

The easy and efficient method of field termination

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In the realm of circuit board design, board space has always been an important issue for the designer. As technology has progressed, circuit boards have become smaller and denser over time. As a result, space has become increasingly harder to find.

Some components, namely terminal blocks, inherently consume a relatively large amount of board space and therefore, their size can be a significant factor in the overall design. At the same time, industries are moving toward greater levels of automation and integration, which results in greater system complexity. RIA Connect has evolved its product line in parallel with the development of the firm's Springcon and Plugcon series of spring type, pluggable terminal blocks.

For example, in the world of modern lawn maintenance, irrigation design and control is a serious business. A system that can accurately measure and monitor the moisture content of the soil is desirable. The challenge here is to accomplish the task of irrigation in such a way that proper soil moisture content can be maintained in all areas of interest, while promoting water conservation. This type of system can and in most cases does, require a multitude of sensors to detect and measure the presence of moisture in the soil.

Consider how undesirable it would be to go to each sensor site in order to monitor the soils moisture content in that region. How would you know if a sensor was faulty or inoperable in real time, unless you physically checked each one? This is where the terminal block can aid in system monitoring and control. By installing a terminal block, for example the RIA Connect's AST188 series, at a designated control site, the system designer can bring these remote sensors together into one common location. You have now created an easy access point, from which the status of each sensor can be verified and hence monitor the overall performance of the system.

In the example above, you will most likely find many points of termination. As a result, the designer can also implement multi-colored terminal blocks to help reduce the risk of mis-wiring, and the resulting electrical damage that may ensue. This makes for

a more timely installation and again, protects circuits from seeing incorrect signals that may cause damage. You can even code each individual position of the terminal block to totally eliminate the possibility of mis-mating in applications where a pluggable terminal block is used.



A glance at a RIA Connect color-coded Springcon series will aid the technician in the process of installation and eliminate any guesswork when performing maintenance or repair. This translates into saved time, which means saved money. As mentioned above, pluggable terminal blocks are desirable forms of termination as they allow a quick and easy method of removing circuit boards that are either defective or in need of upgrade. These products also inherently eliminate rewiring errors during the reinstallation process. Just mate the pluggable portion of the pair with the associated header and you're back in service. Terminal blocks come in both screw-type (RIAcon series) and spring-type (Springcon series) configurations. There are attributes to both types and some may have more influence on the decision making process than others.

Screw-type terminal blocks are typically lower in cost than the spring-type equivalents, although the price gap is closing thanks to increased volumes that are driving automated assembly programs. In some designs, cost is the key issue, and hence the screw-type is well suited in this case. However, there are tools required to install the wires and secure them in the contact bodies. There is also the potential for the screws to back out over time in applications that are subject to vibration for a long duration. Some discretion is left to the technician for proper installation.

If the incorrect torque is applied, contact resistance values cannot be guaranteed and damage can occur if too much torque is applied. The slightly higher cost associated with spring type terminal blocks typically is more than offset when you consider the amount of time saved in the installation process. It is not uncommon to see install times reduced by half or more when using a RIA Connect Springcon terminal block. These types of terminal blocks are much more immune to vibration and supply a constant and correct contact force to the wire.



This yields a gas tight connection and hence eliminates the formation of oxidation that may otherwise occur due to the creation of corrosive gases. Terminal blocks are used throughout the world. In Europe especially, special consideration to material makeup conforming with RoHS regulations is of concern.