

Section 9

International Circuit Breakers

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SF and SL Individually Mounted Circuit Breakers

- CE marking.
- S-frame circuit breakers are CCC Certified.
- International products—for export use only.
- MCCBs in I-Line™ plug-on construction and a complete line of accessories are available. Contact your local Field Sales office.
- Order entry point is Cedar Rapids, Iowa.

Table 9.1: SLAL Individually-Mounted, IEC Rated Circuit Breakers, 415/240 Vac Max., 50/60 Hz, 2P and 3P

Frame Size	Circuit Breaker Type	Ampere Rating	Cat. No.	
			2P	3P
400 A	SLAL [1]	250 A	SLAL2250	SLAL3250
		300 A	SLAL2300	SLAL3300
		350 A	SLAL2350	SLAL3350
		400 A	SLAL2400	SLAL3400

[1] Add suffix K for CCC label



P-frame, 3P, Micrologic Electronic-Trip Unit, IEC Rated

Table 9.2: P-frame—1600 A, Individually-Mounted, Micrologic Electronic Trip Unit, IEC Rated

Sensor Rating	Cat. No.			Terminal Wire Range (AWG–kcmil)
	N Interrupting [1]	H Interrupting [1]	L Interrupting [1]	
3P, 690 Vac 50/60 Hz with LS0 Trip Functions				
630 A	NPNLE36063U32R	NPHLE36063U32R	NPLLE34063U32R	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U32R	NPHLE36080U32R	NPLLE34080U32R	
1000 A	NPNLE36100U32R	NPHLE36100U32R	NPLLE34100U32R	
1250 A	NPNLE36125U32R	NPHLE36125U32R	—	
1600 A	NPNLE36160U32R	NPHLE36160U32R	—	
3P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE36063U33R	NPHLE36063U33R	NPLLE34063U33R	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U33R	NPHLE36080U33R	NPLLE34080U33R	
1000 A	NPNLE36100U33R	NPHLE36100U33R	NPLLE34100U33R	
1250A	NPNLE36125U33R	NPHLE36125U33R	—	
1600A	NPNLE36160U33R	NPHLE36160U33R	—	
Micrologic Ammeter Trip Unit				
3P, 690 Vac 50/60 Hz with LS0 Trip Functions				
630 A	NPNLE36063U42R	NPHLE36063U42R	NPLLE34063U42R	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U42R	NPHLE36080U42R	NPLLE34080U42R	
1000 A	NPNLE36100U42R	NPHLE36100U42R	NPLLE34100U42R	
1250 A	NPNLE36125U42R	NPHLE36125U42R	—	
1600 A	NPNLE36160U42R	NPHLE36160U42R	—	
3P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE36063U43R	NPHLE36063U43R	NPLLE34063U43R	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U43R	NPHLE36080U43R	NPLLE34080U43R	
1000 A	NPNLE36100U43R	NPHLE36100U43R	NPLLE34100U43R	
1250 A	NPNLE36125U43R	NPHLE36125U43R	—	
1600 A	NPNLE36160U43R	NPHLE36160U43R	—	
3P, 690 Vac 50/60 Hz with LSIG Trip Functions				
630 A	NPNLE36063U44R	NPHLE36063U44R	NPLLE34063U44R	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U44R	NPHLE36080U44R	NPLLE34080U44R	
1000 A	NPNLE36100U44R	NPHLE36100U44R	NPLLE34100U44R	
1250 A	NPNLE36125U44R	NPHLE36125U44R	—	
1600 A	NPNLE36160U44R	NPHLE36160U44R	—	
Micrologic Power Trip Unit				
3P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE36063U63RE1	NPHLE36063U63RE1	NPLLE34063U63RE1	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U63RE1	NPHLE36080U63RE1	NPLLE34080U63RE1	
1000 A	NPNLE36100U63RE1	NPHLE36100U63RE1	NPLLE34100U63RE1	
1250 A	NPNLE36125U63RE1	NPHLE36125U63RE1	—	
1600 A	NPNLE36160U63RE1	NPHLE36160U63RE1	—	
3P, 690 Vac 50/60 Hz with LSIG Trip Functions				
630 A	NPNLE36063U64RE1	NPHLE36063U64RE1	NPLLE34063U64RE1	(4) 3/0–500 Al/Cu
800 A	NPNLE36080U64RE1	NPHLE36080U64RE1	NPLLE34080U64RE1	
1000 A	NPNLE36100U64RE1	NPHLE36100U64RE1	NPLLE34100U64RE1	
1250 A	NPNLE36125U64RE1	NPHLE36125U64RE1	—	
1600 A	NPNLE36160U64RE1	NPHLE36160U64RE1	—	

NOTE: See Digest for accessories and other information.

Table 9.3: Interrupting Ratings

	N		H		L	
	Icu	Ics (%Icu)	Icu	Ics (%Icu)	Icu	Ics (%Icu)
220/240 V	50 kA	75%	70 kA	50%	150 kA	100%
380/415 V	50 kA		70 kA		150 kA	
440 V	50 kA		65 kA		130 kA	
500/525 V	40 kA		50 kA		100 kA	
660/690 V	30 kA		42 kA		25 kA	

[1] New for P frame IEC only.



R-frame, 3P, Micrologic Electronic-Trip Unit, IEC Rated

Table 9.4: R-frame—3200 A, Individually-Mounted, Micrologic Electronic Trip Unit, IEC Rated

Sensor Rating	Cat. No.	
	N Interrupting	H Interrupting
3P, 690 Vac 50/60 Hz with LS0 Trip Functions		
1600 A	RNFE36160U32R	RHFE34160U32R
2000 A	RNFE36200U32R	RHFE34200U32R
2500 A	RNFE36250U32R	RHFE34250U32R
3200 A	RNFE36320U32R	RHFE34320U32R
3P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE36160U33R	RHFE34160U33R
2000 A	RNFE36200U33R	RHFE34200U33R
2500 A	RNFE36250U33R	RHFE34250U33R
3200 A	RNFE36320U33R	RHFE34320U33R
Micrologic Ammeter Trip Unit		
3P, 690 Vac 50/60 Hz with LS0 Trip Functions		
1600 A	RNFE36160U42R	RHFE34160U42R
2000 A	RNFE36200U42R	RHFE34200U42R
2500 A	RNFE36250U42R	RHFE34250U42R
3200 A	RNFE36320U42R	RHFE34320U42R
3P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE36160U43R	RHFE34160U43R
2000 A	RNFE36200U43R	RHFE34300U43R
2500 A	RNFE36250U43R	RHFE34350U43R
3200 A	RNFE36320U43R	RHFE34320U43R
3P, 690 Vac 50/60 Hz with LSIG Trip Functions		
1600 A	RNFE36160U44R	RHFE34160U44R
2000 A	RNFE36200U44R	RHFE34200U44R
2500 A	RNFE36250U44R	RHFE34250U44R
3200 A	RNFE36320U44R	RHFE34320U44R
Micrologic Power Trip Unit		
3P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE36160U63RE1	RHFE34160U63RE1
2000 A	RNFE36200U63RE1	RHFE34200U63RE1
2500 A	RNFE36250U63RE1	RHFE34250U63RE1
3200 A	RNFE36320U63RE1	RHFE34320U63RE1
3P, 690 Vac 50/60 Hz with LSIG Trip Functions		
1600 A	RNFE36160U64RE1	RHFE34160U64RE1
2000 A	RNFE36200U64RE1	RHFE34200U64RE1
2500 A	RNFE36250U64RE1	RHFE34250U64RE1
3200 A	RNFE36320U64RE1	RHFE34320U64RE1

NOTE: See Digest for accessories and other information.

Table 9.5: Interrupting Ratings

	N		H	
	Icu	Ics	Icu	Ics (%Icu)
220/240 V	85 kA	75%	125 kA	75%
380/415 V	70 kA		85 kA	
440 V	65 kA		85 kA	
500/525 V	65 kA	—		
660/690 V	65 kA	100%	—	



P-frame, 4P, Micrologic Electronic-Trip Unit, IEC Rated

Table 9.6: P-frame—1600 A, Individually-Mounted, Micrologic Electronic Trip Unit, IEC Rated

Sensor Rating	Cat. No.			Terminal Wire Range (AWG—kcmil)
	N Interrupting [2]	H Interrupting [2]	L Interrupting [2]	
4P, 690 Vac 50/60 Hz with LS0 Trip Functions				
630 A	NPNLE46063U32R	NPHLE46063U32R	NPLLE44063U32R	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U32R	NPHLE46080U32R	NPLLE44080U32R	
1000 A	NPNLE46100U32R	NPHLE46100U32R	NPLLE44100U32R	
1250 A	NPNLE46125U32R	NPHLE46125U32R	—	
1600 A	NPNLE46160U32R	NPHLE46160U32R	—	
4P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE46063U33R	NPHLE46063U33R	NPLLE44063U33R	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U33R	NPHLE46080U33R	NPLLE44080U33R	
1000 A	NPNLE46100U33R	NPHLE46100U33R	NPLLE44100U33R	
1250 A	NPNLE46125U33R	NPHLE46125U33R	—	
1600 A	NPNLE46160U33R	NPHLE46160U33R	—	
Micrologic Ammeter Trip Unit				
4P, 690 Vac 50/60 Hz with LS0 Trip Functions				
630 A	NPNLE46063U42R	NPHLE46063U42R	NPLLE44063U42R	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U42R	NPHLE46080U42R	NPLLE44080U42R	
1000 A	NPNLE46100U42R	NPHLE46100U42R	NPLLE44100U42R	
1250 A	NPNLE46125U42R	NPHLE46125U42R	—	
1600 A	NPNLE46160U42R	NPHLE46160U42R	—	
4P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE46063U43R	NPHLE46063U43R	NPLLE44063U43R	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U43R	NPHLE46080U43R	NPLLE44080U43R	
1000 A	NPNLE46100U43R	NPHLE46100U43R	NPLLE44100U43R	
1250 A	NPNLE46125U43R	NPHLE46125U43R	—	
1600 A	NPNLE46160U43R	NPHLE46160U43R	—	
4P, 690 Vac 50/60 Hz with LSI4 Trip Functions				
630 A	NPNLE46063U44R	NPHLE46063U44R	NPLLE44063U44R	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U44R	NPHLE46080U44R	NPLLE44080U44R	
1000 A	NPNLE46100U44R	NPHLE46100U44R	NPLLE44100U44R	
1250 A	NPNLE46125U44R	NPHLE46125U44R	—	
1600 A	NPNLE46160U44R	NPHLE46160U44R	—	
Micrologic Power Trip Unit				
4P, 690 Vac 50/60 Hz with LSI Trip Functions				
630 A	NPNLE46063U63RE1	NPHLE46063U63RE1	NPLLE44063U63RE1	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U63RE1	NPHLE46080U63RE1	NPLLE44080U63RE1	
1000 A	NPNLE46100U63RE1	NPHLE46100U63RE1	NPLLE44100U63RE1	
1250 A	NPNLE46125U63RE1	NPHLE46125U63RE1	—	
1600 A	NPNLE46160U63RE1	NPHLE46160U63RE1	—	
4P, 690 Vac 50/60 Hz with LSI4 Trip Functions				
630 A	NPNLE46063U64RE1	NPHLE46063U64RE1	NPLLE44063U64RE1	(4) 3/0–500 Al/Cu
800 A	NPNLE46080U64RE1	NPHLE46080U64RE1	NPLLE44080U64RE1	
1000 A	NPNLE46100U64RE1	NPHLE46100U64RE1	NPLLE44100U64RE1	
1250 A	NPNLE46125U64RE1	NPHLE46125U64RE1	—	
1600 A	NPNLE46160U64RE1	NPHLE46160U64RE1	—	

NOTE: See Digest for accessories and other information.

Table 9.7: Interrupting Ratings

	N		H		L	
	Icu	Ics (%Icu)	Icu	Ics (%Icu)	Icu	Ics (%Icu)
220/240 V	50 kA	75%	70 kA	50%	150 kA	100%
380/415 V	50 kA		70 kA		150 kA	
440 V	50 kA		65 kA		130 kA	
500/525 V	40 kA		50 kA		100 kA	
660/690 V	30 kA		42 kA		25 kA	

[2] New for P frame IEC only.



R-frame, 4P, Micrologic Electronic-Trip Unit, IEC Rated

Table 9.8: R-frame—3200 A, Individually-Mounted, Micrologic Electronic Trip Unit, IEC Rated

Sensor Rating	Cat. No.	
	N Interrupting	H Interrupting
4P, 690 Vac 50/60 Hz with LS0 Trip Functions		
1600 A	RNFE46160U32R	RHFE44160U32R
2000 A	RNFE46200U32R	RHFE44200U32R
2500 A	RNFE46250U32R	RHFE44250U32R
3200 A	RNFE46320U32R	RHFE44320U32R
4P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE46160U33R	RHFE44160U33R
2000 A	RNFE46200U33R	RHFE44200U33R
2500 A	RNFE46250U33R	RHFE44250U33R
3200 A	RNFE46320U33R	RHFE44320U33R
Micrologic Ammeter Trip Unit		
4P, 690 Vac 50/60 Hz with LS0 Trip Functions		
1600 A	RNFE46160U42R	RHFE44160U42R
2000 A	RNFE46200U42R	RHFE44200U42R
2500 A	RNFE46250U42R	RHFE44250U42R
3200 A	RNFE46320U42R	RHFE44320U42R
4P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE46160U43R	RHFE44160U43R
2000 A	RNFE46200U43R	RHFE44300U43R
2500 A	RNFE46250U43R	RHFE44350U43R
3200 A	RNFE46320U43R	RHFE44320U43R
4P, 690 Vac 50/60 Hz with LSIG Trip Functions		
1600 A	RNFE46160U44R	RHFE44160U44R
2000 A	RNFE46200U44R	RHFE44200U44R
2500 A	RNFE46250U44R	RHFE44250U44R
3200 A	RNFE46320U44R	RHFE44320U44R
Micrologic Power Trip Unit		
4P, 690 Vac 50/60 Hz with LSI Trip Functions		
1600 A	RNFE46160U63RE1	RHFE44160U63RE1
2000 A	RNFE46200U63RE1	RHFE44200U63RE1
2500 A	RNFE46250U63RE1	RHFE44250U63RE1
3200 A	RNFE46320U63RE1	RHFE44320U63RE1
4P, 690 Vac 50/60 Hz with LSIG Trip Functions		
1600 A	RNFE46160U64RE1	RHFE44160U64RE1
2000 A	RNFE46200U64RE1	RHFE44200U64RE1
2500 A	RNFE46250U64RE1	RHFE44250U64RE1
3200 A	RNFE46320U64RE1	RHFE44320U64RE1

NOTE: See Digest for accessories and other information.

Table 9.9: Interrupting Ratings

	N		H	
	Icu	Ics	Icu	Ics (%Icu)
220/240 V	85 kA	75%	125 kA	75%
380/415 V	70 kA		85 kA	
440 V	65 kA		85 kA	
500/525 V	65 kA	100%	—	
660/690 V	65 kA		—	

Breaking Capacities

- CE Marking
- International products—IEC 60947-2 rated. North American products are dual rated, UL 489 and IEC 60947-2.
- MCCBs in I-Line™ plug-on construction and a complete line of accessories are available. Contact your nearest Field Sales office.
- Order entry point is Cedar Rapids, Iowa.

Table 9.10: Circuit Breaker Breaking Capacities

Circuit Breaker Cat. Prefix		Current Rating (Amps)	Short-circuit Ratings (415 Vac)			Isolator Rating	Impulse Rating U_{imp} (kV)	Insulation Rating U_i (Vac)
International	North America		Ultimate I_{cu}	Service I_{cs}	Withstand I_{cw}			
—	QB [1]	70–250 A [2]	10 kA	5 kA	N/A	Yes	6	750
—	LA	125–400 A	20 kA	5 kA	N/A	Yes	6	750
SLA	—	250–400 A	36 kA	18 kA	N/A	Yes	6	750
—	LH	125–400 A	20 kA	5 kA	N/A	Yes	6	750
—	PG	250–1200 A	35 kA	17.5 kA	25 kA	Yes	6	750
	PJ		50 kA	25 kA	10 kA			
	PL		85 kA	42.5 kA	10 kA			
	PK		50 kA	25 kA	25 kA			
—	RG	600–2500 A	35 kA	17.5 kA	32 kA	Yes	6	750
	RJ		50 kA	25 kA	32 kA			
	RL		85 kA	42.5 kA	32 kA			
	RK		70 kA	52.5 kA	32 kA			
—	PA	600–2000 A	50 kA	38 kA	N/A	No	6	750
—	PC, PH	600–2500 A	70 kA	53 kA	N/A	No	6	750
PE, PX	PE, PX	600–2500 A	70 kA	53 kA	12.5	No	6	750

[1] IEC rating 415Y/240 Vac; NEMA/UL rating 240 Vac.
[2] 250 A lugs are suitable for copper conductors only.

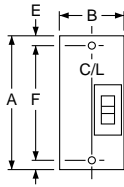


Figure 2

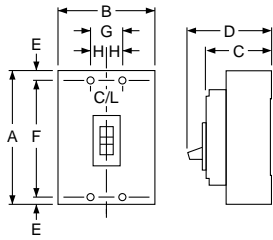


Figure 3

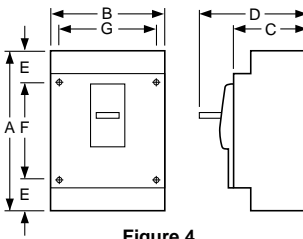


Figure 4

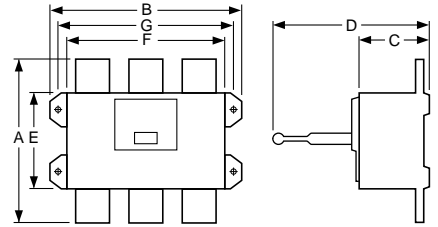


Figure 5

Dimensions

- CE Marking
- International products—IEC 60947-2 rated. North American products are dual rated, UL 489 and IEC 60947-2.
- MCCBs in I-Line™ plug-on construction and a complete line of accessories are available. Contact your nearest Field Sales office.
- Order entry point is Cedar Rapids, Iowa.

Table 9.11: Dimensions

Circuit Breaker	No. Poles	Fig. No.	Dimensions – mm							
			A	B	C	D	E	F	G	H
SLA/LA, LH	3	1	279	152	103	148	22	235	51	25
QB	2	2	164	76	77	100	[1]	108		
	3	3	164	114	77	100	[1]	108	38	19
PG, PJ, PL	2, 3	4	414	210	140	204	106	200	200	—
RG, RJ, RL	2, 3	5	381	420	160	365	222	362	390	—

[1] Dimensions E are 40 mm at ON end and 16 mm at OFF end.