

L-Frame Electronic Trip Circuit Breakers

Micrologic® Series B Trip System



Standard-Function Features:

- 80% rated
- True RMS sensing
- Interchangeable rating plugs
- LSI, LS(I)G, trip configurations
- Short-time delay = I²t IN and ground-fault delay = I²t OUT
- Integral ground-fault testing
- LED long-time pickup indication
- Thermal & magnetic backup protection
- Long-time & ground-fault memory
- Optional local trip indicators—overload, short circuit, ground-fault
- Optional local ammeter/trip indicator
- Universal test set available
- Optional I-Line® mounting (LX, LXI)
- Optional neutral current transformer for 4-wire systems

Full-Function Features:

- 100% rated (600 sensor LE/LEL) circuit breakers are 80% rated)
- True RMS sensing
- Interchangeable rating plugs
- PowerLogic® compatible
- LI, LIG, LS(I), LS(I)G (instantaneous OFF) configurations
- Short-time delay = I²t IN & I²t OUT and ground-fault delay = I²t IN & I²t OUT
- Short-time withstand rating
- Integral ground-fault testing
- Optional ground-fault alarm (no trip) (Requires CIM3F with PowerLogic or see Bulletin 0502DB0001.)
- LED long-time pickup indication
- Zone-selective interlocking (short-time & ground-fault)
- Long-time & ground-fault memory
- Local Trip Indicators—overload, short circuit, ground-fault
- Local ammeter/trip indicator
- Universal test set available
- Optional I-Line® mounting (LE)
- Optional neutral current transformer for 4-wire systems

Table 7.133: L-Frame—600 A, Micrologic Series B Trip System 3P, 600 V♦

	Sensor Size	Ampere Rating	Trip Function	Standard Function		Standard Function Current Limiting		100% Rated Full Function■		Installed Rating Plug	Terminal Wire Range
				Cat. No.	\$ Price	Cat. No.	\$ Price	Cat. No.	\$ Price		
 <p>Circuit Breakers with Micrologic Standard-Function Trip Systems (LXL, LXIL)</p>	250	100	LI	—	—	—	—	LEL36100LI	7692.00	ARP040	AL600LI35 (2) 1 AWG–350 kcmil Al
			LSI	LXL36100	5616.00	LXIL36100	11262.00	LEL36100LS	13035.00		
		LIG	—	—	—	—	LEL36100LIG	9768.00			
		LSIG	LXL36100G	7692.00	LXIL36100G	13338.00	LEL36100LSG	15111.00			
		125	LI	—	—	—	—	LEL36125LI	7692.00		
			LSI	LXL36125	5616.00	LXIL36125	11262.00	LEL36125LS	13035.00		
		LIG	—	—	—	—	LEL36125LIG	9768.00			
LSIG	LXL36125G	7692.00	LXIL36125G	13338.00	LEL36125LSG	15111.00					
150	LI	—	—	—	—	LEL36150LI	7692.00				
	LSI	LXL36150	5616.00	LXIL36150	11262.00	LEL36150LS	13035.00				
LIG	—	—	—	—	LEL36150LIG	9768.00					
LSIG	LXL36150G	7692.00	LXIL36150G	13338.00	LEL36150LSG	15111.00					
175	LI	—	—	—	—	LEL36175LI	7692.00				
	LSI	LXL36175	5616.00	LXIL36175	11262.00	LEL36175LS	13035.00				
LIG	—	—	—	—	LEL36175LIG	9768.00					
LSIG	LXL36175G	7692.00	LXIL36175G	13338.00	LEL36175LSG	15111.00					
200	LI	—	—	—	—	LEL36200LI	7692.00				
	LSI	LXL36200	5616.00	LXIL36200	11262.00	LEL36200LS	13035.00				
LIG	—	—	—	—	LEL36200LIG	9768.00					
LSIG	LXL36200G	7692.00	LXIL36200G	13338.00	LEL36200LSG	15111.00					
225	LI	—	—	—	—	LEL36225LI	7692.00				
	LSI	LXL36225	5616.00	LXIL36225	11262.00	LEL36225LS	13035.00				
LIG	—	—	—	—	LEL36225LIG	9768.00					
LSIG	LXL36225G	7692.00	LXIL36225G	13338.00	LEL36225LSG	15111.00					
250	LI	—	—	—	—	LEL36250LI	7692.00				
	LSI	LXL36250	5616.00	LXIL36250	11262.00	LEL36250LS	13035.00				
LIG	—	—	—	—	LEL36250LIG	9768.00					
LSIG	LXL36250G	7692.00	LXIL36250G	13338.00	LEL36250LSG	15111.00					
 <p>Circuit Breakers with Micrologic Full-Function Trip Systems (LEL)</p>	400	300	LI	—	—	—	—	LEL36300LI	10691.00	ARP075	AL600LI5 (2) 4/0 AWG–500 kcmil Al
			LSI	LXL36300	8618.00	LXIL36300	16400.00	LEL36300LS	16034.00		
		LIG	—	—	—	—	LEL36300LIG	12767.00			
	LSIG	LXL36300G	10694.00	LXIL36300G	18476.00	LEL36300LSG	18110.00				
	350	LI	—	—	—	—	LEL36350LI	10691.00			
		LSI	LXL36350	8618.00	LXIL36350	16400.00	LEL36350LS	16034.00			
	LIG	—	—	—	—	LEL36350LIG	12767.00				
	LSIG	LXL36350G	10694.00	LXIL36350G	18476.00	LEL36350LSG	18110.00				
	400	LI	—	—	—	—	LEL36400LI	10691.00			
LSI		LXL36400	8618.00	LXIL36400	16400.00	LEL36400LS	16034.00				
LIG	—	—	—	—	LEL36400LIG	12767.00					
LSIG	LXL36400G	10694.00	LXIL36400G	18476.00	LEL36400LSG	18110.00					
600 ▲	450	LI	—	—	—	—	—	LEL36450LI	14688.00	ARP075	
		LSI	LXL36450	12611.00	LXIL36450	23250.00	LEL36450LS	20031.00			
	LIG	—	—	—	—	LEL36450LIG	16764.00				
LSIG	LXL36450G	14687.00	LXIL36450G	25326.00	LEL36450LSG	22107.00					
500	LI	—	—	—	—	—	—	LEL36500LI	14688.00	ARP083	
	LSI	LXL36500	12611.00	LXIL36500	23250.00	LEL36500LS	20031.00				
LIG	—	—	—	—	—	—	—	LEL36500LIG	16764.00		
LSIG	LXL36500G	14687.00	LXIL36500G	25326.00	LEL36500LSG	22107.00					
600	LI	—	—	—	—	—	—	LEL36600LI	14688.00	ARP100	
	LSI	LXL36600	12611.00	LXIL36600	23250.00	LEL36600LS	20031.00				
LIG	—	—	—	—	—	—	—	LEL36600LIG	16764.00		
LSIG	LXL36600G	14687.00	LXIL36600G	25326.00	LEL36600LSG	22107.00					

▲ 600 A sensor is 80% rated
 ■ Substitute (A) in place of (G) for ground-fault alarm (pickup indication only). Requires CIM3F and Powerlogic, or see Data Bulletin 0502DB0001. No instantaneous OFF position for LI or LIG trip function type circuit breakers.
 ♦ Type LC, LI, LX, LXI, and LE circuit breakers are NOT recommended for use on single motor branch circuits.

Table 7.134: Interrupting Ratings

	LXL	LEL	LXIL
240 V	100 kA	100 kA	200 kA
480 V	65 kA	65 kA	200 kA
600 V	35 kA	35 kA	100 kA

Optional Lugs Page 7-51
 Dimensions Page 7-54
 Enclosures Page 7-56

NOTE: Consider using PowerPact® circuit breakers for situations requiring circuit breaker accessories.

	600 A L-Frame			PowerPact 800 A M-Frame		PowerPact 1200 A P-Frame				1000 A M-Frame				
														
Circuit Breaker Type	LX	LXI	LE	MG	MJ	PG	PJ	PK	PL	MA	MH	MX	ME	
Number of Poles	3	3	3	2, 3	2, 3	2, 3, 4	2, 3, 4	2, 3, 4	2, 3, 4	2, 3	2, 3	3	3	
Current Range	100–600	100–600	100–600	300–800	300–800	100–1200	100–1200	100–1200	100–1200	300–1200	300–1200	450–800	450–800	
Interrupting Ratings														
UL/CSA/NOM Rating (kA RMS) (50/60 Hz)	240 Vac	100	200	100	65	100	65	100	65	125	42	65	65	65
	480Y/277 Vac	65	200	65	35	65	35	65	50	100	30	65	65	65
	480 Vac	65	200	65	35	65	35	65	50	100	30	65	65	65
	600Y/347 Vac	35	100	35	18	25	18	25	50	25	22	25	25	25
DC Ratings	240 Vac	35	100	35	18	25	18	25	50	25	22	25	25	25
	250 Vdc	—	—	—	—	—	—	—	—	—	14	50	—	—
IEC (kA RMS) Icu/Ics	500 Vdc▲	—	—	—	—	—	—	—	—	—	—	20	—	—
	240 Vac	—	—	—	50/25	65/35	50/25	65/35	50/25	125/65	—	—	—	—
IEC 50/60 Hz	415 Vac	65/65△	—	65/65△	35/20	50/25	35/20	50/25	50/25	85/45	30/30	65/33	65/33	65/33
	For additional IEC ratings, see the Supplemental Digest.										For additional IEC ratings, see the Supplemental Digest.			
Special Ratings														
Fed. Specs W-C-375B/GEN	X	X	X	X	X	X	X	X	X	X	X	X	X	X
HACR (2P, 3P)	—	—	—	—	X	X	X	X	X	X	X	X	—	—
Connections/Terminations														
Unit Mount	X	X	X	X	X	X	X	X	X	X	X	X	X	X
I-Line®	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Rear Connection	—	—	—	—	—	—	—	—	—	—	X	X	—	—
Drawout	—	—	—	—	—	X▼	X▼	X▼	X▼	—	—	—	—	—
Optional Lugs	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Accessories and Modifications														
Shunt Trip	X	X	X	X	X	X	X	X	X	X	X	X	X▼	X▼
Undervoltage Trip	X	X	X	X	X	X	X	X	X	X	X	X	X▼	X▼
Auxiliary Switches	X	X	X	X	X	X	X	X	X	X	X	X	X▼	X▼
Alarm Switch	X	X	X	X	X	X	X	X	X	X	X	X	X▼	X▼
Motor Operator	—	—	—	—	—	—	X▼	X▼	X▼	X▼	X	X	—	—
Handle Operators	—	—	—	—	—	—	X▼	X▼	X▼	X▼	X	X	X	X
Mechanical Interlocks (3P)	—	—	—	—	—	—	X	X	X	X	X★	X★	—	—
Handle Padlock Attachment	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Cylinder Lock (3P)	—	—	—	—	X	X	—	—	—	—	X	X	—	—
Optional GF Protection	X▼	X▼	X▼	—	—	—	X	X	X	X	—	—	X▼	X▼
Trip System Type														
Thermal-magnetic	—	—	—	—	—	—	—	—	—	—	X	X	—	—
Instantaneous-only (MCP)	—	—	—	—	—	—	—	X	X	—	X	X	—	—
Molded Case Switch (Automatic)	—	—	—	—	—	—	X	X	X	X	—	X	—	—
Electronic	X	X	X	X	X	X	X	X	X	X	—	—	X	X
Enclosures (Pages 7-56–7-58)														
General Purpose (NEMA 1)	—	—	—	—	X	X	X	X	X	X	X	X	X	X
Raintight (NEMA 3R)	—	—	—	—	X	X	X	X	X	X	X	X	X	X
Dust-tight (NEMA 12)	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Watertight (NEMA 4, 4X, 5)	—	—	—	—	X	X	—	—	—	—	X	X	X	X
Explosion Proof (NEMA 7, 9)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Dimensions (3P Unit Mount)	Height—in. (mm)	11.86 (301)			12.80 (325)		16.20 (413)				14 (356)			
	Width—in. (mm)	7.5 (190)			8.30 (210)		8.30 (210)				9 (229)			
	Depth—in. (mm)	6.74 (171)			8.10 (205)		8.10 (205)				6.5 (165)			
Pages (Unit Mount)/(I-Line)	Page 7-52/9-28			Page 7-25/9-28		Page 7-26, 7-30, 7-33/9-29				Supplemental Digest Section 3				

Note: All circuit breakers on this chart are UL Listed and CSA Certified unless otherwise noted.

- ▲ Ungrounded UPS systems only. See page 7-34.
- ◆ UL PowerPact MG/MJ and PG/PJ/PK/PL are 60 Hz only.
- ◆ Dual UL and IEC ratings and CE markings on circuit breakers. For additional IEC ratings, see the Supplemental Digest.
- ★ Requires breaker with WB suffix
- ▼ Factory-installed option only.
- △ 65/50 kA Icu/Ics for 450–800 A ratings.

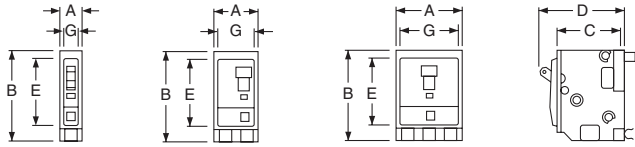


Figure 1 Figure 2 Figure 3 QO, QOB

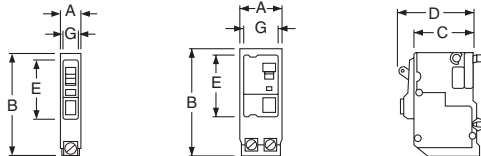


Figure 4 Figure 5 QO-GFI, QO-PL QO-EPD

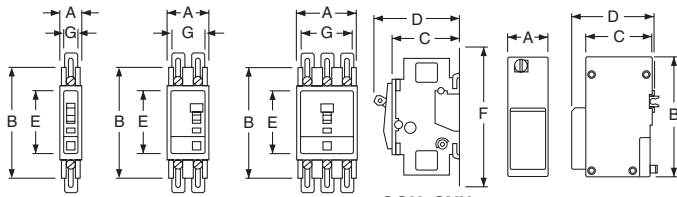


Figure 6 Figure 7 Figure 8 QOU, QYU Low Ampere Figure 9 QO-PLPS

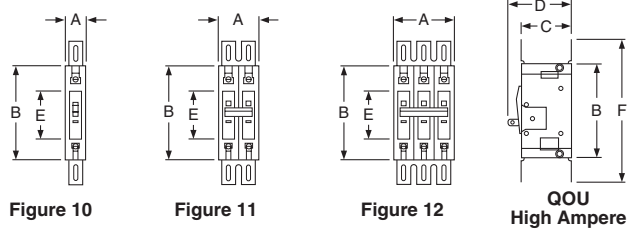


Figure 10 Figure 11 Figure 12 QOU High Ampere

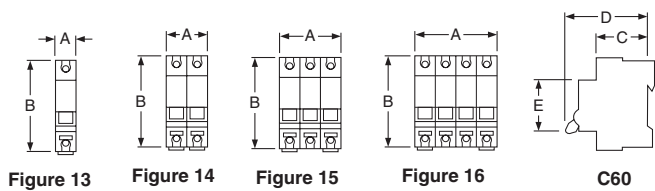


Figure 13 Figure 14 Figure 15 Figure 16 C60

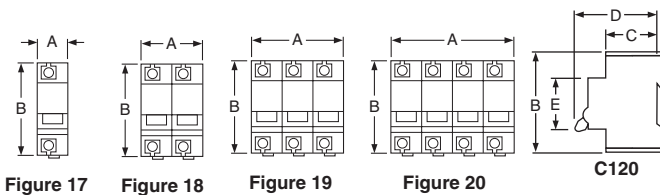


Figure 17 Figure 18 Figure 19 Figure 20 C120

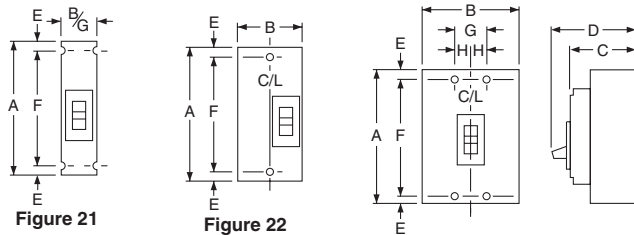


Figure 21 Figure 22 Figure 23

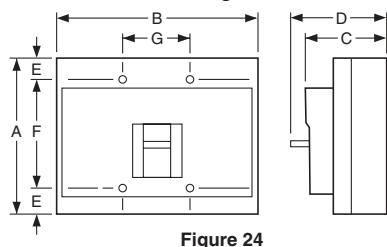


Figure 24

Table 7.140: QO®, QOU, Multi 9™ Circuit Breakers

Circuit Breaker Cat. No. Prefix	Poles	Fig. No.	Dimensions—Inches						
			A	B	C	D	E	F	G
QO, QOB	1	1	0.75	3.00▲	2.31	2.91	2.25	—	0.59
	2	2	1.50	3.00▲	2.31	2.91	2.25	—	1.34
	3	3	2.25	3.00▲	2.31	2.91	2.25	—	2.09
QOB-VH 150 A QOB-VH 110–150 A	2	2	3.0	5.72	2.53	4.90	3.78	—	2.85
	3	3	4.50	5.72	2.53	4.90	3.78	—	4.35
QO-PL QO-GFI QO-EPD	1	4	0.75	4.12■	2.31	2.91	2.25	—	0.59
	2	5	1.50	4.12■	2.31	2.91	2.25	—	1.34
	3	5	2.25	4.12■	2.31	2.91	2.25	—	2.09
QOU QYU Low Ampere	1	6	0.75	4.05♦	2.38	2.98	2.25	5.00★	0.62
	2	7	1.50	4.05♦	2.38	2.98	2.25	5.00★	1.37
	3	8	2.25	4.05★	2.38	2.98	2.25	5.00△	2.12
QOU High Ampere	1	10	0.75	4.45	2.37	2.96	2.25	6.78	—
	2	11	1.50	4.45	2.37	2.96	2.25	6.78	—
	3	12	2.25	4.45	2.37	2.96	2.25	6.78	—
Multi 9™ C60N	1	13	0.71	3.19	1.73	2.76	1.77	—	—
	2	14	1.42	3.19	1.73	2.76	1.77	—	—
	3	15	2.13	3.19	1.73	2.76	1.77	—	—
	4	16	2.84	3.19	1.73	2.76	1.77	—	—
QO-PLPS Power Supply	2	9	1.45	4.35	2.42	3.11	—	—	—

- ▲ 35–70 A is 3.12 in; 80–100 A 2P and 70–100 A 3P are 3.50 in.
- QO-PL is 4.55 in.
- ♦ 80–100 A 1P and 80–125 A 2P are 4.45 in
- ★ 80–100 A 1P and 80–125 A 2P are 6.78 in.
- ▼ 70–100 A 4.45 in.
- △ 70–100 A is 6.78 in.

Table 7.141: QB, QD, QG, QJ, Q4, FA, FI, KA, KC, KI, LA, LC, LI, LE, LX, LXI, MA Circuit Breakers

Circuit Breaker Cat. No. Prefix	Poles	Fig. No.	Dimensions—Inches							
			A	B	C	D	E	F	G	H
QB, QD, QG, QJ	2	22	6.47	3.00	3.02	3.93	□	4.25	—	—
	3	23	6.47	4.50	3.02	3.93	□	4.25	1.50	0.75
FAL, FHL	1	21	6.00	1.50	3.16	4.13	0.44	5.13	1.50	—
	2	22	6.00	3.00	3.16	4.13	0.44	5.13	—	—
	3	23	6.00	4.50	3.16	4.13	0.44	5.13	1.50	0.75
FIL, KAL, KCL, KHL, KIL	2 & 3	23	8.00	4.50	3.66	4.75	0.44	7.13	1.50	0.75
Q4L, LAL, LHL	2 & 3	23	11.00	6.00	4.06	5.84	0.88	9.25	2.00	1.00
LIL, LEL, LXL, LXIL, LCL	2 & 3	24	11.86	7.50	5.48	6.74	0.55	10.75	2.50	—
MAL, MHL	2 & 3	23	14.00	9.00	4.53	6.50	1.66	10.69	3.00	1.50

□ Dimensions E are 1.59 in at ON end and 0.63 in at OFF end.

Table 7.142: Shipping Weights◇

Frame Size	Approx. Shipping Weight (Lbs.)	Frame Size	Approx. Shipping Weight (Lbs.)
FAL, FHL 1P	2	KIL	9
FAL, FHL 2P	3	LAL, LHL	15
FAL, FHL 3P	5	LEL, LIL, LXL, LXIL, LCL	25
FIL	8	Q4L	15
QB, QD, QG, QJ	4	MAL, MHL	34
KAL, KHL	7		

◇ All weights are for 3P circuit breakers unless otherwise noted.