



Digital Wire Harness Manufacturing

Perfectly Wired: Custom Pre-Assembled Wire Harnesses for
Control Cabinet Manufacturing





Wire Harness Manufacturing in the Digital Age

Manual Wiring Is a Thing of the Past – Efficiency Starts with Pre-Assembled Wire Harnesses

“A typical circuit diagram can run to around 400 pages and may need to be consulted repeatedly during wiring.”

In the context of Industry 4.0, the demands on control cabinet manufacturing are increasing: Tailored solutions, short lead times, high flexibility, and consistently high quality are in demand. However, a shortage of skilled workers and time-consuming manual processes are making it increasingly difficult to meet these requirements consistently.

Our fully digitized and automated wiring harness production creates the basis for an end-to-end digital workflow.

All relevant steps are digitally mapped – from design and inquiry through validation checks and quotations to production. This creates a seamless data flow that shortens processing times and reduces sources of error.

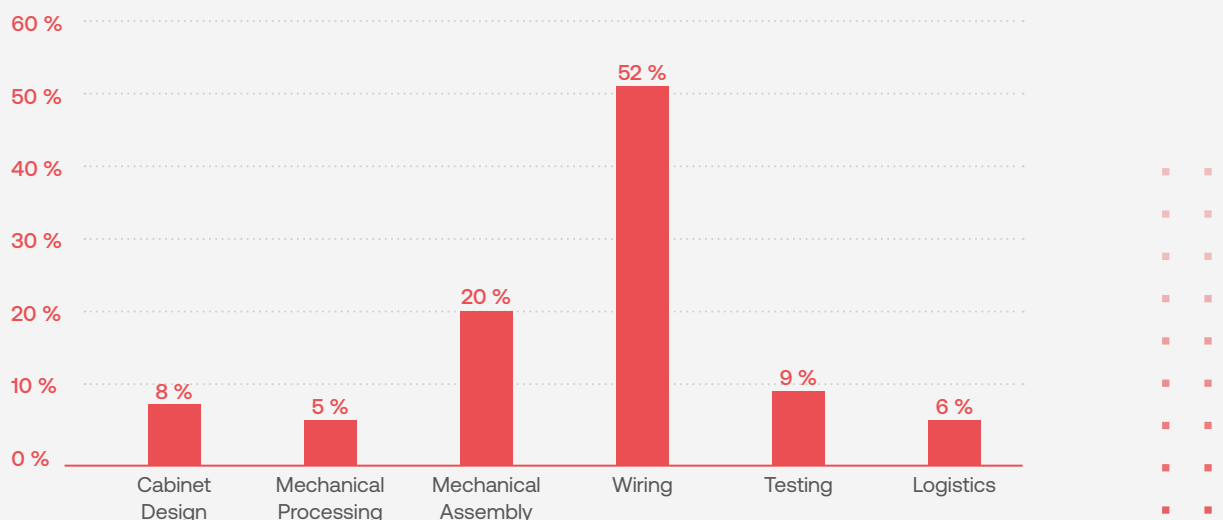
Your benefit: a faster, more cost-effective, and more predictable wiring process – with greater process reliability, reproducible quality, and more time for higher-value work.

“Reduce Wiring Effort by up to 50%”

With pre-assembled and custom-labeled wire harnesses, manual assembly is largely eliminated.

Control Cabinet Manufacturing – Key Facts

Percentage of the total cost of manufacturing a control cabinet:



Manual Wiring is a Thing of the Past

Efficiency starts with pre-assembled wire harnesses

Up to 80% Time Savings Across the Value Chain

Automated processing steps – from cutting to length, stripping, and labeling to crimping – produce ready-to-install wire harnesses. Manual assembly is eliminated, assembly and logistics processes are accelerated, and the risk of errors is reduced.

Lower Overhead Costs, Greater Predictability

From item creation and approval through procurement, storage, and order picking to work planning, manufacturing, and inspection, the entire process is significantly simplified. This reduces indirect costs and improves predictability.

Produce more Control Cabinets with the Same Capacity

Automated wire preparation frees employees from time-consuming manual tasks. The capacity this frees up can be redirected to more demanding, higher-value tasks.

Shorter Order Lead Times

From design and master data maintenance through procurement and production planning to manufacturing and quality control, the overall lead time is reduced. Fewer manual steps, intermediate storage, and internal transport result in measurable time and logistics savings.

Consistent Quality Through Automation

A seamless digital data flow minimizes manual data entry and the associated sources of error. Automated manufacturing ensures consistently high product quality. Integrated crimp height and pull-out force measurements support process reliability.

Reduce Complexity with a Comprehensive Solution

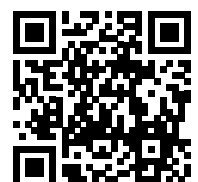
From plausibility checks, design, and material procurement to warehousing, work planning, and manufacturing, all the way through to quality control and delivery, you receive all services from a single source. This reduces interfaces, process costs, warehouse space, and the number of order and picking items.



Digital Wire Harness Manufacturing

Our digital and automated circuit board manufacturing process covers the entire workflow—from data upload, through plausibility checks and quoting, to ordering and production. Manual steps are reduced, which shortens turnaround times, increases process reliability, and ensures consistently high, repeatable quality.

Go to the
Online Wire Set
Configurator



From now on, it's all digital

The Benefits of Automated Wire Harness Manufacturing



Faster Workflows Through Production-Oriented Bundling

The wire harnesses are prepared and bundled in the order required for production. This reduces the time spent searching for and sorting components and speeds up the wiring process.

A Professional Appearance Through Organized Wire Bundling

Organized bundling ensures clear routing within the wiring channel. The result is a neatly structured and professional overall appearance.

Cost Optimization Through Ultrasonic Compaction

Ultrasonically compacted copper wires combine the stability of a solid conductor with the flexibility of a stranded wire. The optimized manufacturing process can yield additional cost savings of approximately 15%.

Faster Wiring Thanks to Individually Labeled Wires

Information such as the start and end points can be printed directly onto the individual wires. This speeds up wire assignment and wiring and reduces the need to frequently consult the circuit diagram.

Greater Process Reliability Through Precise Individual Wire Marking

In the automated manufacturing process, all wires are marked exactly according to the specified data. This improves traceability and supports unambiguous wiring procedures.

Correct Sequence Through Automated Wire Sequencing

Intelligent sequencing automatically arranges interconnected wires in the required installation order. If necessary, the installation of twin ferrules can also be automated.

Your Perfect Wire Set – in Just a Few Clicks

How the Online Wire Set Configurator Works

With our online configurator, you can easily take advantage of modern, digital control panel construction. Custom wiring sets can be configured online, automatically checked for validity, priced, and ordered directly. The saved data is then available for reorders and modifications.



01

Registration

Register once and start configuring right away.



02

Configuration

Enter wire data or upload existing data.



03

Verification & Quote

Automatic validity check and immediate quote generation.



04

Ordering & Delivery

Order directly and receive the finished wire set within seven days.



05

Easy Reordering

Your information is saved and can be reused for reorders or modifications.

The Future of Control Cabinet Manufacturing Starts Now

Reach Your Goal Faster with Pre-Assembled Cable Sets

01

Easy Procurement

Configure custom cable assemblies anytime, anywhere using our online configurator. Automatic validity checks and quote generation streamline internal coordination, item creation, and procurement processes.



02

Reduce Warehousing and Logistics Costs

Reduce the need for warehouse space and simplify the picking of individual components and tools. This allows you to significantly reduce warehousing and logistics costs.

05

Faster Order Processing

Shorter turnaround times increase planning reliability and support more efficient order processing.

04

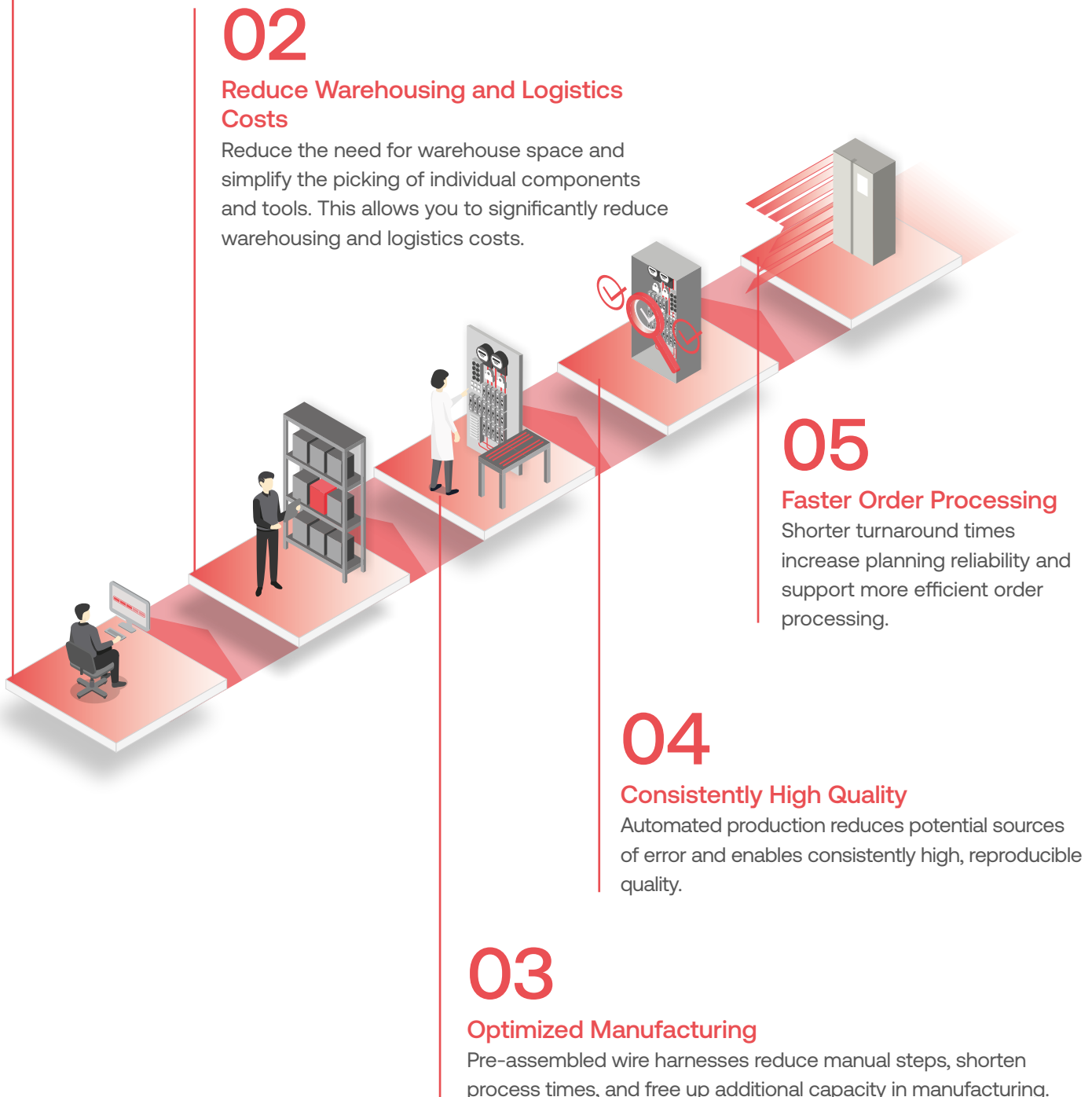
Consistently High Quality

Automated production reduces potential sources of error and enables consistently high, reproducible quality.

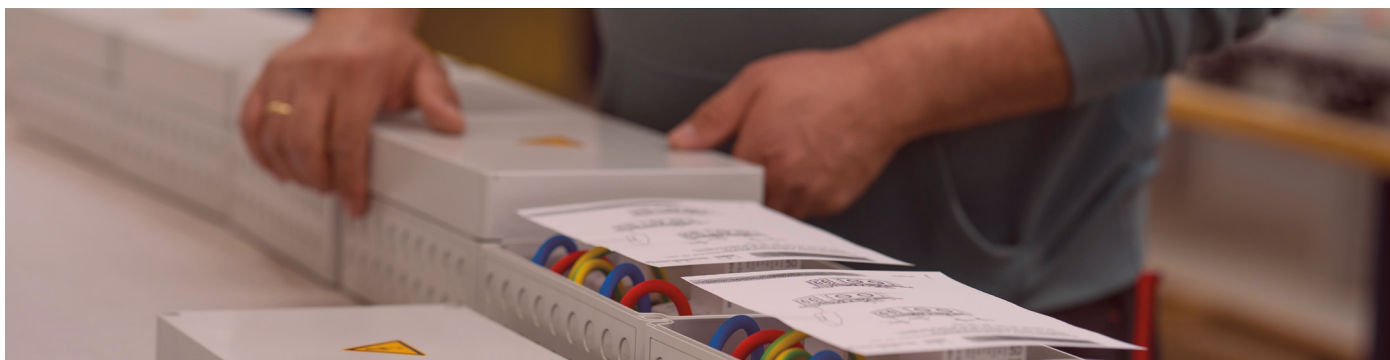
03

Optimized Manufacturing

Pre-assembled wire harnesses reduce manual steps, shorten process times, and free up additional capacity in manufacturing.



Everything from a single source



Our Value Proposition

We digitally integrate engineering, production planning, and manufacturing.

From planning and data import to the complete wire harness, you receive all services from a single source. We manufacture according to your individual requirements or reliably integrate existing designs into our digital manufacturing process.



Significant Time Savings

With pre-assembled, ready-to-use wire harnesses, the amount of wiring required can be reduced by up to 50%, depending on the project and the initial situation.



Consistently High Quality

An integrated quality control system ensures reproducible manufacturing processes and consistently high product quality.



Cost-Effective Even for Small Batches

Thanks to automated manufacturing, we produce cost-effectively and efficiently even for single-unit orders – including custom wire sets.



Significant Cost Savings

Optimizing the value chain reduces internal effort, simplifies processes, and conserves valuable resources.



Maximum Process Reliability

Automated labeling and precise processing of each individual wire ensure reliable and traceable wiring.



Customized Turnkey Solutions

With our extensive expertise in manufacturing and automation, we produce custom wire sets manufactured to your specifications – from data transfer and material procurement to on-time delivery.

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