THERMOCOUPLE CONNECTORS AND ACCESSORIES THAT MAKE YOUR WORK LIFE EASIER

Customizing temperature sensors to suit our customers' needs and wishes is Pentronic's speciality. However, this often involves a total solution that makes it efficient to install, calibrate and demount the sensors in situ in the real world. Pentronic has the necessary knowledge and experience, and can advise on products that can facilitate, improve and simplify the work. One way to do this is to customize the cabling and connectors.

An example of a solution that makes it quick and easy to replace and calibrate thermocouples.

PENTRONIC'S SALES ENGINEER PER BÄCKSTRÖM gives one sample tip about connectors.

Thermocouple connectors are usually 2-pole and problems can arise if it is necessary to connect a ground wire or add a monitor. In such cases, circular connectors are often used but as a rule this means that the connectors become uncompensated. The solution can be to instead use 3-pole thermocouple connectors. These have an extra copper pole that can be used to add a monitor. Another advantage of a 3-pole connector is that it cannot be reversed.

"Another common problem is that thermocouple connectors break," Per continues.

He says there is a very easy solution in the form of a simple pair of clips. These are available for both standard and miniature connectors. One clip is mounted on one of the connectors and then locks onto the other. This makes it unnecessary to use cable ties or electrical tape to ensure a good connection. It is often such small things that can cause the big issues when analysing measurements.

"In a harsh, damp or dusty environment, it can be necessary to add splash guards to thermocouple connectors," adds Lars Grönlund, who is also a Sales Engineer at Pentronic.

He explains that thermocouples have very low signal levels. If thermocouples are a demanding environment with both moisture and dirt, the result can be poor insulation and corrosion to splices and connectors. Then it is a good idea to use a splash guard.

Thermocouple splice with male and female connectors and clips in working position.

Pt100 sensors can usually be spliced with an ordinary connector but thermocouples should preferably not be spliced using an ordinary copper connector due to the risk of creating an uncompensated connection, which will give a misleading measurement result. To solve this issue, compensated connectors are available. These are marked with plus and minus signs at the connection point to minimize the risk of a mix-up. It is also possible to use thermocouple panels, mounted in cabinets or junction boxes, to make it easy to replace sensors quickly and to provide good protection for the thermocouple splices. The panels can also be equipped with splash guards to increase protection against the surrounding environment.

In some cases it can be worth using a junction box or an instrument cabinet when splicing temperature sensor cabling in order to achieve a practical and sturdy splice.

"Yet another good accessory is the cable strain reliever," Lars continues.

Ordinary thermocouple connectors can be used without a strain reliever but to future proof connections, rubber protective sockets and metal cable clamps are available as accessories.

Finally, if you need to splice cabling or install connectors, it is worth using custom-made accessories and connectors for a practical and long-lasting installation.

In the appendix to *Pentronic News* 2020-4 you will find a selection of products from Pentronic's product portfolio of connectors and accessories which cover a few of the most common solutions.

If you need advice and tips about your installations, contact Pentronic and we will help you to find cost-effective solutions that will simplify your work and improve sensor installations in your particular process.

A selection of all the accessories Pentronic supplies as inventory items.