Littelfuse®
Expertise Applied | Answers Delivered

LCP Coordination Panel Operations & Maintenance Manual

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OVERVIEW



The Littelfuse LCP Selective Coordination Panel uses circuit breakers in series with fuses and fuse holders to respond to overloads and short-circuits, respectively, in order to achieve selective coordination. The National Electric Code® (NEC) mandates that certain systems be selectively coordinated (specifics are highlighted on pg. 02), and the LCP Coordination Panel is specifically designed to meet those requirements.

Each unit is custom-built based on an engineering specification, and official technical drawings are carefully reviewed and approved by the specifying engineer before the product is manufactured in order to ensure it meets the requirements. The purpose of this document is to provide technical information about the LCP Coordination Panel and address potential questions end-users may have.

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NEC® REQUIREMENTS FOR SELECTIVE COORDINATION

Healthcare Essential Electrical Systems (NEC® 517.26)

References Article 700 Emergency Systems. The following facilities will have essential lighting and power systems for life safety:

- Clinics
- Hospitals
- Nursing homes
- Medical and dental offices
- Outpatient facilities
- Other healthcare facilities

Elevators (NEC® 620.62)

May include the following circuits per the local agency having jurisdiction:

- Elevators
- Dumbwaitor
- Escalator
- Moving walks
- Platform lifts
- Stairway chair lifts

Emergency Systems (NEC® 700.27)

May include the following circuits per the local agency having jurisdiction:

- Emergency lighting
- Ventilation
- Fire detection and alarm systems
- Elevators
- Fire pumps
- Industrial processes where interruption would be hazardous

Legally Required Standby Systems (NEC® 701.18)

May include the following circuits per the local agency having jurisdiction:

- Heating and refrigeration
- Communications systems
- Ventilation and smoke removal
- Sewage disposal

Critical Operations Power Systems (NEC® 708.54)

High reliability for critical operations during natural disasters and other threats. May include the following circuits per the local agency having jurisdiction:

- Power systems
- HVAC
- Fire alarm
- Security
- Communications

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LCP DATASHEET



Description

The Littelfuse® Coordination Panel provides a simple, time-saving solution for circuits that require selective coordination. This UL Listed product saves time and money, and increases safety by minimizing system downtime.

Applications

- Elevators
- Hospitals
- Hotel and Entertainment Industry
- Amusement Parks and Stadiums

Code Requirements

Systems required by the NEC® to be selectively coordinated include:

- Health Care Essential Electrical Systems (NEC 517.26)
- Elevators (NEC 620.62)
- Emergency Systems (NEC 700.27)
- Legally Required Standby Systems (NEC 701.18)
- Critical Operations Power Systems (NEC 708.54)

Features/Benefits

- Meets NEC® requirements
- Class CC and J fuse holders have built-in open-circuit indication
- Fast-acting UL Listed fuses protect against short circuits
- Feed through/sub feed lugs and 84-circuit configuration available
- Ground and neutral bars
- Copper bus standard

Advanced Design Options

- MLO, Main Circuit Breaker, or Main Fused Pullout device
- Fused Class T branch circuit pullout
- Spare fuse cabinet accessory (holds six spare fuses)
- TVSS overvoltage protection
- Any NEMA enclosure required
- High amperage sub-fed branch breakers (J60A)
- Unique Specifier Tool (see pg. 146) to easily identify panel configurations from tens of thousands of options

Specifications

Voltage Ratings	120/208, 120/240, 277/480 VAC
Main Bus Rating	100 A - 400 A Standard
Conductor Terminals	6 AWG - 300 kcmil
UL Listed	UL 67 Panel boards and UL 50 Enclosures

Web Resources

For more information, visit:
littelfuse.com/lcp

Customizable Options (select one from each column)

NUMBER OF CIRCUITS	VOLTAGE	MAIN DEVICES	NEUTRAL RATING	PANEL MOUNTING	PANEL DOOR	FUSE HOLDERS	BRANCH CIRCUIT PROTECTION DEVICES (1-3 POLE)†	PANEL FEED	OPTIONAL LUGS	STANDARD ENCLOSURE RATING
2 - 42	120/208 V 3P, 4 W 120/240 V 1P, 3 W 277/480 V 3P, 4 W	125, 225, 400 or 600 A MLO Up to 600 A MCB or Main Fuse Pullout	100% 200%	Surface Flush	Standard Door-in-door	30 A Class CC 60 A Class J	10 A - 60 A fused circuit breaker 60 A - 200 A fused pullouts Sub-fed circuit breakers >60 A (not fused)	Top Bottom	None Sub-Fed (MLO panels) Feed-Through	NEMA 1 NEMA 3R NEMA 4X

†Fuses quoted separately to meet panel specifications. Coordination for breakers >60 A depends on upstream and downstream devices. More specialized configurations are also available. Contact factory for more information.

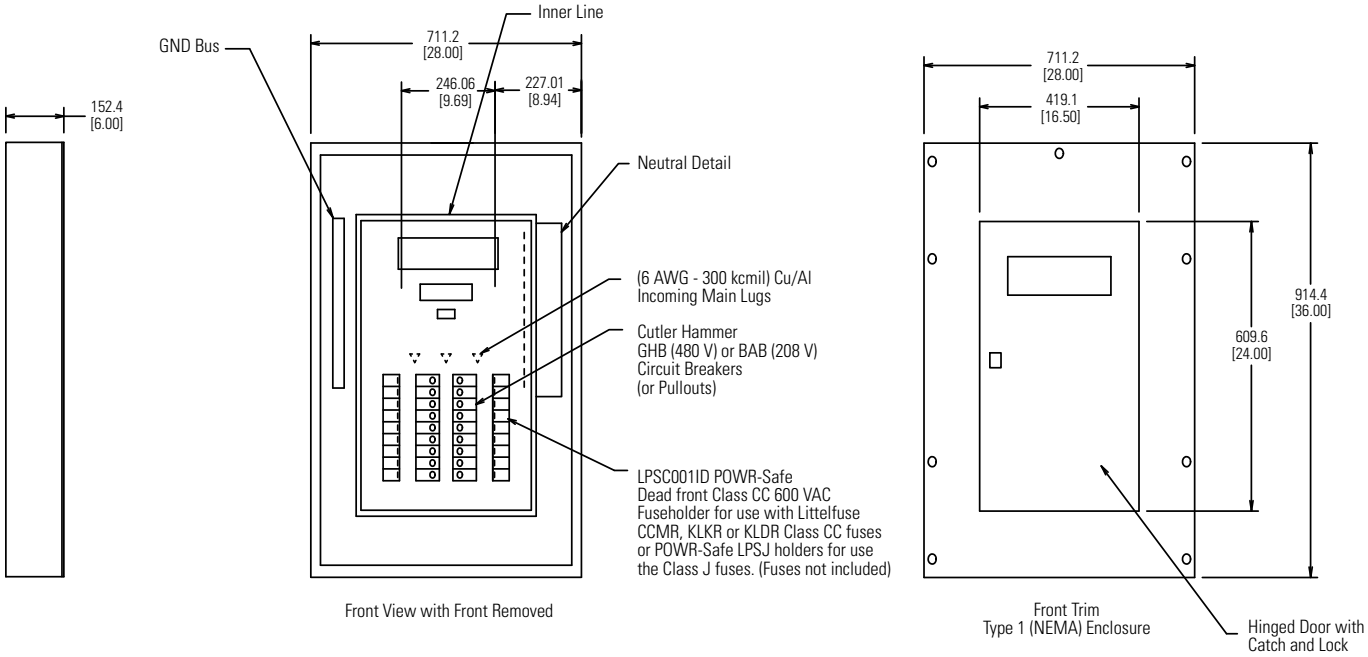
Note: The Littelfuse LPS and LCP products are custom designed products that fall outside standard specifications.

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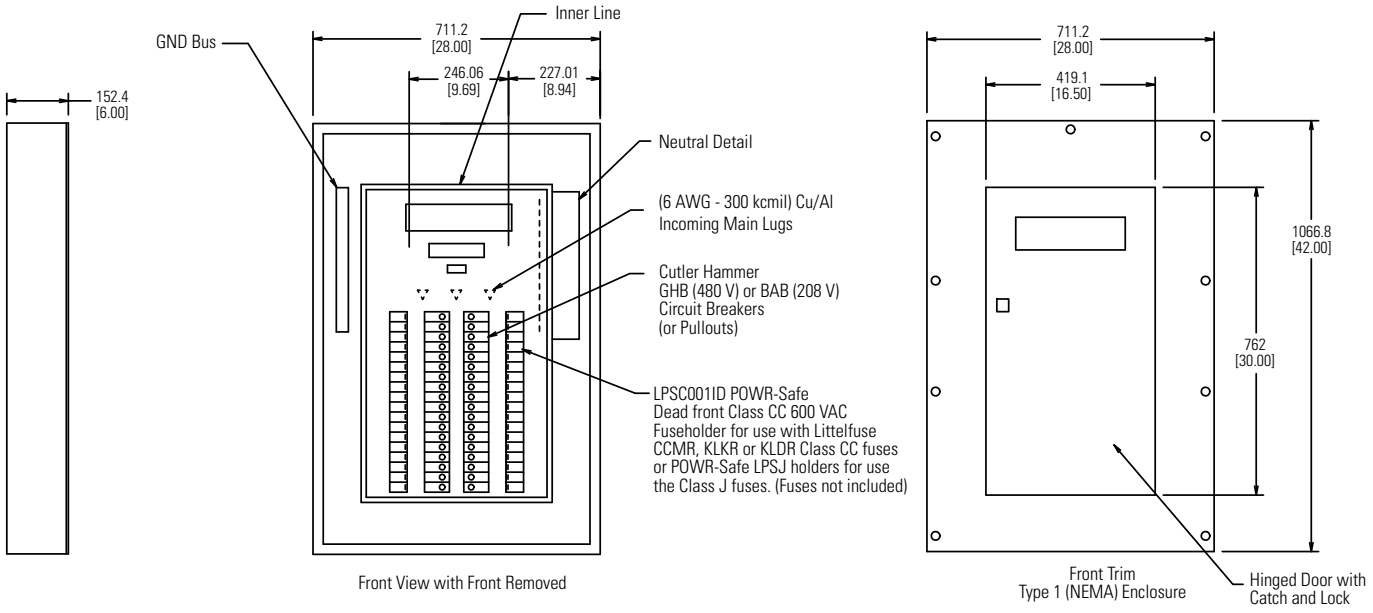
LCP DATASHEET

Dimensions mm (inches)

Standard Coordination Panel Board (up to 30 circuits)



Standard Coordination Panel Board (31-42 circuits)



Note: The Littelfuse LPS and LCP products are custom designed products that fall outside standard specifications.

Dimensions may change depending on panel components.
More specialized configurations are also available.
Contact factory for more information.

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CCMR SERIES POWR-PRO® FUSES - DATASHEET

POWR-PRO® 600 Vac • Dual Element • Time-Delay • 2/10-60 A



Description

The CCMR series is ideal for space saving protection of motors up to 40 hp*. It was designed specifically to withstand sustained starting currents of small motors. The CCMR 60 fuse is the smallest 60 A fuse available rated at 600 V. Compared to other UL Listed fuses, Class CC fuses are the most current-limiting, rating for rating.

Features/Benefits

- POWR-PRO Performance
- Extremely current-limiting
- Ratings up to 60 Amps
- 300 kA Interrupting Rating (self-certified)

Applications

- Motor and motor branch circuit protection

Specifications

Voltage Rating	AC: 600 V DC: 250 V (CCMR 2/10– 2 A) (CCMR 4 1/2– 10 A) (CCMR 35– 60 A) 300 V (CCMR 2 1/4– 4 A) 500 V (CCMR 12– 30 A)
Amperage Rating	2/10 – 60 A
Interrupting Rating	AC: 200 kA rms symmetrical 300 kA Littelfuse self-certified DC: 20 kA
Approvals	AC: Standard 248-4, Class CC UL Listed 2/10-30 A (File: E81895) Standard 248, Class CD UL Listed 35-60 A (File: E81895) CSA Certified (File: LR29862) DC: Littelfuse self-certified
Environmental	RoHS Compliant (except 35-60 A)
Country of Origin	Mexico

Ordering Information

AMPERAGE RATINGS						
2/10	1	2	3 1/2	6 1/4	12	35
1/4	1 1/4	2 1/4	4	7	15	40
3/10	1 4/10	2 1/2	4 1/2	7 1/2	17 1/2	45
1/2	1 1/2	2 8/10	5	8	20	50
6/10	1 6/10	3	5 6/10	9	25	60
8/10	1 8/10	3 2/10	6	10	30	

SERIES	AMPERAGE	ROHS	CATALOG NUMBER	ORDERING NUMBER
CCMR	10	•	CCMR010	CCMR010.TXP
CCMR	45		CCMR045	CCMR045.T

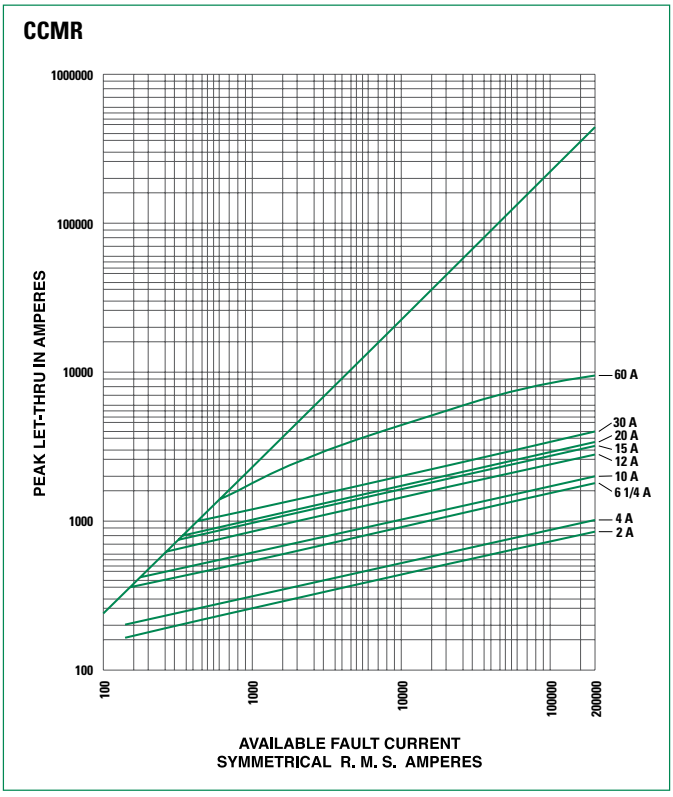
Web Resources

TC Curves, downloadable CAD drawings and other technical information: **www.littelfuse.com/ccmr**

Recommended Fuseholders

LFC600 Series
L60030C Series
LFPSC Touch-Safe Series

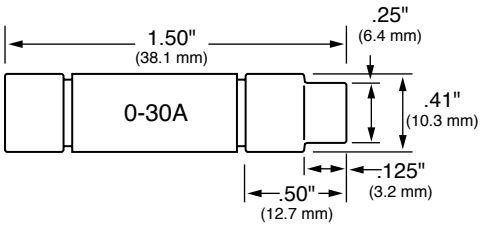
Peak Let-Thru Curve

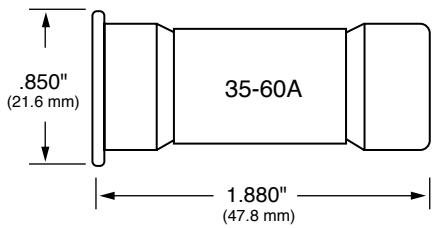


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CCMR SERIES POWR-PRO® FUSES - DATASHEET

Dimensions in inches (mm)





Current-Limiting Effects

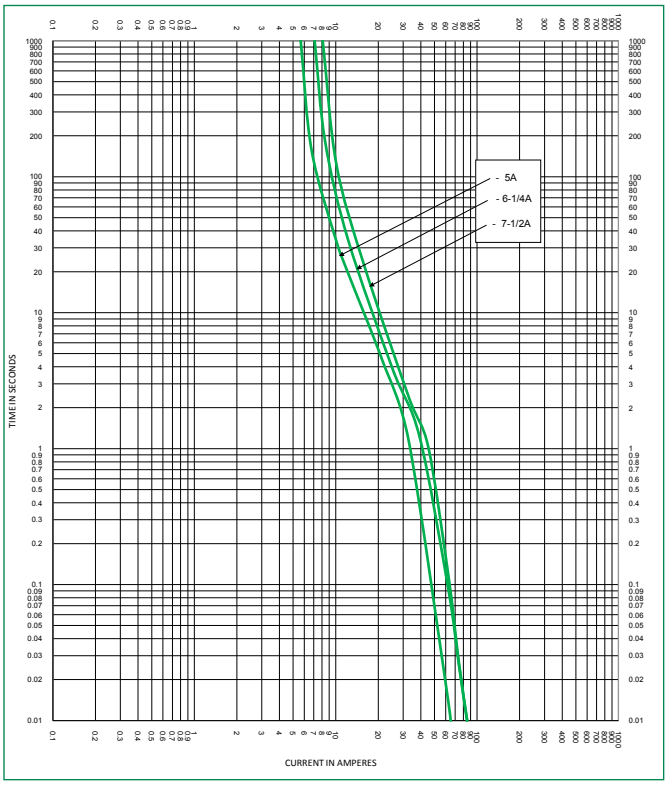
SHORT CIRCUIT CURRENT*	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS																	
	2.25A	2.5A	3A	4A	5A	6.25A	7.5A	8A	10A	12A	15A	20A	30A	35A	40A	45A	50A	60A
5,000	203	224	287	289	460	472	442	437	359	369	435	355	621	1,170	1,240	1,320	1,070	1,525
10,000	256	282	361	364	580	595	557	551	452	465	548	447	783	1,480	1,565	1,670	1,355	1,930
15,000	293	323	413	416	664	681	637	631	517	532	627	512	896	1,695	1,795	1,915	1,555	2,200
20,000	323	356	455	458	730	750	702	694	569	585	690	563	987	1,870	1,980	2,110	1,710	2,430
25,000	348	383	490	493	787	808	756	748	613	630	743	607	1,063	2,015	2,135	2,275	1,845	2,620
30,000	370	407	521	524	836	858	803	795	651	670	790	645	1,129	2,145	2,270	2,420	1,965	2,780
35,000	389	429	548	552	880	903	845	837	686	705	832	679	1,189	2,260	2,390	2,550	2,070	2,885
40,000	407	448	573	577	920	944	884	875	717	737	870	709	1,243	2,360	2,500	2,665	2,165	3,025
50,000	438	483	617	622	991	1,017	952	942	772	794	937	764	1,339	2,545	2,695	2,875	2,330	3,200
60,000	466	513	656	661	1,053	1,081	1,012	1,001	821	844	995	812	1,423	2,705	2,865	3,055	2,480	3,350
80,000	513	564	722	727	1,159	1,190	1,114	1,102	903	929	1,096	894	1,566	2,985	3,160	3,365	2,730	3,540
100,000	552	608	778	783	1,249	1,282	1,200	1,187	973	1,001	1,180	963	1,687	3,215	3,405	3,630	2,945	3,685
150,000	632	696	890	897	1,430	1,467	1,373	1,359	1,114	1,146	1,351	1,102	1,931	3,685	3,905	4,160	3,375	4,030
200,000	696	766	980	987	1,574	1,615	1,511	1,496	1,226	1,261	1,487	1,213	2,125	4,060	4,300	4,580	3,720	4,230

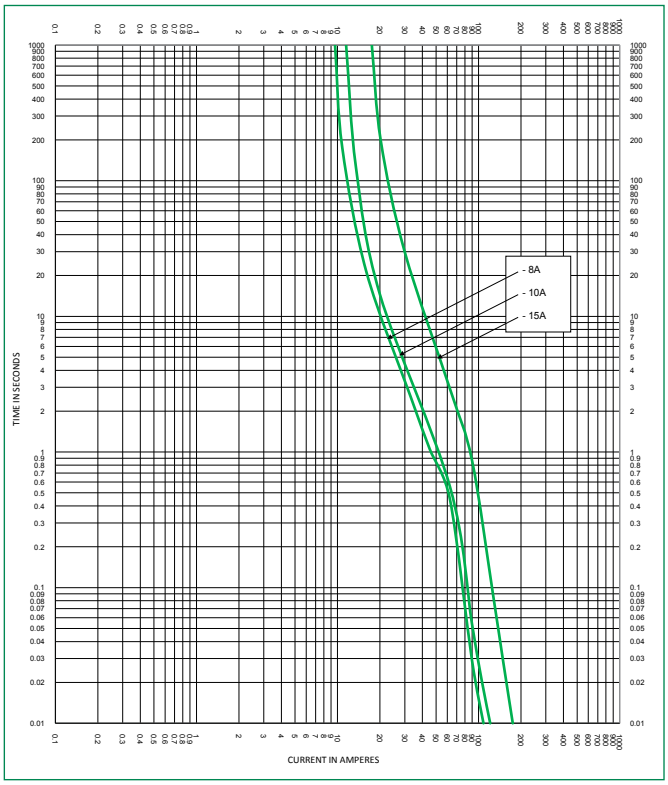
*Prospective RMS Symmetrical Amperes Short-Circuit Current
Note: Data Derived from Peak Let-Thru Curves

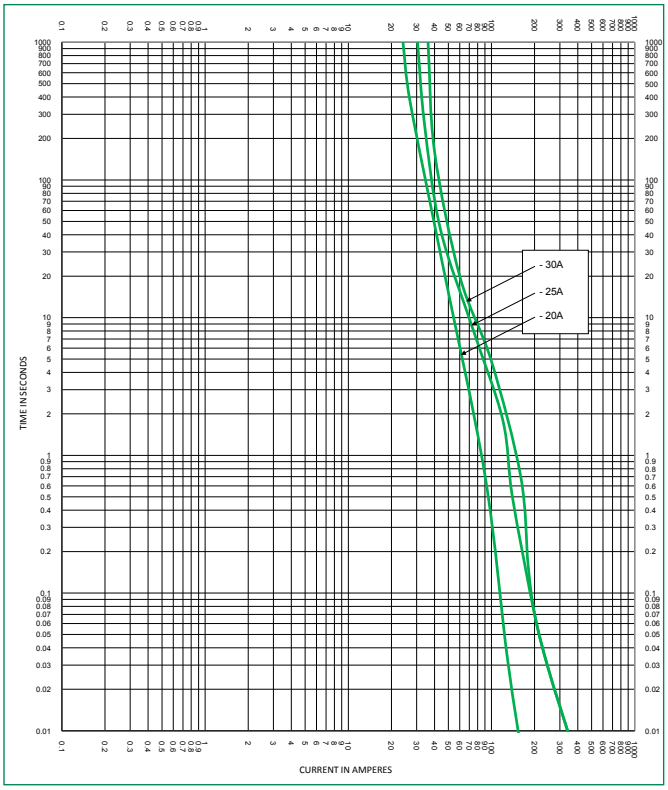
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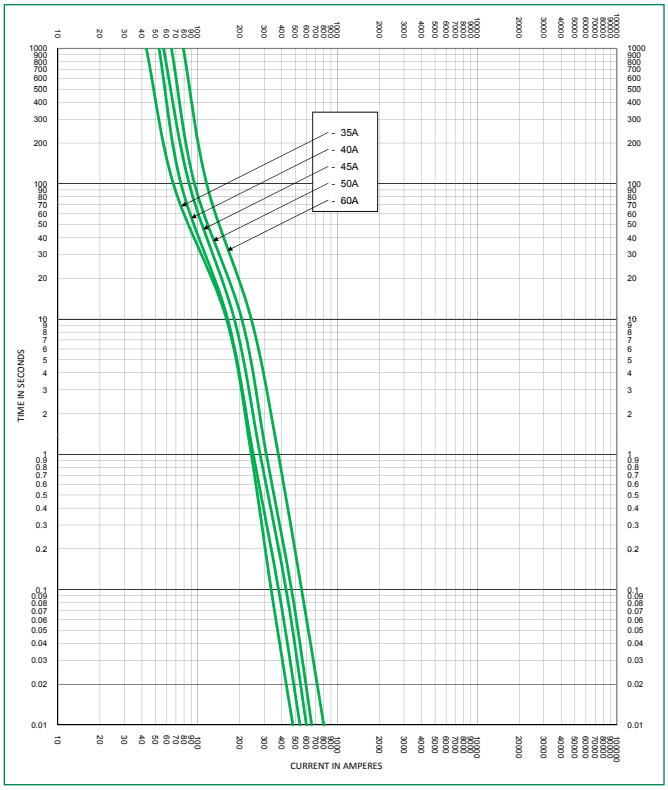
CCMR SERIES POWR-PRO® FUSES - DATASHEET

Time Current Curves









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JTD SERIES INDICATOR POWR-PRO® FUSES - DATASHEET

POWR-PRO® 600 VAC • Time Delay • 8/10 – 600 A



Specifications

Voltage Ratings	AC: 600 V DC: 300 V (8/10–100 A) 500 V (110–600 A)
Amperage Range	8/10–600 A
Interrupting Rating	AC: 200 kA rms symmetrical 300kA rms symmetrical (Littelfuse self-certified) DC: 20 kA
Material	Body: Melamine Caps: Nickel-plated Bronze (8/10–60 A) Brass (70–200 A) Brass Cap with Copper Blade (225–600 A)
Approvals	AC: Standard 248-8, Class J UL Listed (File: E81895) CSA Certified (File: LR29862) DC: Littelfuse self-certified
Country of Origin	Mexico

Description

The Littelfuse POWR-PRO® JTD_ID Indicator Class J fuse provides visual blown fuse indication and maximum protection in a compact package. The current-limiting time delay JTD_ID offers a patented design which reduces nuisance fuse openings.

Features/Benefits

- POWR-PRO® Performance
- Current-Limiting
- IEC Type 2 Protection
- Indication and non-indication version available
- Indicating and DIN mount holders available

Applications

- Fused combination motor controllers and motor control centers
- Transformer protection
- Protection for series rated molded case circuit-breaker panels
- General purpose circuits

Ordering Information

AMPERAGE RATINGS							
8/10	2¼	4½	10	35	90	225	600
1	2½	5	12	40	100	250	–
1¼	2 8/10	5 6/10	15	45	110	300	–
1½	3	6	17½	50	125	350	–
1 6/10	3 2/10	7	20	60	150	400	–
1 8/10	3½	8	25	70	175	450	–
2	4	9	30	80	200	500	–

TYPE	SERIES	AMPERAGE	CATALOG NUMBER	ORDERING NUMBER
INDICATING	JTD_ID	60	JTD60ID	0JTD060.TXID
NON-INDICATING	JTD	60	JTD60	0JTD060.T

Web Resources

Time-current curves, data sheets and additional technical information: **littelfuse.com/jtd**

Recommended Fuse Holders

LFJ60 Series
LFPSJ Series (8/10–60 A)

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JTD SERIES INDICATOR POWR-PRO® FUSES - DATASHEET

Dimensions Inches (mm)

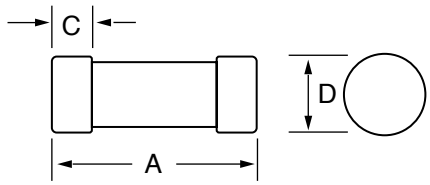


Fig. 1

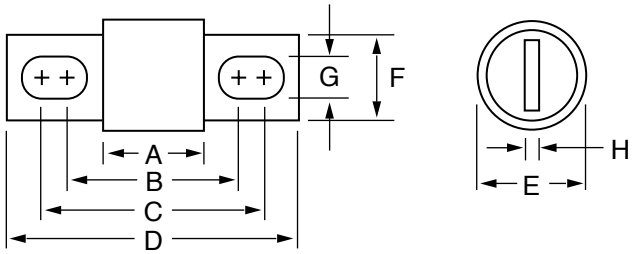


Fig. 2

Dimensions of JTD_ID & JTD

AMPERAGE	FIG. NO.	DIMENSIONS INCHES (mm)							
		A	B	C	D	E	F	G	H
1 – 30	1	2¼ (57.2)	—	½ (12.7)	13/16 (20.6)	—	—	—	—
35 – 60	1	2⅜ (60.3)	—	⅝ (15.9)	1 1/16 (27.0)	—	—	—	—
70 – 100	2	2⅝ (66.7)	3 17/32 (89.7)	3 23/32 (94.5)	4⅝ (117.5)	1⅛ (28.6)*	¾ (19.1)	9/32 (7.1)	⅛ (3.2)
110 – 200	2	3 (76.2)	4 9/32 (108.7)	4 15/32 (113.5)	5¾ (146.1)	1½ (38.1)	1⅛ (28.6)	9/32 (7.1)	3/16 (4.8)
225 – 400	2	3⅜ (85.7)	5⅛ (130.2)	5⅜ (136.5)	7⅛ (181.0)	2 (50.8)	1⅝ (41.3)	13/32 (10.3)	¼ (6.4)
450 – 600	2	3¾ (95.3)	5 27/32 (148.4)	6 5/32 (156.4)	8 (203.2)	2½ (63.5)	2 (50.8)	17/32 (13.5)	⅜ (9.5)

Electrical Specifications

ORDERING NUMBER	AMPERAGE RATING	VOLTAGE RATING		INTERRUPTING RATING		WATTS LOSS AT 100% RATED CURRENT (W)	WATTS LOSS AT 80% RATED CURRENT (W)	TOTAL CLEARING I^2T (A^2 SEC) 200 kA	AGENCY APPROVALS	
		AC	DC	AC	DC				UL	CSA
0JTD003.T	3	600	300	200 kA	20 kA	4.537	2.801	820	•	•
0JTD010.T	10	600	300	200 kA	20 kA	4.087	2.418	1690	•	•
0JTD030.T	30	600	300	200 kA	20 kA	4.247	2.92	4754	•	•
0JTD060.T	60	600	300	200 kA	20 kA	6.447	3.83	10450	•	•
0JTD100.V	100	600	300	200 kA	20 kA	7.463	4.447	68150	•	•
0JTD200.X	200	600	500	200 kA	20 kA	18.39	10.187	159000	•	•
0JTD400.X	400	600	500	200 kA	20 kA	40.037	23.463	1055000	•	•
0JTD600.X	600	600	500	200 kA	20 kA	61.187	34.983	1970000	•	•

Fuse Weight

AMPERAGE	JTD-ID (POUNDS)	JTD-ID (GRAMS)	JTD (POUNDS)	JTD (GRAMS)
8/10–3 1/2	0.088	39.92	0.084	38.10
4–12	0.090	40.82	0.086	39.01
15–30	0.090	40.82	0.086	39.01
35–60	0.180	81.65	0.176	79.83
70–100	0.242	109.77	0.238	107.95
110–200	0.774	351.08	0.770	349.27
225–400	1.704	772.92	1.700	771.11
450–600	3.124	1417.02	3.120	1415.21

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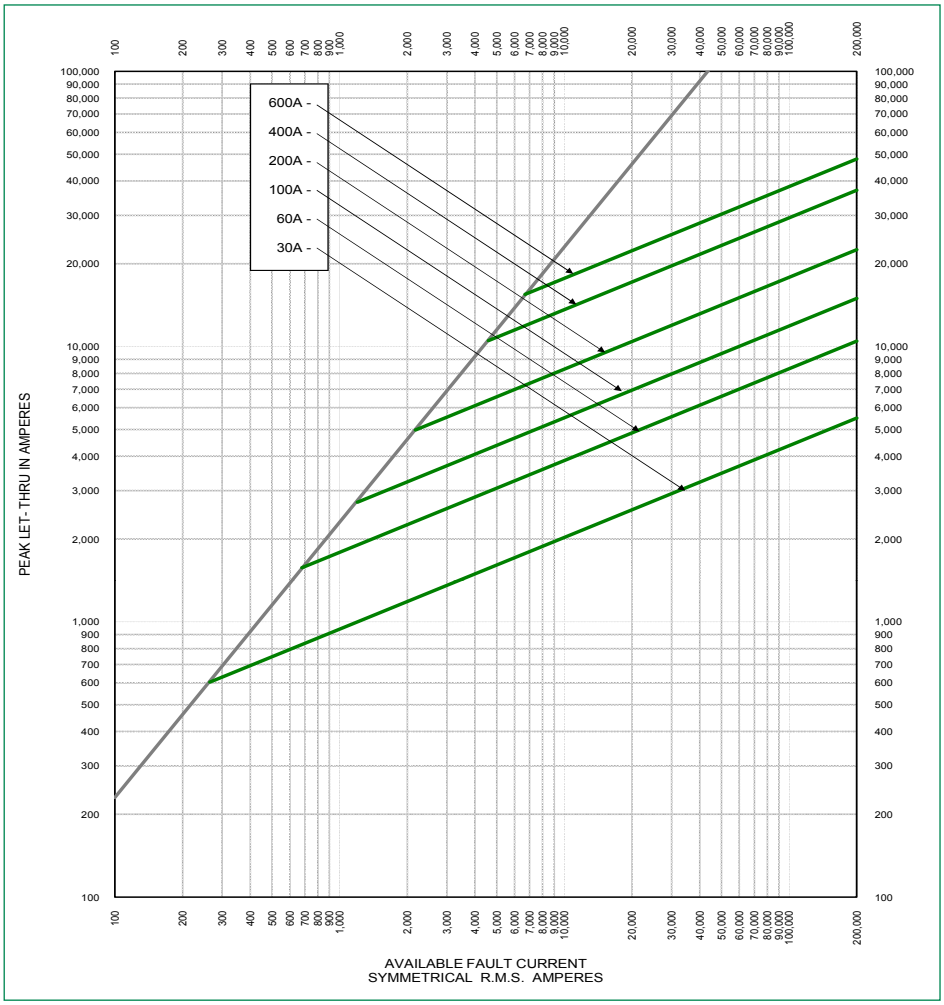
JTD SERIES INDICATOR POWR-PRO® FUSES - DATASHEET

Current-Limiting Effects of JTD & JTD_ID (600 V) Fuses

SHORT CIRCUIT CURRENT†	APPARENT RMS SYMMETRICAL CURRENT FOR VARIOUS FUSE RATINGS					
	30 A	60 A	100 A	200 A	400 A	600 A
5,000	699	1,331	1,903	2,858	4,702	-
10,000	881	1,676	2,397	3,601	5,925	7,689
15,000	1,008	1,919	2,744	4,123	6,782	8,802
20,000	1,110	2,112	3,020	4,537	7,464	9,687
25,000	1,196	2,275	3,254	4,888	8,041	10,436
30,000	1,271	2,418	3,457	5,194	8,545	11,089
35,000	1,338	2,545	3,640	5,468	8,995	11,674
40,000	1,398	2,661	3,805	5,717	9,405	12,205
50,000	1,506	2,867	4,099	6,158	10,131	13,148
60,000	1,601	3,046	4,356	6,544	10,766	13,972
80,000	1,762	3,353	4,795	7,203	11,849	15,378
100,000	1,898	3,612	5,165	7,759	12,764	16,565
150,000	2,173	4,134	5,912	8,882	14,611	18,963
200,000	2,391	4,551	6,507	9,776	16,082	20,871

†Prospective RMS Symmetrical Amperes Short-Circuit Current
Note: Data derived from Peak Let-Thru Curves

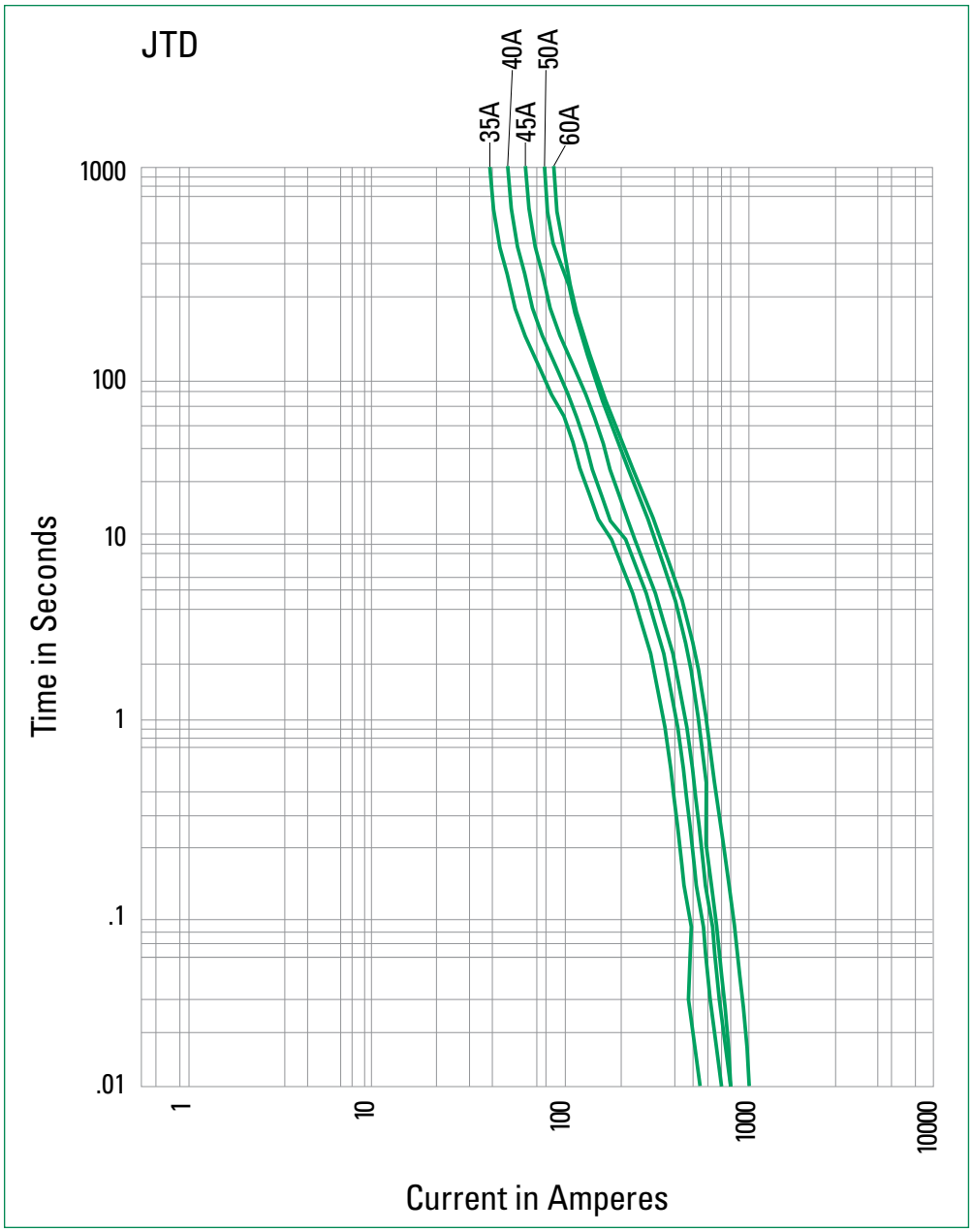
Peak Let-Thru Curve (JTD & JTD_ID)



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JTD SERIES INDICATOR POWR-PRO® FUSES - DATASHEET

Time Current Curves



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CUTLER-HAMMER - BAB DATASHEET

*excerpts from eaton.com

Cutler-Hammer

March 1999

Miniature Circuit Breakers
QUICKLAG® Industrial Circuit Breakers

QUICKLAG Industrial Circuit Breakers Bolt-on

Description

Built and Listed to UL 489

QUICKLAG Circuit Breakers Bolt-on Type

Type BA: 10-125 Amperes, 10,000 AIC

Breaker Catalog Numbers

Continuous Ampere Rating at 40°C	Catalog Number			
	1-Pole①②	2-Pole①②		3-Pole①②
	120/240 Vac	120/240 Vac	240 Vac	240 Vac
QUICKLAG Type: BA 10,000 Ampere I.C. Thermal-Magnetic Breakers				
10	BAB1010	BAB2010	BAB2010H	BAB3010H
15	BAB1015③④	BAB2015	BAB2015H	BAB3015H
20	BAB1020③④	BAB2020	BAB2020H	BAB3020H
25	BAB1025	BAB2025	BAB2025H	BAB3025H
30	BAB1030	BAB2030	BAB2030H	BAB3030H
35	BAB1035	BAB2035	BAB2035H	BAB3035H
40	BAB1040	BAB2040	BAB2040H	BAB3040H
45	BAB1045	BAB2045	BAB2045H	BAB3045H
50	BAB1050	BAB2050	BAB2050H	BAB3050H
55	BAB1055	BAB2055	BAB2055H	BAB3055H
60	BAB1060	BAB2060	BAB2060H	BAB3060H
70	BAB1070	BAB2070	BAB2070H	BAB3070H
80	–	BAB2080	BAB2080H	BAB3080H
90	–	BAB2090	BAB2090H	BAB3090H
100	BAB1100	BAB2100	BAB2100H	BAB3100H
110	–	BAB2110	–	–
125	–	BAB2125	–	–



QUICKLAG Type BA 1-Pole



QUICKLAG Type BA 2-Pole



QUICKLAG Type BA 3-Pole

① All products UL and CSA listed.
② All products 15-100A are HACR rated.
③ Switching duty rated for 120 Vac fluorescent light applications.
④ For special low-magnetic breaker order BAB1015L1 or BAB1020L1.

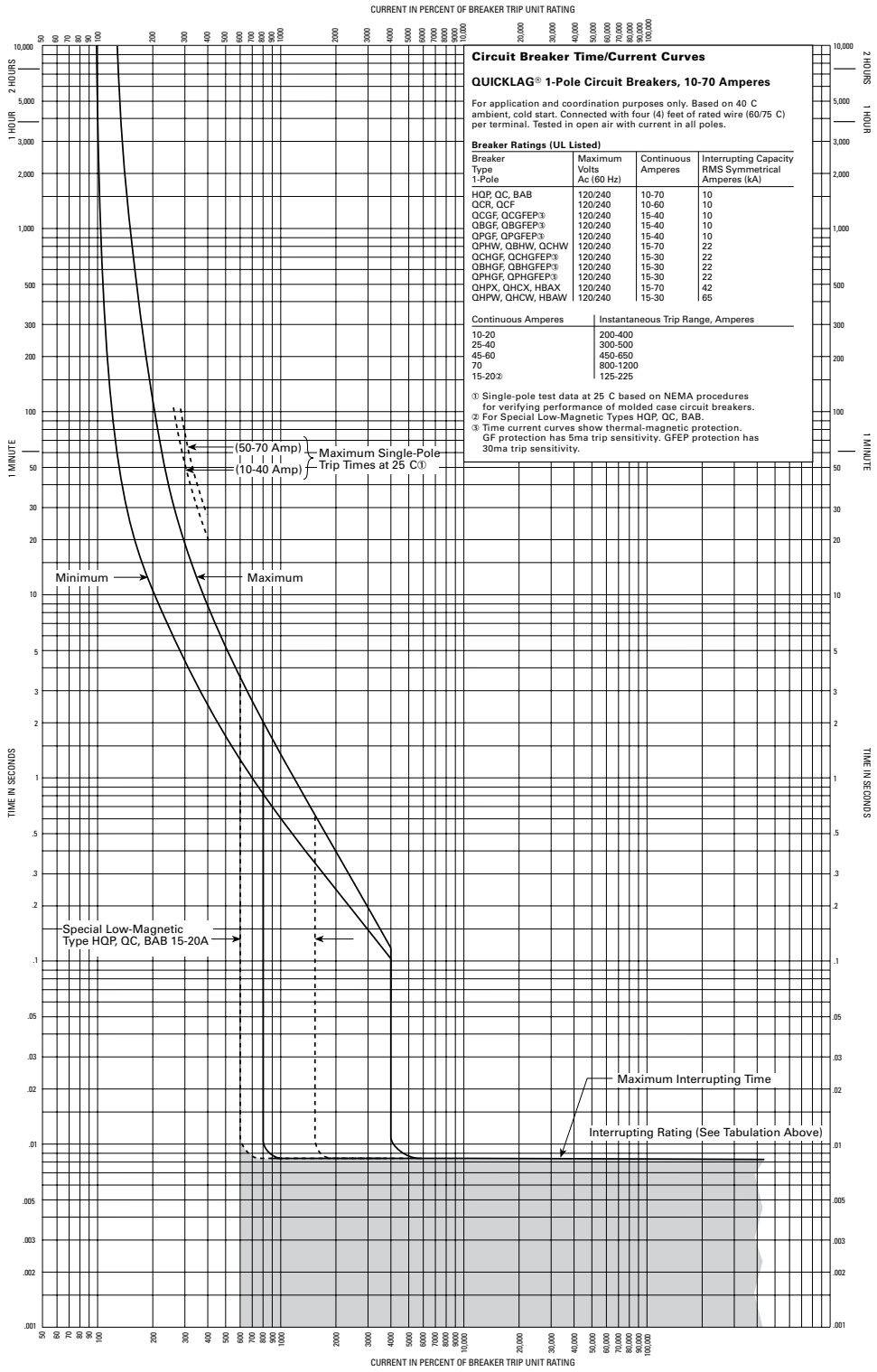
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CUTLER-HAMMER - BAB DATASHEET

*excerpts from eaton.com

QUICKLAG 1-Pole Circuit Breakers, 10-70 Amperes



Circuit Breaker Time/Current Curves

QUICKLAG® 1-Pole Circuit Breakers, 10-70 Amperes

For application and coordination purposes only. Based on 40 C ambient, cold start. Connected with four (4) feet of rated wire (60/75 C) per terminal. Tested in open air with current in all poles.

Breaker Ratings (UL Listed)

Breaker Type 1-Pole	Maximum Volts Ac (60 Hz)	Continuous Amperes	Interrupting Capacity RMS Symmetrical Amperes (kA)
HQP, QC, BAB	120/240	10-70	10
QCR, QCF	120/240	10-60	10
QCGF, QCGFEP③	120/240	15-40	10
QBGF, QBGFEP③	120/240	15-40	10
QPGF, QPGFEP③	120/240	15-40	10
QPHW, QBHW, QCHW	120/240	15-70	22
QCHGF, QCHGFEP③	120/240	15-30	22
QBHGF, QBHGFEP③	120/240	15-30	22
QPHGF, QPHGFEP③	120/240	15-30	22
QHPX, QHCX, HBAX	120/240	15-70	42
QHPW, QHCW, HBAW	120/240	15-30	65

Continuous Amperes	Instantaneous Trip Range, Amperes
10-20	200-400
25-40	300-500
45-60	450-650
70	800-1200
15-20②	125-225

① Single-pole test data at 25 C based on NEMA procedures for verifying performance of molded case circuit breakers.
② For Special Low-Magnetic Types HQP, QC, BAB.
③ Time current curves show thermal-magnetic protection. GF protection has 5ma trip sensitivity. GFEP protection has 30ma trip sensitivity.

EATON

Curve No. SC-3500-77C

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CUTLER-HAMMER - GHB DATASHEET

*excerpts from eaton.com

Cutler-Hammer

March 1999

Molded Case Circuit Breakers 15-100 Amperes

Series C® G-Frame

Types GB and GHB Bolt-On Panelboard Circuit Breakers



Typical GB

These breakers meet the requirements of Federal Specification W-C-375b as follows:

Types GB, GHB, 120 and 240 Volts:
1 Pole: Class 11a.
2, 3 Poles: Classes 10b, 11b, 12b, 14b, 15b

Type GHB, 277 and 480Y/277 Volts:
1 Pole: Classes 12c, 13a
2, 3 Poles: Class 13b

① 15 through 70 ampere circuit breakers only.
② Use (2) outside poles.
③ Uses .190-32 screw type clamp terminals.
④ 480Y/277V, circuit breakers (Type GHB) not suitable for 3-phase Delta (480V).

Type GB Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units

Continuous Ampere Rating @ 40°C	120 Vac Maximum, 125 Vdc Maximum①	240 Vac Maximum, 125/250 Vdc Maximum	240 Vac Maximum, 125/250 Vdc Maximum②
	1-Pole	2-Pole	3-Pole
	Catalog Number		
15	GB1015③	GB2015③	GB3015③
20	GB1020③	GB2020③	GB3020③
25	GB1025	GB2025	GB3025
30	GB1030	GB2030	GB3030
35	GB1035	GB2035	GB3035
40	GB1040	GB2040	GB3040
45	GB1045	GB2045	GB3045
50	GB1050	GB2050	GB3050
60	GB1060	GB2060	GB3060
70	GB1070	GB2070	GB3070
80	GB1080	GB2080	GB3080
90	GB1090	GB2090	GB3090
100	GB1100	GB2100	GB3100

Type GHB Thermal-Magnetic Circuit Breakers with Non-Interchangeable Trip Units④

Continuous Ampere Rating @ 40°C	277/480 Vac Maximum, 125 Vdc Maximum①	277/480 Vac Maximum, 125/250 Vdc Maximum	277/480 Vac Maximum, 125/250 Vdc Maximum②
	1-Pole	2-Pole	3-Pole
	Catalog Number		
15	GHB1015③	GHB2015③	GHB3015③
20	GHB1020③	GHB2020③	GHB3020③
25	GHB1025	GHB2025	GHB3025
30	GHB1030	GHB2030	GHB3030
35	GHB1035	GHB2035	GHB3035
40	GHB1040	GHB2040	GHB3040
45	GHB1045	GHB2045	GHB3045
50	GHB1050	GHB2050	GHB3050
60	GHB1060	GHB2060	GHB3060
70	GHB1070	GHB2070	GHB3070
80	GHB1080	GHB2080	GHB3080
90	GHB1090	GHB2090	GHB3090
100	GHB1100	GHB2100	GHB3100

Instruction Leaflet/FRED Number 15547

PG.74A.01.T.E

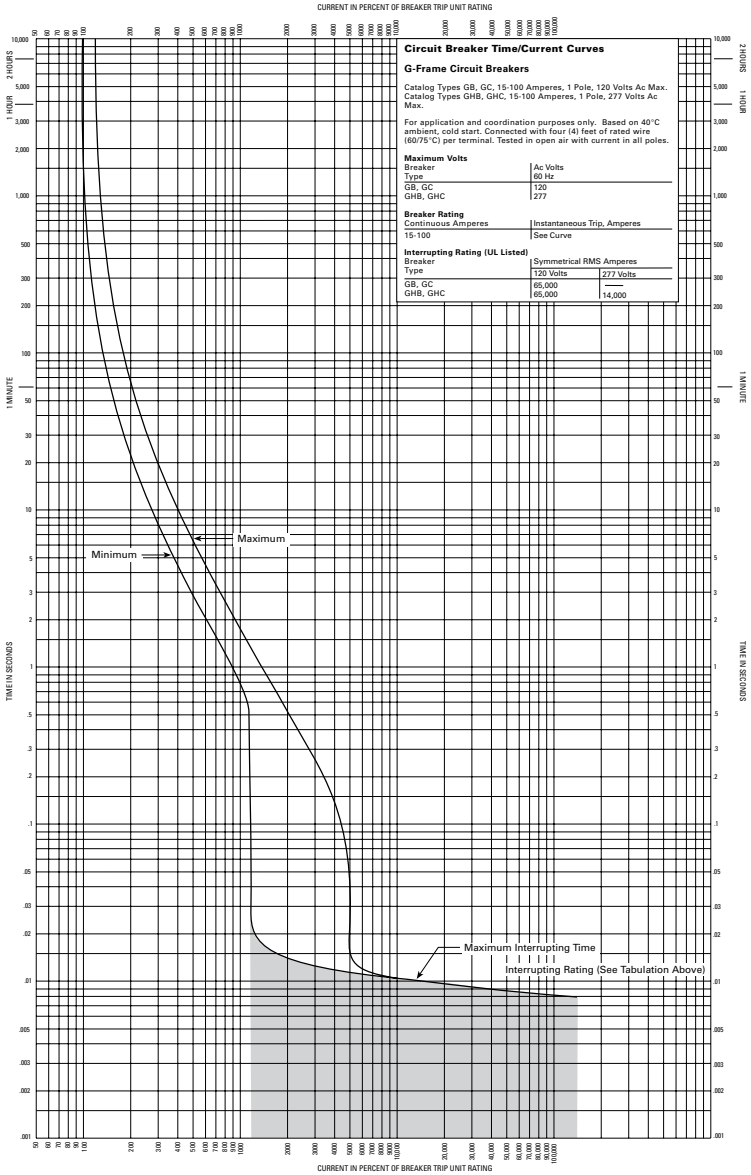
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CUTLER-HAMMER - GHB DATASHEET

*excerpts from eaton.com

AB DE-ION Circuit Breakers

Types GHB 15-100 Amperes, 1 Pole

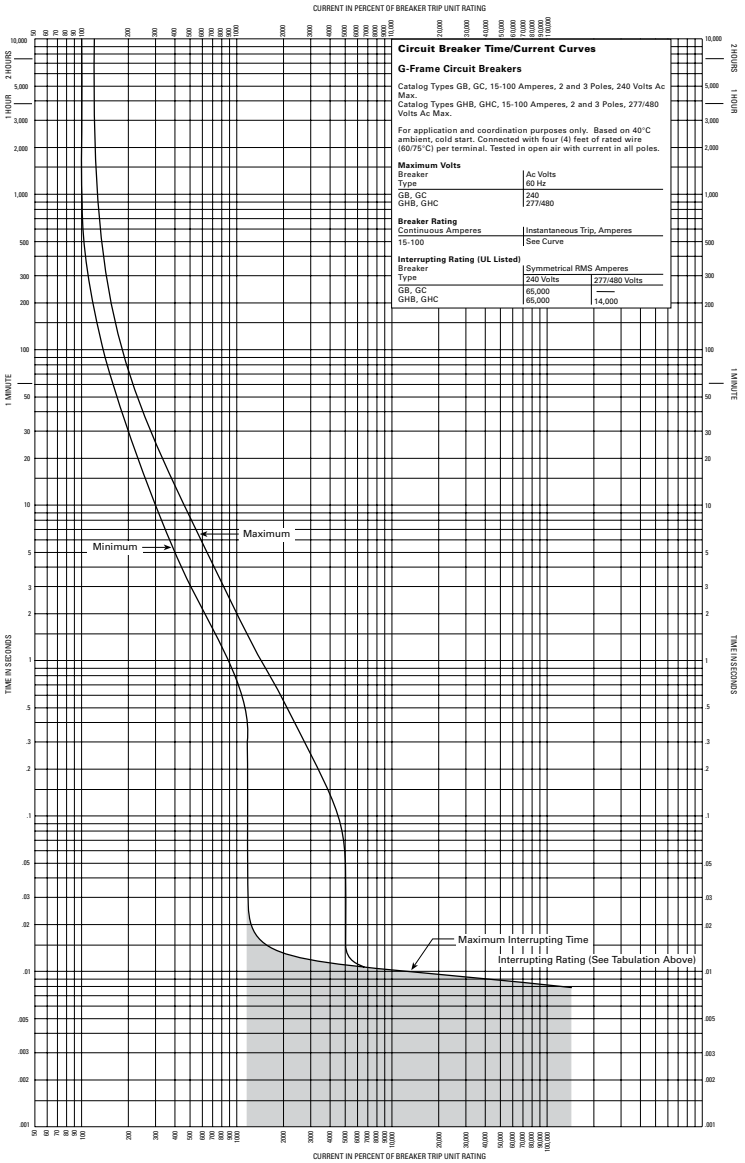


EATON

Curve No. SC-3500-83B

AB DE-ION Circuit Breakers

Types GB, GHB, GC, GHC 15-100 Amperes, 2 and 3 Poles



EATON

Curve No. SC-3501-83B

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RECOMMENDED MAINTENANCE

- The product should not be in an environments greater than 75 degrees Celsius.
- If the ambient temperature drastically changes, inspect the exterior of the panel and ensure the fuses and breakers are still working correctly.
- Occasionally clean by removing dust and other collective particles that may accumulate.
- Ensure all the fuses are still operational, which can be easily done by looking for the red LED light on the fuseholder. If it is on, it means the fuse has opened and needs to be replaced. In most cases it will be fairly obvious if a breaker has tripped or fuse has opened because that particular circuit would be opened.
- Periodically inspect the panel exterior to ensure the NEMA-Rated enclosure is properly protecting the panel product from the elements.
- An annual review of the panel is recommended to make sure the holders haven't loosened and the breakers are still tightly affixed.

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FREQUENTLY ASKED QUESTIONS

1. Part of my panel was shipped during transit? What should I do?

Please have your distributor contact Littelfuse customer service. Take pictures if possible to help Littelfuse file a claim with the courier.

2. How can I change circuit's amperage??

If the desired amperage is less than 30A moving to an amperage less than 30A (or, the desired amperage is greater than 30A moving to an amperage greater than 30A), this is can be replaced in the field by a certified electrician. Order a new breaker from Eaton (see pg. 11 & 13 of this document for reference) and a new fuse from Littelfuse (see pg. 5 & 8 of this document for reference).

If changing the circuit from an amperage less than 30A to an amperage greater than 30A (or vice versa), a new panel lining needs to be constructed and assembly instructions will be sent for field replacement by a certified electrician. Please contact Littelfuse customer service if this is the scenario.

3. I realized that I need a flush mount panel after I received it? How can I switch from a surface to a flush?

- This is not a complicated modification. Contact Littelfuse Customer Service to receive a new flush cover with assembly instructions that can be installed in the field by a certified electrician.

4. How can I get some extra circuit identifiers for the panel?

Contact Littelfuse customer service

5. Can I replace the Littelfuse fuse with another manufacturer's fuse?

While Littelfuse would always prefer you use Littelfuse fuses for both your business and to keep the product solely Littelfuse for a single point of contact, it understands that sometimes you need a quick replacement and might not have a Littelfuse option. Yes, you can use any manufacturers' fuse that is UL-Listed to the same classification as the original Littelfuse product.

6. For some reason there is a different manufacturers' fuse in your coordination panel. How can I cross it over to the Littelfuse product?

Call the Littelfuse TEC-LINE for a simple cross, or visit www.littelfuse.com for a simple cross reference tool.

7. What style circuit breakers do you use on branch circuits? I need a replacement.

- For 120/208V panels, Eaton BAB style breakers
- For 277/480V panels, Eaton GHB style breakers
- If you're referring to a breaker beyond 60A, please contact Littelfuse customer service. There is a variety of breaker styles chosen from based on specific application requirements. The breakers used on every panel are highlighted on the technical drawings that the specifying engineer signed off on before the job was released, so that is another source for you to reference if that file is still in your possession.

8. Why can't I use Square D breakers as replacements?

These coordination panels were designed and built specifically with Eaton-style breakers. To protect UL and ensure the product works correctly, you should use Eaton breakers only for replacement.

9. What if I want to order a new coordination panel from you but only want to use Square D breakers?

Please, e-mail techline@littelfuse.com to discuss this request

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FREQUENTLY ASKED QUESTIONS

10. My fuse keeps opening on one of my circuits. Should I increase the amperage?

No, the fuse is opening for a reason and because it's the fuse as opposed to the breaker, there's a good chance that the fuse is preventing short circuit damage, which is especially dangerous and potentially fatal.

Before you change fuse amperage, you should understand why the fuse is opening. Simply increasing the fuse amperage puts expensive equipment and people's safety at risk.

11. I need to change my feed-through lugs to sub-feed lugs. How can I do this?

Please contact Littelfuse customer service. This is a relatively challenging modification if the panel has already been installed. If it has not yet been installed, it still requires assembly instructions and a new set of lugs.

12. A breaker on one of my circuits keeps tripping. Any idea why?

You can use which device is opening within the coordination panel to give a plausible explanation as to the cause. If the breaker is opening, it's likely due to an overload of that circuit. If the fuse opens, it's likely preventing due to a short circuit.

13. I'd like to sub-feed my panel post-installation to another device. How can I do that?

Please e-mail techline@littelfuse.com. This may be a simple modification, depending on the specifics surrounding the application, but it could vary greatly by what device you're feeding, how far away it is, and what types of loads it's required to sustain.

14. Are there any technical concerns with replacing my main fuse pullout with main lugs to feed through to an upstream breaker?

The main fuse pullout is most likely the main device because it was needed to achieve selective coordination with the upstream breaker. Before you look to modify anything, consult the building's one-line drawings to ensure what the upstream device is. If it is a circuit breaker, you should not modify the coordination panel. Doing so may violate UL and would remove the selective coordination. Please contact Littelfuse Technical Support to discuss your situation.

15. Is there any way to increase the branch breakers' SCCR?

There is not a way to physically change the device's SCCR (10kAIC for BAB breakers & 14kAIC for GHB breakers). But if you feed the branch circuit to a fused disconnect switch instead of a breaker you can use the upstream coordination to protect the circuit.

16. I'd like to add a spare fuse cabinet so I can keep replacements inside the panel. How can I do this?

Contact Littelfuse customer service. There are multiple ways to accomplish this, such as a contraption that you can screw into the door assembly similar to the picture below. To find the best option call customer service.



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GLOSSARY OF LCP COORDINATION PANEL OPTIONS

The purpose of this section is to explain the different options available for the coordination panel so that as the product is serviced desired changes can be evaluated if necessary.

Number of Circuits

12, 18, 24, 30, 36, 42

Those listed are only circuit panel sizes. The customer can use any combination of active and spare circuits he or she wants within the limit of the panel size. For example, a 12-circuit panel can have any combination of active and inactive circuits that add up to 12. So in reality, there are 2-42 circuits available per panel, and Littelfuse can sub-feed panels together using lugs to make "effective" larger circuit panels. NEC ® regulations and practicality prevent us from building any single unit larger than 42 circuits. For instance, an 84-circuit panel would simply be too tall for the average person to service.

Voltage (AC)

120/208V 3Phase, 4Wire

120/240V 1Phase, 3Wire

277/480V 3Phase, 4Wire

These correlate with the system voltage. 208V, 240V, 480V are phase-to-phase voltages, and the 120V and 277V are phase-to-neutral voltages.

Main Fuse Device

MLO up to 400A bus is standard, but this can reach as high as 600A

60A-200A Main Circuit Breakers

60A-400A Main Fuse Class T Pullout

These are the options for the panel's main device for the entire panel. In other words, people use the main circuit breaker or main fuse pullout to voluntarily disconnect power to the entire panel.

Main Lug Only specifies that there is no central disconnect for the entire panel internal to it. In other words, a customer chooses either a main circuit breaker, Main Fuse Pullout or MLO. The MLO is where the incoming power is connected to feed the panel.

Neutral Rating

100%

200%

Under normal loads, 100% is the default. The neutral conducts the return current of the system. 200% rating is used when there is a high percentage of harmonics in the system coming from computer power supplies. This rating essentially allows twice as much return current without heating up.

Panel Mounting

Surface

Flush

Surface panel mounting is when the panel protrudes from the wall. With flush mounting, the panel is actually placed flush within the wall and does not stick out. Surface is standard.

Panel Door

Standard

Door-in-door

Standard door is one door offering access to the circuit breakers and fuse holders without exposure to conductors. To get access to the conductors with a standard door, one would have to remove the screws on the front panel base.

Door-in-door offers the same access to circuit breakers and fuse holders but also allows quick access to the conductors by having an outside hinge.

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GLOSSARY OF LCP COORDINATION PANEL OPTIONS

Fuse Holders

30A Class CC LPSC Holders

60A Class J LFPSJ Holders

Up to 30A, the LPSC is standard. From 30A – 60A the LFPSJ holder is standard

Feeder Circuit Breakers

1 Pole: 10A-60A

2 Pole: 10A-60A

3 Pole: 10A-60A

Standard applications call for single pole circuit breakers. Two and three pole breakers allow for other options, which include motors. For each of the options, we offer between a 10 and 60 amp breaker.

If the application calls for something above 60A, a breaker is available, but it cannot be fused. Alternatively, a branch-circuit Class T pullout can be used to ensure coordination

Panel Feed

Top

Bottom

Top means the feeder conductors are connected through the top, and the bottom means they come in underneath.

Panel Lugs

None

Sub-feed (MLO)

Feed-through

These lugs allow two panels to be connected to one another. If the customer wanted to "daisy chain" a number of panels, he/she would need these lugs.

Enclosure Rating

NEMA 1

NEMA 3R

NEMA 4X

NEMA 1 is standard. NEMA 3R is for outside applications. The door is sealed to prevent moisture from leaking in, etc. NEMA 4X is especially preventative against corrosion and is both water- and dust-tight.

If you have any questions, refer to the Frequently Asked Questions in this document. If you still have questions about the panel options or anything else regarding the Littelfuse LCP Coordination Panel, please e-mail techline@littelfuse.com

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