



Industrial Weighing Systems

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Converting Newton's to Lbs or Kgs

Newton's refer to an objects mass whereas Kgs refer to its force (gravity acting on the mass).

We will use the reference gravitational constant of 9.80665 for our conversion.

1 KN = 1000 Newton (1000 / 9.80665) = 101.97 Kgs

Most manufactures have a rated output of 2.0394 Mv /V for their KN rated load cells..

For the 1 KN cell we now have a capacity rating of 101.97 Kg @ 2.0394 Mv/V output.

Wow does that look messy for programming or calculating system capacities with more than 1 cell. To make life easier lets set load cell capacity to 100 Kgs and calculate the corresponding Mv/V.

$$(100/101.97 * 2.0394) = \mathbf{2.000\ Mv/v}$$

Wow, the load cell capacity works out to be 100 Kgs @ 2.000 Mv/V.

There are much easier numbers to work with so in future.

If the load cell is rated in KN and its output is 2.0394 Mv/V you can do the following:

For **Kgs** systems: **Rated KN x 100** and use an output of **2.000 Mv/V**

For **Lbs** systems: **Rated KN x 100 x 2.2046** and use an output of **2.000 Mv/V**

Actual gravitational constant for your location will affect the calculation however, mechanical influences on your scale will produce far more error than any deviation from 9.80665.

$$\mathbf{1\ Kg = 2.2046\ Lb} \quad \mathbf{1\ Lb = 453.6\ Grams\ (0.4536\ Kgs)}$$