

October 1997
 Mailed to: E, D, C/29-100A, 31-400A,
 31-500A

Engine Generator Molded Case Circuit Breakers FG-NG Frames 15-1200 Amperes

DESCRIPTION

Engine generator molded case circuit breakers are designed specifically for application on diesel engine powered standby generators where high interrupting circuit breakers are not required. The JG through NG breakers are equipped with a special trip unit, that includes standard thermal (overload) protection and special low magnetic pickup range (FG includes a fixed thermal/magnetic pickup), see AD 29-167 EG for details. The standard thermal trip unit provides overload protection for conductors per the National Electric Code. The low magnetic pickup range is approximately two to five times the continuous rating and provides closer low level short circuit protection when applied on generators that have very low short circuit capacity. This combination allows the user to customize the breaker to the generator output.

INTERRUPTING CAPACITY RATINGS

UL 489 Interrupting Capacity Ratings

Interrupting Capacity (Symmetrical Amperes)
 Volts Ac (50/60 Hz)

240	18,000
480	14,000
600	10,000

IEC 947-2 Interrupting Capacity Ratings

Interrupting Capacity (Symmetrical Amperes)
 Volts Ac (50/60 Hz)

220, 240	18,000/9,000
380, 415	14,000/7,000
660, 690	10,000/5,000

STANDARDS

Engine generator molded case circuit breakers are designed to conform with the following standards:

- Underwriters Laboratories, Inc., Standard UL 489, Molded Case Circuit Breakers and Circuit Breaker Enclosures File E7819
- Canadian Standards Association Standard C22.2 No. 5, Service Entrance and Branch Circuit Breakers
- International Electrotechnical Commission Recommendations IEC 947-2, Circuit Breakers

Conformance with these standards satisfies most local and international codes, assuming user acceptability and simplified application.

FURTHER INFORMATION

Time/Current Curves: AD 29-167 EG
 Dimensions: DS 29-170 EG



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The following table lists FG through NG engine generator breakers with the maximum generator kVA and kW rating. Engine generator breakers are applied at 115% of the generator full load current rating. The maximum kW rating is based on three-phase generators at 80% power factor.

Engine Generator Breaker Catalog Number	Magnetic Pickup Range	Maximum Generator Rating 60 Hz					
		240 Vac		480 Vac		600 Vac	
		kVA ^①	kW ^②	kVA ^①	kW ^②	kVA ^①	kW ^②
FG3015	FIXED	5	4	11	9	14	11
FG3020	FIXED	7	6	14	12	18	14
FG3025	FIXED	9	7	18	14	23	18
FG3030	FIXED	11	9	22	17	27	22
FG3035	FIXED	13	10	25	20	32	25
FG3040	FIXED	14	12	29	23	36	29
FG3045	FIXED	16	13	32	26	41	32
FG3050	FIXED	18	14	36	29	45	36
FG3060	FIXED	22	17	43	35	54	43
FG3070	FIXED	25	20	51	40	63	51
FG3080	FIXED	29	23	58	46	72	58
FG3090	FIXED	32	26	65	52	81	65
FG3100	FIXED	36	29	72	58	90	72
FG3110	FIXED	40	32	79	64	99	79
FG3125	FIXED	45	36	90	72	113	90
FG3150	FIXED	54	43	108	87	135	108
FG3175	FIXED	63	51	126	101	158	126
FG3200	FIXED	72	58	144	116	181	144
FG3225	FIXED	81	65	162	130	203	162
JG3175W ^③	350-700	63	51	126	101	158	126
JG3175							
JG3200W ^③	350-700	72	58	144	116	181	144
JG3200							
JG3225W ^③	350-700	81	65	162	130	203	162
JG3225							
JG3250W ^③	350-700	90	72	181	144	226	181
JG3250							
KG3300W ^③	500-1000	108	87	217	173	271	217
KG3300							
KG3350W ^③	500-1000	126	101	253	202	316	253
KG3350							
KG3400W ^③	1000-2000	144	116	289	231	361	289
KG3400							
LG3450	600-2500	162	130	325	260	406	325
LG3450W ^③							
LG3500	600-2500	181	144	361	289	451	361
LG3500W ^③							
LG3600	600-2500	217	173	433	347	542	433
LG3600W ^③							
MG3700	800-2500	253	202	505	404	632	505
MG3700W ^③							
MG3800	800-2500	289	231	578	462	722	578
MG3800W ^③							
NG3900	1600-5000	325	260	650	520	812	650
NG3900W ^③							
NG31000	1600-5000	361	289	722	578	903	722
NG31000W ^③							
NG31200	1600-5000	433	347	867	693	1083	867
NG31200W ^③							

① Breaker continuous current is based on 115% of the generator full load ampere rating.

② Based on three-phase generators at 80% power factor.

③ Without terminals.

Cutler-Hammer

Five Parkway Center
 Pittsburgh, Pennsylvania, U.S.A. 15220



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Engine Generator Molded Case Circuit Breakers FG-NG Frames 15-1200 Amperes

CATALOG NUMBER DESCRIPTION

This information is presented only as an aid to understanding catalog numbers. It is not to be used to build catalog numbers for circuit breakers.

FG breakers include both line and load side terminals.

JG, KG, LG, MG and NG breakers with "W" catalog number suffix do not include any terminals.

JG, KG, LG, MG, and NG breakers without "W" catalog number suffix include both line and load terminals.

Contact Cutler-Hammer for additional ratings and internal/external accessories.

<u>FG</u> Frame	<u>3</u> Number of Poles	<u>100</u> Trip Amps	<u>W</u> Suffix
FG	3	15	W: w/o terminals
		20	
		25	
		30	
		35	
		40	
		45	
		50	
		60	
		70	
		80	
		90	
		100	
		110	
		125	
JG		175	
		200	
		225	
		250	
KG		300	
		350	
		400	
LG		450	
		500	
		600	
MG		700	
		800	
NG		900	
		1000	
		1200	

Standard Terminals					Internal Accessories			
Breaker Frame	Max. Ampere Rating	AWG Wire Range	Metric Wire Range mm ²	Catalog Number	AUXILIARY SWITCH		SHUNT TRIP	
					1A-1B Catalog/Style Number	2A-2B Catalog/Style Number	Rating	Catalog/Style Number
FG	100	#14-1/0	2.5-50	3T100FB ^①	A1X1PK	A2X1PK	12-24 Vdc	SNT1LP03K
FG	150	#4-4/0	25-95	3TA225FD ^①				
JG	250	#4-350 MCM	25-185	TA250KB	A1X2PK	A2X2PK	12-24 Vdc	SNT2P04K
KG	350	250-500 MCM	120-240	TA350K	A1X3PK	A2X3PK	12-24 Vdc	SNT3P05K
KG	400	3/0-250 MCM (2)	95-120	3TA400K ^①				
LG	600	250-500 MCM (2)	120-240	TA600LA	1371D11G03	1371D11G06	24 Vdc	1371D93G01
MG	800	3/0-400 MCM (3)	95-185	TA800MA2	1371D72G03	1371D72G06	24 Vdc	1370D85G01
NG	1000	3/0-400 MCM (3)	95-185	TA1000NB1	1372D39G03	1372D39G06	24 Vdc	1371D94G05
NG	1200	4/0-500 MCM (4)	120-300	TA1200NB1				

^① Package of 3 Terminals.

Selection Data

29-120 EG

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Engine Generator Molded Case Circuit Breakers, FG-NG Frames, 15-1200 Amperes

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Engine Generator Molded Case Circuit Breakers Enclosures FG-NG Frames

ENCLOSURE DESCRIPTION

NEMA 1 General Purpose

NEMA 1 enclosed breakers are designed for use in commercial buildings, apartment buildings and other areas where a general purpose enclosure is applicable. The breaker is front operable and is capable of being padlocked in either the On or Off position. Ratings through 1200 amperes are listed with Underwriters Laboratories, Inc. as approved for service entrance application. Knockouts are furnished on enclosures rated up through 250 amperes. Both surface and flush mounted enclosures are available.

Surface or Flush Mounting
 15-1200 Ampere Range
 600 Volts Ac, 500 Volts Dc

NEMA 3R Rainproof Surface Mounting

This general purpose outdoor service center employs a circuit breaker inside a weatherproof sheet steel breaker enclosure to serve as a main disconnect and protective device for feeder circuits. Ratings through 1200 amperes are listed by Underwriters Laboratories, Inc. as suitable for service entrance application. Knockouts are furnished on enclosures rated up through 250 amperes.

Interchangeable Hubs (Through 400 Amps)
 15-1200 Ampere Range
 600 Volts Ac, 500 Volts Dc

NEMA 12 Dustproof Surface Mounting

The Type 12 enclosure is designed in line with specifications for special industry application where unusually severe conditions involving oil, coolant, dust and other foreign materials exist in the operating atmosphere. The handle padlocks in the Off position and the cover is interlocked with the handle mechanism to prevent opening the cover with the circuit breaker in the On position. Ratings through 1200 amperes are listed by Underwriters Laboratories, Inc. as suitable for service entrance application.

No Knockouts or Other Openings
 15-1200 Ampere Range
 600 Volts Ac, 500 Volts Dc



NEMA 1



NEMA 3R



NEMA 12
 Dustproof

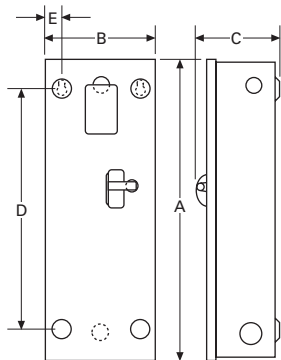


Engine Generator Molded Case Circuit Breakers, Enclosures, FG-NG Frames

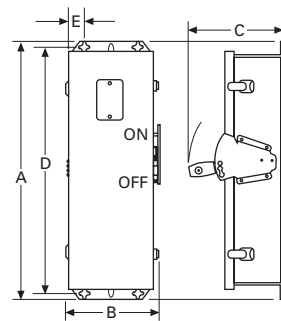
ENCLOSURE SELECTION DATA

Breaker Frame	Enclosure NEMA Class	Catalog Number	Dimensions										App. Wt. Lbs.	Conduit Sizes, Inches
			A		B		C		D		E			
			IN.	MM	IN.	MM	IN.	MM	IN.	MM	IN.	MM		
FG 15-150 A	NEMA 1	SFDN150	23.25	591	8.41	214	6.28	160	18.75	476	1.20	31	15	.25, .50, .75, 1, 1.25, 1.50, 2, 2.50
	NEMA 3R	RFDN150	25.66	603	8.84	225	9.31	237	24.28	617	1.70	43	19	.25, .50, .75, 1, 1.25, 1.50, 2, 2.50
	NEMA 12	JFDN150	25.66	603	8.84	226	9.31	238	24.28	618	1.70	43	18	
JG 175-250 A	NEMA 1	SJDN250	34.70	881	10.92	227	7.20	183	30.00	762	1.88	48	31	.25, .50, 2, 2.50, 3
	NEMA 3R	RJDN250	37.50	891	11.56	294	10.22	260	35.77	909	1.94	49	40	.25, .50, 2, 2.50, 3
	NEMA 12	JJDN250	37.53	953	11.56	294	10.22	260	35.77	909	1.94	49	37	
KG 300-400 A	NEMA 1	SKDN400	38.81	986	11.06	281	10.94	278	34.00	869	2.28	58	53	.25, .50, .75, 1.50, 2, 2.50, 3, 3.50
	NEMA 3R	RKDN400	41.69	997	11.75	298	14.06	357	39.9	1014	1.97	50	60	.25, .50, .75, 2.50, 3, 3.50
	NEMA 12	JKDN400	41.69	997	11.75	298	14.06	357	39.9	1015	1.97	50	53	
LG 450-600 A	NEMA 1	SJDN600	45.88	1165	14.31	364	12.38	314	46.56	1183	1.91	48	81	.25, .50, .75, 3, 3.50, 4
	NEMA 3R	RLDN600	48.31	1227	14.91	379	15.50	394	46.56	1183	1.92	49	84	.25, .50, .75, 3, 3.50, 4
	NEMA 12	JLDN600	48.31	1227	14.91	379	15.50	394	46.56	1183	1.92	49	81	
MG, NG 700-1200 A	NEMA 1	SNDN1200	61.22	1555	21.44	545	15.41	391	61.84	1571	1.97	50	178	
	NEMA 3R	RNDN1200	63.59	1615	22.00	559	17.63	448	61.84	1571	1.97	50	175	
	NEMA 12	JNDN1200	63.59	1615	22.00	559	17.63	448	61.84	1571	1.97	50	170	

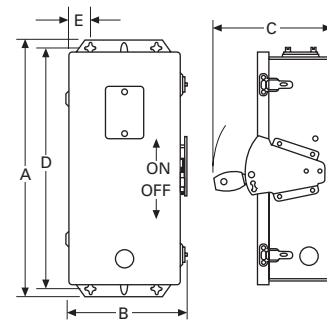
NEMA 1 Surface Mounted



NEMA 3R Rainproof



NEMA 12, 12K Dustproof



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