



Alpha 488 S

Twisting in a new dimension

komax



Alpha 488 S produces fully automatically Twisted-Pairs out of two single bulk wires completely cut-to-length and terminated, with all quality controls included. The modular composition of the system provides superb flexibility. Four processing stations at the wire beginning and two at the wire end offer extensive processing possibilities.

Highest flexibility

The machine layout accommodates up to six processing stations. Wires with cross sections ranging from $2 \times 0.22 \text{ mm}^2$ (AWG 24), optionally from $2 \times 1.3 \text{ mm}^2$ (AWG 26), to $2 \times 2.5 \text{ mm}^2$ (AWG 14), (processing set short open ends up to $2 \times 1.0 \text{ mm}^2$) can be processed in the highest quality.

Alpha 488 S is available in the versions of four, seven and ten meters.

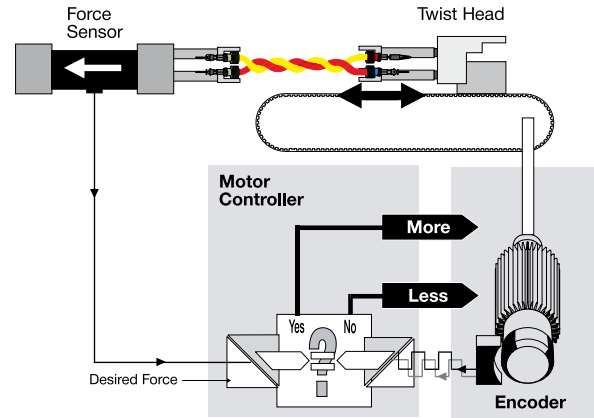
In combination with the Komax crimp modules mci 722 or mci 712 and the Komax seal module

mci 765 C as well as with the quick-change systems and the integrated quality monitoring systems Alpha 488 S ensures maximum process reliability and extremely short changeover times.

With the processing set short open ends UTP (unshielded twisted pair) wires with very short open wire ends can be produced, as required, for example, for Ethernet applications.



▲ **Processing set** Long and unequal length open ends on side 1



▲ **TFA** Twist force analyzer

Outstanding user-friendliness

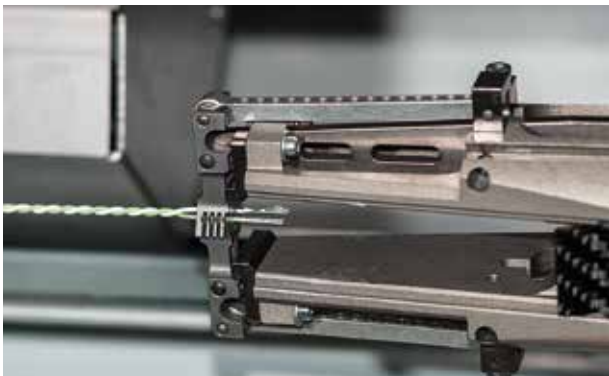
The system is characterized by a remarkable user-friendliness. Accessibility to all stations is optimal due to a large swivel radius and an upwards opening protection cover.

In addition, long and fold-up wing-doors allow the operator an excellent and quick access to the upper wire deposit tray as well as to the twisting area. A pivoting operator console allows an improved machine operation, since the wire deposit tray is freely accessible at all times.

The touch screen which combines visual output and data input in the same spot, also contributes to a more efficient operation of the machine. It is included in the standard configuration.

The graphical user interface is based on the well-proven TopWin and allows the easiest control of the Alpha 488 S.

The compact design of the wire feed-in unit provides central and fast access to daily used guiding parts and tools.



▲ **Processing set** Short open ends on side 1



▲ **Swiveling panel with touch screen**
And compact deposit cells



▲ **Double wire draw-in and feed** With toolbox

Parallel gripper systems ▶

Can be positioned for both wires individually



Blade holder ▶

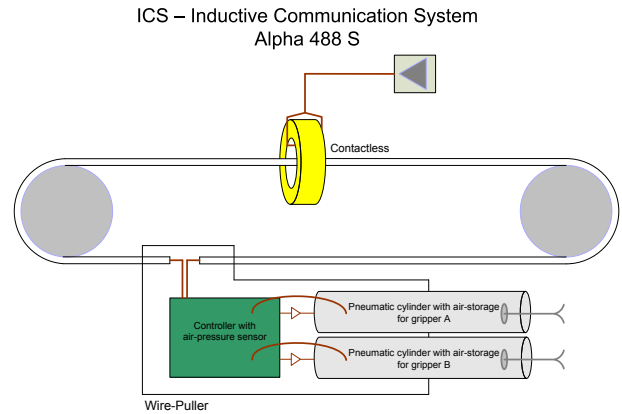
With two V-stripping lines



Maximal ease of maintenance

Thanks to a sophisticated, highly innovative, wireless electrical transmission system - ICS (Inductive Communication System) in combination with an autonomous air-pressure storage system allows the suppression of the drag chain at the wire-puller carriage. The highly simplified guiding concept for the linear carriages, the compact deposit cells and some automated adjustments greatly simplify the installation and maintenance of the system.

A single control cabinet and the simplified hardware architecture further facilitate the maintenance work.



▲ ICS Inductive communication system

Technology

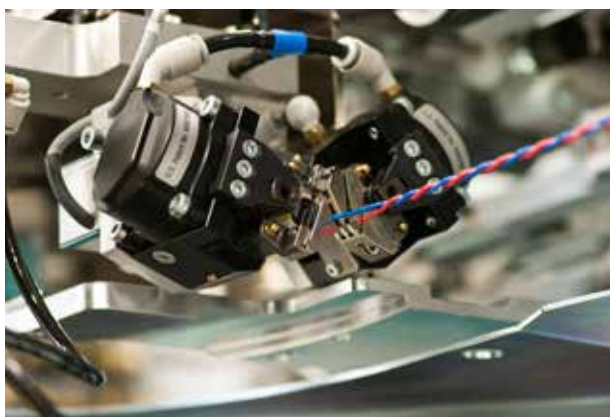
The twisting head with AC servo-drive is the heart of Alpha 488 S and delivers the required dynamics. The integrated Twist Force Analyzer (TFA) monitors the forces during twisting and regulates the subsequent adjustment movements of the twisting head. That ensures a steady and ultra-precise twisting.

The linear wire-puller with integrated Delta Length Analyzer (DLA) ensures that wires are drawn-in gently and with great accuracy of length. The high output of the system results from the parallel processing of two wires and the division of the overall processing cycle into three perfectly synchronized main processes.

A further central element of the Alpha 488 S is the transfer bridge with motorized axes. It allows wires to be handled gentler and more precise than ever while enabling the automation of some adjustment procedures.



▲ Transfer bridge With motor driven axes













▲ Holding gripper With DMS force sensor

Your benefits

- Automatic highly efficient production of twisted pairs
- Flexibility of 6 Stations and possibilities for special wire-end processing
- Gentle wire handling guarantees undamaged products
- Well proven and innovative quality monitoring systems for OEM-approved quality and precision
- Full process control and strict separation of good and bad lead sets
- Networking possibilities for more transparency along the value creation chain
- The processing set short open ends enables production of UTP wires, for example for Ethernet applications with very short open wire ends
- Minimal footprint and little maintenance required thanks to compact, robust and durable machine design
- Swiss technology and twisting competences for 15 years

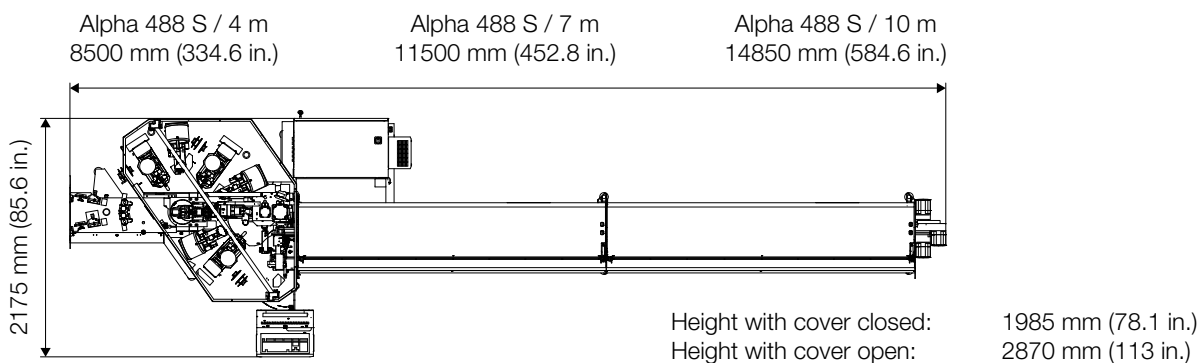
Application sample Alpha 488 S

Twisted pair (also with different open wire ends)		Seal insertion	
Cutting		Split cycle for closed barrel	
Half stripping		Cut pulled strands / Precision cut	
Full stripping		Hot stamp marking	
Crimping		Ink-Jet marking	

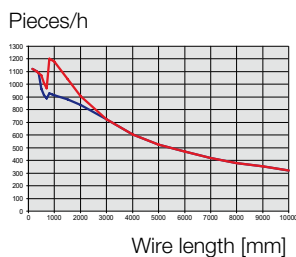
Options and Accessories

Feeding systems	Komax 106 ads 119
Marking systems	Komax 26 hot stamp marking Komax Inkjet marking system IMS Laser marking on request
Wire infeed	Wire puller
Process modules	Crimp module mci 712 (with CFA/CFA+) Crimp module mci 722 (with programmed crimp heights and CFA/CFA+) Seal module mci 765 C (with seal position monitoring SPM)
Quality control	Integrated crimp height measurement Integrated pull-off force measurement Crimp force analyzer CFA/CFA+ Seal position monitoring (SPM) Material change detection Material verification Wire length correction Splice check On request: Strip- and terminal control
Deposit systems	Deposit cells 4m (157.5in.) 7m (275.6in.) or 10m (393.7in.)
Accessories	Manual tool changer Manual roll-holder changing system Barcode scanner PM8300 Software: Networking WPCS Data conversion TopConvert Production control center KomaxCAO Deposit table
Processing sets	short lengths open ends standard short open ends terminal pre-orientation module X2880 long and unequal length open ends small-gage wires halogen-free insulation

Machine layout Alpha 488 S



Reference values for piece output of Alpha 488 S



Conductors	2 × FLRY 0.75 mm ² (AWG 18)
Pneumatic pressure	6 bar (87 psi)
Draw-in Speed	5 m/s (16.4 ft/s)
Acceleration	50 m/s ² (164 ft/s ²)
Pitch	20 mm
Open ends S1+S2	50 mm
Crimp module	mci 722
Seal loading module	mci 765 C

Technical data

Length range	700 – 4000 mm (27.6 in.–157.5 ft.) 700 – 7000 mm (27.6 in.–275.6 ft.) 700 – 10000 mm (27.6 in.–393.7 ft.) Optional from 150 mm (5.9 in.) Final length of twisted pairs
Length accuracy	±(0.3% + 1.5 mm (0.06 in.))
Stripping lengths	Side 1: 0.1 – 18 mm (0.004 – 0.7 in.) Side 2: 0.1 – 35 mm (0.004 – 1.4 in.)
Wire cross-sections*	2 × 0.22 – 2 × 2.5 mm ² (AWG 24 – 14) with processing set open ends standard 2 × 0.22 – 2 × 1.0 mm ² (AWG 24 – 17) with processing set short open ends Optionally with feasibility test up to 0.13 mm ² (AWG 26)
Open wire ends	30 – 99 mm (1.2 – 3.9 in.) with processing set open ends standard 15 – 99 mm (0.6 – 3.9 in.) with processing set short open ends 30 – 125 mm (1.2 – 4.9 in.) with processing set long and unequal length open ends Producible open wire ends depend on pitch, outer diameter and end processing.
Pitch length	5 – 80 mm (0.2 – 3.2 in.) programmable accuracy: ±10%, max. 5 mm
Wire draw-in speed	max. 5 m/s (16.4 ft/s)
Noise level	<75 dB (without crimp module)
Electrical connection	3 × 208 – 480V / 50 – 60Hz 10kVA
Pneumatic system	5 – 6 bar (73 – 87 psi) 12 Nm ³ /h (424 ft ³ /h)
Weight	incl. two crimp modules and two seal loading modules Alpha 488 S / 4 m: approx. 2800 kg (7502 lbs) Alpha 488 S / 7 m: approx. 3400 kg (9109 lbs) Alpha 488 S / 10 m: approx. 4000 kg (10717 lbs)

* Extremely hard and tough wires may not be able to be processed even if they are within the above cross section range. If you are in doubt about your wires, we are happy to process your samples.