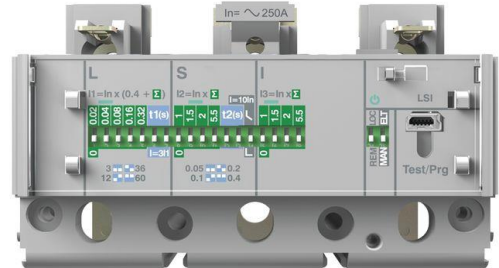


# Product Details and Certifications

## Cross Reference RA Part Number: PN-D12841

➔ **Product: 140G-KTI3-D40**

Description: Molded Case Circuit Breaker Trip Unit, 400A, K - Frame, Electronic LSIG - Long & Short Time, High Instantaneous, Ground Fault, Rated Current 400 A



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

### ***CIRCUIT BREAKER DATA***

Bulletin Number	Bulletin 140G/140MG
Frame Size	K-Frame
Rated Current(A)	400 A
Number of Poles	3 Poles
Protection	Electronic LSIG - Long & Short Time, High Instantaneous, Ground Fault

### ***ACCESSORY ITEMS***

Trip Unit	Molded Case Circuit Breaker Trip Unit, 400A, K - Frame, Electronic LSIG - Long & Short Time, High Instantaneous, Ground Fault, Rated Current 400 A
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# 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
<b>Interrupting Rating [kA]</b>									
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
<b>Breaking Capacity [<math>I_{cu}</math> (kA)]</b>									
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	—	—	—
<b>Protection Type</b>									
Thermal Magnetic	✓	✓	✓	✓	✓	✓	—	—	—
Electronic	—	✓	—	✓	✓	✓	✓	✓	✓
Molded Case Switch	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Internal Accessories</b>									
Auxiliary Contact	✓	✓	✓	✓	✓	✓	✓	✓	✓
Alarm Contact	✓	✓	✓	✓	✓	✓	✓	✓	✓
AX/AL Combo	✓	✓	✓	✓	✓	✓	✓	✓	✓
Trip Unit Contact	—	✓	—	✓	—	—	✓	✓	✓
Shunt Trip	✓	✓	✓	✓	✓	✓	✓	✓	✓
Shunt Close	—	—	—	—	—	—	✓	✓	✓
UV Relay	✓	✓	✓	✓	✓	✓	✓	✓	✓
Field Installable	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>External Accessories</b>									
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 — 400 A, K-Frame

### Complete Circuit Breaker Assemblies — 400 A, K-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 - K
T
I
3 - D40
g

*a*
*b*
*c*
*d*
*e*
*f*
*g*

**a**

Bulletin No.	
Code	Description
140G	Global Molded Case Circuit Breaker

**b**

Frame/Rating	
Code	Description
K	400 A

**c**

Interrupting Rating/Breaking Capacity (based on $I_c$ at 480V)	
Code	Description
3	35 kA
6	65 kA
0	100 kA
15	150 kA
T	Trip unit

**d**

Protection Type	
Code	Description
F	Adjust thermal/ adjust magnetic
H	Electronic LSI -long, short, instant
I	Electronic LSIG -long, short, instant & ground fault
K	Electronic LSIG-MM -long, short, instant, ground fault & MM
S	Molded case switch (isolator)
X	Breaker Frame

**e**

Poles	
Code	Description
3	3 poles
4	4 poles

**f**

Current Range	
Code	Description
D25	e.g., 250 A
D30	e.g., 300 A
D40	e.g., 400 A
Blank	Frame only

**g**

Factory-Installed Internal Options ♦	
Shunt Trip and Undervoltage Release Units	
Code	Description
SJ	Shunt Trip, 24...30V AC/DC
SK	Shunt Trip, 48...60V AC/DC
SD	Shunt Trip, 110...127V AC; 110...125V DC
SA	Shunt Trip, 220...240V AC; 220...250V DC
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
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	
Code	Description
AA	1 Aux., 1 Alarm Contact, 250V
CA	3 Aux., 1 Alarm Contact, 250V
AB	1 Aux., 1 Alarm Contact, 400V
FB	2 Aux. Contacts, 400V
CJ	3 Aux., 1 Alarm Contact, 24V

♦ 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, 400 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	2-pole in series	3-Pole in series	220V★		415V		440V★		690V		500V DC (3-pole in series)		3 Poles	4 Poles
			500V DC ‡	600V DC ‡	I <sub>cu</sub> [kA]	I <sub>cs</sub> [%I <sub>cu</sub> ]	I <sub>cu</sub> [kA]	I <sub>cs</sub> [%I <sub>cu</sub> ]	I <sub>cu</sub> [kA]	I <sub>cs</sub> [%I <sub>cu</sub> ]	I <sub>cu</sub> [kA]	I <sub>cs</sub> [%I <sub>cu</sub> ]	I <sub>cu</sub> [kA]	I <sub>cs</sub> [%I <sub>cu</sub> ]		
100	35	25	35	25	85	100	50	100	40	100	25	100	36	100	140G-K3X3	140G-K3X4
150	65	35	50	35	100	100	70	100	65	100	40	100	50	100	140G-K6X3	140G-K6X4
200	100	65	65	50	200	100	120	100	100	100	70	100	70	100	140G-K0X3	140G-K0X4
200	150	100	100	65	200	100	200	100	180	100	80	100	100	100	140G-K15X3	140G-K15X4

★ These ratings have not been tested for the CCC listing.  
 ‡ DC rating is applicable for thermal-magnetic trip unit only.

Trip Units, Thermal-Magnetic

Rated Current I <sub>n</sub> [A]	Thermal Trip [A] I <sub>r</sub> = I <sub>n</sub>	Magnetic Trip [A] I <sub>m</sub>	Protection Type	Cat. No.	
				3 Poles	4 Poles
300	210...300	1500...3000	F (Adjustable Thermal/ Adjustable Magnetic)	140G-KTF3-D30	140G-KTF4-D30
400	280...400	2000...4000	F (Adjustable Thermal/ Adjustable Magnetic)	140G-KTF3-D40	140G-KTF4-D40

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

Rated Current I <sub>n</sub> [A]	Protection Type					Cat. No.	
	L		S		I	3 Poles	3 Poles
	I <sub>1</sub> =0.4...1 x I <sub>n</sub>	t <sub>1</sub> =sec.	I <sub>2</sub> =0.6...10 x I <sub>n</sub>	t <sub>2</sub> =sec.	I <sub>3</sub> =1.5...12 x I <sub>n</sub>		
300	120...300	3, 6, 9, 18	180...3000	0.05, 0.1, 0.25, 0.5	450...3600	140G-KTH3-D30	140G-KTH4-D30
400	160...400	3, 6, 9, 18	240...4000	0.05, 0.1, 0.25, 0.5	600...4800	140G-KTH3-D40	140G-KTH4-D40

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

Rated Current I <sub>n</sub> [A]	Protection Type								Cat. No.	Cat. No.
	L		S		I	G				
	I <sub>1</sub> =0.4...1 x I <sub>n</sub>	t <sub>1</sub> =sec.	I <sub>2</sub> =0.6...10 x I <sub>n</sub>	t <sub>2</sub> =sec.	I <sub>3</sub> =1.5...12 x I <sub>n</sub>	I <sub>4</sub> =0.2...1 x I <sub>n</sub>	t <sub>4</sub> =sec.			
300	120...300	3, 6, 9, 18	180...3000	0.05, 0.1, 0.25, 0.5	450...3600	60...300	0.1, 0.2, 0.4, 0.8	140G-KTI3-D30	140G-KTI4-D30	
400	160...400	3, 6, 9, 18	240...4000	0.05, 0.1, 0.25, 0.5	600...4800	80...400	0.1, 0.2, 0.4, 0.8	140G-KTI3-D40	140G-KTI4-D40	

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

Rated Current I <sub>n</sub> [A]	Protection Type								Cat. No.	Cat. No.
	L		S		I	G				
	I <sub>1</sub> =0.4...1 x I <sub>n</sub>	t <sub>1</sub> =sec.	I <sub>2</sub> =0.6...10 x I <sub>n</sub>	t <sub>2</sub> =sec.	I <sub>3</sub> =1.5...12 x I <sub>n</sub>	I <sub>4</sub> =0.2...1 x I <sub>n</sub>	t <sub>4</sub> =sec.			
300	120...300	3, 6, 9, 18	180...3000	0.05, 0.1, 0.25, 0.5	450...3600	60...300	0.1, 0.2, 0.4, 0.8	140G-KTK3-D30	140G-KTK4-D30	
400	160...400	3, 6, 9, 18	240...4000	0.05, 0.1, 0.25, 0.5	600...4800	80...400	0.1, 0.2, 0.4, 0.8	140G-KTK3-D40	140G-KTK4-D40	

Assembled molded case circuit breakers found on pages 22...24

# Molded Case Circuit Breakers

## Specifications — K- and M-Frame

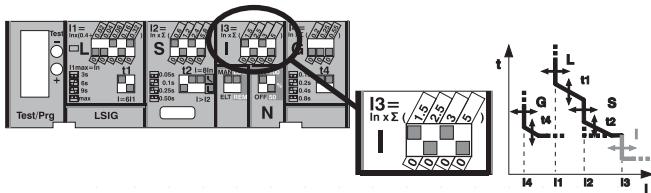
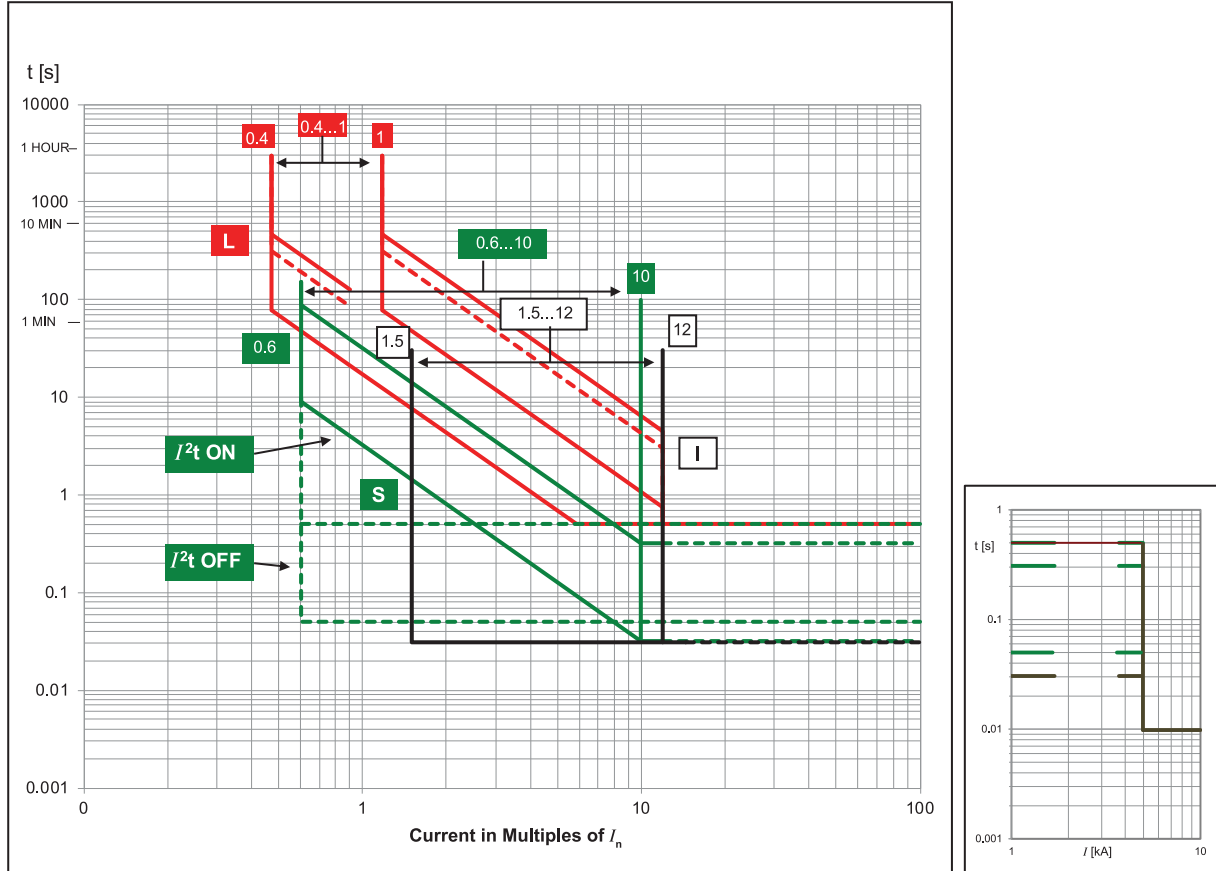


		K-Frame				M-Frame		
Max. Rated Current	[A]	400				800		
Rated insulation voltage, U <sub>i</sub> , IEC	[V]	1000				1000		
NEMA, UL, CSA								
Interrupting Rating Code		K3	K6	K0	K15	K5	K6	K0
240V AC, 50/60Hz	[kA]	100	150	200	200	100	200	200
480V AC, 50/60Hz	[kA]	35	65	100	150	50	65	100
600Y/347V AC, 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 <sub>cu</sub>								
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 <sub>cs</sub>								
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		

## Bulletin 140G-K

Available Sensors ( $I_n$ ): 300 A, 400 A

Electronic Trip Unit. Long Delay Response, Short Delay with  $I^2t$  Response, and Instantaneous Curve



Example:  
 $I_n = 300$  A  
 $I_3 = 300 \times (1.5 + 3) = 1350$  A

### Tolerance Values

Protection	Trip Threshold	Trip Time
L	$1.05 \leq xI_n \leq 1.25$	$\pm 20\%$
S	$\pm 10\%$	$\pm 20\%$
I	$\pm 1.5\%$	$\leq 60$ ms
Others	$\pm 20\%$	

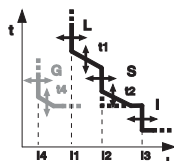
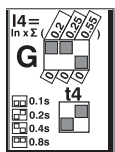
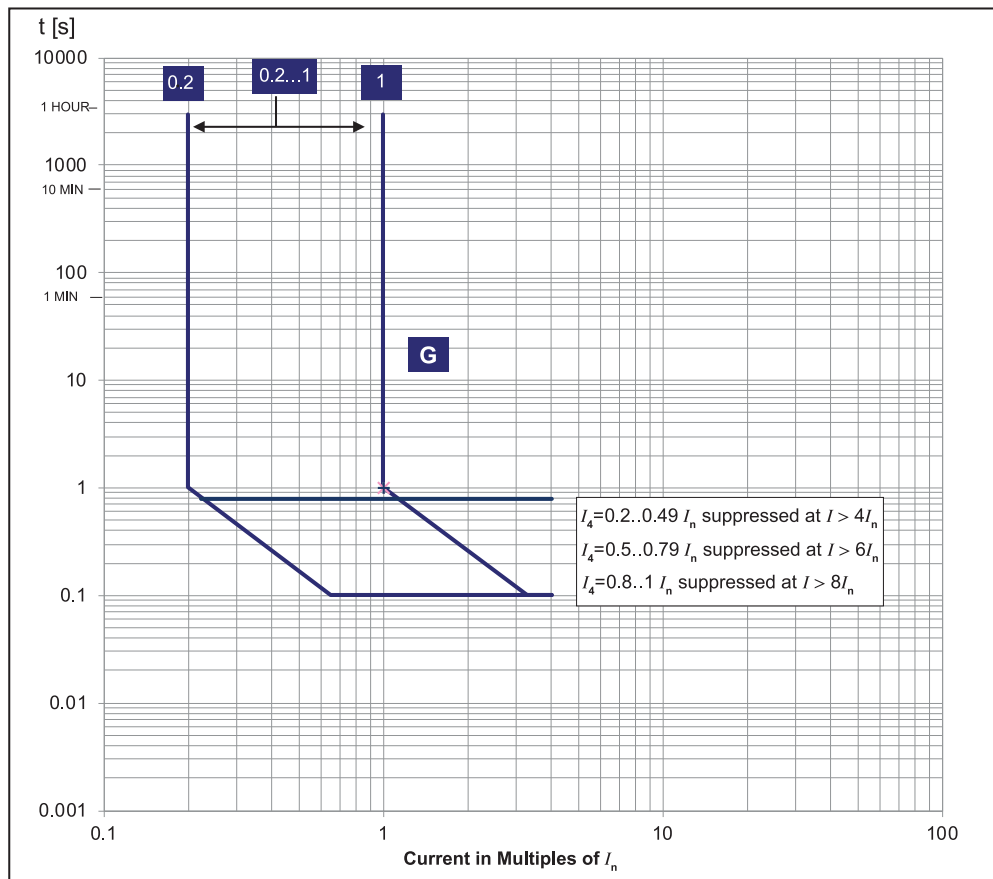
$I_n$ [A]	$I_3$ [ $I_n$ ]														
	1.5	2.5	3	4	4.5	5	5.5	6.5	7	7.5	8	9	9.5	10.5	12
300	450	750	900	1200	1350	1500	1650	1950	2100	2250	2400	2700	2850	3150	3600
400	600	1000	1200	1600	1800	2000	2200	2600	2800	3000	3200	3600	3800	4200	4800

### Notes:

1. Curve accuracy applies from  $-20$  °C to  $+55$  °C ( $-4$  °F to  $+131$  °F) ambient temperature. For possible continuous ampere derating for ambient temperature above  $40$  °C ( $104$  °F), consult your local Rockwell Automation sales office or Allen-Bradley distributor.
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 5 kA.

## Bulletin 140G-K

Ground Fault Protection Curve for LSI G MCCBS



Example:

$$I_n = 100 \text{ A}$$

$$I_4 = 100 \times (0.2 + 0.25) = 45 \text{ A}$$

$$t_4 = 0.2 \text{ s}$$

$I_n$ [A]	$I_4$ [ $I_n$ ]						
	0.2	0.25	0.45	0.55	0.75	0.8	1
300	60	75	135	165	225	240	300
400	80	100	180	220	300	320	400

### Tolerance Values

Protection	Trip Threshold	Trip Time
G	± 10%	± 20%

For L-S-I trip curve see Pub. 140G-TD025.