

# How to choose the best-suited Terminal Blocks?

A terminal block is made up of modular housing with an insulated body that connects two or more wires. Terminal blocks, also known as terminal connectors, connection terminals, or screw terminals, are used to properly connect electrical systems in a variety of applications. They're great for designs that require well-organized, secure, as well as semi-permanent connections of wire that may be swapped out in the field for inspection or repair.



# Various Types of Terminal Blocks:

In a design, there are many different sorts of terminal blocks that can be employed. The following are a few of the most common:

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#### • PCB Mount:

PCB mount terminal blocks, also known as Eurostyle blocks, work by introducing bare wires into the module, where a clamp fixes the wire in the housing. After that, the housing is

attached to a PCB in standard footprints. Single, dual, or multi-level terminal blocks can be mounted on a PCB.

#### • Barrier Strips:

The screw-down terminal on these terminal blocks is used to attach a ring or spade terminal to the wire, which is then put into the screw and tightened into the housing. When vibration is an issue, barrier strips are frequently used.

# • Feed-Through:

Feed-through terminal blocks are used to make wire-to-wire connections by connecting two wires together. Two separate wires are inserted into opposing sides of the housing in this terminal block type, which contains one input and one output contact. These can be single, dual, or multi-level modules, just like the PCB mount versions.

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# Electrical Considerations that help in choosing the best suited Terminal Block:

You will most likely know your overall system voltage and current needs when developing a system that will use a terminal block. While they are critical, there are more variables to consider in your design, which are listed below.

## - Current Rating:

In terminal block designs, the current rating is frequently the most critical metric to consider. The current rating is based on the terminals' conductivity, cross-sectional area, and resulting heat rise. Overheating and damage to the terminal block can occur when the current is too high, posing serious safety problems. It is recommended that you use a terminal block that is rated for at least 150% of the system's maximum current.

### - Voltage Rating:

The dielectric strength and pitch of the terminal block housing play a role in the voltage rating. The application's maximum system voltage must be less than the voltage rating. When choosing a terminal block, any voltage surges in the system should be considered.

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#### - Pole Count:

The pole count refers to the number of separate circuits within a terminal block. Depending on how many distinct circuits are required in the specific application, this can range from a single-pole to as many as 24 poles.

#### - Pitch:

The pitch of a terminal block is the distance between one pole and the next. The overall rating of the terminal block, which takes into account criteria like voltage/current, creepage, and clearance, is commonly used to calculate the connection pitch. 2.54, 3.81, 5.0, as well as 7.62 mm are some of the most common industry pitches.

#### - Wire Size/Type:

The voltage/current rating determines the minimum and maximum wire sizes that the terminal block can tolerate. The type of wire should be evaluated in addition to ensuring that the wires used physically fit into the terminal block. Screw terminals often employ stranded or multi-core wire, while push-in style terminal blocks typically use single-core wire. Wire size is measured in American wire gauge units in North America (AWG).