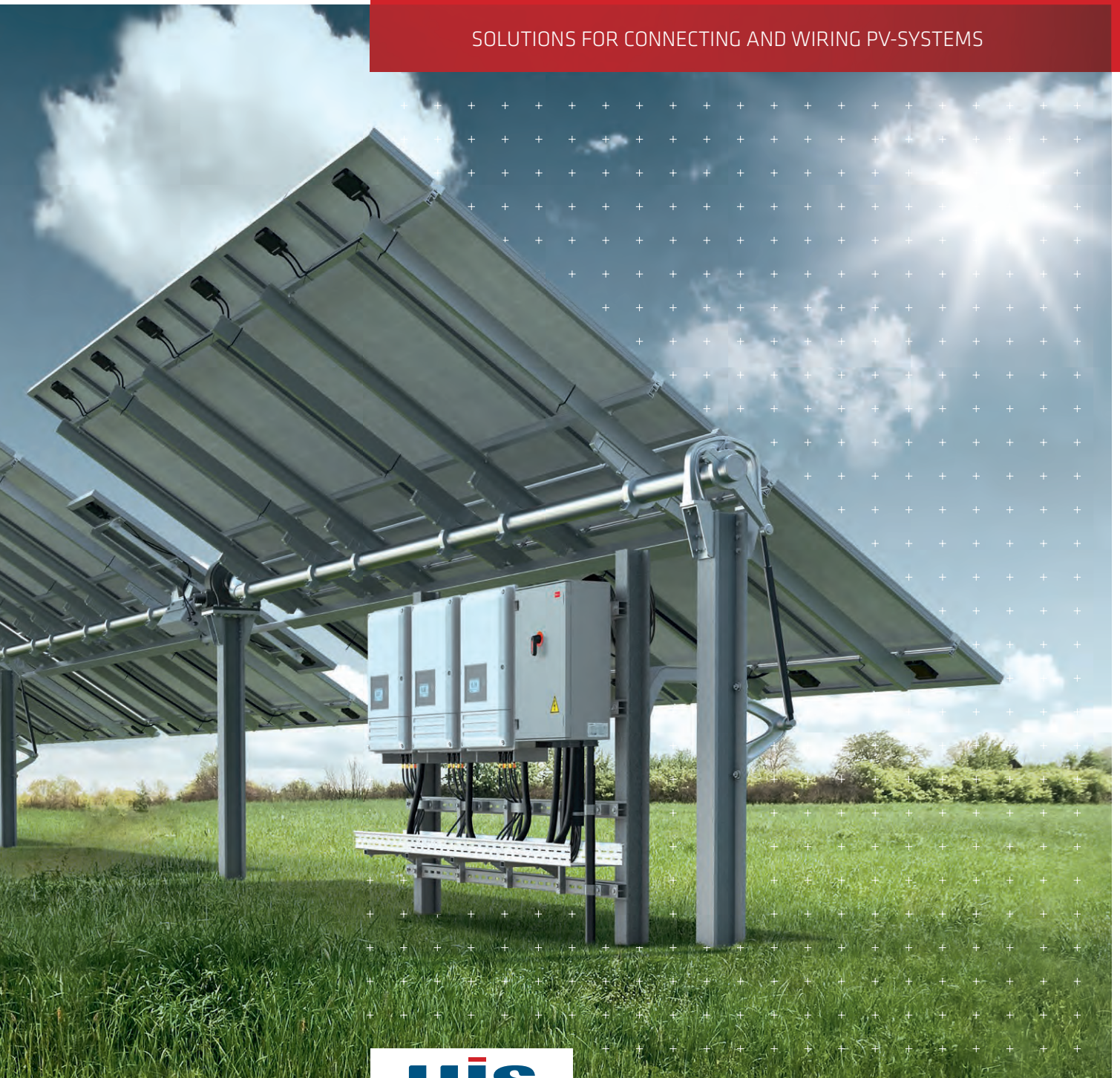


# HIS SOLUTIONS. YOUR ADVANTAGES.

2021/2022

SOLUTIONS FOR CONNECTING AND WIRING PV-SYSTEMS








# OUR PRINCIPLES: MORE. EFFICIENCY.

NNNNNNNNNNNN

Solar energy is one of the sustainable energy sources known to man which, with the help of photovoltaic technology, we try to put to use. We at HIS have set ourselves the task to provide operators of photovoltaic plants with integrated cabling and switching solutions with which they can achieve their objectives and maintain their long-term position in the market.

## SUSTAINABLE SOLUTIONS. FOR BETTER RESULTS.

As a leading international manufacturer of solar cables, string boxes, pluggable cable solutions and in-line fuses for the PV industry, we have worked hard since the company was founded, to improve the cabling and connecting of solar plants. This is better for the installer, better for the operator and better for the environment. The result of our work is installation-friendly and sustainable solutions which also set the benchmark with regard to cost effectiveness.

-  **In-house test laboratory**
-  **Reduced installation times**
-  **Durable products**
-  **Optimization concepts**
-  **Greater profitability**

## FACTS & FIGURES

- |   |  |
|---|--|
| <b>Family business</b><br>with over 20 years experience<br>in the PV sector | <b>1600 Customers</b><br>in 60 countries around<br>the world |
| <b>280 Employees</b><br>in development, production<br>and sales             | <b>8.000 m²</b><br>production area in our<br>Oberzent plant  |





# COMPETENCE

**HIS components and solutions** are designed by our experienced development team to best meet the particular on-site environmental conditions and then tested in our in-house laboratory. Worldwide, in 2020 our products have successfully connected **more than 4 GW PV** output.







**HIKRA® Solar cable**  
**PV Connectors**  
**HISkon® Cabling solutions**  
**HISkon® Cable assembly**  
**HISbox® String boxes**

Cabling and switching components. Industrially manufactured and tested. Individually designed and assembled. For residential, commercial, power plant and floating PV. Delivered ready to plug in.

**In short:**





JUST  
PERFECT  
HISconnect®



# HIS CONNECT® ALL-IN-ONE SYSTEM FOR PV-PROFESSIONALS

XXXXXXXXXXXX

Whether high quality single components, pre-assembled solar cables or individually developed string boxes: the HISconnect® has everything that plant operators, installers and service specialists need for cabling, switching and repairing of solar plants, including the safety you would wish for in your work.

## REDUCE YOUR INSTALLATION COSTS AND BOOST THE LONGEVITY OF YOUR PV PLANT

The complete coverage of all cabling and switching tasks, simple installation and maintenance-free operation; the HISconnect® System has been designed to meet these requirements exactly. The basis of our system constitutes certified product brands which are tailor-made, professionally assembled and finally delivered ready to install. This means that from the beginning, installation errors are prevented and the foundations for a long life are laid.



**HISkon®**  
PV cabling components  
part of HIS CONNECT

+

**HISbox®**  
DC/AC string boxes  
part of HIS CONNECT

=

**HISCONNECT®**  
solar wiring system

### PV Cabling Components

High quality HIKRA® Solar cables, PV connectors for all major module manufacturers, In-line fuses, tools and accessories

### Cable Assembly

Design and assembly of individual Plug-and-Play cable solutions (splitters, harnesses and extensions)

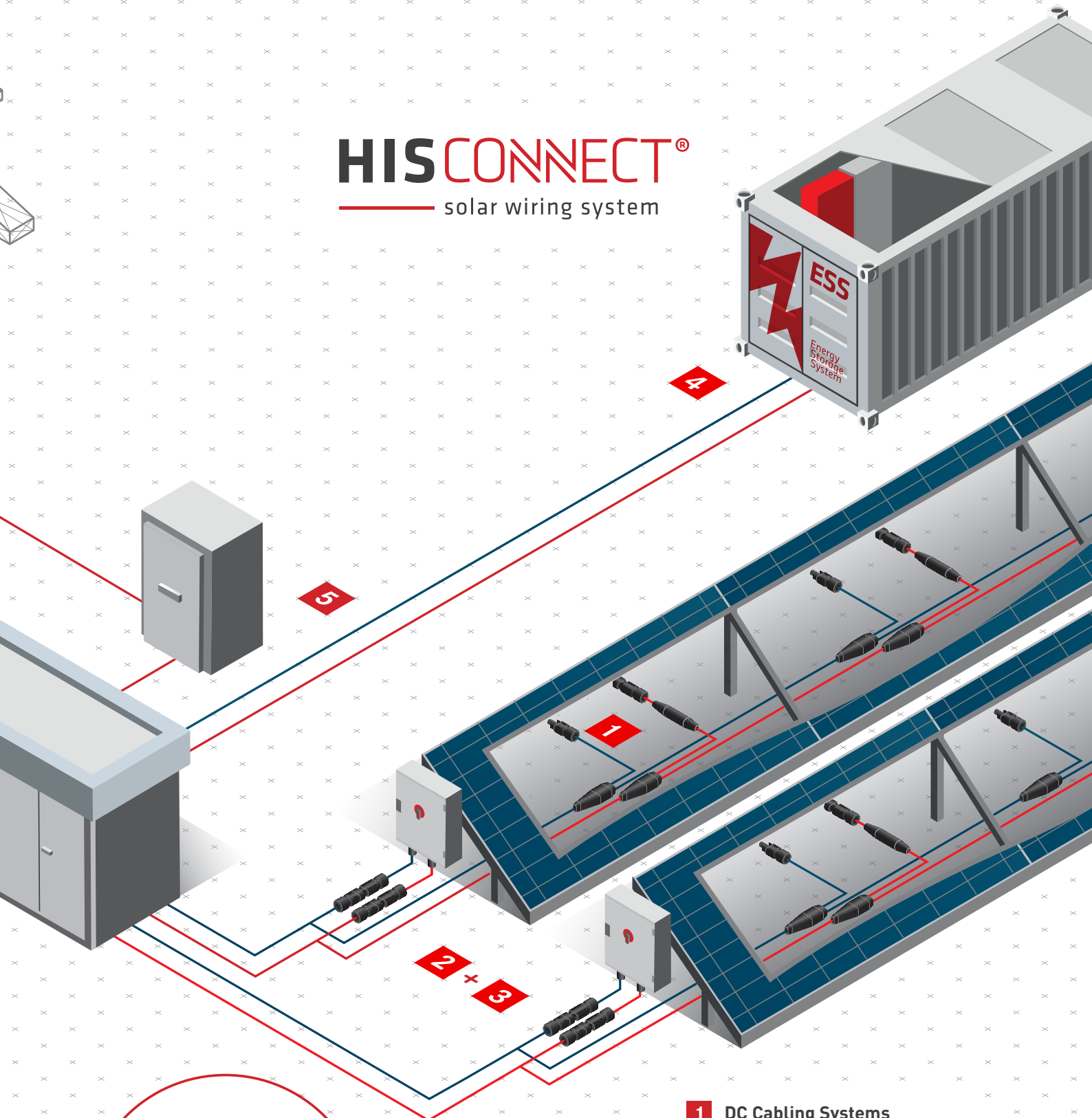
### DC/AC Stringboxes

Planning and manufacture of string combiner boxes, including all necessary switching and fuse components



# HISCONNECT®

solar wiring system



**ONE-STOP-SHOP  
SOLAR WIRING  
SOLUTION**

- 1** DC Cabling Systems
- 2** DC Combiner
- 3** Monitoring & Communication
- 4** ESS Combiner
- 5** Grid protect



# HIS CONNECT® PLUS SERVICE PLUS FOR YOUR PV PROJECT

NNNNNNNNNNNN

HISconnect® PLUS stands for comprehensive service in the planning, design and co-ordination of PV projects, including the provision of the appropriate cabling and switching components. Everyone involved in the PV project benefits: investors, plant operators and developers as well as EPC and O&M companies.

## REDUCE YOUR PLANNING AND CO-ORDINATION COSTS AND IMPROVE THE COST-EFFECTIVENESS OF YOUR PV PLANT

Based on complete coverage of all project specifications as well as a holistic examination of the plant, our employees will create a tailor-made cabling and switching concept including a comprehensive detailed plan of the components. Moreover, all attendant project stages will be conducted or co-ordinated: coordination with panel manufacturers to the processing of customs and to the provision of resources for installation personnel.

**MORE  
RELIABILITY**

**MORE  
EFFICIENCY**

**MINIMIZED  
RISKS**

## THE PLUS FOR ALL INVOLVED PARTIES

### For investors

- High bankability for simpler project financing
- Better calculation security thanks to the all-in-one solution
- Continuing plant cost-effectiveness

### For project developers and EPC companies

- Integrated system for all cabling and switching tasks
- Access to comprehensive HIS Product know-how
- Additional support from HIS PV experts and best practice management
- Much reduced supply chain and access to HIS Logistic expertise
- Pluggable components and reduced installation times
- Frictionless commissioning and compliance with project deadlines

### For plant operators, IPP and O&M companies

- Reduced costs in operational plants because of low maintenance
- Reliable energy supply
- Greater plant availability due to long-life cabling and switching solutions



# HISCONNECT PLUS<sup>®</sup>

wiring solution for solar business

DECREASED  
LCOE

INCREASED  
RoI

OPTIMIZED  
OpEx

REDUCED  
CapEx

PLUS

COST EFFECTIVE  
AND SUSTAINABLE  
COMPLETE SOLUTION  
FOR PV PROJECTS



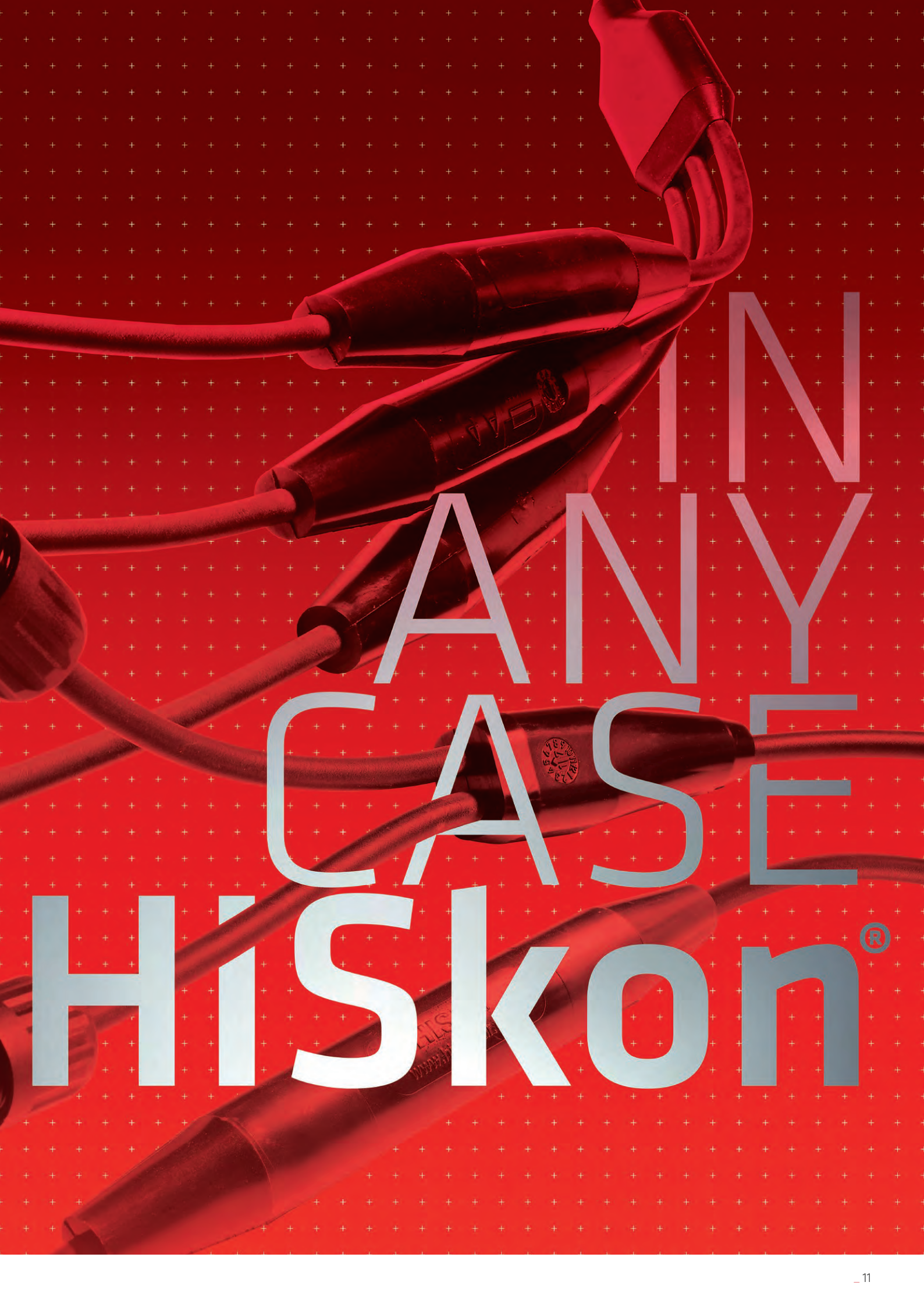


**HIKRA® Solar cable  
PV Connectors  
HISkon® Splitter  
HISkon® Extensions and Adaptors  
HISkon® Inlinefuses and Fuse-connectors**

Durable and robust cabling components from leading manufacturers.  
Individually tailored and pre-assembled for ready to plug in wiring  
solutions. In addition, internally quality tested  
with special adaptations on request.

**In short:**





# ANY CASE HISKON®



# HIKRA®

## Solar cable

NNNNNNNNNNNN

HIKRA® stands for more. More quality by testing which goes above and beyond the current product norms. More safety thanks to improved reaction to fire. More service thanks to varied designs and greater availability in our warehouses on three continents.

HIKRA®: the comprehensive cabling solution for international successful EPC and Installation companies which expect more from their suppliers.

### IN FOCUS IS THE PLANT REVENUE. IN OPERATION OUR SOLAR CABLES.

HIKRA® stands for technically outstanding and integrated cabling solutions which have been developed taking into account all environmental, safety and cost aspects and even under the harshest conditions delivering a faultless performance.

A fine stranded wire of tinned electrolyte copper (IEC 60228/cl.5) as well as robust materials provide a low-loss transfer even after many years. When used in accordance with instructions, the expected life time of this product is at least 25 years. In addition, innovative insulating and sheath material designs provide greater resistance to abrasion and moisture. Versions with an additional nylon coating or stainless steel armour are also available at HIS.



### HIKRA® SOL (H1Z2Z2-K) EN50618 + IEC62930

The double insulated, electronbeam cross-linked cable with special compound is certified to all current standards, meets all fire safety regulations and undergoes additional tests that go far beyond the standard. Durable and robust materials provide increased water-repellent properties: thus, it can be laid in the ground.

**NEW**  
according to  
IEC62930

### HIKRA® PLUS EN50618 (H1Z2Z2-K)

Robust materials defy the long-term influences of nature and offer a maximum quality and safety and conforms with fire protection guidelines. Thanks to its good resistance to atmospheric conditions, the cable has a specifically water repellency and can be laid underground.



# INNOVATION



## HIKRA® DUAL

The HIKRA® DUAL solar cable is TÜV (EN50618) and UL (UL 4703 PV Wire) certified and thus covers the whole bandwidth required for global distribution. Ideal in combination with preassembled cables for manufacturers of junction boxes and modules. Also available as a pure UL version.

### YOUR ADVANTAGES

Certification  
**EN50618, IEC62930, UL4703**  
(depending on type)

High availability  
**HIS warehouses on 3 continents**

Part of the HISconnect® wiring system  
**Optimal compatibility with  
the plant configuration**

Nominal voltage  
**1.5kV DC (up to 2kV DC  
max. operating voltage)**

Suitable for laying in the ground  
**Optimized special compounds**

High conductivity  
**Fine stranded wire of  
electrolyte copper**

High short circuit current rating  
**250° C/5s**



## HIKRA® SOL (H1Z2Z2-K)



### Your benefits:

- Certification: EN50618; **NEW: IEC62930**
- Nominal voltage 1,5kV DC and 1,0kV AC  
Maximum permitted operating voltage: 1,8kV DC (2,0 kV DC internal examination)
- Thanks to high-quality materials ready for direct burial (acc. UL 44 cl. 5.4 & UL2566 cl. 6.4.4.2)
- Electron-beam cross-linked special compound; XLPO/XLPO
- CPR-classification of burning behavior acc. to 305/2011/EU: D<sub>ca</sub>
- Halogen free, flame retardant, UV and ozone resistant
- To aid installation: We ship this cable with meter-marking.
- Colour coding to separate polarities
- Available in 100m coils, 500 m drums or in another kind upon request



### TECHNICAL DATA

Nominal voltage	1.5kV DC and 1.0kV AC
Maximum permitted operating voltage	1,8kV DC (2,0 kV DC internal examination)
Test voltage	6.5kV AC / 15kV DC (5 minutes water bath, 20±5° C)
Strand construction	Tin-plated copper (electrolytic copper), fine wire acc. IEC 60228 Class 5
Short-circuit-temperature	250° C/5s
UV stability	Tensile strength and ultimate-elongation after 720 h (360 cycles) > 70% of initial values; EN 50289-4-17 acc. Method A; EN ISO 4892-1 (2000) and EN ISO 4892-2 (2006)
Insulation resistance	Insulation resistance in water bath, each 2h at +90° C and 2h at 20° C (Limit values acc. EN 50618 Table 1)
Resistance against acid and alkaline solution	168h at 23° C in N-Oxal acid and N-Sodium hydroxide (EN 60811-404); ammoniac-resistant
Behaviour in case of fire	Flame-retardant acc. EN 60332-1-2 Annex A, low smoke emission (EN 61034, -2)
Halogen-free	EN 50525-1, Annex B
Minimum bending radius	10x cable diameter (flexible)   4x cable diameter (fixed)
Range of temperature	Ambient temperature: -40° C to +90° C; Maximum conductor temperature: +120° C

Order No.		No. of cores in mm <sup>2</sup>	Construction max. Ø (mm)	Resistance of conductor (Ω/km)	External diameter approx (± 0.2 mm)	Copper index kg/km	Weight ~ kg/km
black	red						
73 90 65	73 90 66	1 x 1.5	29 x 0.25	13.7	4.6	14.0	32.0
73 86 09	73 86 10	1 x 2.5	47 x 0.25	8.21	5.0	24.0	42.0
73 86 13	73 86 14	1 x 4.0	52 x 0.3	5.09	5.4	38.4	57.0
73 86 15	73 86 16	1 x 6.0	78 x 0.3	3.39	6.0	57.6	76.0
73 86 17	73 86 18	1 x 10.0	77 x 0.4	1.95	7.2	96.0	119.0
73 86 19		1 x 16.0	126 x 0.4	1.24	9.3	153.6	196.0
73 90 61		1 x 25.0	190 x 0.4	0.795	11.3	240.0	291.0
73 90 63		1 x 35.0	266 x 0.4	0.565	12.9	336.0	394.0

## HIKRA® DUAL 1500V/2000V



The HIKRA® DUAL solar cable is TÜV (EN50618) and UL (UL 4703 PV Wire) certified and thus covers the whole bandwidth required for global distribution. Ideal in combination with preassembled cables for manufacturers of junction boxes and modules.



Order No.	No. of cores in mm <sup>2</sup>	Construction max. Ø (mm)	Resistance of conductor (Ω/km)	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight ~ kg/km
72 78 41	1 x 2.5 / AWG 14	47 x 0.25	8.21	5.94	24.0	49.0
74 06 74	1 x 4.0 / AWG 12	52 x 0.3	5.09	6.35	38.4	64.0
74 06 75	1 x 6.0 / AWG 10	78 x 0.3	3.39	6.97	57.6	84.0
74 11 97	1 x 10.0 / AWG 8	77 x 0.4	1.95	8.57	96.0	137.0



## HIKRA® PLUS EN50618 (H1Z2Z2-K)



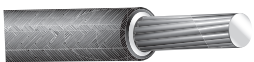
### Your benefits:

- Because of its excellent insulation material, the cable is particularly water repellent and can be laid directly underground. UL2566 (internal examination) Long-term insulation resistance test in water bath at 90° C >3GΩ\*m (internal examination)
- Nominal voltage: 1.5kV DC and 1.0 kV AC
- Maximum permitted operating voltage: 1.8kV DC (Internal examination: 2.0kV DC)
- Short-circuit-temperature: 250° C/5s
- Reinforced cable sheath: Impact-Resistance UL 854.23 and Crushing-Resistance UL 854.24 (internal examination)
- UV stability: Tensile strength and ultimate-elongation after 720 h (360 cycles) ≥ 70% of initial values; EN 50289-4-17 acc. method A; EN ISO 4892-1 (2000) and EN ISO 4892-2 (2006)
- CPR-classification of burning behavior: E<sub>ca</sub> Declaration of Performance DoP 0743



Order No.			No. of cores in mm²	Construction n x max-Ø (mm)	Resistance Ω/km	External diameter approx (± 0.2 mm)	Copper index kg/km	Weight ~ kg/km
black	red	blue						
72 83 79	72 83 80	72 83 81	1 x 2.5	50 x 0.26	8.21	5.0	24.0	45.0
72 83 70	72 83 71	72 83 72	1 x 4.0	56 x 0.31	5.09	5.4	38.4	55.0
72 83 73	72 83 74	72 83 75	1 x 6.0	80 x 0.31	3.39	6.0	57.6	75.0
72 83 76	72 83 77	72 83 78	1 x 10.0	80 x 0.41	1.95	7.1	96.0	115.0
73 78 60			1 x 16.0	120 x 0.41	1.24	8.1	153.6	170.0
73 78 63			1 x 25.0	196 x 0.41	0.795	10.3	240.0	270.0
73 78 64			1 x 35.0	280 x 0.41	0.565	11.8	336.0	370.0

## FURTHER HISKON® CABLES



**HIKRA® Marten Resistant Cable**  
with a steel braid of V2A



**HIKRA® AC Solar 3P**  
for use in systems with micro inverters



**Underground Cable NYY / NAYY**  
for cabling the AC or DC side  
of your system

**Data Cable Li2YCYv**  
for wiring data interfaces, e.g. standard  
protocols RS422 and RD485 in outdoor  
applications



### HISkon® Cable configurator

Set up your own cabling quickly and in comfort with  
our online cable configurator

[www.his-solar.com/kabelkonfigurator](http://www.his-solar.com/kabelkonfigurator)



# HISkon® Plug Connectors

NNNNNNNNNNNN

## Your benefits:

- Globally leading distributor of PV connectors of all well-known manufacturers
- Reliable delivery thanks to extensive storage and a long-standing logistics network
- Quick and easy installation thanks to high quality crimp tools and installation accessories

## STÄUBLI/MULTI-CONTACT ORIGINAL MC4

**Stäubli Electrical Connectors (formerly Multi-Contact): Pioneer and world market leader for PV connectors**

- Over 20 years experience in the photovoltaics sector (inventor of the original MC3 and MC4 connectors)
- Over 1.5 billion installed MC4 connectors connect more than 200GW or 50% of global PV capacity (2018)
- Proven MULTILAM technology with high long term stability which over the lifetime of the connector guarantees lasting low power loss and outages (lower LCOE)



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 40 87	PV-KST4/2.5IUR	Plug	2.5	5.0 – 6.0
71 40 88	PV-KBT4/2.5IUR	Socket	2.5	5.0 – 6.0
71 13 90	PV-KST4/6IUR	Plug	4.0 – 6.0	5.0 – 6.0
71 13 93	PV-KBT4/6IUR	Socket	4.0 – 6.0	5.0 – 6.0
71 13 92	PV-KST4/2.5IIUR	Plug	2.5	5.9 – 8.8
71 13 95	PV-KBT4/2.5IIUR	Socket	2.5	5.9 – 8.8
70 86 68	PV-KST4/6IIUR	Plug	4.0 – 6.0	5.9 – 8.8
70 86 69	PV-KBT4/6IIUR	Socket	4.0 – 6.0	5.9 – 8.8
71 92 66	PV-KST4/10II	Plug	10.0	5.9 – 8.8
71 92 67	PV-KBT4/10II	Socket	10.0	5.9 – 8.8
71 44 86	PV-SP 4/6	Plug contact	4.0 – 6.0	
71 44 87	PV-BP 4/6	Socket contact	4.0 – 6.0	
71 40 48	PV-AZS4	Y-plug	2.5 – 10.0	
71 40 47	PV-AZB4	Y-socket	2.5 – 10.0	
71 26 76	PV-ADSP4-S2/6	Built-in plug M12	4.0 – 6.0	
71 26 78	PV-ADBP4-S2/6	Built-in socket M12	4.0 – 6.0	

**STÄUBLI**

## STÄUBLI/MULTI-CONTACT EVO2



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
73 67 43	PV-KST4-EVO 2/2,5I-UR	Plug	2.5	4.7 – 6.4
73 67 42	PV-KBT4-EVO 2/2,5I-UR	Socket	2.5	4.7 – 6.4
73 27 58	PV-KST4-EVO 2/6IUR	Plug	4.0 – 6.0	4.7 – 6.4
73 27 60	PV-KBT4-EVO 2/6IUR	Socket	4.0 – 6.0	4.7 – 6.4
73 27 61	PV-KST4-EVO 2/6IIUR	Plug	4.0 – 6.0	6.4 – 8.4
73 27 62	PV-KBT4-EVO 2/6IIUR	Socket	4.0 – 6.0	6.4 – 8.4
73 27 63	PV-KST4-EVO 2/10II-UR	Plug	10.0	6.4 – 8.4
73 27 64	PV-KBT4-EVO 2/10II-UR	Socket	10.0	6.4 – 8.4
74 12 86	PV-SP4-EVO 2/6	Plug contact	4.0 – 6.0	
73 67 42	PV-BP4-EVO 2/6	Buchsenkontakt	4.0 – 6.0	
74 36 77	PV-ADS4-EVO 2/6-UR	Built-in plug TR12	4.0 – 6.0	
74 36 78	PV-ADB4-EVO 2/6-UR	Built-in socket TR12	4.0 – 6.0	

**STÄUBLI**



## Tools, assembly aid and accessories



- 71 12 66 | Crimping pliers PV-CZM-19100 with locator MC4 2,5 - 6,0 mm²  
73 46 37 | Crimping pliers PV-CZM-41100 with locator EVO 2 2,5 - 6,0 mm²



- 71 40 86 | MC4 and EVO2 protection cap plug



- 71 40 85 | MC4 and EVO2 protection cap socket



- 71 32 37 | MC4 plastic wrench tool  
72 34 96 | MC4 and EVO2 metal wrench tool



- 71 43 10 | MC4 coupler safety lock clip



- 71 27 63 | Socket wrench insert PV-WZ-AD/GWD  
71 61 71 | Socket wrench insert PV-SSE-AD4



- 72 34 97 | MC4 Test plug PV-PST  
74 75 79 | EVO 2 Test plug PV-EVO-PST

## AMPHENOL UTX

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
73 30 35	UTXCMA4AM (S&F)	Plug	4.0 – 6.0	5.3 – 7.65
73 30 36	UTXCFA4AM (S&F)	Socket	4.0 – 6.0	5.3 – 7.65
72 09 45	H4YY (H4)	Y-plug	2.5 – 10.0	
72 09 46	H4YX (H4)	Y-socket	2.5 – 10.0	



Amphenol



## Tools, assembly aid and accessories



- 73 73 96 | UTX crimping pliers PEW 12 with locator, H4 UTX S&F 2.5 - 6.0 mm²



- 73 32 79 | UTX plastic wrench tool, 2.5 - 6.0 mm²

## TE CONNECTIVITY PV4-S

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
73 86 24	2-2270024-1	Plug	4.0 – 6.0	5.0 – 7.8
73 86 25	2-2270025-1	Socket	4.0 – 6.0	5.0 – 7.8

## Tools and assembly aid

- 72 76 17 | PV4 and PV4-S crimping pliers, 4.0 - 6.0 mm²  
72 76 18 | PV4 and PV4-S wrench tool, 4.0 - 6.0 mm²



## TE CONNECTIVITY SOLARLOK 2.0

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 51 54	2315176-1	Plug	2.5 – 6.0	5.5 – 7.2
74 51 55	2308033-1	Socket	2.5 – 6.0	5.5 – 7.2

## Tools and assembly aid

- 74 51 57 | Solarlok 2.0 hand crimping tool, 2.5 - 6.0 mm²  
74 51 56 | Solarlok 2.0 opening tool, 2.5 - 6.0 mm²



## PHOENIX CONTACT SUNCLIX



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 63 57	PV-CM-S 1100V	Plug	2.5 – 6.0	5.0 – 8.0
71 63 56	PV-CF-S 1100V	Socket	2.5 – 6.0	5.0 – 8.0
75 04 24	PV-C4M-S 1500V	Plug	2.5 – 6.0	5.0 – 8.0
75 04 25	PV-C4F-S 1500V	Socket	2.5 – 6.0	5.0 – 8.0
72 28 35	PV-CM-S-6-16(-)	Plug	6.0 – 16.0	5.5 – 10.0
72 28 36	PV-CF-S-6-16(+)	Socket	6.0 – 16.0	5.5 – 10.0

### Accessories

72 03 18 | Sunclix protection cap plug and socket



## WEIDMÜLLER WM4



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
73 03 38	WM4 PV Stick	Plug	4.0 – 6.0	5.5 – 7.5
73 03 37	WM4 PV Stick	Socket	4.0 – 6.0	5.5 – 7.5
73 62 11	WM4 C	Plug	4.0 – 6.0	5.5 – 7.0
73 62 16	WM4 C	Socket	4.0 – 6.0	5.5 – 7.0

### Tools and assembly aid

73 03 20 | WM4 C crimping pliers, 4.0 - 6.0 mm²

73 03 19 | WM4 C and PV-Stick wrench tool



## RENHE ZJRH 05-8



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 71 09	05-8 1500V	Plug	2.5 – 6.0	5.5 – 6.3
74 71 10	05-8 1500V	Socket	2.5 – 6.0	5.5 – 6.3

### Assembly aid

74 76 56 | Wrench tool G-BS-08-02



## JINKO JK03M2



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
75 33 92	PV-JK03M2	Plug	4.0 – 6.0	5.0 – 6.8
75 33 93	PV-JK03M2	Socket	4.0 – 6.0	5.0 – 6.8

### Tools and assembly aid

75 33 15 | Crimping pliers JKT-02, 4.0 - 6.0 mm²

75 33 14 | Wrench tool JKT-06



## TRINA TS4



Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 31 47	TS4-M2	Plug	4.0 – 6.0	5.6 – 6.8
74 31 48	TS4-F2	Socket	4.0 – 6.0	5.6 – 6.8





## TLIAN T4-PC1 CANADIAN SOLAR

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 99 33	T4-PC-1-1500V	Plug	4.0 – 6.0	4.3 – 6.6
74 99 34	T4-PC-1-1500V	Socket	4.0 – 6.0	4.3 – 6.6

### Tools and assembly aid

75 00 32 | Tool case with crimping pliers, wrench tool, stripping pliers and cable shears  
75 00 31 | Wrench tool T4-DT



## PV-ZH SUNTER JA SOLAR, LONGI

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 59 99	PV-ZH202 male	Plug	4.0 – 6.0	5.8 – 6.9
74 60 00	PV-ZH202 female	Socket	4.0 – 6.0	5.8 – 6.9

### Tools and assembly aid

74 36 95 | Tool case with crimping pliers, wrench tool und stripping pliers



## QC4

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
74 45 43	PV-ZH202-B04	Plug	4.0	4.5 – 5.6
74 45 44	PV-ZH202-B04	Socket	4.0	4.5 – 5.6

### Tools and assembly aid

74 45 45 | Tool case with crimping pliers, wrench tool and stripping pliers  
74 49 87 | Wrench tool QC4-10



## YUKITA 25 X

Type		Cross-section Ø mm²	Outer sheath Ø mm / Order No.		
			5.4 – 6.0	6.0 – 6.5	6.6 – 7.9
YS-254-xxx	Plug	1.5 – 2.5	72 03 56	72 03 58	72 03 60
YS-255-xxx	Socket	1.5 – 2.5	72 03 57	72 03 59	72 03 61
YS-254-xxx	Plug	4.0 – 6.0	71 73 62	71 73 64	71 73 66
YS-255-xxx	Socket	4.0 – 6.0	71 73 63	71 73 65	71 73 67

### Tools

Yukita crimping pliers PEW 12 with locator, 1.5 – 6.0 mm² | 71 86 51



## TOOLS, ASSEMBLY AID AND ACCESSORIES

71 40 77 | Cable shears



72 66 18 | End cap with internal adhesive



72 01 66 | Stripping pliers



# HISkon®

## Cable assembly

XXXXXXXXXXXX

PV cabling and switching professionals frequently work under time pressure and as a result want cables and components which they can install on site quickly and without too high cost. For such requirements, there is our assembly service: here, you get just the right cable at the right length with the right properties and connections. Obviously at the right time and the right place.

### OFF THE SHELF PRODUCTS. TAILOR MADE FOR YOU.

By using innovative technology and the most modern machines and plant, we provide maximum efficiency in cable fabrication and testing, completely secure processes and a high plant availability. For almost 20 years, we have interacted intensively with customers, suppliers and partners on the subject of photovoltaics. This experience flows into every single assembly.

### BEST PLACED TO MEET YOUR REQUIREMENTS



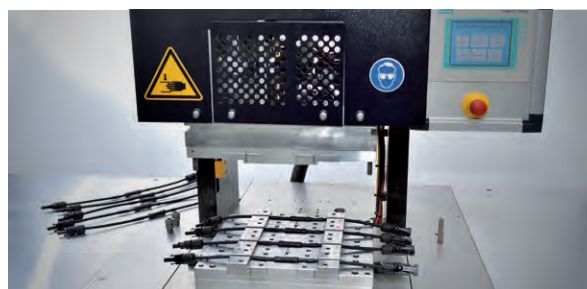
Our own laboratory for development and testing purposes



Fulfillment solutions in the printing sector



High availability thanks to an automated small components store



Industrial quality thanks to modern production methods





## WHAT DOES NOT FIT WILL BE MADE TO FIT

From the module field via the string/central inverter to the utility companies' supply point: we support you in the building and design of your required string cabling. Reduce to a minimum the installation costs and cable wastage with the HISkon® Assembly Service.

## PERFECTLY TAILORED TO YOUR NEEDS



Cabling solutions with U-Splitter for crystalline PV plants



Plug and Play cabling solutions for PV plants with thin-film modules



Cabling solutions for LED street lighting and further uses in the PV industry



Battery connection cables and cable harnesses for energy storage

# HISKON® SPLITTER

### Your benefits:

- Easy and quick installation for efficient and smooth commissioning
- The most modern welding technology guarantees minimum transfer losses by bundling the DC output on the cable
- Reduction of DC cables
- Flexible splitter concept to meet your requirements



## CONSTRUCTION

Cable	HIKRA® solar cable H1Z2Z2-K acc. EN50618; Minimum length between splitters and connector: 160mm
Termination of splitter	Monitored resistance welding process
Molding	Specialized compound; UV-stabile
Connector	Inter alia without or with MC4, MC-EV02, Amphenol H4, Amphenol UTX, Phoenix Contact Sunclix, Hosiden HSC
Options	Optionally: Including String-diodes or Inline-fuses (Please refer to specific technical characteristics)

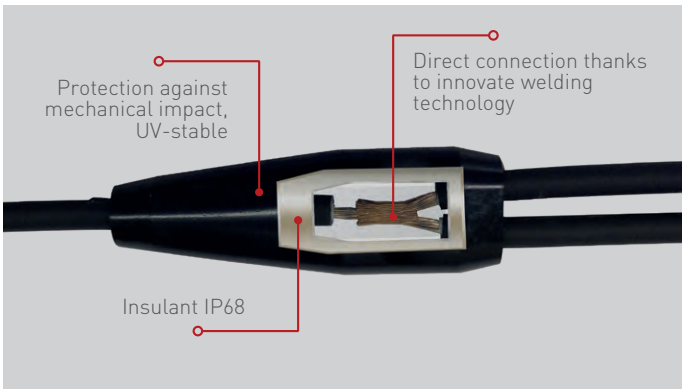
  

Nominal voltage	1500V DC
Max. current ampacity	Without connectors, Single layed, free in air at 90° C: 4,0mm²→ 39.5 A; 6,0mm² -> 49.7 A; 10,0mm² -> 69.58 A* acc. IEC 60364-5-52.
IP-class of cable splitter	IP65/68 (1m/24h) (Take note of connector´s IP-protection!)
Contact resistance of HISKon splitter without connector	≤ 0,1mΩ
Protection class	II (reinforced Insulation) acc. IEC 61140
Flame class	Self-extinguishing UL94-V2
Temperature range	Ambient temperature -40° C to +90° C (without mechanical impact)



### HISKon® splitter family

With low planning costs, you will receive machine manufactured string array harnesses of the highest quality.



### Innovative manufacturing technology

By using the most up-to date welding technology, you will achieve an optimal switching with minimal contact resistance. Thanks to high quality insulation materials, our splitters are also suitable for outdoor applications.



# HISKON® INLINEFUSE 1000V/1500V DC

## Your benefits:

- For the best possible cost-effectiveness and operational safety of solar plants the installation of an inline fuse is recommended
- In doing so, you can draw upon a wide range of solutions: 1000V DC or 1500V DC; singly or integrated in a cable harness
- Available with the appropriate connector, fitting exactly to your plant design
- In addition, thanks to our innovative connection technology, we can offer the possibility of several strings on the cable level from the start with our U- or E-splitters connecting in parallel and each string individually fused



## TECHNICAL CHARACTERISTICS

	INLINE	INLINE1500
Rated Voltage	1000V DC	1500V DC
Rated Current (Fuse-link)	gPV 4-32A (IEC60269-6); Breaking capacity 30kA	gPV 4-25A (IEC60269-6); Breaking capacity 30kA
IP Class	IP68 (Please take note of connector's IP-protection)	
Temperature Range	Ambient temperature: -40° C to +50° C (Please consider dimensioning specifications)	
Pollution Degree / Protection Class / Rated Impulse	3 / II / 12kV	3 / II / 16kV
Material and termination	Material: Special Hotmelt, UV-Stable, Connection: Patented connection	
Cable	HIKRA® solar cable H1Z2Z2-K (1500V DC)	

### Inlinefuse 1000V DC – Item number: 2 x cables each length 160mm; cross-section 6,0mm²

Termination	4A	6A	10A	12A	15A	20A	25A	30A
Without connector	INLINE0276-04	INLINE0276-06	INLINE0276-10	INLINE0276-12	INLINE0276-15	INLINE0276-20	INLINE0276-25	INLINE0276-30
MC4	INLINE0148-04	INLINE0148-06	INLINE0148-10	INLINE0148-12	INLINE0148-15	INLINE0148-20	INLINE0148-25	INLINE0148-30
MC4-EVO2	INLINE0149-04	INLINE0149-06	INLINE0149-10	INLINE0149-12	INLINE0149-15	INLINE0149-20	INLINE0149-25	INLINE0149-30
Amphenol UTX	INLINE0231-04	INLINE0231-06	INLINE0231-10	INLINE0231-12	INLINE0231-15	INLINE0231-20	INLINE0231-25	INLINE0231-30
Sunclix	INLINE0232-04	INLINE0232-06	INLINE0232-10	INLINE0232-12	INLINE0232-15	INLINE0232-20	INLINE0232-25	INLINE0232-30
TE PV4-S	INLINE0234-04	INLINE0234-06	INLINE0234-10	INLINE0234-12	INLINE0234-15	INLINE0234-20	INLINE0234-25	INLINE0234-30

### Inlinefuse 1500V DC – Item number: 2 x cables each length 160mm; cross-section 6,0mm²

Termination	4A	6A	10A	12A	15A	20A	25A
Without connector	INLINE1500-002-L-04	INLINE1500-002-L-06	INLINE1500-002-L-10	INLINE1500-002-L-12	INLINE1500-002-L-15	INLINE1500-002-L-20	INLINE1500-002-L-25
MC-EVO2	INLINE1500-001-L-04	INLINE1500-001-L-06	INLINE1500-001-L-10	INLINE1500-001-L-12	INLINE1500-001-L-15	INLINE1500-001-L-20	INLINE1500-001-L-25
Amphenol UTX	INLINE1500-003-L-04	INLINE1500-003-L-06	INLINE1500-003-L-10	INLINE1500-003-L-12	INLINE1500-003-L-15	INLINE1500-003-L-20	INLINE1500-003-L-25
Phoenix Contact Sunclix	INLINE1500-004-L-04	INLINE1500-004-L-06	INLINE1500-004-L-10	INLINE1500-004-L-12	INLINE1500-004-L-15	INLINE1500-004-L-20	INLINE1500-004-L-25
TE PV4-S	INLINE1500-005-L-04	INLINE1500-005-L-06	INLINE1500-005-L-10	INLINE1500-005-L-12	INLINE1500-005-L-15	INLINE1500-005-L-20	INLINE1500-005-L-25

# HISKON® FUSE-CONNECTOR 1000V/1500V DC

## Your benefits:

- As an alternative to an inline fuse, you can install our fuse-connectors
- With a patented connection method, you can rely on a stable and sustainable fuse element
- Pluggable with original Stäubli MC4/EVO2 connectors and the appropriate fuse link
- The simple solution for retrofitting and O&M



## TECHNICAL CHARACTERISTICS

Rated Voltage	1000V DC	1500V DC
Rated Current (Fuse-link)	gPV 4-32A (IEC60269-6); Breaking capacity 30kA	gPV 4-25A (IEC60269-6); Breaking capacity 30kA
IP Class	IP68 (Please take note of connector's IP-protection)	
Temperature Range	Ambient temperature: -40° C to +50° C (Please consider dimensioning specifications)	
Pollution Degree / protection Class / Rated Impulse withstand Voltage	3 / II / 12kV	3 / II / 16kV
Material and termination	Material: Special Hotmelt, UV-Stable, Connection: Patented link directly in PV connector; without cable	
General	Material: Special Hotmelt, UV-Stable, Connection: Patented link directly in PV connector; without cable	

Connector	4A	6A	10A	15A	20A	25A	30A
HISfuse MC4 (1000V DC)	HISfuse-1-04	HISfuse-1-06	HISfuse-1-10	HISfuse-1-15	HISfuse-1-20	HISfuse-1-25	HISfuse-1-30
HISfuse EVO2 (1000V DC)	HISfuse-2-04	HISfuse-2-06	HISfuse-2-10	HISfuse-2-15	HISfuse-2-20	HISfuse-2-25	HISfuse-2-30
HISfuse EVO2 (1500V DC)	HISfuse1500-1-04	HISfuse1500-1-06	HISfuse1500-1-10	HISfuse1500-1-15	HISfuse1500-1-20	HISfuse1500-1-25	—

## HISKON® INLINEDIODE



HISkon® String Diode included in an endless chain

## TECHNICAL CHARACTERISTICS

	Article code	
Rated Voltage	1000V DC	2000V DC
Rated Current (Fuse-link)	5A (Nominal diode 25A P2500M)	
IP Class	IP65/68 (1m/24h)	
Temperature Range	Ambient temperature: -40° C to +85° C (please consider dimensioning specifications)	
General	Material: Special Hotmelt, UV-Stable, Connection: Patented link directly in PV connector; without cable	





## HISKON® WIRING SOLUTION FOR THE FIRST SOLAR SERIES 6



### Optimized for your First Solar System

The best cost-performance ratio by matching the cabling design to your plant components as well as a reduction in installation time by using ready to use components



### Quality conforming to norms

HISkon® stands for distinctly sorted connectors on module and inverter sides as well as fully automated welding and crimp processes including quality controls in our in-house test laboratory



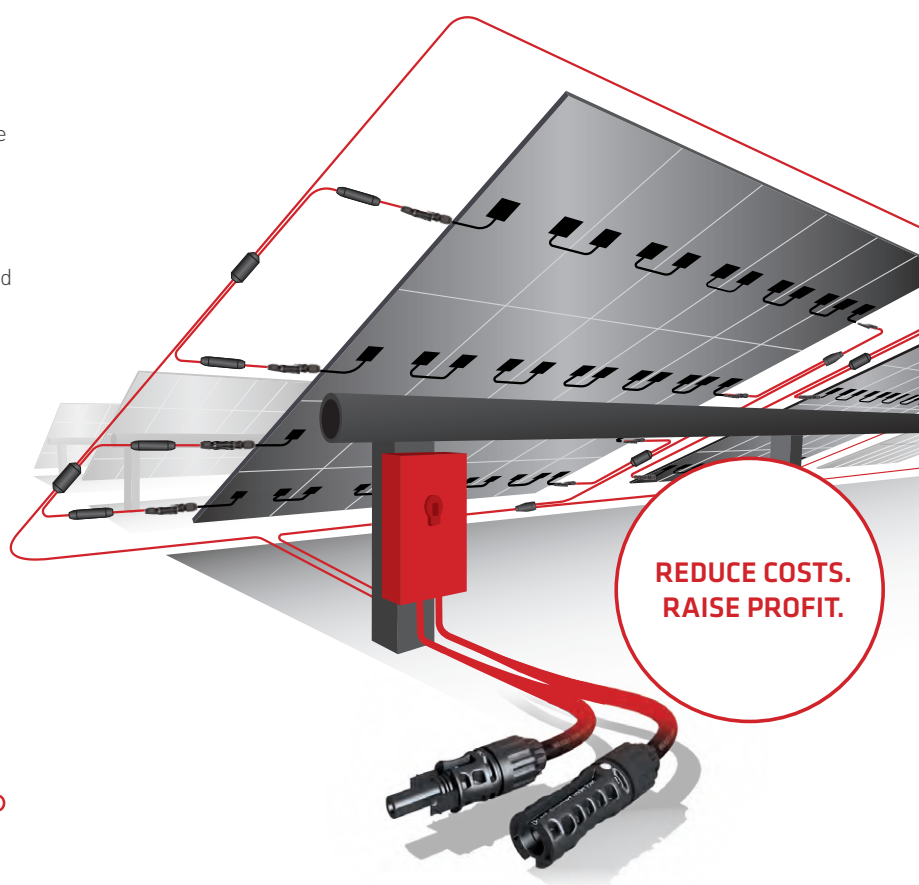
### 100% Cost controls

A reliable pre-calculation, numerous optimization possibilities and the effective prevention of offcuts and wastage provide for minimum expenditure in the installation



### Time-saving solutions

Installation-ready Plug and Play components reduce the installation costs and save a time-intensive and costly fault-finding or correction during operation



## HISCONNECT PLUS®

wiring solution for solar business

### HISbox® DC Combiner Power Plant

Monitor and optimize the yield of your plant with a First Solar System matched HISbox®.

More information on page 34



### Brochure First Solar Series 6

Further information about our First Solar offer can be found in the brochure „Wiring solution for First Solar Series 6“



# HISKON® U-SPLITTER WITH INLINEFUSE

## Your benefits:

- Increase the RoI by reduction of the acquisition costs and shorter installation times
- The possibility of cable reduction through individual optimization concepts  
(for more information see page 8)



Module/Inverter	Item number	Voltage	Connector	Polarity	Fuse-link
EVO2 / EVO2	U-SPLITTER0001-L	1500V DC	EVO2	FFM	gPV 15A (10x85)
	U-SPLITTER0002-L	1500V DC	EVO2	MMF	gPV 15A (10x85)
	U-SPLITTER0003	1500V DC	EVO2	FFM	-
	U-SPLITTER0004	1500V DC	EVO2	MMF	-
MC4 / MC4	U-SPLITTER0007-L	1500V DC	MC4	FFM	gPV 15A (10x85)
	U-SPLITTER0008-L	1500V DC	MC4	MMF	gPV 15A (10x85)
	U-SPLITTER0011	1000V DC	MC4	FFM	gPV 15A (10x38)
	U-SPLITTER0012	1000V DC	MC4	MMF	gPV 15A (10x38)
	U-SPLITTER0009	1000V DC	MC4	FFM	-
Weidmüller / Weidmüller	U-SPLITTER0010	1000V DC	MC4	MMF	-
	U-SPLITTER0013-L	1500V DC	WM4	FFM	gPV 15A (10x85)
	U-SPLITTER0014-L	1500V DC	WM4	MMF	gPV 15A (10x85)
	U-SPLITTER0015	1500V DC	WM4	FFM	-
	U-SPLITTER0016	1500V DC	WM4	MMF	-
Sunclix /Sunclix	U-SPLITTER0017-L	1500V DC	Sunclix	FFM	gPV 15A (10x85)
	U-SPLITTER0018-L	1500V DC	Sunclix	MMF	gPV 15A (10x85)
	U-SPLITTER0019	1500V DC	Sunclix	FFM	-
	U-SPLITTER0020	1500V DC	Sunclix	MMF	-
TE PV4-S / UTX	U-SPLITTER0022-L	1500V DC	PV4-S-PV4-S-UTX	FFM	gPV 15A (10x85)
	U-SPLITTER0023-L	1500V DC	PV4-S-PV4-S-UTX	MMF	gPV 15A (10x85)
	U-SPLITTER0024	1500V DC	PV4-S-PV4-S-UTX	FFM	-
	U-SPLITTER0025	1500V DC	PV4-S-PV4-S-UTX	MMF	-
T4 (Canadian Solar) / EVO2	U-SPLITTER0026-L	1500V DC	T4-T4-EVO2	FFM	gPV 15A (10x85)
	U-SPLITTER0027-L	1500V DC	T4-T4-EVO2	MMF	gPV 15A (10x85)
	U-SPLITTER0028	1500V DC	T4-T4-EVO2	FFM	-
	U-SPLITTER0029	1500V DC	T4-T4-EVO2	MMF	-
TS4 (TRINA) / EVO2	U-SPLITTER0030-L	1500V DC	TS4-TS4-EVO2	FFM	gPV 15A (10x85)
	U-SPLITTER0031-L	1500V DC	TS4-TS4-EVO2	MMF	gPV 15A (10x85)
	U-SPLITTER0032	1500V DC	TS4-TS4-EVO2	FFM	-
	U-SPLITTER0033	1500V DC	TS4-TS4-EVO2	MMF	-

# HISKON® E-SPLITTER WITH INLINEFUSE

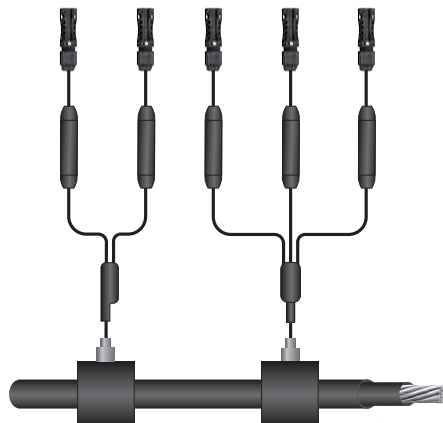


Module/Inverter	Item number	Voltage	Connector	Polarity	Fuse-link
EVO2 / EVO2	E-SPLITTER0001-L	1500V DC	EVO2	FFFM	gPV 15A (10x85)
	E-SPLITTER0002-L	1500V DC	EVO2	MMMF	gPV 15A (10x85)
	E-SPLITTER0003	1500V DC	EVO2	FFFM	-
	E-SPLITTER0004	1500V DC	EVO2	MMMF	-
MC4 / MC4	E-SPLITTER0018	1000V DC	MC4	FFFM	gPV 15A (10x38)
	E-SPLITTER0019	1000V DC	MC4	MMMF	gPV 15A (10x38)
	E-SPLITTER0011	1000V DC	MC4	FFFM	-
	E-SPLITTER0012	1000V DC	MC4	MMMF	-



## HISKON® IPC-BUS

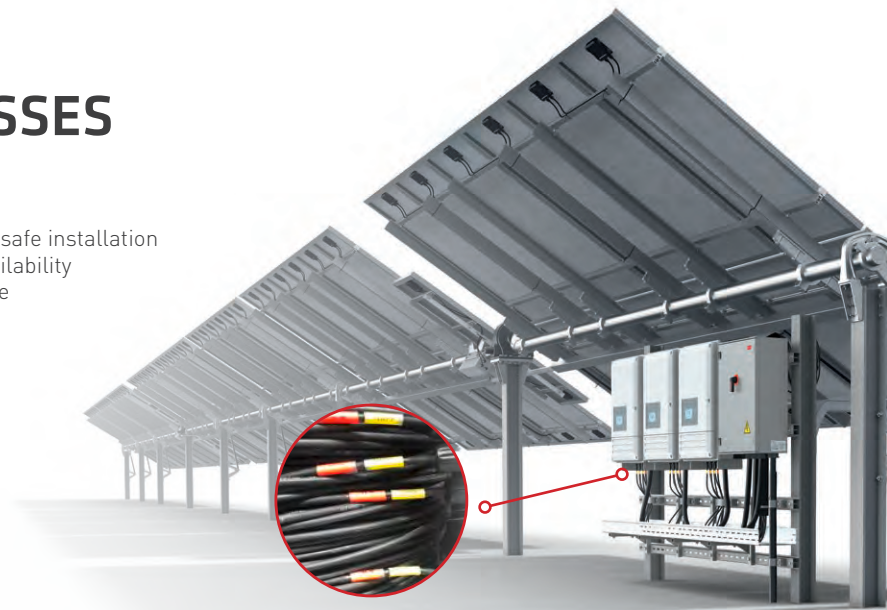
Collect power on a DC main cable without the need of a DC Combiner thanks to the HISKON® IPC concept. The individual module strings are bundled together with the HISKON® splitter concept and are finally joined with the IPC Piercing Connector to the main conductor.



## HISKON® CABLE HARNESES

### Your benefits:

- Plug and Play solution for PV power plants for a quick and safe installation
- Always the appropriate connector for sustainable plant availability
- Monitored crimp quality and reduction of contact resistance
- Fully labelled cable harnesses



## HISKON® CABLE ADAPTORS & EXTENSIONS

### Your benefits:

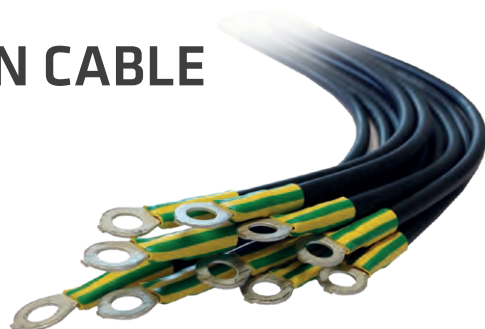
- Double or single sided manufactured extensions including individual marking
- HISKON® cable adaptors for distinct connectors



## HISKON® POTENTIAL EQUALIZATION CABLE

### Your benefits:

- Pre-assembled with UV stable cable sheathing, gn/ye heat-shrink tubing and tube crimping lug without inspection hole



The background of the entire page is a close-up photograph of a red electrical enclosure. The enclosure has a triangular warning symbol (a lightning bolt inside a triangle) on its side. A terminal block with a red cover is visible on the front panel. The text is overlaid on the right side of the enclosure.

**HISbox® DC Combiner Residential**  
**HISbox® DC Combiner Power Plant 1000V/1500V**  
**HISbox® DC Monitoring & Communication**  
**HISbox® AC Combiner**  
**HISbox® AC Combiner 800V AC**  
**HISbox® Storage and Accessories**

A large portfolio of standard string boxes. All manufactured from first class industrial components. Always perfectly tailored to your individual requirements. If necessary, specifically modified to your own concept. And always delivered ready to use.

**In short:**





# OUT OF THE HISbox<sup>®</sup>

# HISbox®

## DC/AC String Boxes

NNNNNNNNNNNN

HISbox® String boxes are synonymous with uncompromising product quality, the greatest possible cost-efficiency and longevity. We plan, develop and manufacture string boxes optimized and ready for connection from high quality industrial components of leading manufacturers to meet the exact requirements of your plant.

**DESIGNED WITH HIGH QUALITY COMPONENTS.  
DESIGNED TO INDIVIDUAL REQUIREMENTS.  
TESTED FOR HIGH PLANT AVAILABILITY.**



**Huge wealth of experience**  
from numerous projects in the  
whole world



**Our own Test laboratory**  
for additional testing



**An experienced development team**  
with many years of experience



**International support**  
with a multilingual sales team



**Manufactured in Germany**  
guarantees the highest quality



### DC Combiner Residential

Bring the DC performance of your modules together. We will build a total concept for your PV roof-top installation tailored to your concrete requirements.

### DC Combiner Power Plant

In your ready-to-connect array-boxes, you can combine the DC output of your PV power plant with custom made solutions.

### AC Combiner

Bring together the power of your string inverter in one with the grid requirements, the fusing concept and the switch gear of the matching AC Combiner.

### Storage

Store the energy gained in a Combiner for hybrid concepts and off-grid plants, designed specifically to meet your requirements.



# QUALITY



## HISBOX® ADVANTAGES

### Standard String boxes

based on current customer requirements

### Customer-specific solutions

for monitored and non-monitored systems

### Long lasting product solutions

through close cooperation with leading manufacturers

### Individual design

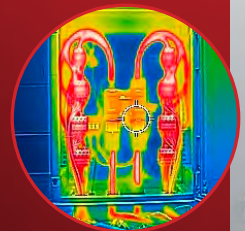
based on the environmental conditions on site

### IEC 61439-1,-2

norm standard construction, manufacture and testing

### Higher Safety

- designed with high-quality components
- designed to individual requirements
- tested for high plant availability



# HISBOX® DC COMBINER RESIDENTIAL

## Your Benefits:

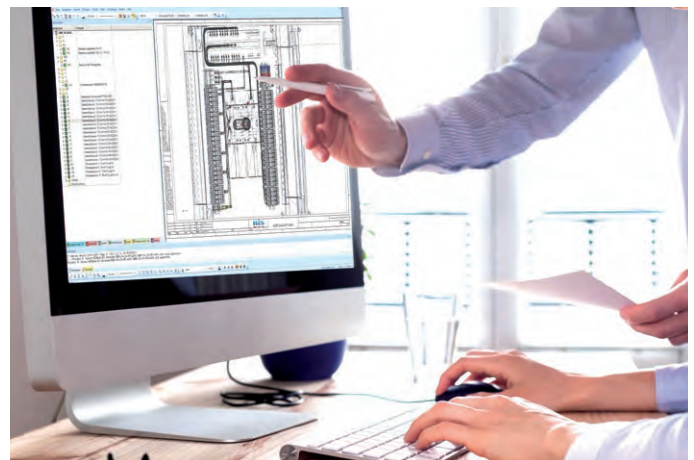
- 1 brand, 1000 possibilities: modular design enables the simple implementation of bespoke solutions
- Effective protection of modules, inverters and energy meter against impact of surge and lightning strikes
- High-quality enclosures enables application outdoor
- Wide range of connection options are realizable
- Easy and quick installation due to a sophistic design and useful mounting options

## MODULAR PV COMBINER BOXES

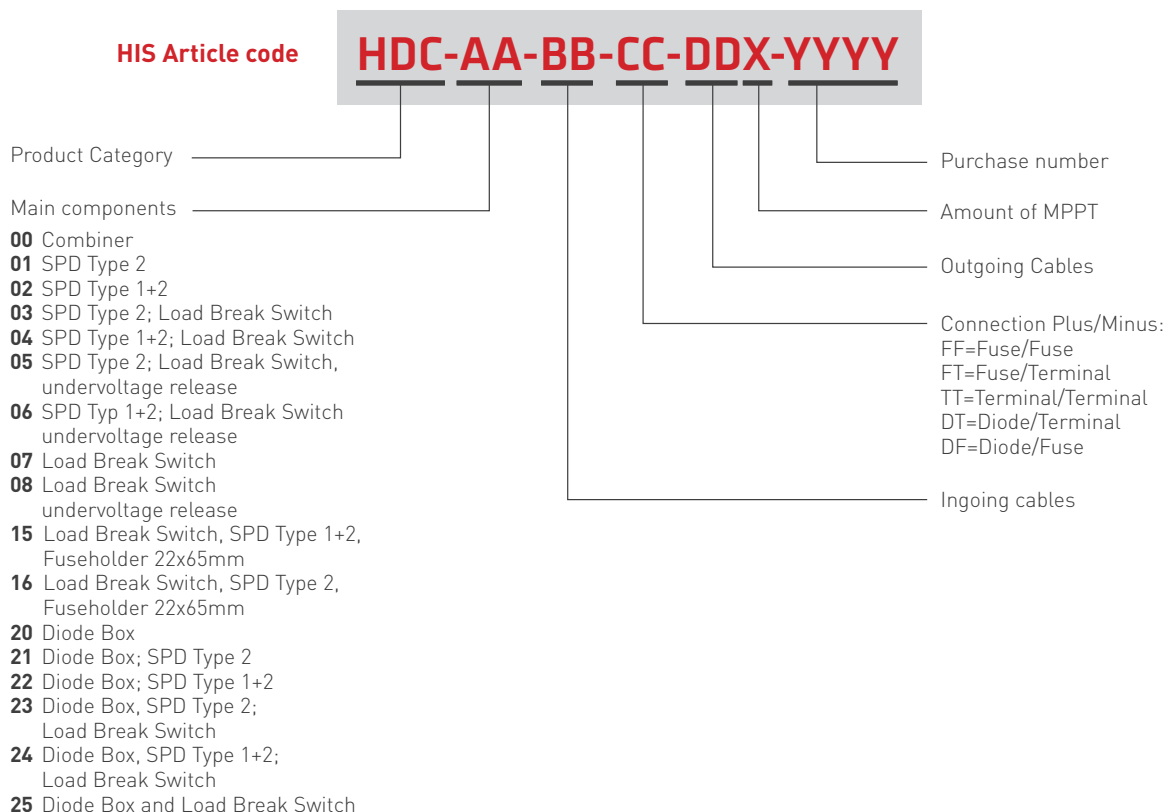
Because of decreasing demand and cost pressures, the availability and reliability of PV installations is becoming more and more important. Surge voltage coupling from the effects of lightning or switching operations in the power supply can cause considerable damage to parts of a photovoltaic installation. Roof modules, inverters and feed-in meters are particularly at risk. Our bespoke DC Combiner boxes will protect your plant from a premature failure of units caused by lightning or surge voltage thus saving the potential expense of a replacement.



Quickly and easily to the objective thanks to HIS checklist



Construction, implementation and quality testing in accordance with IEC 61439-2





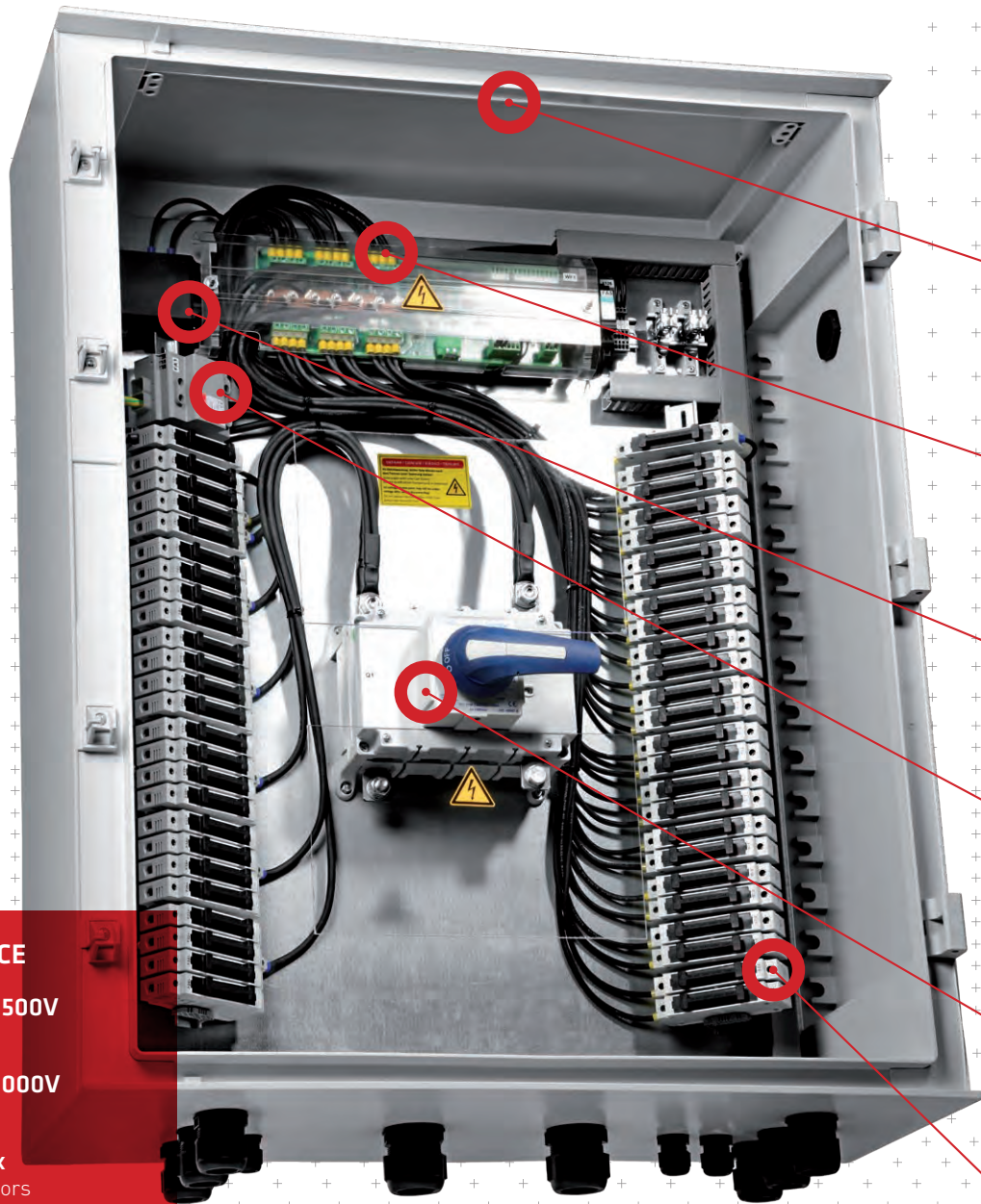
## STANDARD SOLUTIONS

	Order no.	Amount MPPT	Amount Ingoing / MPPT	Amount Outgoing MPPT	Fuse	SPD	Load Break Switch
<b>SMA</b> Sunny Boy 1.52.5	HDC-02-02-TT-011-A001	1	2	1	No / No	Type 1+2	No
	HDC-02-02-FF-011-A001	1	2	1	Yes / Yes	Type 1+2	No
<b>SMA</b> Sunny Boy 3000TL5000TL	HDC-02-02-TT-012-A001	2	2	1	No / No	Type 1+2	No
	HDC-02-02-FF-012-A001	2	2	1	Yes / Yes	Type 1+2	No
<b>SMA</b> STP Tripower 5000-12000TL	HDC-02-02-TT-012-A001	2	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-022-A001	2	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-012-A001	2	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-022-A001	2	2	2	Yes / Yes	Type 1+2	No
<b>SMA</b> STP Tripower 15000-25000TL	HDC-02-03-FF-012-A001	2	3	1	Yes / Yes	Type 1+2	No
	HDC-02-03-FF-032-A001	2	3	3	Yes / Yes	Type 1+2	No
<b>SMA</b> Sunny Tripower 60	HDC-02-01-TT-011-A002	1	1	1	No / No	Type 1+2	No
	HDC-04-12-FF-011-A001	1	12	1	Yes / Yes	Type 1+2	Yes
<b>Sunny</b> Tripower Core 1	HDC-02-02-TT-016-A001	6	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-026-A001	6	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-016-A001	6	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-026-A001	6	2	2	Yes / Yes	Type 1+2	No
<b>Solaredge</b> SE5k / SE10K	HDC-02-02-TT-011-A001	1	2	1	No / No	Type 1+2	No
	HDC-02-02-FF-011-A001	1	2	1	Yes / Yes	Type 1+2	No
<b>Solaredge</b> SE25K / SE27.6K	HDC-02-02-TT-021-A001	1	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-021-A001	1	2	2	Yes / Yes	Type 1+2	No
	HDC-02-03-FF-031-A001	1	3	3	Yes / Yes	Type 1+2	No
	HDC-04-03-FF-031-A001	1	3	3	Yes / Yes	Type 1+2	Yes
<b>Huawei</b> SUN2000-8KTL	HDC-02-02-TT-012-A001	2	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-022-A001	2	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-012-A001	2	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-022-A001	2	2	2	Yes / Yes	Type 1+2	No
<b>Huawei</b> SUN2000-17KTL / 20 / 23	HDC-02-02-TT-013-A001	3	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-023-A001	3	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-013-A001	3	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-TT-023-A001	3	2	2	No / No	Type 1+2	No
<b>Huawei</b> SUN2000-33KTL / 36KTL	HDC-02-02-TT-014-A001	4	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-024-A001	4	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-014-A001	4	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-024-A001	4	2	2	Yes / Yes	Type 1+2	No
<b>Huawei</b> SUN2000-60KTL-HV	HDC-02-02-TT-014-A001	4	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-024-A001	4	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-014-A001	4	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-024-A001	4	2	2	Yes / Yes	Type 1+2	No
<b>Huawei</b> SUN2000-100KTL	HDC-02-02-TT-016-A001	6	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-026-A001	6	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-016-A001	6	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-026-A001	6	2	2	Yes / Yes	Type 1+2	No
<b>Sungrow</b> SG10KTL-EC	HDC-02-03-FF-012-A001	2	3	1	Yes / Yes	Type 1+2	No
<b>Sungrow</b> SG36KTL-M	HDC-02-03-FF-013-A001	3	3	1	Yes / Yes	Type 1+2	No
	HDC-02-03-FF-033-A001	3	3	3	Yes / Yes	Type 1+2	No
<b>Sungrow</b> SG60KTL	HDC-04-16-FF-011-A001	1	16	1	Yes / Yes	Type 1+2	Yes
<b>Sungrow</b> SG125KTL	HDC-04-24-FF-011-A001	1	24	1	Yes / Yes	Type 1+2	Yes
<b>Delta</b> RPI M15/M20	HDC-02-02-TT-012-A001	2	2	1	No / No	Type 1+2	No
	HDC-02-02-TT-022-A001	2	2	2	No / No	Type 1+2	No
	HDC-02-02-FF-012-A001	2	2	1	Yes / Yes	Type 1+2	No
	HDC-02-02-FF-022-A001	2	2	2	Yes / Yes	Type 1+2	No
<b>Delta</b> RPI M30	HDC-02-03-FF-013-A001	3	3	1	Yes / Yes	Type 1+2	No
	HDC-02-03-FF-033-A001	3	3	3	Yes / Yes	Type 1+2	No
<b>Delta</b> RPI M50A	HDC-02-05-FF-052-A001	2	5	5	Yes / Yes	Type 1+2	No
<b>Delta</b> M88H-122	HDC-04-07-FF-012-A001	2	1	1	Yes / Yes	Type 1+2	Yes
<b>Emergency shutdown</b>	HDC-06-02-TT-011-A001	1	2	1	No / No	Type 1+2	Yes, UVR
	HDC-06-02-FF-012-A001	2	2	1	Yes / Yes	Type 1+2	Yes, UVR
	HDC-06-02-FF-013-A001	3	2	1	Yes / Yes	Type 1+2	Yes, UVR
	HDC-06-02-FF-014-A001	4	2	1	Yes / Yes	Type 1+2	Yes, UVR

# HISBOX® DC COMBINER POWER PLANT

## Your benefits:

- Optimized solutions, tailor-made to your plant requirements
- High level of safety through high quality, perfectly matched components
- Increase the plant cost effectiveness by heating tests carried out in our test laboratory to check the best configurations during operation



## LARGE CHOICE

**DC Combiner 1500V**  
8-32 Strings

**DC Combiner 1000V**  
10-32 Strings

**DC Switch-Box**  
for Bus conductors

**DC Combiner**  
with String monitoring

## Brochure HISbox® DC Combiner

Further information about our HISbox® DC Combiner can be found in the brochure „HISbox® DC Combiner“







### ◦ Enclosures

High stability and reliability fitting for challenging project realisation. High impact resistance, high IP protection rating, door lock, integrated canopy, stainless steel mounting lugs with an integrated pressure equalisation element (prevents a build-up of condensation). UV and ozone stable, perfectly suited to outdoors.

### ◦ Monitoring

Optimize your revenue by using high quality measurement technology. The identification of residual images is therefore enabled on string levels. On the one hand, this reduces the maintenance costs and at the same time, increases the operational reliability and cost effectiveness of your plant.

### ◦ Power Supply

DC-DC converter, which has advantages such as high efficiency, high reliability and high safety isolation. This DC-DC converter provides a stable operating voltage for the load device. Its multiple protection features can enhance the safety performance of the module power supply and the load under abnormal working conditions.

### ◦ Protection against lightning and voltage surge

Lightning and voltage surge arrestors for 2 pole isolated DC systems 1500V DC with remote signalling contact, temperature monitored protection elements and optical display for status monitoring fitted to the unit. Increase your plant security and reduce potential loss of productivity. Moreover, the replacement of components is very costly. Finally, with this, you will fulfil possible requirements of the financing banks, investors and insurance companies.

### ◦ Isolators

DC isolators are designed for safe switching particularly when there are difficult switch off conditions in photovoltaic plants without affecting safety, efficiency and simplicity. The manually operated isolators are a cost-effective and reliable solution for the most diverse areas, especially where there are high ambient temperatures.

### ◦ String protection

As well as the requirements of the product standard, the specific requirements of the plant must be taken into account. Both the protection of the linked system components and the use of the correct temperature coefficients must be taken into account. HIS has checked numerous configurations in its own test laboratory because a half job does not provide complete plant protection.

## TECHNICAL CHARACTERISTICS

String input	8–32
DC main cable	1–2
Rated voltage (U <sub>e</sub> )	1000V DC oder 1500V DC
Rated current I <sub>n</sub> per string	≤ 25 A
Max. rated current (I <sub>nA</sub> )	≤ 630A
Safety class (acc. IEC 61140)	II, insulated
<b>DC Input</b>	
Termination	Connection on fuse-holder or terminal clamp
Cable feedthrough	Cable gland or built-in connectors (MC4, Amphenol, Weidmüller, Phoenix Contact, TE PV4S)
<b>DC output and termination</b>	
Termination	M8-M12, directly ion loadbreak switch or bolt terminal
Cable gland	Black; UV-stabile up to M75
Earthing connection	Optionally M20 (Ø 6mm to 13mm)
<b>Protection and switchgear</b>	
Surge arrester	I <sub>n</sub> = 15kA; I <sub>max</sub> = 40A (valid for Type 2 or Type 1+2)
Fuse links gPV (acc. IEC 60269-6)	Fusing plus and/or minus pole
Loadbreak switch (acc. IEC 60947-3; 60364-4-410; -7-712)	Multiple pole load break switch
<b>String monitoring (optionally)</b>	
Measurement system	Shunt-Sensors or Hall-Sensores; Current: single string or multiple string
Measuring accuracy	≤0.5%
Communication	RS485 (Modbus) or wireless
Power supply	External cable or DC/DC converter 1000V/24V or 1500V/24V
<b>Enclosure</b>	
Material	Glass-fibre reinforced Polyester (GRP); UV- and ozone stabile
Description	Incl. anti-pressure ventile; mounting bracktes in stainless steel
Protetction cascs (IEC 60529)	Up to IP65 (comepletely wired, closed case)
Impact resistance (IEC62262)	IK10
<b>Operation and enviromental conditions:</b>	
Ambient temperature	-20° C to max. +55° C
Installation	Indoor and outdoor
Relative Humidity	Indoor: Max. 50% at +40° C, max. 90% at +20° C (not condensating) Outdoor application: temporarily up to 95% at +25° C (not condensating)
Altitude above sea level (MLS)	Standard 2000m above, max. 4000m (DEARTING applies)
Standards	IEC61439-2

### Parallel switching of module strings

Reduce the costs of your DC cabling with pre assembled, ready-to-plug-in HISkon® cabling concepts. For example, switch in parallel two module strings with our U-Splitters with integrated inline fuses.

Depending on the requirements, you can save up to 25% of cable and at the same time, reduce the demands of the DC Combiner. Your installation time will also be shorter.

**HISCONNECT PLUS®**  
wiring solution for solar business



# HISBOX® AC COMBINER 400V/800V/1000V AC

String inverters are increasingly used in PV power plants. With our AC Combiners, you can collect the output of your inverters, including the necessary switching and protection facilities. As well as variety of standard solutions, our Development and Construction team also offer customer specific solutions.

## AC COMBINER 400V AC



Item nr.	Amount Inverter	Input Inc max	Grid	Surge arrester	Connection output	OutputInAmax	Dimension
HAC-03-0301-10-A001	3	120	TNC/ IT	-	M12 tubular cable lug	360	847x635x300 mm
HAC-04-0301-10-A001	4	100	TNC/ IT	-	M12 tubular cable lug	400	847x635x300 mm
HAC-05-0301-10-A001	5	100	TNC/ IT	-	M12 tubular cable lug	500	847x635x300 mm
HAC-06-0301-10-A001	6	80	TNC/ IT	-	M12 tubular cable lug	500	1056x852x350 mm
HAC-03-0301-13-A001	3	120	TNC	Type 1+2	M12 tubular cable lug	360	847x635x300 mm
HAC-04-0301-13-A001	4	100	TNC	Type 1+2	M12 tubular cable lug	400	847x635x300 mm
HAC-05-0301-13-A001	5	100	TNC	Type 1+2	M12 tubular cable lug	500	847x635x300 mm
HAC-06-0301-13-A001	6	80	TNC	Type 1+2	M12 tubular cable lug	500	1056x852x350 mm

## AC COMBINER 800V AC (NH00 + LOAD BREAK SWITCH)



HUAWEI



Item nr.	Amount Inverter	Input Inc max	Grid	Surge arrester	Connection output	OutputInAmax	Dimension
HAC-02-0611-10-A001	2	50	IT/TNC	- (optional)	Load Break 160A, 3-pole	100	847x635x300 mm
HAC-03-0611-10-A001	3	50	IT/TNC	- (optional)	Load Break 250A, 3-pole	160	847x635x300 mm
HAC-04-0611-10-A001	4	50	IT/TNC	- (optional)	Load Break 250A, 3-pole	200	847x635x300 mm

## AC COMBINER 1000V AC (MCCB 3-POLE)



HUAWEI



Item nr.	Amount Inverter	Input Inc max	Grid	Surge arrester	Connection output	OutputInAmax	Dimension
HAC-02-1311-10-A001	2	80	IT/TNC	- (optional)	M12 tubular cable lug	160	847x635x300 mm
HAC-03-1311-10-A001	3	80	IT/TNC	- (optional)	M12 tubular cable lug	250	847x635x300 mm
HAC-04-1311-10-A001	4	80	IT/TNC	- (optional)	M12 tubular cable lug	320	1065x852x350 mm

**Tip:** We also provide customer specific solutions, including sockets, terminals for wiring of the communication and ready to plug in connection and communication cables.

### Brochure HISbox® AC Combiner

Further information about our HISbox® AC Combiner can be found in the brochure „HISbox® AC Combiner“



# HISBOX® GRID AND PLANT PROTECTION

### Your benefits:

- Fulfills all the required functions for network and plant protection from the energy supply companies
- As well as the control unit, it incorporates two remotely controllable 4-pole isolation points well and the associated components

Order No.	AC-Performance [max.]	Rated current	Supply monitoring relays	Housing types - dimensions HxWxD
HNA-033-0-A001	33 kVA	50A	CM-UFD.M31	610x448x160 mm
HNA-061-0-A001	61 kVA	88A	CM-UFD.M31	800x800x300 mm
HNA-077-0-A001	77 kVA	110A	CM-UFD.M31	800x800x300 mm
HNA-099-0-A001	99 kVA	144A	CM-UFD.M31	800x800x300 mm
HNA-0138-0-A001	138 kVA	200A	CM-UFD.M31	800x800x300 mm
HNA-0220-0-A001	220 kVA	320A	CM-UFD.M31	1200x1000x400 mm

HISbox® Grid and Plant Protection takes over all the functions for grid and plant protection required by the power supply company in your PV plant. HISbox® Grid and Plant Protection includes the control unit, two remotely controllable 4 pole disconnection points and the corresponding components. The completely pre-wired switchgear assemblies are connected between the mains connection point and the inverter.



# HISBOX® ESS COMBINER

### Your benefits:

- Planning and manufacturing of main distributions for island, microgrid and fuel saving applications
- Specific project requirements in comprehensive systems solutions will be implemented
- Maximum support from the planning stage through to installation and commissioning

## HISBOX® ESS-COMBINER REMOTE GRID SOLUTION

Inverter	Protection; 3-phase up to 160A per inverter
Diesel generator	Motorized 3-phase Power circuit breaker, remote signal with contact for synchronization up to 250A
Input/Output ESS	1 x 3-phase fused up to 400A
Load side	2 x 3-phase fused up to 160A
Energy measuring	Optionally 2x current transducer 400/5A to connect energy meter or Grid-Management-System
Control components EMS	Integrated PLC Components for Energy-Management-Systems
Data connection	Ethernet CU, overvoltage protection; Alternatively via fibre optic cable



# HISBATT® ENERGY STORAGE SYSTEMS

### Battery interconnects / Battery connection cables

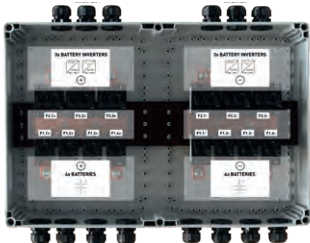
Ready for use: Completely pre-assembled and tailored 1:1 to your requirements.

### HIS-BATT Battery fuse combiner

The battery fuse combiner protects the connecting cables of their respective inverters. This achieves fuse protection for all battery poles and also isolates the inverter. We offer different options depending on the system requirements and the inverters used.

### Switch Box (1-phase / 3-phase)

The HIS Switch Box for 1- or 3-phase backup power systems is regulated and controlled by the manufacturer's inverter power meter and creates an isolated grid during a mains blackout. All poles of the PV complex, along with all other consumers, are safely isolated from the public grid.



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# WE CONNECT SOLAR ENERGY Worldwide

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As well as the head office in Germany, HIS Renewables has also companies abroad in all the relevant markets from where we supply and look after our customers locally.



In 2020, more than **4 GW** PV power successfully connected

**1600 customers** in more than **60 countries** worldwide

**20 years experience**  
in design, cabling and switching of PV installations

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