

RATINGS OF CIRCUIT BREAKERS

Introduction

Every electrical device has some specific ratings which specify its several characteristics which are already written on them. These ratings ensure proper and safe use of the device, guiding the users about the maximum and minimum values on which they can operate.

As we are dealing here with electrical devices, so the ratings discussed will also be related to electricity. When talking about electricity and electrical components, the first things which come to our mind usually are somewhat like current, voltage and resistance, as they are the most basic things on which electrical concepts are based on. Similarly all the electrical components are also usually rated based upon these three things, especially voltage and current.

For safe and reliable use of a device, knowledge of these ratings is necessary. Moreover these ratings guide the user about if the specific component type is right for them to use and if it would be able to give them the best result.

For example the maximum **current rating** of a **circuit breaker** would guide us about the maximum current that can pass through the breaker without tripping it. In this way we could get knowledge about the safe limit in which we can get our desired result without damaging the device or the equipment attached to it.

Here I am going to discuss some basic terms which are related to the ratings of the circuit breaker.

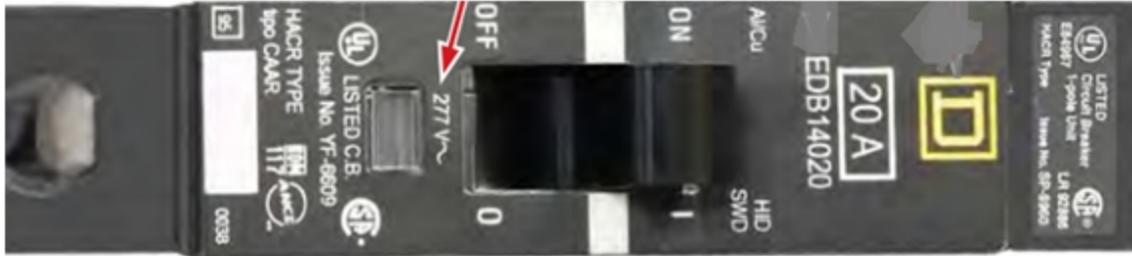
Voltage Rating

When we go to buy a circuit breaker, we see a voltage rating written on it, along with much other stuff as well. So what does it mean if a circuit breaker has 240V AC written on it?

It means that the circuit breaker can withstand a voltage of 240V easily without disturbing its operation and can operate safely if the voltage supplied to it is equal to or less than 240V. In short, the voltage rating of a circuit breaker is the maximum amount of voltage it can handle.

It must be noted here that the maximum allowable voltage of a circuit breaker should obviously be greater or equal to the voltage of the circuit in which it has to be installed. So this thing should be taken care of before selecting a circuit breaker.

The voltage rating written on a circuit breaker is shown in the figure:



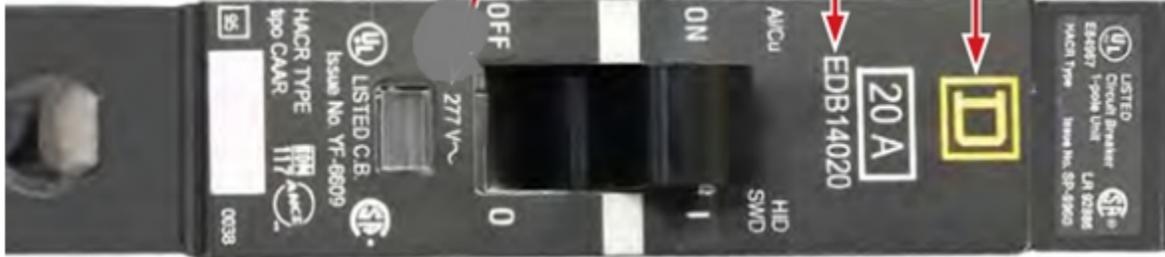
Continuous Current rating

The continuous current rating of a circuit breaker refers to the maximum amount of current which can pass through a circuit breaker without making the breaker trip over.

It shows that this value of current can safely pass through the breaker, and if in some case a value greater than this tries to pass through the circuit breaker, its contacts will break and it will trip, not letting any current to pass at all.

This thing is also necessary to know as it helps us to decide the limit of the current according to the rating of our appliance, so that the current greater than that does not get further and damage our circuitry or appliance.

The current rating written on a circuit breaker is shown in the figure:



Interrupting Rating

When talking about current rating, also sometimes known as Ampere rating, another type of value is also necessary to mention, which is known as the interrupt rating of the circuit breaker.

This value specifies the maximum amount of current that a circuit breaker can interrupt. Any amount further than this may damage the breaker.

This was all about the main ratings of a typical circuit breaker. Sometimes, there are some other characteristics as well, which are written on the breaker, but these were the most main and essential ones.

Source : <http://engineering.electrical-equipment.org/electrical-distribution/ratings-of-circuit-breakers.html>