P3
400	—	50	100	125	250	300	Class J Fused	F1	194R-FJ400P3	194R-CJ400P3	194R-KJ400P3
							Non-Fused	F1	194R-FN400P3	194R-CN400P3	194R-KN400P3

❶ Black operating handles supplied as standard. To order Red/Yellow Handles, add string suffix "**E**" to the Cat. No. Example: **Cat. No. 194R-FC030P3E.**

Operating Shaft Guide



Disconnect Switch Dim Ref.	Pkg. Qty.	Cat. No.
A1, A2, B1, B2	1	194R-HSG1

Shaft Guard

Disconnect Switch Dim Ref.	Pkg. Qty.	Cat. No.
A1, A2, B1, B2	1	194R-R1G
C1, C2, D1, D2	1	194R-R3G

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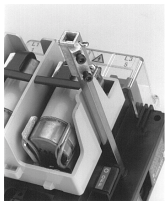
Operating Shaft Coupler



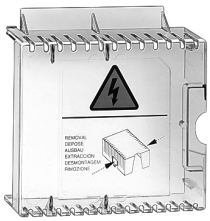
Disconnect Switch Dim Ref.	Pkg. Qty.	Cat. No.
A1, A2, B1, B2	1	194R-SC1

Operating Handle Instruction Label

Disconnect Switch Dim Ref.	Conductor Range	Pkg. Qty.	Cat. No.
ALL	—	10	194R-L1

Fuse Covers

CSA/UL 30/60 A non-fused switches come with fuse covers as standard.



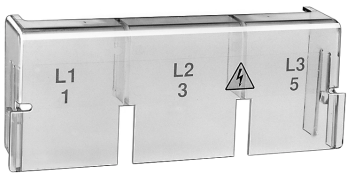
Cat. No. 194R-FCA2

Cat. No. 194R-FCD1

Disconnect Switch Dim. Ref.	Quantity Required Per Disconnect Switch	Cat. No.
A1, A2	1	194R-FCA2
B1, B2		194R-FCJ60
C1	3	194R-FCC1
C2		194R-FCC2
D1, D2		194R-FCD1
E1, E2		194R-FCE1
F1		194R-FCF1

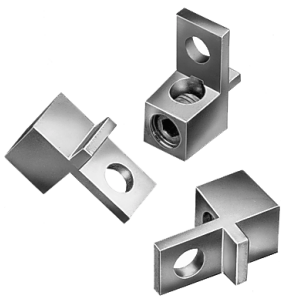
Terminal Shields ❶

CSA/UL switches come with line side shield as standard.



Disconnect Switch Dim. Ref.	Quantity Required Per Disconnect Switch	Cat. No.
A1, A2	2	194R-LNC1
B1, B2		194R-LNC2
C1, C2		194R-LNC3
D1, D2		194R-LNC4
E1, E2		194R-LNC5
F1		194R-LNC6

Terminal Lugs



Disconnect Switch Dim Ref.	Conductor Range	Pkg. Qty.	Cat. No.
D1 **(Cat. No. 194R-NH100P3 only)**	10 mm^2…50 mm^2 #8…1/0 AWG	3	199-LE1
D1 **(Cat. No. 194R-NJ200P3, NN200P3, NA400P3)** D2	16 mm^2…120 mm^2 #6…250MCM AWG		199-LF1
E1, E2	25 mm^2…240 mm^2 #4…500MCM AWG		199-LG1
F1	Two 50 mm^2…150 m^2 Two 1/0…350MCM AWG		199-LH1

❶ For use on either Line or Load Side of Disconnect Switch. Disconnect switch **Cat. Nos: 194R-NN**P3**, **194R-NJ**P3** and **194R-NC**P3** are provided as standard with a line side terminal shield.

Product Selection — Page 4-64

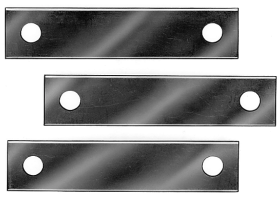
Auxiliary Contacts ❶

Cat. No. 194R-AA

Cat. No. 195-GA10

Disconnect Switch Dim. Ref.	Description	Contact Configuration	Cat. No.
A1, A2 B1, B2	Auxiliary Contact Adapter	—	194R-AA
ALL ❷	Single Pole ❸	1 N.O.	195-GA10
		1 N.C.	195-GA01
ALL ❷	Two Pole ❸	1 N.O.…1 N.C.	195-GA11
		2 N.O.	195-GA20
		2 N.C.	195-GA02
ALL	Auxiliary Support For 5…8 Circuits Per Switch	—	194R-A1

Shorting Links For BS Switches Only



Disconnect Switch Dim. Ref.	Description	For Use with Cat. No.	Cat. No.
A1	BS88 Size A1	194R-NA100P3	194R-SLA1
B1	BS88 Size A3	194R-NA300P3	194R-SLA3
C1		194R-NA380P3	
D1	BS88 Size A4	194R-NA400P3	194R-SLA4
E1	BS88 Size B1, B2	194R-NB200P3	194R-SLB2
F1	BS88 Size B3, B4	194R-NB300P3	

Disconnect Switch Padlocking Kit

Disconnect Switch Dim Ref.	Pkg. Qty.	Cat. No.
A1, A2 B1, B2	1	194R-P1

❶ See page 4-78 for contact ratings.

❷ Disconnect switches with dimension reference A1, A2, B1 and B2 require a quantity of one (1) auxiliary contact adapter, **Cat. No. 194R-AA**, for installation of auxiliary contacts.

❸ A maximum of four (4) contact blocks (8 auxiliary contacts) can be installed on each disconnect switch. When more than two (2) contact blocks are used, a support kit **Cat. No. 194R-A1** must be used.

Fused Disconnect Switches For BS88 Fuses

Note: Table continued on page 4-73.

Electrical Ratings						
Cat. No.		**194R-NA100P3**		**194R-NA200P3**	**194R-NA300P3**	
Fuse Type	BS88 Dimension	A1		A2	A3	
Rated Insulation Voltage (U_i)	(V)	660		660	660	
Maximum Short Circuit Prospective Fault Current	(kA)	80		80	80	
Rated Operational Current AC-22A (I_e)		Fuse Links	Shorting Links	Fuse Links	Fuse Links	Shorting Links
200/230V 50 Hz	(A)	20	32	32	63	63
380/400/415V 50 Hz	(A)	20	32	32	63	63
500V 50 Hz	(A)	20	32	32	63	63
660/690V 50 Hz	(A)	—	32	32	63	63
Rated Operational Current AC-23A (I_e)						
200/230V 50 Hz	(A)	20	32	32	45	45
380/400/415V 50 Hz	(A)	20	32	32	60	63
500V 50 Hz	(A)	20	32	32	45	45
660/690V 50 Hz	(A)	—	18	18	37	37
Rated Thermal Current (I_{the})	(A)	20	32	32	63	63
Maximum kW, AC-23A 3∅						
200/230V 50 Hz	(kW)	3	7.5	7.5	11	11
380/400/415V 50 Hz	(kW)	7.5	15	15	30	30
500V 50 Hz	(kW)	7.5	18.5	18.5	30	30
660/690V 50 Hz	(kW)	—	11	11	30	30
Maximum Fuse Rating	(A)	20	—	32	63	—
Maximum Motor Circuit Fuse Link		20M32	—	32M63	63M100	—
Maximum Fuse Cut-off Current ❶	(kA)	7.5	7.5	7.5	10	10
Rated Short Time Current, 1 Second	(kA)	1		1	1	

Mechanical Data				
Cat. No.		**194R-NA100P3**	**194R-NA200P3**	**194R-NA300P3**
Degree of Protection (per IEC 947) Switch Only Switch with Terminal Shield & Fuse Cover(s)		 IP 00 IP 20	 IP 00 IP 20	 IP 00 IP 20
Mechanical Endurance ❷	**Operations**	10,000	10,000	10,000
Operating Torque (Maximum)	Nm Lb.-In.	4 35	4 35	4 35
Terminal Capacity				
Power Terminals	mm^2 AWG	2.5…6 #14…#8	2.5…6 #14…#8	2.5…25 #14…#4
Auxiliary Contact Terminals	mm^2 AWG	2.5…4 #14…#12	2.5…4 #14…#12	2.5…4 #14…#12
Maximum Number of Auxiliary Circuits		8	8	8
Approximate Weight	kg Lbs.	0.83 1.84	0.83 1.84	1.18 2.60
Minimum Enclosure Size Approximate dimensions in millimeters (inches)	Height Width Depth	248 (9-3/4) 171 (6-3/4) 148 (5-13/16)	248 (9-3/4) 171 (6-3/4) 148 (5-13/16)	248 (9-3/4) 197 (7-3/4) 148 (5-13/16)
Switch Dimension Reference (See dimension drawings on pages 4-87 and 4-88.)		A1	A1	B1

❶ Fuses must be selected with regard to the maximum prospective fault current of the system and the maximum cut-off current of the fuse when subjected to that maximum fault current. The maximum fuse cut-off current as specified for each disconnect switch must not be exceeded.

❷ Based on Allen-Bradley tests in accordance with the requirements as defined in IEC 947-3.

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Fused Disconnect Switches For BS88 Fuses, Continued

Electrical Ratings

Cat. No.		194R-NA380P3		194R-NA400P3		194R-NB200P3		194R-NB300P3	
Fuse Type	BS88 Dimension	A3		A4		B1, B2		B1, B2, B3, B4	
Rated Insulation Voltage (U_i)	(V)	660		660		660		660	
Maximum Short Circuit Prospective Fault Current	(kA)	80		80		80		80	
Rated Operational Current AC-22A (I_e)		Fuse Links	Shorting Links	Fuse Links	Shorting Links	Fuse Links	Shorting Links	Fuse Links	Shorting Links
200/230V 50 Hz	(A)	100	100	200	160	250	250	400	400
380/400/415V 50 Hz	(A)	100	100	200	160	250	250	400	400
500V 50 Hz	(A)	100	100	200	160	250	250	400	400
660/690V 50 Hz	(A)	100	100	200	160	250	250	400	400
Rated Operational Current AC-23A (I_e)									
200/230V 50 Hz	(A)	75	75	130	130	240	240	300	300
380/400/415V 50 Hz	(A)	75	75	138	138	245	245	300	300
500V 50 Hz	(A)	65	65	130	130	220	220	290	290
660/690V 50 Hz	(A)	61	61	118	118	170	170	220	220
Rated Thermal Current (I_{the})	(A)	100	100	160	160	200	250	400	400
Maximum kW, AC-23A 3∅									
200/230V 50 Hz	(kW)	22	22	37	37	75	75	90	90
380/400/415V 50 Hz	(kW)	37	37	75	75	132	132	160	160
500V 50 Hz	(kW)	45	45	90	90	160	160	200	200
660/690V 50 Hz	(kW)	55	55	110	110	160	160	200	200
Maximum Fuse Rating	(A)	100	—	200	—	200	—	400	—
Maximum Motor Circuit Fuse Link		100M125	—	200M250	—	ED355	—	400M450	—
Maximum Fuse Cut-off Current ❶	(kA)	14	14	20	20	33	33	40	40
Rated Short Time Current, 1 Second	(kA)	2		4		7.5		12	

Mechanical Data

Cat. No.		194R-NA380P3	194R-NA400P3	194R-NB200P3	194R-NB300P3
Degree of Protection (per IEC 947)					
Switch Only		IP 00	IP 00	IP 00	IP 00
Switch with Terminal Shield & Fuse Cover(s)		IP 20	IP 20	IP 20	IP 20
Mechanical Endurance ❷	Operations	10,000	8,000	8,000	8,000
Operating Torque (Maximum)	Nm	17.5	20.3	31.4	31.4
	Lb.-In.	155	180	275	275
Terminal Capacity					
Power Terminals	mm^2	2.5…35	16…120	25…240	Two 50…150
	AWG	#14…#2	#6-250MCM	#4-500MCM	Two 1/0…350MCM
Auxiliary Contact Terminals	mm^2	2.5…4	2.5…4	2.5…4	2.5…4
	AWG	#14…#12	#14…#12	#14…#12	#14…#12
Maximum Number of Auxiliary Circuits		8	8	8	8
Approximate Weight	kg	4.03	6.16	9.30	23.83
	Lbs.	8.88	13.59	20.50	30.50
Minimum Enclosure Size	Height	330 (13)	560 (22)	610 (24)	762 (30)
Approximate dimensions in millimeters (inches)	Width	301 (11-27/32)	344 (13-17/32)	394 (15-33/64)	424 (16-45/64)
	Depth	162 (6-3/8)	178 (7)	227 (8-15/16)	243 (9-9/16)
Switch Dimension Reference (See dimension drawings on pages 4-89 and 4-90.)		C1	D1	E1	F1

❶ Fuses must be selected with regard to the maximum prospective fault current of the system and the maximum cut-off current of the fuse when subjected to that maximum fault current. The maximum fuse cut-off current as specified for each disconnect switch must not be exceeded.

❷ Based on Allen-Bradley tests in accordance with the requirements as defined in IEC 947-3.

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Fused Disconnect Switches For DIN Fuses

Electrical Ratings					
Cat. No.		**194R-ND072P3**	**194R-ND138P3**	**194R-ND250P3**	**194R-ND300P3**
Fuse Type	DIN Dimension	00	0	1	1, 2
Rated Insulation Voltage (U_i)	(V)	660	660	660	660
Maximum Short Circuit Prospective Fault Current	(kA)	100	100	100	100
Rated Operational Current AC-22A (I_e)		Fuse Links	Fuse Links	Fuse Links	Fuse Links
200/230V 50 Hz	(A)	85	160	250	400
380/400/415V 50 Hz	(A)	85	160	250	400
500V 50 Hz	(A)	85	160	250	400
660/690V 50 Hz	(A)	85	160	250	400
Rated Operational Current AC-23A (I_e)					
200/230V 50 Hz	(A)	75	130	240	300
380/400/415V 50 Hz	(A)	72	138	245	300
500V 50 Hz	(A)	65	130	220	290
660/690V 50 Hz	(A)	61	118	170	220
Rated Thermal Current (I_{the})	(A)	85	160	250	400
Maximum kW, AC-23A 3∅					
200/230V 50 Hz	(kW)	22	37	75	90
380/400/415V 50 Hz	(kW)	37	75	132	160
500V 50 Hz	(kW)	45	90	160	200
660/690V 50 Hz	(kW)	55	110	160	200
Maximum Fuse Rating	(A)	100	200	250	400
Maximum Motor Circuit Fuse Link		100	200	250	400
Maximum Fuse Cut-off Current ❶	(kA)	14	20	33	40
Rated Short Time Current, 1 Second	(kA)	2	4	7.5	12

Mechanical Data					
Cat. No.		**194R-ND072P3**	**194R-ND138P3**	**194R-ND250P3**	**194R-ND300P3**
Degree of Protection (per IEC 947)					
Switch Only		IP 00	IP 00	IP 00	IP 00
Switch with Terminal Shields & Fuse Cover(s)		IP 20	IP 20	IP 20	IP 20
Mechanical Endurance ❷	Operations	10,000	8,000	8,000	8,000
Operating Torque (Maximum)	Nm	17.5	20.3	31.4	31.4
	Lb.-In.	155	180	275	275
Terminal Capacity					
Power Terminals	mm^2	2.5…35	16…120	25…240	Two 50…150
	AWG	#14…#2	#6…250MCM	#4…500MCM	Two 1/0…350MCM
Auxiliary Contact Terminals	mm^2	2.5… 4	2.5…4	2.5…4	2.5…4
	AWG	#14…#12	#14…#12	#14…#12	#14…#12
Maximum Number of Auxiliary Circuits		8	8	8	8
Approximate Weight	kg.	4.15	6.17	9.41	14.06
	Lbs.	9.16	13.61	20.75	31.00
Minimum Enclosure Size	Height	330 (13)	560 (22)	712 (28)	762 (30)
Approximate dimensions in millimeters (inches)	Width	301 (11-27/32)	344 (13-17/32)	394 (15-33/64)	424 (16-45/64)
	Depth	168 (6-5/8)	183 (7-7/32)	227 (8-15/16)	243 (9-9/16)
Switch Dimension Reference (See dimension drawings on pages 4-89 and 4-90.)		C2	D2	E2	F1

❶ Fuses must be selected with regard to the maximum prospective fault current of the system and the maximum cut-off current of the fuse when subjected to that maximum fault current. The maximum fuse cut-off current as specified for each disconnect switch must not be exceeded.

❷ Based on Allen-Bradley tests in accordance with the requirements as defined in IEC 947-3.

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Fused Disconnect Switches For CSA HRCII-C Fuses

Electrical Ratings						
Cat. No.			**194R-NA200P3**	**194R-NA300P3**	**194R-NH100P3**	**194R-NH200P3**	**194R-NH400P3**
CSA Fuse Type			HRCII-C	HRCII-C	HRCII-C	HRCII-C	HRCII-C
Maximum Fuse Cartridge Size		(A)	30	60	100	200	400
Maximum Voltage	AC	(V)	600	600	600	600	600
Ampere Rating		(A)	30	60	100	200	400
Maximum Short Circuit Prospective Fault Current		(kA)	100	100	100	100	100
Maximum HP, 3∅ AC							
	200V 60 Hz	(HP)	7.5	15	25	50	100
	230V 60 Hz	(HP)	7.5	15	30	60	125
	460V 60 Hz	(HP)	15	30	60	125	250
	575V 60 Hz	(HP)	20	50	75	150	300
Maximum HP, 1∅ AC							
	115V 60 Hz	(HP)	2	3	—	—	—
	230V 60 Hz	(HP)	3	10	15	30	50

Mechanical Data						
Cat. No.		**194R-NA200P3**	**194R-NA300P3**	**194R-NH100P3**	**194R-NH200P3**	**194R-NH400P3**
Degree of Protection (per IEC 947)						
Switch Only		IP 00	IP 00	IP 00	IP 00	IP 00
Switch with Terminal Shields & Fuse Cover(s)		IP 20	IP 20	IP 20	IP 20	IP 20
Mechanical Endurance ❶	Operations	10,000	10,000	10,000	8,000	8,000
Operating Torque (Maximum)	Nm	4	4	20.3	31.4	31.4
	Lb.-In.	35	35	180	275	275
Terminal Capacity						
Power Terminals	mm^2	2.5…6	2.5…25	10…50	25…240	Two 50…150
	AWG	#14…#8	#14…#4	#8…#1/0	#4…500MCM	Two 1/0…350MCM
Auxiliary Contact Terminals	mm^2	2.5…4	2.5…4	2.5…4	2.5…4	2.5…4
	AWG	#14…#12	#14…#12	#14…#12	#14…#12	#14…#12
Maximum Number of Auxiliary Circuits		8	8	8	8	8
Approximate Weight	kg.	0.83	1.18	6.16	9.30	13.83
	Lbs.	1.84	2.60	13.59	20.50	30.50
Minimum Enclosure Size	Height	248 (9-3/4)	248 (9-3/4)	384 (15-1/8)	610 (24)	762 (30)
Approximate dimensions in	Width	171 (6-3/4)	197 (7-3/4)	344 (13-17/32)	394 (15-33/64)	424 (16-45/64)
millimeters (inches)	Depth	148 (5-13/16)	148 (5-13/16)	178 (7)	227 (8-15/16)	243 (9-9/16)
Switch Dimension Reference (See dimension drawings on pages 4-87, 4-88, 4-89 and 4-90.)		A1	B1	D1	E1	F1

❶ Based on Allen-Bradley tests in accordance with the requirements as defined in CSA C22.2 No. 4 and IEC 947-3.

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Fused Disconnect Switches For CSA HRCI-J and UL Class Fuses ❶

Electrical Ratings

Cat. No.	194R-NC030P3		194R-NJ030P3		194R-NJ060P3		194R-NJ100P3		194R-NJ200P3		194R-NJ400P3	
CSA Fuse Type/UL Fuse Type	HRCI-MISC ❷/ Class CC		HRCI-J/ Class J		HRCI-J/ Class J		HRCI-J/ Class J		HRCI-J/ Class J		HRCI-J/ Class J	
Maximum Fuse Cartridge Size (A)	30		30		60		100		200		400	
Maximum Voltage AC (V)	600		600		600		600		600		600	
DC (V)	250		250		250		250		250		250	
Ampere Rating (A)	30		30		60		100		200		400	
Maximum Short Circuit Prospective Fault Current (kA)	100		100		100		100		100		100	
Fuse Operating Characteristics	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay
Maximum HP, 3∅ AC												
200V 60 Hz (HP)	5	3	7.5	3	15	7.5	25	15	50	25	100	50
230V 60 Hz (HP)	5	3	7.5	3	15	7.5	30	15	60	25	125	50
460V 60 Hz (HP)	10	5	15	5	30	15	60	25	125	50	250	100
575V 60 Hz (HP)	10	7.5	20	7.5	50	15	75	30	150	60	300	125
Maximum HP, 1∅ AC												
115V 60 Hz (HP)	0.75	0.5	2	0.5	3	1.5	7.5	—	—	—	—	—
230V 60 Hz (HP)	2	1.5	3	1.5	10	3	15	7.5	25	15	50	25
Maximum HP, DC												
125V DC (HP)	2	2	3	2	5	5	—	—	—	—	—	—
250V DC (HP)	3	3	5	5	10	10	20	20	40	40	50	50

Mechanical Data

Cat. No.	194R-NC030P3, 194R-NJ030P3	194R-NJ060P3	194R-NJ100P3	194R-NJ200P3	194R-NJ400P3
Degree of Protection (per IEC 947)					
Switch Only	IP00	IP00	IP00	IP00	IP00
Switch with Terminal Shields & Fuse Cover(s)	IP20	IP20	IP20	IP20	IP20
Mechanical Endurance ❸ Operations	10,000	10,000	10,000	8,000	8,000
Operating Torque (Maximum)					
Nm	4	4	17.5	20.3	31.4
Lb.-In.	35	35	155	180	275
Terminal Capacity					
Power Terminals mm^2	2.5…6	2.5…25	2.5…35	16…120	Two 50…150
AWG	#14…#8	#14…#4	#14…#2	#6…250MCM	Two 1/0…350MCM
Auxiliary Contact Terminals mm^2	2.5…4	2.5…4	2.5…4	2.5…4	2.5…4
AWG	#14…#12	#14…#12	#14…#12	#14…#12	#14…#12
Maximum Number of Auxiliary Circuits	8	8	8	8	8
Approximate Weight kg.	0.92	1.32	4.12	6.16	13.83
Lbs.	2.03	2.9	9.08	13.59	30.50
Minimum Enclosure Size					
Approximate dimensions in millimeters (inches) Height	248 (9-3/4)	248 (9-3/4)	330 (13)	560 (22)	762 (30)
Width	171 (6-3/4)	197 (7-3/4)	301 (11-27/32)	344 (13-17/32)	424 (16-45/64)
Depth	148 (5-13/16)	148 (5-13/16)	162 (6-3/8)	178 (7)	243 (9-9/16)
Switch Dimension Reference (See dimension drawings on pages 4-87, 4-88, 4-89 and 4-90.)	A1	B1	C1	D1	F1

❶ Only CSA Certified HRCI-J and HRCI-MISC (also UL Listed as Class CC) fuses and UL Listed Class J and CC fuses are suitable for use with these disconnect switches.
❷ CSA HRCI-MISC fuses must also be UL Listed as Class CC fuses.
❸ Based on Allen-Bradley tests in accordance with the requirements as defined in CSA C22.2 No. 4, IEC 947-3, UL 1087 and UL 98.

Product Selection — Page 4-64
Accessories — Page 4-69
Approximate Dimensions — Page 4-85

Non-Fused Disconnect Switches For CSA and UL Class Applications ❶

Electrical Ratings											
Cat. No.		**194R-NN030P3**		**194R-NN060P3**		**194R-NN100P3**		**194R-NN200P3**		**194R-NN400P3**	
Maximum Fuse Cartridge Size		30 ❷		60 ❷		100 ❷		200 ❷		400 ❷	
Maximum Voltage	AC (V) DC (V)	600 250		600 250		600 250		600 250		600 250	
Ampere Rating	(A)	30		60		100		200		400	
Maximum Short Circuit Prospective Fault Current	(kA)	100		100		100		100		100	
Fuse Operating Characteristics ❸		Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay	Time Delay	Non-Time Delay
Maximum HP, 3ý AC	200V 60 Hz (HP) 230V 60 Hz (HP) 460V 60 Hz (HP) 575V 60 Hz (HP)	7.5 7.5 15 20	3 3 5 7.5	15 15 30 50	7.5 7.5 15 15	25 30 60 75	15 15 25 30	50 60 125 150	25 25 50 60	100 125 250 300	50 50 100 125
Maximum HP, 1∅ AC	115V 60 Hz (HP) 230V 60 Hz (HP)	2 3	.5 1.5	3 10	1.5 3	— 15	— 7.5	— 25	— 15	— 50	— 25
Maximum HP, DC	125V DC (HP) 250V DC (HP)	3 5	2 5	5 10	5 10	— 20	— 20	— 40	— 40	— 50	— 50
Power Lost	(W)	2		6		20		40		80	

Mechanical Data						
Cat. No.		**194R-NN030P3**	**194R-NN060P3**	**194R-NN100P3**	**194R-NN200P3**	**194R-NN400P3**
Degree of Protection (per IEC 947) Switch Only Switch with Terminal Shields & Fuse Cover(s)		 IP20 IP20	 IP20 IP20	 IP00 IP20	 IP00 IP20	 IP00 IP20
Mechanical Endurance ❸	Operations	10,000	10,000	10,000	8,000	8,000
Operating Torque (Maximum)	Nm Lb.-In.	4 35	4 35	17.5 155	20.3 180	31.4 275
Terminal Capacity Power Terminals	 mm² AWG	 2.5…6 #14…#8	 2.5…25 #14…#4	 2.5…35 #14…#2	 16…120 #6…250MCM	 Two 50…150 Two 1/ 0…350MCM
Auxiliary Contact Terminals	mm² AWG	2.5…4 #14…#12	2.5…4 #14…#12	2.5…4 #14…#12	2.5…4 #14…#12	2.5…4 #14…#12
Maximum Number of Auxiliary Circuits		8	8	8	8	8
Approximate Weight	kg. Lbs.	0.81 1.78	1.14 2.52	4.31 9.50	6.56 14.47	14.97 33.00
Minimum Enclosure Size Approximate dimensions in millimeters (inches)	Height Width Depth	248 (9-3/4) 171 (6-3/4) 111 (4-3/8)	248 (9-3/4) 197 (7-3/4) 111 (4-3/8)	330 (13) 301 (11-27/32) 162 (6-3/8)	560 (22) 344 (13-17/32) 178 (7)	762 (30) 424 (16-45/64) 243 (9-9/16)
Switch Dimension Reference (See dimension drawings on pages 4-87, 4-88, 4-89 and 4-90.)		A2	B2	C1	D1	F1

❶ Non-fused disconnect switches must be used with separately installed CSA Certified HRCI-J, HRCI-T, or HRCI-MISC (also UL Listed as Class CC) fuses; or UL Listed Class J, CC or T fuses.
❷ When using CSA HRCI-J, HRCI-MISC (also UL Listed as Class CC) or HRCI-T fuses, and UL Class J, CC or T fuses.
❸ Based on Allen-Bradley tests in accordance with the requirements as defined in CSA C22.2 No. 4, IEC 947-3, UL 1087 and UL 98.

Product Selection — Page 4-64

All Bulletin 194R Disconnect Switch Cat. Nos.

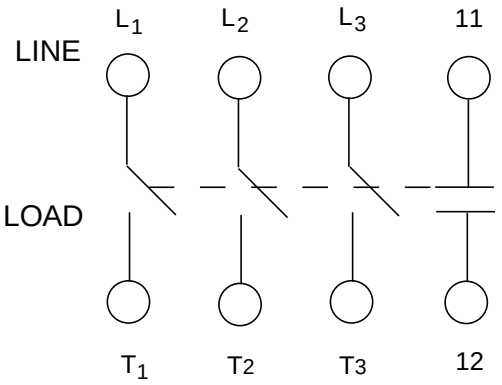
Environmental Data	
Ambient Temperature	
Open ..... °C (F)	–2…+55 (–4…+131)
Enclosed ..... °C (F)	–20…+40 (–4…+104)
Storage ..... °C (F)	–40…+65 (–40…+149)
Altitude (per IEC 947-1) m	2,000
Relative Humidity (per IEC 947-1)	90% @ +20°C (+68°F) 50% @ +40°C (+104°F)

Auxiliary Contact Ratings for Cat. No. 195-GA

AC11 Rating		DC11 Rating	
U_e (Volts)	I_e (Amperes)	U_e (Volts)	I_e (Amperes)
12…120	6	28	5.0
220…240	3	110	1.25
380…480	1.5	220	0.62
500…600	1.2	440	0.27
		600	0.20

Thermal Current — 10 Amperes. EEMAC/NEMA A600, P300.
Insulation Voltage IEC (U_i) — 660.

Wiring Schematic



Applications Within Canada and the United States

General

The requirements for disconnect switches used in motor branch circuits rated 600V and less are defined in Article 430, Part J of the U.S. National Electrical Code (NEC), NFPA70. Canadian Electrical Code (CEC) requirements are very similar in the area of motor branch circuit disconnect requirements. For simplicity, we will treat the NEC and CEC requirements as being the same — and reference specific sections of the U.S. National Electrical Code.

The requirements for properly sizing a disconnect switch are dependent on the type of application. The NEC refers to two types of applications: single motor and combination loads. A combination load consists of an application where two or more motors are used together or where one or more motors are used in combination with other loads, such as resistance heaters.

Single Motor Applications

Section 430-110 Paragraph (a) states that the disconnect switch must have an ampere rating of at least 115% of the full-load current rating of the motor.

Example 1: For a motor with a full-load current of 22 A, the disconnect switch must be rated at least 25.3 A (22 x 1.15).

If the disconnecting means under evaluation is rated in horsepower, the selection of the disconnect switch is even more straightforward; a disconnect switch must have a horsepower rating equal to, or greater than the horsepower rating of the motor at the applicable voltage.

Example 2: For a motor with a 10HP rating at 460V AC, the disconnect switch must be rated at least 10HP at 460V AC.

If the disconnect switch is rated in horsepower, and UL Listed, UL Component Recognized, or CSA Certified, it will meet the requirements for the 115% full-load current rating stipulated by the NEC.

Combination Load Applications

Section 430-110 Paragraph (c) addresses the rating of the disconnecting means for combination loads. This paragraph essentially requires that the loads that “may be simultaneous on a single disconnecting means” be combined to provide equivalent full-load and locked-rotor currents for what is then to be considered as a single motor for the purpose of selecting the appropriate disconnecting means. This means that it is necessary to identify the particular combination of connected loads which can be operating simultaneously and will result in the maximum full-load and locked-rotor current sums.

The individual full-load current values are to be selected from Tables 430-148, 430-149, or 430-150 and the locked-rotor values are to be from Table 430-151.

The equivalent single motor full-load current is the sum of the simultaneously operating motor full-load currents and the rating in amperes of other loads operating at the same time. The equivalent locked-rotor current is the sum of the simultaneously started motors’ locked-rotor currents and the full-load currents of the remaining operating motor and non-motor loads.

The disconnecting means shall have a current rating equal to or greater than 115% of the equivalent single motor full-load current and have a horsepower rating equal to or greater than the horsepower rating determined from the equivalent locked-rotor summation.

Consider the following 460V application:

Load	HP	Full-Load Current A
Motor 1	5	7.6 (simultaneous)
Motor 2	10	14.0 (not included) ❶
Motor 3	15	21.0 (simultaneous)
Motor 4	20	27.0 (simultaneous)
Other		7.0 (simultaneous)
Total Equivalent		62.6 (simultaneous)

❶ Motor 2 is not included in the total since it cannot operate simultaneously with the other motors, therefore, the disconnect switch must be rated at least 72 A (1.15 x 62.6).

Consider now the locked-rotor current analysis for the same application:

Load	HP	Full-Load Current A
Motor 1	5	(7.6FLA) 45.6 (simultaneous)
Motor 2	10	84.0 (not included) ❶
Motor 3	15	126.0 (simultaneous) ❷
Motor 4	20	162.0 (simultaneous) ❷
Other		7.0 (simultaneous)
Total Equivalent		302.6 (simultaneous)

❶ Note again that Motor 2 cannot operate simultaneously with the other loads.

❷ The largest equivalent locked-rotor current occurs when motors 3 and 4 start together while the other loads marked “simultaneous” are already operating. Since Motor 1 is not starting with Motors 3 and 4, its full-load current will be added to the total instead of its locked-rotor current.

Table 430-151, which provides the correlation between locked-rotor currents and HP ratings, shows that a 40 HP rating is the equivalent for 302.6 locked-rotor amperes.

Therefore, the disconnect selected for this application must have a current rating of at least 72 A and a HP rating of at least 40 HP. In this case a Bulletin 194R rated for 100 A and 60 HP at 460V would be an appropriate choice. What can be seen from this analysis is that, depending upon the number of motors that can start simultaneously, the actual size of the required disconnect is sometimes determined by the equivalent full load current (72 A) and other times by the equivalent horsepower determined from the locked-rotor analysis (40 HP).

Applications Outside the United States and Canada

General

Disconnect switches designed to IEC Standards and used in applications outside of North America are selected based on the ampere, horsepower, or kilowatt rating of the disconnect switch, under various utilization categories. Utilization categories for disconnect switches are as follows:

Nature of Current	Utilization Category		Typical Applications
	Frequent Operation	Infrequent Operation	
AC	AC-20A ❶	AC-20B ❶	Connecting and disconnecting under no-load conditions
	AC-21A	AC-21B	Switching of resistive loads including moderate overloads
	AC-22A	AC-22B	Switching of mixed resistive and inductive loads, including moderate overloads
	AC-23A	AC-23B	Switching of motor loads or other highly inductive loads

❶ The use of these utilization categories is not permitted in the U.S.

For any application, the disconnect switch ampere, horsepower, or kilowatt rating must be greater than, or equal to, the application full-load current or power (HP or kW), in the appropriate utilization category.
Example 1: For a 380V 50 Hz distribution application (AC-22A), with a 63 A full load current, the disconnect switch must be rated at least 63 A at 380V 50 Hz for use in AC-22A applications.
Example 2: For a 415V 50 Hz motor application (AC-23A), with a 75 kW rating, the disconnect switch must be rated at least 75 kW at 415V 50 Hz for use in AC-23A applications.

Renewal Parts

Hardware Kits (Includes switch/fuse mounting hardware and operating rod cotter pin)

Disconnect Switch		Hardware Kit Part No.
Cat. No.	Dim. Ref.	
194R-NC030P3	A1, A2	41022-316-02
194R-NJ030P3		41022-316-02
194R-NN030P3		41022-316-02
194R-NA100P3		41022-316-02
194R-NA200P3		41022-316-02
194R-NJ060P3	B1, B2	41022-316-02
194R-NN060P3		41022-316-02
194R-NA300P3		41022-316-02
194R-NA380P3	C1, C2	41022-800-03
194R-NN100P3		41022-800-02
194R-NJ100P3		41022-800-01
194R-NA400P3	D1, D2	41022-800-07
194R-NN200P3		41022-800-06
194R-NJ200P3		41022-800-05
194R-ND072P3		41022-800-04

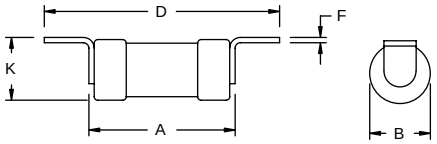
Disconnect Switch		Hardware Kit Part No.
Cat. No.	Dim. Ref.	
194R-NH200P3	E1, E2	41022-800-12
194R-ND250P3		41022-800-11
194R-NB200P3		41022-800-10
194R-NH100P3		41022-800-09
194R-ND138P3		41022-800-08
194R-NH400P3	F1	41022-800-17
194R-ND300P3		41022-800-16
194R-NB300P3		41022-800-15
194R-NN400P3		41022-800-14
194R-NJ400P3		41022-800-13

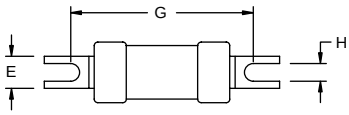
With Bulletin 194R Fused Disconnect Switches

Bulletin 194R Fused Disconnect Switches have been designed to accept a variety of fuses for worldwide application flexibility. Following is a brief summary of typical fuse specifications, where the fuses are typically used, and which Bulletin 194R disconnect switches will accommodate each fuse type. Fuse manufacturers should be contacted for more specific information about each fuse type. **Fuses are not available from Allen-Bradley.**

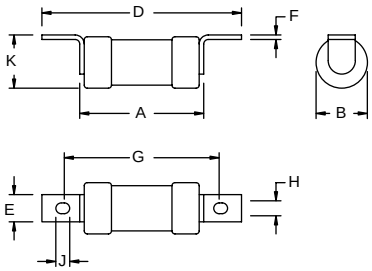
BS88 Fuses (63 A shown)
Dimensions in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.

- IEC fuse type: Fuse-link for bolted connection
- Voltage rating: 660/690V AC
- Interrupting rating: 80 kA
- Standard cartridge sizes: A1, A2, A3, A4, B1, B2, B3, B4
- Typical ampere ratings: 2 A…400 A
- Construction: Blade type for bolted connection
- Can be installed on Bulletin 194R disconnect switch **Cat. Nos: 194R-NA100P3, NA200P3, NA300P3, NA380P3, NA400P3, NB200P3, NB300P3**
- Where used: United Kingdom, Australia, New Zealand, Asia

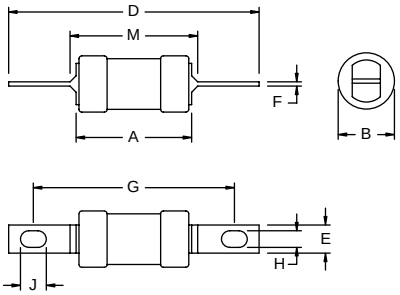




Standard cartridge size A1



Standard cartridge sizes A2, A3, A4



Standard cartridge sizes B1, B2, B3, B4

Dim. Ref.	Ampere Range (A)	A	B	D	E	F	G	H	K
A1	2…20	36.50 (1-7/16)	13.90 (35/64)	55.60 (2-3/16)	11.10 (7/16)	0.80 (1/32)	4.50 (1-3/4)	4.40 (11/64)	14.30 (9/16)

Dim. Ref.	Ampere Range (A)	A	B	D	E	F	G	H	J	K
A2	2…32	56.40 (2-7/32)	23.80 (15/16)	85.80 (3-3/8)	8.70 (11/32)	1.20 (3/64)	73.00 (2-7/8)	5.20 (13/64)	7.10 (9/32)	23.80 (15/16)
A3	35…63	56.40 (2-7/32)	23.80 (15/16)	85.80 (3-3/8)	8.70 (11/32)	1.20 (3/64)	73.00 (2-7/8)	5.20 (13/64)	7.10 (9/32)	23.80 (15/16)
A4	80…100	70.00 (2-3/4)	34.90 (1-3/8)	111.00 (4-3/8)	19.10 (3/4)	2.40 (3/32)	93.70 (3-11/16)	8.70 (11/32)	10.30 (13/32)	34.90 (1-3/8)

Dim. Ref.	Ampere Range (A)	A	B	D	E	F	G	H	J	M
B1	80…100	70.00 (2-3/4)	34.90 (1-3/8)	136.50 (5-3/8)	19.10 (3/4)	3.20 (1/8)	111.00 (4-3/8)	8.70 (11/32)	11.90 (15/32)	79.40 (3-1/8)
B2	125…200	77.00 (3-1/32)	41.30 (1-5/8)	136.50 (5-3/8)	19.10 (3/4)	3.20 (1/8)	111.00 (4-3/8)	8.70 (11/32)	11.90 (15/32)	79.40 (3-1/8)
B3	250…315	77.00 (3-1/32)	54.00 (2-1/8)	136.50 (5-3/8)	25.40 (1)	3.20 (1/8)	111.00 (4-3/8)	8.70 (11/32)	11.90 (15/32)	82.00 (3-1/4)
B4	355…400	83.00 (3-9/32)	61.10 (2-13/32)	136.50 (5-3/8)	25.40 (1)	6.30 (1/4)	111.00 (4-3/8)	8.70 (11/32)	11.90 (15/32)	85.80 (3-3/8)

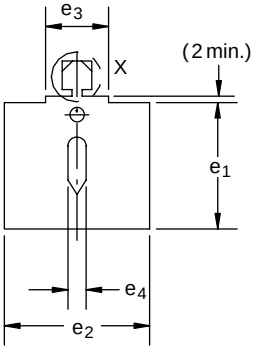
Product Selection — Page 4-64

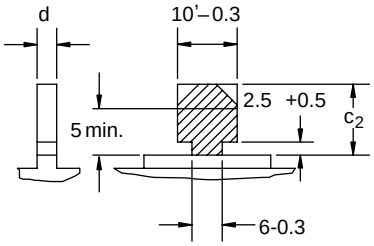
With Bulletin 194R Fused Disconnect Switches, Continued

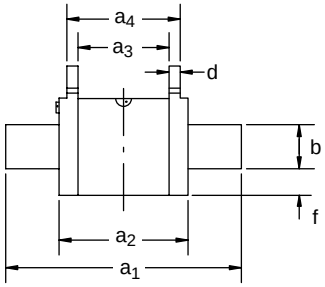
DIN Fuses (100 A shown)

Dimensions in millimeters only.
Dimensions are not intended to be used for manufacturing purposes.

- IEC fuse type: Fuse-link with blade contacts
- Voltage rating: 660/690V AC
- Interrupting rating: 120,000 A
- Standard cartridge sizes: 00, 0, 1 and 2
- Typical ampere ratings: 2…400 A
- Construction: Blade type
- Can be installed on Bulletin 194R disconnect switch
  Cat. Nos: 194R-ND072P3, ND138P3, ND250P3, ND300P3
- Where used: Europe, South America, Middle East and India







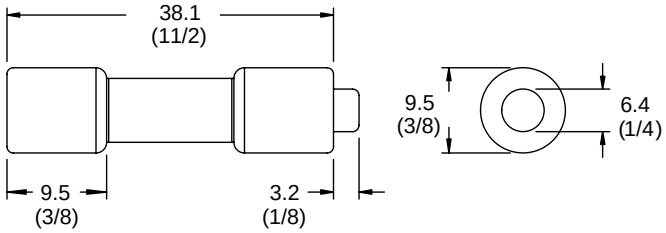
Size	Max. rated current (A)	a_1	a_2	a_3	a_4	b (min.)	d	e_1 (max.)	e_2 (max.)	e_3	e_4 ±0.2	f
00	100	78.5 ±1.5	53	45 ±1.5	49 ±1.5	15	2 ±0.5	48	30	20 ±5	6	12.5
0	160	125 ±2.5	67	62 +3 –1.5	68 +1.5 –3	15	2 +1.5 –0.5	48	40	20 ±5	6	11.5
1	250	135 ±2.5	71	62 ±2.5	68 ±2.5	20	2.5 +1.5 –0.5	53	52	20 +5 –2	6	10
2	400	150 ±2.5	72	62 ±2.5	68 ±2.5	25	2.5 +1.5 –0.5	61	60	20 +5 –2	6	10

Product Selection — Page 4-64

With Bulletin 194R Fused Disconnect Switches, Continued

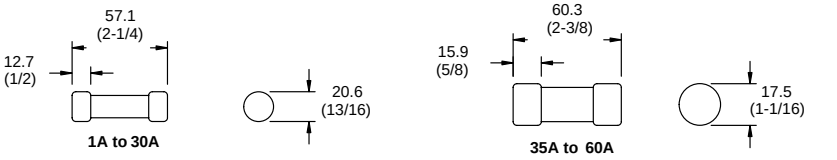
CSA HRCI and UL Class Fuses (10 A shown)
Dimensions in millimeters (inches).
Dimensions are not intended to be used for manufacturing purposes.

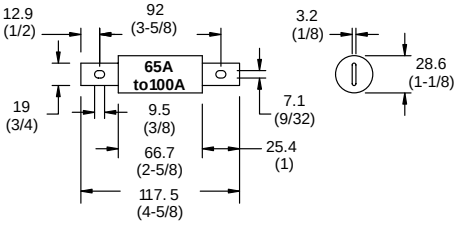
- UL fuse type: Class CC
- CSA fuse type: HRCI-MISC
- Voltage rating: 600V AC
- Interrupting rating: 200,000 A
- Standard cartridge sizes: 30 A
- Typical ampere ratings: 1…30 A
- Construction: Ferrule type
- Can be installed on Bulletin 194R disconnect switch **Cat. No: 194R-NC030P3**
- Where used: North America

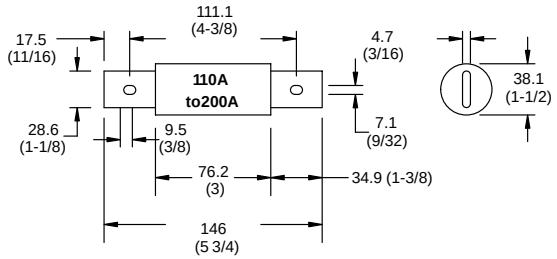


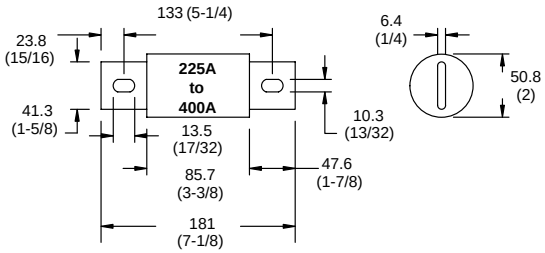
CSA HRCI and UL Class Fuses (30 A shown)
Dimensions in millimeters (inches).
Dimensions are not intended to be used for manufacturing purposes.

- CSA fuse type: HRCI-J
- UL fuse type: Class J
- Voltage rating: 600V AC
- Interrupting rating: 200,000 A
- Standard cartridge sizes: 30 A, 60 A, 100 A, 200 A and 400 A
- Typical ampere ratings: 1 -600 A; Blade type for bolted connection
- Can be installed on Bulletin 194R disconnect switch **Cat. Nos: 194R-NJ030P3, NJ060P3, NJ100P3, NJ200P3, NJ400P3**
- Where used: North America







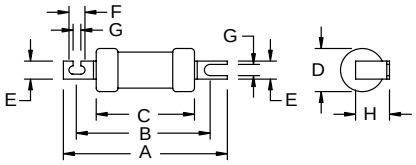


Product Selection — Page 4-64

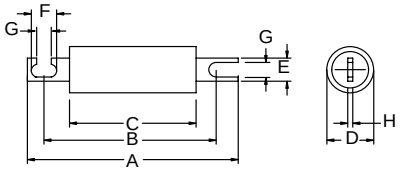
With Bulletin 194R Fused Disconnect Switches, Continued

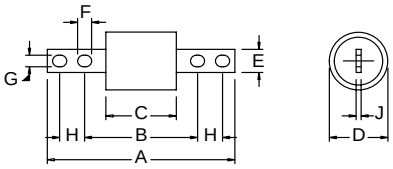
CSA HRCII Fuses (100 A shown)
Dimensions in millimeters (inches).
Dimensions are not intended to be used for manufacturing purposes.

- CSA fuse type: HRCII-C
- Voltage rating: 600V AC
- Interrupting rating: 200,000 A
- Standard cartridge sizes: 30 A, 60 A, 100 A, 200 A and 400 A
- Typical ampere ratings: 1…400 A
- Construction: Blade type for bolted connection
- Can be installed on Bulletin 194R disconnect switch **Cat. Nos: 194R-NA200P3, NA300P3, NH100P3, NH200P3, NH400P3**
- Where used: Canada



Standard Cartridge Sizes 30 A and 60 A





Standard Cartridge Sizes 100 A, 200 A and 400 A

Range (A)	A	B	C	D	E	F	G	H	J
0…30	84.14 (3-5/16)	71.04 (2-51/64)	50.8 (2)	20.64 (13/16)	8.73 (11/32)	7.54 (19/64)	5.56 (7/32)	23.81 (15/16)	1.59 (1/16)
31…60	88.9 (3-1/2)	71.04 (2-51/64)	50.8 (2)	20.64 (13/16)	12.7 (1/2)	7.54 (19/64)	5.56 (7/32)	26.99 (1-1/16)	1.59 (1/16)
61…100	109.54 (4-5/16)	92.47 (3-41/64)	60.72 (2-25/64)	34.13 (1-11/32)	19.05 (3/4)	11.91 (15/32)	8.73 (11/32)	34.93 (1-3/8)	2.38 (3/32)
101…200	134.94 (5-5/16)	109.14 (4-19/64)	76.2 (3)	38.1 (1-1/2)	19.05 (3/4)	11.91 (15/32)	8.73 (11/32)	3.18 (1/8)	—
201…400	207.96 (8-3/16)	133.35 (5-1/4)	76.2 (3)	60.33 (2-3/8)	25.4 (1)	12.7 (1/2)	9.53 (3/8)	25.4 (1)	4.76 (3/16)
401…600	207.96 (8-3/16)	133.35 (5-1/4)	76.2 (3)	76.2 (3)	25.4 (1)	15.08 (19/32)	10.32 (13/32)	25.4 (1)	9.53 (3/8)

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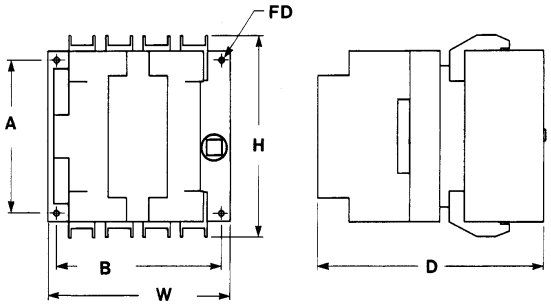
Disconnect Switches

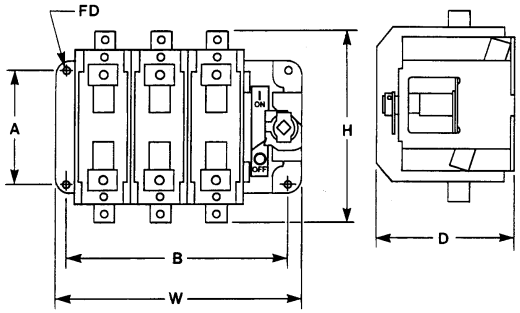
Disconnect Switch Dimension References A1, A2, B1 and B2 (30 A and 60 A)

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



Disconnect Switch Dimension Reference	Approximate Dimensions					
	H	W	D	A	B	FD
A1	106 (4-11/64)	102 (4-1/64)	112 (4-13/32)	82 (3-15/64)	85 (3-11/32)	2-M4 2-#8
A2	106 (4-11/64)	102 (4-1/64)	83 (3-17/64)	82 (3-15/64)	82 (3-15/64)	2-M4 2-#8
B1	118 (4-21/32)	134 (5-9/32)	115 (4-33/64)	100 (3-15/16)	120 (4-23/32)	4-M4 4-#8
B2	118 (4-21/32)	134 (5-9/32)	83 (3-17/64)	100 (3-15/16)	120 (4-23/32)	4-M4 4-#8

Disconnect Switch Dimension References C1, C2, D1, D2, E1, E2 and F1 (100 A, 200 A and 400 A)

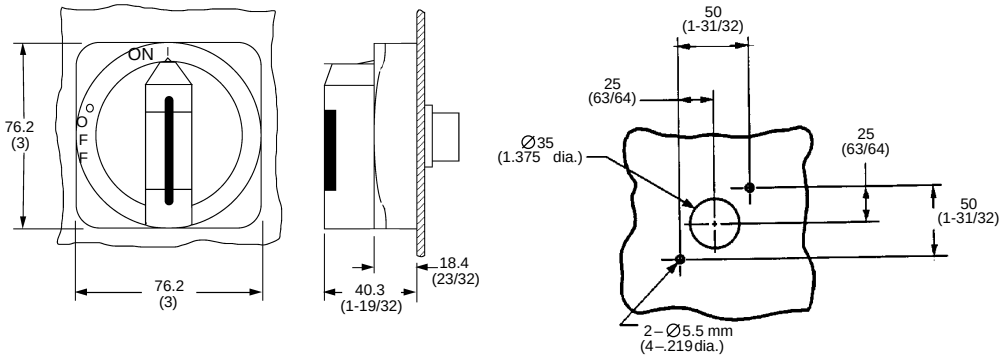


Disconnect Switch Dimension Reference	Approximate Dimensions					
	H	W	D	A	B	FD
C1	148 (5-53/64)	194 (7-41/64)	130 (5-7/64)	106 (4-11/64)	170 (6-11/16)	4-M6 (4-1/4)
C2	148 (5-53/64)	194 (7-41/64)	136 (5-23/64)	106 (4-11/64)	170 (6-11/16)	4-M6 (4-1/4)
D1	184 (7-1/4)	236 (9-19/64)	148 (5-53/64)	106 (4-11/64)	212 (8-11/32)	4-M6 (4-1/4)
D2	184 (7-1/4)	236 (9-19/64)	153 (6-1/64)	106 (4-11/64)	212 (8-11/32)	4-M6 (4-1/4)
E1	220 (8-21/32)	278 (10-15/16)	213 (8-25/64)	150 (5-29/32)	252 (9-59/64)	4-M8 (4-5/16)
E2	220 (8-21/32)	278 (10-15/16)	213 (8-25/64)	150 (5-29/32)	252 (9-59/64)	4-M8 (4-5/16)
F1	250 (9-27/32)	308 (12-1/8)	213 (8-25/64)	150 (5-29/32)	282 (11-7/64)	4-M8 (4-5/16)

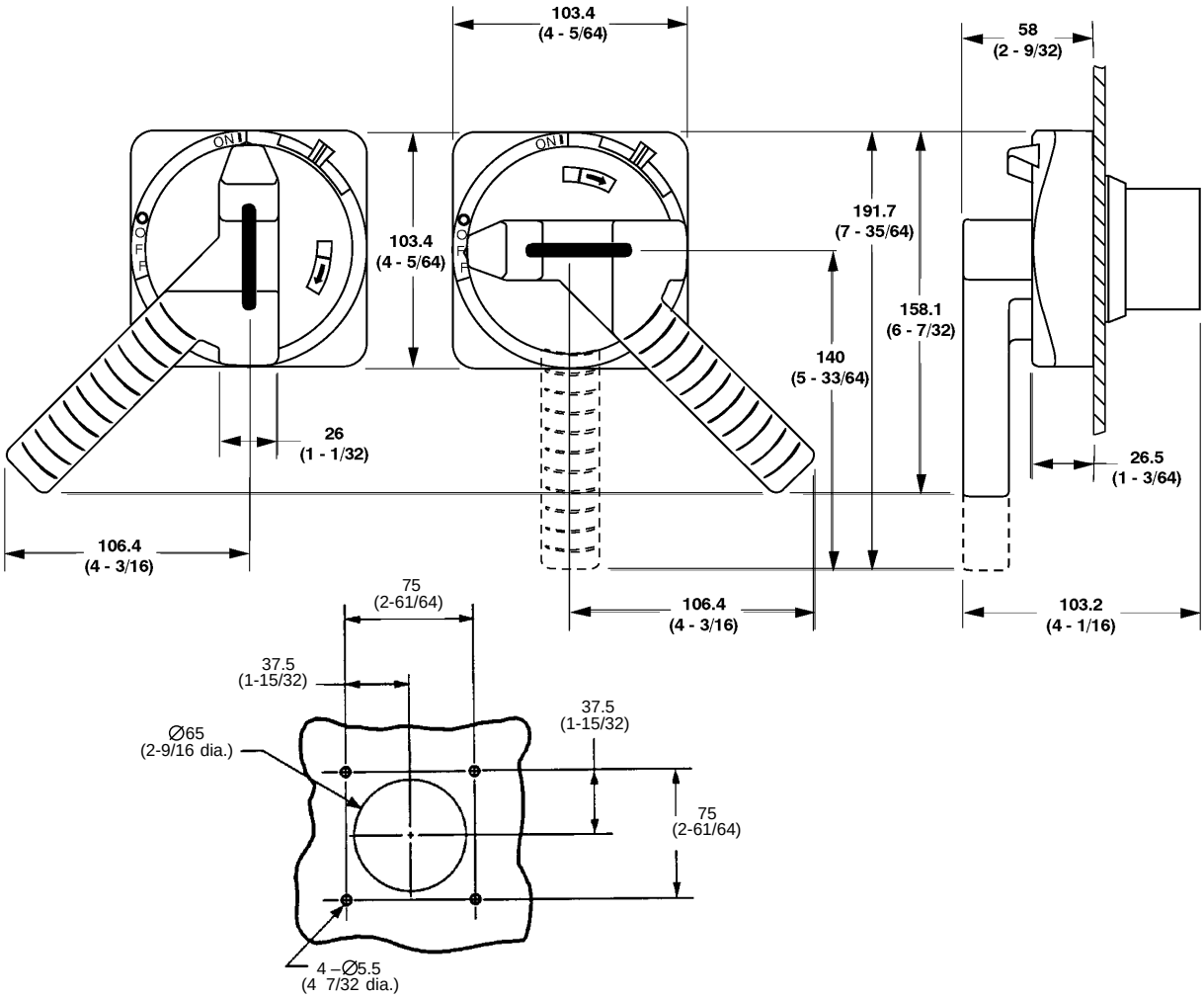
Product Selection — Page 4-64

Operating Handles — Cat. No. 194R-HS.../190-HS

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

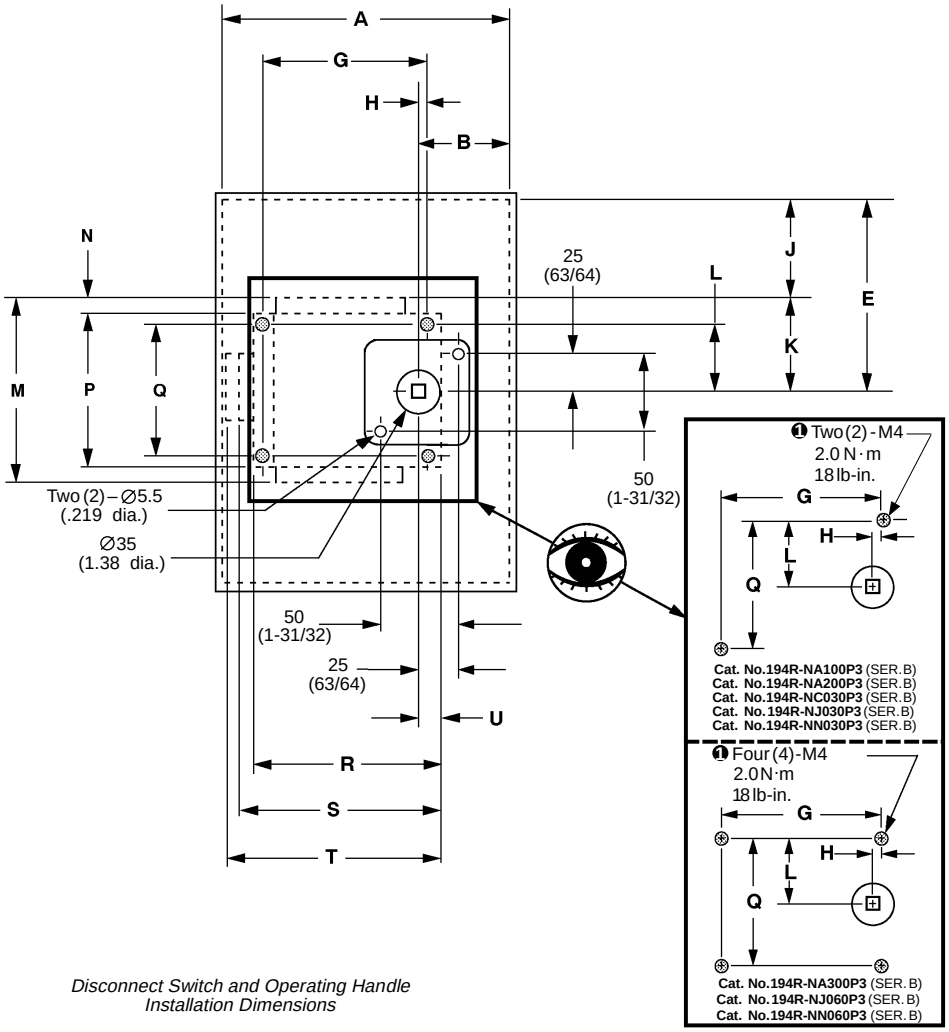


Operating Handles — Cat. No. 194R-HM.../190-HM



Disconnect Switch Dim. Ref.: A1, A2, B1, B2 (30 A and 60 A)

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



Disconnect Switch and Operating Handle Installation Dimensions

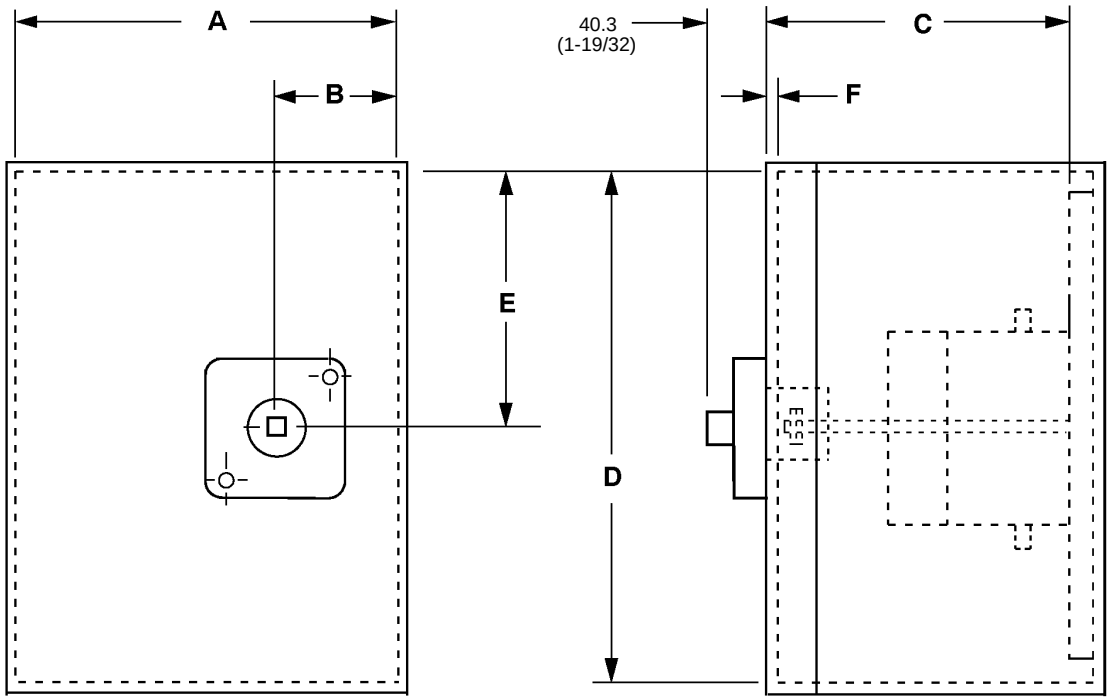
❶ The switch is capable of accepting #8 screws 34.9 (1-3/8) for mounting.

Note: Enclosure Installation Dimensions **A** through **F** are listed on page 4-88.

Cat. No. (SER. B)	Dim. Ref.	G	H	J	K	L	M	N	P	Q	R	S	T	U
194R-NA100P3 **194R-NA200P3** **194R-NC030P3** **194R-NJ030P3** **194R-NN030P3**	A1, A2	85 (3-11/32)	7.5 (19/64)	24.2 (61/64)	64.8 (2-35/64)	41 (1-39/64)	129.6 (5-7/64)	11.8 (15/32)	106 (4-11/64)	82 (3-15/64)	102 (4-1/64)	114.1 (4-1/2)	126.2 (4-31/32)	12 (15/32)
194R-NA300P3 **194R-NJ060P3** **194R-NN060P3**	B1, B2	120 (4-23/32)	10 (25/64)	28.5 (1-1/8)	76.5 (3-1/64)	50 (1-31/32)	153 (6-1/32)	17.5 (11/16)	118 (4-21/32)	100 (3-15/16)	134 (5-9/32)	146.1 (5-3/4)	158.2 (6-15/64)	16 (5/8)

Disconnect Switch Dim. Ref.: A1, A2, B1, B2 (30 A and 60 A)
Enclosure and Operating Handle

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

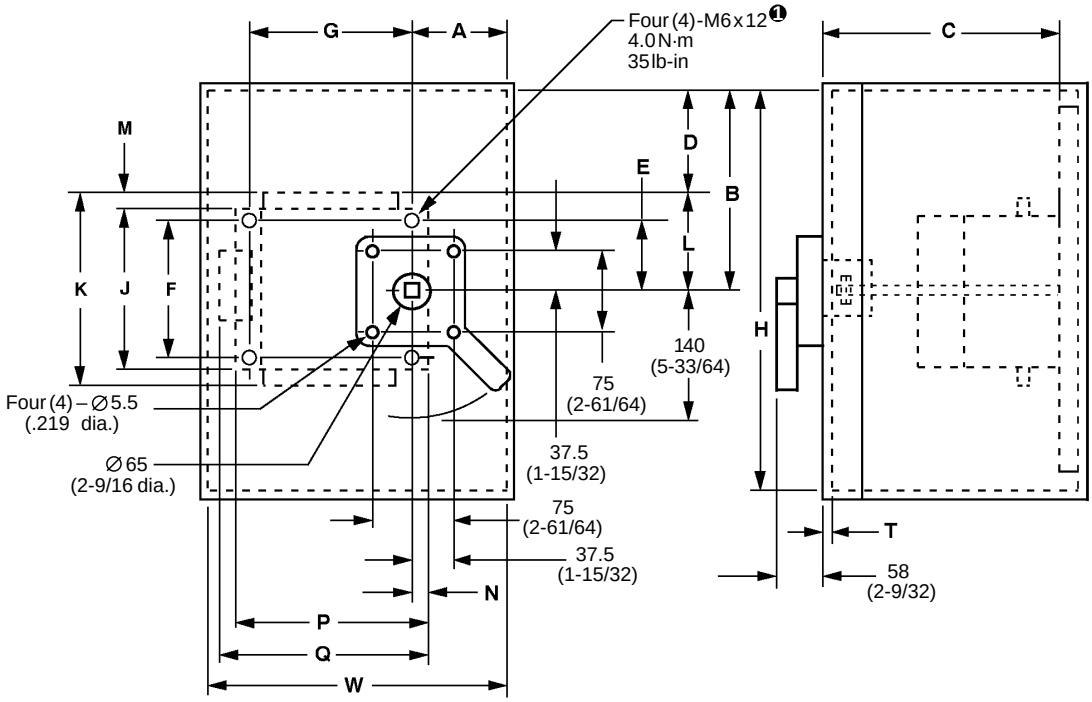


Enclosure Installation Dimensions

Cat. No.	Dim. Ref.	A	B	C		D	E	F	
		Maximum	Minimum	Minimum	Maximum	Minimum	Minimum	Minimum	Maximum
194R-NA100P3 (SER. B) **194R-NA200P3** (SER. B) **194R-NC030P3** (SER. B) **194R-NJ030P3** (SER. B)	A1	171 (6-3/4)	45 (1-49/64)	147.6 (5-13/16)	454 (17-7/8)	248 (9-3/4)	89 (3-1/2)	1.4 (1/16)	4.78 (3/16)
194R-NN030P3 (SER. B)	A2	171 (6-3/4)	45 (1-49/64)	111 (4-3/8)	454 (17-7/8)	248 (9-3/4)	89 (3-1/2)	1.4 (1/16)	4.78 (3/16)
194R-NA300P3 (SER. B) **194R-NJ060P3** (SER. B)	B1	197 (7-3/4)	45 (1-49/64)	147.6 (5-13/16)	454 (17-7/8)	248 (9-3/4)	105 (4-9/64)	1.4 (1/16)	4.78 (3/16)
194R-NN060P3 (SER. B)	B2	197 (7-3/4)	45 (1-49/64)	111 (4-3/8)	454 (17-7/8)	248 (9-3/4)	105 (4-9/64)	1.4 (1/16)	4.78 (3/16)

Disconnect Switch Dim. Ref.: C1, C2, D1, D2 (100 A and 200 A)

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



❶ The switch is capable of accepting four (4)∅ 6.4 (1/4 dia.) screws for mounting.

Enclosure Installation Dimensions

Dimension Reference	A	B	C		H	T		W	
								Minimum	
	Minimum	Minimum	Minimum	Maximum	Minimum	Minimum	Maximum	Single Pole Aux. Cont.	Two Pole Aux. Cont.
C1	108 (4-1/4)	162 (6-3/8)	162 (6-3/8)	457 (18)	330 (13)	1.6 (1/16)	4.8 (3/16)	301 (11-27/32)	313 (12-5/16)
C2	108 (4-1/4)	162 (6-3/8)	168 (6-5/8)	457 (18)	330 (13)	1.6 (1/16)	4.8 (3/16)	301 (11-27/32)	313 (12-5/16)
D1	108 (4-1/4)	280 (11)	178 (7)	457 (18)	560 (22)	1.6 (1/16)	4.8 (3/16)	344 (13-17/32)	356 (14)
D2	108 (4-1/4)	280 (11)	183 (7-7/32)	457 (18)	560 (22)	1.6 (1/16)	4.8 (3/16)	344 (13-17/32)	356 (14)

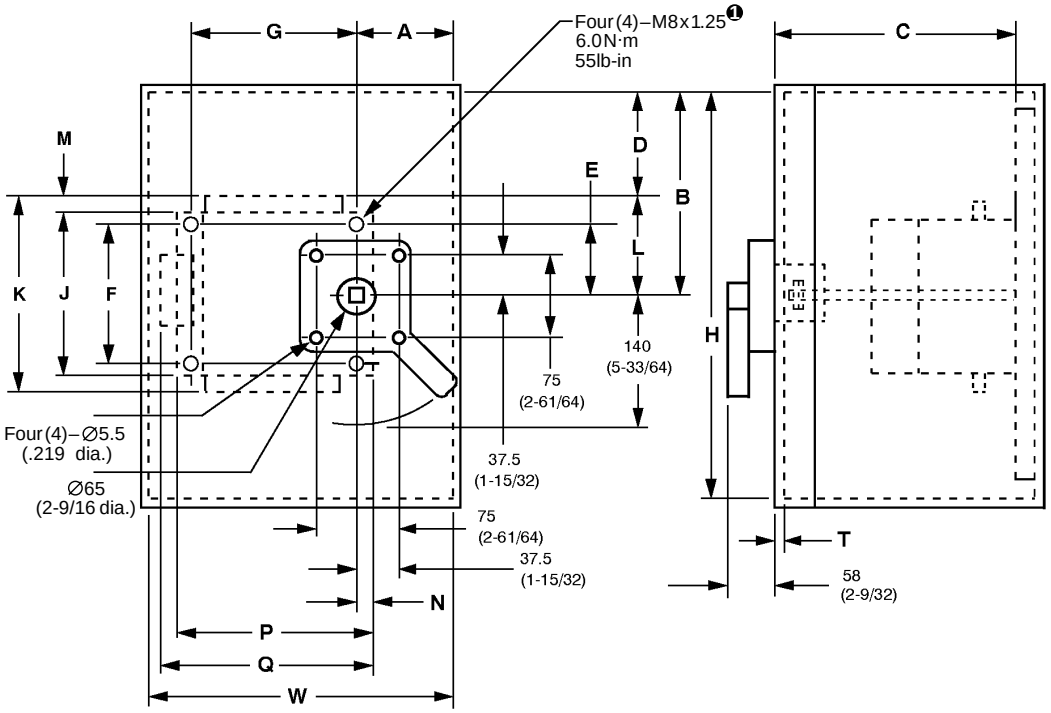
Disconnect Switch and Operating Handle Installation Dimensions

Dimension Reference	D	E	F	G	J	K	L	M	N	P	Q
C1, C2	74 (2-29/32)	53 (2-3/32)	106 (4-3/16)	170 (6-11/16)	148 (5-53/64)	176 (6-15/16)	88 (3-15/32)	13.5 (17/32)	12.7 (1/2)	194 (7-41/64)	206 (8-7/64)
D1, D2	162 (6-23/64)	53 (2-3/32)	106 (4-3/16)	212 (8-11/32)	184 (7-1/4)	236 (9-9/32)	118 (4-41/64)	26 (1-1/32)	12.7 (1/2)	236 (9-19/64)	248 (9-49/64)

Product Selection — Page 4-64

Disconnect Switch Dim. Ref.: E1, E2, F1 (200 A and 400 A)

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



❶ The switch is capable of accepting four (4)∅ 7.9 (5/16 dia.) screws for mounting.

Enclosure Installation Dimensions

Dimension Reference	A	B	C		H	T		W	
	Minimum	Minimum	Minimum	Maximum	Minimum	Minimum	Maximum	Minimum	
								Single Pole Aux. Cont.	Two Pole Aux. Cont.
E1	108 (4-1/4)	305 (12)	227 (8-15/16)	610 (24)	610 (24)	1.6 (1/16)	4.8 (3/16)	394 (15-33/64)	406 (16)
E2	108 (4-1/4)	356 (14)	227 (8-15/16)	610 (24)	712 (28)	1.6 (1/16)	4.8 (3/16)	394 (15-33/64)	406 (16)
F1	108 (4-1/4)	381 (15)	243 (9-9/16)	610 (24)	762 (30)	1.6 (1/16)	4.8 (3/16)	606 (23-7/8)	606 (23-7/8)

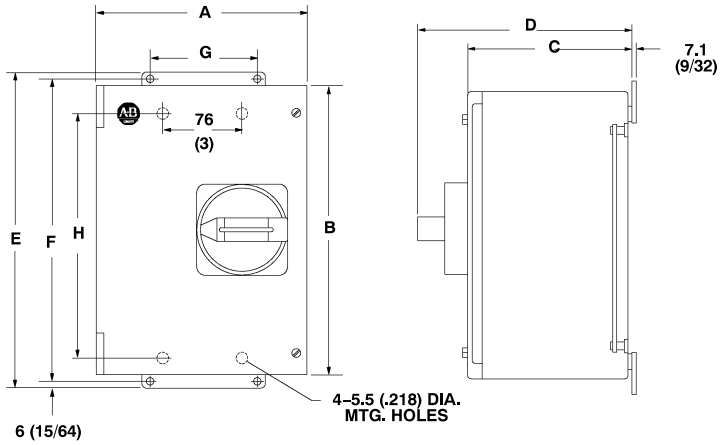
Disconnect Switch and Operating Handle Installation Dimensions

Dimension Reference	D	E	F	G	J	K	L	M	N	P	Q
E1	158 (6-7/32)	75 (2-61/64)	150 (5-29/32)	252 (9-59/64)	220 (8-21/32)	294 (11-37/64)	147 (5-25/32)	37 (1-29/64)	14 (35/64)	278 (10-15/16)	290 (11-13/32)
E2	209 (8-7/32)	75 (2-61/64)	150 (5-29/32)	252 (9-59/64)	220 (8-21/32)	294 (11-37/64)	147 (5-25/32)	37 (1-29/64)	14 (35/64)	278 (10-15/16)	290 (11-13/32)
F1	202 (7-61/64)	75 (2-61/64)	150 (5-29/32)	282 (11-7/64)	250 (9-27/32)	358 (14-3/32)	179 (7-3/64)	54 (2-1/8)	14 (35/64)	308 (12-1/8)	320 (12-19/32)

Product Selection — Page 4-64

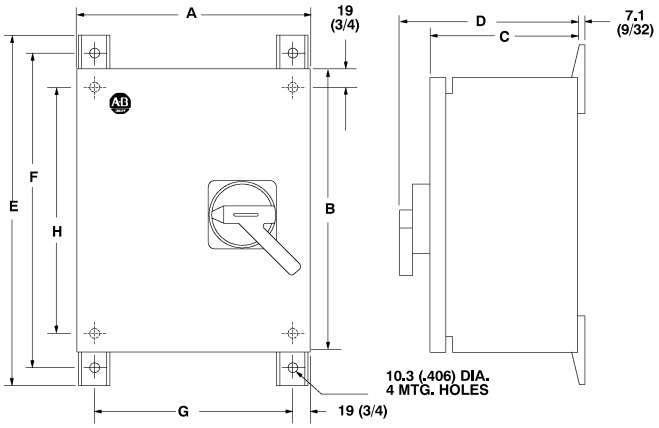
IP66 (Type 3/4/12) Watertight, Dusttight Sheet Metal Enclosure

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



External Mounting Feet Optional ***Cat. No. 198-F1***

(A)	Type	Dim. Ref.	A	B	C	D	E	F	G	H
30	Non-Fused & Fused	A1 & A2	200 (7-7/8)	300 (11-13/16)	160 (6-19/64)	200 (7-7/8)	325 (12-51/64)	313 (12-21/64)	105 (4-1/8)	236 (9-9/32)
60	Non-Fused & Fused	B1 & B2	200 (7-7/8)	300 (11-13/16)	160 (6-19/64)	200 (7-7/8)	325 (12-51/64)	313 (12-21/64)	105 (4-1/8)	236 (9-9/32)
100	Non-Fused & Fused	C1	400 (15-3/4)	350 (13-25/32)	180 (7-3/32)	220 (8-21/32)	375 (14-3/4)	363 (14-19/64)	206 (8-1/8)	286 (11-1/4)

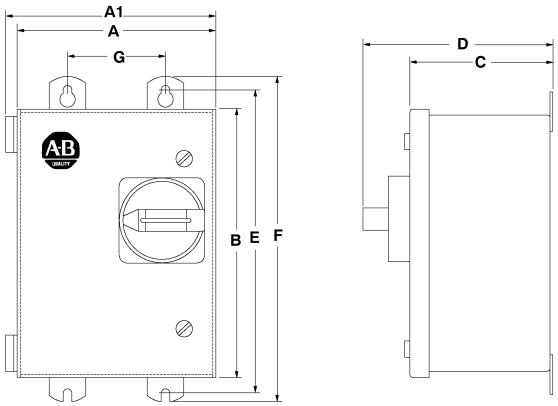


External Mounting Feet Optional ***Cat. No. 198-F3***

(A)	Type	Dim. Ref.	A	B	C	D	E	F	G	H
200	Non-Fused & Fused	D1	406 (16)	610 (24)	224 (8-51/64)	282 (11-5/64)	688 (27-5/64)	648 (25-1/2)	368 (14-1/2)	572 (22-1/2)
400	Non-Fused & Fused	F1	610 (24)	762 (30)	326 (12-51/64)	384 (15-5/64)	840 (33-5/64)	800 (31-1/2)	572 (22-1/2)	724 (28-1/2)

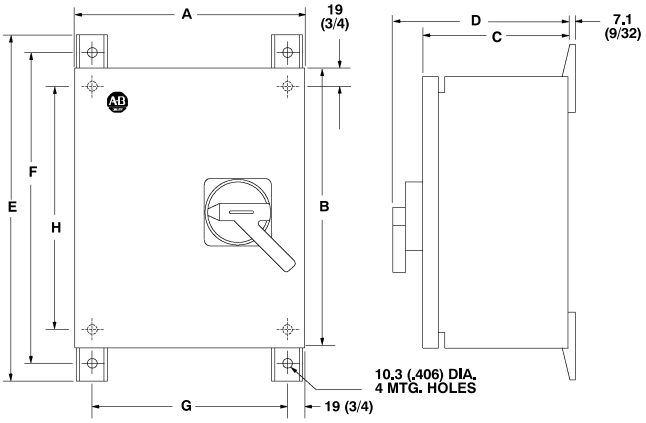
Type 4/4X Watertight, Corrosion-Resistant Stainless Steel Enclosure

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



External Mounting Feet Standard
External Mounting Feet Optional ***Cat. No. 198-F3***

(A)	Type	Dim. Ref.	A	A1	B	C	D	E	F	G	H
30	Non-Fused	A2	159 (6-1/4)	170 (6-11/16)	240 (9-7/16)	123 (4-27/32)	163 (6-7/16)	273 (10-3/4)	254 (10)	83 (3-1/4)	–
	Fused	A1	214 (8-7/16)	225 (8-7/8)	265 (10-7/16)	125 (4-29/32)	165 (6-1/2)	298 (11-23/32)	229 (11)	83 (3-1/4)	–
60	Non-Fused & Fused	B1 & B2	214 (8-7/16)	225 (8-7/8)	265 (10-7/16)	125 (4-29/32)	165 (6-1/2)	298 (11-23/32)	229 (11)	83 (3-1/4)	–

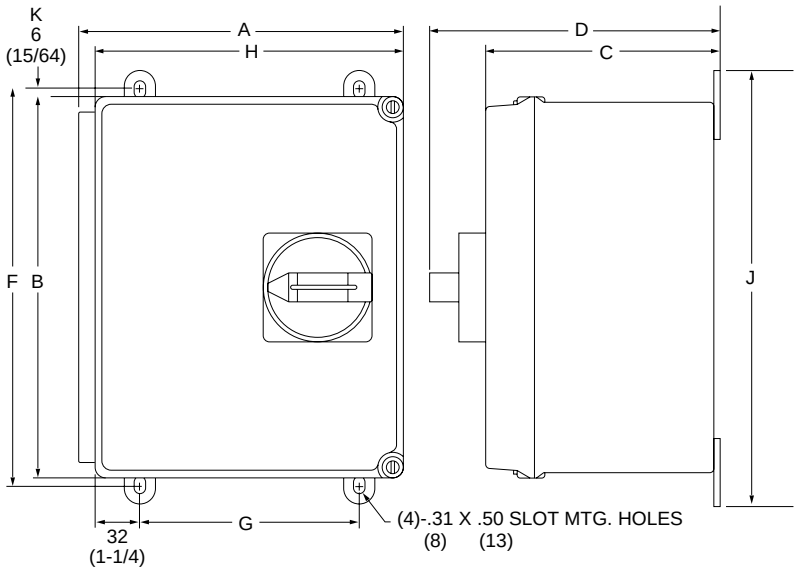


External Mounting Feet Optional ***Cat. No. 198-F3***

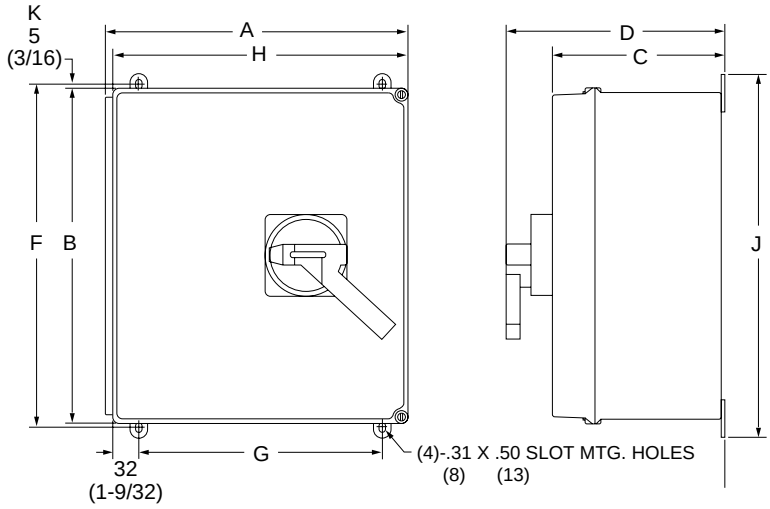
(A)	Type	Dim. Ref.	A	A1	B	C	D	E	F	G	H
100	Non-Fused & Fused	C1	508 (20)	–	406 (16)	224 (8-51/64)	282 (11-7/64)	484 (19-5/64)	444 (17-1/2)	470 (18-1/2)	368 (14-1/2)
200	Non-Fused & Fused	D1	406 (16)	–	610 (24)	224 (8-51/64)	282 (11-5/64)	688 (27-5/64)	648 (25-1/2)	368 (14-1/2)	572 (22-1/2)
300	Non-Fused & Fused	F1	610 (24)	–	762 (30)	326 (12-51/64)	384 (15-5/64)	840 (33-5/64)	800 (31-1/2)	572 (22-1/2)	724 (28-1/2)

IP66 (Type 3/4/4X/12) Corrosion Resistant, Non-Metallic Enclosure

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



Cat. No. 194R-K_30P3, 194R-K_60P3
30 and 60 A Switch



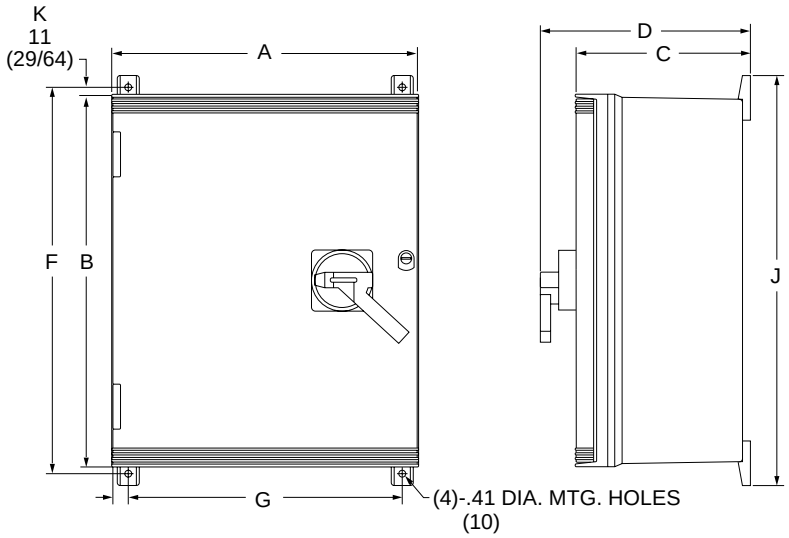
Cat. No. 194R-K_100P3
100 A Switch

Switch Size (A)	A	B	C	D	F	G	H	J	K
30/60	226 (8-59/64)	267 (10-1/2)	163 (6-27/64)	202 (7-61/64)	278 (10-61/64)	152 (6)	216 (8-1/2)	305 (12)	6 (15/64)
100	379 (14-15/16)	420 (16-1/4)	215 (8-31/64)	273 (10-49/64)	430 (16-61/64)	305 (12)	370 (14-9/16)	457 (18)	5 (13/64)

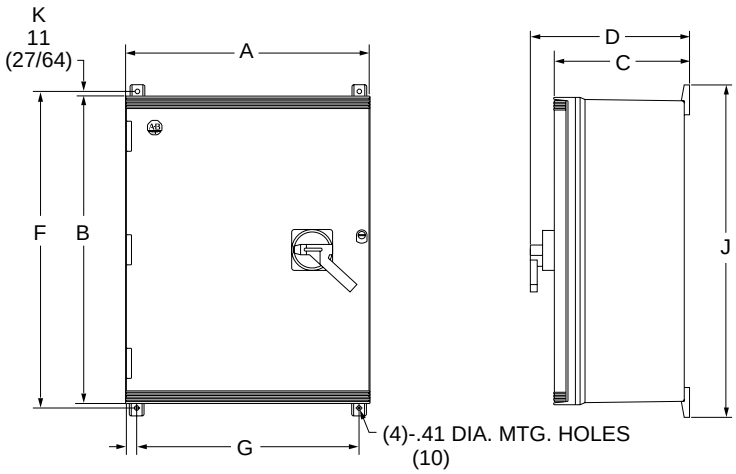
Product Selection — Page 4-64

IP66 (Type 3/4/4X/12) Corrosion Resistant, Non-Metallic Enclosure, Continued

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



Cat. No. 194R-K_200P3
200 A Switch



Cat. No. 194R-K_400P3
400 A Switch

Switch Size (A)	A	B	C	D	F	G	J	K
200	513 (20-13/64)	625 (24-5/8)	292 (11-31/64)	350 (13-25/32)	648 (25-1/2)	457 (18)	686 (27)	11 (7/16)
400	612 (24-1/8)	775 (30-33/64)	342 (13-31/64)	401 (15-25/32)	796 (31-11/32)	555 (21-7/8)	834 (32-27/32)	11 (27/64)