

For more space and safety, and a better overview of your cabinets

Covestro AG and SBM Steuerungsbau- und Montage GmbH use terminal blocks for SIGNAL marshalling (PRV) from Weidmüller

Space in the cabinet has been scarce for quite some time, and highly sought after. Increasingly complex requirements for automation processes and growing demands in terms of monitoring and recording operational data have also led to an ever-increasing number of sensors and measurement devices in the field for the process industry – while a clear overview, safety, and easy handling still remain important. To update the substation in its production, Covestro AG worked with partners including cabinet specialist SBM Steuerungsbau- und Montage GmbH. To implement increased customer requirements in some areas, they used components such as terminal blocks for SIGNAL marshalling (PRV) from Weidmüller. This allows them to create an extremely compact, yet easy to understand cabinet design.

Covestro is one of the world's leading manufacturers of high-tech polymer materials. Products and application solutions from the company are used in many areas of modern life. Covestro's portfolio includes preliminary products for polyurethane foams and the high-performance plastic polycarbonate, as well as preliminary products for varnishes, adhesives, and sealants and speciality products like films. When updating one of its largest production systems, the company completed a comprehensive overhaul of the entire control and wiring technology step by step during ongoing operation.

In the old substation, the signal lines were installed on the signal strips with cable lugs or soldered contacts, and routed from there to the control units. This solution made wiring more complex, required a large amount of space, and made maintenance work more difficult. Contacts needed to be re-soldered in some cases, and troubleshooting and measurements inside the system were difficult to carry out, since measurement points were too far apart between the signals. All in all, this design did not meet Covestro's needs for a modern cabinet.

SBM Steuerungsbau- und Montage GmbH from Niederkassel handled renovations for the cabinet. The goal of the revisions was to achieve a high level of wiring density, in which the signals could be connected in series in an easy-to-understand way. Due to the increased requirements that apply in the chemical industry, in some parts of the system the terminal blocks also needed to fulfil intrinsic safety requirement EX i under IEC/EN 60079-11.

“With PRV terminal blocks from Weidmüller, we were able to achieve our desired goals and fulfil the high requirements. PRV terminal blocks with a checkerboard pattern structure the terminal block and also save a huge amount of space” says Plant Manager Özden Aydemir from SBM Steuerungsbau- und Montage GmbH.

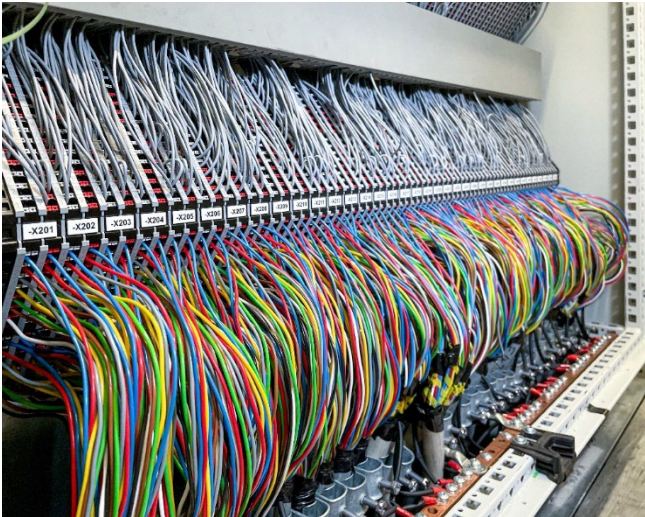
In addition, the SIGNAL marshalling terminals use secure PUSH IN connection technology. The PUSH IN double connection ensures simple potential distribution and serves as a separate test point. PUSH IN provides users with a reliable, vibration-resistant, and gas-tight connection quickly. To do so, the prepared conductors are simply plugged in into the terminal points. This connection technology also offers high conductor pull-out forces and vibration resistance. In comparison to other connection technologies, PUSH IN also delivers a high level of wiring density with excellent operating comfort. Up to 16 levels with a total of 64 PUSH IN connections make it possible to wire a large number of signals in the smallest possible space. To provide the best possible orientation – even during expansion and maintenance work – clear matrix designations and red and white actuation elements make it possible to arrange the distribution board terminal blocks clearly, for error-free signal assignment. With their V-shape, the current bars of the PRV compensate for different coefficients of material expansion between the plastic terminal base and copper current bar, and always ensure low transition resistances that are stable over the long-term – even in case of temperature fluctuations or changing climatic conditions. A snap-on foot stop prevents overextension during installation, and ensures the terminal block sits firmly on the DIN rail.

Mr Marius Bernau, Maintenance Management Covestro, is excited: “Thanks to the use of PRV terminal blocks, we were able to create over 8,800 connection

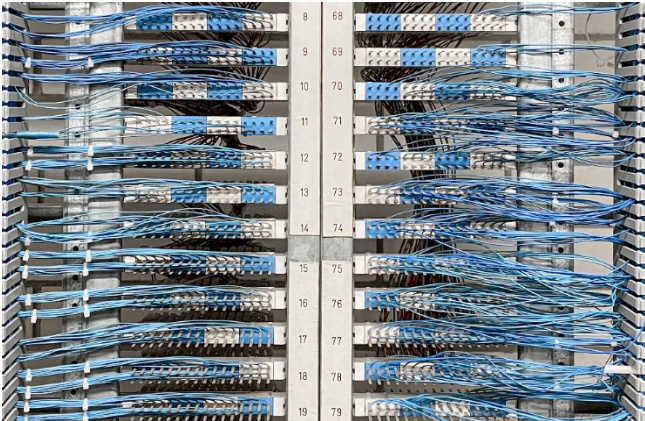
points on less than two meters of terminal rail. And all without restricting the overview and ease of handling”.

The space savings are also impressive: in comparison to the old system, the new one achieves an average reduction of 40 percent. This means that fewer new cabinets are set up in the overall substation, generating several square meters of added space which can now be used for other purposes.

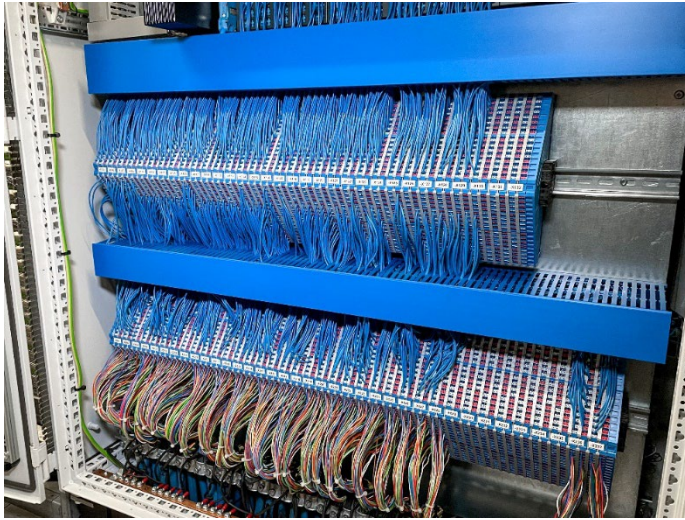
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Up to 8,800 connection points on only two metres of DIN Rail



Previous wiring by using of cable lug and solder contact



New and optimised wiring using Weidmüller PRV terminal blocks

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