

# Circuit Breaker

## HCB-850 Series

120 / 240 V ac • 10–60 A • 1P – 3P



### Description

HCB-850 series are reliable circuit protection solutions designed for various electrical applications. Available in 1, 2, and 3-pole configurations, these breakers range from 10 to 60 amperes, providing versatility for both residential and commercial use. Engineered for durability and safety, HCB Breakers ensure optimal performance while protecting your electrical systems from overloads and short circuits.

### Features & Benefits

FEATURES	BENEFITS
<b>Thermal-Magnetic Circuit Breakers</b>	Automatically open a circuit under overload or short circuit conditions
<b>Can be flush-, surface-, or DIN rail-mounted</b>	Helps streamline installation
<b>Termination options include lug or ¼" quick connects</b>	To meet a broad range of system needs

### Applications

- HVAC/R
- Food & Beverage
- Industrial Machinery
- Material Handling

### Certification & Compliance

<b>UL 489 &amp; CSA C22.2 No. 5-16</b>	E507662
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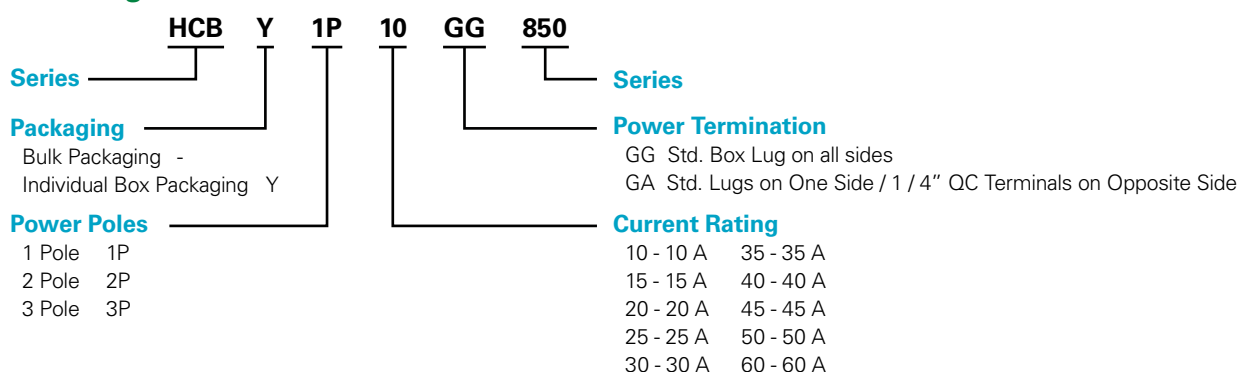
# Circuit Breaker

## HCB-850 Series

### Specifications

<b>Rated Current (A)</b>	10, 15, 20, 25, 30, 35, 40, 45, 50, 60
<b>Rated Voltage</b>	1 Pole & 2 Pole: 120/240 V ac; 3 Pole: 240 V ac
<b>Power Pole Terminations</b>	Aluminum Box Lugs or Quad 0.250" Quick Connects
<b>Wire Size</b>	Box Lug: 14-2
<b>Recommended Tightening Torque</b>	45 in. - lbs
<b>Operating Temperature</b>	-10°C to +60°C; 14°F to 140°F
<b>Storage Temperature</b>	-40°C to +70°C; -40°F to 158°F
<b>Relative Humidity</b>	90-95% RH (Below 40°C / 104°F)
<b>Altitude</b>	≤2000m (≤6562 Feet)
<b>Mechanical Life (No Current)</b>	10,000 cycles
<b>Electrical Life (Rated Current)</b>	10,000 cycles
<b>Mounting Method</b>	DIN Rail; Flush; Surface
<b>Unit Weight</b>	1 Pole: 4.96 oz; 2 Pole: 9.92 oz; 3 Pole: 15.36 oz

### Ordering Part Number



Note: Not all combinations of Part Number suffixes are listed. Contact Littelfuse for details.

### Ordering Information

#### 1 Pole Circuit Breaker

NUMBER OF POLES	TERMINATION	CATALOG NUMBER*	ORDERING NUMBER
1	Lugs (on Both Sides)	HCB-1/XX/L	HCBY1PXXGG850
1	Lugs (on One Side) / Quick Connects (on Other Side)	HCB-1/XX/Q	HCBY1PXXGA850

To select other amperages, use the Amperage Selection Chart to find the appropriate amperage. Replace the XX above with the required amperage. For example, for a 60 A in a one-pole circuit breaker with Lugs (on Both Sides), the Catalog Number would be HCB-1/30/L and Ordering Number would be HCBY1P30GG850.

#### 2 Pole Circuit Breaker

NUMBER OF POLES	TERMINATION	CATALOG NUMBER*	ORDERING NUMBER
2	Lugs (on Both Sides)	HCB-2/XX/L	HCBY2PXXGG850
2	Lugs (on One Side) / Quick Connects (on Other Side)	HCB-2/XX/Q	HCBY2PXXGA850

To select other amperages, use the Amperage Selection Chart to find the appropriate amperage. Replace the XX above with the required amperage. For example, for a 60 A in a two-pole circuit breaker with Lugs (on Both Sides), the Catalog Number would be HCB-2/30/L and Ordering Number would be HCBY2P30GG850.

\*The Catalog Number serves solely as an identifier. When placing an order, please use ordering number.

# Circuit Breaker

## HCB-850 Series

### Ordering Information (Continued)

#### 3 Pole Circuit Breaker

NUMBER OF POLES	TERMINATION	CATALOG NUMBER*	ORDERING NUMBER
3	Lugs (on Both Sides)	HCB-3/XX/L	HCBY3PXXGG850
3	Lugs (on One Side) / Quick Connects (on Other Side)	HCB-3/XX/Q	HCBY3PXXGA850

To select other amperages, use the Amperage Selection Chart to find the appropriate amperage. Replace the XX above with the required amperage. For example, for a 60 A in a three-pole circuit breaker with Lugs (on Both Sides), the Catalog Number would be HCB-3/30/L and Ordering Number would be HCBY3P30GG850.

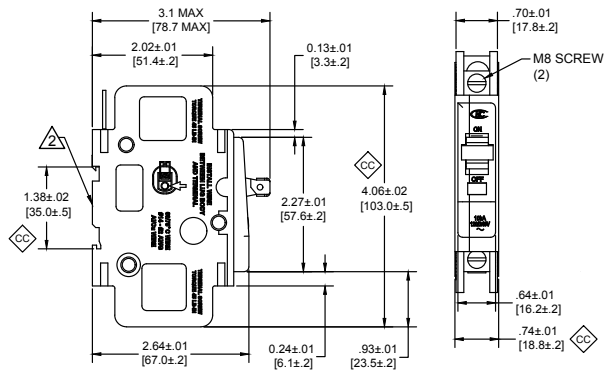
\*The Catalog Number serves solely as an identifier. When placing an order, please use ordering number.

### Amperage Selection Chart

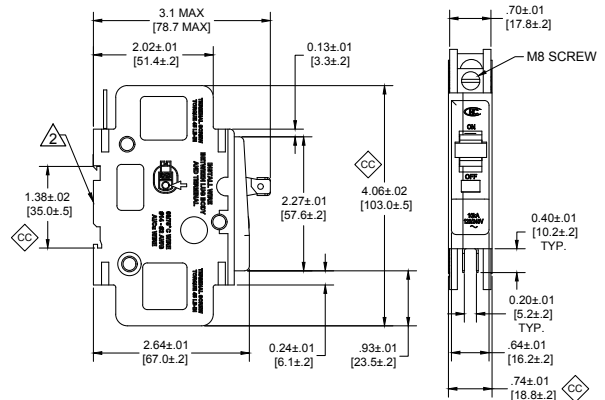
	10 A	15 A	20 A	25 A	30 A	35 A	40 A	45 A	50 A	60 A
Catalog Number Suffix	10	15	20	25	30	35	40	45	50	60
Ordering Number Suffix	10	15	20	25	30	35	40	45	50	60

### Dimensions – Inches (Millimeters)

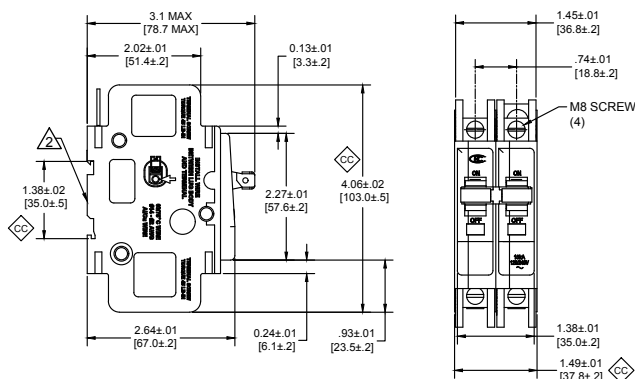
#### 1 Pole With Lugs (on Both Sides)



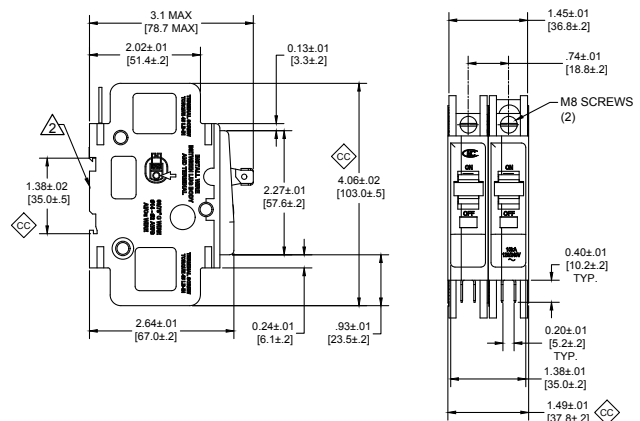
#### 1 Pole With Lugs (on One Side) / Quick Connects (on Other Side)



#### 2 Pole With Lugs (on Both Sides)



#### 2 Pole With Lugs (on One Side) / Quick Connects (on Other Side)

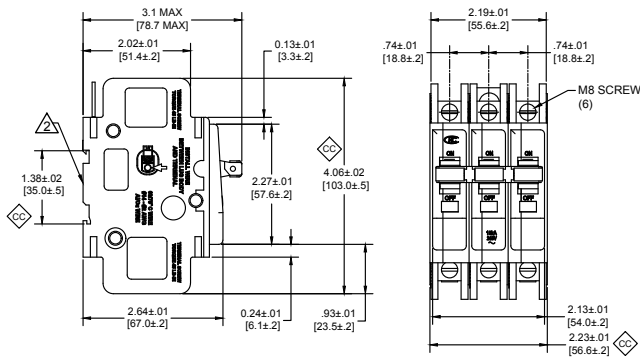


# Circuit Breaker

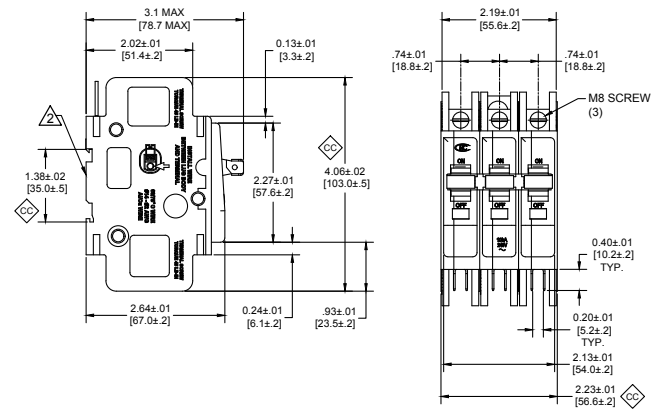
## HCB-850 Series

### Dimensions – Inches (Millimeters) (Continued)

3 Pole With Lugs (on Both Sides)



3 Pole With Lugs (on One Side) / Quick Connects (on Other Side)



### Wire Gauge

TYPE	AMPERAGE	NO. OF POLE	CU WIRE		AL WIRE	
			NO. OF WIRE	SIZE (AWG)	NO. OF WIRE	SIZE (AWG)
Lugs	10	1 / 2 / 3	1	14	1	12
	15	1 / 2 / 3	1	14	1	12
	20	1 / 2 / 3	1	12	1	10
	25	1 / 2 / 3	1	10	1	10
	30	1 / 2 / 3	1	10	1	8
	35	1 / 2 / 3	1	10	1	8
	40	1 / 2 / 3	1	8	1	8
	45	1 / 2 / 3	1	8	1	8
	50	1 / 2 / 3	1	8	1	6
60	1 / 2 / 3	1	1	6	1	4

TYPE	AMPERAGE	NO. OF POLE	CU WIRE ONLY	
			NO. OF WIRE	SIZE (AWG)
QC	10	1 / 2 / 3	1	14
	15	1 / 2 / 3	1	14
	20	1 / 2 / 3	1	12
	25	1 / 2 / 3	1	10
	30	1 / 2 / 3	1	10
	35	1 / 2 / 3	2	12
	40	1 / 2 / 3	2	12
	45	1 / 2 / 3	2	10
	50	1 / 2 / 3	2	10
60	1 / 2 / 3	2	10	

# Circuit Breaker

## HCB-850 Series

### Interrupting Rating

The interrupting rating of a circuit breaker is the highest current at rated voltage that the circuit breaker is intended to interrupt under standard test conditions. Circuit breakers must be chosen with interrupting ratings equal to or greater than the maximum available short-circuit current at the point where the circuit breaker is applied in the system.

UL Listed Interrupting Rating—RMS Sym. Amperes:

- 10kA, at AC Volts: 120/240V AC. (1P & 2P Breaker)
- 10kA, at AC Volts: 240V AC. (3P Breaker)

### Rerating of Thermal-magnetic Circuit Breakers for Ambient Conditions

HCB-850 thermal-magnetic circuit breakers are to be applied in ambient temperatures within the range of 14 °F to 140 °F (-10 °C to 60 °C). Use the following rerating guidelines:

Ambient Temperatures between 77 °F and 104 °F (25 °C and 40 °C):

- No rerating is necessary

Ambient Temperatures Between 14 °F and 75 °F (-10 °C and 24 °C):

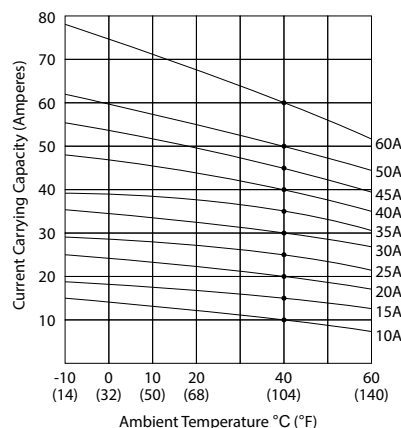
- Thermal-magnetic circuit breakers operating within this ambient temperature range will carry more than their continuous current rating without tripping. Conductor and equipment damage can result if they are not in the same low ambient environment as the circuit breaker.
- Nuisance tripping will not be a problem. However, if closer protection of the equipment and conductor is required, the increased current carrying capacity of the circuit breaker at the lower ambient temperature should be taken into consideration.

Ambient Temperatures Between 106 °F and 140 °F (41 °C and 60 °C):

- Thermal-magnetic circuit breakers operating within this ambient temperature range will carry less than their continuous current rating and must be carefully selected to prevent nuisance tripping.

To determine the continuous current carrying capacity of a thermal-magnetic circuit breaker at an ambient temperature other than 104 °F (40 °C), perform the following steps (with the graph on the next page):

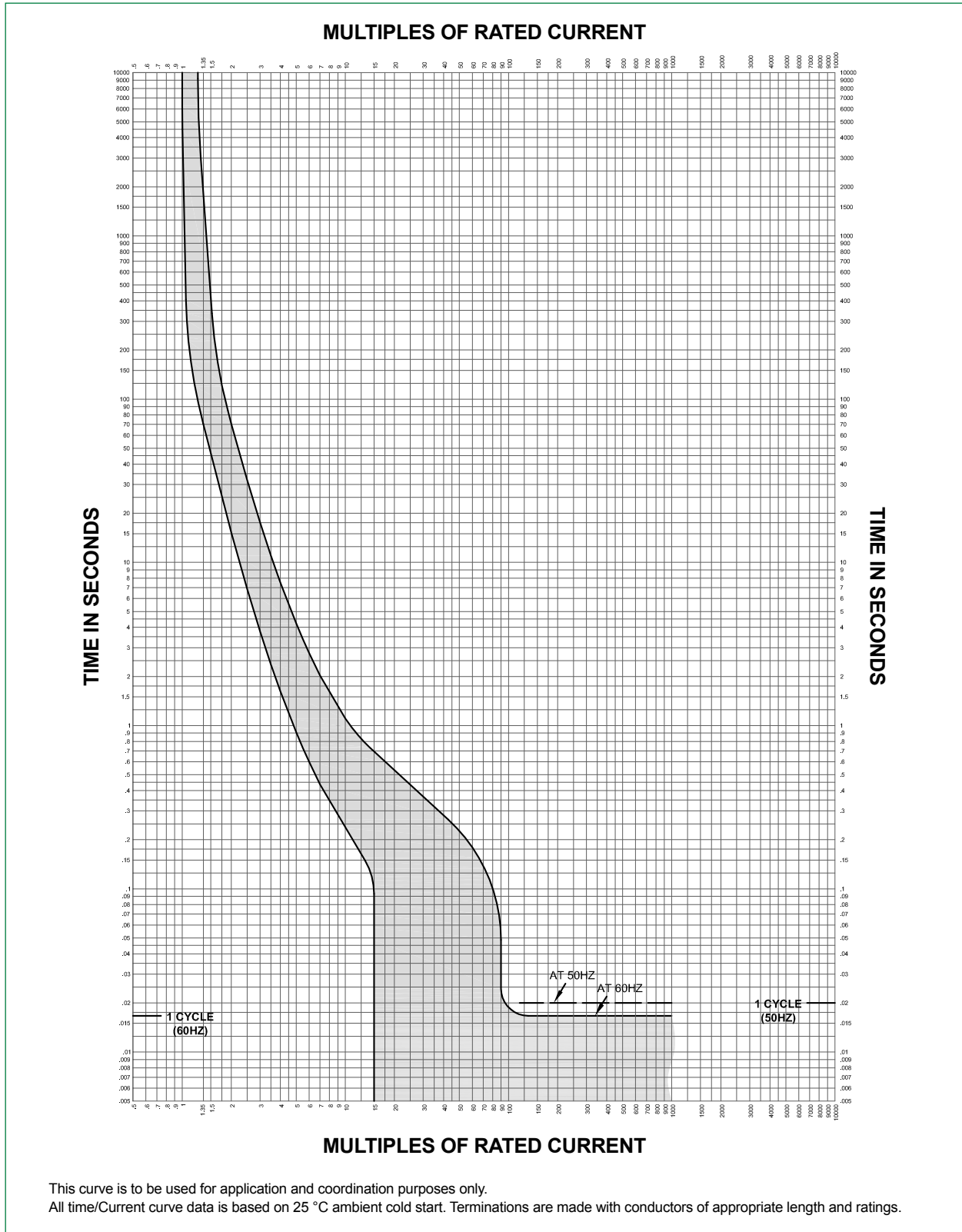
1. Choose the ambient rerating curve for the specific amperage rating of the circuit breaker you wish to apply. Note that the curve crosses the 104 °F (40 °C) ambient temperature line at the circuit breaker's rated continuous current carrying capacity (Circuit Breaker Handle Rating on the curve).
2. Follow this curve to the appropriate ambient temperature.
3. Read the adjusted continuous current carrying capacity at this point (on the left axis).
4. Add in any other applicable factors, such as continuous loading, per the NEC requirement.



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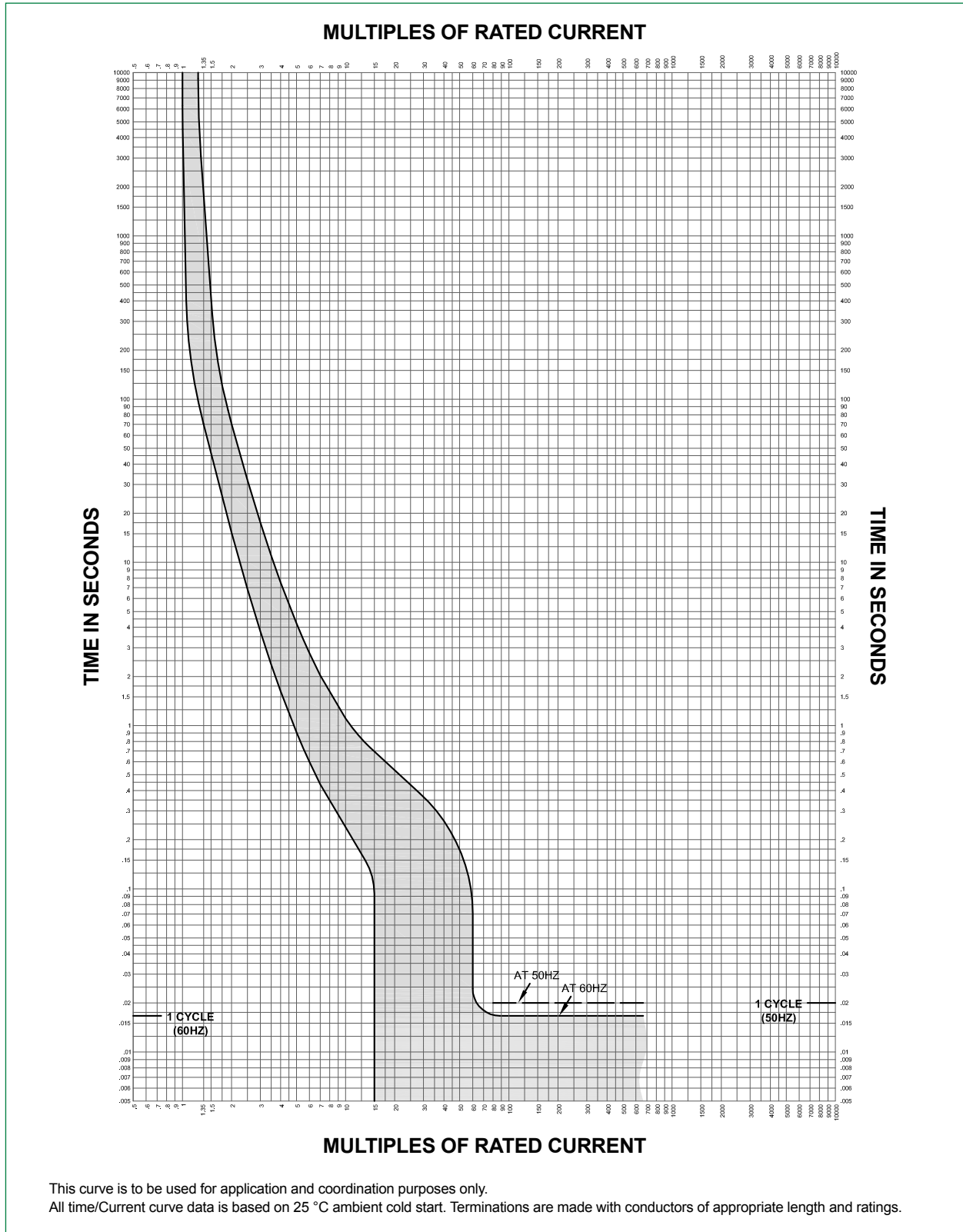
### Tripping Curve – 10A, 1 Pole / 2 Pole / 3 Pole



# Circuit Breaker

## HC8-850 Series

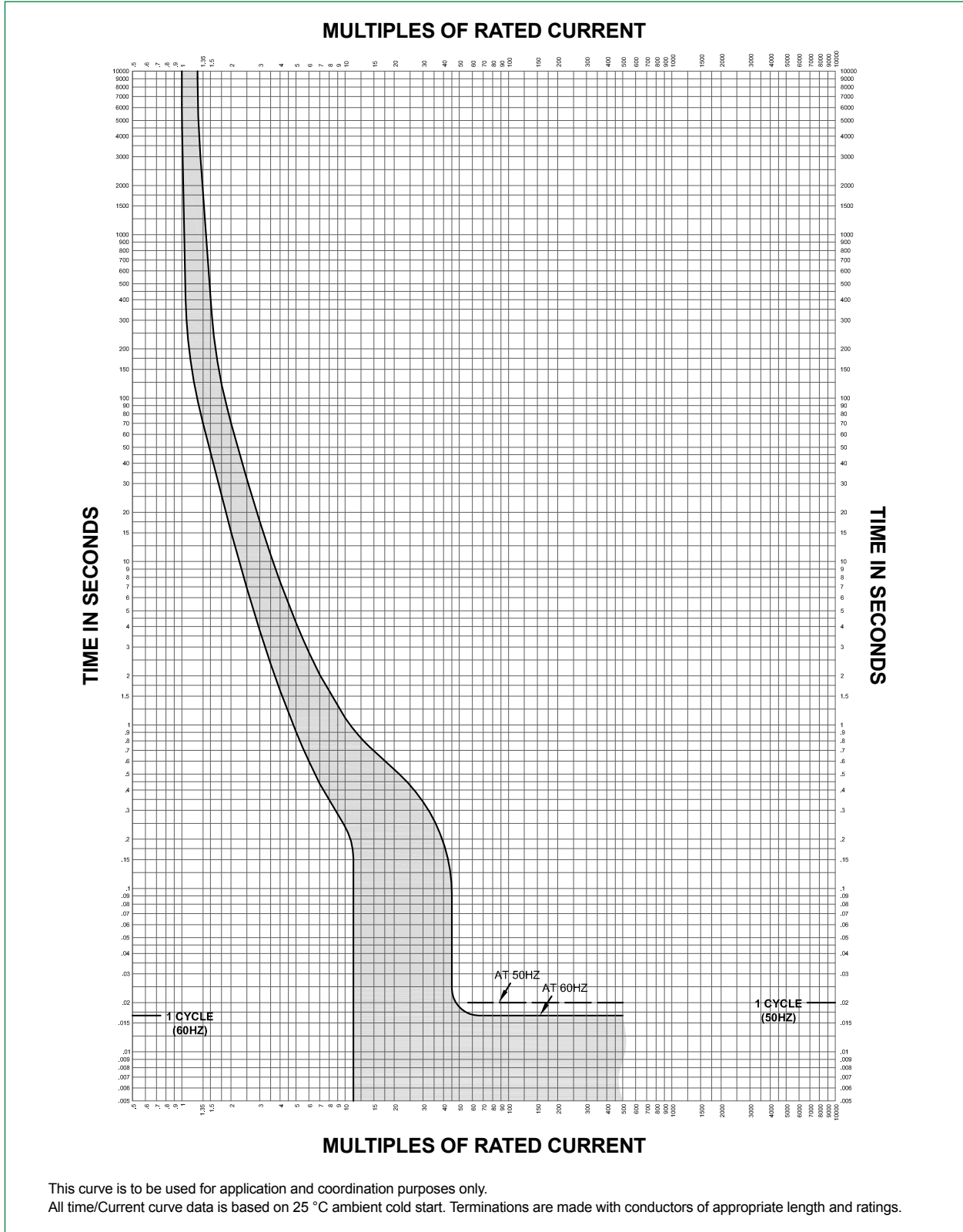
### Tripping Curve – 15A, 1 Pole / 2 Pole / 3 Pole



# Circuit Breaker

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### Tripping Curve – 20A, 1 Pole / 2 Pole / 3 Pole

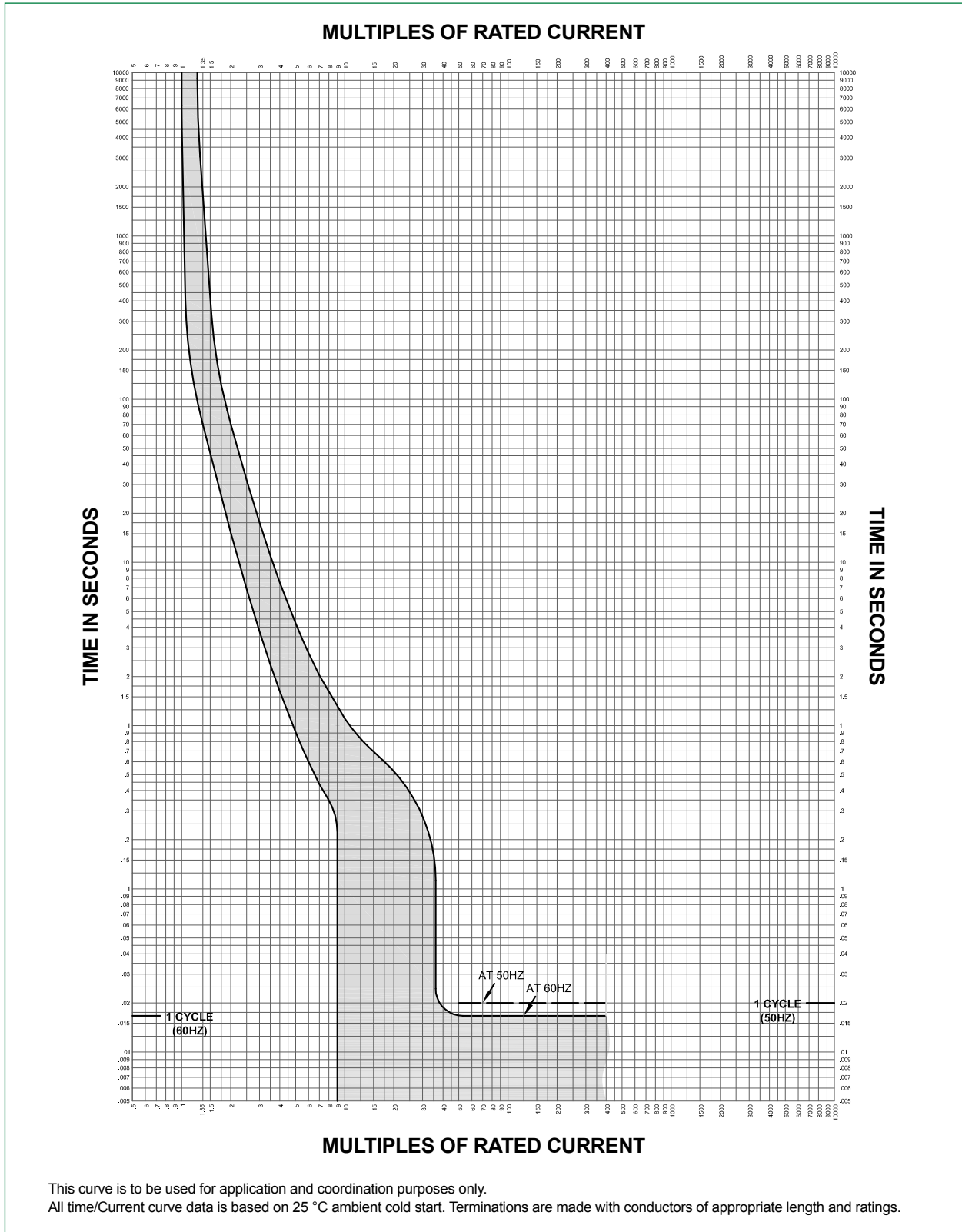




# Circuit Breaker

## HCB-850 Series

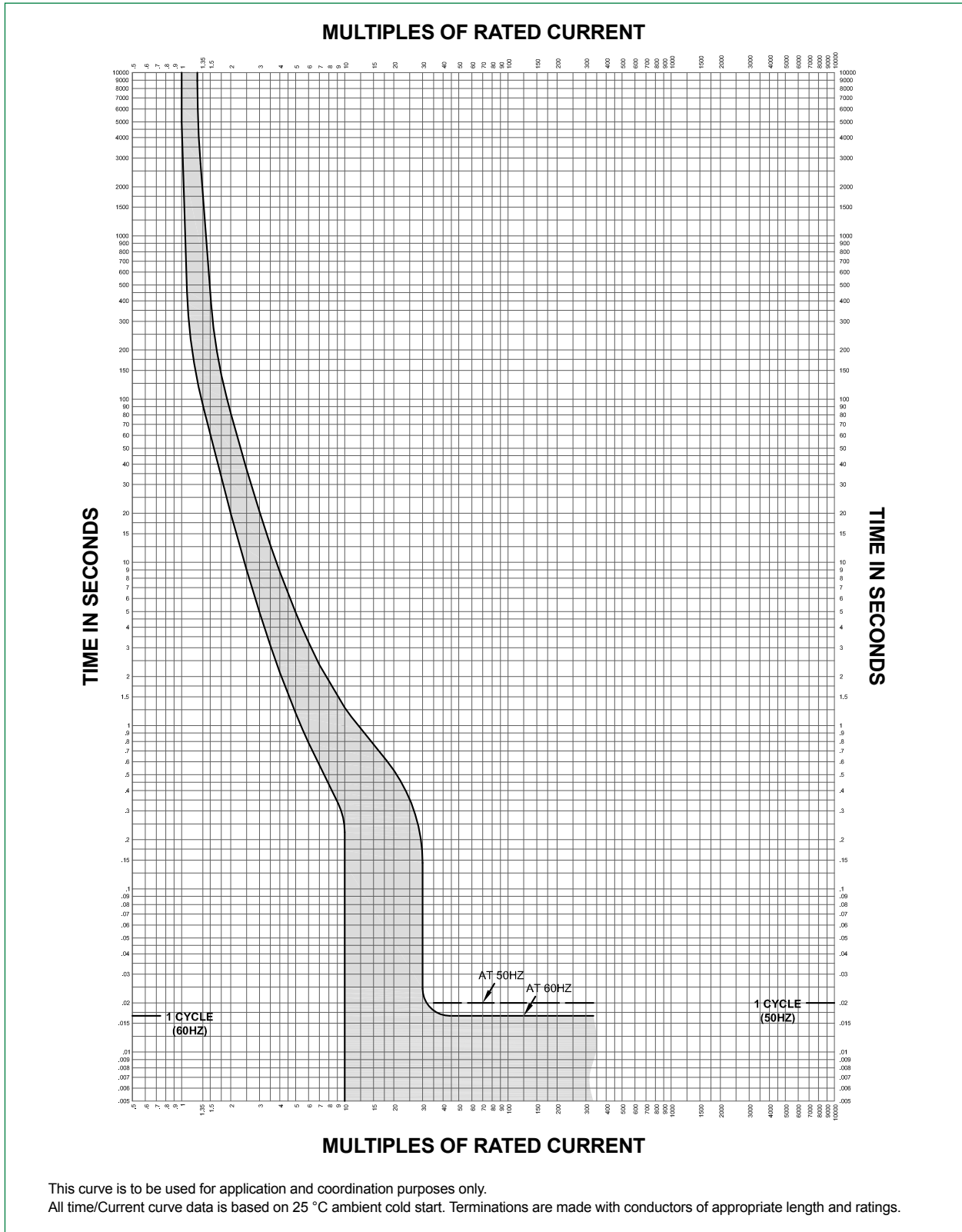
### Tripping Curve – 25A, 1 Pole / 2 Pole / 3 Pole



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## HCB-850 Series

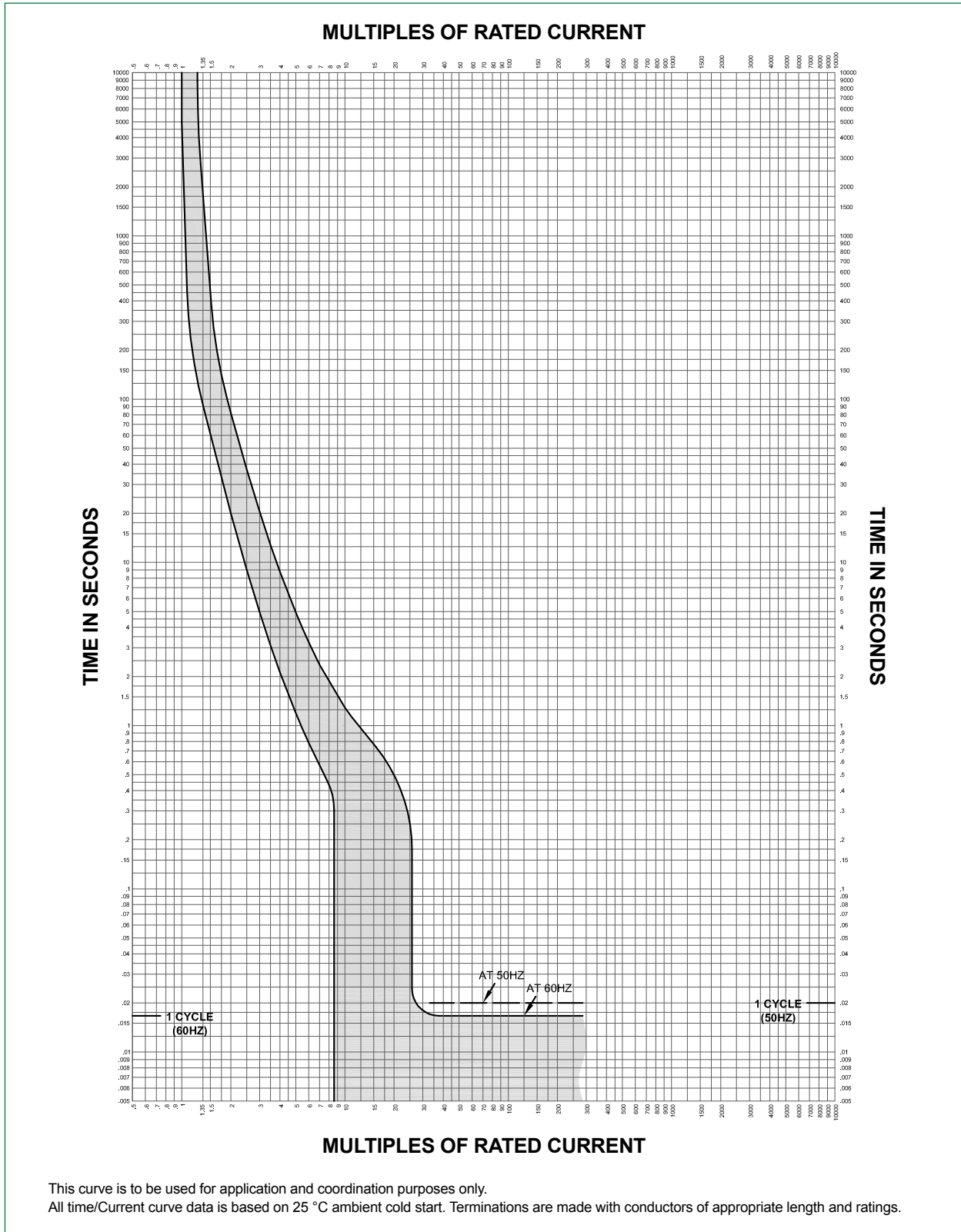
### Tripping Curve – 30A, 1 Pole / 2 Pole / 3 Pole



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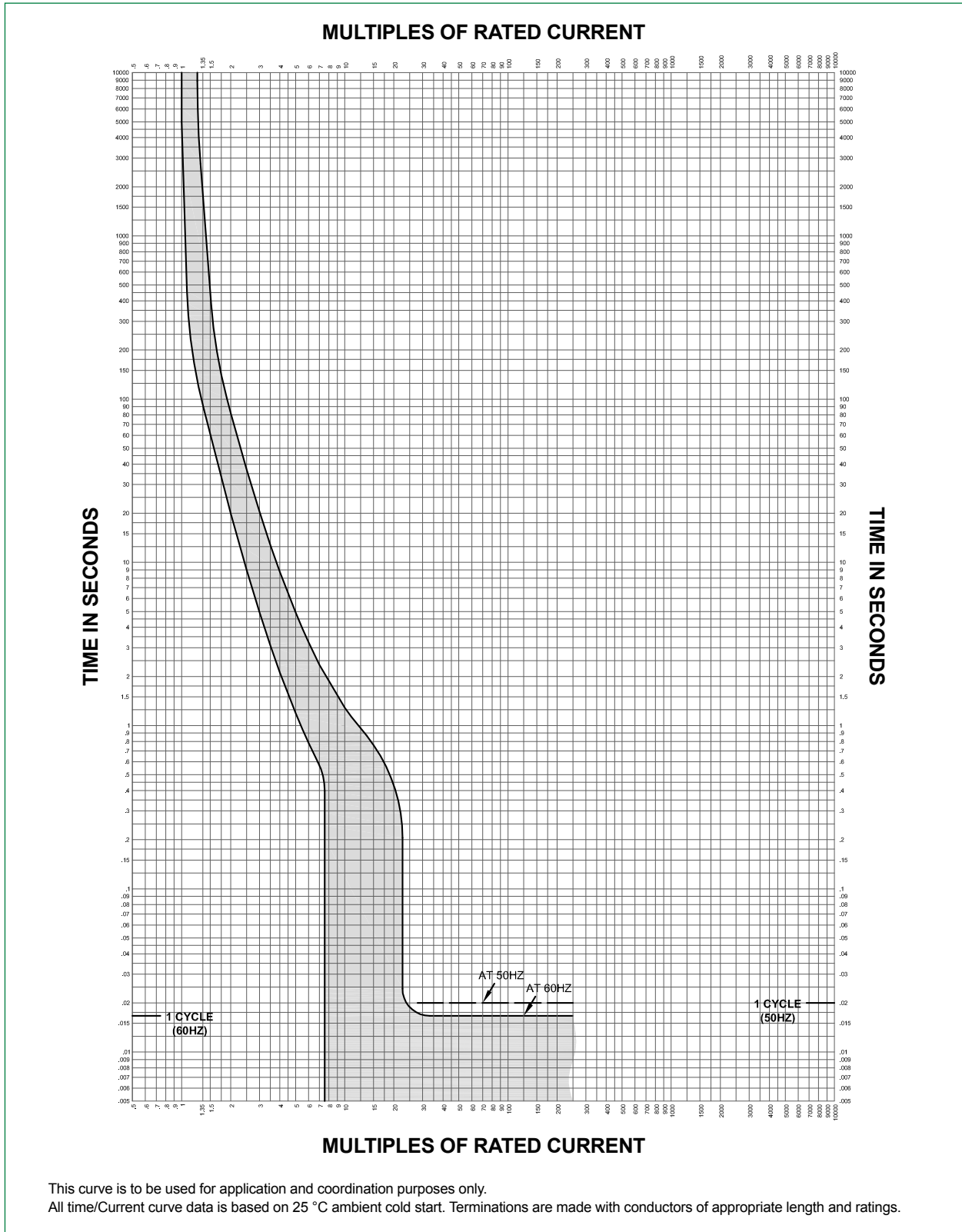
### Tripping Curve – 35A, 1 Pole / 2 Pole / 3 Pole



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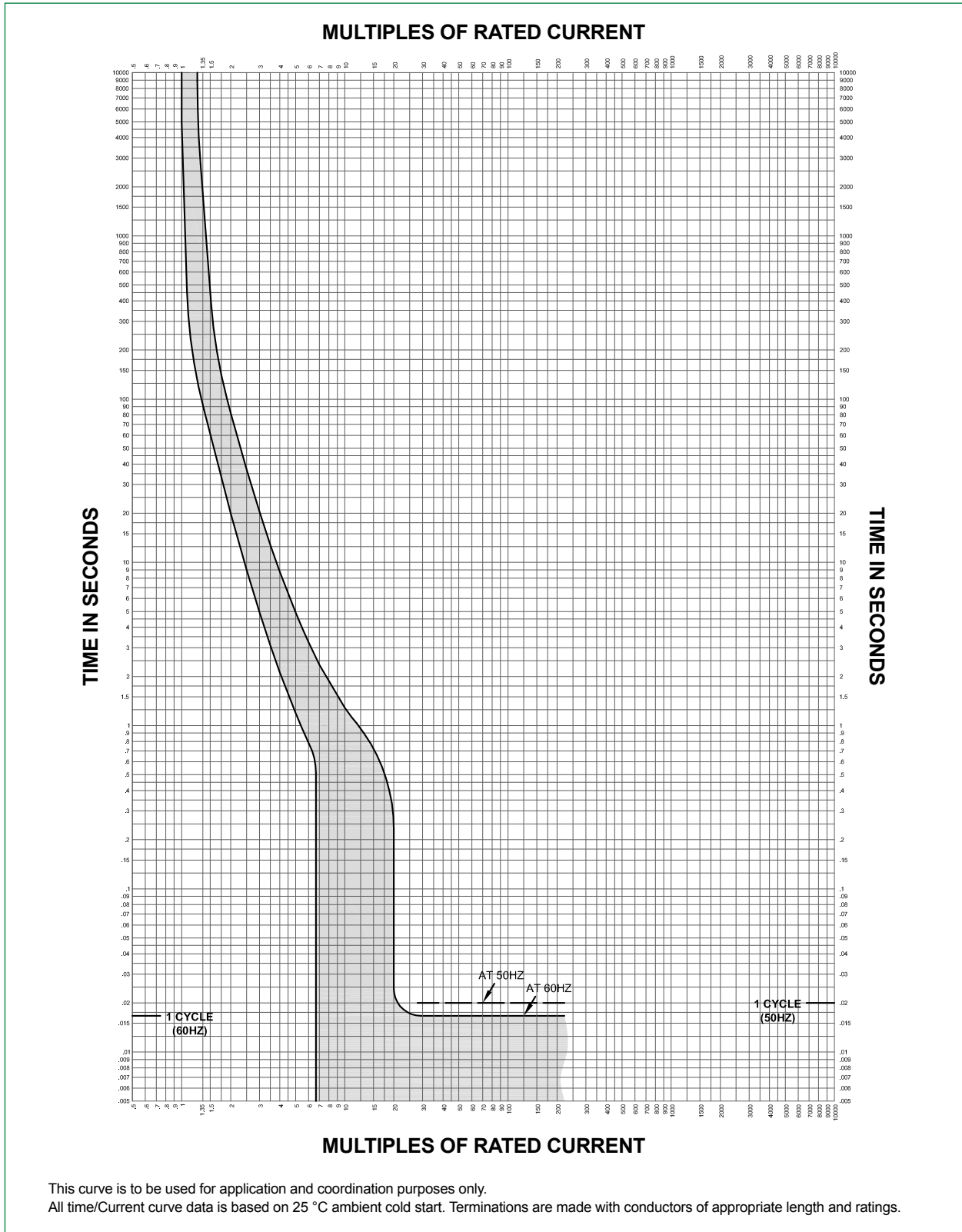
### Tripping Curve – 40A, 1 Pole / 2 Pole / 3 Pole



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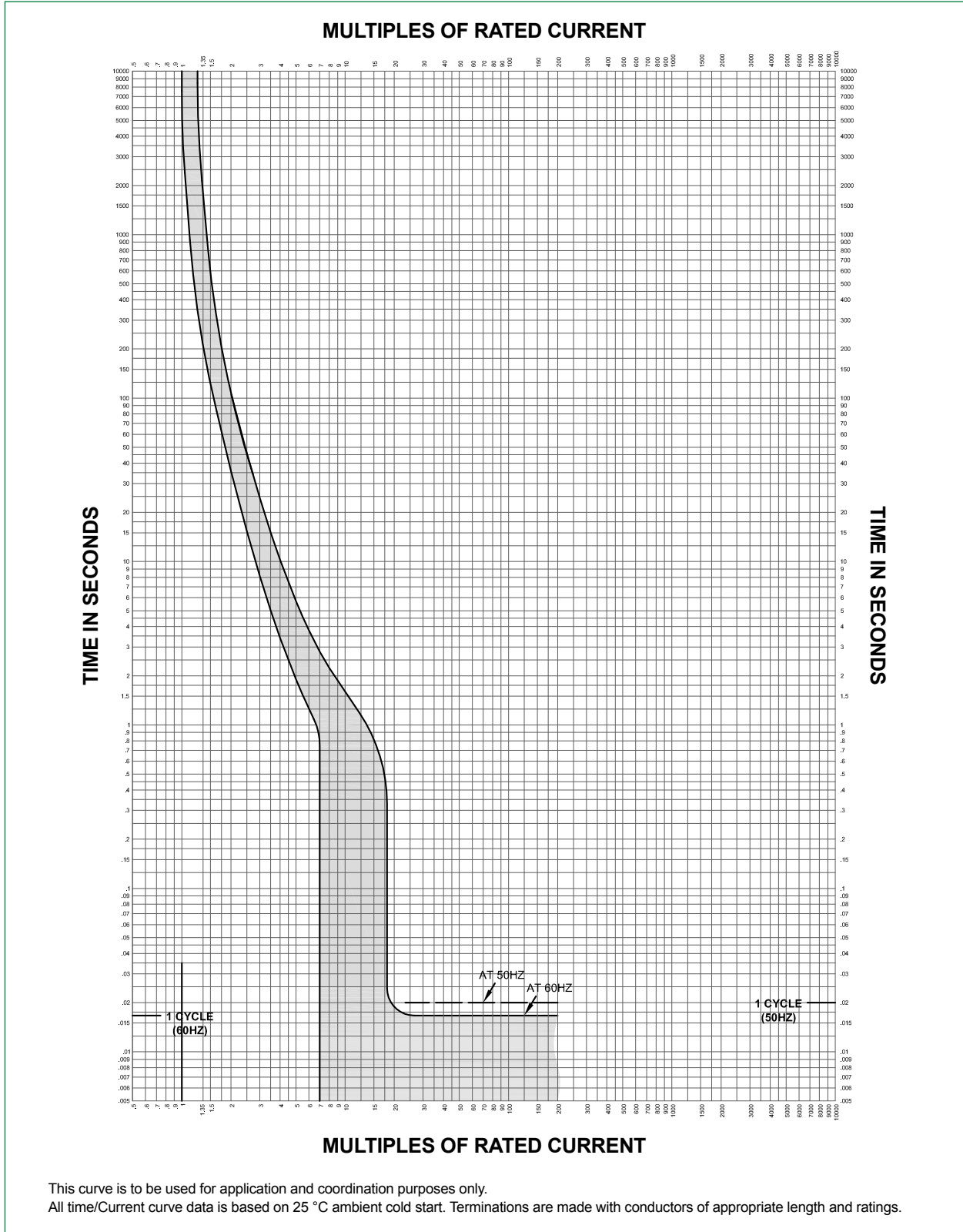
### Tripping Curve – 45A, 1 Pole / 2 Pole / 3 Pole



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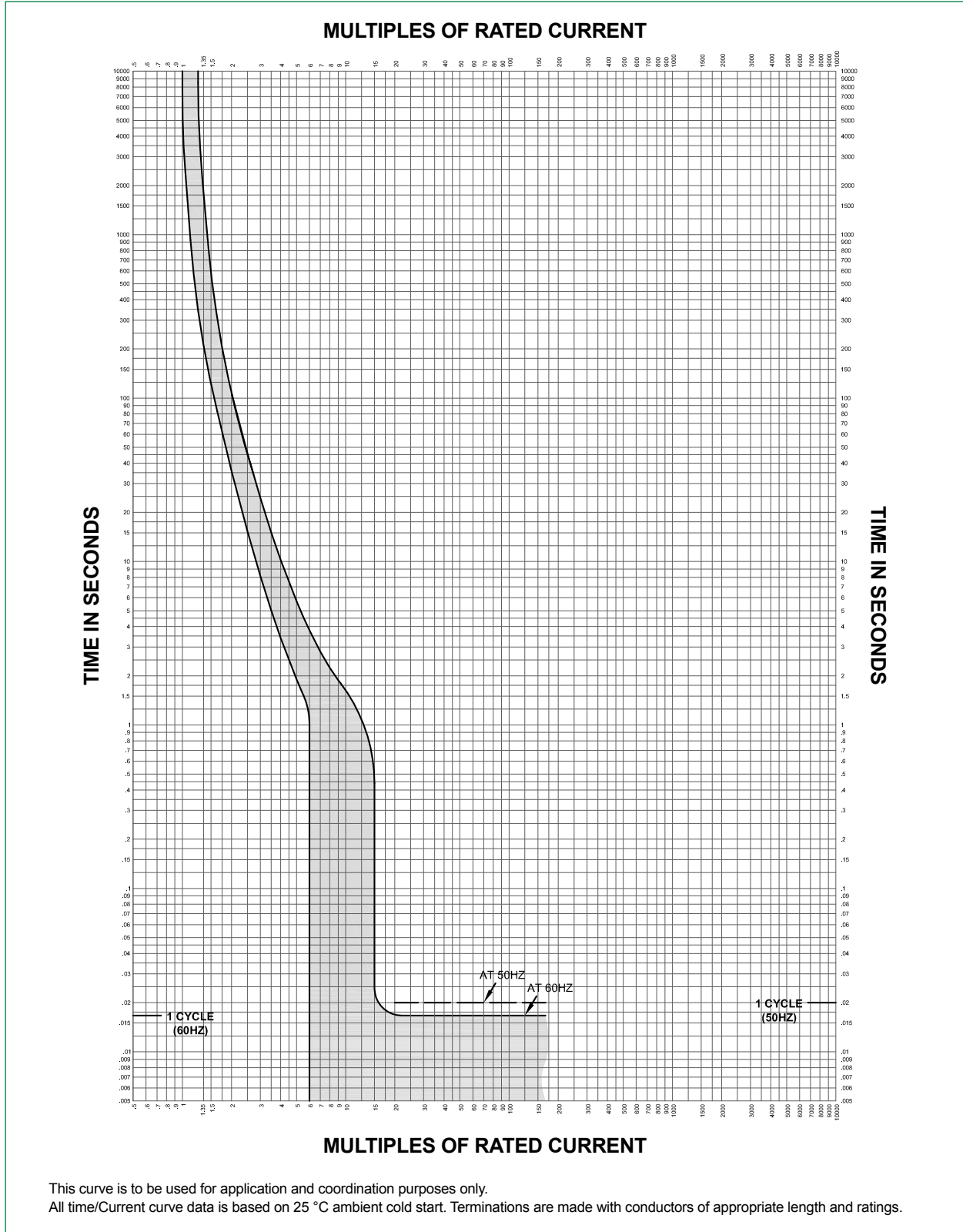
### Tripping Curve – 50A, 1 Pole / 2 Pole / 3 Pole



# Circuit Breaker

## HC8-850 Series

### Tripping Curve – 60A, 1 Pole / 2 Pole / 3 Pole



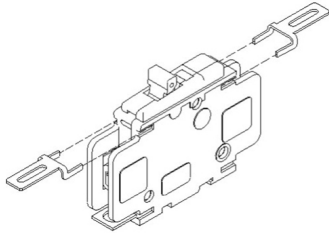
# Circuit Breaker

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### Mounting Configuration

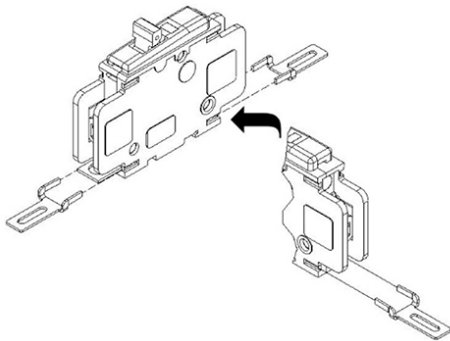
#### Flush Mounting

1. Install mounting feet on each end of circuit breaker in grooves provided closest to rocker switch. Feet mounting surface faces rocker switch.
2. Use a screw through each mounting foot to fasten circuit breaker inside enclosure.



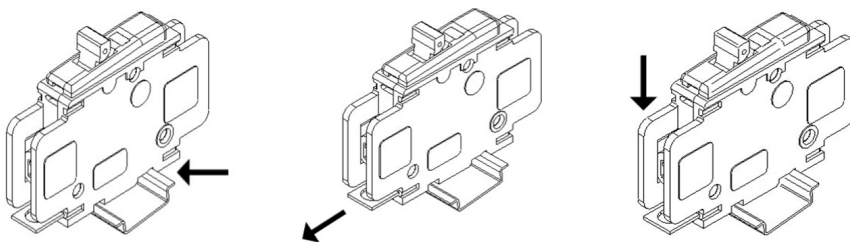
#### Surface Mounting

1. Install mounting feet on each end of circuit breaker in grooves provided furthest from rocker switch. Feet mounting surface faces away from rocker switch.
2. Use a screw through each mounting foot to fasten circuit breaker inside enclosure.



#### DIN Rail Mounting

1. Slide non-snap notch side of breaker onto one side of DIN rail lip.
2. Push on snap notch side of breaker. Snap will move, locking breaker onto DIN rail.
3. Pull tab to release breaker from DIN rail.



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