

# PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions



How to...

Calculate the step size and decimal point  
for your installation



**PENKO**

an ETC Company

## Certified installations

In our example we have a bunker with 3 \* 200kg C3 load cells. The load of the installation itself is 50kg (dead load). The maximum amount we want to weigh is 150kg. The dead load and the maximum weighing amount must be well below the maximum capacity of the load cells combined.

So what is the smallest step size I can choose, and where to place the decimal point?

First of all we need to know the following specifications of the load cell (contact your load cell manufacture for this information):

Accuracy class	C3
Maximum no. of intervals	3000
Utilization for most load cells in percentage	33,3%

*The Utilization is a percentage of the maximum capacity of the load cell. The smaller the Utilizations the more accurate the load cell can be calibrated, and there for a smaller step size and decimal point can be selected.*

The total capacity of the 3 load cells is 600kg. The utilization is 33,3%, so 33,3% of 600kg is 200kg.

Divide 200kg by 3000 (interval amount) the answer is 0,06kg. This is the minimum step size.

The Indicator doesn't have a step size of 0,06kg, choose the first one above 0,06kg that will be step size 0,1kg (this step size will affect the last digit). The decimal point must be set to 00000.0 the weighing installation will be accurate within 00.1 kg.

<b>Step</b>	<input type="text" value="STEP 1"/>
<b>Decimal point</b>	<input type="text" value="00000.0"/>
<b>Unit</b>	<input type="text" value="kg"/>

## Industrial installations

We will keep the same bunker with 3 \* 200kg C3 load cells. The load of the installation itself is 50kg (dead load). The maximum amount we want to weigh is 150kg. The dead load and the maximum weighing amount must be well below the maximum capacity of the load cells combined.

So what is the smallest step size I can choose, and where to place the decimal point?

First of all we need to know the following specifications of the load cell (contact your load cell manufacture for this information):

Accuracy class	C3
Utilization for most load cells in percentage	33,3%

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For Industrial it's not necessary to look up the Maximum no. of intervals.

Maximum no. of intervals (The maximum for Industrial installations is 10000) 10000

The total capacity of the 3 load cells is 600kg. The utilization is 33,3%, so 33,3% of 600kg is 200kg.

Divide 200kg by 9000 (interval amount) the answer is 0,02kg. This is the minimum step size.

Choose step size 0,02 (this step size will affect the last digit). The decimal point must be set to 0000.00. The weighing installation will be accurate within 00.02 kg.

Step	STEP 2
Decimal point	0000.00
Unit	kg



## About PENKO

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

## Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:

[http://penko.com/nl/publications\\_certificates.html](http://penko.com/nl/publications_certificates.html)



## PENKO Professional Services

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: [www.penko.com/training](http://www.penko.com/training)

## PENKO Alliances

PENKO's worldwide network: Australia, Belgium, Brazil, China, Denmark, Germany, Egypt, Finland, France, India, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Syria, Turkey, United Kingdom, South Africa, Slovakia Sweden, Switzerland and Singapore. A complete overview you will find on: [www.penko.com/dealers](http://www.penko.com/dealers)

