

# K-Series

Hydraulic-Magnetic Circuit Breaker

[PRODUCT WEBPAGE](#)

*request sample, configure part, watch video*



## Micro-Sized and Versatile Design

The K-Series is a single-pole hydraulic-magnetic circuit breaker featuring rating options of 65 or 80VDC or 250VAC, making it ideal for a variety of applications including Datacom/Telecom and 5G devices. This low-profile circuit breaker can be configured with PCBA, push-on tab, or screw terminals and is available with instantaneous, short, and medium time-delay options. The K-Series is available with current ratings of 1 to 30 amps.

<b>1</b>	<b>30</b>	<b>250</b>	<b>80</b>
Pole	Amps Max	VAC Max	VDC Max

## Typical Applications

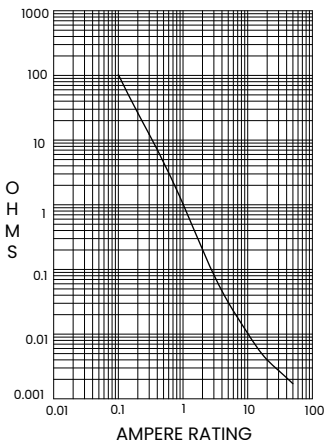
- Datacom/Telecom
- 5G Devices
- Power Supplies
- Medical Equipment

# Tech Specs

## Electrical

Maximum Voltage	AC: 250VAC DC: 80VDC, 65VDC
Current Rating	1-30A
Dielectric Strength	1500 VAC, 50/60Hz for 1 minute between all electrically isolated terminals.
Insulation Resistance	Minimum of 100 Megohms @ 500VDC
Resistance, Impedance	Values from Line to Load Terminal, based on Series Trip Circuit Breaker.

RESISTANCE, IMPEDANCE VALUES from Line to Load Terminals (Values Based on Series Trip Circuit Breaker)



CURRENT (AMPS)	TOLERANCE (%)
1.0-30.0	+/-25%

Interrupt Capacity	See Tables A & B
--------------------	------------------

## Mechanical

Endurance	6,000 ON-OFF operations @ 6per minute with rated current and voltage.
Trip Free	All K-Series circuit breakers will trip on overload, even when actuator is forcibly held in the ON position.
Trip Indication	The operating actuator moves positively to the middle position when an overload causes the breaker to trip. The breaker needs to be placed in the OFF position and can then be reset.

## Physical

Number of Poles	1 pole
Internal Circuit Configs.	Series without Auxiliary Switch.
Weight	Approximately 27 grams/pole

## Environmental

Designed in accordance with requirements of specification MIL PRF-55629 & MIL-STD-202G as follows:

Shock	Withstands 100 Gs, 6ms sawtooth while carrying rated current per Method 213, Test Condition "1". Instantaneous curves tested @ 80% of rated current
Vibration	Withstands 0.060 inch excursion from 10-55 Hz & 10 Gs 55-500 Hz, at rated current per Method 204C, Test Cond. A. Instantaneous curves tested @ 80% of rated current.
Moisture Resistance	Method 106D, i.e., Ten 24-hour cycles @ +25°C to +65°C, 80-98% RH.
Salt Spray	Method 101, Condition A (90-95% RH @ 5% NaCl Solution, 96 hrs)
Thermal Shock	Method 107D, Condition A (five cycles @ -55°C to +25°C to +85°C to +25°C)
Operating Temperature	-40°C to +85°C.

## Approvals

UL 489A, UL 1077, CSA 22.2 No. 235, TUV IEC/EN 60934, CCC GB17701

# Tech Specs

## Tables

**Table A:** UL Recognized, CSA Approved and CCC Approved configurations and performance capabilities as a Component Supplementary Protector.

Circuit Configuration	Voltage			Current Rating General Purpose Amps	Poles Breaking	Short Circuit Capacity (Amps)			Application Codes	
	Max Rating	Frequency	Phase			UL/CSA	TUV	CCC	UL	CSA
Series	65 <sup>1</sup>	DC	-	1-30	1	1000	1000	500	TC1,2, OL0, U3	TC1,2, OL0, U3
	80 <sup>1</sup>					600	600		TC1,2, OL0, U3	TC1,2, OL0, U3
	250	50/60	1	1-12		800	700	-	TC1,2, OL0, U3	TC1,2, OL0, U3
				12.1-30						

**Table B:** UL489A Listed configurations and performance capabilities as a Circuit Breakers for use in Communication Equipment.

Circuit Configuration	Voltage		Current Rating General Purpose Amps	Poles Breaking	Short Circuit Capacity (Amps)	
	Max Rating	Frequency			Without Backup Fuse	
					UL489A	TUV
Series	65 <sup>1</sup>	DC	1-30	1	800	1000
	80 <sup>1</sup>				600	600

Notes:  
<sup>1</sup> Polarity Sensitive

# Ordering Scheme Handle

Sample Part Number **K A 1 - B - 12 - 630 - 1 2 2 - M E**

Selection 1 2 3 4 5 6 7 8 9 10 11

## 1. SERIES

**K** K-Series Circuit Breaker

## 2. ACTUATOR

**A** Handle, one per pole

## 3. POLES

**1** One

## 4. CIRCUIT

**B** Series Trip (Current)

## 5. FREQUENCY & TIME DELAY

**10** DC Instantaneous  
**12** DC Short  
**14** DC Medium  
**20** 50/60 Hz Instantaneous  
**22** 50/60 Hz Short  
**24** 50/60 Hz Medium

## 6. CURRENT RATING (AMPERES)

CODE	AMPERES				
410	1.00	445	4.50	610	10.00
512	1.25	450	5.00	710	10.50
415	1.50	455	5.50	611	11.00
517	1.75	460	6.00	711	11.50
420	2.00	465	6.50	612	12.00
522	2.25	470	7.00	712	12.50
425	2.50	475	7.50	613	13.00
527	2.75	480	8.00	614	14.00
430	3.00	485	8.50	615	15.00
435	3.50	490	9.00	616	16.00
440	4.00	495	9.50	617	17.00
				618	18.00
				619	19.00
				620	20.00
				622	22.00
				624	24.00
				625	25.00
				630	30.00

## 7. TERMINAL

**1** PCBA soldering terminal (0.197)  
**2** Push-On 0.250 Tab (Q.C)  
**3** Screw Terminal 8-32 (Bus Type)

## 8. ACTUATOR COLOR & LEGEND

Actuator Color	Legend	Legend color
<b>1</b> White	Dual	Black
<b>2</b> Black	Dual	White

## 9. MOUNTING

**1** 6-32 x .195" Threaded Insert with hook  
**A** 6-32 x .195" Threaded Insert without hook  
**2** ISO M3 x 5mm Threaded Insert with hook  
**B** ISO M3 x 5mm Threaded Insert without hook

## 10. MAXIMUM APPLICATION RATING

**A**<sup>1</sup> 65 VDC  
**M**<sup>1</sup> 80 VDC  
**D**<sup>2</sup> 250 VAC

## 11. AGENCY APPROVAL

**A** Without Approvals  
**C** UL Recognized, CSA Accepted  
**E** UL Recognized, CSA Accepted, TUV certified  
**J** UL 489A Listed & TUV certified  
**M** UL 489A Listed  
**8** UL Recognized, CSA Accepted, CCC  
**9** UL Recognized, CSA Accepted, TUV certified, CCC

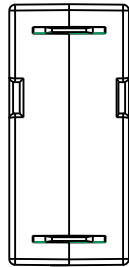
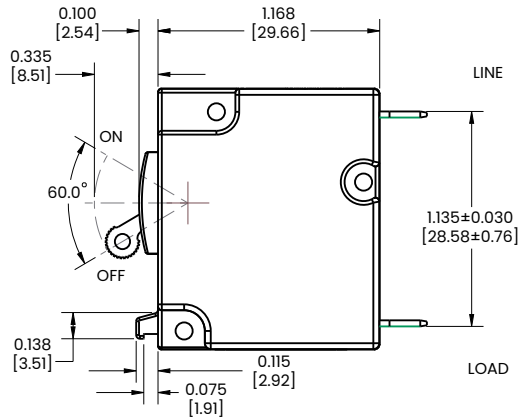
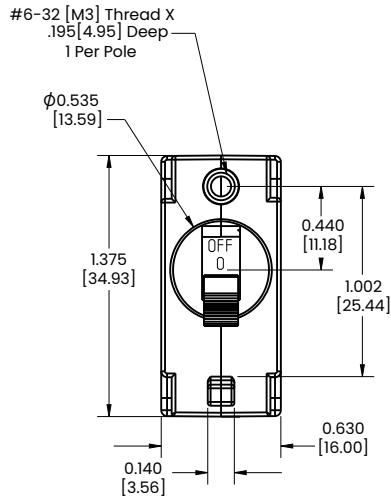
### Notes:

**1** Polarity Sensitive  
**2** 250 VAC only available to 12 amps max for CCC.

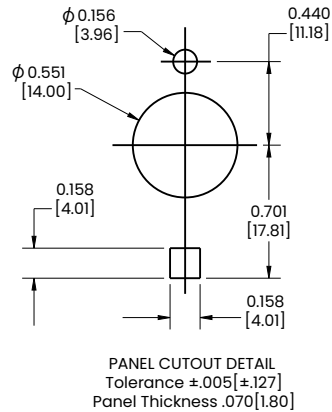
 [Configure Complete Part Number >](#)

# Dimensional Specs

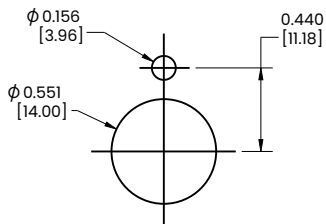
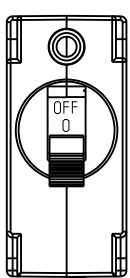
inches [millimeters]



TAB(Q.C.) Type Terminals in Series Trip Circuit Configuration Show. For other Configuration. See Circuit and Terminals Diagrams

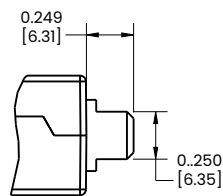


## ALTERNATIVE MOUNTING WITHOUT HOOK

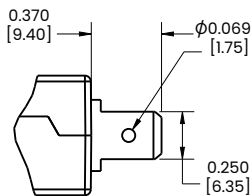


PANEL CUTOUT DETAIL  
Tolerance  $\pm .005 [\pm 127]$   
Panel Thickness .070 [1.80]

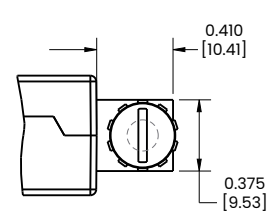
## TERMINAL DIMENSIONAL DETAIL



PCBA soldering terminal .197



TAB (Q.C.) .250



Screw Terminal  
#8-32 Bus

### Notes:

1. All Dimensions are in inches [Millimeters]
2. Tolerance  $\pm .010 [0.25]$  unless otherwise specified
3. Angels  $\pm 1^\circ$

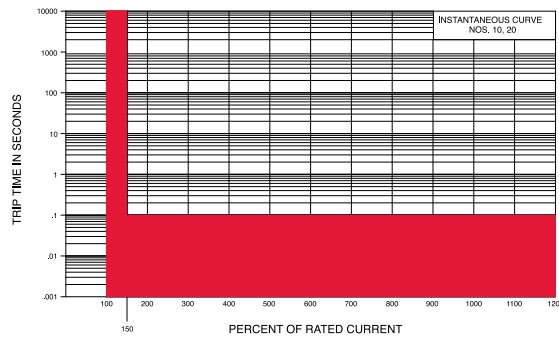
# Time Delay

K-SERIES TIME DELAY VALUES										
TRIP TIME SECONDS	PERCENT OF RATED CURRENT									
	Delay	100%	135%	150%	200%	400%	600%	800%	1000%	1200%
	10, 20	No Trip	May Trip	.100 Max	.100 Max	.100 Max	.100 Max	.100 Max	.100 Max	.100 Max
12, 22	.300 - 7.00		.100 - 5.00	.100 - 2.00	.030 - .500	.008 - .300	.006-.150	.005 - .100	.005 - .100	
14, 24	3.00 - 70.0		2.00 - 40.0	1.00 - 15.0	.100 - 4.00	.008 - 2.00	.006-.800	.005 - .350	.005 - .160	

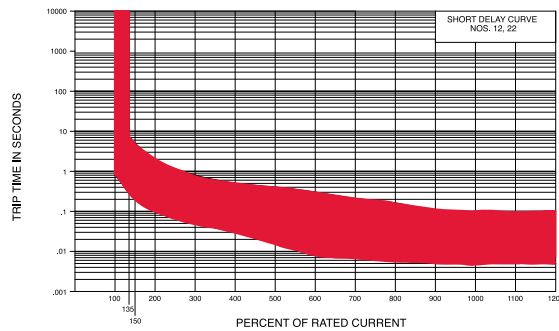
**Notes:**

- 1 Delay Curves 12, 14, 22, 24: Breakers to hold 100% and must trip at 135% of rated current and greater within the time limit shown in this curve.
- 2 Delay Curves 10, 20: Breakers to hold 100% and must trip at 150% of rated current and greater within the time limit shown in this curve.
- 3 All Curves: Curve data shown represents breaker response at ambient temperature of 77°F (25°C) with no preloading. Breakers are mounted in standard wall-mount position.
- 4 The minimum inrush pulse tolerance handling capability is 12 times the rated current on standard delay. These values are based on a 60 Hz 1/2 cycle, 8.33 ms pulse.

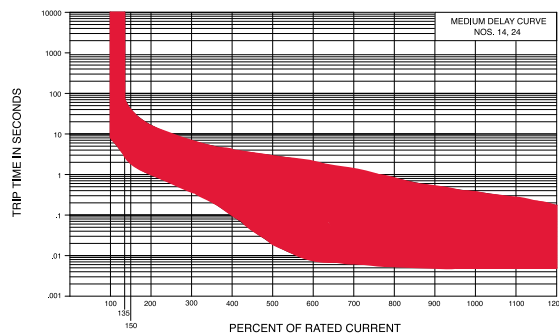
## Instantaneous



## Short



## Medium



## Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit [www.carlingtech.com/findarep](http://www.carlingtech.com/findarep).



## About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With six ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit [www.carlingtech.com/company-profile](http://www.carlingtech.com/company-profile).

To view all of Carling's environmental, quality, health & safety certifications please visit [www.carlingtech.com/environmental-certifications](http://www.carlingtech.com/environmental-certifications).

© Carling Technologies, Inc.

7. Carling is a registered trademark of Carling Technologies, Inc. in the U.S. and other countries.