



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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## Description

Single pole, DIN rail mount, hydraulic-magnetic miniature circuit breaker (MCB) in accordance with UL1077, CSA22.2, and UL Class I Division 2, Groups A, B, C, D.

## Typical Applications

Hazardous locations where flammable liquids, gases, vapors, or combustible dust exists in sufficient quantities to produce an explosion or fire. Typical applications include; Oil & Gas drilling and production, Agricultural processing and storage, and Saw Mill / Pulp & Paper production.

## Ordering Information

<b>Type No.</b>	
<b>4231</b>	Hydraulic-magnetic high performance circuit breaker
<b>Mounting</b>	
<b>T1</b>	Rail mounting
<b>Number of poles</b>	
<b>1</b>	Single pole protected
<b>Accessories</b>	
<b>0</b>	Without
<b>Terminals</b>	
<b>K0</b>	Screw terminals
<b>Characteristic curve</b>	
<b>F1</b>	DC short time delay*
<b>F2</b>	AC short time delay
<b>Approvals</b>	
<b>H</b>	UL1077, CSA22.2, UL Class I Division 2
<b>Current ratings</b>	
<b>1, 2, 3, 5, 7, 8, 10, 12, 15, (20A)**</b>	

**4231 - T1 1 0 - K0 F2 H - 10A** ordering example  
 \* Visit [www.e-t-a.com/us\\_esx10-t/](http://www.e-t-a.com/us_esx10-t/) to see ESX10 Electronic Breakers for 24VDC Class I Division II applications  
 \*\* for 50VDC only

## Available product configurations

Part number	Current rating	Description
4231-T110-K0F1H- 4231-T110-K0F2H-	1A	UL1077, CID2, 1P, 120VAC, 50VDC
	2A	
	3A	
	5A	
	7A	
	8A	
	10A	
	12A	
	15A	
	20A	UL1077, CID2, 1P, 50VDC

## Approvals

Authority	Standard	Rated voltage	Current ratings
UL	Class I Div 2 GP A, B, C, D ISA 12.12.01-2015 CSA C22.2 No. 213	120VAC 50/60 Hz 50VDC	1, 2, 3, 5, 7, 8, 10, 12, 15, 20A*
UL	UL 1077 CSA C22.2 No. 235-04		

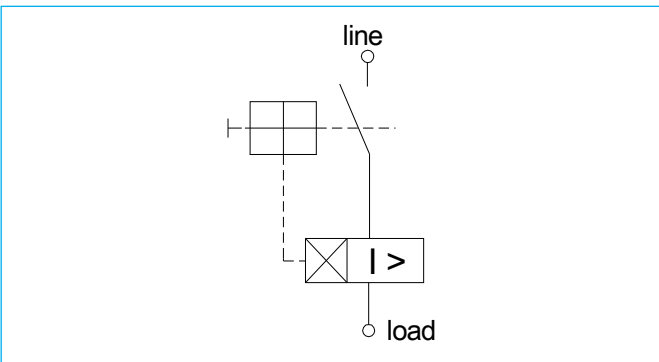
\* for 50VDC only



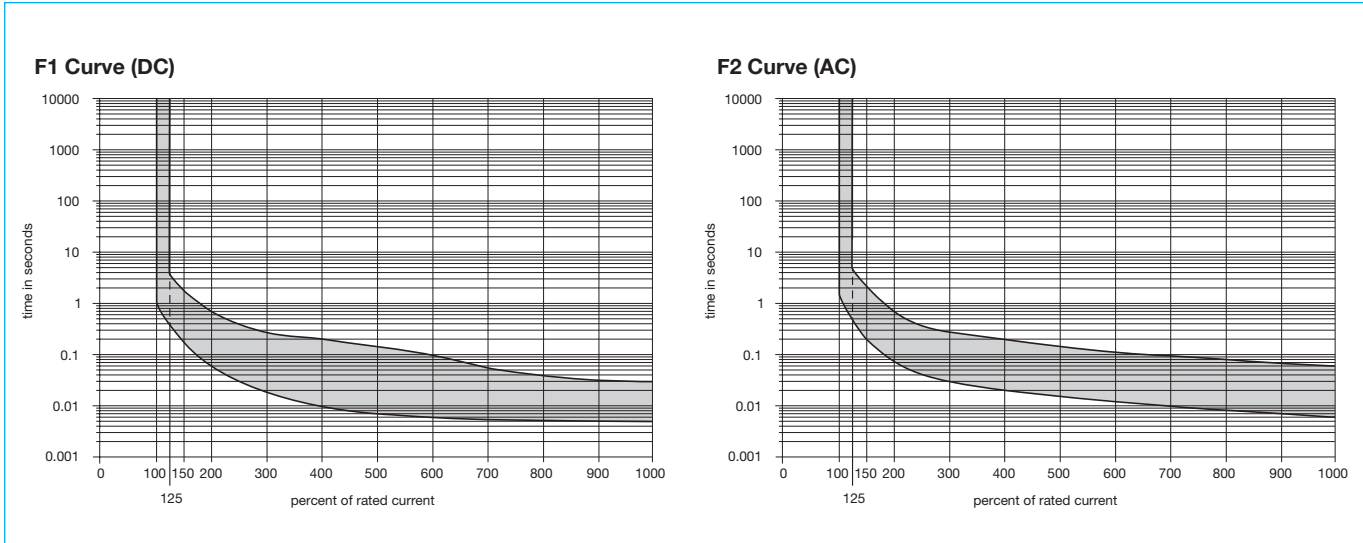
## Technical Data

Voltage rating	120VAC, 50VDC
Current rating range	1... 15A (AC) 1... 20A (DC)
Interrupting capacity	1000 A (AC and DC)
Temperature	-40° - 65°C
Ambient typical life	1... 20A 6000 operations @ 1 x I <sub>N</sub>
Insulation Resistance	>100 mega ohms (100VDC)
Dielectric Strength	1250 V RMS, 60 Hz (between terminals)
Degree of Protection	IP20
<b>Vibration</b>	
Directions 1, 2, 3, 4:	5 g at 1.0 x I <sub>N</sub>
Directors 5, 6:	10 g at 1.0 x I <sub>N</sub> (57-2000 Hz) +/- 0.76 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis
<b>Shock</b>	
Directions 2, 3, 4, 5, 6:	40 g/11 ms/half sine at 1.0 x I <sub>N</sub>
Direction 1:	30 g/11 ms/half sine at 1.0 x I <sub>N</sub> to IEC 60068-2-27, test Ea
<b>Humidity</b>	240 hrs in 95% RH, temperature 40 Deg C test to IEC60068-2-78, test Cab
<b>Corrosion</b>	96 hrs in 5% salt mist test to IEC60068-2-11, test Ka

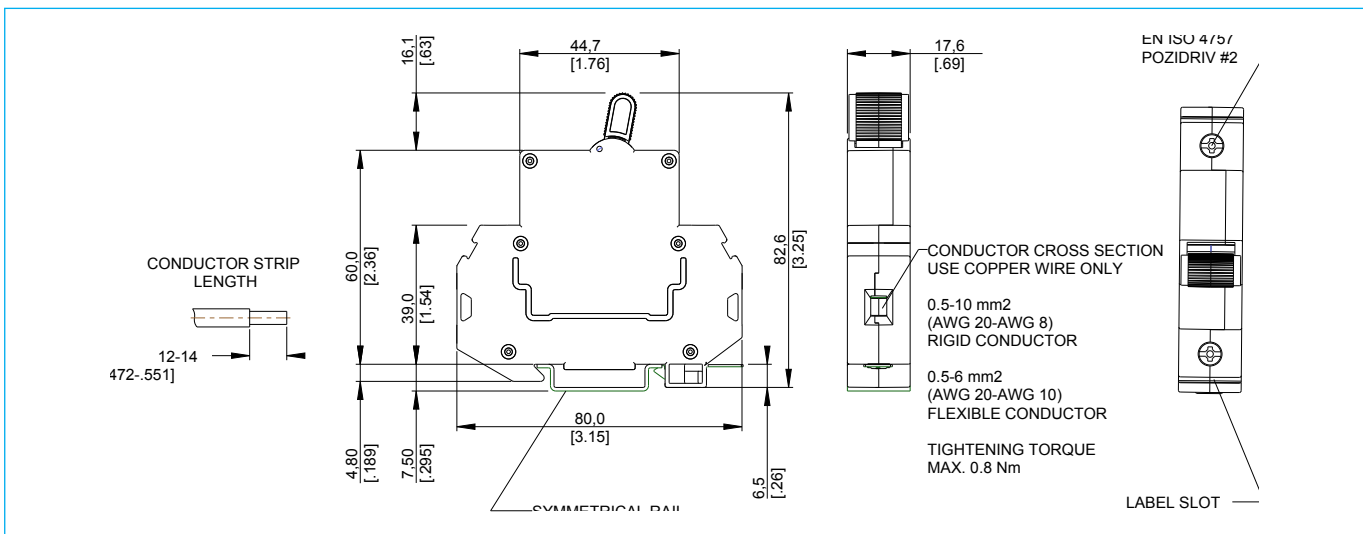
## Schematic Diagram



## Time/current characteristic



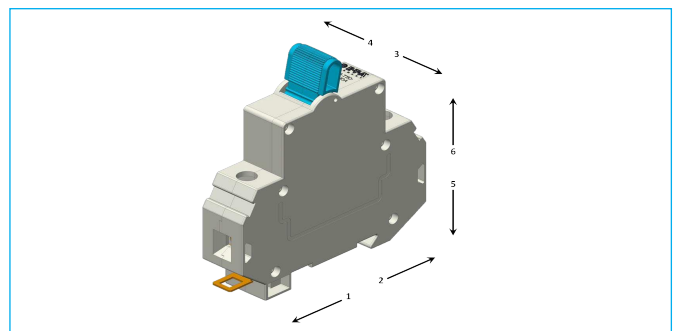
## Dimensions



## Temperature Derating Factor

Ambient Temperature	Temperature rating of conductor	
	75°C	90°C
40°C	1.00	1.00
50°C	1.00	1.00
60°C	0.80	1.00
65°C	0.70	0.80

## Shock directions



## Approval Details

Model	File Number	Type	UG	FW	U(V)	I(A)	TC	OL	SC
4231	E67320, E498433	OC	A	0	120 VAC	1... 15A	1	1	C1, 1KA*
					50 VDC	1... 20A			U1, 1KA

\*Evaluated with series fuse RK5 rated no more than 4X the rating of the protector