

Product Details and Certifications

Cross Reference RA Part Number: PN-D12870

 **Product: 140G-MTH3-D80**

Description: Molded Case Circuit Breaker Trip Unit, 800A, M - Frame, Electronic LSI - Long & Short Time, High Instantaneous, Rated Current 800 A



Representative Photo Only (actual product may vary based on configuration selections)

CIRCUIT BREAKER DATA

Bulletin Number	Bulletin 140G/140MG
Number of Poles	3 Poles
Frame Size	M frame
Rated Current(A)	800 A

ACCESSORY ITEMS

Terminal Covers	Molded Case Circuit Breaker Trip Unit, 800A, M - Frame, Electronic LSI - Long & Short Time, High Instantaneous, Rated Current 800 A
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Bulletin 140G
Molded Case Circuit Breakers
 Product Overview



Frame Reference	G-Frame	H-Frame	I-Frame	J-Frame	K-Frame	M-Frame	N-Frame	NS-Frame	R-Frame
Rated Current I_n	125 A	125 A	225 A	250 A	400 A	800 A	1200 A	1200 A	3000 A
No. of Poles	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Interrupting Rating [kA]									
240V	50 65 100	65 100 150 200 200	50 65	65 100 150 200	100 150 200 200	100 200 200	65 100 150	65 100 150	125
480V	25 35 65	25 35 65 100 150	25 35	25 35 65 100	35 65 100 150	50 65 100	50 65 100	50 65 100	125
600Y/347V	10 14 25	—	10 10	—	—	—	—	—	—
600V	—	14 18 25 35	10 10	14 18 25 35	25 35 65 100	25 35 42	25 50 65	25 50 65	100
Breaking Capacity [I_{cu} (kA)]									
220...240V	65 85 100	65 85 100 150 200	65 85	65 85 100 150	85 100 200 200	85 100 200	85 100 200	85 100 200	130
415V	36 50 70	36 50 70 120 150	36 50	36 50 70 120	50 70 120 200	36 70 100	50 70 120	50 70 120	80
440V	36 50 65	36 50 65 100 150	25 40	36 50 65 100	40 65 100 180	35 50 65	50 65 100	50 65 100	80
690V	6 8 10	10 12 15 18 20	5 8	10 12 15 20	25 40 70 80	22 25 30	30 42 50	30 42 50	40
250V DC	36 50 70	36 50 70 85 100	36 50	36 50 70 85	—	36 50 65	—	—	—
500V DC	36 50 70	36 50 70 85 100	36 50	36 50 70 85	36 50 70 100	—	—	—	—
750V DC	—	—	—	—	25 36 70 70	16 36 50	—	—	—
Protection Type									
Thermal Magnetic	✓	✓	✓	✓	✓	✓	—	—	—
Electronic	—	✓	—	✓	✓	✓	✓	✓	✓
Molded Case Switch	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal Accessories									
Auxiliary Contact	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alarm Contact	✓	✓	✓	✓	✓	✓	✓	✓	✓
AX/AL Combo	✓	✓	✓	✓	✓	✓	✓	✓	✓
Trip Unit Contact	—	✓	—	✓	—	—	✓	✓	✓
Shunt Trip	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt Close	—	—	—	—	—	—	✓	✓	✓
UV Relay	✓	✓	✓	✓	✓	✓	✓	✓	✓
Field Installable	✓	✓	✓	✓	✓	✓	✓	✓	✓
External Accessories									
End Cap	STD	STD	STD	STD	STD	STD	STD	STD	—
25 mm Phase Barriers	STD	STD	STD	STD	STD	—	—	—	—
Insulators	STD	STD	STD	STD	STD	STD	—	—	—
Terminal Lugs	✓	✓	✓	✓	✓	✓	✓	✓	✓
Extended Terminal	✓	✓	✓	✓	✓	✓	✓	✓	—
Spreader Terminal	✓	✓	✓	✓	✓	✓	✓	✓	✓
Rear Terminal	—	—	—	—	—	—	✓	✓	✓
Phase barriers	✓	✓	✓	✓	✓	✓	✓	✓	✓
Terminal Cover	✓	✓	✓	✓	✓	✓	✓	✓	—
Direct Rotary	✓	✓	✓	✓	✓	✓	✓	—	—
Variable Depth (Door)	✓	✓	✓	✓	✓	✓	✓	—	—
Internal NFPA 79	✓	✓	✓	✓	✓	✓	✓	—	—
Flange Operator	✓	✓	✓	✓	✓	✓	✓	—	—
Flange Cable	✓	✓	✓	✓	✓	✓	✓	—	—
Motor Operator	✓	✓	✓	✓	✓	✓	—	✓	✓
Field Installable	✓	✓	✓	✓	✓	✓	✓	✓	✓

Molded Case Circuit Breakers

Catalog Number Explanation — 800 A, M-Frame

Complete Circuit Breaker Assemblies — 800 A, M-Frame

Examples given in this section are not intended to be used for product selection. Use ProposalWorks to configure the molded case circuit breaker. Use these configurations only to select all factory-installed options for shunt trips, undervoltage release units, auxiliary contacts, and alarm contacts. Use the codes from Table g to add on to the molded case circuit breaker cat. no. selected on the previous pages to form a complete cat. no. for a complete assembly with factory-installed options.



140G - M ~~XXXXXX~~
H
3 - D80
g

a
b
c
d
e
f
g

<i>a</i>		<i>d</i>		<i>g</i>	
Bulletin No.		Protection Type		Factory-Installed Internal Options ♦	
Code	Description	Code	Description	Code	Description
140G	Global Molded Case Circuit Breaker	F	Adjust thermal/ adjust magnetic	Shunt Trip and Undervoltage Release Units	
		H	Electronic LSI -long, short, instant	SJ	Shunt Trip, 24...30V AC/DC
		I	Electronic LSI -long, short, instant & ground fault	SK	Shunt Trip, 48...60V AC/DC
		K	Electronic LSI -long, short, instant, ground fault & MM	SD	Shunt Trip, 110...127V AC; 110...125V DC
		X	Breaker frame	SA	Shunt Trip, 220...240V AC; 220...250V DC
		S	Molded case switch (isolator)	SB	Shunt Trip, 380...440V AC
				SC	Shunt Trip, 480...525V AC
				UJ	Undervoltage Release, 24...30V AC/DC
				UR	Undervoltage Release, 48V AC/DC
				UY	Undervoltage Release, 60V AC/DC
				UD	Undervoltage Release, 110...127V AC; 110...125V DC
				UA	Undervoltage Release, 220...240V AC; 220...250V DC
				UB	Undervoltage Release, 380...440V AC
				UC	Undervoltage Release, 480...525V AC
				No Digit	No Selection
				Auxiliary and Alarm Contacts, Trip Units	
				AA	1 Aux., 1 Alarm Contact, 250V
				CA	3 Aux., 1 Alarm Contact, 250V
				FB	2 Aux. Contacts, 400V
				AB	1 Aux., 1 Alarm Contact, 400V
				CJ	3 Aux., 1 Alarm Contact, 24V

<i>b</i>		<i>e</i>	
Frame/Rating		Poles	
Code	Description	Code	Description
M	800 A	3	3 poles
		4	4 poles

<i>c</i>		<i>f</i>	
Interrupting Rating/Breaking Capacity (based on I_c at 480V)		Current Range	
Code	Description	Code	Description
5	50 kA	D60	e.g., 600 A
6	65 kA	D63	e.g., 630 A
0	100 kA	D80	e.g., 800 A
T	Trip unit	Blank	Frame only

♦ Select up to two internal options: 1 for left side mounting (shunt trip or undervoltage release), 1 for right (auxiliary or alarm contact). Consult your local Rockwell automation sales office or Allen-Bradley distributor for further assistance.

Breaker Frames & Trip Units



Breaker Frames, 800 A Rated Current

Interrupting Rating (50/60 Hz), UL 489/CSA C22.2-5, No. 5-02 [kA]			Breaking Capacity (50/60 Hz), IEC 60947-2								Breaking Capacity (DC), IEC 60947-2 §		Cat. No.	
240V	480V	600V	3-Pole in series 600V DC	220V★		415V		690V		750V DC (3-pole in series)		3 Poles	4 Poles	
				I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]	I_{cu} [kA]	I_{cs} [% I_{cu}]			
100	50	25	20	85	100	50	100	22	75	16	75	140G-M5X3	140G-M5X4	
200	65	35	35	100	100	70	100	25	75	36	75	140G-M6X3	140G-M6X4	
200	100	42	50	200	75	100	75	30	75	50	75	140G-M0X3	140G-M0X4	

- ★ These ratings have not been tested for the CCC listing.
- ‡ See table below for Cat. No. selection
- § DC rating is applicable for thermal-magnetic trip unit only.

Trip Units, Thermal-Magnetic

Rated Current I_n [A]	Thermal Trip [A] $I_t = I_n$	Magnetic Trip [A] I_m	Protection Type	Cat. No.	
				3 Poles	4 Poles
600	420...630	3000...6000	F (Adjustable Thermal/ Adjustable Magnetic)	140G-MTF3-D60	140G-MTF3-D60
800	560...800	4000...8000	F (Adjustable Thermal/ Adjustable Magnetic)	140G-MTF3-D80	140G-MTF4-D80

Trip Units, Electronic LSI (Long, Short, Instantaneous)

Rated Current I_n [A]	Protection Type			Cat. No.			
	L $I_1=0.4...1 \times I_n$	S $I_2=0.6...10 \times I_n$	I $I_3=1.5...12 \times I_n$	3 Poles	4 Poles		
600	240...600	3, 6, 9, 18	360...6000	0.05, 0.1, 0.25, 0.5	900...7200	140G-MTH3-D60	140G-MTH4-D60
800	320...800	3, 6, 9, 18	480...8000	0.05, 0.1, 0.25, 0.5	800...8400	140G-MTH3-D80	140G-MTH4-D80

Trip Units, Electronic LSIG (Long, Short, Instantaneous, Ground Fault)

Rated Current I_n [A]	Protection Type				Cat. No.				
	L $I_1=0.4...1 \times I_n$	S $I_2=0.6...10 \times I_n$	I $I_3=1.5...12 \times I_n$	G $I_4=0.2...1 \times I_n$	3 Poles	4 Poles			
600	240...600	3, 6, 9, 18	360...6000	0.05, 0.1, 0.25, 0.5	900...7200	120...600	0.1, 0.2, 0.4, 0.8	140G-MTI3-D60	140G-MTI4-D60
800	320...800	3, 6, 9, 18	480...8000	0.05, 0.1, 0.25, 0.5	800...8400	160...800	0.1, 0.2, 0.4, 0.8	140G-MTI3-D80	140G-MTI4-D80

Trip Units, Electronic LSIG-MM (Long, Short, Instantaneous, Ground Fault - Maintenance Mode)

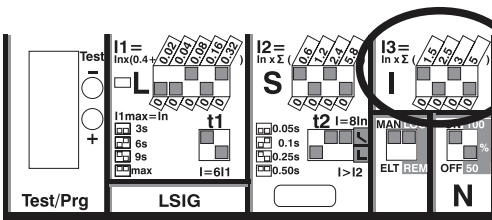
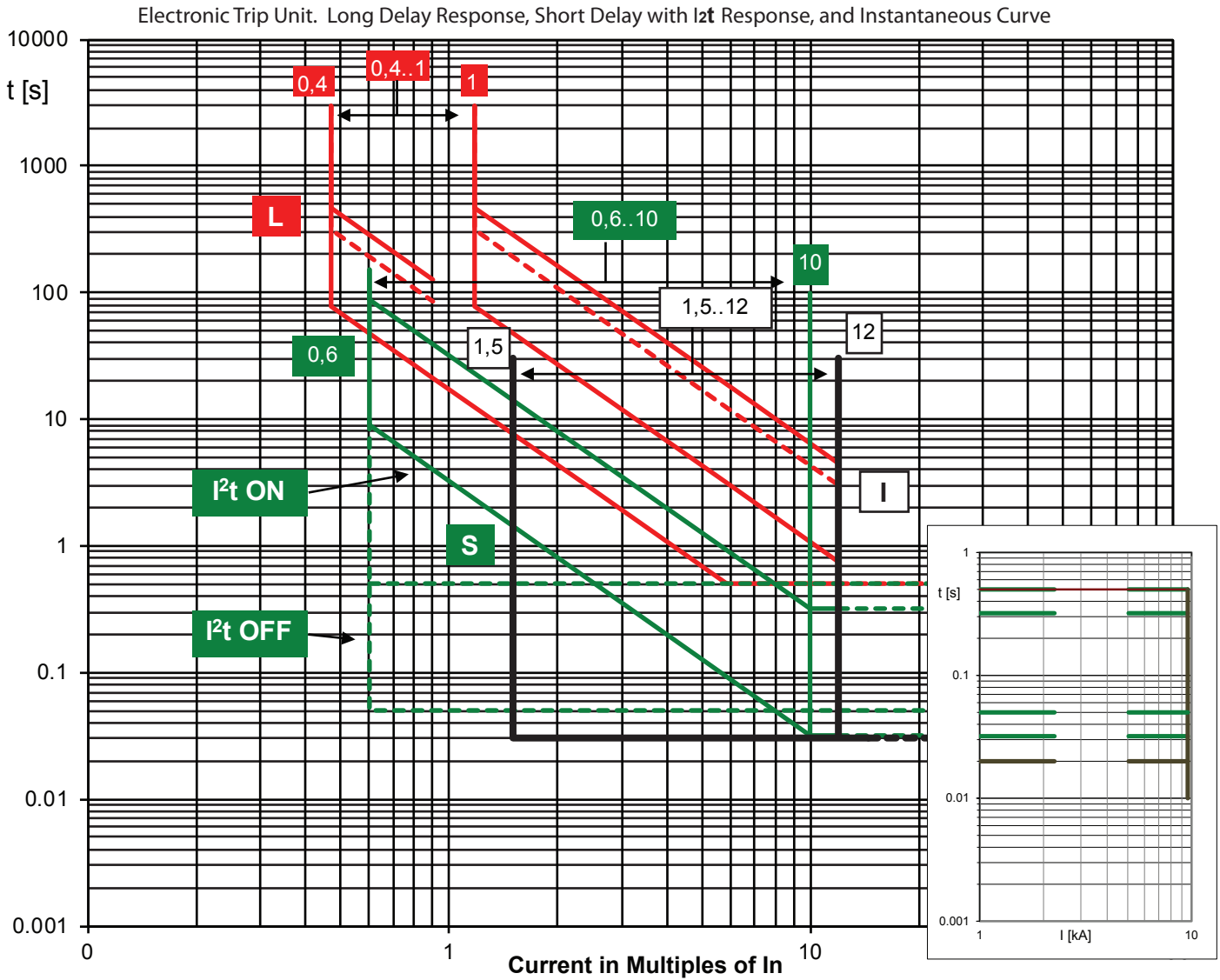
Rated Current I_n [A]	Protection Type				Cat. No.				
	L $I_1=0.4...1 \times I_n$	S $I_2=0.6...10 \times I_n$	I $I_3=1.5...12 \times I_n$	G $I_4=0.2...1 \times I_n$	3 Poles	4 Poles			
600	240...600	3, 6, 9, 18	360...6000	0.05, 0.1, 0.25, 0.5	900...7200	120...600	0.1, 0.2, 0.4, 0.8	140G-MTK3-D60	140G-MTK4-D60
800	320...800	3, 6, 9, 18	480...8000	0.05, 0.1, 0.25, 0.5	800...8400	160...800	0.1, 0.2, 0.4, 0.8	140G-MTK3-D80	140G-MTK4-D80

Assembled molded case circuit breakers found on pages 28...30

Bulletin 140G
Molded Case Circuit Breakers
Specifications — K- and M-Frame

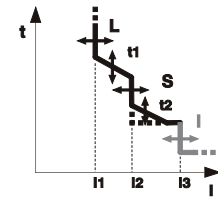
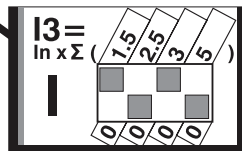


		K-Frame				M-Frame		
Max. Rated Current	[A]	400				800		
Rated insulation voltage, U _i , IEC	[V]	1000				1000		
NEMA, UL, CSA								
Interrupting Rating Code		K3	K6	K0	K15	T 5	U	T €
240V AC, 50/60Hz	[kA]	100	150	200	200	100	200	200
480V AC, 50/60Hz	[kA]	35	65	100	150	50	65	100
600Y/347V AC, 50/60Hz	[kA]	—	—	—	—	—	—	—
600V AC, 50/60 Hz	[kA]	25	35	65	100	25	35	42
IEC 60947-2								
Rated ultimate short-circuit breaking capacity, I _{cu}								
220/230/240V AC, 50/60Hz	[kA]	85	100	200	200	85	100	200
380V AC, 50/60Hz	[kA]	50	70	120	200	50	70	100
415V AC, 50/60Hz	[kA]	50	70	120	200	50	70	100
440V AC, 50/60Hz	[kA]	40	65	100	180	45	50	80
500V AC, 50/60Hz	[kA]	30	50	85	150	35	50	65
525V AC, 50/60Hz	[kA]	—	—	—	—	—	—	—
690V AC, 50/60Hz	[kA]	25	40	70	80	22	25	30
250V DC, 2 Poles in Series	[kA]	—	—	—	—	—	—	—
500V DC, 2 Poles in Series	[kA]	36	50	70	100	—	—	—
500V DC, 3 Poles in Series	[kA]	—	—	—	—	—	—	—
750V DC, 3 Poles in Series	[kA]	25	36	70	70	20	36	50
Rated service short-circuit breaking capacity, I _{cs}								
220/230/240V AC, 50/60Hz	[kA]	100%	100%	100%	100%	100%	100%	75%
380V AC, 50/60Hz	[kA]	100%	100%	100%	100%	100%	100%	75%
415V AC, 50/60Hz	[kA]	100%	100%	100%	100%	100%	100%	75%
440V AC, 50/60Hz	[kA]	100%	100%	100%	100%	100%	100%	75%
500V AC, 50/60Hz	[kA]	100%	100%	100%	100%	100%	100%	75%
525V AC, 50/60Hz	[kA]	—	—	—	—	—	—	—
690V AC, 50/60Hz	[kA]	100%	100%	100%	100%	75%	75%	75%
250V DC, 2 Poles in Series	[kA]	—	—	—	—	—	—	—
500V DC, 2 Poles in Series	[kA]	100%	100%	100%	100%	—	—	—
500V DC, 3 Poles in Series	[kA]	—	—	—	—	—	—	—
750V DC, 3 Poles in Series	[kA]	100%	100%	100%	100%	75%	75%	75%
Mechanical Life	[No. Ops]	20000				20000		
	[Ops/hr]	120				120		
Electrical Life @ 415V AC	[No. Ops]	7000 (400 A) - 5000 (630 A)				7000 (630 A) - 5000 (800 A) - 4000 (1000 A)		
	[Ops/hr]	60				60		
Ambient Temp. w/out derating	°F [°C]	104 °F [40 °C]				104 °F [40 °C]		
Storage Temperature	°F [°C]	-40...+176 °F [-40...+80 °C]				-40...+176 °F [-40...+80 °C]		
Dimensions [Width/Depth/Height]	[mm]	3 poles: 140x108.5x205				3 poles: 210x103.5x268		
	[mm]	4 poles: 185x103.5x205				4 poles: 280x103.5x268		



Example - Esempio - Beispiel - Exemple - Ejemplo

$I_n = 600A$
 $I_3 = 600 \times (1.5 + 3) = 2700A$



Tolerance values:

Protection	Trip Threshold	Trip Time
L	$1.05 \leq x I_1 \leq 1.25$	$\pm 20\%$
S	$\pm 10\%$	$\pm 20\%$
I	$\pm 15\%$	$\leq 60 \text{ ms}$
Others	$\pm 20\%$	

Notes:

1. Curve accuracy applies from -20 C to +55 C ambient.
For possible continuous ampere derating for ambient above 40 C, consult Rockwell Automation.
2. The right portion of the curve is determined by the interrupting rating of the circuit breaker.
3. Total clearing times shown include the response times of the trip unit, the breaker opening, and the interruption of the current.
4. For high fault current levels an additional fixed instantaneous hardware override is provided at 9.6kA