

SNAP INto the future

Handling of Weidmüller SNAP IN components in robot applications

Growing shortage of skilled workers, more complex systems, increasing price pressure – the requirements in control cabinet construction are constantly increasing. In order to remain competitive in this environment, panel builders have to rethink their processes and make them more efficient. This applies in particular to the wiring and the selection of the associated connection technologies. The optimal solution is called SNAP IN – currently the fastest and most secure connection technology on the market. With SNAP IN, companies save time and manpower. At the same time, they are well prepared for the requirements of the future, because SNAP IN is „ready to robot“. That means: As the first connection technology on the market, it enables easy automation of wiring processes in control cabinet construction. In this guide we give you a first insight into the handling of SNAP IN components in robot applications.

1. Use of Data Models

Automated assembly and wiring with SNAP IN connection technology requires a solid foundation of digital data. To integrate our products into your designs, we therefore provide you with digital product data for EPLAN, Zuken E3.series, WSCAD and other engineering systems. Configuration solutions such as the Weidmüller Configurator (WMC) also provide you with additional product-specific information and information on automated processes in engineering, production and process planning. The information provided contains precise data sets for the individual function points and enables automated wiring processes to be implemented. The product-specific data includes in particular precise information on:

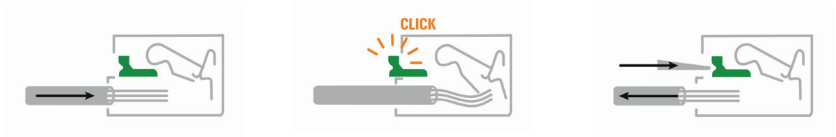
- Permissible conductor cross-sections, stripping lengths and insertion depths
- Coordinates and vectors of the function points
- Collision and gripping points for industrial robots
- Additional descriptions such as component type or item number, weight, etc.

2. Automated assembly

Products with SNAP IN connection technology are the optimal solution for automated assembly and wiring processes in switchgears. The contours of our SNAP IN terminal blocks and -PCBs are designed to be easily gripped and assembled by industrial robots. Their symmetrical outer contours and the flat side surface without protrusions make the connection areas freely accessible. Product-specific details such as the standardized snap-on foot of our terminal blocks that is flexible on one side, support quick and easy assembly. In addition, there are self-locking mechanisms or clearly coded plug pairs for particularly uncomplicated and error-free wiring of the SNAP IN connectors.

3. Contacting

Contacting is child's play with the SNAP IN connection technology. Simply insert the stripped rigid or flexible conductor into the terminal point. Push it forward until the spring mechanism releases with an audible click. The conductor is permanently contacted immediately. When inserting the conductor, 100% exact positioning is not absolutely necessary. As soon as the insertion funnel is reached, the conductor is automatically aligned in the terminal point, guided correctly and fixed in a flash. This is a particular advantage for automated wiring, because the conductor only has to be inserted by the robot and pushed forward to the release point of the spring mechanism. Additional force monitoring can increase process stability during insertion.



4. Connection check

A final connection check ensures that the wiring was successful. With the SNAP IN connection technology, incorrect wiring is almost impossible thanks to the intuitive handling. As soon as the powerful spring mechanism is triggered, the conductor is contacted. In contrast to conventional connection technologies, SNAP IN products use visual and haptic indicators to reliably identify whether the connection has been made correctly:

- Clearly audible click when releasing the spring mechanism
- Clearly recognizable position of the pusher with correct wiring
- Noticeably tight fit of the conductor during the pull test

"Due to digitization and automation, control cabinet construction is currently experiencing rapid development. With the purchase of a Weidmueller RailAssembler, we have already taken the first step towards automated control cabinet construction. The terminal blocks with the innovative SNAP IN technology now pave the way for automated wiring in the near future."

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