

# PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions



How to...  
Connect up to 4 load cells to the 1020



*an ETC Company*

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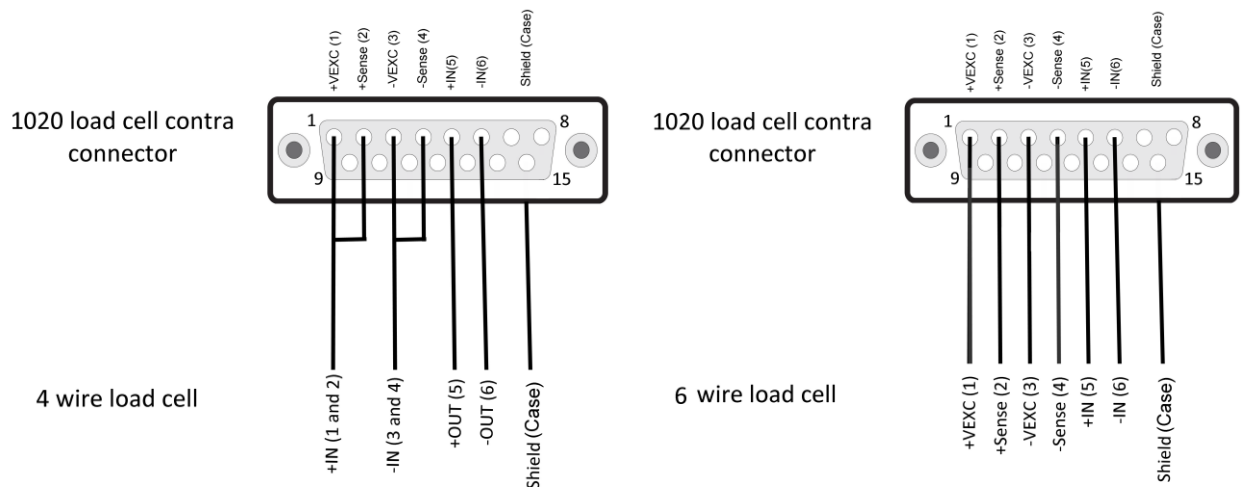
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## Connect 1 load cell directly to the 1020

There are generally 2 types of load cells, load cells with 4 wires and load cells with 6 wires. The difference is that the load cells with 6 wires used a sense circuit to measure the input voltage (Excitation) and the load cells with 4 wires don't have this sense circuit. Below are some examples of how to connect load cells with 4 or 6 wires from different manufactures to a 1020.

1020	Uttlcel 4 wires	Ascell 6 wires	Tedea Huntleigh 6 wires	Flintec 4 wires
+VEXC	+IN (Green)	+V (Red)	+V (Blue)	+IN (Green)
+Sense	+IN (Green)	+Sense (Violet)	+Sense (Green)	+IN (Green)
-VEXC	-In (Black)	-V (Black)	-V (Black)	-In (Black)
-Sense	-IN (Black)	-Sense (Gray)	-Sense (Gray)	-IN (Black)
+IN	+ Out (Red)	+Signal (Green)	+Signal (Red)	+Out (White)
-IN	-Out (White)	- Signal (White)	-Signal (White)	-Out (Red)
SHIELD	Shield	Shield	Shield	Shield

*Note: the colors of the wiring of the manufactures can differ from the examples above, check the manufactures website for the correct wiring.*



*Note: when you use a 4 wire load cell, +IN **must** be connected to +VEXC **and** +Sense.  
-IN **must** be connected to -VEXC **and** -Sense.*

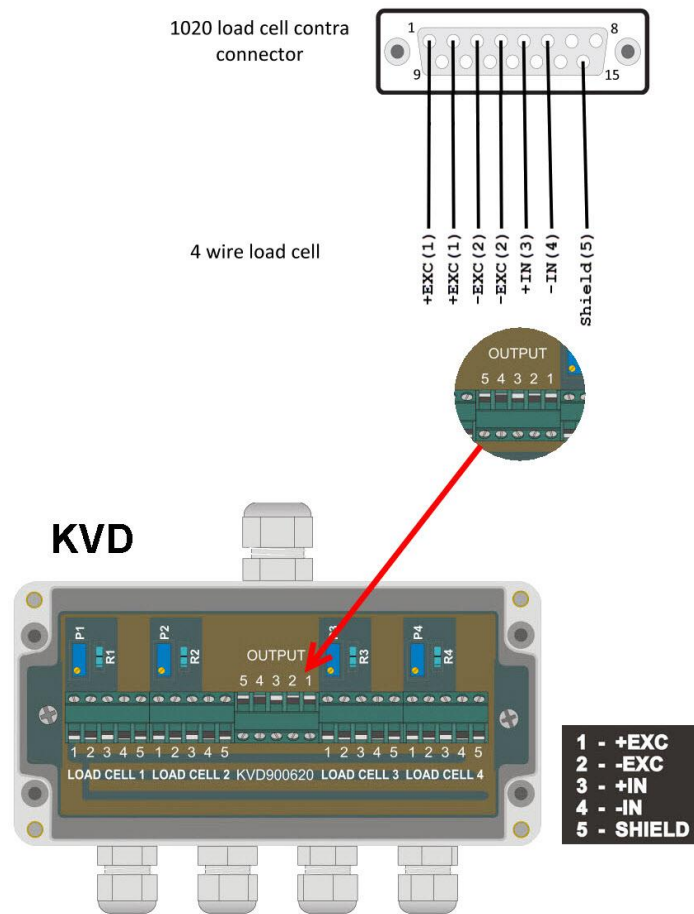
## Connect up to 4 load cells with 4 wires to the 1020 using a KVD

There are generally 2 types of load cells, load cells with 4 wires and load cells with 6 wires. The difference is that the load cells with 6 wires used a sense circuit to measure the input voltage (Excitation) and the load cells with 4 wires don't have this sense circuit. Below are some examples of how to connect load cells with 4 or 6 wires from different manufactures to a 1020.

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+Sense	+IN (Green)	+Sense (Violet)	+Sense (Green)	+IN (Green)
-VEXC	-In (Black)	-V (Black)	-V (Black)	-In (Black)
-Sense	-IN (Black)	-Sense (Gray)	-Sense (Gray)	-IN (Black)
+IN	+ Out (Red)	+Signal (Green)	+Signal (Red)	+Out (White)
-IN	-Out (White)	- Signal (White)	-Signal (White)	-Out (Red)
SHIELD	Shield	Shield	Shield	Shield

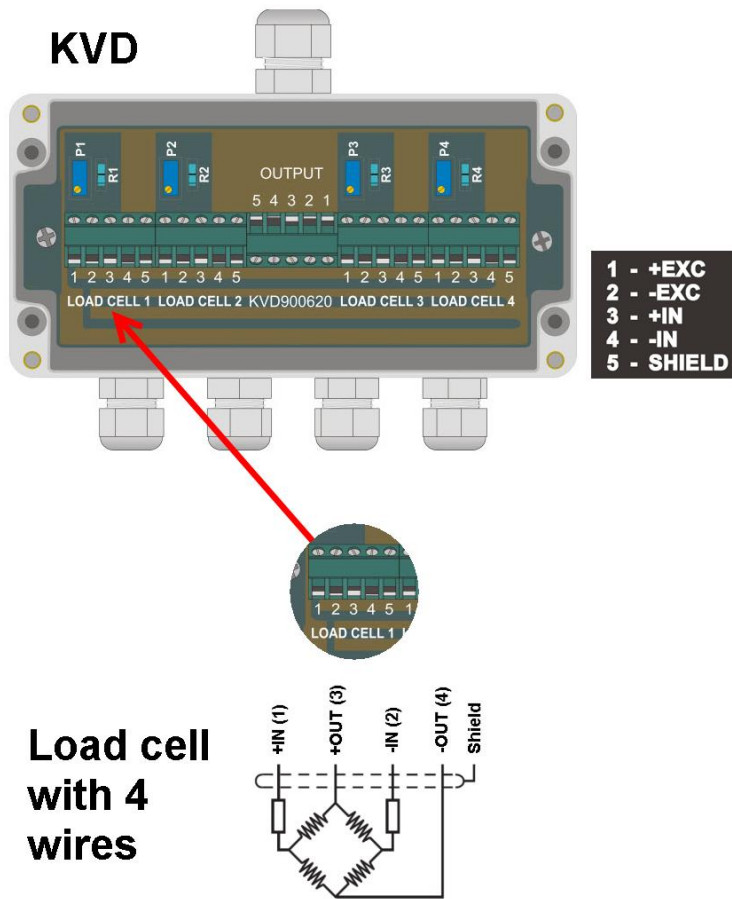
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1020 to KVD connection



PENKO How to...  
Connect up to 4 load cells to the 1020

KVD to load cell connection, connect up to 4 load cells like the example below:



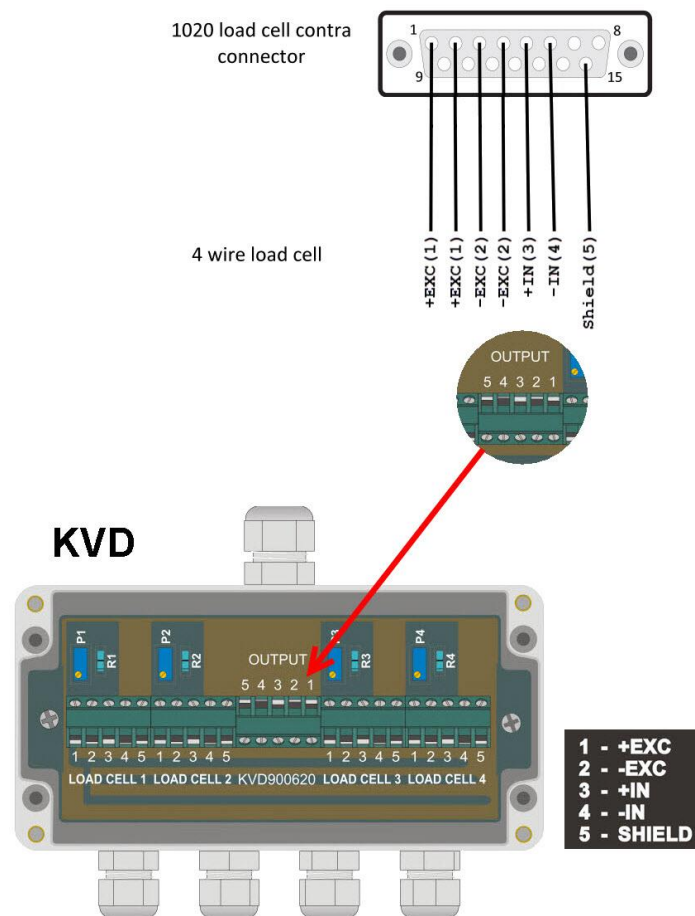
## Connect up to 4 load cells with 6 wires to the 1020 using a KVD

There are generally 2 types of load cells, load cells with 4 wires and load cells with 6 wires. The difference is that the load cells with 6 wires used a sense circuit to measure the input voltage (Excitation) and the load cells with 4 wires don't have this sense circuit. Below are some examples of how to connect load cells with 4 or 6 wires from different manufactures to a 1020.

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+Sense	+IN (Green)	+Sense (Violet)	+Sense (Green)	+IN (Green)
-VEXC	-In (Black)	-V (Black)	-V (Black)	-In (Black)
-Sense	-IN (Black)	-Sense (Gray)	-Sense (Gray)	-IN (Black)
+IN	+ Out (Red)	+Signal (Green)	+Signal (Red)	+Out (White)
-IN	-Out (White)	- Signal (White)	-Signal (White)	-Out (Red)
SHIELD	Shield	Shield	Shield	Shield

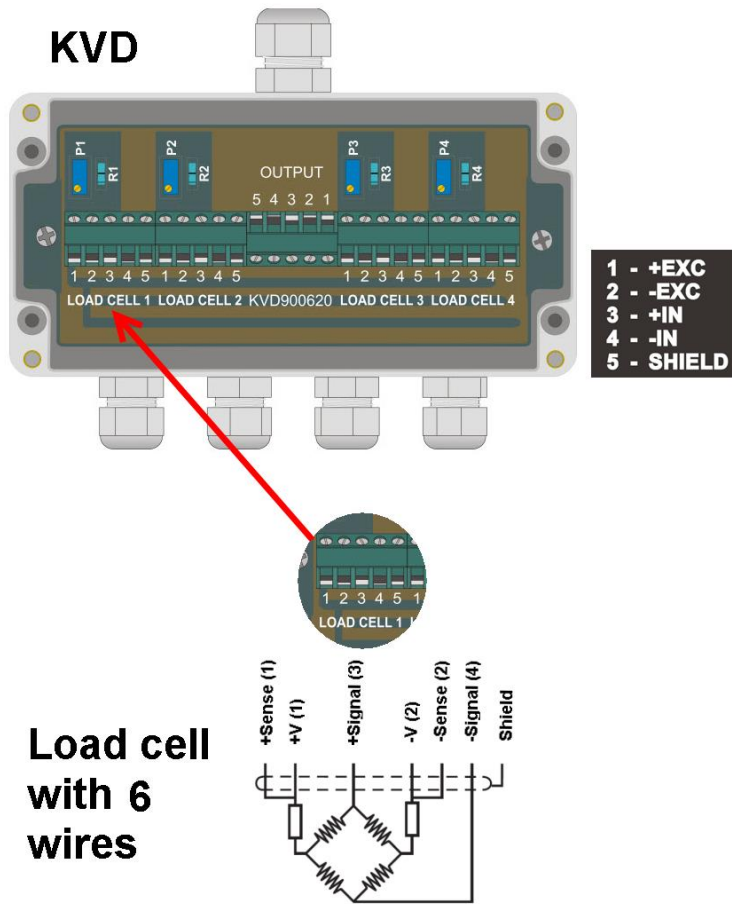
*Note: the colors of the wiring of the manufactures can differ from the examples above, check the manufactures website for the correct wiring.*

1020 to KVD connection



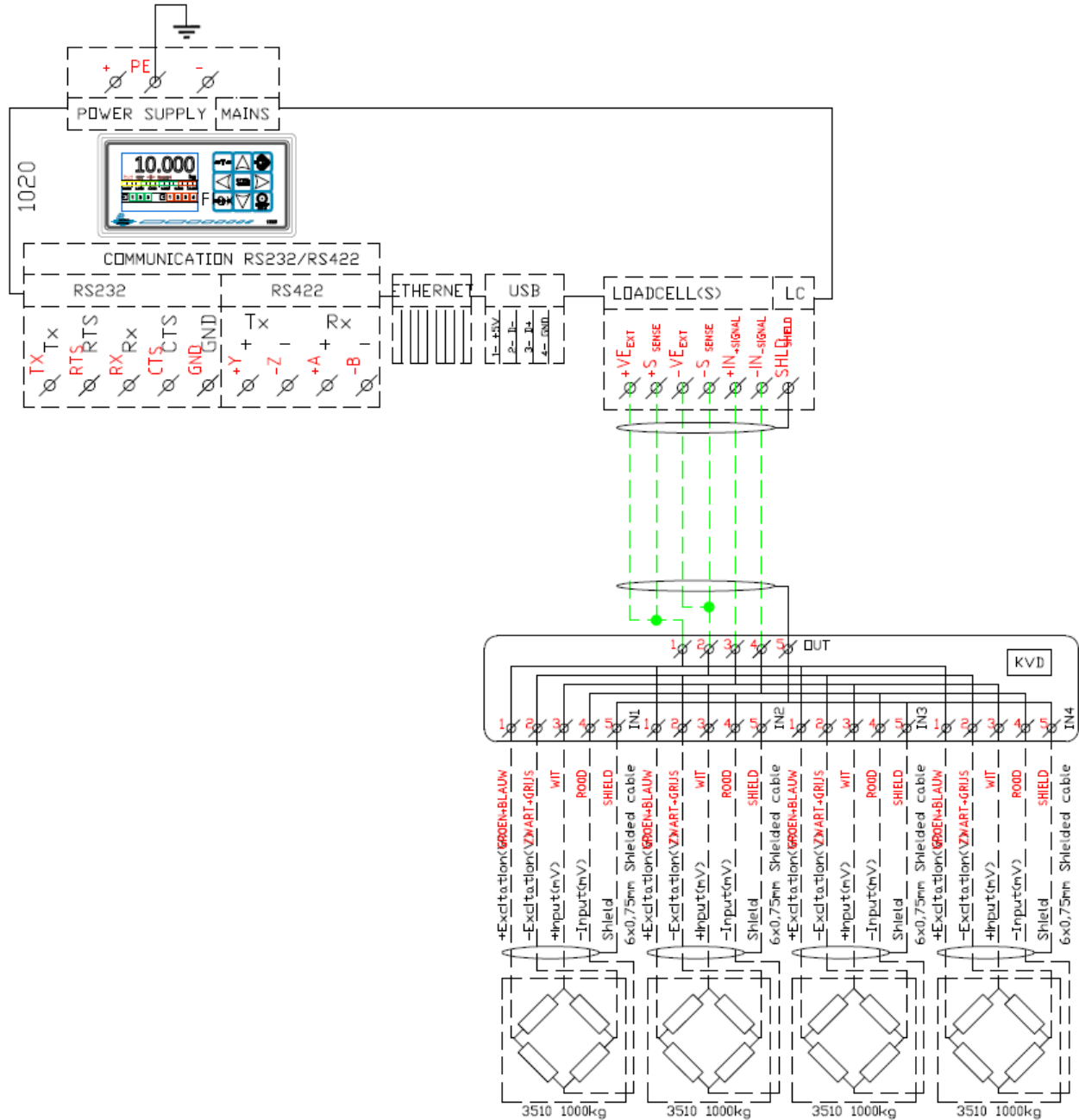
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KVD to load cell connection, connect up to 4 load cells like the example below:



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### Wiring example with 4x Tedeia Huntleigh 3510 loadcells







## 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)

