



gesis® DC-SOLAR
Connector System
for Solar Power Installations

Solar Power is Pluggable



Active worldwide

With its staff of almost 2,000 employees, the Wieland Group is at home on all continents. Subsidiaries in Great Britain, France, Spain, Italy, Poland, Canada, the USA and very recently also in China speak for themselves. With a great number of representatives, Wieland Holding is active in almost all strategically important countries. Just a medium-size global player with a clear commitment to the German location where most of the products are still manufactured.

contacts
are
green.



▲ Photo of the Bamberg headquarters



◀ Sales and Marketing Center in Bamberg

The Wieland Group

Competence and know-how

One company group, a thousand opportunities

The philosophy of the Wieland Group with its headquarters in Bamberg can be summarized that simply. The independent subsidiaries, Wieland Electric and STOCKO Contact, are active beneath Wieland Holding.

Together they cover an extraordinarily wide product portfolio in the field of electrical engineering and electronics. It comprises control cabinet engineering, industrial multipole connectors as well as overvoltage technology and building system technology.

Wieland Electric is active in most areas of automation technology and delivers as the industry's driver for innovation. **safety** first – Wieland Electric is ideally positioned with its modular system solutions such as **Series 4000, samos[®], samos[®]PRO** and the new **SMA** safety sensors. **podis[®]**, the solution-oriented system for remote power distribution, and **ricos^{TP}**, the latest development in the field of automation systems for heavy duty industrial requirements, are only two examples.

In the building installation system sector, Wieland Electric, with its **gesis[®]** system, is the world market leader in pluggable electrical installation. With good reason do planners and architects of the tallest and most interesting construction projects worldwide, such as the Petronas Towers in Kuala Lumpur, rely on **gesis[®]** components from Wieland. Wieland is the pioneer on a path toward the intelligent home by consistently developing its **gesis[®]** product range, especially with regards to the demands of electronic networking.

Wieland Electric was founded in 1910 in Bamberg. With 1350 staff members it is the largest subsidiary within the company group of Wieland Holding. With its numerous innovations, Wieland Electric has become a major supplier of electrical connection technology. Export share is currently at 58%.

STOCKO Contact is located in North Rhine-Westphalia's Wuppertal and has been a member of the Wieland Group since 2001. The company can look back at a history of more than 100 years. STOCKO Contact is one of the biggest European manufacturers of connector systems and crimp contacts.

Almost 100 years young and full of innovative energy...

this is the foundation of our company philosophy.

From this statement Wieland Electric will not just maintain, but expand its social responsibility into the future. Eco-friendly high-tech products, manufactured according to state-of-the-art production standards, an audited environmental management system and extensive investments in our facilities with cutting-edge environmental technologies are a matter of fact. A company policy that also commits us to the long term responsibility for the future of our families and children, as well as for the city of Bamberg, in addition to innovative system solutions for our customers.

In our opinion, worldwide action and regional responsibility are united.



◀ STOCKO headquarters
in Wuppertal



Pluggable solar solutions from Wieland

At home on both sides

Extremely easy to handle and highly flexible

With Wieland, the enormous benefits of a pluggable electrical installation are no longer restricted to the DC side of photovoltaic systems. Whether for main power supply connections (AC) or connectors for the drives of tracking systems, durable electrical connectors are the backbone of a profitable installation.

The AC solar system

With its 3 and 5 pole connector system RST25i3/i5, Wieland offers the optimal solution for AC side interconnect possibilities. Pre-assembled components and IP68 protection enable a fast and safe installation, even under the most adverse conditions. The RST25i3/i5 AC system includes connectors for on-site field wiring; device connectors for inverter housings (leading manufacturers already deliver their product with RST connectors installed); cable assemblies for connection from the inverter to the combiner box; and combiner boxes that are delivered pre-assembled.

Inverters are often installed in groups, with the same distance between them. The resulting cable lengths repeat from system to system. The AC side can now be installed similarly to the traditional DC module to module interconnection method.

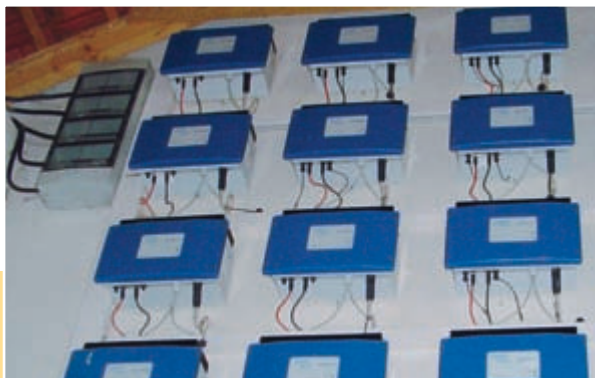
This concept effectively reduces the logistics and installation times to a minimum. This advantage pays

off not only for initial installation, but for any subsequent service or add-on work as well. For servicing, individual inverters can be disconnected from the main supply by simply unplugging them. Continuous protection against accidental contact, as well as quick installation and return to operation ensure a profitable system.

The DC solar system

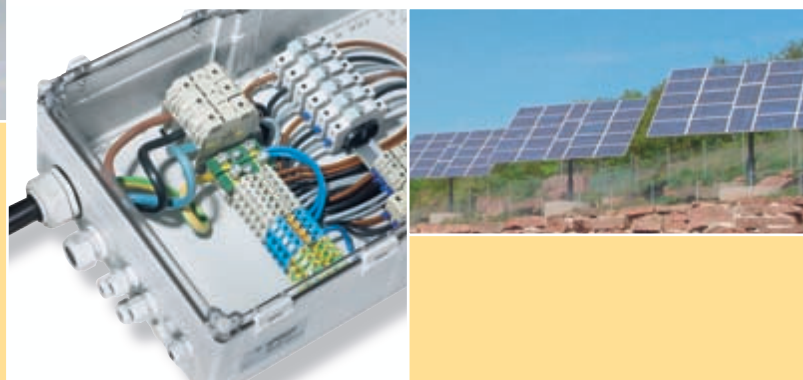
The DC solar system is developed and manufactured in close cooperation between Wieland Electric GmbH and PRYSMIAN Cables and Systems GmbH. PST40i1 is based on the need to combine a highly reliable contact system with the easiest termination technology. The silver-plated machined contacts have been proven in the most demanding applications, such as machine tool construction, crane technology, and shipbuilding; they are also ideally suited for wiring in the field. This ease of use is particularly important whether the installations are found on rooftops, in building integrated systems, or installations in open space. The field wired version is capable of multiple mating cycles. Just a few individual parts for multiple wire gauge variations and cables simplify logistics at the assembly site.

Both the molded cable version, as well as the field-wired version carry their rated current throughout the entire temperature range; there is no need to derate according to temperature.



Versions:

- RST25i3** for AC 25 single-phase supply 25 A / 5 kW with SZS
- RST20i4** on motors for tracking systems of 20 A / 240 V
- RST20i5** for supply of 1 x AC 25 A / 5 kW (phase-monitored) or three-phase supply of 3 x 20 A / 12 kW
- PST40i1** on motors for tracking systems of 20 A / 240 V



The IP67 protection rating, the robust design, as well as the mate compatibility guarantee flexibility for installations. PST 40i1 accepts cross sections of 1.5 mm² up to 10.0 mm², 16 – 8AWG. This increased wire gauge enables pluggable connections to inverters over extended cable runs. The high current-carrying capacity of 40A is proof of the contacts' superior conductivity, and at the same time satisfies the trend towards increased input on powerful new string inverters.

Other areas of applications

- Chargers with a high IP protection degree
- Island systems with AC or DC bus in buildings and façades
- Motor connections for tracking systems
- Inverting on-board voltage (car; truck; railroad; RVs; boat)
- Power generation (fuel cells; wind and water power plants; biogas and biomass systems; cogeneration power plants; and geothermal energy systems)

Benefits

- Quick assembly
- Easy handling
- UV resistant
- High conductivity
- IP67

Skills that complement one another:

PST40i1 satisfies the most demanding requirements using TECSUN (PV), the cable from PRYSMIAN Cables and Systems GmbH, www.special-cables-neustadt-coburg.de. Not only winning the TÜV certificate or tests at leading institutions provide proof of this, but primarily the daily practical use, taking place worldwide.



Pluggable solar solutions from Wieland

Exemplary professional competence

For almost 100 years, Wieland has made its mark in the history of industrial electrical engineering. But we are always looking to the future. New technology, new requirements, better solutions. Photovoltaics, with its great innovative force, is dynamic and expansive, and a perfect fit for our expertise. The high quantities demanded by the solar industry require proven manufacturing processes, just as the installations demand customer oriented concepts.

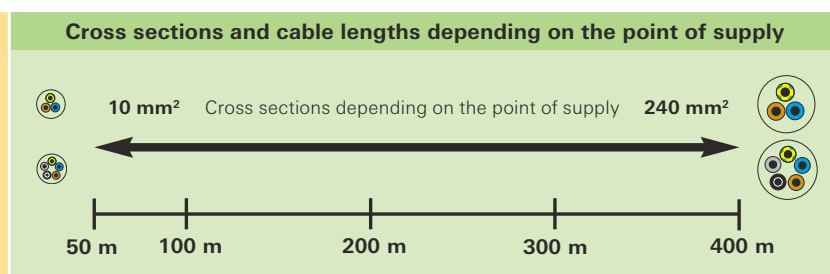
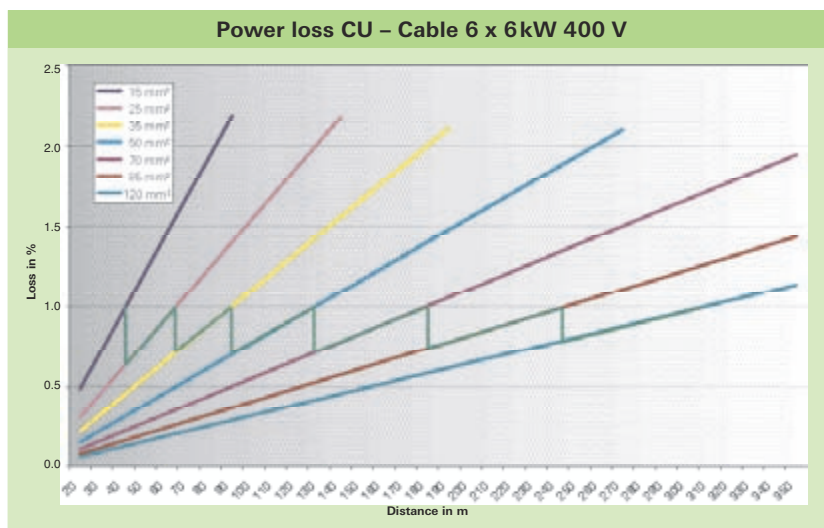
Example: power supply connection in open spaces, on rooftops, and in building integrated systems

Implementing large solar power plants in fields or on rooftops using string inverters requires a system with various combiner and distribution units. AC distribution units combine and conduct the power from the inverter to the load or network. Depending on the power and the cable distance, various cross sections up to 240 mm² are required. Wieland Electric's project team supports planning, even megawatt systems, with design and assembly of combiner boxes.

By reviewing the installation site plan and considering the inverters' AC power, we create the optimal AC distribution box for any project. Sample construction, CAD documentation and delivery logistics are included. Further options such as lightning and surge suppression modules, custom housing design, and components including the installation of monitoring systems satisfy the majority of requirements.

Example: industrial product for the PV marketplace

Wieland Electric occupies a unique niche in serving the PV marketplace. By combining the experience of development and manufacturing of components and sub-assemblies for both the industrial and building installation markets, we are well-positioned to satisfy the requirements of the emerging PV market. Our assembly and testing facilities and processes are not simply certified, but also proven in delivering value-added services and products. UL and IEC testing, Ex-Approvals, shipbuilding norms and standards all belong to the everyday activities of manufacturing over 20,000 individual catalog parts.



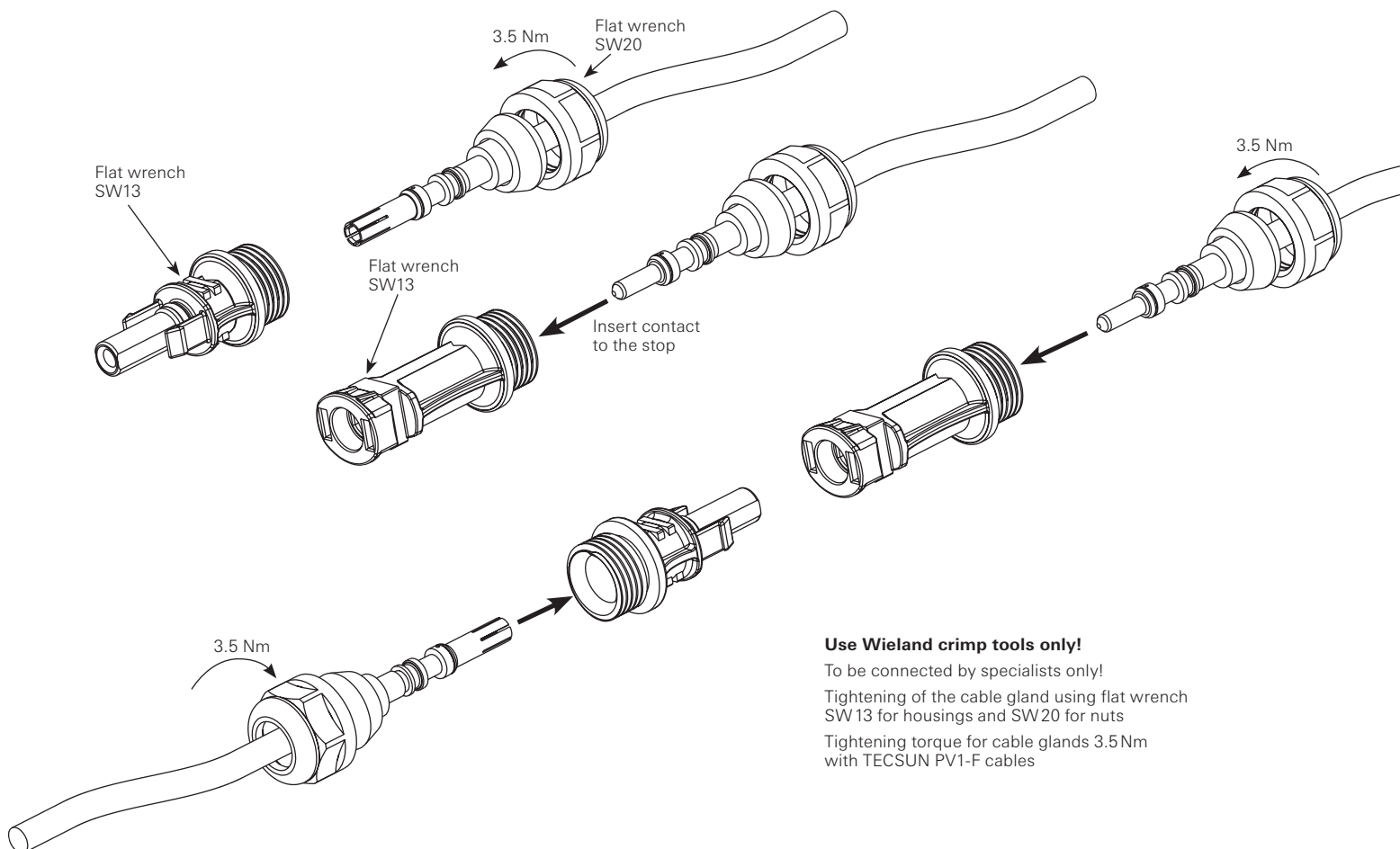
Contacts

Female and male contacts from the system kit

- For cables with a cross section of **1.5 – 10 mm²**.
- Standard pack delivered in a plastic bag.
- Delivery in complete standard packs.

Female contacts	Std. Pack	Cross section	Marking
02.125.8002.8	100	1.5 mm ²	unmarked
02.125.8102.8	100	2.5 mm ²	2 grooves
02.125.8202.8	100	4.0 mm ²	unmarked
02.125.8302.8	100	6.0 mm ²	1 groove
02.125.8402.8	100	10.0 mm ²	unmarked

Male contacts	Std. Pack	Cross section	Marking						
05.545.2002.8	100	1.5 mm ²	unmarked						
05.545.2102.8	100	2.5 mm ²	2 grooves						
05.545.2202.8	100 </tr <tr> <td>05.545.2302.8</td> <td>100</td> <td>6.0 mm²</td> <td>1 groove</td> </tr> <tr> <td>05.545.2402.8</td> <td>100</td> <td>10.0 mm²</td> <td>unmarked</td> </tr>	05.545.2302.8	100	6.0 mm ²	1 groove	05.545.2402.8	100	10.0 mm ²	unmarked
05.545.2302.8	100	6.0 mm ²	1 groove						
05.545.2402.8	100	10.0 mm ²	unmarked						



Use Wieland crimp tools only!

To be connected by specialists only!

Tightening of the cable gland using flat wrench SW 13 for housings and SW20 for nuts

Tightening torque for cable glands 3.5Nm with TECSUN PV1-F cables