

TO WHOM IT MAY CONCERN

The problem of the difference between the real electrical machines' rotation speed and the rated speed that we indicate in our catalogues is a very important issue that needs attention.

First of all, we have a rated speed and a maximum machine speed, as well as a maximum operating speed, a shaft speed, etc.

Normally, in all the catalogs of any manufacturer of electrical machines (industrial machines, like the ones that we use in our laboratories), rpm numbers are always a very precise value, such as, for example, 1500, 3000, 6000, which obviously cannot be. You will never find a rated value of, say, 1512 rpm, 3067 rpm, or similar.

The rated data are the results of tests that the manufacturer has performed on some prototypes at the beginning of the bulk production; every produced machine will then be a little apart from these standard performances, because of the inevitable structural tolerances.

Therefore, the data that are displayed in catalogues are basically the best indication of typical data, that cannot be taken with the precise accuracy of the number. 5-10 % variations of the actual data with respect to the rated ones are normal for each series of motors.

This is true for speed, current, excitation parameters, etc.

The actual data for a specific electrical machine are the ones that are written on the plate attached to the machine, where we write the data that come from the individual tests on that machine.

Each machine is unique, structurally speaking. Therefore, the data of each machine (rpm, excitation voltage, current, etc.) may be slightly different and differ one with the other.

Two machines that come from the same series production, once tested, usually have different values, always, as we said, with a percentage of variation from the rated value.

Another thing to consider is that to write the plate of the machines, the same are tested with an excitation connection in additive series, while the data shown in the catalogue are for machines under subtractive series excitation conditions.

The machine operating in additive series excitation is more stable and, therefore, the machines are tested under these conditions.

To ensure that the data written on the machine plate are closer to the information that appears in the catalogue, simply connect the machine with the subtractive series excitation.

In this configuration, the data will be closest to the values of the catalogue, but NEVER exactly the same, because, as we said, each machine is unique.