

ENC

expertise meets cable



PRODUCT CATALOG | 2025/26

CABLE PROTECTION & CABLE MANAGEMENT FOR SOLAR SYSTEMS



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PEOPLE MAKE THE DIFFERENCE

We are convinced that people make the difference. We are a team of highly committed, loyal and strong-willed individuals. Our methods are modern, innovative and time-optimized. We implement our projects reliably with a lot of experience and passion. You will be impressed by our speed and service.

WE ARE ACTIVE IN THE FOLLOWING SECTORS:



VEHICLE CONSTRUCTION



PHOTOVOLTAICS



ELECTRICAL INSTALLATION



MECHANICAL ENGINEERING

THAT'S WHAT SETS US APART



FOCUS ON OUR CUSTOMERS

- Over 20 years of consulting experience in industry and electrical trade
- Extensive range of services
- Excellent service across all channels



WIDE PRODUCT RANGE

- Exclusive brands with convincing quality, price-performance and sustainability
- Unique product range depth in the main categories
- Over 7,500 items, guaranteed, deliverable within 48 hours
- Delivery reliability and price guarantee for call orders with a term of up to 18 months



HANDPICKED PARTNERS

- Own manufacturing expertise in cable ties and tools
- Worldwide certified and long-standing manufacturing and procurement partners
- Highest quality standards
- Excellent value for money



STRONG TEAM

- We are service providers by conviction
- We act as problem solvers and inspire with our speed
- Trust us as experts for cable protection, cable connections and fastening technology
- We offer individual support through personal customer advisors



CERTIFIED MANAGEMENT SYSTEM ACCORDING TO ISO 9001:2015

Our quality management system has been certified according to ISO 9001 for all product areas for over 10 years. We have our processes and material flows checked every year by internal and external auditors and are constantly developing further.

OUR PRODUCTS



CABLE TIES



FASTENING CLIPS



CORRUGATED CONDUIT



SOLAR CONNECTORS



ELECTRICAL CONNECTION TECHNOLOGY



SHRINK TUBING



INSULATING & PROTECTIVE HOSE



TOOL



CABLE DUCTS & CONDUITS



TAILOR-MADE SERVICE PACKAGES FROM A SINGLE SOURCE

For years, EMC-direct has been a high-performance strong partner of the solar industry and is growing above average in this area.

The strengths include:

- Individual support from experienced customer advisors
- Cable protection and fastening solutions from a single source
- Resource-saving collective deliveries
- Reliable construction site delivery (GPS data and delivery notification)
- Maximum delivery reliability through warehouse service
- Price security for up to 18 months
- Maximum transparency through project-based invoicing
- NRW – Cleaning service for solar systems



WE ARE HAPPY TO ADVISE YOU ON OUR PRODUCTS +49 (0)2369 - 98469-15

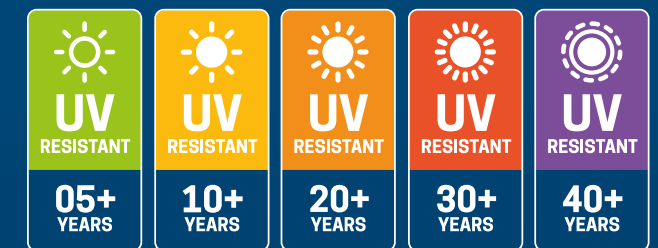
The telephone consultation is free of charge and of course non-binding.



CLEAR LABELING FOR LONG-LASTING QUALITY

Your advantages with EMC-direct – UV-resistant outdoor installations

- **Maximum longevity** – Our UV-resistant and durable components defy sun and weather.
- **Reliable security** – Protection against material fatigue and functional failures caused by UV radiation.
- **Easy product selection** – Clear UV labels, long-term protection annual information and color codes make the decision easier.
- **Perfect for photovoltaics & outdoor installations** – Designed for demanding outdoor conditions.

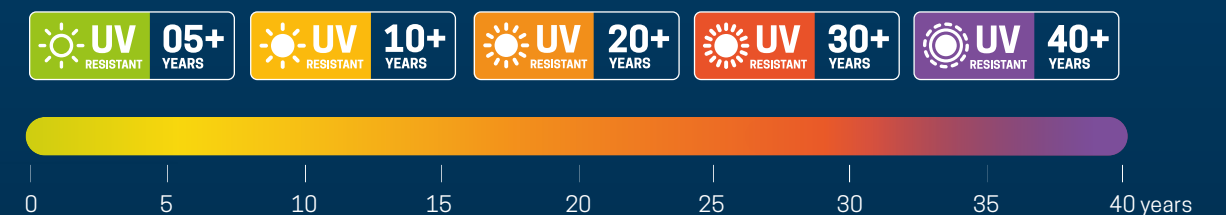


ROBUST SOLUTIONS FOR OUTDOOR USE

Outdoor electrical installations require durable materials. UV radiation can degrade conventional plastic conduits, cable ties and cable ducts – endangering their safety and functionality.

EMC UV-RESISTANT LABEL – UV PROTECTION AT A GLANCE

Rely on our color coding system for tested quality – for safe and durable outdoor installations



OUR HIGHLIGHTS



UV-RESISTANT CORRUGATED CONDUIT

Our UV-resistant corrugated tubes are specially designed for long-term use in photovoltaic applications. These high-quality protective products are available as slotted, unslotted and 2-part lockable versions. With our on-demand service, you can secure fixed prices for up to 18 months and have your corrugated tubes delivered as needed.



Designed for long-term use



UV and heat resistance



Compressive strength up to 450N



CABLE TIES

The power cable tie for all demanding and safety relevant applications is inspired by nature and so powerful as the talons of a bird of prey. Thanks to an innovative 4-tooth head design, it grips relentlessly and ensures 15-30% more tensile strength and stability. The 10-year UV-resistant version is also perfect for long-term outdoor use.



Innovative 4-tooth head design



At least 10 years UV-weather-resistant

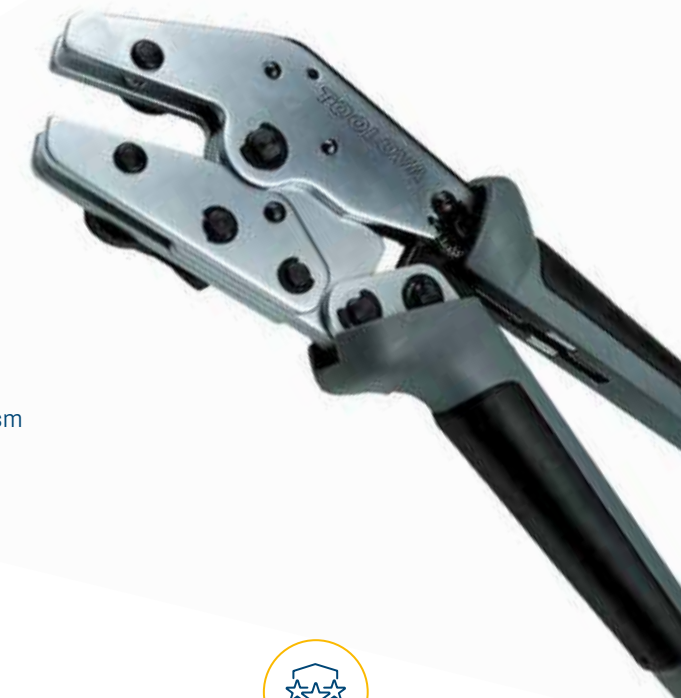


15 to 30% more traction and stability



TOOL PROGRAM

We are proud to present the TOOLOVA® tool range, a manufacturer specialising in hand tools for the electrical engineering industry. Once you pick up a TOOLOVA® tool and use it for the first time, you are guaranteed not to want to give it up. Discover, for example, the 'Crimptool TF Plus', the best crimping tools with interchangeable dies and quick-locking mechanism on the market. The tool is also available as a special solar set with three dies and crimp die holder.



Price-performance winner



Distinctive design



Zero-risk guarantee



OUR MISSION: SUPPLY GERMANY'S MEDIUM-SIZED BUSINESSES WITH ELECTROTECHNICAL MATERIALS AND CONTRIBUTE TOGETHER TO CLIMATE-FRIENDLY ENERGY SECURITY.

WE AS COMPANY

We want to sustainably reduce our emissions and contribute to a functioning circular economy. To achieve this, we are constantly working on our processes and cooperate exclusively with suppliers who live up to their ecological responsibility. Our own energy supply has been supported by a photovoltaic system since 2010. We rely on green energy for a better climate future.

PRODUCTS & SERVICES

With our products and services, we contribute to the expansion of renewable energies and help to ensure a liveable environment for future generations. Our programme includes a growing range of products that are obtained or manufactured from recyclable materials. The development of products made from bio-based materials is one of our most important tasks for the future.



RESPONSIBLE CORPORATE MANAGEMENT

By participating in the UN Global Compact, we are committed to a global network for an inclusive and sustainable economy, including along our supply chains. Values such as mutual trust, predictability, honesty and long-termity shape the way we deal with each other and with our business partners.



SOCIAL ENGAGEMENT

Sustainability is not only an integral part of our economic activities, it also shapes our social commitment. A particular concern for us is children and young people from disadvantaged families. For many years we have consciously supported regional foundations and causes that help to improve educational opportunities, leisure activities and prospects for such children and young people.



EMPLOYEES SUPPORT FINANCIALLY

We see the compatibility of family and career as our social responsibility. In addition to flexible working models, we offer our employees various opportunities to develop professionally and personally. Together we are committed to a trusting and cooperative relationship.

EMC



**CABLE PROTECTION AND FASTENING
SOLUTIONS FOR SOLAR PARKS:**

RELIABLE QUALITY – FROM THE PRODUCTS TO TO THE SERVICE



GREENTECH SYSTEMS FURTHER EXPANDS PARTNERSHIP WITH EMC-DIRECT

For the economical and reliable operation of open-space solar systems over many decades, high quality of all components used is essential – until to cable protection and cable connections. The experienced EPC partner greentech therefore relies on a close cooperation with EMC-direct – and intends to gradually expand this cooperation.

The business relationship with EMC-direct has been successful for over a year, explains Lars Petzold, Managing Director at greentech: "From the very beginning, we were impressed by the exceptionally high level of customer orientation. The contact persons at EMC-direct took the time for on-site appointments at our construction sites and on this basis the best suitable product solutions are recommended." The ongoing support also represents a added value, Petzold continues: "We are in constant communication and have fixed contact persons who are always available to answer questions and take care of things."



HIGH DELIVERY RELIABILITY IS CRUCIAL

Another key advantage is reliability and high delivery reliability. After all, nothing is more frustrating than when low-priced components that don't arrive on time delay the entire construction progress. Lars Petzold comments: "In the past, we sometimes had challenges with the availability and timely delivery of various products. With EMC-direct, we can always rely on reliable delivery directly to the construction site and are therefore happy to concentrate our procurement of cable protection and cable connection products from this partner."



HIGHEST QUALITY STANDARDS

As an experienced EPC partner, the greentech systems GmbH business unit, which was founded within greentech in October 2021, takes care of all the necessary steps in plant construction: from planning, component procurement and construction to handover in the operating phase. "The catalogue of requirements, in which we define uniformly high quality standards in order to guarantee the longevity and reliability of the systems, was developed from our own 15 years of experience at greentech", Petzold continues.



EFFICIENT AND WELL-REHEARSED PROCESSES

Efficient processes and procedures, from ordering to delivery to invoicing, are just as important as the quality of all products. EMC-direct supports customers in this regard with customized solutions that are continuously optimized. A new digital customer portal is currently being launched to provide clients with 100 percent transparency regarding orders, deliveries, and outstanding contract quantities at all times. Due to its expansion, particularly in the solar sector, EMC-direct is also expanding its own logistics resources – acting as an outsourced warehouse for its customers.



HIGH QUALITY OF SERVICE

"We see ourselves as a service provider and would like to support customers in the solar industry through our service packages enable them to focus clearly on their core activities," emphasizes Thaddäus Nagy, Managing Director of EMC-direct. "This includes maintaining a constant dialogue with our partners regarding the individual requirements and circumstances of each project, and regularly adjusting our planning during the year to ensure the best possible delivery to the construction sites."



COOPERATION IS BEING EXPANDED

The comprehensive product portfolio that greentech systems sources from EMC-direct has grown continuously. Especially given the market outlook, having reliable partnerships is essential to cope with growth, Lars Petzold emphasizes in conclusion: "Simplicity and efficiency at all levels – that is a key advantage of our collaboration. Therefore, we want to further expand the cooperation and are discussing a more extensive framework agreement for 2024."

MULTI-MEGAWATT LIGHTHOUSE PROJECT

The cooperation between the two companies has proven successful in recent months, including in a special flagship project: Along the A60 motorway, greentech has implemented solar parks with a total output of 43.6 megawatts on a total of 14 sites for Aachen-based Trianel, thus demonstrating its high level of expertise in the planning and implementation of turnkey photovoltaic systems in the multi-megawatt range.

PROJECT DETAILS

greentech sources a comprehensive portfolio of cable protection and cable connections from EMC-direct:

- Various specialized cable protection conduits for underground and above-ground installation including the associated accessory systems
- Long-term UV-weather-resistant cable ties made of plastic and stainless steel
- Edge clips, cable clips and other fastening solutions specifically for cable routing in solar systems
- Heat shrink tubing, cable lugs and other small parts





CABLE TIES / CABLE MANAGEMENT

As a major importer, we work with a network of hand-picked suptools worldwide and can offer you almost every common cable tie at attractive prices. We produce special products, including mold construction, through our own manufacturing partner in Germany. With the popular HPER® series you can purchase cable ties in market-leading quality from us, which characterized by longevity and an excellent price-performance ratio.



CABLE TIES PA 6.6



- » High-quality cable ties for industrial applications
- » UV stability of at least 3 years
- » Versatile and easy to use



Material:

- PA 6.6 (premium polyamide 6.6 / cadmium-free, lead-free, silicone-free)

Operating temperature:

- Approx. -40 °C to +85 °C (briefly up to +110 °C)
- Installation temperature Approx. -10 °C to +60 °C

Characteristics:

- UV-weather-resistant
- Internally toothed
- Very good fire protection properties: self-extinguishing according to UL94 V-2
- Very good chemical resistance: excellent resistance to conventional liquids, aromatic solvents, oils, greases, and derivatives. Good resistance to bases, gasoline, soaps, greases, and alcohol. Limited resistance to acids.

Width [mm]	Length [mm]	Bundling max. [mm]	Tensile strength min. [N]	Contents	Tool Item No.	Item no.
2.5	100	24	107	100 pcs.	4040004 4040060 4040063	22002
	140	36	107	100 pcs.		22004
	200	55	107	100 pcs.		22006
3.6	140	36	200	100 pcs.	4040004 4040060 4040061 4040063	22008
	200	55	200	100 pcs.		22010
	250	70	200	100 pcs.		22012
	290	82	200	100 pcs.		22014
	360	103	200	100 pcs.		22016
	200	55	275	100 pcs.		22021
4.8	250	70	275	100 pcs.	4040004 4040060 4040061 4040063	22023
	290	82	275	100 pcs.		22025
	360	103	275	100 pcs.		22027
	430	123	275	100 pcs.		22031
	385	110	275	100 pcs.		22046
	180	44	640	100 pcs.	4040060	22033
7.8	280	76	640	100 pcs.		22035
	360	103	640	100 pcs.		22037
	450	130	640	100 pcs.		22039
	540	160	640	100 pcs.		22043
	750	222	640	100 pcs.		22045
9	550	160	785	100 pcs.	4040060	22049
	780	235	785	100 pcs.		22050
	920	280	785	100 pcs.		22053
	1220	375	785	100 pcs.		22054
	1330	409	785	100 pcs.		22057
12.5	500	140	1130	50 pcs.	4040061	22061
	720	222	1130	50 pcs.		22063
	1000	300	1130	50 pcs.		22065

UV-RESISTANT
HPER® CABLE TIES



- » High-performance cable ties with increased tensile strength and load capacity
- » Guaranteed UV stability of 10 years
- » High cold resistance and weather stability
- » Ideal for long-term outdoor use and for the installation of photovoltaic systems.



Material:

- PA 6.6 (premium polyamide 6.6 / cadmium-free, lead-free, silicone-free)

Operating temperature:

- Approx. -40 °C to +85 °C (briefly +110 °C)
- Installation temperature approx. -10 °C to +60 °C

Characteristics :

- UV-weather-resistant
- Internally toothed
- Very good fire protection properties: self-extinguishing according to UL94 V-2
- Very good chemical resistance: excellent resistance to conventional liquids, aromatic solvents, oils, greases, and derivatives. Good resistance to bases, gasoline, soaps, greases, and alcohol. Limited resistance to acids.

Width [mm]	Length [mm]	Bundling max. [mm]	Tensile strength min [N]	Contents	Tool Item no.	Item no.
2.5	100	24	107	100 pcs.	4040004 4040060 4040063	26030-H
	200	55	107	100 pcs.	4040004 4040060 4040061 4040063	26039-H
3.6	140	36	200	100 pcs.	4040004 4040060 4040061 4040063	26031-H
	200	55	200	100 pcs.	4040004 4040060 4040061 4040063	26032-H
4.8	200	55	275	100 pcs.	4040004 4040060 4040061 4040063	26033-H
	290	82	275	100 pcs.	4040060	26034-H
	360	106	275	100 pcs.	4040060	26041-H
7.8	365	106	540	100 pcs.	4040060	26035-H
	540	160	540	100 pcs.	4040060	26036-H
	750	185	540	100 pcs.	4040060	26042-H
9	920	280	785	100 pcs.	4040060	26037-H

STAINLESS STEEL CABLE TIES
WITHOUT COATING



- » Extreme temperature and weather resistance
- » Resistant to UV radiation, corrosion and abrasion
- » Particularly suitable for use in photovoltaic applications, in the chemical industry or in shipbuilding

Material:

- Stainless steel type 304

Operating temperature:

- Resistant to ambient temperatures from -60 °C to +300 °C (short-term from Approx. - 80 °C to max. +538 °C)
- Installation temperature from approx. -60 °C

Characteristics :

- UV-weather-resistant
- Secure hold thanks to ball-lock closure
- Excellent fire protection properties: non-flammable
- Excellent chemical resistance: not vulnerable to conventional media / corrosion-protected
- No water absorption

Width [mm]	Length [mm]	Bundling max. [mm]	Tensile strength min. [N]	Contents	Tool Item no.	Item no.
4.6	200	61.9	890	100 pcs.	4040064	24060
	300	90.6	890	100 pcs.	4040064	24005
	360	112	890	100 pcs.	4040064	24062
	600	200	890	100 pcs.	4040064	24008
	800	265.7	890	100 pcs.	4040064	24011
	1000	300	890	100 pcs.	4040064	24012
	1200	320	890	100 pcs.	4040064	24010
7.9	200	61.9	1600	100 pcs.	4040064	24065
	300	90.6	1600	100 pcs.	4040064	24013
	360	112	1600	100 pcs.	4040064	24004
	450	152	1600	100 pcs.	4040064	24015
	500	160	1600	100 pcs.	4040064	24069
	600	214.8	1600	100 pcs.	4040064	24017
	800	265.7	1600	100 pcs.	4040064	24018
	1000	318	1600	100 pcs.	4040064	24071
	1200	350	1600	100 pcs.	4040064	24077
12	680	214.8	2300	100 pcs.		24022

STAINLESS STEEL CABLE TIES
WITH COATING



- » Extreme temperature and weather resistance
- » Insensitive to UV radiation and corrosion
- » Particularly suitable for use in photovoltaic applications, in the chemical industry or in shipbuilding

Material:

- Type 304 stainless steel with polyester coating

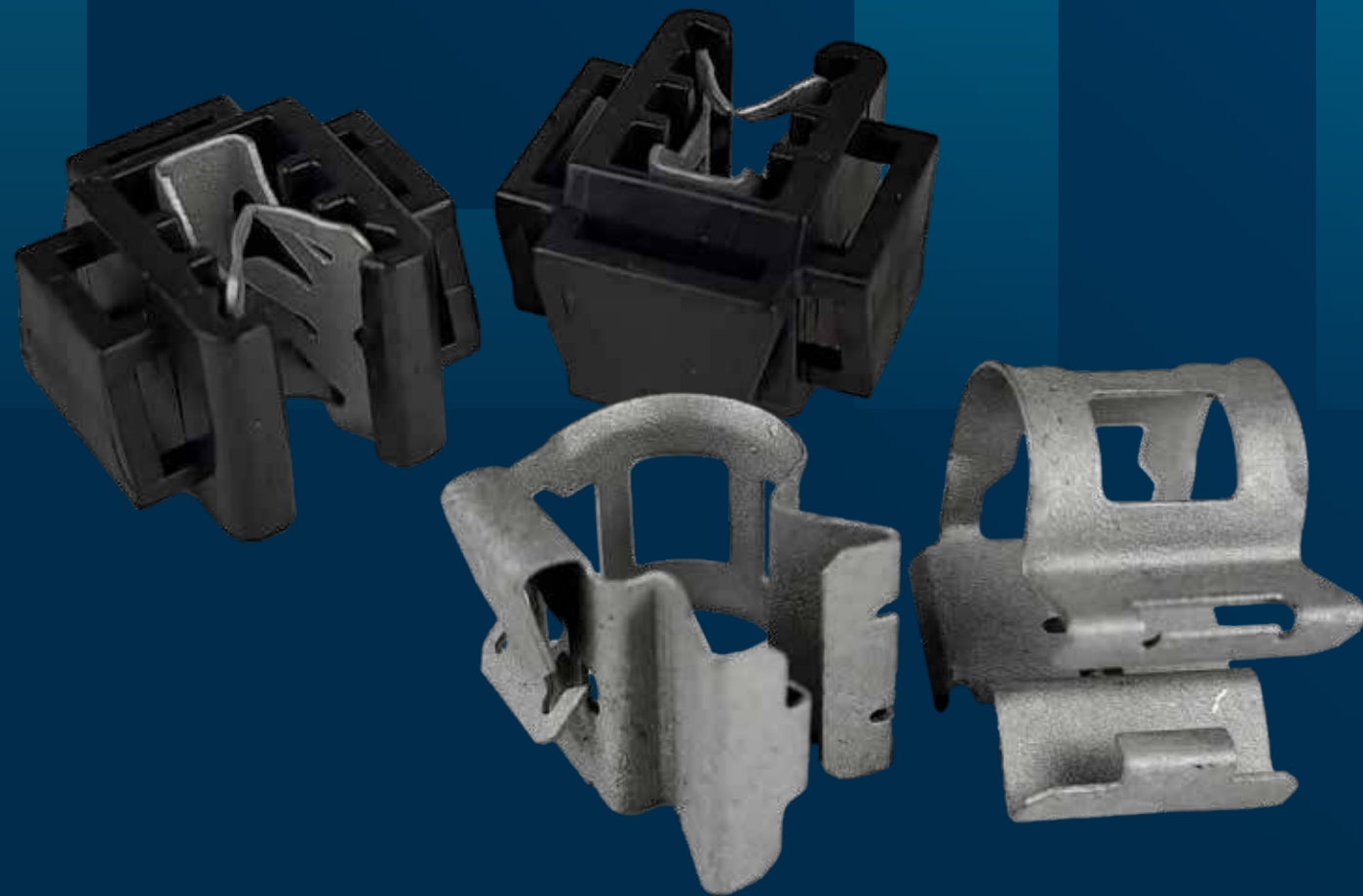
Operating temperature:

- Approx. - 80 °C to +150 °C
- Installation temperature from approx. -60 °C

Characteristics :

- UV-weather-resistant
- Secure hold thanks to ball-lock closure
- Excellent fire protection properties: non-flammable / self-extinguishing coating
- Excellent chemical resistance: excellent
- No water absorption
- Available in black, blue, green, red, white and yellow

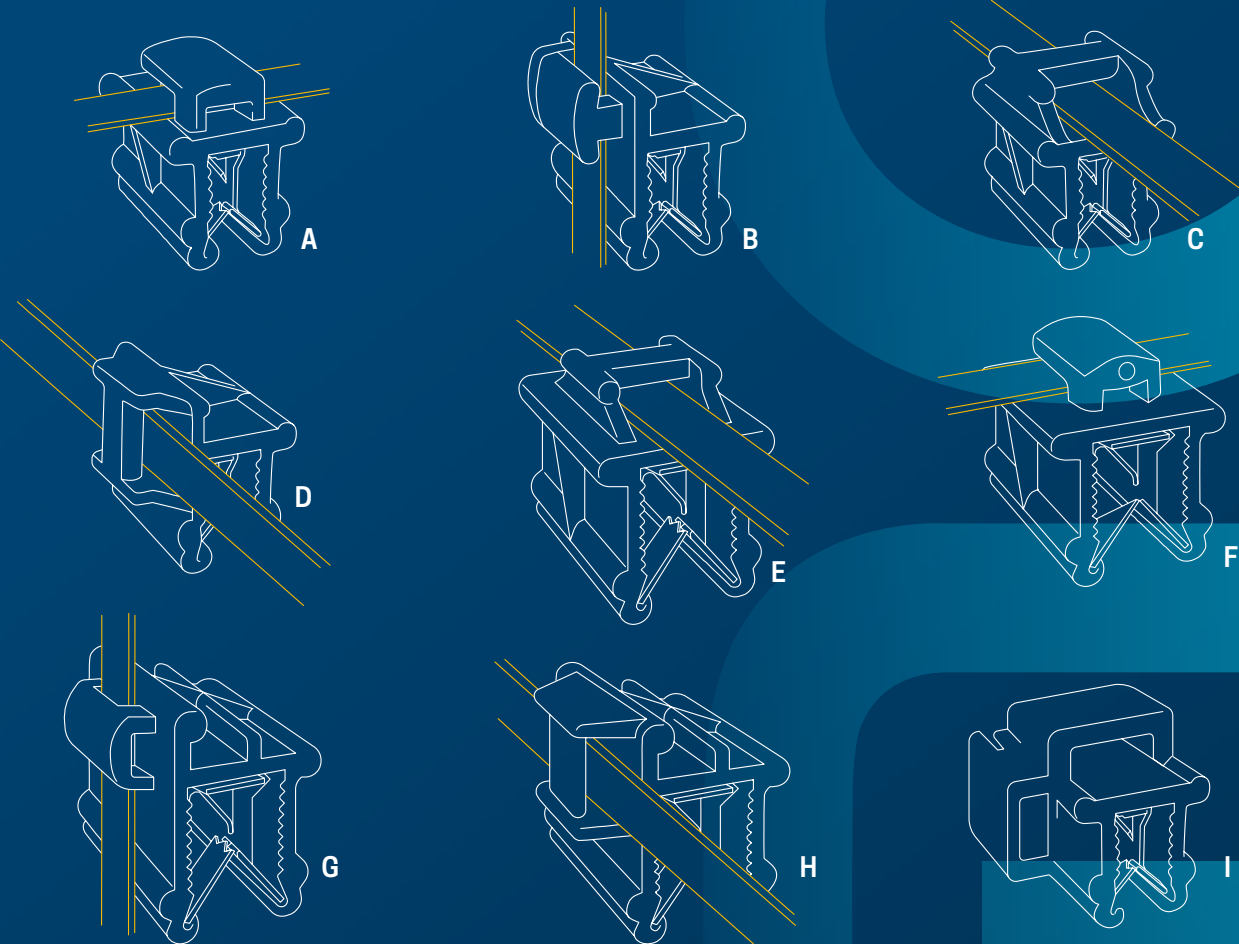
Width [mm]	Length [mm]	Bundling max. [mm]	Tensile strength min. [N]	Color	Contents	Tool Item no.	Item no.
4.6	200	61.9	890	black	100 pcs.	4040064	24030
	300	90.6	890	black	100 pcs.	4040064	24061
	360	112.8	890	black	100 pcs.	4040064	24031
	520	163.8	890	black	100 pcs.	4040064	24032
	600	214.8	890	black	100 pcs.	4040064	24035
	800	265.7	890	black	100 pcs.	4040064	24036
	1200	320	890	black	100 pcs.	4040064	24064
7.9	200	61.9	1600	black	100 pcs.	4040064	24066
	300	90.6	1600	black	100 pcs.	4040064	24067
	360	112	1600	black	100 pcs.	4040064	24068
	500	160	1600	black	100 pcs.	4040064	24070
	600	214.8	1600	black	100 pcs.	4040064	24072
	800	265.7	1600	black	100 pcs.	4040064	24073
	1000	318	1600	black	100 pcs.	4040064	24074
	1200	350	1600	black	100 pcs.	4040064	24076
12	680	214.8	2300	black	100 pcs.		24075



MOUNTING CLIPS FOR PHOTOVOLTAICS

Our specialized range of fastening clips for the solar industry enables precise and professional installation of cables, MC4 connectors and corrugated conduits.

For both plastic and metal clips, we consistently focus on particularly high-quality and durable products that meet the demanding requirements of the solar industry even under extreme conditions.



EDGE CLIPS

- » Flexible fastening solution for guiding cable harnesses, hoses or conduits, especially in outdoor applications
- » For attachment to the module frame and all other plastic panels and metal sheet edges
- » Available for various guide directions and edge thicknesses
- » Clip is attached without tools and held firmly on the edge by the integrated metal clamp.

Material:

- PA 6.6 HS (polyamide 6.6 / halogen-free, cadmium-free, lead-free, silicone-free)
- Metal clamp made of spring steel with hardened surface

Operating temperature:

- Approx. -40 °C to +120 °C (briefly up to +140 °C)

Characteristics:

- UV-weather-resistant
- Impact-resistant and heat-stabilized
- Excellent fire protection properties: Underlying material is self-extinguishing. (Cable ties according to UL94 V-2)
- Very good chemical resistance: resistant to bases, alcohols, oils, greases, fuels
- Metal clamp made of spring steel, with special, corrosion-protected surface



EDGE CLIPS
WITH CABLE TIES, BLACK



Dimensions of cable ties [mm]	Bundling max. [mm]	Profile thickness [mm]	Cable tie holder	Sketch	Direction of cable to profile	Type	Contents	Item no.
200 x 4.8	50	0.7 - 3.0	Above	A	Longitudinal to the profile	EC4A	100 pcs.	29000
	50	0.7 - 3.0	Lateral	B	Longitudinal to the profile	EC5A	100 pcs.	29001
290 x 4.8	50	0.7 - 3.0	Lateral	B	Longitudinal to the profile	EC5A	100 pcs.	29351
360 x 4.8	50	0.7 - 3.0	Lateral	B	Longitudinal to the profile	EC5A	100 pcs.	29352
200 x 4.8	50	0.7 - 3.0	Above	C	Perpendicular to the profile	EC4B	100 pcs.	29002
	50	0.7 - 3.0	Lateral	D	Perpendicular to the profile	EC5B	100 pcs.	29003
	50	3.0 - 6.0	Above	E	Perpendicular to the profile	EC19	100 pcs.	29005
	50	3.0 - 6.0	Above	F	Longitudinal to the profile	EC20	100 pcs.	29006
	50	3.0 - 6.0	Lateral	G	Longitudinal to the profile	EC23	100 pcs.	29007
	50	3.0 - 6.0	Lateral	H	Perpendicular to the profile	EC24	100 pcs.	29008

EDGE CLIPS
WITHOUT CABLE TIES, BLACK



Profile thickness [mm]	Direction of cable to profile	Cable tie holder	Sketch	Type	Contents	Item no.
0.7 - 3.0	Multidirectional	Top and side	I	KC15	500 pcs.	29004
3.0 - 6.0	Multidirectional	Top and side	I	KC107	500 pcs.	29009

CABLE MANAGEMENT CLIP

Item no.: 29050



- » Cable holder for photovoltaic installations in UV-weather-resistant design
- » Flexible design for different cable sizes and types
- » Modular design, several clips can be connected
- » Quick and easy installation with one hand

Material:

- PA 6.6 (Polyamide 6.6)
- UV-weather-resistant

Operating temperature:

- -40 °C to +85 °C

Characteristics:

- UV-weather-resistant
- Width: 23.0 mm
- Cable outer diameter of 5.2 - 8 mm
- Fire protection properties: very good (underlying material self-extinguishing)
- Chemical resistance: Excellent resistance to common liquids, aromatic solvents, oils, greases, and derivatives. Good resistance to bases, gasoline, soaps, greases, and alcohol. Limited resistance to acids.

SPECIAL CLIPS FOR PHOTOVOLTAICS



- » Special photovoltaic clips in UV-weather-resistant design
- » Fastening solution for the flexible routing of cable harnesses, hoses or conduits in various industrial applications
- » For secure attachment to profiles
- » Clips are attached without tools

Material:

- PA 6.6 HS (polyamide 6.6 / halogen-free, cadmium-free, lead-free, silicone-free)
- Metal clamp made of spring steel with hardened surface (cable clamps)

Operating temperature:

- Approx. -40 °C to +120 °C (briefly up to +140 °C)

Characteristics:

- UV-weather-resistant
- Impact-resistant and heat-stabilized
- Fire protection properties: very good (underlying material self-extinguishing)
- Very good chemical resistance: Good resistance to bases, alcohols, oils, greases, fuels / Spring steel meets the highest corrosion protection requirements

PROFILE CLIPS FOR PHOTOVOLTAICS



Dimensions of cable ties [mm]	Bundling max. [mm]	Mounting the clip	Type	Contents	Item no.
200 x 4.8 mm	50	M10 / 7.0 mm deep	SC1	100 pcs.	29013
200 x 4.8 mm	50	M8 / 6.9 mm deep	SC2	100 pcs.	29014

DOUBLE CABLE CLIP FOR PHOTOVOLTAICS



Profile thickness	Mounting cables	Type	Contents	Item no.
0.7 - 0.3	2 x 6.0 mm, without cable ties	SKC 1	100 pcs.	29012

OMEGA CABLE CLIPS

UV-WEATHER-RESISTANT

Item no.: 95104

- » Special photovoltaic clips in UV-weather-resistant design
- » Fastening solution for the flexible routing of cable harnesses, hoses or conduits in various industrial applications
- » For secure attachment to profiles
- » Clips are attached without tools



- Material:**
- PP (polypropylene / halogen-free / silicone-free)
- Operating temperature:**
- -35 °C to +80 °C

- Characteristics:**
- UV-weather-resistant
 - Groove width: 8 – 13 mm
 - Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis, as well as most common solvents / limited resistance to alkalis

WATER DRAIN PV MODULE CLIP

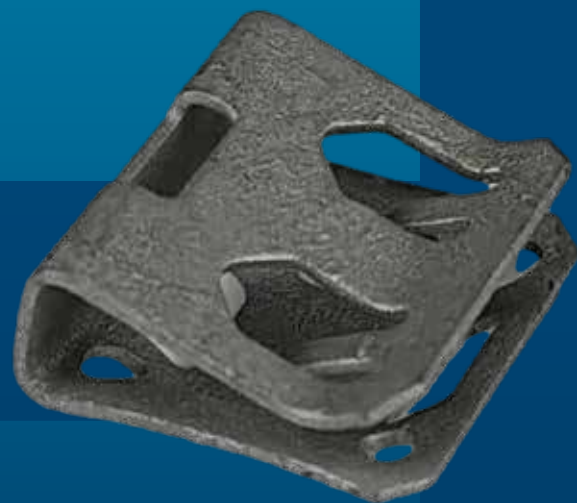


- » Effective reduction of dirt and water on module edges
- » Easy one-click installation
- » Increase energy production by keeping modules clean
- » Less maintenance effort due to extended cleaning intervals

- Material:**
- ABS (heat-stabilized, cold-resistant, age-resistant)
- Execution:**
- For 30, 35, 40 and 45 millimeter frame height
- Characteristics :**
- UV-weather-resistant
 - Fire protection properties: very good
 - Corrosion protection: very good



Execution	Contents	Item no.
for 30 mm frame height	100 pcs.	29200
for 35 mm frame height		29202
for 40 mm frame height	100 pcs.	29201
for 45 mm frame height	100 pcs.	29203



EDGE CLIPS MADE OF METAL FOR CABLE TIES



- » Ideal for organizing multiple cables
- » Multifunctional and flexible in cable routing
- » Secure hold and easy installation
- » Durability and safety through high-quality surface protection

Material:

- Steel (C67S) / Coating: inorganic, zinc-containing base coat with aluminum-containing, organic top coat

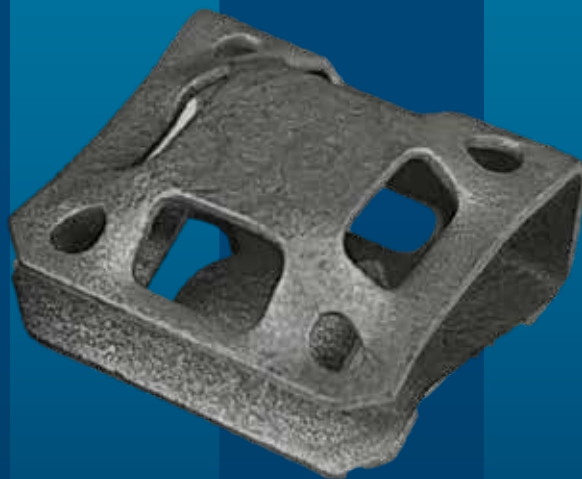
Execution:

- Multidirectional for cable ties (can be looped in both directions)

Characteristics :

- UV-weather-resistant
- Fire protection properties: Very good
- Chemical resistance: Very good
- Corrosion protection: Excellent. No red rust after 720 hours of neutral salt spray exposure according to EN ISO 9227:2012
- We recommend using this clip in conjunction with stainless steel cable ties or PA12 cable ties.

Profile thickness [mm]	Cable tie width	Item no.
0.8 - 3.0 mm	for cable ties up to a maximum width of 5.0 mm	95110



METAL EARTHING TERMINAL FOR PHOTOVOLTAICS



- » Designed for solar applications
- » Secure hold on the module frame
- » Durability and safety through high-quality surface protection

Material:

- Steel (C67S) / Coating: inorganic, zinc-containing base coat with aluminum-containing, organic top coat

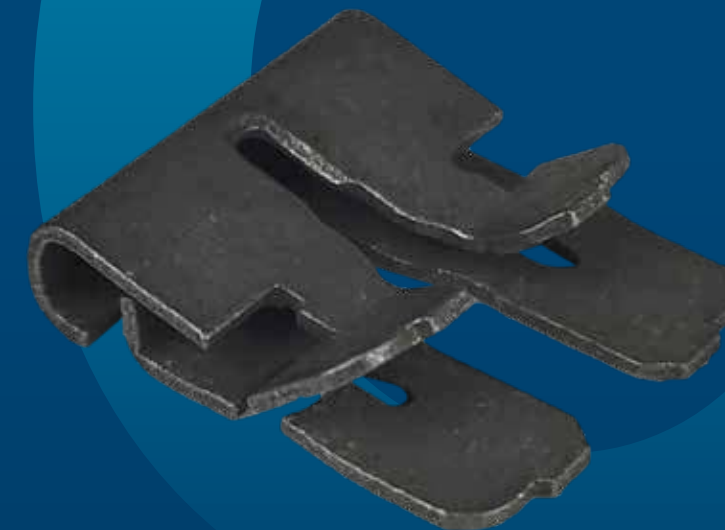
Execution:

- Earthing clip for a multi-wire, flexible cable (H07V-K6 mm2)

Characteristics :

- UV-weather-resistant
- Very good fire protection properties
- Earth continuity / Standards: IEC 60947-1:2001, Compliant with IEC 61730-2:2007, after 96 hours of salt spray according to EN 60068-2-11:1999

Profile thickness [mm]	Cable diameter [mm]	Dimensions [L/H/W]	Contents	Item no.
1.2 - 2.5	6.0	23.3 x 20.0 x 5.6 mm	100 pcs.	95116





Item No. 95113



Item No. 95115



Item No. 95111



Item No. 95114



Item No. 95105



Item No. 95112

METAL CABLE CLAMPS FOR PHOTOVOLTAICS

- » Robust and versatile
- » Corrosion-protected by high-quality coating
- » Safe and fast installation
- » Ideal for offshore applications

Material:

- Steel (C67S) / Coating: inorganic, zinc-containing base coat with aluminum-containing, organic top coat

Versions

- Single (for one cable/strand) / Double (for 2 cables) / Multiple (for 2 or more cables)

Characteristics:

- UV-weather-resistant
- Very good fire protection properties
- Very good corrosion protection: No red rust after 720 hours of neutral salt spray according to EN ISO 9227:2012



Execution	Profile thickness [mm]	Direction of the cable	Contents	Item no.
Single	0.7 - 2.1	perpendicular to the edge	100 pcs.	95113
Single	0.8 - 3.0	perpendicular to the edge	100 pcs.	95115
Single	1.2 - 2.75	parallel to the edge	100 pcs.	95111
Double	1.2 - 2.5	perpendicular to the edge	100 pcs.	95114
Double	1.5 - 2.0	parallel to the edge	100 pcs.	95105
Multiple	1.2 - 2.5	parallel to the edge	100 pcs.	95112

MC4 CONNECTOR METAL TERMINALS FOR PHOTOVOLTAICS

- » Designed for the installation of MC4 connectors
- » Safe and fast installation
- » To be opened later

- Material:**
- Steel (C67S) / Coating: inorganic, zinc-containing base coat with aluminum-containing, organic top coat
- Execution:**
- Metal edge clip for MC4 connectors



- Characteristics :**
- UV-weather-resistant
 - Very good fire protection properties
 - Very good corrosion protection: No red rust after 720 hours of neutral salt spray according to EN ISO 9227:2012
 - Excellent UV stability



Profile thickness [mm]	Plug diameter [mm]:	Direction of the cable	Contents	Item no.
1.0 - 2.5	15.0	90° offset from the edge	100 pcs.	95201
1.0 - 3.0	17.0 - 22.0	parallel to the edge	100 pcs.	95200

EDGE CLIPS MADE OF METAL FOR CORRUGATED CONDUIT

- » Efficient and reliable cable management solution
- » Secure grip on edges
- » Corrosion-protected by high-quality coating

- Material:**
- Steel (C67S) / Coating: inorganic, zinc-containing base coat with aluminum-containing, organic top coat
- Execution:**
- Multidirectional metal edge clip for corrugated conduit



- Characteristics :**
- UV-weather-resistant
 - Very good fire protection properties
 - Very good corrosion protection: No red rust after 720 hours of neutral salt spray according to EN ISO 9227:2012
 - Excellent UV resistance

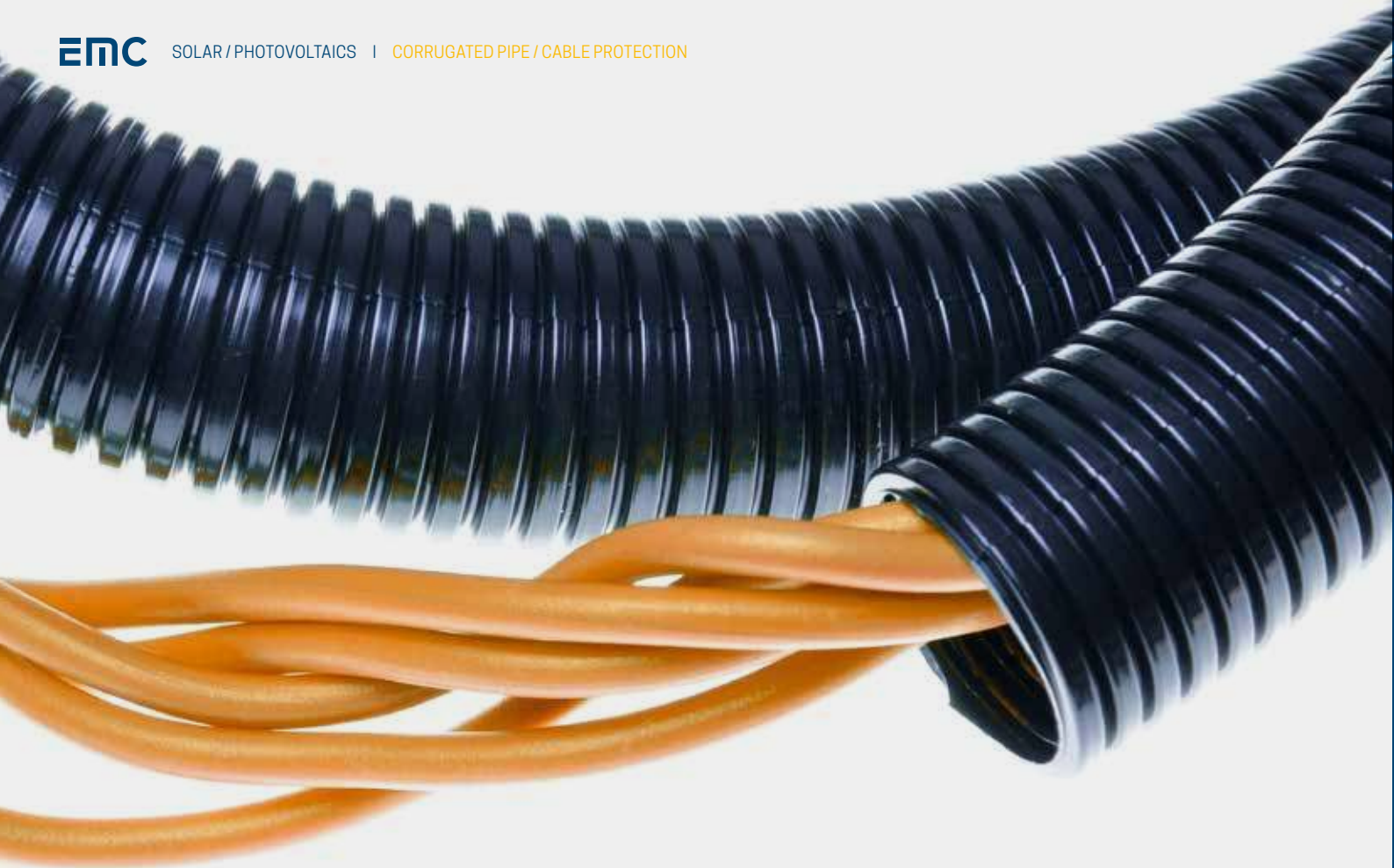


Width [mm]	Length [mm]	Bundling max. [mm]	Tensile strength min. [N]	Item no.
1.0 - 3.5	8	90° to the edge	100 pcs.	95300
1.0 - 3.5	14.25	90° to the edge	100 pcs.	95301



CORRUGATED CONDUIT / CABLE PROTECTION

Thanks to our wide range of standard and special corrugated conduits for industrial cable protection and photovoltaics, we are now the market leader. When it comes to procurement, we rely on long-term partnerships, but are also manufacturer-independent. Thanks to our storage and retrieval service, you benefit as a customer in every market phase through the delivery strength we guarantee.



UV-RESISTANT CONDUIT FROM PP

- » Lightweight and flexible conduit for all outdoor applications
- » UV-weather resistant for at least 20 years
- » Halogen-free, self-extinguishing, with very good chemical resistance
- » Very flexible, specially developed for outdoor applications

Material:

- PP (polypropylene UV-stabilized / cadmium-free, halogen-free)

Operating temperature:

- Approx. -40 °C to +105 °C (short-term up to +120 °C)

Characteristics:

- UV-weather-resistant
- Very good fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 HB
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis, as well as most common solvents / limited resistance to alkalis
- Elongation at break: 300%
- Tensile strength (E-modulus): 1200 – 2000 N/mm²



UV-RESISTANT CONDUIT SLIT



Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item no.
4.5	4.8	7.1	0.15	10	100 m	32092
7.5	6.9	9.9	0.15	10	50 m	32077
8.5	8.7	11.4	0.15	10	100 m	32094
10	10.1	12.6	0.15	15	50 m	32079
13	12.9	15.8	0.15	15	50 m	32082
14	14.5	18.4	0.15	25	50 m	32083
17	16.8	21	0.2	30	50 m	32085
19	19.4	24	0.2	35	50 m	32086
22	21.8	25.5	0.2	45	50 m	32087
23	23.7	28	0.2	45	50 m	32088
26	26.1	31	0.2	50	50 m	32089
29	29.2	34	0.2	50	25 m	32091
37	33.8	41.6	0.2	50	25 m	32090
50	45.7	53.2	0.3	120	25 m	32093
65	63	73.9	0.3	120	25 m	32078
75	76.7	84.8	0.3	120	25 m	32080
100	101	110	0.3	120	25 m	32081

UV-RESISTANT CONDUIT UNSLIT



Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Wall thickness [mm]	Bending radius [mm]	Contents	Item no.
4.5	4.8	7.1	0.15	10	100 m	32053
7.5	6.9	9.9	0.15	10	50 m	32054
8.5	8.7	11.4	0.15	10	100 m	32072
10	10.1	12.6	0.15	15	50 m	32055
13	12.9	15.8	0.15	20	50 m	32058
14	14.5	18.4	0.15	25	50 m	32059
17	16.8	21	0.2	30	50 m	32061
19	19.4	24	0.2	35	50 m	32056
22	21.8	25.5	0.2	45	50 m	32057
23	32.7	28	0.2	45	50 m	32064
26	26.1	31	0.2	50	50 m	32065
29	29.2	34	0.2	50	25 m	32066
37	33.8	41.6	0.2	50	25 m	32067
50	45.7	53.2	0.3	120	25 m	32068
65	63	73.9	0.3	120	25 m	32069
75	76.7	84.8	0.3	120	25 m	32070
100	101	110	0.3	120	25 m	32071

UV-RESISTANT CONDUIT

FROM PP, DIVIDED INTO TWO



- » Lightweight and flexible conduit for all outdoor applications
- » UV-weather resistant for at least 20 years
- » Halogen-free, self-extinguishing, with very good chemical resistance
- » Very flexible, specially developed for outdoor applications



Material:

- PP (polypropylene UV-stabilized / cadmium-free, halogen-free)

Operating temperature:

- Approx. -40 °C to +105 °C (short-term up to +120 °C)

Characteristics:

- UV-weather-resistant
- Very good fire protection properties: self-extinguishing according to FMVSS 302 / UL 94 HB
- Very good chemical resistance: resistant to fuels, mineral oil, greases, alkalis, as well as most common solvents / limited resistance to alkalis
- Elongation at break: 300%
- Tensile strength (E-modulus): 1200 – 2000 N/mm²

Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Bending radius	Contents	Item no.
7	6.3	10	20	50 m	32212
10	8.4	13.4	25	50 m	32213
11	11	16	30	50 m	32214
14	12.5	18.5	35	50 m	32215
16	16	21.5	40	50 m	32216
20	19.2	25.3	45	50 m	32217
23	23.4	30.8	50	50 m	32218
29	27.3	35.5	90	25 m	32219
37	31	41.4	110	25 m	32220
45	42.7	54	130	25 m	32221
70	67.5	79.8	190	10 m	32210
100	87.5	102.5	210	10 m	32211

Special sizes and colors available on request.



UV-RESISTANT CONDUIT

MADE OF PVC, UNSLIT, 750 N



- » Particularly resilient empty conduit for use in roof installations
- » UV-weather resistant for 10 years
- » Flame-retardant and self-extinguishing
- » Corrosion-resistant and good chemical resistance
- » Flexible, with highly slippery inner layer



Material:

- PVC (polyvinyl chloride / UV-stabilized)
- Design: flexible / corrugated outside, smooth inside

Operating temperature:

- Approx. -25 °C to +60 °C

Characteristics :

- UV-weather-resistant
- Impact-resistant
- With protective coating and inner sliding layer
- Chemical resistance: fuels, mineral oils, lubricating greases, alkalis, and most common solvents
- Compressive strength: 750 N
- Standards: REACH, RoHS, tested according to DIN EN 61386-1, DIN EN 61386-22

Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Color	Contents	Item no.
16	10	16	black	50 m	37150
20	13.5	20	black	50 m	37151
25	18	25	black	50 m	37152
32	23.3	32	black	25 m	37153
40	30.7	40	black	25 m	37154
50	39.8	50	black	25 m	37155



UV-RESISTANT CONDUIT MADE OF HDPE
UNSLIT, 450 N



- » Heavy-duty conduit for use above and below ground
- » Perfect for open-space solar systems
- » UV-weather resistant for at least 10 years
- » Flexible, with a smooth structure inside
- » With a sleeve attached on one side for easy connection of several conduits
- » With pull-in aid to facilitate pulling in the cables



Material:

- HDPE (high-density polyethylene, UV-stabilized / halogen-free, high impact strength)

Operating temperature:

- Approx. -5 °C to +90 °C

Characteristics :

- UV-weather-resistant
- Very good chemical resistance: resistant to almost all media, mineral oils, fuels, greases, alcohols / is only attacked by strongly oxidizing, concentrated acids
- Compressive strength: 450 N
- Protection class: IP40 (with appropriate sealing ring up to 110 mm diameter IP67 / using special sealing compound IP68)
- Standards: Available upon request with CE and VDE certification, as well as with antistatic properties and protection against rodents. Contact us; we'll be happy to advise you!

Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Bending radius	Contents	Item no.
32	24.8	32	230	50 m	36401
40	32	40	230	50 m	36402
50	41	50	350	50 m	36403
63	52	63	350	50 m	36404
75	61	75	350	50 m	36405
90	75	90	400	50 m	36406
110	94	110	400	50 m	36407
125	106	125	410	50 m	36408
160	136	160	650	50 m	36409
200	171.1	200	680	25 m	36410



HDPE TELE CONDUIT

- » Reduction of the pulling forces of the cable to be pulled into a plastic conduit
- » Evenly building tensile forces and thus protecting high-quality cable types
- » Maximized retraction lengths and reduction of assembly pits
- » Short assembly times due to reduced connecting elements



Material:

- PE-HD (polyethylene high density)

Operating temperature:

- Ambient temperature range -40 °C to +90 °C

Characteristics:

- 2-rib system ensures the world's smallest contact area of 1.76 mm² between conduit and cable
- 360° force distribution on PE conduits through clamping ring system
- Markings to check the optimal insertion depth
- Rubber ring for sealing against water and internal pressure
- Conical clamping grooves in the conduit body fix the cables by applying pressure during blowing in or during the pressure test.

Ø Outside [mm]	Wall thickness [mm]	Contents	Item no.
50	4.6	100 m roll	99935
		885 m on drum	99935-X885



QUICK COUPLING FOR HDPE TELESCOPIC CONDUIT

Item no.: 99936

Material :

- PE-HD (polyethylene high density)

Operating temperature:

- Ambient temperature range -40 °C to +90 °C

Characteristics:

- With insertion depth marking for pressure-tight connection of PE-HD cable protection conduits



CONDUIT PLUG FOR HDPE TELESCOPIC CONDUIT

Item no.: 99939

Material :

- PE-HD (polyethylene high density)

Operating temperature:

- Ambient temperature range -40 °C to +90 °C

Characteristics:

- Conduit plug 50 mm for HDPE telescopic conduit

HDPE FOUNDATION CONDUIT



- » Particularly resilient, rigid conduit for use above and below ground
- » Perfect for photovoltaic parks
- » UV-weather-resistant
- » Lightweight, stable and shatterproof
- » Foundation conduit for casting masts, posts, poles, etc.
- » Due to the corrugated profile on the outside, very good bond with the concrete casing



- Material:**

 - PEHD (high-density polyethylene / high impact strength)
 - Design: rigid / corrugated outside, smooth inside
 - Article 36351* is perforated, with slit hole 50 x 150 mm
- Characteristics :**

 - UV-weather-resistant
 - Very good chemical resistance: resistant to almost all media, mineral oils, fuels, greases, alcohols / is only attacked by strongly oxidizing, concentrated acids
 - Standards: according to DIN 16961

Nominal diameter	Ø Inside [mm]	Ø Outside [mm]	Color	Length [mm]	Contents	Article number
300	248	290	black	800	32 pcs.	36350
				800	32 pcs.	36351*
				1000	32 pcs.	36352
350	297	346	black	800	18 pcs.	36353
				1000	18 pcs.	36354
				1200	18 pcs.	36355
				1500	27 pcs.	36356
380	347	397	black	1000	18 pcs.	36357
				1200	18 pcs.	36358
				1500	9 pcs.	36359

Article 36351* is perforated, with slit hole 50 x 150 mm

CAPS
FOR HDPE FOUNDATION CONDUIT



- » Quick and easy assembly
- » Reliable closure for HDPE foundation conduits



- Material:**

 - PE (polyethylene)
- Characteristics :**

 - Very good chemical resistance: resistant to almost all media, mineral oils, fuels, greases, alcohols / is only attacked by strongly oxidizing, concentrated acids

Ø Outside [mm]	Color	Contents	Article number
250	yellow	1 pc.	38500
300	yellow	1 pc.	38501
350	yellow	1 pc.	38502



CABLE CONNECTION

Our connector program for the solar industry consists of products from leading brand manufacturers, so that our customers can rely on the safety and sustainability of their systems for decades to come.

For classic MC4 connectors, we rely on the original from Stäubli and also offer crimp-free solutions from Weidmüller and Phoenix Contact.

SOLAR PLUG
STÄUBLI MC4



- » Most frequently installed PV plug-in solution
- » Optimal efficiency and long-term performance
- » Manufactured according to EU conformity directives
- » MC4 is a registered trademark of Stäubli

Material:

- Contact material: tinned copper
- Insulation material: PC / PA

Operating temperature:

- Ambient temperature range -40 °C to +85 °C (TÜV/UL)
- Upper limit temperature 105 °C

Characteristics:

- UV-weather-resistant
- 1100 DC V according to IEC 62852 (for 10 mm² 1000 DC V)
- Protection class, plugged in IP65/IP68 (1 m, 1 h)
- Protection class unplugged: IP2X
- Degree of contamination: 3
- Max. contact resistance of the connector: 0.25 mΩ
- Rated impulse voltage: 16 kV
- Contact system: MULTILAM
- Connection type: Crimping
- Locking system: Locking Type
- Fire protection class: UL94 V-0
- Ammonia-resistant according to DLG
- Salt spray test severity level 6 passed

Cross-section [mm²]	Cable outer Ø [mm]	Execution	Dielectric strength DC [V]	DC current load capacity [A]	Contents	Item no.	Designation
1.5 - 2.5	5.5 - 7.4	Socket	1100	22.5	100 pcs.	59522	PV-KBT4/2.5X-UR
		Plug	1100	22.5	100 pcs.	59521	PV-KST4/2.5X-UR
4 - 6	5.0 - 6.0	Socket	1100	39	100 pcs.	59506	PV-KBT4/6I-UR
		Plug	1100	39	100 pcs.	59505	PV-KST4/6I-UR
4 - 6	7.0 - 8.8	Socket	1100	39	100 pcs.	59512	PV-KBT4/6II-UR
		Plug	1100	39	100 pcs.	59511	PV-KST4/6II-UR
4 - 6	5.5 - 7.4	Socket	1100	39	100 pcs.	59534	PV-KBT4/6X-UR
		Plug	1100	39	100 pcs.	59535	PV-KST4/6X-UR
10	7.0 - 8.8	Socket	1000	45	100 pcs.	59514	PV-KBT4/10II
		Plug	1000	45	100 pcs.	59513	PV-KST4/10II

SOLAR PLUG
STÄUBLI MC4 EVO2



- » Most frequently installed PV plug-in solution
- » Optimal efficiency and long-term performance
- » Manufactured according to EU conformity directives
- » MC4 is a registered trademark of Stäubli

Material:

- Contact material: tinned copper
- Insulation material: PC / PA

Operating temperature:

- Ambient temperature range -40 °C to +85 °C (TÜV / UL)
- Upper limit temperature 105 °C

Characteristics:

- UV-weather-resistant
- 1500 DC V according to IEC 62852
- Protection class plugged in: IP68 (1 m, 1 h)/IP65
- Protection class unplugged: IP2X
- Overvoltage category III
- Max. contact resistance of the connector:
- Class (IEC) II
- Contact system: MULTILAM
- Connection type: Crimping
- Locking system: Locking Type
- Fire protection class: UL94 V-0
- Ammonia-resistant (TÜV Rheinland certified according to 2 PFG 1911/03.2011)
- UL-recognized component according to UL 6703 E343181
- Maximum altitude above sea level for operation 5000 m
- Temperature range according to IEC TS 63126 Level 2

Cross-section [mm²]	Cable outer Ø [mm]	Execution	Dielectric strength DC [V]	DC current load capacity [A]	Contents	Item no.	Designation
1.5 - 2.5	5.9 - 7.3	Socket	1500	39	100 pcs.	59523	PV-KBT4-EVO 2A/2.5X
		Plug	1500	39	100 pcs.	59524	PV-KST4-EVO 2A/2.5X
4 - 6	4.7 - 6.4	Socket	1500	45 / 53	100 pcs.	59510	PV-KBT4-EVO 2A/6I
		Plug	1500	45 / 53	100 pcs.	59509	PV-KST4-EVO 2A/6I
4 - 6	6.4 - 8.4	Socket	1500	45 / 53	100 pcs.	59516	PV-KBT4-EVO 2A/6II
		Plug	1500	45 / 53	100 pcs.	59515	PV-KST4-EVO 2A/6II
4 - 6	5.9 - 7.3	Socket	1500	45 / 53	100 pcs.	59536	PV-KBT4-EVO 2A/6X
		Plug	1500	45 / 53	100 pcs.	59537	PV-KST4-EVO 2A/6X
10	6.4 - 8.4	Socket	1500	69	100 pcs.	59518	PV-KBT4-EVO 2A/10II
		Plug	1500	69	100 pcs.	59517	PV-KST4-EVO 2A/10II
10	5.9 - 7.3	Socket	1500	69	100 pcs.	59538	PV-KBT4-EVO 2A/10X
		Plug	1500	69	100 pcs.	59539	PV-KST4-EVO 2A/10X

SOLAR CONNECTOR STÄUBLI MC4 EVO READY

- » For crimp-free plugging
- » Most frequently installed PV plug-in solution
- » Optimal efficiency and long-term performance
- » Manufactured according to EU conformity directives
- » MC4 is a registered trademark of Stäubli

Material:

- Contact material: tinned copper
- Insulation material: PA

Operating temperature:

- Ambient temperature range -40 °C to +85 °C (TÜV/UL)
- Upper limit temperature 115 °C

Characteristics:

- UV-weather-resistant
- Overvoltage category III
- Protection class (IEC) II
- Protection class, plugged in IP65/IP68 (1 m, 1 h)
- Protection class, unplugged IP2X
- Contact resistance of the connectors
- Rated impulse voltage 16 kV
- Connection type spring terminal (tool-free connection)
- Locking system Locking type
- Fire protection class: UL94 V-0

Cross-section [mm²]	Cable outer Ø [mm]	Execution	Dielectric strength DC [V]	DC current load capacity [A]	Contents	Article number	Designation
4 - 6	5.4 - 7.6	Plug	1500	30	1 pc.	59801	PV-KST-EVO READY
		Socket	1500	30	1 pc.	59802	PV-KBT-EVO READY



WEIDMÜLLER
PUSH-IN PV STICK



- » “PUSH IN” installation for easy and quick connections
- » Significant time savings due to elimination of the crimping process
- » Comfortable and safe handling at all temperatures
- » Guaranteed highest quality and safety

Material:

- Plastic (impact-resistant, heat-resistant, UV-resistant)

Operating temperature::

- Ambient temperature range -40 °C to +85 °C (short-term up to +115 °C)

Characteristics :

- UV-weather-resistant
- Rated voltage: 1500 V DC (IEC) (1500 V DC (DE) / 1500 V DC (EN))
- Rated current: 30 A
- Protection class plugged in: IP65P
- Protection class unplugged: IP2x
- Pollution degree: 3 (2 within the sealed area)
- Cable diameter outside max.: 7.6 mm²
- Cable diameter outside min.: 5.4 mm²
- Conductor connection cross-section max.: 6 mm²
- Conductor connection cross-section min.: 4 mm²
- Cable type: 2 Pfg1169/08.07, EN 50618:2014
- Connection type: Plug-in (push-in/ spring clamp connection)
- Packaging unit: Set, each consisting of one plug and one socket
- Approved by TÜV Rheinland (IEC 62852), CE, RoHS compliant

Cross-section [mm²]	Cable outer Ø [mm]	Execution	Dielectric strength DC [V]	DC load capacity [A]	Color	Contents	Item no.
4 - 6	5.4 - 7.6	Socket and Plug	1500	30	black	10 sets	59800

SOLAR PLUG PHOENIX
CONTACT SUNCLIX



- » Comfortable and safe spring connection technology
- » High yields thanks to silver-plated contacts
- » Safe unlocking without special tools
- » One-piece DC connector

Material:

- Housing: PPE
- Contact material: Cu
- Contact surface: Ag
- Insulation material: mPPE

Operating temperature:

- Ambient temperature: -40 °C to +85 °C (TÜV/UL)
- Upper limit temperature: 105 °C

Characteristics:

- UV-weather-resistant
- Rated voltage: 1500 V DC
- Rated current: 35 A
- Number of poles: 1
- Protection class plugged in: IP65/IP66/IP67/IP68 (24 h / 2 m)
- Protection class unplugged: IP20
- Wire cross-section: 2.5–6 mm²
- Cable diameter: 5–8 mm
- Connection type: spring force
- Contact type: pin
- Socket cable diameter min.: 5 mm / max.: 8 mm Fire protection class: UL94 V-0
- Ammonia-resistant according to DLG and salt spray test severity level 6 passed



Cross-section [mm²]	Cable outer Ø [mm]	Execution	Dielectric strength DC [V]	DC load capacity [A]	Contents	Item no.	Designation
2.5 - 6.0	5.0 - 8.0	Plug	1500	35	50 pcs.	59507	PV-C4M-S 2.5-6 (-) Phoenix Contact Sunclix
		Socket	1500	35	50 pcs.	59508	PV-C4F-S 2.5-6 (+) Phoenix Contact Sunclix



COMPRESSION
CABLE LUGS
ALUMINUM-COPPER (AL/CU)



- » For mounting Al cables on Cu rails
- » Manufactured using friction welding
- » Corrosion-free connection technology
- » Safe electrical and mechanical contact

Material:

- Aluminum / Copper

Characteristics:

- E-Al and E-Cu according to EN 13600
- Blank
- Longitudinally sealed with solid Cu connection lug
- Conduit dimensions according to DIN 46329
- With press markings
- For strain-relieved connections

Conductor cross-section rm/sm [mm²]	Conductor cross-section re/se [mm²]	Code number	Bolt Ø [mm]	Contents	Item no.
120	150	22	M10	10 pcs.	55201
			M12	10 pcs.	55202
150	185	25	M8	10 pcs.	55210
			M10	10 pcs.	55207
			M12	10 pcs.	55206
185	240	28	M8	10 pcs.	55212
			M10	10 pcs.	55208
			M12	10 pcs.	55211
240	300	32	M10	10 pcs.	55214
			M12	10 pcs.	55209



INSULATED WIRE END FERRULES
DIN 46228, PART 4



- » For stabilizing and protecting cable ends
- » For better contact in clamping technology
- » Solderless connection technology
- » High electrical and mechanical safety

- Material:**
- Copper E-Cu / Surface galvanically tinned
 - Insulation material: polypropylene
- Operating temperature:**
- -35 °C to +105 °C
- Characteristics:**
- Minimum layer thickness 3 µ m
 - Dimensional tolerances according to DIN 46228 Part 4

Cross-section [mm²]	Insulation paint	S [mm]	Total length L1 [mm]	Length without insulation L2 [mm]	Contents	Item no.
0.5	white	0.15	12	6	500 pcs.	52001
			14	8	500 pcs.	52002
			16	10	500 pcs.	52003
0.75	gray	0.15	12	6	500 pcs.	52201
			14	8	500 pcs.	52202
			16	10	500 pcs.	52203
			18	12	500 pcs.	52204
1	red	0.15	12	6	500 pcs.	52015
			14	8	500 pcs.	52016
			16	10	500 pcs.	52017
			18	12	500 pcs.	52018
1.5	black	0.15	12	6	500 pcs.	52023
			14	8	500 pcs.	52024
			16	10	500 pcs.	52025
			18	12	500 pcs.	52026
			24	18	500 pcs.	52027
2.5	blue	0.15	14	8	500 pcs.	52033
			16	10	500 pcs.	52034
			24	18	500 pcs.	52036
			18	12	500 pcs.	52600
4	gray	0.2	17	10	500 pcs.	52198
			20	12	500 pcs.	52199
			26	18	100 pcs.	52200
6	yellow	0.2	20	12	100 pcs.	52040
			26	18	100 pcs.	52041
10	red	0.2	22	12	100 pcs.	52046
			28	18	100 pcs.	52047
16	blue	0.2	24	12	100 pcs.	52050
			28	18	100 pcs.	52051
25	yellow	0.2	29	16	50 pcs.	52056
			36	22	50 pcs.	52057
35	red	0.2	30	16.2	50 pcs.	52064
			30	18	50 pcs.	52065
			30	25	50 pcs.	52066
50	blue	0.3	36	19	50 pcs.	52070
			40	25	50 pcs.	52071
70	yellow	0.4	37	21	25 pcs.	52074
95	red	0.4	44	25	25 pcs.	52075
120	blue	0.45	48	27	25 pcs.	52076
150	yellow	0.5	58	32	25 pcs.	52077

**ISOLATED TWIN
WIRE END FERRULES**
DIN 46228, PART 4



- » For contacting two cables in one sleeve
- » Material-saving solution
- » For better contact in clamping technology
- » High electrical and mechanical safety

Material:

- Copper E-Cu / surface galvanically tinned
- Insulation material: polypropylene

Operating temperature:

- -35 °C to +105 °C

Characteristics:

- Minimum layer thickness 3 µ m



Cross-section [mm²]	Insulation paint	S [mm]	Total length L1 [mm]	Length without insulation L2 [mm]	Contents	Item no.
0.25	light blue	0.15	15	8	500 pcs.	52079
0.34	turquoise	0.15	15	8	500 pcs.	52080
0.5	white	0.15	15	8	500 pcs.	52081
0.75	gray	0.15	15	8	500 pcs.	52192
			17	10	500 pcs.	52193
			15	8	500 pcs.	52087
			17	10	500 pcs.	52088
			19	12	500 pcs.	52089
1	red	0.15	25	18	500 pcs.	52090
			16	8	500 pcs.	52095
			20	12	500 pcs.	52096
			26	18	500 pcs.	52097
			18.5	10	250 pcs.	52101
2.5	blue	0.2	21.5	13	250 pcs.	52102
4	gray	0.2	23	12	100 pcs.	52191
6	yellow	0.2	26	14	100 pcs.	52103
10	red	2	26	14	100 pcs.	52205



TOOL

Under the umbrella of our in-house tool forge, TOOLOVA*, we combine our activities in the development and manufacture of electrical hand tools. All TOOLOVA* tools have been tried and tested tens of thousands of times, offer the best value on the market, and come with a 10-year manufacturer's warranty when used properly.

MANUAL CABLE TIE TOOLS

- » Ergonomic tool for tensioning and cutting cable ties in one operation
- » The infinitely adjustable clamping force is displayed on a scale in the handle area
- » Once the clamping force is reached, the excess material is automatically cut off flush



FOR PLASTIC CABLE TIES UP TO 4.8 MM

Item no.: 4040063

Execution :

- Professional, robust cable tie tools for plastic cable ties from 2.2 to 4.8 mm wide and 1.6 mm thick

Material:

- Aluminum alloy

Characteristics:

- Length: 165 mm | Weight: 330 g



FOR STAINLESS STEEL CABLE TIES UP TO 7.9 MM

Item no.: 4040064

Execution:

- Professional, robust cable tie tools for stainless steel cable ties up to 7.9 mm wide and up to 0.3 mm thick

Material:

- Aluminum alloy

Characteristics:

- Length: 180 mm | Weight: 555 g



MANUAL CABLE TIE RELEASE TOOLS

Item no.: 92161

- » Durable safety tool
- » Prevents damage to the conductor insulation when cutting cable ties
- » Optimally adapted cutting head with guide

Material:

- High-alloy tool steel

Characteristics:

- Length: 172 mm | Weight: 142 g

CRIMPING TOOLS SET TF PLUS SOLAR

WITH 3 INSERTS

Item no.: 406014300



Additional press inserts available

- » All-in-one crimping tool
- » With “Easy Change” quick locking
- » Matching inserts for solar connectors
- » Preset, optimal hand force
- » Precise workmanship in industrial quality
- » Safe and ergonomic handling

Execution:

- Crimping tool frame with quick locking
- Set with transport holder and three inserts for photovoltaic applications

Material:

- Matt chrome-plated tool frame
- 2-component handles

Characteristics:

- Robust and reliable
- Forced lock with unlocking option guarantees complete crimping
- Adjustable pressing pressure
- Length: 248 mm
- Weight: 550 g
- Included in the set are:
- 1 crimping tool TF PLUS (with quick-lock) + transport holder
- 3 interchangeable crimping inserts: - for MC3 solar plug contacts 4–6 mm² - for MC4 solar plug contacts 2.5–6 mm² - for insulated cable lugs (red, blue, yellow) from 0.5–6.0 mm²
- (Other press inserts available)



SELF-ADJUSTING WIRE STRIPPER

FOR SOLAR CABLES UP TO 6 mm²

Item no.: 92165

- » For pv cables
- » High-quality, robust wire stripping tools
- » At least 10,000 stripping operations
- » Tools body made of steel
- » V-shaped blades for optimal removal of even difficult insulation

Execution:

- Automatic / self-adjusting
- Cable cross-section: 2.5 – 6.0 mm²
- Cutting range: up to 4.0mm Ø
- Equipment: guide scale, stripper, length adjustment, cutting device, lock

Characteristics:

- Material: Nylon / Steel
- Length: 178 mm | Weight: 147 g



MANUAL WIRE STRIPPER

FOR SOLAR CABLES UP TO 10 mm²

Item no.: 92167

- » High-quality, robust wire stripping tools
- » At least 50,000 stripping operations
- » Excellent stripping performance
- » Blade is precisely tailored to the individual size of the PV cables

Execution:

- Manually
- Cable cross-section: 2.5 – 10 mm²
- Equipment: stripper, cutting device

Characteristics:

- Material: Steel
- Length: 163 mm | Weight: 369 g

CABLE CUTTERS FOR COPPER AND ALUMINUM

- » Compact design
- » Robust ratchet mechanism for daily use on construction sites
- » Ergonomic handles
- » Effortless operation with just one hand possible
- » Easy opening of the swivel knife
- » Locking option for safe transport



UP TO Ø 32 MM, WITH RATCHET

Item no.: 4010037

Execution:

- Ratchet cable cutters up to Ø 32 mm
- Cutting range for copper and aluminum cables: up to 240 mm² fine and stranded
- Not suitable for steel wire or hard drawn copper and Bz conductors

Characteristics:

- Crushing-free cutting of copper and aluminum cables
- Length: 254 mm | Weight: 785 g



UP TO Ø 45 MM, WITH RATCHET

Item no.: 91553

Execution:

- Ratchet cable cutters up to Ø 45 mm
- One-hand ratchet cable cutter for CU and AL cables up to Ø max. 45 mm

Characteristics:

- Cuts cables without crushing
- Length: 220 mm | Weight: 980 g



ASSEMBLY KEY FOR SOLAR CONNECTOR STÄUBLI MC4

Item no.: 99000

- » Easy handling
- » Suitable for Stäubli MC4 connectors

Execution::

- Mounting key for Stäubli solar connector
- The PV-MS assembly and release tool is used to assemble and release screw and plug connections for MC4 connectors.

Characteristics:

- Weight: approx. 300 g



ASSEMBLY KEY FOR SOLAR CONNECTOR STÄUBLI MC4 EVO2

Item no.: 99010

- » Easy handling
- » Suitable for Stäubli MC4 Evo2 connectors

Execution::

- Mounting key for Stäubli solar connector
- The assembly and release tool PV-MS-PLS is used for assembling and releasing screw and plug connections for MC4 Evo2 connectors

Characteristics:

- Weight: approx. 300 g

PRODUCT
STANDARDS



Registration, Evaluation,
Authorization of Chemicals.



Restriction of Hazardous
Substances in electrical and
electronic equipment



Underwriters Laboratories



Canadian Underwriters
Laboratories



Canadian
United States Underwriters
Laboratories



Canada 5858



International Electrotechnical
Commission



European Conformity



Association of Electrical,
Electronic and Information Technologies



American Society for Testing
and Materials



Society of Automotive
Engineers



Military Specification



Bureau Veritas



The Norwegian Veritas
Germanischer Lloyd



Lloyd's Register



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