



# ZETA 630

harness manufacturing



**komax** WIRE

## ZETA 630

With the Zeta 630, control cabinet construction becomes an efficient, just-in-time activity. Wire processing is highly productive from a batch of 1 thanks to the economical automation process. Automated processes plus batch or sequence production without changeover shorten the manufacturing time by up to 50 percent. The automatic wire selector makes available up to 36 different cables and the CM 1/5 GS module processes as many as five different ferrules. Reliable fully automatic production assures consistently high quality.

### Efficient automation process

- Manufacturing time reduced by up to 50% thanks to automation
- End-to-end data flow from ECAD or DLW to the machine
- Efficient just-in-time production from a batch of 1 and up
- Wiring simplified by optimum wire deposit

### High productivity

- Batch or sequence production without changeovers
- Automatic wire selector with up to 36 different cables
- Automated marking of cable with inkjet marking
- Processing of five different ferrules with one CM 1/5 GS module

### Reliable processing of maximum quality

- Large cross section range: 0.22 mm<sup>2</sup> to 6 mm<sup>2</sup>
- Modules and components of premium quality
- Consistently high quality thanks to fully automatic production

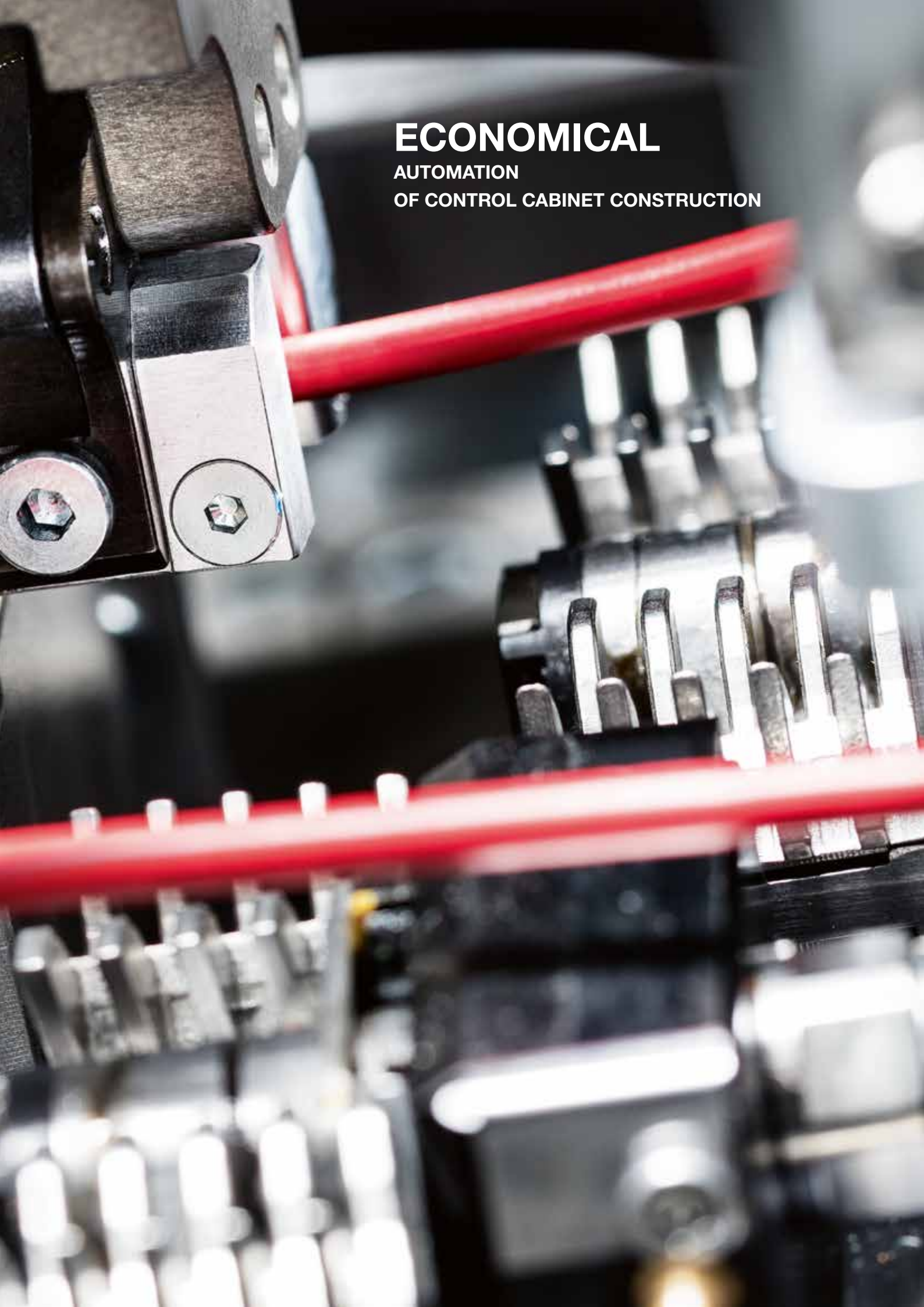
► Absolutely precise processing thanks to special cutting head and trimming unit.



# ECONOMICAL

AUTOMATION

OF CONTROL CABINET CONSTRUCTION



# HIGH PRODUCTIVITY FROM A BATCH OF 1 AND UP

## **Required time reduced by up to 50 percent**

Manual processes take time. The Zeta 630 reduces manual work to a minimum. It processes all required cables automatically and provides them fully equipped in the correct order and length – complete with marking and terminals. The only remaining step is to lay the cables in the control cabinet. Manual processes such as cutting to length, stripping, marking and sleeve attachment are all eliminated.

## **End-to-end data flow from ECAD to the machine**

Production data can be sent over the Komax interface WPCS from specific ECAD systems directly to the machine. Data can also be exported from the ECAD systems in a cut list. It is converted to readable data and scanned. That eliminates the need for manually programming articles in the machine. This approach is highly efficient with batches of any size – even with a batch of 1.

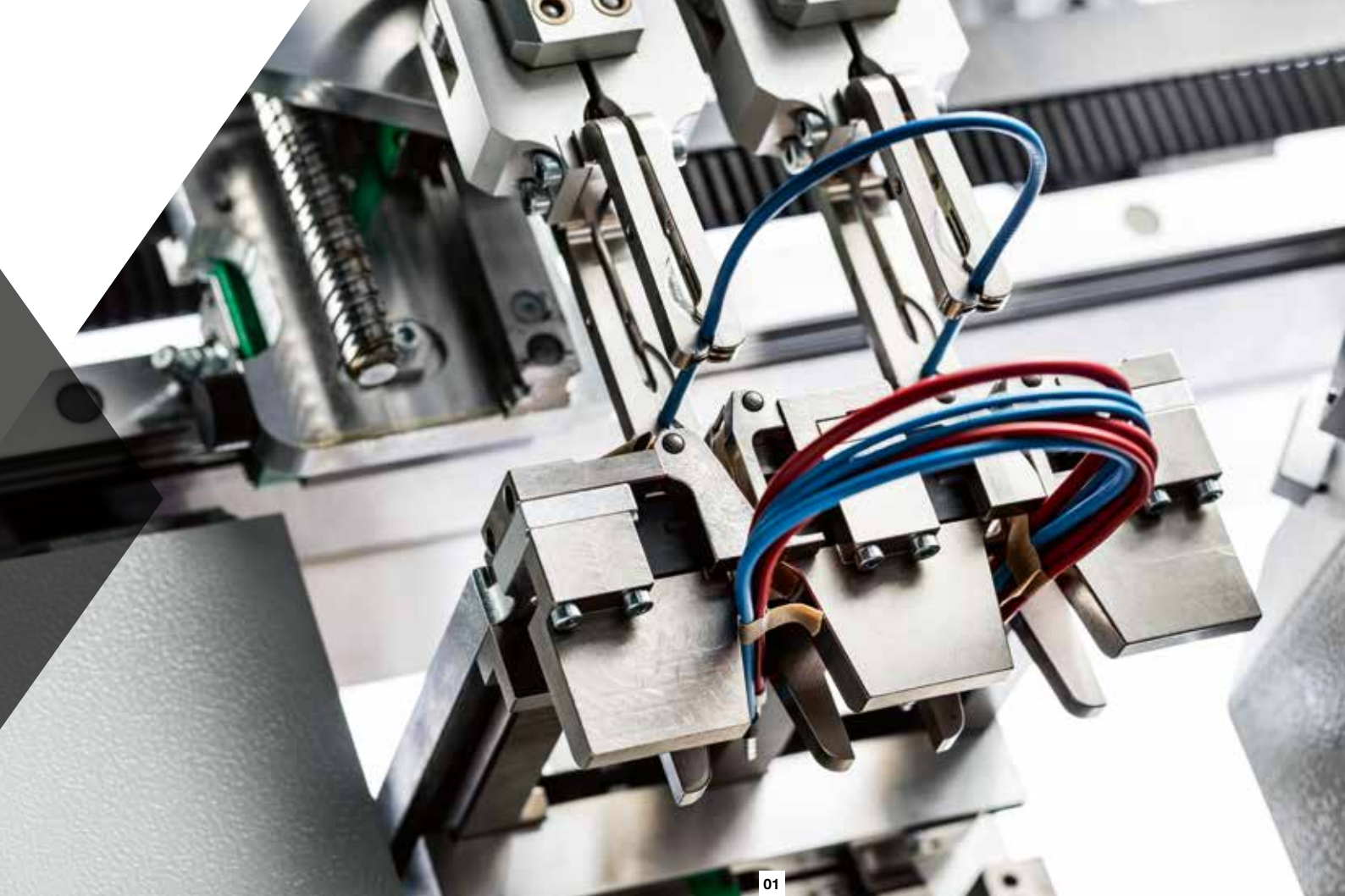
## **Consistently high quality thanks to automation**

Fully automatic production assures reproducible, continuous quality. Automated data transfer eliminates error sources because no manual entries are required to be made on the machine. Optional quality monitoring modules are available to meet the most exacting requirements.









01

**01**  
The flex bundler sorts and binds the batches in a single process step.

02

**02**  
Up to 36 different cables from the entire cross section range are available in the wire selector.



### **Wiring simplified by fully tried-and-tested deposit**

Cables can be produced, sorted and bound in one process step in ideal order for subsequent wiring. The fully automatic flex bundler wire deposit simplifies and accelerates the laying of cables in the control cabinet. The batches can be taken out while production is going on. The binding method can be defined as desired for each cable depending on the production mode (batch or sequence processing).

### **Reliable sequence processing**

Thanks to the special cutting head featuring three pairs of blades, cross sections from 0.22 mm<sup>2</sup> to 6 mm<sup>2</sup> can be processed perfectly in sequence. The top-quality, durable blades and components enable high processing speeds, which reduces throughput times accordingly.

### **Required materials available at any time**

Control cabinet construction involves diverse variations that require many different types of materials such as wire types, terminals or ferrules. They are all available on the Zeta 630 without changeover. Up to 36 different cables from the entire cross section range are provided in the automatic wire selector. The automated marking system labels the cables in an optimum manner and the ferrule module subsequently fits them with up to five different terminals.

03

With the unique CM 1/5 GS, up to five different ferrules can be processed with a single module.

03







### Innovation push for control cabinet construction: CM 1/5 GS ferrule module

The module accommodates five taped AEH rolls at the same time. The available positions can be assigned as desired and sequentially processed. This can be done over the full cross section range of 0.5 mm<sup>2</sup> to 2.5 mm<sup>2</sup> and in the lengths 8 mm and 10 mm. Consequently, five different types of ferrules can be processed very flexibly and without changeovers. The module is uniquely compact and readily accessible. No tools are needed to insert the AEH rolls and no tool change is required.

### Technical data for CM 1/5 GS

Operating pressure	6 bar
Air consumption	0.72 L per cycle
Voltage	100 – 240 V
Frequency	50 / 60 Hz
Power input	100 VA
Continuous sound pressure level	≤ 70 dB (A)
Dimensions (W × D × H)	260 × 540 × 490 mm
Weight	26.5 kg
Sleeve length	8 mm / 10 mm
Taped Z+F ferrules	0.5 – 2.5 mm <sup>2</sup>
Crimp shape	Quadro



### The simple alternative

In order for the control cabinet construction process to be automated, the first step is to collect the production data, including the cable length. The DLW (Digital Lean Wiring) software developed by Komax offers the ideal solution for this with its clear focus on simplicity and flexibility.

### Virtual wiring

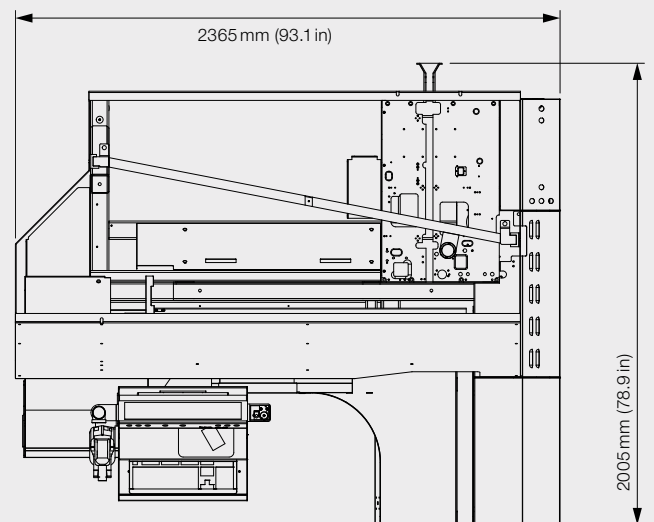
In the DLW software, the technician uses an image or a 2D drawing to wire the cables virtually on the screen. This is a highly efficient method of determining the cable length per connection. After that, the production data is converted and uploaded to the wire processing machine, which produces the ready-to install cables.



## Technical data for the Zeta 630

Length range with two-sided processing	240 – 3000 mm standard tray (9.45 – 118 in.) 240 – 5000 mm (9.45 – 197 in.) (optional)
Length range with one-sided processing	85 – 3000 mm standard tray (3.35 – 118 in.) 85 – 5000 mm (3.35 – 197 in.) (optional)
Stripping lengths	0.1 – 25 mm (0.0039 – 0.98 in.) with full strip 0.1 – 42 mm (0.0039 – 1.65 in.) with half strip
Wire cross sections*	0.22 – 6 mm <sup>2</sup> (AWG 24 – 10)
Number of stations	2
Wire feed speed	Maximum of 10 m/s (33 ft/s)
Wire selector	Maximum of 36 cables (in increments of six cables)
Noise level	< 80 (without crimp modules)
Electrical connection	3 × 208 V – 480 V 50/60 Hz; 3 kVA (basic machine)
Pneumatic connection	5 – 6 bar (73 – 87 psi)
Air consumption	7 m <sup>3</sup> /h, (247 ft <sup>3</sup> /h) (without modules)
Weight	About 1.7 t (3748 lbs)

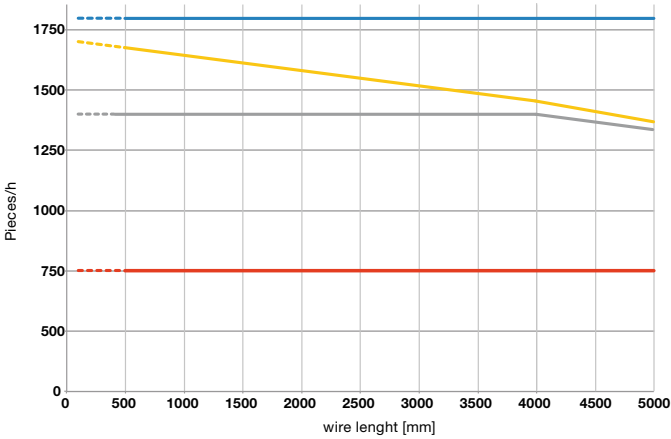
\*Certain extremely hard, tough wires may not be able to be processed even if they are within the indicated cross section range. In case of doubt, we are happy to produce samples of your wires.



Machine height with safety cover closed 1990 mm (78.3 in)  
Machine height with safety cover open 2870 mm (113 in)





◀ **The automatic marking system for two different inkjets marks the cables in an optimum manner.**

Piece output

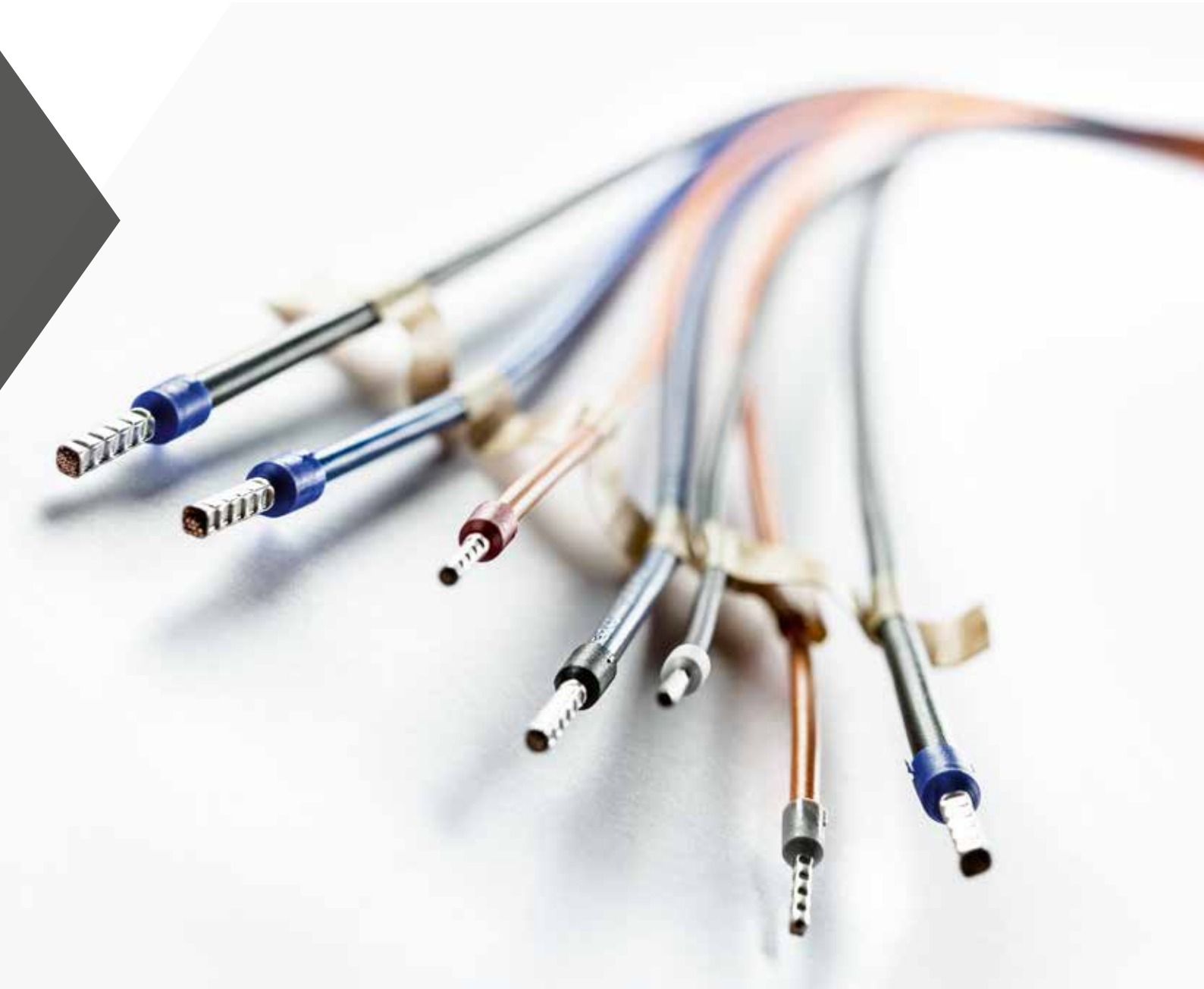


Wire speed	10 m/s
Crimping module	C1370
Ferrule module	CM 1/5 GS

The effective output may vary with application and machine configuration.

-  Strip/strip
-  Strip/strip with wire selection movements (12 positions)
-  Ferrules/ferrules with wire selection movements (12 positions)
-  Crimp/crimp with wire selection movements (12 positions)

The cables are bound in the right order, which simplifies wiring in the control cabinet.





## Options and accessories

Marking systems	Komax IMS inkjet marking systems • Automatic inkjet head changer
Wire feed	Expandable wire selector
Processing modules	C1370 crimping module (with programmable crimp height) • MIL crimp • Ferrule module • Ultrasonic compaction
Quality control	Integrated crimp height measurement • Integrated pull-out force measurement • CFA/CFA+ crimp force analysis • Splice monitoring
Accessories	Uninterruptible power supply • Signal light
Software	WPCS networking interface • TopConvert data conversion • KomaxCAO control stand • DLW

## Processing examples

Cutting to length		Crimp force analysis	
Cutting pulled strands		Integrated crimp height measurement	
Full stripping		Integrated pull-out force measurement	
Half stripping		Wire length correction	
Double sheath cable		Splice monitoring	
Crimping		Good/bad separation /cutting of bad parts	
Split cycle for closed terminals		Sequence	
Ferrules crimping		Batch size separation	
MIL-Crimping		Networking (control stand, WPCS)	
Wire-end compaction		Material verification	
Inkjet marking		Wire selector	
Wire feed		Programmable crimp height	
Wire deposit system/binding			



## Komax Wire – industry leader today and in the future

As the pioneer and market leader in the field of automated wire processing, Komax Wire provides its customers with innovative and sustainable solutions for any situation that calls for precise contact connections. Komax Wire manufactures machinery and equipment for various industries, catering for every conceivable degree of automation and customization. Its range of quality tools, test systems and intelligent networking solutions complete the portfolio, and ensure safe and efficient production. The Swiss company, which has operations all over the world, develops and manufactures its products at various locations. Its extensive distribution and service network supports customers locally in more than 60 countries through standardized service processes, while ensuring the ongoing availability and value of these customers' investments once the equipment has been put into operation. The Swiss company Komax Wire is part of the international Komax Group, which employs approximately 1500 people.



### Market segments

**Komax Wire offers outstanding competence and solutions for various areas of application and draws on them to generate the desired value-added for the entire process and optimize economic efficiency in line with customer requirements. The main markets of Komax Wire are as follows: automotive, aerospace, industrial and telecom & datacom. With this breadth of experience, customers obtain expert knowledge for process optimization and access to the latest technologies.**



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