

# Product Details and Certifications

Cross Reference RA Part Number: PN-D13260

 **Product: 140G-RRP-E16**

Description: 1600A Rating Plug

## ***CIRCUIT BREAKER DATA***

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Bulletin Number	140G Molded Case Circuit Breaker Accessories
Number of Poles	3 Poles
Frame Size	R frame
Rated Current(A)	1600 A

## ***ACCESSORY ITEMS***

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Rating Plug	1600A Rating Plug
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## Molded Case Circuit Breakers

Product Selection — 2000...3000 A, R-Frame Stored Energy Operating Mechanism

## Assembled Molded Case Circuit Breakers — 2000...3000 A R-Frame

## 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										Interrupting Code‡
240V	480V	600V	220V		415V		440V		500V		690V		
			$I_{cu}$ [kA]	$I_{cs}$ [kA]	$I_{cu}$ [kA]	$I_{cs}$ [kA]	$I_{cu}$ [kA]	$I_{cs}$ [kA]	$I_{cu}$ [kA]	$I_{cs}$ [kA]	$I_{cu}$ [kA]	$I_{cs}$ [kA]	
125	125	100	130	97.5	80	60	80	60	40	40	40	40	R12

‡ See table below for Cat. No. selection

## Electronic LSI (Long, Short, Instantaneous, Ground Fault) - 80% Rated

Rated Current $I_n$ [A]	Protection Type							Interrupting Code R12	
	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
2000‡	800...2000	3, 12, 24, 36, 48, 72, 108, 144	1200...20000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	3000...30000	400...2000	0.1, 0.2, 0.4, 0.8	140G-R12I3-E20	140G-R12I4-E20
2500‡	1000...2500	3, 12, 24, 36, 48, 72, 108, 144	1500...25000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	3750...37500	500...2500	0.1, 0.2, 0.4, 0.8	140G-R12I3-E25	140G-R12I4-E25
3000‡	1200...3000	3, 12, 24, 36, 48, 72, 108, 144	1800...30000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	4500...45000	600...3000	0.1, 0.2, 0.4, 0.8	140G-R12I3-E30	140G-R12I4-E30

‡ Listed  $I_1$ ,  $I_2$ ,  $I_3$  &  $I_4$  values are based on a 2000, 2500 & 3000 A rating plug value, respectively.

## Electronic LSI (Long, Short, Instantaneous, Ground Fault) - 100% Rated

Rated Current $I_n$ [A]	Protection Type							Interrupting Code R12	
	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
2000§	1000...2500	3, 12, 24, 36, 48, 72, 108, 144	1500...25000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	3750...37500	500...2500	0.1, 0.2, 0.4, 0.8	140G-R12I3-E20-Z1	140G-R12I4-E20-Z1
2500§	1000...2500	3, 12, 24, 36, 48, 72, 108, 144	1500...25000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	3750...37500	500...2500	0.1, 0.2, 0.4, 0.8	140G-R12I3-E25-Z1	140G-R12I4-E25-Z1
3000§	1200...3000	3, 12, 24, 36, 48, 72, 108, 144	1800...30000	0.1, 0.2, 0.3, 0.4, 0.5, 5.8, 6.6, 7.4, 8.2, 9, 10	4500...45000	600...3000	0.1, 0.2, 0.4, 0.8	140G-R12I3-E30-Z1	140G-R12I4-E30-Z1

§ Listed  $I_1$ ,  $I_2$ ,  $I_3$  &  $I_4$  values are based on a 2000, 2500 & 3000 A rating plug value, respectively.

## Molded Case Switch — UL489§

Rated Current $I_n$ [A]	Magnetic Trip $I_m$ [A]	Cat. No.	
		3 Poles	4 Poles
2500	25 000	140G-R12S3-E25	140G-R12S4-E25

§ Does not provide overcurrent protection; may open at 40,000 A.



## Rating Plugs

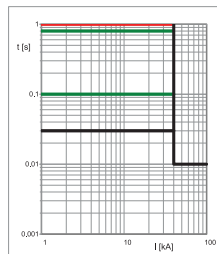
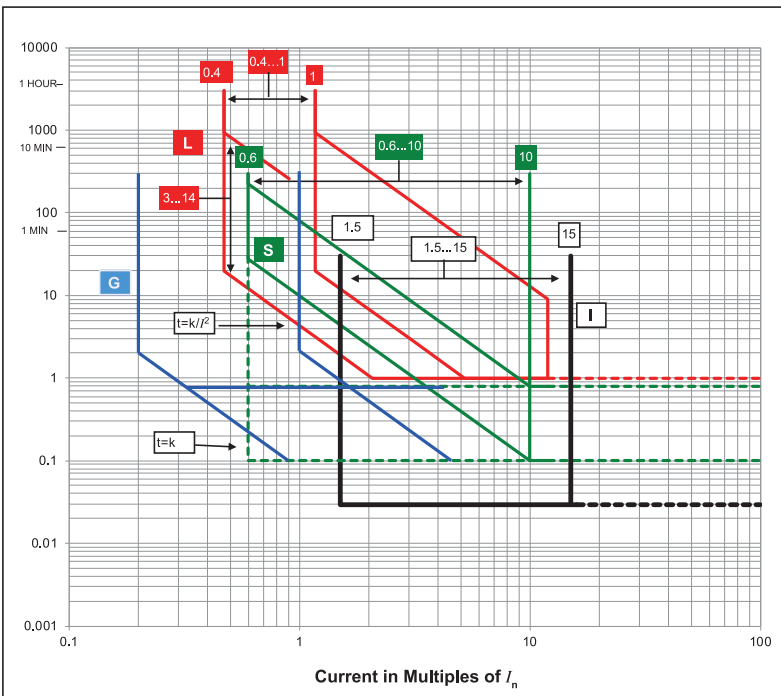
Rated Current $I_n$ [A]	Cat. No.
1000	140G-NRP-E10
1200	140G-NRP-E12
1600	140G-RRP-E16
2000	140G-RRP-E20
2500	140G-RRP-E25
3000	140G-RRP-E30



## Bulletin 140G-R

Available Sensors ( $I_n$ ): 2000 A, 2500 A, 3000 A

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



Protection	Disable	Trip Threshold	Trip Time	Trip Threshold Tolerance <sup>(2)</sup>	Trip Time Tolerance <sup>(2)</sup>	
<b>L</b> ( $t=k/I^2$ )		$I_1=0.4-0.425-0.45-0.475-0.5\dots-1 \times I_n$	$t_1=3-12-24-36-48-72-108-144 \text{ s}^{(1)} @ 3I_1$	Release between 1.05 and $1.2 \times I_1$	$\pm 10\% I_f \leq 6 \times I_n$	
<b>S</b> ( $t=k$ )	✓	$I_2=0.6-0.8-1.2-1.8-2.4-3-3.6-4.2-5-5.8-6.6-7.4-8.2-9-10 \times I_n$	with $I > I_2$ $t_2=0.1-0.2-0.3-0.4-0.5-0.6-0.7-0.8 \text{ s}$	$\pm 7\% I_f \leq 6 \times I_n$ $\pm 10\% I_f > 6 \times I_n$	The best of: $\pm 10\%$ or $\pm 40 \text{ ms}$	
<b>S</b> ( $t=k/I^2$ )	✓	$I_2=0.6-0.8-1.2-1.8-2.4-3-3.6-4.2-5-5.8-6.6-7.4-8.2-9-10 \times I_n$	$t_2=0.1-0.2-0.3-0.4-0.5-0.6-0.7-0.8 \text{ s}$ @ $10 I_n$	$\pm 7\% I_f \leq 6 \times I_n$ $\pm 10\% I_f > 6 \times I_n$	$\pm 15\% I_f \leq 6 \times I_n$ $\pm 20\% I_f > 6 \times I_n$	
<b>I</b> ( $t=k$ )	✓	$I_3=1.5-2-3-4-5-6-7-8-9-10-11-12-13-14-15 \times I_n$	$\leq 30 \text{ ms}$	$\pm 10\%$		
<b>G</b> ( $t=k$ )	✓	$I_4=0.2-0.3-0.4-0.6-0.8-0.9-1 \times I_n$	with $I > I_4$ $t_4=0.1-0.2-0.4-0.8 \text{ s}$	$\pm 7\%$	The best of: $\pm 10\%$ or $\pm 40 \text{ ms}$	
<b>G</b> ( $t=k/I^2$ )	✓	$I_4=0.2-0.3-0.4-0.6-0.8-0.9-1 \times I_n$	$t_4=0.1 @ 4.47 I_4$ $t_4=0.4 @ 2.24 I_4$	$t_4=0.2 @ 3.16 I_4$ $t_4=0.8 @ 1.58 I_4$	$\pm 7\%$	$\pm 15\%$

#### Notes:

- The minimum value of this trip is 1s regardless of curve type (self-protection)
- These tolerances apply under the following conditions:
  - self-powered relay at full power (without start-up)
  - two-phase or three-phase power supply
  - presence of auxiliary power supply
  - preset trip time  $\geq 100 \text{ ms}$
- Curve accuracy applies from  $-20 \text{ }^\circ\text{C}$  to  $+55 \text{ }^\circ\text{C}$  ( $-4 \text{ }^\circ\text{F}$  to  $+131 \text{ }^\circ\text{F}$ ) ambient temperature. For possible continuous ampere derating for ambient temperature above  $40 \text{ }^\circ\text{C}$  ( $104 \text{ }^\circ\text{F}$ ), consult your local Rockwell Automation sales office or Allen-Bradley distributor.
- 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 40 kA.

For all cases not covered by the above assumptions, the following tolerance values apply:

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