

# Product Details and Certifications

**Cross Reference RA Part Number: PN-D12926**

**Product: 140G-M6S3-D80**

Description: 140G - Molded Case Switch, M frame, 65 kA, Molded Case Switch (Isolator), Rated Current 800 A



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

## **SYSTEM DATA**

Supply Voltage	480V 50/60Hz / 600V 50/60 Hz
Interrupt Rating[kA]	65 kA at 480V / 35 kA at 600V

## **CIRCUIT BRAKER DATA**

Bulletin Number	140G - Molded Case Circuit Breaker
Number of Poles	3 Poles
Frame Size	M frame
Rated Current(A)	800 A
Protection	Molded Case Switch (Isolator)

## **MANUFACTURING**

Assembly	Factory Assembled
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## **INTERNAL ACCESSORIES**

Auxiliaries(AX), Alarm (AL), Auxiliary/Alarm Combination (AX/AL), Right Side Mounting	N/A
Voltage for Aux Alarm Combination	N/A

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
<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 — 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<sup>XXXXXX</sup>6
S
3
- D80
g

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

*a*

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

*b*

Frame/Rating	
Code	Description
M	800 A

*c*

Interrupting Rating/Breaking Capacity (based on $I_c$ at 480V)	
Code	Description
5	50 kA
6	65 kA
0	100 kA
T	Trip unit

*d*

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

*e*

Poles	
Code	Description
3	3 poles
4	4 poles

*f*

Current Range	
Code	Description
D60	e.g., 600 A
D63	e.g., 630 A
D80	e.g., 800 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
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	
Code	Description
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

♦ 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.



**Interrupting Rating/Breaking Capacity — Electronic Circuit Breakers**

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		Interrupting Code‡
240V	480V	600V	3-Pole in series 600V DC	220V★		415V		690V		750V DC (3-pole in series)		
				$I_{cu}$ [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	M5
200	65	35	35	100	100	70	100	25	75	36	75	M6
200	100	42	50	200	75	100	75	30	75	50	75	M0

★ These ratings have not been tested for the CCC listing.

‡ See table below for Cat. No. selection

**Electronic LSI (Long, Short, Instantaneous)**

Rated Current $I_n$ [A]	Protection Type					Interrupting Code M5		Interrupting Code M6	
	L		S		I	Cat. No.		Cat. No.	Cat. No.
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	3 Poles	4 Poles	4 Poles	3 Poles
600	240...600	3, 6, 9, 18	360...6000	0.05, 0.1, 0.25, 0.5	900...7200	140G-M5H3-D60	140G-M5H4-D60	140G-M6H3-D60	140G-M6H4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	140G-M5H3-D63	140G-M5H4-D63	140G-M6H3-D63	140G-M6H4-D63
800	320...800	3, 6, 9, 18	480...8000	0.05, 0.1, 0.25, 0.5	800...8400	140G-M5H3-D80	140G-M5H4-D80	140G-M6H3-D80	140G-M6H4-D80

§ IEC only.

Rated Current $I_n$ [A]	Protection Type					Interrupting Code M0	
	L		S		I	Cat. No.	
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	3 Poles	4 Poles
600	240...600	3, 6, 9, 18	360...6000	0.05, 0.1, 0.25, 0.5	900...7200	140G-M0H3-D60	140G-M0H4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	140G-M0H3-D63	140G-M0H4-D63
800	320...800	3, 6, 9, 18	480...8000	0.05, 0.1, 0.25, 0.5	800...8400	140G-M0H3-D80	140G-M0H4-D80

§ IEC only.

**Electronic LSIG (Long, Short, Instantaneous, Ground Fault)**

Rated Current $I_n$ [A]	Protection Type							Interrupting Code M5		Interrupting Code M6	
	L		S		I	G		Cat. No.		Cat. No.	
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	$I_4=0.2...1 \times I_n$	$t_4=sec.$	3 Poles	4 Poles	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-M5I3-D60	140G-M5I4-D60	140G-M6I3-D60	140G-M6I4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	126...630	0.1, 0.2, 0.4, 0.8	140G-M5I3-D63	140G-M5I4-D63	140G-M6I3-D63	140G-M6I4-D63
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-M5I3-D80	140G-M5I4-D80	140G-M6I3-D80	140G-M6I4-D80

§ IEC only.

Rated Current $I_n$ [A]	Protection Type							Interrupting Code M0	
	L		S		I	G		Cat. No.	
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	$I_4=0.2...1 \times I_n$	$t_4=sec.$	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-M0I3-D60	140G-M0I4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	126...630	0.1, 0.2, 0.4, 0.8	140G-M0I3-D63	140G-M0I4-D63
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-M0I3-D80	140G-M0I4-D80

§ IEC only.

# Molded Case Circuit Breakers

Product Selection — 800 A, M-Frame



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

Rated Current $I_n$ [A]	Protection Type							Interrupting Code M5		Interrupting Code M6	
	L		S		I	G		Cat. No.		Cat. No.	
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	$I_4=0.2...1 \times I_n$	$t_4=sec.$	3 Poles	4 Poles	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-M5K3-D60	140G-M5K4-D60	140G-M6K3-D60	140G-M6K4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	126...630	0.1, 0.2, 0.4, 0.8	140G-M5K3-D63	140G-M5K4-D63	140G-M6K3-D63	140G-M6K4-D63
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-M5K3-D80	140G-M5K4-D80	140G-M6K3-D80	140G-M6K4-D80

§ IEC only.

Rated Current $I_n$ [A]	Protection Type							Interrupting Code M0	
	L		S		I	G		Cat. No.	
	$I_1=0.4...1 \times I_n$	$t_1=sec.$	$I_2=1...10 \times I_n$	$t_2=sec.$	$I_3=1...10 \times I_n$	$I_4=0.2...1 \times I_n$	$t_4=sec.$	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-M0K3-D60	140G-M0K4-D60
630 §	252...630	3, 6, 9, 18	378...6300	0.05, 0.1, 0.25, 0.5	945...7560	126...630	0.1, 0.2, 0.4, 0.8	140G-M0K3-D63	140G-M0K4-D63
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-M0K3-D80	140G-M0K4-D80

§ IEC only.

## Maintenance Mode (MM)

Maintenance Mode (MM) offers a preset set of protection parameters. MM allows systems testing when the molded case circuit breaker is energized or ON. This feature is a manual adjustment on the molded case circuit breaker, via a DIP switch. The following table illustrates the preset values for Maintenance Mode.

Rated Current $I_n$ [A]	L		S		I	G	MM	
	$I_1=1 \times I_n$	$t_1=MAX sec.$	$I_2=OFF$	$t_2=OFF sec.$	$I_3=4 \times I_n$	$I_4=OFF$	$t_4=OFF sec.$	$I_5=2.5 \times I_n$
600	600	18	—	—	2400	—	—	1500
630 §	630	18	—	—	2520	—	—	1575
800	800	18	—	—	3200	—	—	2000

§ IEC only.

## Molded Case Switch — UL489

Rated Current $I_n$ [A]	Magnetic Trip $I_m$ [A]	Cat. No.	
		3 Poles	4 Poles
800	10 000	140G-M6S3-D80	140G-M6S4-D80

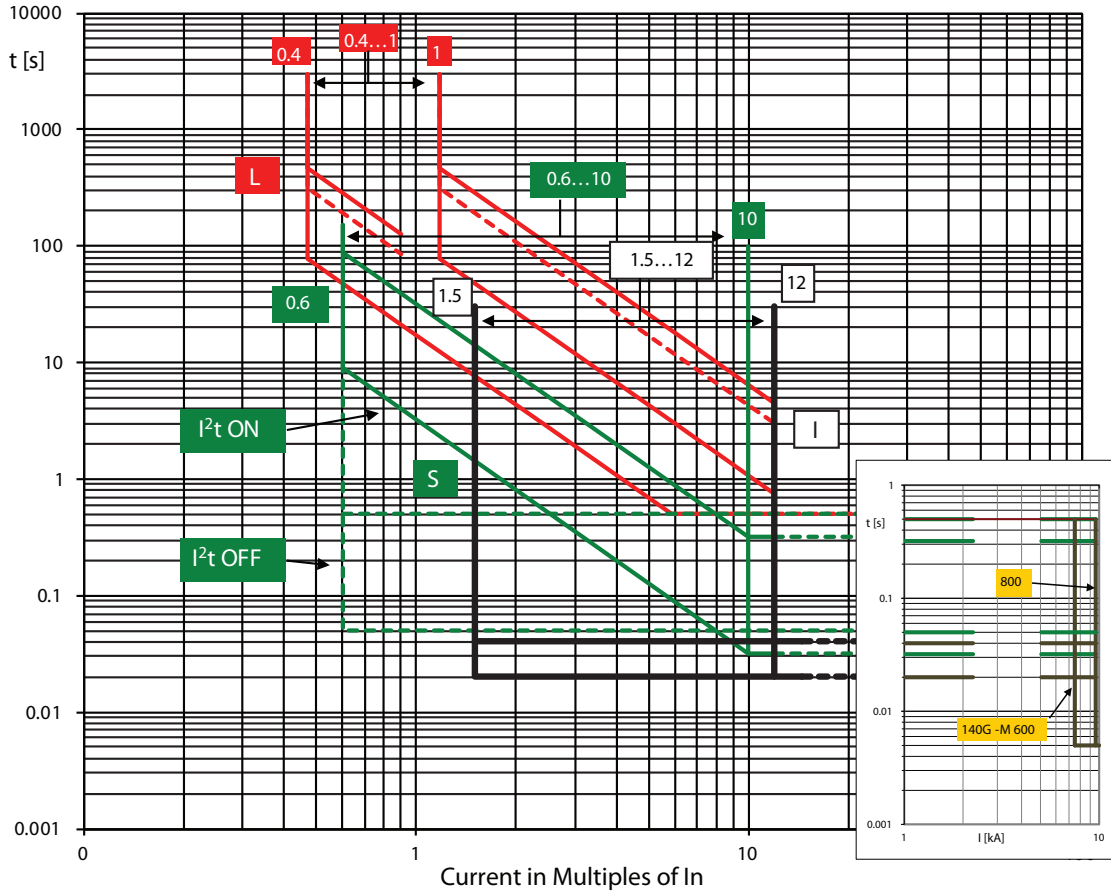


**Bulletin 140G**  
**Molded Case Circuit Breakers**  
**Specifications — K- and M-Frame**

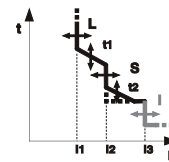
		K-Frame				M-Frame		
Max. Rated Current	[A]	400				800		
Rated insulation voltage, $U_i$ , IEC	[V]	1000				1000		
NEMA, UL, CSA								
Interrupting Rating Code		K3	K6	K0	K15	K5	<b>U</b>	T €
240V AC, 50/60Hz	[kA]	100	150	200	200	100	200	200
480V AC, 50/60Hz	[kA]	35	65	100	150	50	65	100
600Y/347V AC,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

**Figure 28 - Time-current Curves for Bulletin 140G-M Molded Case Circuit Breaker, 600V AC, (50/60 Hz) 600 A, 800 A**

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



**Example**  
 $I_n = 600 \text{ A}$   
 $I_3 = 600 \times (1.5+3) = 2700 \text{ A}$



**Tolerance values:**

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

- IMPORTANT**
- Curve accuracy applies from  $-20 \dots 55 \text{ }^\circ\text{C}$  ( $-4 \dots 131 \text{ }^\circ\text{F}$ ) ambient. For possible continuous ampere derating for ambient above  $40 \text{ }^\circ\text{C}$  ( $104 \text{ }^\circ\text{F}$ ), contact your local Allen-Bradley distributor or Rockwell Automation sales representative.
  - The right portion of the curve is determined by the interrupting rating of the circuit breaker.
  - Total clearing times shown include the response times of the trip unit, the breaker opening, and the interruption of the current.
  - For high fault current levels an additional fixed instantaneous hardware override is provided at  $10.5 \times (I_n)$ .