

Molded Case Circuit Breakers

Product Overview

2



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 — 400 A, K-Frame

- UL 489
- CSA 22.2, No. 5

Note: Terminal lugs must be ordered separately. See page 2-101



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		500V		690V		240V	480V	600V	
400	65	65	40	40	30	30	10	5	65	35	25	140U-K3X3
	100	100	35	35	50	38	13	6	100	65	35	140U-K6X3
	200	200	100	100	65	49	18	9	200	100	65	‡ 140U-K0X3

‡ Current limiting.

Trip Units and Rating Plugs

Thermal-Magnetic			
Rated Current I_n [A]	Adjustment Range [A]		Cat. No.
	Thermal Trip [A] $I_r = I_n$ (Fixed)	Magnetic Trip $I_m = 5...10 \times I_n$	
100	100	500...1000	140U-KTD3-D10
125	125	625...1250	140U-KTD3-D12
150	150	750...1500	140U-KTD3-D15
175	175	895...1750	140U-KTD3-D17
200	200	1000...2000	140U-KTD3-D20
225	225	1125...2250	140U-KTD3-D22
250	250	1250...2500	140U-KTD3-D25
300	300	1500...3000	140U-KTD3-D30
350	350	1750...3500	140U-KTD3-D35
400	400	2000...4000	140U-KTD3-D40

Electronic				
Rated Current I_n [A]	Thermal Trip* $I_r = 0.5...1.0 \times I_n$	Magnetic Trip $I_m = 2...8 \times I_r$	Protection Type	Cat. No.
400	200...400	400...3200	LS	140U-KTL3-D40
			LSI	140U-KTH3-D40
			LSG	140U-KTG3-D40
			LSIG	140U-KT3-D40

* Electronic trip units require the use of a rating plug. Thermal trip rating is determined by the rating plug selection and is not adjustable.

Rating Plugs			
Thermal Trip I_n [A]	Cat. No.	Thermal Trip I_n [A]	Cat. No.
200	140U-KRP3-D20	300	140U-KRP3-D30
225	140U-KRP3-D22	350	140U-KRP3-D35
250	140U-KRP3-D25	400	140U-KRP3-D40

Assembled Circuit Breakers, Thermal-Magnetic Trip Units

Rated Current I_n [A]	Breaking Capacity/ Interrupting Rating [kA]‡		Cat. No.	Breaking Capacity/ Interrupting Rating [kA]‡		Cat. No.	Breaking Capacity/ Interrupting Rating [kA]‡		Cat. No.
	400V	480V		400V	480V		400V	480V	
100	40	35	140U-K3D3-D10	65	65	140U-K6D3-D10	100	100	140U-K0D3-D10
125	40	35	140U-K3D3-D12	65	65	140U-K6D3-D12	100	100	140U-K0D3-D12
150	40	35	140U-K3D3-D15	65	65	140U-K6D3-D15	100	100	140U-K0D3-D15
175	40	35	140U-K3D3-D17	65	65	140U-K6D3-D17	100	100	140U-K0D3-D17
200	40	35	140U-K3D3-D20	65	65	140U-K6D3-D20	100	100	140U-K0D3-D20
225	40	35	140U-K3D3-D22	65	65	140U-K6D3-D22	100	100	140U-K0D3-D22
250	40	35	140U-K3D3-D25	65	65	140U-K6D3-D25	100	100	140U-K0D3-D25
300	40	35	140U-K3D3-D30	65	65	140U-K6D3-D30	100	100	140U-K0D3-D30
350	40	35	140U-K3D3-D35	65	65	140U-K6D3-D35	100	100	140U-K0D3-D35
400	40	35	140U-K3D3-D40	65	65	140U-K6D3-D40	100	100	140U-K0D3-D40

Assembled circuit breakers can be created by adding a trip unit and rating plugs (electronic only) to a circuit breaker frame. Example: Cat. No. **140U-K3X3 + 140U-KTL3-D40 + 140U-KRP3-D35**

‡ 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.	Breaking Capacity/ Interrupting Rating [kA]*		Cat. No.
			400V	480V		400V	480V		400V	480V	
400	200...400	LS	40	35	140U-K3L3-D40	65	65	140U-K6L3-D40	100	100	140U-K0L3-D40
		LSI	40	35	140U-K3H3-D40	65	65	140U-K6H3-D40	100	100	140U-K0H3-D40
		LSG	40	35	140U-K3G3-D40	65	65	140U-K6G3-D40	100	100	140U-K0G3-D40




* Electronic trip units require the use of a rating plug. Thermal trip rating is determined by the rating plug selection and is not adjustable.
 * Interrupting ratings shown are for 400V and 480V, respectively. The complete range of ratings can be found in the frame rating table on page 2-100

Molded Case Switch — UL 489

Rated Current I_n [A]	Magnetic Trip $10 \times I_n$	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	
400	4000	100	100	65	65	50	38	13	6	100	65	35	140U-K6S3-D40

Optional Terminal Lug Kits

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

	Description	Pkg. Quantity	Cat. No.	
	Terminal Lugs	Aluminum lug, Al or Cu wire (1) 3...350 MCM or (1) 30...185 mm ²	1	140U-K-TLA1A
		Aluminum lug, Al or Cu wire (1) 250...500 MCM or (1) 120...240 mm ²		140U-K-TLA1
		Aluminum lug, Al or Cu wire (2) 3/0...250 MCM or (2) 95...120 mm ²	3 (includes shield)	140U-K-TLA2
	Terminal Lugs	Copper lug, Cu wire only (1) 3...350 MCM or (1) 30...185 mm ²	1	140U-K-TLC1A
		Copper lug, Cu wire only (1) 250...500 MCM or (1) 120...240 mm ²		140U-K-TLC1
		Copper lug, Cu wire only (2) 3/0...250 MCM or (2) 95...120 mm ²	3 (includes shield)	140U-K-TLC2
		Aluminum lug, Al or Cu wire (2) 2/0...250 MCM or (1) 2/0...500 MCM, (2) 70...120 mm ² or (1) 70...240 mm ²	3 (includes shield)	140U-K-TLA2A
		Aluminum lug, Al or Cu wire (1) 500...750 MCM or (1) 300...400 mm ²		140U-K-TLA1B
	Terminal Lugs	Copper lug, Cu wire only (1) 500...750 MCM or (1) 300...400 mm ²	3 (includes shield)	140U-K-TLC1B
		Multi-Tap Terminal Lug Kit — with IP20 terminal cover	(3) #14...2/0 AWG or (3) 4...67 mm ²	3
(6) #14...3 AWG or (6) 2.5...33 mm ²	3		140U-K-MTL6A	


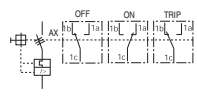
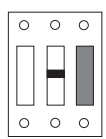
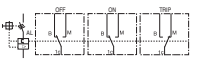
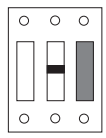
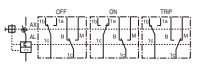
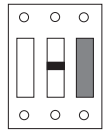

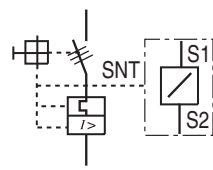
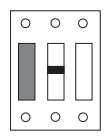
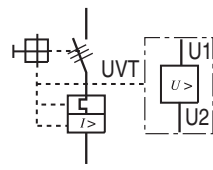
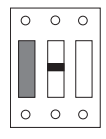
Molded Case Circuit Breakers

Accessories — 400 A, K-Frame

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




Internal Control Modules — Field Installed

2

	Description		Diagram	Mounting Location	Cat. No.
	Auxiliary Contact (AX) Electrically indicates "ON/OFF" status of breakers	(1) 1a-1b			140U-K-EA1
		(2) 1a-1b			Right side ONLY
	Alarm Contact (AL) Electrically indicates when the breaker is in the "TRIPPED" state	(1) 1M (make)-1B (break)			140U-K-ER1
	Auxiliary/Alarm Contact (AX/AL) Combination Combination of auxiliary contact and alarm contact				140U-K-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			140U-K-SNJ
		110...240V AC, 110...125V DC			140U-K-SND
		380...440V AC, 220...250V DC			140U-K-SNN
		480...600V, 50/60 Hz			140U-K-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			140U-K-UJ
		24V DC			140U-K-UZJ
		110...127V, 50/60 Hz			140U-K-UD
		208...240V, 50/60 Hz			140U-K-UA
		380...500V, 50/60 Hz			140U-K-UB
					Left side ONLY

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

External Accessories

	Description	Cat. No.
	Terminal Shields IP20 Ingress Protection Rating	140U-K-TS
	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-K-FCX04
		6 ft (1.9 m) Cable 140U-K-FCX06
		10 ft (3.0 m) Cable 140U-K-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 (1.2 m) Cable 140U-K-FCS04
		6 ft (1.9 m) Cable 140U-K-FCS06
		10 ft (3.0 m) Cable 140U-K-FCS10
	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-K-RVM12B
		Red/Yellow Handle 140U-K-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-K-RVM21B
		Red/Yellow Handle 140U-K-RVM21R
	Rotary, Variable-Depth Operating Mechanism with Internal NFPA 79 Operating Handle External UL Type 3/12/4/4X, IP 66 Rotary Handle 12 in. (30.48 cm) operating rod	Black Handle 140U-K-NVM12B
		Red/Yellow Handle 140U-K-NVM12R
	Rotary, Variable-Depth Operating Mechanism with Internal NFPA 79 Operating Handle External UL Type 3/12/4/4X, IP 66 Rotary Handle 21 in. (53.34 cm) operating rod	Black Handle 140U-K-NVM21B
Red/Yellow Handle 140U-K-NVM21R		
	Rotary, Direct Couple Operating Mechanism Type 1 Rotary Handle Breaker Mounted	Black Handle 140U-K-RCG
		Red/Yellow Handle 140U-K-RCR
	End Cap Kit Provides 3-phase connections for terminal or bolt-on connections Metric Hardware	Qty: 1 140U-K-ECM
	Padlock Kit Padlocking Hasp Lock-OFF only	Qty: 1 140U-K-PL
	Phase Barriers Provides additional phase clearance when special connections that extend past the circuit breaker housing are required	Qty: 2 140U-K-PB
	Replacement Mounting Hardware (4) M6 - 1.0 x 45 mm §	1 140U-K-MHM

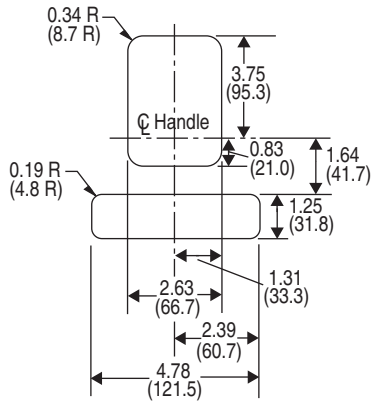
§ Supplied with breaker.

Molded Case Circuit Breakers

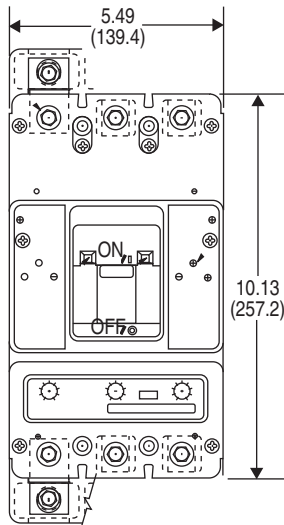
Appropriate Dimensions — 400 A, K-Frame

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

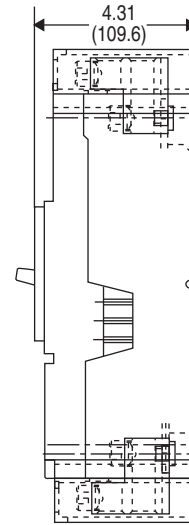
Front Cover Cutout



Front View



Side View



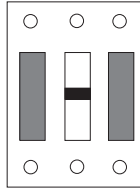
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Internal Control Modules — Factory Installed
 For use with H-, J-, K-, L-, M-, and N-Frame Molded Case Circuit Breakers

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	—	—	—	—

