

Molded Case Circuit Breakers

Product Overview

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Bulletin 140U Molded Case Circuit Breakers

- 0.5...1200 A Molded Case Circuit Breakers
 - Thermal-Magnetic 0.5...800 A
 - Electronic 70...1200 A
 - LS — Long Time/Short Time
 - LSI — Long Time/Short Time/High Instantaneous
 - LSG — Long Time/Short Time/Ground Fault
 - LSIG — Long Time/Short Time/High Instantaneous/Ground Fault
 - Molded Case Switches 125...1200 A
- Factory- or field-installed accessories
- Flex cable operating mechanisms
- Rotary variable-depth operating mechanisms
- High interrupting ratings in compact dimensions
- Globally rated and approved product line for worldwide application

Standards Compliance

UL 489
 CSA C22.2, No. 5
 EN/IEC 60947-2
 CCC (most frame sizes)

Certifications

UL Listed
 CSA Certified
 CE Marked
 KEMA

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Product Line Overview

Frame Reference	D-Frame	G-Frame	H-Frame	J-Frame	K-Frame	L-Frame	M-Frame	N-Frame	R-Frame
Max. Current I_n	30 A	100 A	125 A	250 A	400 A	600 A	800 A	1200 A	2500 A
Current Range	0.5...30 A	15...100 A	15...125 A	70...250 A	100...400 A	300...600 A	300...800 A	600...1200 A	800...2500 A
Thermal Magnetic	✓	✓	✓	✓	✓	✓	✓	—	—
Electronic:									
LS	—	—	—	✓	✓	✓	✓	✓	✓
LSI	—	—	—	✓	✓	✓	✓	✓	✓
LSII	—	—	—	—	—	✓	—	✓	—
LSG	—	—	—	✓	✓	✓	✓	✓	✓
LSIG	—	—	—	✓	✓	✓	✓	✓	✓
LSIIG	—	—	—	—	—	✓	—	✓	—
Interrupting Ratings:									
380...415V (I_{cu})	see selection table	14 22	25 40 70	25 40 70 100	40 65 100	45 70 100	50 70	50 70 100	—
480V		14 22	25 35 65 100	25 35 65 100	35 65 100	35 65 100	50 65	50 65 100	65 100
600V		—	18 22 25 35	18 18 25 35	25 35 50	25 35 50	25 35	25 35 50	—
690V (I_{cu})		—	3 4 6	6 6 7 12	10 13 18	20 25 15	20 25	20 25 30	—
Molded Case Switches	—	✓	✓	✓	✓	✓	✓	✓	—
Flex Cable Operators	—	—	✓	✓	✓	✓	✓	✓	✓
Rotary Operators	✓	✓	✓	✓	✓	✓	✓	✓	✓
Internal Control Modules (Field installed)	✓	✓	✓	✓	✓	✓	✓	✓	✓
Standards Compliance (For information regarding specific breakers, please consult www.ab.com. Standards compliance varies by catalog number.)									
UL 489	✓	✓	✓	✓	✓	✓	✓	✓	✓
UL File Nos.	E334037, E33916	E197878, Guide No. DIV Q							
CSA C22.2, No. 5	✓	✓	✓	✓	✓	✓	✓	✓	✓
CSA File Nos.	—	216034, 216035, 219884 Class No. 1432-01							
IEC 60947-2	✓	✓	✓	✓	—	✓	✓	✓	✓
CE	✓	—	✓	✓	—	✓	✓	✓	✓
KEMA	—	—	✓	✓	—	✓	✓	✓	✓
CCC	—	—	✓	✓	—	✓	✓	✓	✓

Examples given in this section are for reference purposes. **This basic explanation should not be used for product selection; not all combinations will produce a valid cat. no.** Refer to the tables on the following pages for descriptions of options.

Complete Circuit Breaker Assemblies

140U – H 6 C 3 – C50 – H _____
a *b* *c* *d* *e* *f* *g* *h*

a

Bulletin No.	
Code	Description
140U	Molded Case Circuit Breaker

b

Frame/Rating	
Code	Description
D	30 A
G	100 A
H	125 A
J	250 A
K	400 A
L	600 A
M	800 A
N	1200 A
R	2500 A

c

Interrupting Rating/Breaking Capacity (based on I_c at 480V)	
Code	Description
2	20...29 kA
3	30...39 kA
5	50...59 kA
6	60...69 kA
8	80...89 kA
0	≥100 kA

d

Protection Type	
Code	Description
C	Fixed thermal/fixed magnetic
D	Fixed thermal/adjust magnetic
E	Adjust thermal/fixed magnetic
F	Adjust thermal/adjust magnetic
G	Electronic (LSG — long, short, ground fault)
H	Electronic (LSI — long, short, high instant)
I	Electronic (LSIG — long, short, high instant, ground fault)
J	Electronic (LSII — long, short, high instant, instantaneous maintenance mode)
K	Electronic (LSIIG — long, short, high instant, instantaneous maintenance mode, ground fault)
L	Electronic (LS — long and short time)
S	Molded case switch (Isolator)

e

Poles	
Code	Description
1	1 poles
2	2 poles
3	3 poles

f

Current Range	
Code	Description
C	10 rr. A
D	100 rr0 A
E	1000 rr00 A

g

Internal Control Modules	
Code	Description
A	1 auxiliary contact
B	2 auxiliary contacts
D	1 alarm contact
F	1 auxiliary + 1 alarm contact
G	Undervoltage release only
P	Shunt trip only
Control Module Combinations	
Code	Description
H	1 auxiliary contact + undervoltage release
J	2 auxiliary contacts + undervoltage release
L	1 auxiliary + 1 alarm contact + undervoltage release
N	1 alarm contact + undervoltage release
Q	1 auxiliary contact + shunt trip
R	2 auxiliary contacts + shunt trip
T	1 auxiliary + 1 alarm contact + shunt trip
V	1 alarm contact + shunt trip

h

Voltage Code	
See the following pages for voltage code descriptions:	
All frame sizes	Page 2-121

Bulletin 140U
Molded Case Circuit Breakers
 Product Selection — 800 A, M-Frame

- UL 489
- CSA 22.2, No. 5
- IEC 60947-2
- CE
- KEMA
- CCC

Note: Terminal box lugs must be ordered separately. See page 2-112



Breaker Frames

Rated Current I_n [A]	Breaking Capacity (50 Hz) I_{cu}/I_{cs} [kA]								Interrupting Rating (60 Hz) [kA]			Cat. No.
	220...240V		380...415V		525V		690V		240V	480V	600V	
800	65	65	50	50	50	25	20	10	65	50	25	140U-M5X3
	100	100	70	70	70	50	25	13	100	65	35	140U-M6X3

Trip Units and Rating Plugs

Rated Current I_n [A]	Thermal-Magnetic		Cat. No.
	Adjustment Range [A]		
	Thermal Trip $I_r = I_n$	Magnetic Trip $I_m = 5...10 \times I_n$	
300	300	1500...3000	140U-MTD3-D30
350	350	1750...3500	140U-MTD3-D35
400	400	2000...4000	140U-MTD3-D40
450	450	2250...4500	140U-MTD3-D45
500	500	2500...5000	140U-MTD3-D50
600	600	3000...6000	140U-MTD3-D60
700	700	3500...7000	140U-MTD3-D70
800	800	4000...8000	140U-MTD3-D80

Rated Current I_n [A]	Electronic		Protection Type	Cat. No.
	Adjustment Range [A]			
	Thermal Trip $I_r = 0.5...1.0 \times I_n$	Magnetic Trip $I_m = 2...8 \times I_n$		
800A	400...800*	800...6400	400...800 A LS Electronic Trip Unit	140U-MTL3-D80
			400...800 A LSI Electronic Trip Unit	140U-MTH3-D80
			400...800 A LSG Electronic Trip Unit	140U-MTG3-D80
			400...800 A LSIG Electronic Trip Unit	140U-MTI3-D80

Rating Plugs			
Thermal Trip I_n [A]	Cat. No.	Thermal Trip I_n [A]	Cat. No.
400	140U-MRP3-D40	700	140U-MRP3-D70
500	140U-MRP3-D50	800	140U-MRP3-D80
600	140U-MRP3-D60	—	—

Assembled Circuit Breakers, Thermal-Magnetic Trip Units

Rated Current I_n [A]	Thermal Trip $I_r = I_n$	Breaking Capacity/Interrupting Rating [kA]*		Cat. No.	Breaking Capacity/Interrupting Rating [kA]*		Cat. No.
		400V	480V		400V	480V	
300	300	50	50	140U-M5D3-D30	70	65	140U-M6D3-D30
350	350	50	50	140U-M5D3-D35	70	65	140U-M6D3-D35
400	400	50	50	140U-M5D3-D40	70	65	140U-M6D3-D40
450	450	50	50	140U-M5D3-D45	70	65	140U-M6D3-D45
500	500	50	50	140U-M5D3-D50	70	65	140U-M6D3-D50
600	600	50	50	140U-M5D3-D60	70	65	140U-M6D3-D60
700	700	50	50	140U-M5D3-D70	70	65	140U-M6D3-D70
800	800	50	50	140U-M5D3-D80	70	65	140U-M6D3-D80

* Interrupting ratings shown are for 400V and 480V, respectively. The complete range of ratings can be found in the frame rating table on this page

Assembled Circuit Breakers, Electronic Trip Units

Rated Current I_n [A]	Thermal Trip $I_r = 0.5...1.0 \times I_n$	Protection Type	Breaking Capacity/Interrupting Rating [kA]*		Cat. No.	Breaking Capacity/Interrupting Rating [kA]*		Cat. No.
			400V	480V		400V	480V	
800	400...800*	LS	50	50	140U-M5L3-D80	70	65	140U-M6L3-D80
		LSI	50	50	140U-M5H3-D80	70	65	140U-M6H3-D80
		LSG	50	50	140U-M5G3-D80	70	65	140U-M6G3-D80

* Select proper rating plug to cover thermal trip requirement.

* Interrupting ratings shown are for 400V and 480V, respectively. The complete range of ratings can be found in the frame rating table on this page.

Molded Case Circuit Breakers

Product Selection/Accessories — 800 A, M-Frame


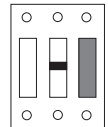

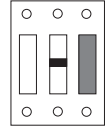

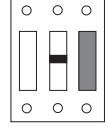

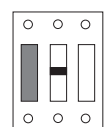
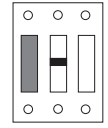
Molded Case Switch — UL 489

Rated Current I_n [A]	Magnetic Trip [A] $I_m = 10 \times I_n$	Breaking Capacity (50 Hz) I_{cu} / I_{cs} [kA]								Interrupting Rating (60 Hz) [kA]			Cat. No.
		220...240V		380...415V		500V		690V		240V	480V	600V	
800	8000	100	100	70	70	70	50	25	13	100	65	35	140U-M6S3-D80

Accessories — 800 A, M-Frame

Pictures shown are representative. Actual product may differ from product shown.

Internal Control Modules — Field Installed

	Description	Mounting Location	Diagram	Cat. No.
	Auxiliary Contact (AX) Electrically indicates "ON/OFF" status of breakers	(1) 1a-1b	 Right Side ONLY	140U-M-EA1
		(2) 1a-1b		140U-M-EA2
	Alarm Contact (AL) Electrically indicates when the breaker is in the "TRIPPED" state	(1) 1M (make)-1B (break)	 Right Side ONLY	140U-M-ER1
	Auxiliary/Alarm Contact (AX/AL) Combination Combination of auxiliary contact and alarm contact	(1) 1a-1b (1) 1M (make)-1B (break)	 Right Side ONLY	140U-M-EA1R1
	Shunt Trip (SNT) Provides remote tripping of the circuit breaker Undervoltage trip not available when shunt trip is used	12...24V, 50/60/DC	 Left Side ONLY	140U-M-SNJ
		110...240V AC, 110...125V DC		140U-M-SND
		380...440V AC, 220...250V DC		140U-M-SNN
		480...600V, 50/60 Hz		140U-M-SNB
	Undervoltage Release (UVT) Automatically trips breaker when voltage falls between preset value, 35...70% Shunt trip is not available when undervoltage release is used	24V, 50/60 Hz	 Left Side Only	140U-M-UJ
		110...127V, 50/60 Hz		140U-M-UD
	208...240V, 50/60 Hz		140U-M-UA	
	380...500V, 50/60 Hz		140U-M-UB	

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Note: For Factory-Installed internal control modules, please see page 2-121

Molded Case Circuit Breakers

Accessories — 800 A, M-Frame

Pictures shown are representative. Actual product may differ from product shown.

External Accessories

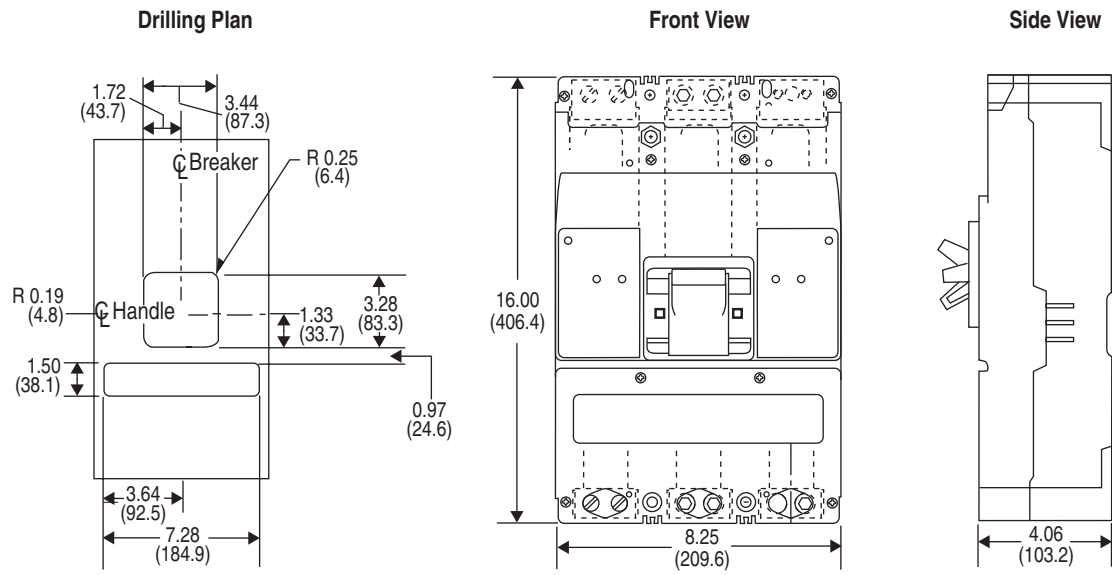
	Description		Cat. No.
	Flex-Cable Operating Mechanism Includes handle, cable, operating, and bail mechanism Pre-assembled and adjusted UL Type 1/3/12/4/4X Flange-Mount Operating Handle Non-Metallic	4 ft (1.3 m) Cable	140U-M-FCX04
		6 ft (1.8 m) Cable	140U-M-FCX06
		10 ft (3.0 m) Cable	140U-M-FCX10
	Flex-Cable Operating Mechanism Includes handle, cable, operating, and bail mechanism Pre-assembled and adjusted UL Type 4/4X Flange-Mount Operating Handle Stainless Steel	4 ft (1.3 m) Cable	140U-M-FCS04
		6 ft (1.8 m) Cable	140U-M-FCS06
		10 ft (3.0 m) Cable	140U-M-FCS10
	Flex-Cable Operating Mechanism Includes handle, cable, operating, and bail mechanism Pre-assembled and adjusted Painted metal — Type 1/12 Flange mount operating handle	4 ft (1.2 m) Cable	140U-M-FMX04
		6 ft (1.9 m) Cable	140U-M-FMX06
		10 ft (3.0 m) Cable	140U-M-FMX10
	Rotary, Variable-Depth Operating Mechanism UL Type 3/12/4/4X, IP 66 Rotary Handle 12 in. (30.48 cm) operating rod	Black Handle	140U-M-RVM12B
		Red/Yellow Handle	140U-M-RVM12R
	Rotary, Variable-Depth Operating Mechanism UL Type 3/12/4/4X, IP 66 Rotary Handle 21 in. (53.34 cm) operating rod	Black Handle	140U-M-RVM21B
		Red/Yellow Handle	140U-M-RVM21R
	Rotary, Variable-Depth Operating Mechanism with Internal NFPA79 Operating Handle External UL Type 3/12/4/4X, IP 66 Rotary Handle 12 in. (30.48 cm) operating rod	Black Handle	140U-M-NVM12B
		Red/Yellow Handle	140U-M-NVM12R
Rotary, Variable-Depth Operating Mechanism with Internal NFPA79 Operating Handle External UL Type 3/12/4/4X, IP 66 Rotary Handle 21 in. (53.34 cm) operating rod	Black Handle	140U-M-NVM21B	
	Red/Yellow Handle	140U-M-NVM21R	
	Terminal Lugs	Copper lug, Cu wire Only (3) 3/0...300 MCM or (3) 95...135 mm ²	Qty: 1 140U-M-TLC3
		Aluminum lug, Al or Cu wire (3) 3/0...400 MCM or (3) 95...185 mm ²	Qty: 1 140U-M-TLA3
	Terminal Lugs	Aluminum lug, Al or Cu wire (2) 1...500 MCM or (2) 50...240 mm ²	Qty: 1 140U-M-TLA2
			Aluminum lug, Al or Cu wire (2) 500...750 MCM or (2) 240...400 mm ²
			Copper lug, Cu wire only (2) 2/0...500 MCM or (2) 70...240 mm ²
			Phase Barriers Provides additional phase clearance when special connections that extend past the circuit breaker housing are required
	Padlock Kit Padlocking Hasp Lock-OFF only		
			Replacement Mounting Hardware (4) M8 - 1 x 35 mm §

§ Supplied with breaker.

Molded Case Circuit Breakers

Approximate Dimensions — 800 A, M-Frame

Dimensions are in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.



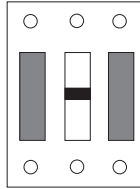
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Internal Control Modules — Factory Installed
 For use with H-, J-, K-, L-, M-, and N-Frame Molded Case Circuit Breakers

Mounting Location

Left side only

(1) **Shunt Trip (SNT)**
 or
 (1) **Undervoltage Release (UVT)**



Right side only

(1) **Auxiliary contact (AX)**
 or
 (2) **Auxiliary contacts (AX)**
 or
 (1) **Alarm contact (AL)**
 or
 (1) **Alarm contact (AL) + Auxiliary contact (AX)**

Auxiliary and Alarm Contacts	Suffix
(1) AX	- A
(2) AX	- B
(1) AL	- D
(1) AX + (1) AL	- F

Undervoltage Release Combinations	Suffix
(1) UVT only	- G⊗
(1) AX + (1) UVT	- H⊗
(2) AX + (1) UVT	- J⊗
(1) AX + (1) AL + (1) UVT	- L⊗
(1) AL + (1) UVT	- N⊗

⊗Standard Voltage Suffix Codes*

Voltage [V]	24	110...127 7	208...240 0	380...480 0
AC, 50/60 Hz	J	D	A	B
Voltage [V]	—	—	—	—
DC	—	—	—	—

* For additional voltages, consult your local Rockwell Automation sales office or Allen-Bradley distributor.

Undervoltage Release Combinations	Suffix
(1) UVT only	- G⊗
(1) AX + (1) UVT	- H⊗
(2) AX + (1) UVT	- J⊗
(1) AX + (1) AL + (1) UVT	- L⊗
(1) AL + (1) UVT	- N⊗

⊗Standard Voltage Suffix Codes*

Voltage [V]	24	110...127	208...240	380...480
AC, 50/60 Hz	J	D	A	B
Voltage [V]	—	—	—	—
DC	—	—	—	—

