» Secure Connections. World-wide.«





» The STOCKO Success Story«

From the beginnings...

STOCKO is a company with a tradition going back for more than one hundred years. The foundation stone was laid by Alfred Aders, Heinrich Pfeiffer, and Johann August Stock 1901 at Wuppertal under the name of Stock & Co. - as button manufacturers. Amongst other items, they produced hollow rivets, eyelets, and press fasteners that, during the Wilhelmian boom era, were in great demand and were even shipped to South America. When Stock & Co. developed the eyelet tag from a shoe eyelet with a solder tag added, the future direction of the company's activities was set: electrical technologies. Very soon there followed additional pressed, drawn, and seamed metal parts all of which could be manufactured with the same machines as the button parts up until now.



... to the present

During the Weimar period that is during the twenties of the last century, the living habits of the people changed dramatically; modern electrical devices such as the radio, telephone, or even the electric shaver found entry into the households in large scale. The new direction of the company proved to be a particularly lucky move, 500 people were employed 1935; two years later there were already 1000. Now under the sole company name STOCKO. With the new factory at Malmedy in Belgium 1940, the company grew to a concern employing 1800 people. However, the war was not without consequences, and the number sank down to 300. There followed the years of the so-called "economic miracle", and STOCKO, too, gained by the new boom. Subsidiaries were founded like in England, France,

Switzerland, and overseas. With the expertise, which STOCKO had gained in the manufacture of plastic parts, the product range was extended by film spools, tape cassettes, slide frames etc.. During these years, the expansions abroad continued steadily until far-reaching re-structuring measures took place during the nineties. In 1994, STOCKO divorced themselves from the division Fasteners. In 1998 a merger with the Bamberg Wieland Group took place and since then the company's name is STOCKO Contact GmbH. & Co. KG. Today STOCKO employ about 450 people at three locations: Sales and Marketing are at Wuppertal, production is distributed among the plants at Hellenthal (Eifel) and Andlau/France.

1901

Founding of Messrs. Stock & Co. in Wuppertal-Elberfeld. The button factory has five employees. Hugo Henkels becomes a partner and later the sole proprietor.





» STOCKO has met the great ruptures and frequent changes of the industry in masterly fashion. Today the company is well prepared to continue with the 100 year old tradition also in the future.«

1911

The subsidiary at Hellenthal/ Eifel is set up. Stock & Co. employ already 110 workers at that time

1929

At the end of the twenties, start of the production of special parts for the electro-technical and radio industries

1950

Steady growth of the company

1960

Dr. Dirk Henkels, grandson of Hugo Henkels and son of Kurt Henkels (with the company since 1930) joins the firm

1998

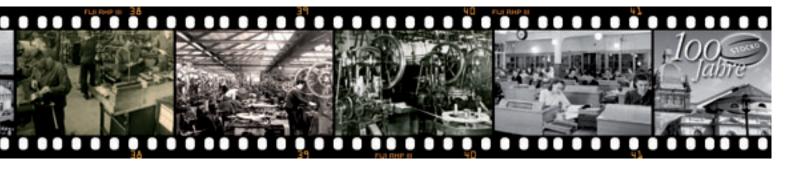
Wieland Holding GmbH. take over Stocko Metallwarenfabriken, Henkels und Sohn GmbH & Co.. New name: STOCKO Contact GmbH & Co. KG.

2001

STOCKO celebrate their centenary at Wuppertal.

2007

STOCKO France celebrate their 50th anniversary at Andlau.



» Secure Connections. World-wide.«

Today, STOCKO is one of the leading European manufacturers of electro-mechanical components; for very good reasons, because, for more than one hundred years, we are focussed in our daily work on the most important object, to satisfy our customers. Of course, it is not easy to meet these expectations over such a long period of time. Electronic component manufacturing is a key industry that does not tolerate mistakes, and customers' requirements are very complex and challenging. Again and again, they demand our full efforts beginning with research and development and finally in logistics and marketing. Hence we invite our customers' involvement in numerous stages of production processes but above all with regard to quality assurance, right from the beginning, and thus make sure that we continue to offer our products at a high quality level. Products that can be found equally in heating controls, drink dispensing machines, dish washers or motor cars.

If, at STOCKO, we talk of secure connections then for this reason that in every one of our connectors an element of conviction reverberates that good connections are always a matter of trust.



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Technical alterations and changes reserved. WEEE Reg. No. DE 14484959 $\,$

» Development «

Design and Development

STOCKO products are renowned and held in high estimation. They represent solid solutions and a multitude of applications as connectors and terminals. The growing functionality and complexity in this sector, however, limits the usage of volume-produced standard components; more and more customers demand individual applications or new designs. Such processes need know-how, ideas, and adjustment to technical and economical philosophies in a sensible manner. Together with our customers, we are concentrating our energy on the expected performance of the new product and, step by step, work out the details — the material, the surface finish, the physical properties and finally the design. For design and development, we have the most modern, computer aided systems at our disposal. With the stereolithography method for example, we are in a position to check the precision of future products with the aid of prototypes, or manufacture prototype samples for testing purposes. Before reaching marketing stages, all STOCKO products are subjected to rigorous test procedures in our laboratories to check the mechanical and electrical properties as well as the influence they may have on the environment.

Toolmaking

Absolutely essential and a decisive component in our successful connector technology, is our toolmaking capability and that takes place inhouse at STOCKO. The production tools with which amongst other things the negative forms of housings are produced are of paramount importance that quality is assured, and our design teams for electro-technical components have to adhere to strict guidelines with regard to the mechanical design of such components. All press and moulding tools are built by STOCKO according to the latest state of the art. They are central in a value producing chain that ultimately is to the benefit of our customers.

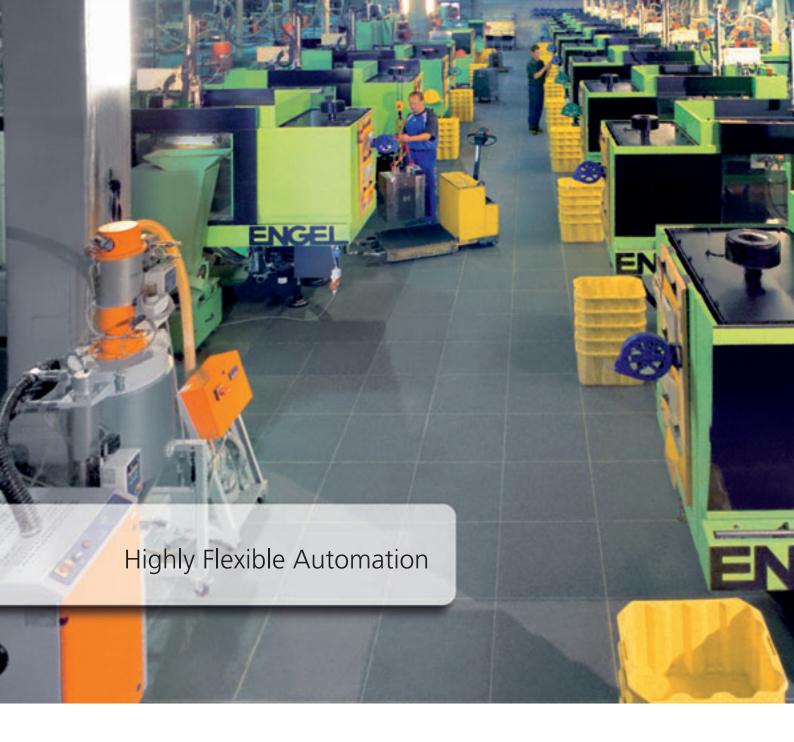


CAD work station Wire erosion machine Plastic moulding tool



Corrosion testing installation

»Our laboratories test all components of their suitability for volume production. The quality and equipment of our laboratories are of such high level that the VDE approvals and certification institute uses them to carry out their own independent tests. These include VDE and even the stringent CSA and UL tests for the international markets.«



Production of Plastic Mouldings

Production at STOCKO is concentrated in manufacturing centres to secure the highest quality even with growing output rates. Thus the whole production of plastic parts is at our Hellenthal plant. With this location specializing on this sector, they can fully concentrate on to the highly technical requirements of those parts such as the production of a maximum number of pin count with a minimum contact spacing and the closest possible tolerances, processing special flame retarding plastic materials, usage of a wide range of materials, and a high machine output rate. For this, we rely on the most modern machines available. We compliment our fully automated moulding presses with intelligent ancillary devices and tooling from our own in-house production. With regard to production techniques and the development of new possibilities for plastic materials, we are constantly aiming for the best possible solutions. This is hard cast quality.



Production of plastic mouldings at the Hellenthal factory

» Manufacturing Technology«

Stamping

The precision stampings for our different product groups are produced at our manufacturing centres in Hellenthal and Andlau where the most sophisticated high-performance machines with electronic quality control and quality assurance facilities are deployed.

Assembly

Our connector systems are assembled by STOCKO in Hellenthal (Germany) and Sokolov (Czech Republic) using fully automated processes. Here, too, we apply the STOCKO philosophy of developing and producing most of the machinery, tooling and auxiliary devices in-house. The result is a highly flexible degree of automation leading to our high quality standards, which are assured with control systems that have also been developed in-house.



» Machine Building«

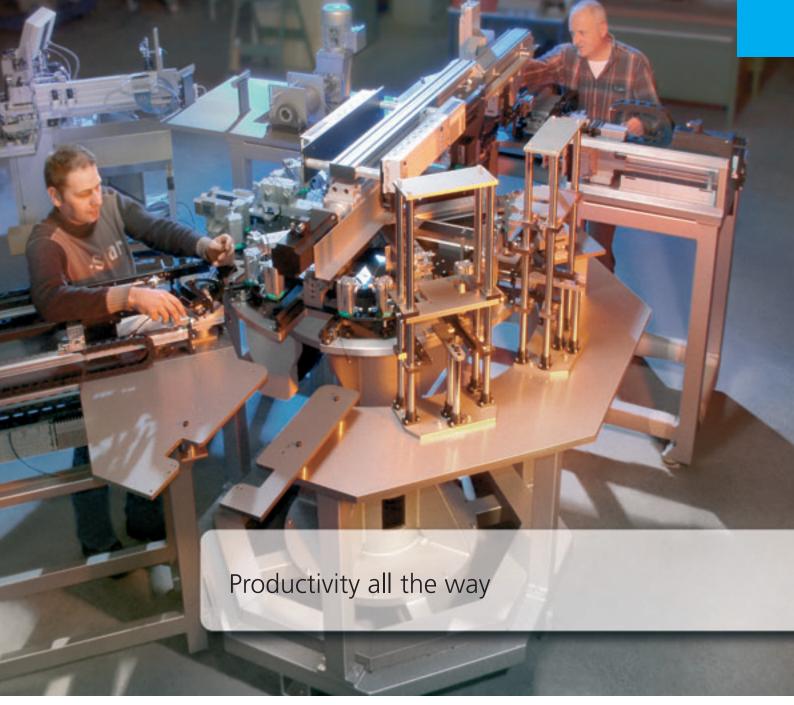
We give high priority to our STOCKO terminating systems, because the quality and reliability of an electrical connection is largely determined by the high levels of the terminating technology. That is why we allocate considerable financial resources to the development and production of such systems. In addition to quality, innovation and economies play important parts. Our aim is to improve the productivity of our customers by integrating our terminating machines smoothly into their production processes. Thus once more, STOCKO solutions act as catalysts and enable profitable competition. And to make sure everything runs smoothly, training is given to your staff for the various production processes, and our team of service engineers is always at your disposal with help and advice to ensure productivity all along the line.





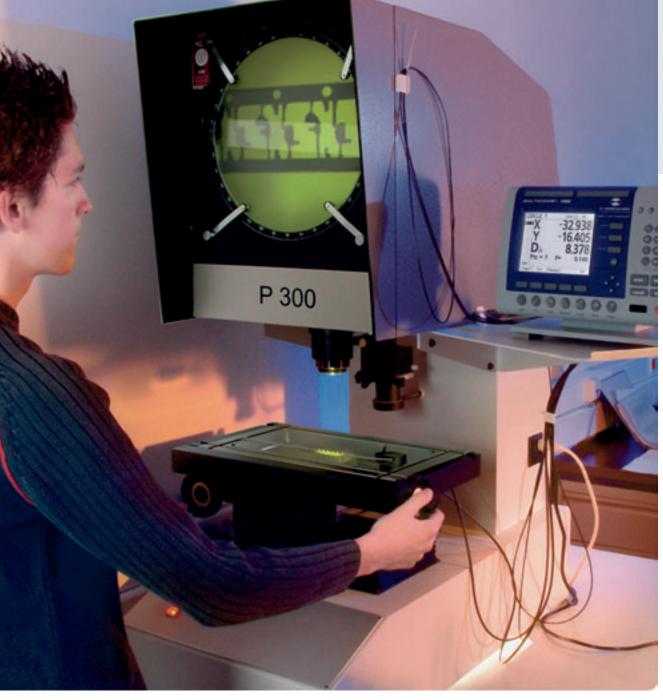






Design and construction of the new automaton ECO-STAR is undertaken at our machine building department at the Hellenthal factory.

» STOCKO Terminating Technology - for every type of application, from simple hand tools, to semi-automated machines, and ultimately to fully automated modular machines with "Just in Time" functions, computer controlled, automated quality control functions, modem connections for outside diagnostic centres and the option to programme sequences of cable forms.«



Profile Projector

»We take it as our social responsibility to integrate environmental protection in our manufacturing processes. For this reason, the plating shop at our manufacturing centre at Andlau was only recently modernized and converted taking account of the latest environmental and ecological developments. In an elaborate process, all effluents are returned to nature, purified and completely free of harmful substances.«





» STOCKO Quality «

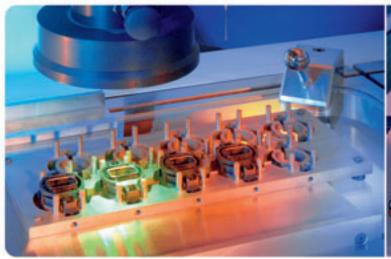
Quality is our highest premise. For it is the best argument for customers' satisfaction and a solid position in a hard fought market. This quality approach at STOCKO does not simply begin at the manufacturing stage. From the first initial contact, we wish our customers to know they are in safe hands and can rely on this also during the planning and development stages: with an application oriented design, the uncompromising selection of the most suitable materials, and strict observation of the customers' requirements profile. International standards can only act as guidelines for us. We exceed their demands by setting our own additional standards: with our own designed testing programs, in-house laboratories, a continued striving for optimal organisational processes during all phases and a close exchange of experiences and know-how with our customers and users. In addition to this, our quality offensive goes even further in that our environmental responsibilities are firmly imbedded in our manufacturing processes. Right from the development stage of our products, we aim for the conscientious use of our raw material resources. All our plastics and metal materials are recyclable and our state-of-the-art production processes completely eliminate the use of chlorinated hydrocarbons and chlorofluorocarbons. Moreover and to avoid waste, STOCKO are using reusable packaging systems such as blister packs, reels, and magazines

DIN EN ISO 9001 and ISO/TS 16949

Having been awarded certification to ISO 9001, we have received approval that a quality management system is in operation throughout all areas of activity that assures a uniform high level of quality. Likewise, this is also the basis for specification ISO/TS 16949, which we hold for the establishment of a quality management system at our French plant since 2006. This certification is a prerequisite to qualify as supplier to the automotive industry. It acknowledges that the company has set up special procedures in all areas of activity and, therefore, complies with customers' specific demands in the automotive sector. Thus and in the long-term, STOCKO increase the efficiency and safety for their customers and themselves.

DIN EN ISO 14001

In recent years we have with great commitment incorporated numerous improvement processes into our company environmental policy and constantly expanded them. Since 2011 our factory in Andlau has met the strict requirements of environmental management standard ISO 14001. By doing so, we commit ourselves to a far greater extent than normal to the voluntary reduction of environmental risks such as waste, waste water and emissions. We are constantly planning, implementing and monitoring our goals in this regard. For us they are a major factor in our value system.





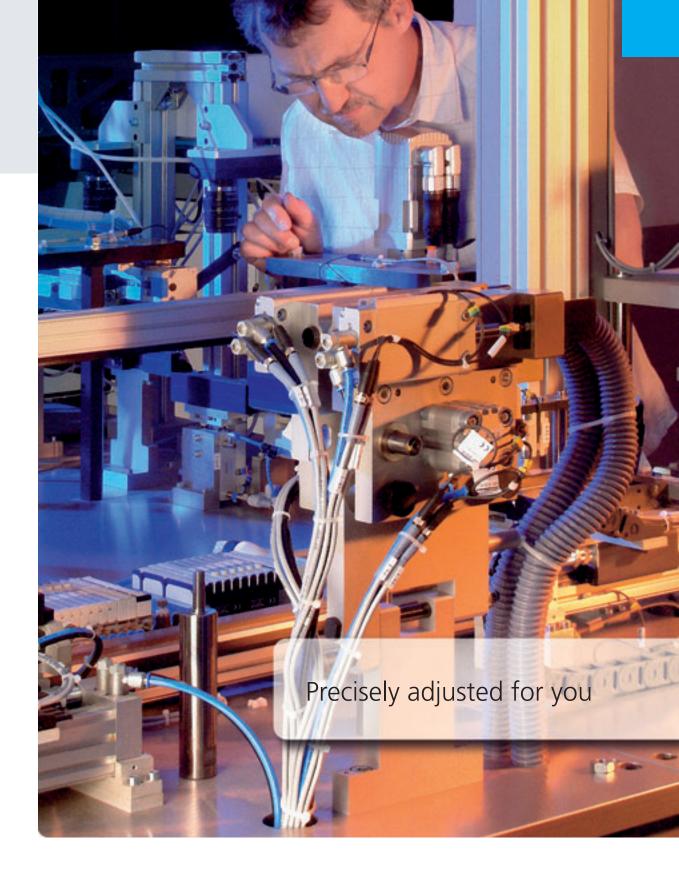
3 D Coordinate Measuring Device

Work place at quality assurance

» Service «

Service and close proximity with our customers has always been a top priority and form an integral part of the STOCKO philosophy. Of course, to discuss with our customers their specific requirements and to meet their expectations in the best possible way is part of our flexibility. We wish to offer our customers superior performance characteristics and to support them in their business activities by anticipating future requirements. Our customers shall be able to rely upon us so that they become true partners eventually. Partners, who we can assist with our know-how and comprehensive knowledge of the markets. Particularly our sales engineers and our service engineers carry this part of our philosophy outside. Moreover, an extensive network of subsidiaries, sales offices, and agencies around the world assist in bringing this principle close to our customers wherever they are. This network will be expanded still further during the next few years so that our customers can benefit from close on-site support even more efficiently. And should one of our customers ever ask if we are the right partners then something must have gone wrong from our part.







Domestic Appliances

» Our Markets«

Developments in the electro-technical market are short-lived and permanently exposed to innovative pressures; again and again the limits are newly defined. How gratifying, there is a safe constancy on which one can rely. STOCKO offer such constancy. Our name stands synonymous for connector systems in crimp and ID form, crimp contacts, solderless terminals, and special parts. Millions of all these elements perform their tasks unnoticed and reliably day in, day out. STOCKO components ensure secure and advanced connections and progress in a wide range of industries and areas of application. A range as wide as household appliances, the heating industry, automotives, industrial and entertainment electronics, control equipment and machine building, as well as the sectors multi-media and telecommunication. Maintaining the well-proven STOCKO quality, we are continuously upgrading the performance of our products to changing market conditions enabling us to set standards for customers of the highest levels of expectation.







Industry

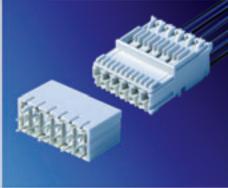
Automotive

Heating Industry

» Our Products «

- \cdot Connector systems in insulation displacement, crimp or solder form
- · Solderless terminals
- · Crimp contacts
- · Terminal blocks
- · Customers' special products
- Terminating systems for all STOCKO products: hand tools, semi-automated and fully automated machines.





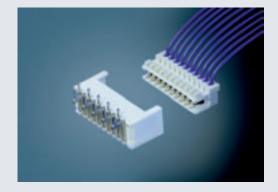


Pitch 2.5 mm - ECO-TRONIC









Derating curve Wire size: 0.35 mm² / 19-way connector / on PCB Ambient temperature [°C]

120 110 100 90 80 70 60 50 40 30 20 10 0 Temperature rise [K]

Description of system

IDC housings

- Direct and indirect connectors with IDC termination in accordance with the RAST 2.5 standard specification for domestic appliances
- Closed cable entries ensure long air and creepage distances
- Trimming polarizing pegs to individual requirements produces a large number of clearly defined connector combinations
- With direct edge versions, polarizing and locking feature for PCB

Pin connectors

- In vertical and horizontal versions facilitate 90° and 180° cable angles
- SMT version for vertical PC board assembly

Pin connector panel mount

- Pin connector with IDC termination for entry through back panel
- Lockable in metal thickness 0.8 \pm 0.1 mm

Pitch

Positions

Technical data

Mechanical

	Termination Wire size Insulation Ø Hardness of insulation Type of wire Temperature range Board thickness	IDC 0.22 / 0.35 mm² max. 1.6 mm Shore A 90° ± 5 solid, stranded -40°C+ 120°C 1.55 ± 0.19 mm
Electrical	Rated current Rated voltage	2 A Pitch 2.5 mm: 32 V Pitch 5 mm: 250 V
	Dielectric strength	Fully assembled 2.5 mm: 1.4 kV Partially assembled 5 mm: 2.8 kV
	Insulation resistance	$> 10^9 \Omega$
	Contact resistance	$<$ 10 m Ω
	Air gap and creeping distances	Pitch 2.5 mm: > 1 mm Pitch 5 mm: > 3 mm
	Creeping strength	CTI ≥ 400
	Approved by	DIN EN 61984 (IEC 61984) UL / ULC E96569
Materials	Contact	Socket: CuSn, Cu-alloy Pin: CuZn
	Contact finishing	Socket: Sn, NiAu Pin: NiSn
	Housing	PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1
	SMT pin connector	PPA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1
	Colour of housing	natural
	Polarizing	to RAST 2.5

2.5 mm 2 - 20



Pitch 2.5 mm - RFK 2





Description of system

Socket connectors

- Crimp version for indirect connections, wire range 0.07 0.5 mm²
- IDC version for direct and indirect connections, wire range 0.14 0.25 mm²
- Suitable for terminating ribbon cables and discrete wires
- Also available with extended cable support

Pin connectors

- With or without snap-in locking device, for vertical or horizontal connections
- The tandem pin connectors can be used as flying lead connection

Mechanical	Pitch Positions Termination Temperature range	2.5 mm up to 20 IDC, crimp, soldering -40 °C + 115 °C
Electrical	Rated current Insulation resistance Contact resistance Test voltage Rated voltage Approved by	$5 \text{ A} / 30 ^{\circ}\text{C}$ $2.5 \text{ A} / 70 ^{\circ}\text{C}$ $> 10^{9} ^{\circ}\Omega$ $< 10 ^{\circ}\text{m}^{\circ}\Omega$ $\ge 1 ^{\circ}\text{kV}$ $32 ^{\circ}\text{V}$ UL, VDE tested
Materials	Housing Contact Finishing	PC, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 CuSn Sn



Pitch 2.54 mm - RFK 1





Description of system

Wire-to-Board socket connectors (WtB)

- IDC version for direct and indirect connections, wire range 0.14 0.25 mm²
- Suitable for terminating ribbon cables and discrete wires
- Also available with polarizing pegs

Pin connectors

- With or without snap-in locking device, for vertical or horizontal connections
- The tandem pin connectors can be used as flying lead connection

Pin strips

- In-line version
- Staggered versions and larger pitch sizes on request

		WtB	Pin strips
Mechanical	Pitch Positions Termination Temperature range	2.54 mm up to 20 IDC, crimp, soldering -40 °C + 115 °C	2.54 mm up to 50 soldering -40 °C + 100 °C
Electrical	Rated current Insulation resistance Contact resistance Test voltage Rated voltage	2.5 A / 70 °C 5 A / 30 °C >10 9 Ω <10 m Ω ≥ 1 kV 32 V	1.5 A / 70 °C 4 A / 30 °C $>10^9 \Omega$ $<10 m \Omega$ $\ge 1 kV$ 32 V
Materials	Housing Contact Finishing	PC, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 PBT CuSn Sn	PC, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 PBT CuZn Sn



Pitch 2.54 mm - STO-GRID





Description of system

- Suitable for the connection to HVAC periphery devices, e. g. stepping/servo motors or linear actuators
- Housing variants
- In-line 3-positions or dual-line 6-positions
- Three different coding variants
- Crimped wires are insertable from the rear
- Cable exit 180°

SMD Socket Connector

- 4 to 80 poles socket connector doublerow
- Board to board connection (bottom entry) with 0.64 x 0.64 mm pins
- Surface Mount Technology
- Contact area flash gold, soldering area tin plated

		Housing	SMD Socket connector
Mechanical	Positions Pitch Termination Wire size Temperature range	3 / 6 2.54 mm Crimp 0.14 - 0.34 mm ² AWG 26-22 - 20 °C + 110 °C	4-80 2.54 mm SMD soldering
Electrical	Rated current Rated voltage Dielectrical strength Insulation resistance Contact resistance Air gap Creeping distances Creeping strength	max. 3 A at T_{amb} 80 °C 250 V \geq 2.5 kV $>$ 10 ° Ω $<$ 10 m Ω 1.5 mm 1.8 mm CTI \geq 425	max. 1 A at T_{amb} 95 °C (max. 3 A at T_{amb} 47 °C) 250 V \geq 1.39 kV $>$ 10° Ω $<$ 40 m Ω 1.5 mm \geq 1.25 mm CTI \geq 600
Materials	Housing Colour of housing Associated contact Contact Contact finishing	PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 various colors RVB 8231.001 Z 0.64-0.35 CuSn Sn	PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 black CuSn Contact area: gold flash, Soldering area: Sn



Pitch 3.5 mm - HLK 3500





Description of system

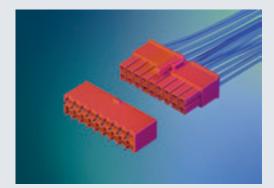
- Suitable for the connection to HVAC periphery devices, e. g. stepping/servo motors or linear actuators
- Pitch 3.5 mm
- Pluggable connector with external locking feature
- Crimped wires are from the rear insertable
- Cable exit 180°
- Remarks with or without seal
- With seal IP 44
- Clear positioning

Mechanical	Positions Pitch Termination Temperature range Wire size	4 3.5 mm Crimp -40 °C +120 °C 0.07 – 0.5 mm ²
Electrical	Rated current Rated voltage Insulation resistance Contact resistance	max. 5 A 250 V $> 10^9 \Omega$ $< 10 m \Omega$
Materials	Housing Colour of housing Associated contact Contact Contact finishing	PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 black RFB 7808 V 0.6-0.5 CuSn pre tin-plated



Pitch 4.2 mm - STO-FIT





Description of system

- Universal connector system for internal equipment wiring
- Applicable as flying lead coupling, for panel mounting or for printed circuit board contacting
- Available in a range of versions and materials
- Crimp contacts are touch-protected into the housing locatedCable exit 180°

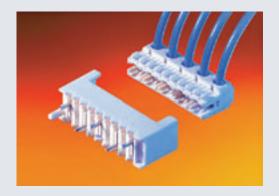
Mechanical	Positions Pitch	Single-row Dual-row	2 - 6 2 - 24 4.20 mm
	Termination	Connector, Counter part Headers	Crimp Solder
	Wire size		0.22 - 0.48 mm ² 0.50 - 1.00 mm ²
	Degree of pollution Temperature range		II -40 °C +110 °C
Electrical	Rated current Rated voltage Insulation resistance Contact resistance Air gap and creeping dist Creeping strength Surge category Insulation group Dielectric strength	iances	7 A $250 \text{ V} \\ > 10^9 \Omega \\ < 10 \text{ m } \Omega \\ \ge 3 \text{ mm} \\ \text{CTI} \ge 325^* \\ \text{II} \\ \text{III a*} \\ 3 \text{ kV}$
Materials	Housing		PA PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1
	Colour of housing Contact		natural, other colours on request CuZn
	Contact finishing		Sn

^{*} Depending on material



Pitch 5 mm - ECO-TRONIC pro





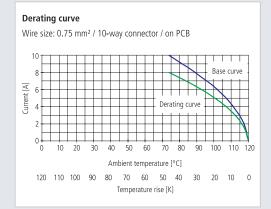
Description of system

IDC housings

- Direct and indirect connectors with IDC termination in accordance with the RAST 2.5 standard specification for domestic appliances
- Closed cable entries ensure long air and creepage distances
- Trimming polarizing pegs to individual requirements produces a large number of clearly defined connector combinations
- With direct edge versions, polarizing and locking feature for PCB

Pin connectors

• Versions for vertical or horizontal PC board assembly

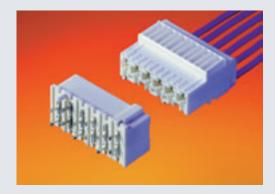


Mechanical	Pitch Positions Termination Wire size Insulation Ø Hardness of insulation Type of wire Temperature range Board thickness	5 mm 2 - 10 IDC 0.35 - 0.75 mm ² max. 2.4 mm Shore A 90° ± 5 stranded -40 °C+ 120 °C 1.55 ± 0.19 mm
Electrical	Rated current Rated voltage Dielectric strength Insulation resistance Contact resistance Air gap and creeping distances Creeping strength Approved by	$6 A$ 250 V 2.8 kV > $10^9 Ω$ < 10 m $Ω$ > 3.2 mm CTI ≥ 400 DIN EN 61984 (IEC 61984) UL / ULC E96569
Materials	Contact Contact finishing Housing Colour of housing Polarizing	Socket: CuSn Cu-alloy Pin: CuZn Socket: Sn Pin: NiSn PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 natural to RAST 2.5



Pitch 5 mm - ECO-DOMO





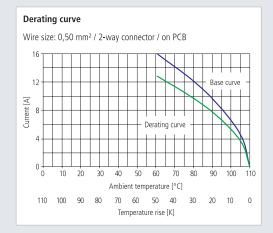
Description of system

IDC housings

- Direct and indirect connector with IDC termination in accordance with the RAST 5 standard specifications for domestic appliances, with locking features inside or outside
- Direct connector with central polarizing and polarizing pegs at sides, locking features for PCB
- Cable exit 90° and 180° according to RAST 5

Pin connectors for indirect connectors

Versions for vertical or horizontal PC board assembly



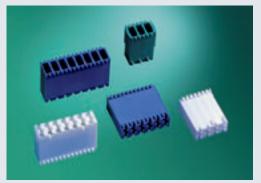
hnical	

Mechanical	Pitch Positions	5 mm Direct connector	2 - 12
	. 651(161)5	Indirect connector	1 - 12
	Locking features	Direct connector	PCB
		Indirect connector	inside and outside
	Termination	IDC	
	Wire size	Direct connector	0.5 / 0.75 mm ²
		Indirect connector	0.35 - 1.5 mm ²
	Insulation diameter	3.0 mm	
	Cable exit 180°	max. ≤ 2.4 mm	
	Type of wire	stranded	
	Temperature range	- 40 °C+ 110 °C	
Electrical	Rated current	Direct connector	6 A
		Indirect connector	16 A
	Rated voltage	ECO-DOMO	400 V
		ECO-DOMO NF	250 V
	Delectrical strength	≥ 3.0 kV	
	Insulation resistance	$\geq 10^9 \Omega$	
	Contact resistance	\leq 5 m Ω	
	Air gap	≥ 3 mm	~ ~
	Creeping distance	ECO-DOMO	≥ 3 mm ≥ 3.6 mm
	Creeping strength	ECO-DOMO NF ECO-DOMO	≥ 3.0 IIIIII CTI ≥ 600
	Creeping strength	ECO-DOMO NF	CTI ≥ 400
	Approved by	DIN EN 61984 (IEC 61984)	CII 2 400
	Approved by	UL / ULC E96569	
Materials	Contakt	Socket: CuSn	
	Contact finishing	Socket: Sn	
	Housing	ECO-DOMO	PBT
		ECO-DOMO NF	PA, glow wire resistant,
			GWT 750 °C acc. to IEC 60335-1
	Colour of housing	natural	



Pitch 5 mm - RAST 5 Crimp









Description of system

Housings

- Housing with crimp connection
- Dimensions of housing in accordance with RAST 5 standard specification for domestic appliance
- Different polarizing features
- Indirect connector with inside locking device
- Cable exit 90° / 180°

Tab connector ECO-DOMO PM

■ For flying lead or panel mounting



EH 699

EH 688





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Mechanical	Pitch Positions	EH 699 EH 688 ED PM	5 mm 2 - 5 1 - 8 2 - 10		
	Locking features Termination Wire size Insulation-Ø Temperature range	LUTIVI	inside 6.3 FSH Crimp technology 0.5 - 1.5 mm² max. 3.3 mm -40 °C +120 °C		
Electrical	Rated current Rated voltage Dielectrical strength Air gap Creeping distance Approved by	EH 688 / EH 699 EH 688 EH 699	16 A 250 / 400 V ≥ 3.0 kV ≥ 3 mm ≥ 3 mm DIN EN 61984 (IEC 61984) UL / ULC E96569 UL E306640		
Materials	Contact Contact finishing Housing Colour of housing	ECO-DOMO PM	CuZn Sn PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 natural other colours on request		



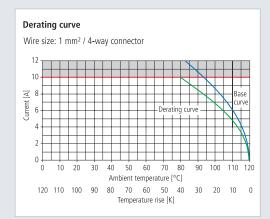
Pitch 5 mm - ECO-DOMO FT





Description of system

- Indirect IDC connector in accordance with the RAST 5 standard specification for domestic appliances
- Suitable for up to 10 A current load
- Complex cable assemblies with fully automated terminating capability
- Meeting RoHS requirements
- Highly economical
- Cable exit at 90°
- As direct connector necessary, STOCKO offers with the series ECO-TRONIC pro an economical solution (s. page 22)



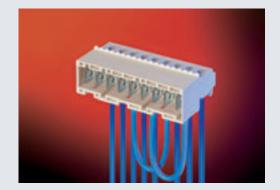
Derating curve Wire size: 0.50 mm² / 8-way connector 8 6 4 2 0 10 10 20 30 40 50 60 70 80 90 100 110 120 Ambient temperature [°C] 120 110 100 90 80 70 60 50 40 30 20 10 0 Temperature rise [K]

Mechanical	Pitch Positions Termination Wire size Type of wire Temperature range	5 mm 1 - 12 IDC 0.35 - 1 mm ² stranded -40 °C+ 120 °C
Electrical	Rated current Rated voltage Dielectrical strength Insulation resistance Contact resistance Air gap and creeping distances Creeping strength Approved by	$10~A$ $250~V$ $3.0~kV$ $> 10^9~\Omega$ $< 5~m~\Omega$ $> 4~mm$ $> 400~CTI$ DIN EN 61984 (IEC 61984)
Materials	Contact Contact finishing Housing Colour of housing Polarizing	Socket: Cu-alloy Socket: Sn PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 natural according to RAST 5



Pitch 5 mm - ECO-DOMO TI





Description of system

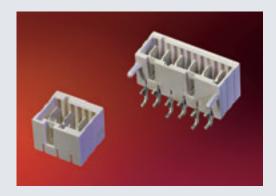
- RAST 5 Tab connector for IDC termination as flying lead coupling or for panel mounting application
- Versions with / without back panel clips
- Cable exits 90°, 180° (optional 270°)
- Single and / or twin terminations depending on wire size
- Individual positioning and coding
- Label optional

Mechanical	Pitch Positions Termination Wire size Insulation diameter Type of wire Temperature range	5 mm 2 - 10 IDC 0.5 / 0.75 mm ² 2.3 mm stranded wire - 40 °C+ 110 °C
Electrical	Rated current Rated voltage Dielectrical strength Creeping strength Air gap and creeping distance Insulation resistance Contact resistance Approved by	10 A 250 V 2,5 kV CTI \geq 400 \geq 4 mm > 10 9 Ω < 10 m Ω DIN EN 61984 (IEC 61984)
Materials	Contact Contact material Contact finishing Housings Colour of housing	tabs 6.3 x 0.8 mm CuSn Sn PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 natural



Pitch 5 mm - ECO-FLEX





Description of system

ECO-FLEX M Tab connector

ECO-FLEX ML Tab connector with bridging contacts

ECO-FLEX BL Socket connector with bridging contacts

ECO-FLEX MBL Connectors in tab/socket combinations with bridging contacts

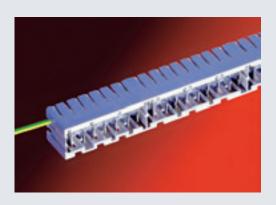
- Connector system allowing individual, free contact combinations to RAST 5 standard
- Versions for vertical or horizontal PC board assembly
- For dual-in-line or in-line hole patterns
- Contact surface lead-free
- Individual polarizing possible
- Clear grouping of connecting positions using movable inserts or empty spaces
- Neutral and/or grounded bridging contacts
- Polarizing pegs optional
- Advancing tab contacts as grounded conductor optional



- Suitable for RAST 5 indirect connectors in screw, crimp, or IDC technology
- 8105B / 8105FU (screw type)
- EH 688 / EH 699 (crimp type)
- ECO-DOMO / RAST 5 (IDC type)

Applications

Domestic appliances industry Heating industry



Mechanical	Pitch Positions	5 mm
	- ECO-FLEX M without inserts with inserts - ECO-FLEX ML, BL, MBL;	2 – 12 2 – 20
	with inserts or empty spaces Pitch Termination Temperature range	2 – 30* 7.5 mm, 10 mm soldering 40 °C +120 °C
Electrical	Rated current Rated voltage	- Tab contacts 16 A - Socket contacts 10 A - Bridging contacts over IDC 10 A 250 V
Materials	Housings Housing colour Contacts Tabs Contact materials Contact surface	PA, glow wire resistant, GWT 750 °C acc. to IEC 60335-1 natural 6.3 x 0.8 mm CuZn / CuSn Sn

^{*} depending on number of inserts or empty spaces, higher pole versions on request



Pitch 5 mm - TL 1





Description of system

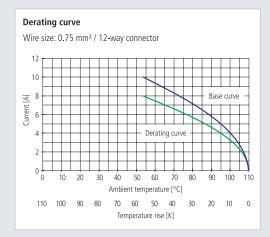
IDC housings

- Direct and indirect connectors with IDC termination
- The leaf spring contacts ensure trouble-free connections even in large multi-way systems
- Suitable for termination with hand tools, or on semi automated machines

Pin connectors

• Versions for vertical or horizontal PC board assembly

Mechanical	Pitch Positions Termination Wire size Insulation Ø Hardness of insulation Type of wire Temperature range Board thickness	5 mm 2 - 12 IDC 0.5 / 0.75 mm² max. 2.5 mm Shore A 90° ± 5 solid, stranded -40 °C + 110 °C 1.6 ± 0,14 mm
Electrical	Rated current Dielectric strength Insulation resistance Contact resistance Air gap and creeping distance Creeping strength Rated voltage Approved by	6 A > 3.0 kV > 10^9 Ω < 5 m Ω > 3 mm CTI \geq 250 250 V DIN EN 61984 (IEC 61984) UL / ULC E96569
Materials	Contact Contact finishing Housing Colour of housing	Socket: CuSn - Pin: CuZn Socket: Sn - Pin: NiSn PBT natural







Pitch 5 mm





Series MGF 4400

Technical data			
Mechanical	Pitch Positions Termination Temperature range	5 mm 1-7 / 9 soldering -40 °C+125 °C	
Electrical	Max. current load per contact Current rating Nom. voltage Insulation resistance Contact resistance	8 A 4 A 250 V > $10^9 \Omega$ < 5 m Ω	
Materials	Contact Contact finishing Housings	CuZn Sn PC	



Pitch 5.08 / 7.62 mm





Series MKH 2800, for pin connectors series MKS 2820

Technical data

MechanicalPitch5.08 / 7.62 mmPositions1-8 / 11Terminationcrimp

Temperature range -40 °C...+100 °C, PBT: +125 °C

4 A

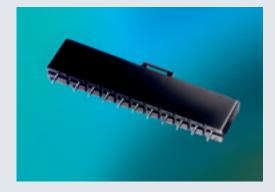
Wire size crimp contact 0.22-1 mm²

Electrical Max. current load per contact

 $\begin{array}{ll} \mbox{Rated current} & 3 \mbox{ A} \\ \mbox{Rated voltage} & 250 \mbox{ V} \\ \mbox{Insulation resistance} & > 10^9 \mbox{ }\Omega \\ \mbox{Contact resistance} & < 10 \mbox{ m }\Omega \end{array}$

Materials Housings PC, 2-way: PBT

Crimp contact RFB 7851 CuSn tin plated



Series MKS 2820, vertical, for socket connectors series MKF 2800

Technical data

Mechanical Pitch 5.08 / 7.62 mm
Positions 2-8 / 11

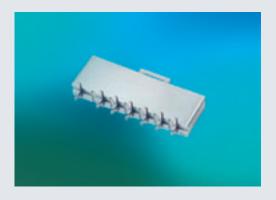
Termination soldering

Temperature range -40 °C...+100 °C, PBT: +125 °C

Electrical Max. current load per contact 4 A

 $\begin{array}{lll} \mbox{Rated current} & 3 \mbox{ A} \\ \mbox{Rated voltage} & 250 \mbox{ V} \\ \mbox{Insulation resistance} & > 10^{9} \mbox{ }\Omega \\ \mbox{Contact resistance} & < 10 \mbox{ m }\Omega \\ \mbox{Contact} & \mbox{CuZn} \\ \end{array}$

Contact finishing Sn Housings PC, 2-way: PBT



Series MKS 2820, horizontal, for socket connectors series MKF 2800

Technical data

Materials

Mechanical Pitch 5.08 / 7.62 mm

Positions 2-8 / 11

Termination soldering

Temperature range -40 °C...+100 °C

PBT: +125 °C

Electrical Max. current load per contact 4 A

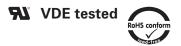
Rated current3 ARated voltage250 VInsulation resistance $> 10^9 \Omega$ Contact resistance $< 10 \text{ m }\Omega$

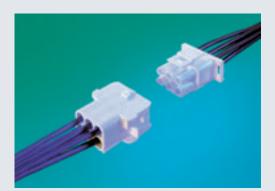
Materials Contact CuZn
Contact finishing Sn

Housings PC, 2-way: PBT



Pitch 6.35 mm - STO-LOCK





Description of system

- Universal connector system for white goods, industrial electronics and commercial building equipment appliances.
- Application as flying lead assemblies, panel mounting and for PCB connections.
- Pitch 6.35 mm
- 2 to 15 positions with crimp contacts and locking feature outside
- Suitable for power connections up to 16 A
- Headers pre-loaded for PCB assembly
- Cable exit 180°
- Coding via contact types
- Clear positioning

Mechanical	Pitch Positions Termination Wire size Locking feature Degree of pollution Temperature range	6.35 mm In-line Multi-row Connector / Counter Part Headers 0.34 - 0.82 mm ² 0.75 - 2.03 mm ² yes 2 -40 °C +110 / +120 °C *	2 - 5 6 - 15 Crimp Solder
Electrical	Rated current Rated voltage Dielectric strength Insulation resistance Contact resistance Air gap and creeping distances Creeping strength Surge category Insulation group Approved by	max. 16 A 400 V 2.21 kV $10^9 Ω$ < 10 m $Ω$ ≥ 4 mm CTI $600 / ≥ 300 *$ II $I / III a *$ UL E306640 VDE tested	
Materials	Contact Contact finishing Housing Colour of housing Polarizing	CuZn, CuSn tin plated PA PA, glow wire resistant, GWT 750 °C acc. to IEC 60335 natural yes	-1

^{*} Depending on material



Connector

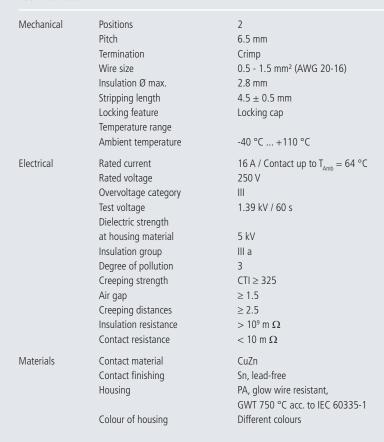
Pitch 6.5 mm – Sensor Plug

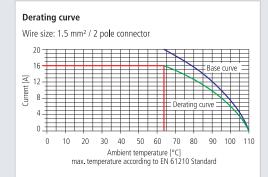




Description

- 2-pole sensor plug
- Pitch 6.5 mm
- Compliant with RoHS
- Loadable with flag receptacles 4.8 mm RSB 8186
- Cable exit 90°
- Locking cap
- Different colours

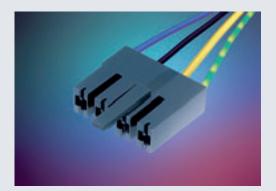






Pitch 8 / 11.4 mm - Series TL 3 HT / TL 4



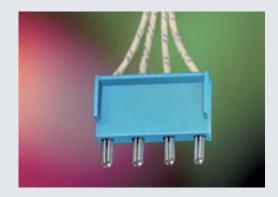


Series TL 3 HT · Pitch 8 mm

Description of system

This connector range, which consists of housings EH 700/4-2 HT and receptacle RSB 8180.1158, is designed to interconnect with tabs 6.3 x 0.8 mm to DIN spec. 46244. The housings have a connector spacing of 8 mm and are ideally suitable to mate with interconnections of electric kitchen hobs.





Series TL 4 · Pitch 11.4 mm

Description of system

The connector system TL 4, pitch 11.4 mm, was developed to provide the manufacturers of electric cookers with a fast and secure means of connecting the cooking rings and rotary switches of built-in appliances. Special attention was paid to the fully automated production of the cable harness. That ensures a high standard of quality coupled with maximum cost efficiency.





Circular Connector

MH 2490 / MV 2490





Description of system

- 1 to 4 poles circular connector
- Round contacts for crimp termination
- Sealed according to IP44
- Two-sided external locking latches
- Possibility of coding
- Single or hose cable
- Cable exit 180°
- Clamping possibility for lateral plate cut out
- Housing rip

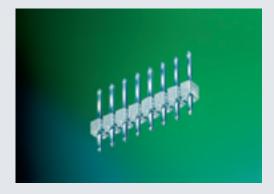
210
211
212
2.03 mm ²
+ 120 °C
1 kV
Ω
mΩ
mm
400
ow wire resistant,
750 °C acc. to IEC 60335-1
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ed or pre tinned

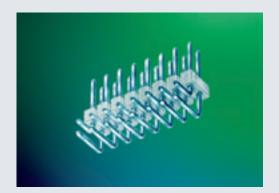


Pin strips

Pitch 2.54 mm







Versions: vertical, horizontal, single row, double row

Technical data

Mechanical	Positions	single row 2-40 double row 2-80
	Termination Temperature range	soldering -40 °C+100 °C
Electrical	Max. current load per contact	*
	Rated current	*
	Rated voltage	*
	Insulation resistance	$> 10^9 \Omega$
	Contact resistance	$<$ 10 m Ω
Materials	Contact	CuZn
	Contact finishing	Sn
	Housings	PBT

* Electrical data are dependent on the application. Information is available on request.



PCCR







Function of the PCCR

The PCCR system is a PCMCIA modul Type II as interface and an integrated chip card reader of compact design.

The modul is inserted into the 68-way PCMCIA connector of a PC, Notebook, or any other PCM systems. The front section of the module has a flexible slot which by means of integreal pre-determined tension applies contact pressure on to the chip card without any guides.

The chip card is inserted by hand to its end position; at the same time contact will be made with the PCMCIA platform through the contact unit (reader), which puts the chip card in an active write and read mode.

Technical data

PCMCIA	Housing	Dimensions Coding	85.6 x 54 mm 5 V (3.3 V on request)
	Materials	Housing	Stainless steel (matt finish) with plastic
	PC Board	Thickness Dimensions	0.45 mm max. 74.5 x 50 x 0.45 mm
	Fixing	PCB 68-way connector	with guide elements in plastic adaptor
	Reader	Number of ways Contact principle Insertion cycles Operating temperature Finish of contacts	8-way with microswitch (to ISO 7816) Sliding contact > 30.000 -25 °C bis +85 °C selective Au over Ni
	Chip height	over PCB	1.6 mm max.
	Area for labelling	at top and bottom within the stamping area of the housing	
Chip card	Standard Versions Dimensions	ISO 7816, EMV spec. With and/or without stamping 85.6 x 54 x 0.78 mm + stamping (1.24 mm)	
Conformance tests	PCMCIA Chip card	PCMCIA standard spec. ISO 7816 / EMV spec.	



PCCR

Long Version - Personal Computer Card Reader





Function of the PCCR

 $\label{thm:condition} \mbox{The PCCR system is a PCMCIA modul Type II as interface and an integrated chip card reader of compact design.}$

The modul is inserted into the 68-way PCMCIA connector of a PC, Notebook, Set Top Box, or any other PCM systems. The front section of the module has a slot to accept a chip card (lead-in-section with protective collar).

The chip card is inserted by hand to its end position; at the same time contact will be made with the PCMCIA platform through the contact unit (reader), which puts the chip card in an active write and read mode.

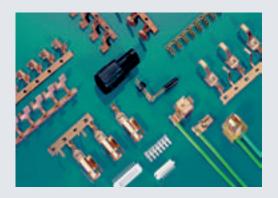
Technical data

PCMCIA	Housing	Dimensions Coding	100.5 x 54 mm (Chip card lead-in 57.5 mm) 5 V (3,3 V on request)	
	Materials	Housing Frame	Stainless steel (matt finish) Plastic (LCP)	
	PC Board	Thickness Dimensions	0.45 mm max. 74.5 x 50 x 0.45 mm	
	Fixing	PCB 68-way connector	with guide elements in plastic adator	
	Reader	Number of ways Contact principle Insertion cycles Operating temperature Finish of contacts	8-way with microswitch (to ISO 7816) Sliding contact > 30.000 -25 °C bis +85 °C selective Au over Ni	
	Chip height	over PCB	1.6 mm	
	Area for labelling	at top and bottom within the of the housing	he stamping area	
Chip card	Standard Versions Dimensions	ISO 7816, EMV spec. With and/or without stamping 85.6 \times 54 \times 0.78 mm + stamping (1.24 mm)		
Conformance tests	PCMCIA Chip card	PCMCIA standard spec. ISO 7816 / EMV spec.		



Automotive

Standard program



Safety and Security Systems

Contacts for bulb holders head and rear lights, also indicator lights Connector systems for lights Contacts for airbag systems



Engine Management

Contacts for ABS and exhaust systems Ignition terminals Battery terminals



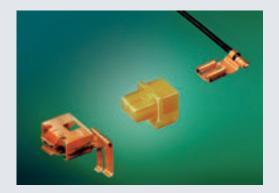
Comfort and Communication

Connectors for communication systems Loudspeakers and height adjustable car seats Contacts for air conditioning systems



Automotive

Examples for custom design solutions



Bulb contact H 1

for the Automotive Industry



Bulb contacts H 7

for the Automotive Industry



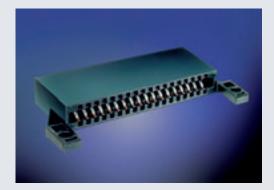
Lampholder Group D 1 S

for the Automotive Industry



Connectors

Examples for custom design solutions



Axial coupling "Duo-Edge"

Board-Board direct connector with two mounting brackets

- 36-ways
- Pitch 2.54 mm
- for PC boards 1.6 mm thick

Under construction

Duo-Edge without brackets, 16-ways, pitch 3.5 mm

Applications

ISDN telephone installations, industrial control equipment or PC's



Loudspeaker module

Centre disc and contact unit for miniature loudspeakers 13 mm dia.

Application

Mobile telephones



Charge contacts for battery shavers



Crimp Contacts

in Bandolier Form





Receptacles for tab width 6.3 mm, in versions self locking, permanently engaged, with low insertion force, as timer contact, inserted into housing, suitable for RAST 5 connector housings

• Material: brass, phosphor bronze or steel, other materials on request

Finishing: natural, tin plated or nickel plated
 Wire size: 0.2 - 6 mm² / AWG 24 - 10

• Tab thickness: 0.8 mm in accordance with DIN or IEC specifications

■ Temperature range: - 40 °C to +300 °C



Receptacles for tab width 4.8 mm, in versions self-locking, permanently engaged, with low insertion force, inserted into housing

• Material: brass, phosphor bronze or steel, other materials on request

Finishing: natural, tin plated or nickel plated
 Wire size: 0.14 - 2.5 mm² / AWG 26 - 14

■ Tab thickness: 0.5 - 0.8 mm in accordance with DIN or IEC specifications

■ Temperature range: - 40 °C to +300 °C



Receptacles for tab width 2.8 mm, in versions permanently engaged, with low insertion force, as timer contact, inserted into housing

Material: brass, phosphor bronze or steel, other materials on request

Finishing: natural, tin plated or nickel plated
 Wire size: 0.14 -1.5 mm² / AWG 26 –16

■ Tab thickness: 0.5 - 0.8 mm in accordance with DIN or IEC specifications

■ Temperature range: - 40 °C to +300 °C

STOCKO products are fully tested at our laboratories. VDE, UL / ULC and other approvals for the main STOCKO items are regularly updated.

Technical data sheets are available on request.



Crimp Contacts

in Bandolier Form





Tabs 2.8 / 4.8 or 6.3 mm wide for STOCKO receptacles

- For crimping
- For PC Board assembly
- Weld tabs



End splices with or without insulation crimp

- For longitudinal or transverse transport
- For stranded or enamel wires
- Wire size: 0.2 16 mm² / AWG 24 6



Open barrel terminals in ring or c-type version, with or without insulation crimp

- Drill hole diameter: 2.3 10 mm
- Wire size: 0.25 20 mm² / AWG 22 4

Complementary to our product range "Crimp Contacts", STOCKO offers

- Circular sockets
- Circular pins
- PC board contacts
- Miscellaneous special types

STOCKO products are fully tested at our laboratories. VDE, UL / ULC and other approvals for the main STOCKO items are regularly updated.

Technical data sheets are available on reques



Insulation housings





Single or multi-way housings for receptacles and tabs, available in following versions

- Glow wire resistant, GWT 750 °C acc. to IEC 60335-1
- Flammability class UL 94 V2 or V0Natural or in different colours



STOCKO products are fully tested at our laboratories. VDE, UL / ULC and other approvals for the main STOCKO items are regularly updated.

Technical data sheets are available on request.



Solderless terminals





- Solderless terminals with and without insulation
- Pin terminals
- Parallel splices
- Butt splices
- Receptacles
- Tabs
- Terminal blocks
- Circular terminals and blocks
- End splices
- Insulation housings
- End sleeves
- Terminating technology:
 Cable stripper, hand tools, electrical and hydraulic crimping tools







Terminating Technology



The quality and reliability of an electrical connection depend largely on the terminating technology.

Consequently, STOCKO offers an economical and efficient terminating technique for every product.

Whatever the particular requirements and production quantities are, we offer state-of-the art tools and machinery.

From a simple hand tool to semi-automated machines and to fully automated machines of modular construction incorporating "Just-in-Time" functions, Computer controlled machine operation, automated quality control, modem connection for remote diagnostics, and the option to program sequences in cableform output.

With the object in mind improving our customers' productivity through optimum production rationalization.

A qualified STOCKO team of service engineers is always at your disposal for advice and practical assistance. In an emergency, they attend to prompt machine maintenance and carry out preventative servicing tasks.











- 1 STOCKOMAT IDC pre-line Electrical terminating machine for IDC connector systems
- 2 STOCKOMAT CRIMP professional line Semi-automatic terminating machine for crimp contacts in bandolier form
- 3 Quick-release applicator for STOCKOMAT CRIMP professional line longitudinal transport
- ${\tt 4~Quick-release~applicator~for~STOCKOMAT~CRIMP~professional~line~-transverse~transport}\\$
- 5 STOCKOMAT ECO-DOMO professional line Semi-automated terminating machine for connector ECO-DOMO according to RAST 5 specification
- 5 ECO-STAR
 Fully automated terminating machine for connector systems ECO-TRONIC
 ECO-TRONIC pro / ECO-DOMO FT



Contact adresses

D Distribution
P Plant
R Representation
S Subsidiary
SO Sales Office

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