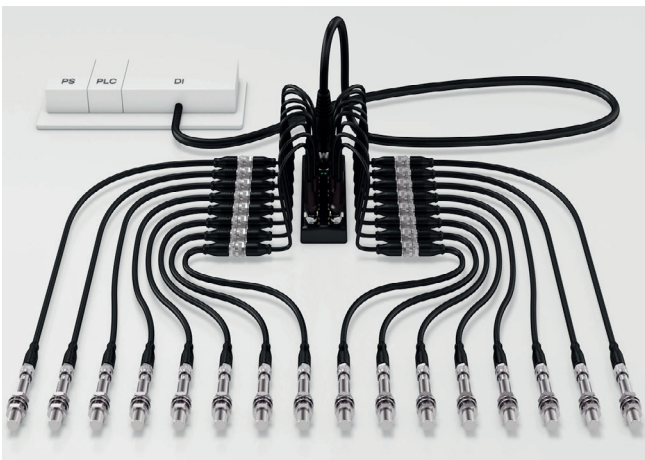


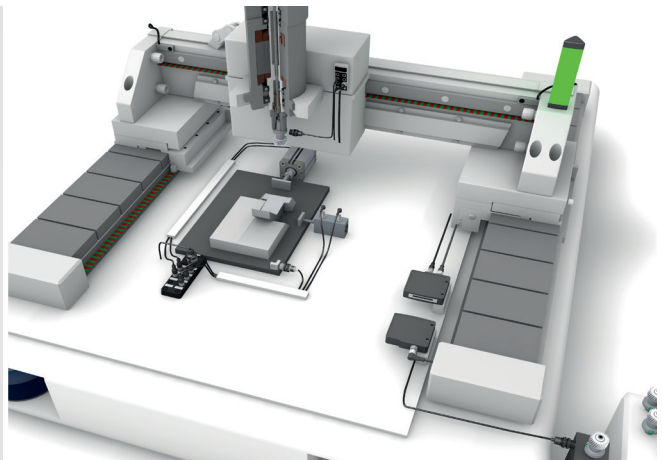
Connecting and Networking – Wiring with junction blocks

HOW DATA TRANSPORT THROUGH PASSIVE DISTRIBUTORS WORKS

In the years after its invention, the controller (PLC) was only wired directly to the controlling devices, often using terminal strips. The devices were distributed throughout the machine. This meant the wiring was quite cumbersome and prone to mistakes. This led to the development of junction blocks. We will show you how to use these to combine cables from multiple devices and reduce everything to a single cable.



Wiring devices to the PLC using a junction block



Use of a junction block in the field

By bundling multiple sensor/actuator cables into one junction block, you reduce the number of cables that have to be routed into the control cabinet. The number of wires for signal transmission is not, however, reduced. This is because the cable between the junction block and control cabinet contains the sum of all wires between the junction block and the devices.

Junction blocks are often equipped with status LEDs for indicating the device status. This is very helpful in localizing faults in a system.



Junction block in M8 with cable connection (8 slots)



Junction block in M12 with hood connection (8 slots)



Junction block in M12 with plug connection (4 slots)



M23 connector between junction block and PLC

There is a wide variety of junction blocks. These differ, for example, in the connector size (M8 or M12), in the connection to the PLC (cable, hood or plug) and in the number of slots (4 to 10). They are mostly made of plastic. An LED tells you the status of the connected devices. Appropriate connectors are available for connecting between the junction block and the PLC as well as between junction blocks and devices. Both cables are used for supply voltage for the junction blocks and devices (unidirectional) and for signal transmission between junction blocks and the PLC (bidirectional).