



Well-advised with HIS

Our experienced engineers provide comprehensive advice, from the planning through to the monitoring of your finished system. So you can relax in the knowledge that thanks to the highest quality components that are optimally tailored to one another, none of your precious electricity is lost and your system operates intelligently and productively.

Your reliable partner HIS

Today, more than 700 customers with systems ranging up to one megawatt class are already relying on our unique expertise and diverse product portfolio. As a member of the Walther-Gebhardt Group, we have over 25 years' experience in the area of cabling and switching solutions – all manufactured at our state-of-the-art production facilities in Germany.

Outstanding HIS quality at fair prices

The Walther-Gebhardt Group purchases and produces all components in high volumes and in strict compliance with relevant industry standards. This allows us to offer you the very highest quality at a fair price. Like our low-loss HIKRA® S solar cable – winner of the test conducted by Photon magazine.



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HIS – SERVICES



› Consulting

Tap the potential of your PV system. Our experienced engineers are happy to advise you, without obligation, on the cables and switches that best meet your needs.



› Yield calculation & yield prognosis

To ensure that your investment also pays out in financial terms, our experts can assist you as early as the planning phase in selecting a location, providing profit forecasts and obtaining independent expert opinions.



› ELO planning

During the project planning and construction phase, our ELO planning service will help you reduce costs, optimize yields and guarantee the reliable operation of your system for decades to come. If you wish, we can also match modules and inverters, create cable cutting plans, calculate and optimize cable cross sections, identify suitable components, develop and produce junction boxes for inverters and implement remote monitoring systems.



› String monitoring

Our Sinusstrom Control web portal enables you to constantly monitor each string in your photovoltaic system. You can be kept up to date and alerted anywhere in the world according to your own criteria. This gives you certainty regarding yields and enables you to react quickly should the need arise, even in the event of unforeseen events such as theft or environmental catastrophes.



› System check & system renovation

You shouldn't accept any compromises when putting your PV system to the acid test: The comprehensive HIS check avoids dangerous malfunctions and the resulting financial losses. Alongside diagnostics, you'll also receive rapid support when it comes to resolving any faults.

HIKRA® Solar Cables

Boost the yield of your system with low-loss and long-lasting HIKRA® Solar Cables. We are happy to help you select a cable that meets your requirements.

From the cost-effective standard cable all the way to the premium HIKRA® S with its 25-year warranty – winner of the test by Photon magazine.



HIKRA® Solar Cables

FEATURES

- UV-, ozone- and weather-resistant
- Flame-retardant, halogen-free, hydrolysis-resistant
- Good abrasion resistance, robust
- Short-circuit-proof up to 200° C/5s, thanks to double insulation
- Highly flexible for high mechanical stress
- RoHS and Reach-conformant
- 25-year factory warranty from date of delivery. The warranty conditions for HIKRA® Solar Cable apply for intended use, installation and operating conditions

TYPES OF BUNDLES

- 100 m ring / drum
- 500 m drum

We'll be happy to provide you with an offer on special requests, different lengths, labels, etc...

HIKRA® S

Our TÜV and VDE-certified HIKRA® S Solar Cable complies with the requirements of the DKE and features optimal mechanical and electrical properties. Robust materials defy the long-term influences of nature and offer a maximum of quality and safety. Thanks to the high-quality electrical properties, with HIKRA® S you are employing a true yield wonder. HIKRA® S is available in different colours, as a double cable or preassembled.

TECHNICAL DATA

Approvals	DKE (PV1-F), TÜV 2 PFG. 1169/08.07 (R 60033853), VDE (REG. Nr.: 8322)		
Temperature range	flexible	-25° C to +125° C	
	fixed	-50° C to +150° C	
Minimum bending radius	flexible approx. 10x cable dia fixed approx. 5x cable dia		
Nominal voltage [U ₀ /U]	AC 600 / 1.000 V, DC 900 / 1.500 V		
Rated voltage	maximum admissible voltage up to 1.8 KV DC (Conductor/conductor, ungrounded system, off-load circuit)		
Construction	Tin-plated copper strand, fine wire per IEC 60228 class 5		
	Double insulated		
	Isolation: Chemically cross-linked special compound		

Order No.			No. of cores x cross-section in mm²	Construction in mm	External diameter approx. (± 0.2mm)	Copper quantity kg/km	Weight approx. in kg/km
black	red	blue					
71 63 48	-	-	1 x 1.5	30 x 0.25	4.3	14.0	31
71 43 17	71 65 59	71 65 60	1 x 2.5	50 x 0.25	4.5	24.0	40
71 43 18	71 65 61	71 65 62	1 x 4.0	56 x 0.30	5.2	38.4	59
71 43 20	71 65 63	71 65 64	1 x 6.0	84 x 0.30	5.9	57.6	81
71 43 21	71 65 65	71 65 67	1 x 10.0	80 x 0.40	6.9	96.0	127
71 48 36	71 95 30	72 05 31	1 x 16.0	126 x 0.40	8.3	151.1	193
71 48 35	-	-	1 x 25.0	196 x 0.40	9.6	234.0	284
71 47 75	-	-	1 x 35.0	266 x 0.40	11.0	315.7	378

HIKRA® ECO

This standard line helps you meet all the necessary photovoltaics requirements. Our TÜV-certified HIKRA® ECO Solar Cable complies with the requirement profile of the DKE. Ideal for simple installations with moderate external influences on the cable.

TECHNICAL DATA

Approvals	DKE (PV1-F-Approval), TÜV 2 PfG. 1169/08.07 (R 60039795)		
Temperature range	flexible	-25° C to +125° C	
	fixed	-50° C to +150° C	
Minimum bending radius	flexible approx. 10x cable dia fixed approx. 5x cable dia		
Nominal voltage [U ₀ /U]	AC 600 / 1.000 V, DC 900 / 1.500 V		
Rated voltage	maximum admissible voltage up to 1.8 KV DC (Conductor/conductor, ungrounded system, off-load circuit)		
Construction	Tin-plated copper strand, fine wire per IEC 60228 class 5 Double insulated Isolation: Chemically cross-linked special compound		

Order No.			No. of cores x cross-section in mm²	Construction in mm	External diameter approx. (± 0.2mm)	Copper quantity kg/km	Weight approx. in kg/km
black	red	blue					
72 03 06	72 13 03	72 13 07	1 x 2.5	44 x 0.25	4.5	20.7	38
72 03 07	72 13 04	72 13 08	1 x 4.0	50 x 0.30	5.0	33.8	54
72 03 08	72 13 05	72 13 09	1 x 6.0	74 x 0.30	5.6	50.4	74
72 03 09	72 13 06	72 13 10	1 x 10.0	74 x 0.40	6.9	88.1	119
72 03 10	-	-	1 x 16.0	114 x 0.40	7.7	136.9	174
72 03 11	-	-	1 x 25.0	189 x 0.40	9.3	229.2	296
72 03 12	-	-	1 x 35.0	259 x 0.40	10.7	314.9	397

Robust materials stand up to nature's effects over many years.

HIKRA® C

Thanks to an optimized use of materials, HIKRA® C poses a viable alternative to a premium cable. This PV1-F solar line complies with all the necessary photovoltaics requirements of DKE and has been approved by TÜV.

TECHNICAL DATA



Approvals	DKE (PV1-F), TÜV 2 Pfg. 1169/08.07 (R 60040476)
Temperature range	-40° C to +90° C, max. temperature at the conductor: +126° C
Minimum bending radius	flexible approx. 10x cable dia fixed approx. 5x cable dia
Nominal voltage [U ₀ /U]	AC 600 / 1.000 V, DC 900 / 1.500 V
Rated voltage	maximum admissible voltage up to 1.8 KV DC (Conductor/conductor, ungrounded system, off-load circuit)
Construction	Tin-plated copper strand, fine wire per IEC 60228 class 5 Double insulated Isolation: Chemically cross-linked special compound

Order No.			No. of cores x cross-section in mm²	Construction in mm	External diameter approx. (± 0.2mm)	Copper quantity kg/km	Weight approx. in kg/km
black	red	blue					
72 11 24	72 15 01	72 11 79	1 x 2.5	4.6	50 x 0.25	4.6	46
72 11 25	72 15 02	72 11 80	1 x 4.0	5.0	53 x 0.31	5.0	60
72 11 26	72 15 03	72 11 81	1 x 6.0	5.6	80 x 0.31	5.6	80
72 11 27	72 15 04	72 11 82	1 x 10.0	7.4	80 x 0.31	7.4	140
72 14 98	-	-	1 x 16.0	8.1	120 x 410	8.1	185
72 15 00	-	-	1 x 25.0	10.3	196 x 0,41	10.3	310
72 14 99	-	-	1 x 35.0	11.4	280 x 410	11.4	410

HIKRA®

Order No. black	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km
71 41 64	1 x 50.0	13.0	480.0	630
71 41 65	1 x 70.0	15.3	672.0	850
71 41 66	1 x 95.0	17.0	912.0	1.200
71 49 54	1 x 120.0	23.8	1.152	1.475
71 66 40	1 x 150.0	28.0	1.440	1.868
71 66 41	1 x 185.0	31.0	1.776	2.299
71 66 42	1 x 240.0	34.0	2.304	2.557

HIKRA® S Twinline

Order No.	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km	Sheath colour
71 63 93	2 x 4.0	5.4 x 10.6	76.80	118	black
71 63 94	2 x 6.0	6.2 x 12.1	115.20	162	black

HIKRA® S Twinline simplifies your installation and is based on the HIKRA® S technical data.

HIKRA® S Marten Resistant Cable

Order No.	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km
71 57 35	1 x 2.5	5.3	24.00	40 V2A extra
71 57 34	1 x 4.0	6.0	38.40	59 V2A extra
71 57 36	1 x 6.0	6.7	57.60	81 V2A extra
71 57 37	1 x 10.0	7.7	96.00	127 V2A extra

For special protection against rodents, we offer rodent-resistant HIKRA® S. With a steel braid of V2A, visually up to 90 % flexible, this is a robust alternative.

Potential equalization cable

Order No.	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km	Sheath colour
70 35 20	1 x 2.5 / AWG 14	3.7	24.0	30.1	green / yellow
70 67 44	1 x 4 / AWG 12	4.4	38.4	29.2	green / yellow
71 03 88	1 x 6 / AWG 10	4.8	58.0	63.0	green / yellow
70 47 98	1 x 10 / AWG 8	6.9	96.0	110.0	green / yellow
70 64 51	1 x 16 / AWG 6	8.9	154.0	185.0	green / yellow



! Pre-assembled with UV-resistant cable jacket, gn/ye shrink sleeving and end sleeves w/o inspection holes.



HIKRA® UL

HIKRA® UL Solar Cable was developed according to UL Subject 4703 “Outline of investigation for photo-voltaic wire” and meets the specific requirements of the North American market.

TECHNICAL DATA

Temperature range	flexible	-40° C to +90° C
	fixed	-40° C to +105° C
Minimum bending radius	flexible approx. 10x cable dia fixed approx. 5x cable dia	
Nominal voltage [U ₀ /U]	AC 600 / 1.000 V, DC 1.000 / 1.800 V	
Alternating text voltage	7.500 V	
Construction	Copper strand tin-plated per AWG, double insulated, Halogen-free, isolation: Chemically cross-linked special compound	

Order No.	Conductor cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km	Sheath colour
71 58 89	2.5 (AWG 14)	6.1	24.0	56	black
71 58 90	4.0 (AWG 12)	6.7	38.4	75	black
71 58 91	6.0 (AWG 10)	7.2	57.6	98	black
71 58 92	10.0 (AWG 8)	9.0	96.0	156	black
71 58 93	16.0 (AWG 6)	10.2	151.1	220	black
71 58 94	25.0 (AWG 4)	11.4	234.0	313	black
71 58 95	35.0 (AWG 2)	13.6	315.7	426	black

HIKRA® DUAL

The electron beam cross-linked HIKRA® DUAL solar cable is TÜV and UL-certified and thus covers the whole bandwidth required for global distribution. Ideal in combination with preassembled cables for manufacturers of junction boxes and modules.

TECHNICAL DATA

Approvals	TÜV 2 Pfg. 1169/08.07, UL Subject 4703, „Outline of investigation for photovoltaic wire“	
Temperature range	flexible	-40° C to +90° C
	fixed	-40° C to +105° C
Minimum bending radius	flexible approx. 5x cable dia fixed approx. 4x cable dia	
Nominal voltage [U ₀ /U]	AC 600 / 1.000 V, DC 1.000 / 1.800 V	
Alternating text voltage	AC 6.500 V	
Construction	Tin-plated copper strand, fine wire per IEC 60228 class 5, double insulated, Halogen-free, electron beam cross-linked special compound, Isolation: Cross-linked special compound	

Order No.	Conductor cross-section in mm² / AWG	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km	Sheath colour
71 70 27	2.5 (AWG 14)	6.1	24.0	59	black
71 70 28	4.0 (AWG 12)	6.8	38.4	79	black
71 70 29	6.0 (AWG 10)	7.6	57.6	105	black

SPECIAL CABLES

Data Cables J-Y(St)Y Lg

Order No.	Number of pairs x cross-section in mm²	External diameter approx. mm	Copper quantity kg/km	Weight approx. in kg/km
70 73 84	2 x 2 x 0.6	5	13	40
71 62 38	4 x 2 x 0.6	6.5	24	60
71 58 34	8 x 2 x 0.6	8	46	90
72 42 13	16 x 2 x 0.6	11	93	160

Data Cables LiYCY

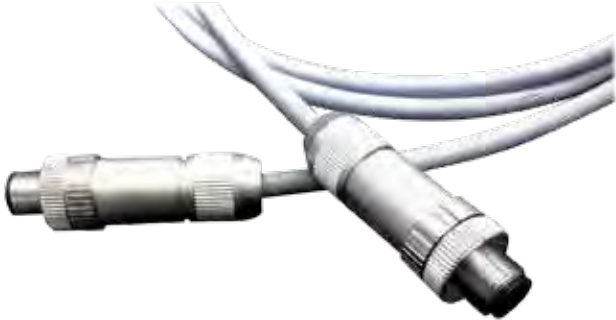
Order No.	Number of pairs x cross-section in mm²	External diameter approx. mm	Copper quantity kg/km	Weight approx. in kg/km
70 22 22	2 x 2 x 0.25	6.3	2.8	54
71 05 46	2 x 2 x 0.5	8.7	4.81	93
70 33 33	2 x 2 x 0.75	10.7		106
70 16 42	4 x 2 x 0.25	7.6	4.49	81
70 85 62	4 x 2 x 0.5	9.4	9.1	146
72 29 89	4 x 2 x 0.75	11.1	10.8	179

LAN Cables CAT7 - S-STP

Order No.	Number of pairs x cross-section in mm²	External diameter approx. mm	Copper quantity kg/km	Weight approx. in kg/km
718840	2x(4x2xAWG 23/1)	approx. 7,5 x 16	60	120
715821	4 x 2 x AWG23/7	7	26	65
714643	4 x 2 x AWG27/7	5,9	24	37

RS 485 Cables

Order No.	Number of pairs x cross-section in mm²
723874	1x1xAWG 23 stranded conductor



 We also have other services available on request.



UNDERGROUND CABLE NYY / NAYY

HIS offers you a comprehensive range of underground cables for cabling the AC or DC side of your system. They are suitable for use underground, in the water and in the open, as well as in concrete. All of our underground cables are available in J and O versions.

FEATURES

- ▶ PVC, self-extinguishing and flame-retardant per VDE 0482-332-1-2, DIN EN 60332-1-2/IEC 60332-1
- ▶ Approbation VDE 0276-603
- ▶ The materials used in production are silicon- and cadmium-free, and contain no substances that impair the wetting properties of lacquers

TECHNICAL DATA

Permissible short-circuit temperature	+160° C (short-circuit duration 5 Sec.)	
Temperature range	flexible	-5° C to +50° C
	fixed	-40°C to +70° C
Minimum bending radius	approx. 15x cable diameter approx. 12x cable diameter	
Nominal voltage [U ₀ /U]	600 / 1.000 V	
Test voltage	4.500 V	
PVC-core insulation	DIV4 per HD 603.1	
PVC-outer sheath	DMV5 per HD 603.1	
Sheath colour	black	
J-version	green-yellow (1/2), brown, s/w, grey	
O-version	blue (1/2), brown, s/w, grey	
Construction	NYY Bare copper conductor, per DIN VDE 0295 class 1 or class 2, single- or multi-core	
	NAYY Aluminium conductor, per DIN VDE 0295 class 1 or class 2 (class 1 or class 2 solid or stranded type, BS 6360 cl. 1 or cl. 2, IEC 60228 and HD 383) RE: round solid core SE sectional core RM stranded core	

! All other versions of underground cable (for example with concentric conductor or mean voltage cable) are available on request.

Underground Cable NYY

Order No. NYY-J	Order No. NYY-O	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Copper quantity kg/km	Weight approx. in kg/km
71 58 03	71 53 96	1 x 4	9	38	115
71 45 61	71 38 81	1 x 6	9.5	58	135
71 45 62	71 45 65	1 x 10	10	96	179
71 57 12	70 99 04	1 x 16	11	154	245
71 57 13	71 69 86	1 x 25	12	240	360
71 61 42	70 99 05	1 x 35	13	336	470
71 54 95	71 53 88	1 x 50	15	480	620
71 53 92	71 53 87	1 x 70	16.5	672	810
71 50 04	71 50 06	1 x 95	19	912	1.110
71 53 90	70 96 80	1 x 120	20.5	1.152	1.360
71 59 63	71 54 75	1 x 150	22.5	1.440	1.670
71 60 87	70 96 82	1 x 185	25	1.776	2.050
71 57 14	71 16 52	1 x 240	28	2.304	2.630
71 56 95	71 58 48	1 x 300	30	2.880	3.200
71 69 64	71 69 87	1 x 400	34	3.840	4.150
71 69 65	71 69 88	2 x 1.5	11.0	29	175
71 69 66	71 69 89	2 x 2.5	12.0	48	215
71 69 67	71 69 90	2 x 4.0	14.0	77	295
71 69 68	71 69 91	2 x 6.0	15.0	115	370
71 69 63	71 45 64	2 x 10.0	16.5	192	495
71 69 69	71 69 92	2 x 16.0	18.5	307	670
71 69 70	71 69 93	2 x 25.0	23.5	480	960
71 69 71	71 69 94	3 x 1.5	11.5	43	195
71 05 01	71 69 95	3 x 2.5	12.5	72	250
71 57 56	71 69 96	3 x 4	14	115	340
71 54 59	71 69 97	3 x 6	15	173	430
71 57 57	71 69 98	3 x 10	17	288	590
71 43 64	71 69 99	3 x 16	19	461	820
71 59 65	71 70 00	3 x 25	24	720	1320
71 69 72	71 70 01	3 x 35	25	1008	1450
71 69 73	71 70 02	3 x 50	26.5	1440	1850
71 69 74	71 70 03	3 x 70	30	2016	2450
71 22 95	71 70 04	3 x 95	34.5	2736	3300
71 69 75	71 70 05	3 x 120	37	3456	4100
71 69 76	71 70 06	3 x 150	40	4320	4900
71 69 77	71 31 67	3 x 185	46	5328	6.500
71 69 78	71 40 73	3 x 240	51	6912	8300
71 69 79	71 70 07	4 x 1.5	12	58	230
71 69 80	71 70 08	4 x 2.5	13.5	96	300
71 69 81	71 70 09	4 x 4	15	154	410
71 69 82	71 70 10	4 x 6	16.5	230	520
71 69 83	70 83 58	4 x 10	18.5	384	730
71 15 11	71 62 05	4 x 16	21.5	614	1045
71 15 12	71 51 28	4 x 25	26	960	1640
70 89 08	71 70 11	4 x 35	27.5	1344	1760
70 89 09	71 70 12	4 x 50	30	1920	2350
71 48 22	71 70 13	4 x 70	34	2688	3100
70 84 16	71 57 51	4 x 95	39	3648	4250
71 45 54	71 57 52	4 x 120	42.5	4608	5300
70 89 51	71 70 14	4 x 150	47.5	5760	6400
71 61 66	71 70 15	4 x 185	52	7104	8500
71 60 43	71 70 16	4 x 240	58	9216	11.000

▶ Underground cables are suitable for use underground, in water, in the open air and in concrete.

Underground Cable NAYY

Order No. NAYY-O	Order No. NAYY-J	No. of cores x cross-section in mm²	External diameter approx. (± 0.2 mm)	Al weight kg/km	Weight approx. in kg/km
71 67 15		1 x 35 RE	13	102	240
71 60 88		1 x 50 RE	15	145	360
71 60 89		1 x 70 RM	16.5	203	410
71 60 91		1 x 95 RM	19	276	570
71 60 92		1 x 120 RM	20.5	348	691
71 60 93		1 x 150 RM	22.5	435	804
71 60 94		1 x 185 RM	25	537	979
71 60 90		1 x 240 RM	28	696	1253
71 59 09		1 x 300 RM	30	870	1395
71 63 71		1 x 400 RM	34	1160	1890
71 87 82		1 x 500 RM	38	1450	2600
71 87 83		1 x 650 RM	43	1827	2780
72 42 32	71 68 06	4 x 16 RE	23	186	750
72 42 31	71 61 10	4 x 25 RE	26	290	950
72 42 30	71 61 11	4 x 35 RE	28.5	406	1120
72 46 42	71 57 94	4 x 50 SE	30	580	1151
72 42 27	71 68 88	4 x 70 SE	35	812	1549
72 42 26	71 72 61	4 x 95 SE	39.5	1102	2030
72 42 25	71 57 93	4 x 120 SE	44	1392	2400
72 06 41	71 54 08	4 x 150 SE	46	1740	3030
71 87 19	71 49 11	4 x 185 SE	51	2146	3650
72 35 52	71 56 89	4 x 240 SE	56	2784	4800
72 35 53	72 09 41	4 x 300 SM	66	3480	6160
	72 42 34	5 x 25 RM	28	363	1175
	72 42 33	5 x 35 RM	31	508	1399
	72 33 65	5 x 50 RM	35	725	1855
	72 42 35	5 x 70 RM	40	1015	2351
	72 42 37	5 x 95 RM	45	1378	3071
	72 42 38	5 x 120 RM	49	1740	3631
	72 42 39	5 x 150 RM	54	2175	4123
	72 42 41	5 x 185 RM	59	2683	4892

MEDIUM VOLTAGE CABLES

Cables	Stranded copper or aluminium conductor	XLPE insulation	Inner covering	Conductor screen of semi-conducting compound	Core screen of semi-conducting compound	Copper wire	Semi- conducting swellable tape	Separation tape	PVC sheath
N2XY / NA2XY	✓	✓	✓						PVC
	(6/10kV) four-core XLPE insulated cables with PVC sheath according DIN VDE 0276-603								
N2XSEY / NA2XSEY	✓	✓	✓	✓	✓	✓			PVC
	(6/10kV) three-core XLPE insulated cables with PVC sheath according DIN VDE 0276-620 (IEC 60502)								
N2XS(F)2Y / NA2XS(F)2Y	✓	✓		✓	✓	✓	✓	✓	PE
	(6/10kV, 12/20kV, 18/30kV) single-core XLPE insulated cables with PE sheath, longitudinally watertight according to DIN VDE 0276-620								
N2XS(FL)2Y / NA2XS(FL)2Y	✓	✓		✓	✓	✓	✓		PE
	(6/10kV, 12/20kV, 18/30kV) single-core XLPE insulated cables with PE sheath, longitudinally and radially watertight according to DIN VDE 0276-620								

HISbox[®]
String Boxes

Maximize your system's security and profitability with DC/AC String Boxes from HIS. Thanks to efficient and logical switches as well as optimum protection against power surges, lightning strikes and leakage currents, our customized HIS String Boxes guarantee seamless performance monitoring and alarm functions for a rapid response capability.

Available options include individual string monitoring, fire protection and anti-theft monitoring.



MODULAR SYSTEM / HIS STANDARD

We design and manufacture optimized boxes, made of industrial components, specifically for your system. This gives you the greatest possible customization in keeping with the industrial standard, and at a fair price.

At the Walther-Gebhardt group of companies, we work closely with major component manufacturers. Our efficient warehouse and production facilities ensure first-class manufacturing and fast availability. We produce according to country-specific requirements and applicable standards and certificates.

Together with us, you can configure the right box for your requirements:

Step 1 Choice of components

- › Matching the desired output
- › Countless possible combinations



Step 2 Input and output connections

- › Matching the cable diameters, connections and seals



Screwing, built-in connector, assembled connection cable, minimum bending radius, rubber flange, special connector

Step 3 Selecting the right housing

- › UV- and ozone-stable components usable outdoors with protection
- › Splashproof IP 65, optional IP 67 / 68
- › Protection class II, complete protection against accidental contact
- › Pressure compensation element prevents condensation



Step 4 Internal wiring

- › For internal wiring, we use 1.000 V cable that meets typical photovoltaic requirements
- › For your project we can also create individual comb rails
- › PE and communication pre-wired on request.

! Follow the HIS installation instructions for string boxes.
Download at: www.his-solar.com

DC COMBINER BOX

With the HIS Combiner Box, you can assemble strings or even boxes in the module fields up to the inverter. Working with HISkon® Cable assembly allows quality and price advantages, such as through parallel connection of module strings at the cable level.

Additional safety can be achieved with encapsulated fuses, gPV fuses, NH fuses or automatic circuit breakers.

- › Terminal strip screw or spring contacts
- › Suitable for copper and aluminium cables
- › 1-pole fuse holder (optional 2-pole and/or with LED)
- › gPV fuses: Please observe the manufacturer's design guidelines (temperature, release current nominal value, speed)



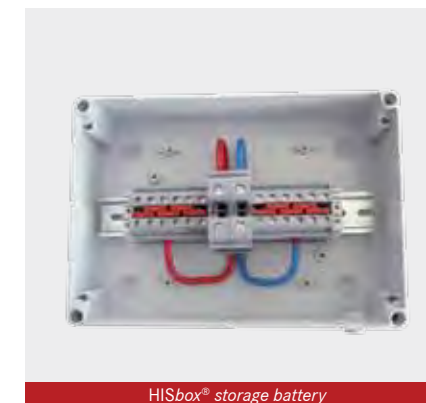
HISbox® combination box fuse +/-



HISbox® fuse +/-



HISbox® fuse +



HISbox® storage battery



HISbox® combiner



DIODE BOX

When producing your HIS Diode Box, we not only consider all of your requirements, but also those of the module manufacturer, legal authorities and insurance company.

- › Cover profile for protection against accidental contact
- › Phoenix and Wago diode terminals
- › Input current: Diode 3 - 8 A
- › Input voltage: 1.000 - 2.000 V
- › Optional Type 2 surge protection or Type 1+2 surge protection
- › Spring clamps and screw clamps at input and output



insulated comb rails



HISbox® diode + / clamps -



HISbox® diode + / fuse -



HISbox® combination arrester diode + / LED fuse -

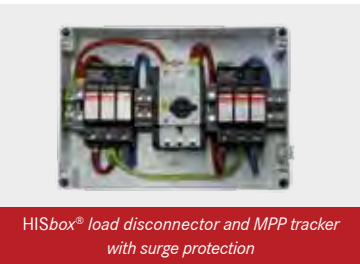


HISbox® diode + / fuse -

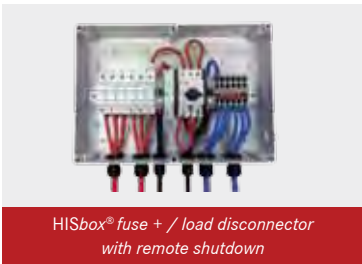
- ! Please comply with the following regulations, among others:
- › VDE 0100-712
 - › Low voltage directive 2006/95/EC appendix III B
 - › Coordinated standard DIN EN 61010-1 Cat II
 - › VDE 0411-1

HISbox® LOAD DISCONNECTOR

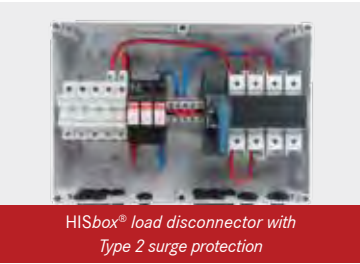
Multi-pole load disconnectors with manual activation or motor drive ensure safe switching on and off under load, as well as a safety disconnect in all low-voltage circuits with DC current for photovoltaic applications.



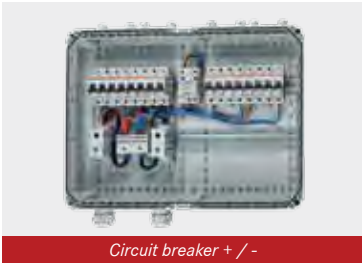
HISbox® load disconnecter and MPP tracker with surge protection



HISbox® fuse + / load disconnecter with remote shutdown



HISbox® load disconnecter with Type 2 surge protection



Circuit breaker + / -

A wide range of components from nearly all major manufacturers

- › Adapted to various manufacturers' connector types (including cable shoes and end sleeves) and to country-specific conditions
- › Load disconnecter power spectrum (30 A to 500 A)
- › Maximal use

! **Hazard warning:**
Disconnection under load may be fatal!

DC ISOLATOR

Safe operation of solar systems with the HIS DC Isolator. These separators, which can be switched between photovoltaic generators and inverters, are available as a complete device in a housing or in combination with the string boxes in different designs.

FEATURES

- › 4-pole
- › 1 PE terminal and 1 removable n terminal
- › Protection class IP 65
- › Can be expanded with up to two auxiliary switch modules



718899 | DC Isolator 22PV4304, 32 A, 4-pole

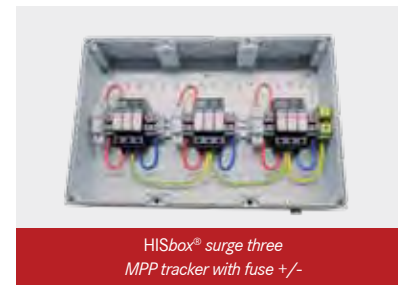
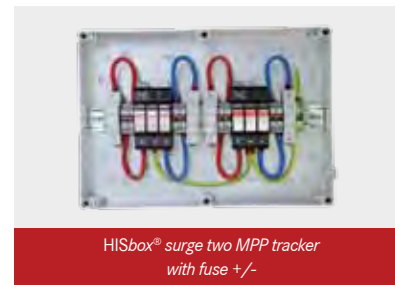
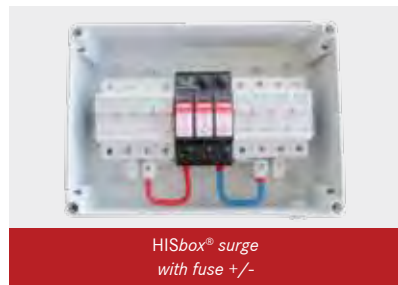
718900 | DC Isolator, 22PV4308, 40 A, 4-pole

DC / AC ISOLATOR (especially used in UK)



Order No.	Type	AC / DC	V = volts, A = amperes
72 24 84	H226-81400-710N1	DC	250 V / 32 A or 450 V / 20 A or 500 V / 16 A
72 24 86	B250-81500-710N1	DC	500 V / 25 A
72 24 89	B250-81600-761N1	DC	650 V / 32 A
72 24 90	B250-81800-740N1	DC	800 V / 32 A
72 24 92	H220-41200-700N4	AC	25 A 2-pole less than 690 volts

DC TYPE 2 SURGE PROTECTION



Using components from well-known manufacturers, we can configure your systems precisely for optimal surge protection.

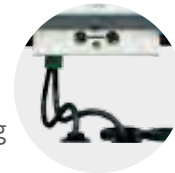
› Varistor technology



› VG technology

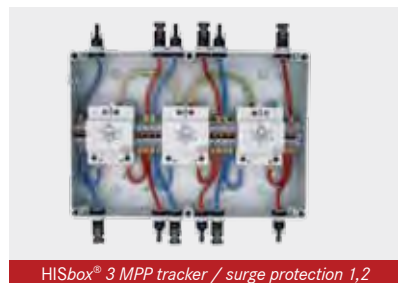


› Standard with remote signal contact, optional pre-wiring



In the event of a failure, the device is disconnected from the power circuit, and the device's fault is shown on a mechanical display. Upon request, we will wire the communication connection, so that you can detect failures remotely and react quickly. The plug-in protection module ensures fast replacement.

DC TYPE 1+2 SURGE PROTECTION COMBINATION ARRESTER



Our expertise as an experienced manufacturer gives us access to a wide range of standard components.



twin cable end-sleeve



The protection circuit with VG technology consists of a Y circuit with gas-filled spark gaps and high-performance varistors. Special development and interconnection of components allows trouble-free insulation measurement. Because no leakage or operating currents result, passive ageing is prevented.

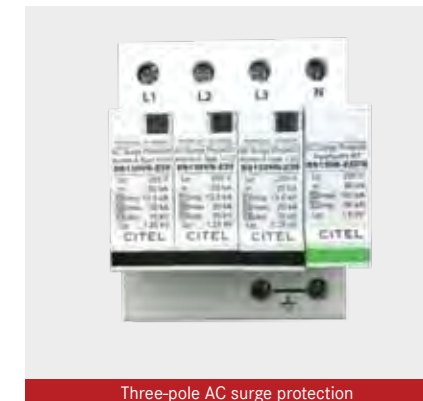
The lightning protection used is a monoblock combination arrester, which offers secure protection against close and direct strikes. The DC current between the solar generator and inverter is exposed to the greatest risk, because the solar modules are always in an exposed location and require the best possible protection here. Our lightning protection reliably covers this risk.

Our motto is, "Reach the goal safely and quickly." Greater efficiency means lower cost to you.

AC SURGE PROTECTION



HISbox AC surge protection 1-phase with line protection



Three-pole AC surge protection

These boxes protect the inverter, your communication and the building's circuits against surges from the power grid. In the event of a failure, the device is disconnected from the power circuit, and the device's fault is shown on a mechanical display. Upon request, we will wire the communication connection, so that you can see failures remotely and react quickly. The plug-in protection module ensures fast replacement in case of failure.

We would be happy to advise you on combining your preferred surge protection with earth leakage protection switches.

- › 1-, 3-pole AC surge arresters in a variety of sizes and designs, temperature resistant, waterproof, 12, 24, 48 V AC, as well as 120 and 240 V AC, meets ICAO and FAA requirements, long service life
- › Line protection switches in various sizes and activation speeds

SURGE PROTECTION FOR COMMUNICATION

Surge protection for communication should not be neglected. On the one hand, this must be installed according to specific requirements. On the other hand, large PV systems have the problem that surges can arise from potential differences (such as soft sand on one side and rock on the other). In such cases, without proper protection, even small changes (such as a strong rain after a long dry spell) can lead to major property damage.



Please comply with the following regulations:

- › Low voltage directive 2006/95/EC appendix III B
- › Coordinated standard DIN EN 61643-11
Cat III DIN 61643-21
- › VDE 0185-305-3
- › VDE 0411-1
- › VDE V 0675-39-12 for PV systems

MONITORING

Monitor and optimize your system’s yield and safety with string-specific HIS Monitoring.

- › MODBUS-enabled single string monitoring to 20 A (RS485 to 9.6 kB/s ASCII)
- › Measuring accuracy +/- 1%, optionally with voltage monitoring
- › 1.000 V DC surge protection with remote signal contact
- › String protection +/- through 10 x 38 mm gPV fuses, contact safe
- › DC load disconnecter to 500 A (optional)
- › Simple, flexible system planning through modular design
- › Fast, easy assembly with our HISbox® plug-in system (including built-in MC4, Amphenol, Tyco, Sunclix sockets, etc.)
- › Housing: Polycarbonate or metal housing



FEATURES

- › 24 V DC-DC power adapter: For voltage boost of 24 V power supply for communication (no additional 240 V supply line needed)
- › LWL Repeater: Incoming and outgoing fibre optic cable, for potential protection and for extending the communication distance by 500 m
- › Type 2 surge protection with signal contact: Connected to Modbus communication, can be read directly from monitoring portal
- › Load disconnecter with its own lid. During maintenance, only the small lid needs to be removed.
- › Modular design allows easier exchange of replacement modules (even in unfavourable weather). Trouble-free storage, dispatch and installation
- › Increased profitability and long service life, because components are produced to industry standards.

HISbox® Monitoring 8 generator connection box +/- fuse / surge protection 2 / DC-DC power / LWL repeater / 160 A

! We would be happy to advise you on connecting your preferred monitoring system.

FEATURES

- › 240 V AC / 24 V DC power adapter for supplying power for communication, with additional buffer for equalizing fluctuations in the 240 V grid
- › LWL Repeater: Incoming and outgoing fibre optic cable, for potential protection and for extending the communication distance by 500 m
- › Type 1, 2 surge protection with signal contact for protection against lightning and surge connected to Modbus communication, can be read directly from monitoring portal
- › 500 A load disconnecter with very good size/ performance ratio, remote operation on request
- › Modular design allows easier exchange of replacement modules even in unfavourable weather.
- › Trouble-free storage, dispatch and installation
- › Increased profitability and long service life, because components are produced to industry standards.



HISbox® Monitoring 24 generator connection box +/- fuse / surge protection 1.2 / AC-DC power / LWL repeater / 500 A steel

TECHNICAL DATA

HISbox® MONITORING-8/12/16/24

ELECTRICAL DATA

Input voltage max.	1.000 V DC
Cable current per channel	to 20 A
Single cable protection +/- gPV 10x38	to 20 A, 1.000 V
Output current max.	500 A
Power consumption	800 mA
Interface	RS485 to 9,6 kB/s ASCII (MODBUS)
DC surge arrester	Type 2 FM / Type 1,2 optional / Type 3 FM for communication (optional)

CONNECTIONS

DC circuit breakers	Max. 500 A, 1.000 V
RS485 and auxiliary power supply	Input through 23 – 30 V DC 0,8 A
RS485 cable width	0.15 – 1.5 mm²
Cable connection: max. 10 mm²	Customer-specific (incl. H4 / MC 4 / TYCO / cable gland)
DC inverter connection	DC Isolator connection (e.g. cable shoe)

MECHANICAL DATA

Temperature range	- 20 °C to +70 °C (operation) / - 40 °C to +85 °C (storage)
Protection class	IP65 / Protection class II
Housing	Polycarbonate, steel housing

HIS-CONTROL / IPC

- Industrial PC with software for system monitoring (IPC image)
- › Monitoring of up to 2 x 31 HIS-Monitoring generator connection boxes and, if necessary, individual driver support for inverters.
 - › Irradiation and temperature sensors can be connected
 - › Storage of captured data as CSV or XML METEO Control form file
 - › Possible XML transfer by FTP to METEO Control data server
 - › 2 x RS 485, Ethernet, 24VDC feed, Windows CE operating system
 - › Several IPCs can be used in one intranet
 - › Optional touch pad screen



HIS-SOLARLOG

Order No.	Type
72 21 93	Solar-Log 200 PM+ data logger for system monitoring. 1 inverter, to 15 kWp, power company supported power management
72 28 85	Solar-Log 500 PM+ data logger for system monitoring. Up to 10 inverters, maximum 50 kWp, power company power management supported
72 29 53	Solar-Log 1000 PM+ data logger for system monitoring. Up to 100 inverters, maximum 1 MWp, power company power management supported



SOLAR-LOG-SENSOR BOX

Irradiation, temperature and wind sensor for Solar-Log 200, 500 and 1.000

Order No.	Type
72 31 20	Sensor Box, incl. irradiation sensor and module temperature sensor
72 41 97	Wind sensor for connection to the Sensor Box, incl. 5 m connection cable
72 41 98	Ambient temperature sensor for connection to the Sensor Box, incl. 3 m connection cable



SOLAR-LOG UTILITY METER

Idle power support for Solar-Log 1.000 PM

Order No.	Type
72 32 09	Solar-Log™ Utility Meter measurement unit for cos phi control depending on the supply voltage



HIS-LWL-REPEATER

LWL Repeater converts RS232/485 to fibre optic cable. This allows communication paths to be increased by up to 500 between two repeaters. Can be built directly into HIS-Monitoring upon order.

Info: 1 x RS232, 1 x RS485, 2 x RX fibre, 2 x TX fibre, 24VDC feed



HIS I-GAK

The HIS I-GAK combines the unique selling points of the central inverter design for major systems with completely new types of technologies allowing flexible system construction.

FEATURES

- › Flexible systems planning and simple installation
- › MPP tracking on the string level
- › High level of efficiency (max. >99 %)
- › Built-in system monitoring via Sinusstrom Control webportal
- › Weatherproof housing with protection class IP 65
- › One MPP tracker in one housing*
- › Connecting module phases for as much as 12.5 A (I_{mpp})*

TECHNICAL DATA

Max. input voltage (idling)	780 Voc DC
Working range of MPP voltage	250 V – 680 V DC**
Max. input current	12.5 A DC**
Max. connected load	7.5 kWp
Max. output voltage (intermediate circuit)	800 V DC
Min. output voltage (intermediate circuit)	590 V DC (20 V DC via input voltage)
Connecting communication / monitoring	RS-4851
Cooling	passive (free convection)
Output monitoring	via Sinusstrom Control webportal

* Variants in preparation with several MPP trackers in one housing for connecting several phases
** Variants with other MPP current zones and in preparation



HIS SPIDER

The most accurate string monitoring in its class: measuring accuracy $\pm 1\%$. The measuring technology built into the strings gives the HIS Spider an optimal alarm function that guarantees easy error searches. Furthermore, the module and the final end of the whole PV system is protected from high short-circuit currents. With integrated string monitoring, yields can additionally be monitored long term.

Easy installation is guaranteed by extensive pre-wiring, so that only the modules' single strand conductors and the collecting line to the inverter need to be connected.



FEATURES

- Personalised alarm criteria can be set for every measuring channel
- Measuring accuracy $\pm 1\%$ for each channel
- Modules protected against reverse flows by diodes
- Simple planning and realisation by means of plug-installation
- Weather-resistant housing with protection class IP 68
- Integrated anti-theft protection thanks to watchdog function

ELECTRICAL DATA

No. of strings / No. of measuring channels	8
Max. input current total	40 A
Max. input current per measuring channel	5 A
Max. input current during idle running (VDC)	1.000 V
Rated power	approx. 27 kWp
Measuring accuracy	$\pm 1\%$
Input connections	MC / Amphenol / customer-specific
Output connections, customer-specific	up to 50 A
DATCOM connections cable gland / DATA line	IP 68 – plug

GENERAL DATA

Protection class	IP 68
Ambient conditions (°C)	-15 to +50°C
Dimensions without connection WxHxD (mm)	approx. 182 x 182 x 67
Serial interface	RS-485
No. of bus participants	up to 99 HIS Spiders on one exchange
Fastening eyelets	Ø 4 mm
Standards and certification	EN 55011, Class B; EN 61326-1; CE
Weight	ca. 2.2 kg
String comparison and alarm	Sinusstrom Control webportal

FIRE PROTECTION / BEAVER

The Beaver is a collective connection box for large photovoltaic systems. It can perform comprehensive safety functions. Depending on the design variant, the DC cable couplings are disconnected and short-circuited in the event of a failure. This allows safe shutdown in almost any failure, such as short circuits or earth faults. Short-circuiting is also implemented for safe extinguishing in case of fire. Activation is done either manually or automatically in the event of overvoltage, undervoltage, lightning strikes or if differential current arises, similarly to an FI protection switch.

FEATURES

- The product can be connected to the Internet to allow remote access.
- In large systems, this function can also be used for segmented power switching for the inverter.
- The system is also designed performing equalization by string monitoring through wireless data transfer, such as the sinusoidal current Mosquito System. It can also use the measured values as activation parameters.

TECHNICAL DATA

Max. current	180 A
Max. voltage	1.000 V
Max. Cable width	240 mm ²
Max. Output	144 kWp
Power supply	24 V DC
Power consumption	max. 5 W
Disconnect conditions	overvoltage (adjustable), undervoltage (adjustable), differential current (version A), lightning strike, reverse current
Activation function	manually on site, by remote, automatically by inverter
Protection class	IP 66
Ambient conditions	-55° to +85°C
Dimensions (W x H x D)	250 x 350 x 150 mm
Weight	1.5 kg
Serial interface	RS-485

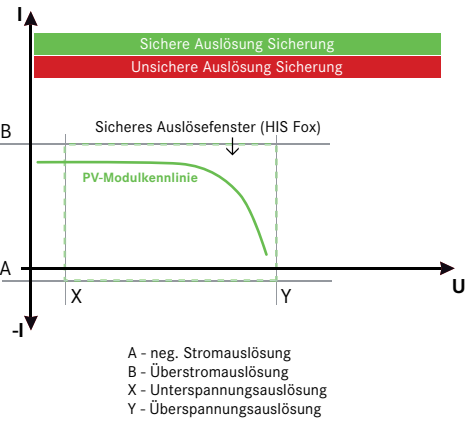
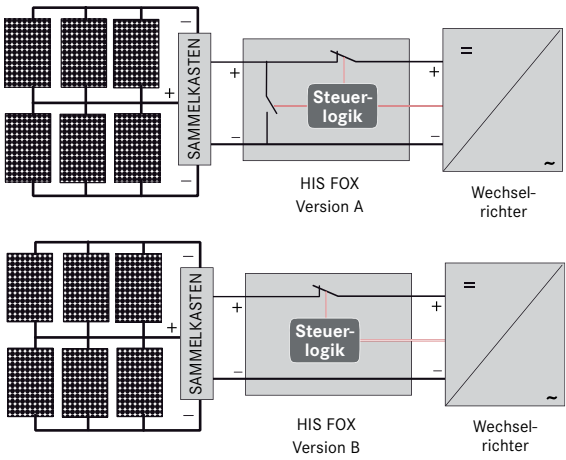


Diagramm Wirkungsweise HIS BEAVER

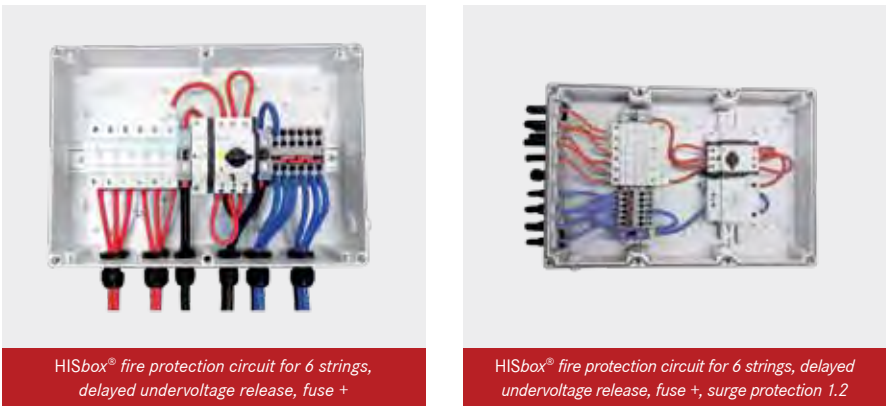


Schematische Zeichnung HIS BEAVER

FIRE PROTECTION

Protection switches safeguard the PV system and rescue it in an emergency

With HIS Fire Protection switching, you can disconnect the current at the string level by triggering undervoltage. HIS adapts this system individually to the number of MPP trackers and modules and can also implement it in existing systems. The box switches off the current to the inverter, so that it does not pose a hazard to fire-fighters. These boxes are simply built into the DC line right near the photovoltaic module. The PV module is turned off automatically by an undercurrent switch in the fire protection circuit if the fire department has cut power to the fire location through the local utility or has tripped the PV emergency OFF switch on site.



DC FIREMAN'S SWITCH

FEATURES

- Rated operational voltage 1.000 V
- Utilization category DC-21 A
- Rated operational current Ie 30 A
- Remote release by undervoltage release 230 V, 50 Hz
- Feedback of the switching status by auxiliary contacts 1NO and 1NC

Order No.	Type	Input	Output
71 90 93	SOL30-SAFETY/2MC3-U(230 V50Hz)	30 A	2 x MC3
71 90 94	SOL30-SAFETY/2MC4-U(230 V50Hz)	30 A	2 x MC4
71 90 95	SOL30-SAFETY/2MV-U(230 V50Hz)	30 A	2 x M12

72 12 66 | Emergency stop switch M22-SOL-PVT45P-MPI



30 KW SWITCH BOX / NA PROTECTION



PV systems < 30 kWP

In Germany, new regulations have applied to PV systems < 30 kWp since the beginning of 2012:

The inverter's feed output must either be limited to 70% of the module output,
or
the system must be capable of complete disconnection through the utility's ripple control receivers.

We offer our box as a disconnection solution.

FEATURES

- Inverter disconnection to 65 A (AC)
- Ready-to-connect box that can be connected between the inverter and the utility
- Direct connection to ripple control receivers (can usually be integrated into the box), otherwise, an external connection can be easily provided.

! If the utility switches the system off, the system owner is reimbursed for revenue loss.

PV systems > 30 kWP

For systems larger than 30 KW, NA protection is required as frequency and voltage monitoring. We can offer this and the matching relays for your specific meter cabinet.

Order No.	Type
72 42 11	NA protection frequency and voltage control
72 42 08	4 pole load break switch 160 A remotely operated release device
72 42 09	4 pole load break switch 200 A remotely operated release device
72 41 99	4 pole load break switch 800 A remotely operated release device
72 42 03	Contacteur AC1 60 A/690 V AC 230V, size S2
72 42 04	Contacteur AC1 110 A/690 V AC 230V, size S3
72 42 05	Contacteur AC1 140 A/690 V AC 230V, size S3
72 42 06	1-pole auxiliary contact 1 NA
72 42 07	2-pole auxiliary contact 1 NA + 1 NO
72 42 00	Open contact (NO)
72 42 01	Undervoltage releases 208-240VAC MC4
72 42 02	Electronic remote operator 208-240VAC MC4

! Please observe the low voltage directives per VDE-AR-N 4105
E DIN V VDE 0124-100 (VDE V 0124-100):2011-10



72 42 11

Protection against increase of voltage
Protection against voltage drop
Protection against increase in frequency
Protection against drop in frequency

String Cabling

Support in creating and laying out your String Cabling in and from the module field through the string/central inverter to the EVU feed point and over the HIS Cable Configurator.

Plug-ready AC / DE Cabling

Plug-ready AC / DE Cabling adapted to any PV system.

The right Plug Connector

Always the right Plug Connector for a given cable according to manufacturer specification, VDE, TÜV and /or UL.



Reliable preliminary costing

Reliable precalculation of your project – at your request you get a firm offer, usually within 24 hours.

Decreased installation effort

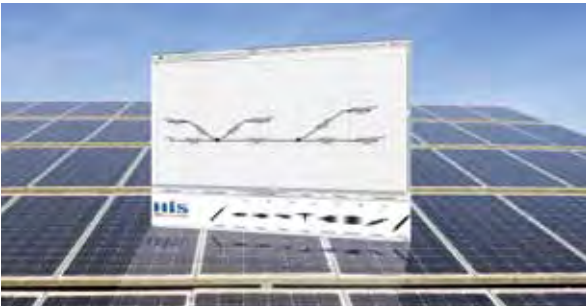
Considerably reduced installation cost. Pre-assembly by PV system trades people, such as roofers, suppliers of trapezoidal metal and aluminium roofs are definitely possible.

No Troubleshooting

Extensive prevention of installation errors; eliminates the need for costly troubleshooting.

Sizable cost savings

No costly cable waste, cable drum remnants and disappearing plugs and tools.



Maximum power transmission

Maximum power transmission for the best possible PV system efficiency. By optimizing cable cross-sections in laying out the cable. By industrial, extensively automated HISkon® production. Example: Mechanical, largely automatic gas-tight crimping of plug contacts. Ided HISkon® distributors.

HIS takes the responsibility

- We take over permanent quality assurance and documentation for every PV project.
- Every HISkon® distributor weld is logged
 - Contact pull test and log
 - Ongoing continuous development of our products with the primary suppliers

Buying in bulk

HIS serves and delivers to more than 700 customers, from photovoltaics development companies to all types of installation trades. Thanks to our large procurement volume we can achieve very favorable wholesale prices – which we are happy to share with our customers.



TECHNICAL DATA

Temperature range	Suitable from -40 to +130° C
Low temperature flexibility	-25° C per ASTM D 3111
Thermal endurance	150° C per Henkel method MH11
Voltage	Up to 1.000 V
Resistance	< 2 mΩ
IP class	Conforms IP67
Protection class	II (reinforced insulation)
Over-mould	Hot melt in low-pressure process
Material	UV- and weather-resistant
Suitability	For open land, roof and facade photovoltaic systems per installation instructions
Tested per	DIN EN 60664-1

HISkon® SPLITTER FAMILY

HISkon® T



HISkon® U



HISkon® E



HISkon® Duo



HISkon® Double-U



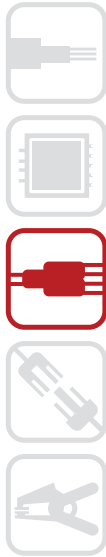
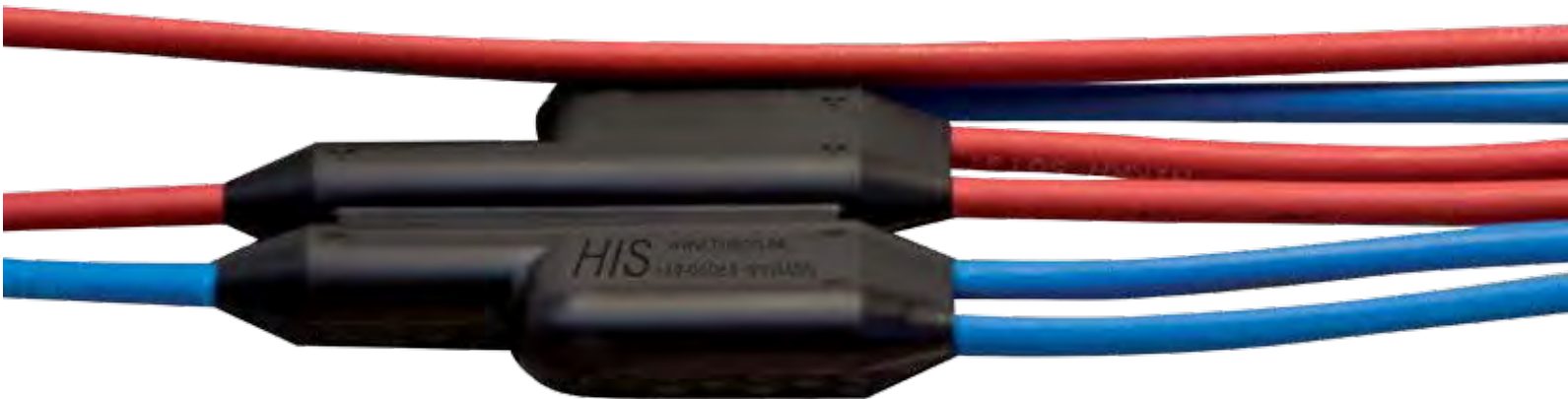
HISkon® Quattro



HISkon® Diode



HISkon® Fuse



ENDLESS CHAINS

Installation – made easy.

For parallel wiring of thin-film installations, we recommend HISkon® endless chains. With low planning costs, you get the highest quality machine-made array harnesses.

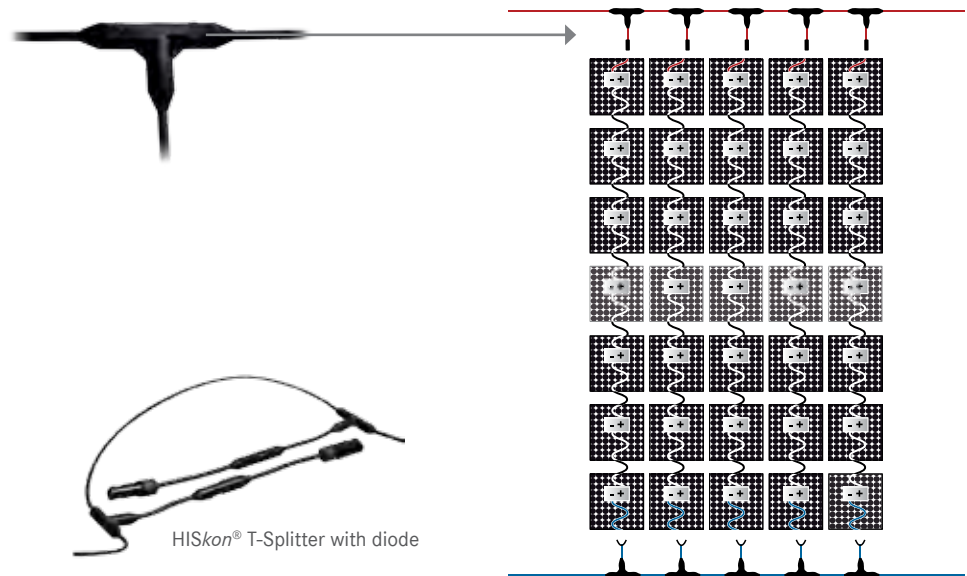
In **three steps**, you get HISkon® at prices that will amaze you:

- 1 Specify the **main line** (length, line Cross-section)
- 2 Specify the **outlet** (length, line Cross-section)
- 3 Choose the **Plug Connector**

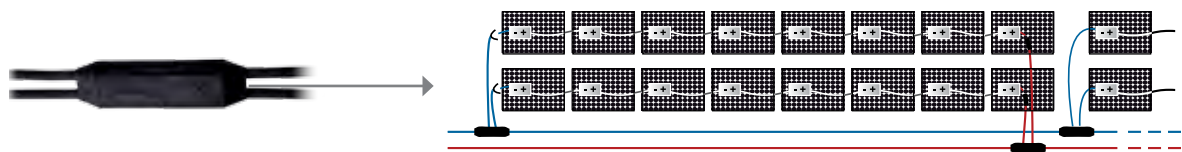


! And if you would like to help us even more: Please let us know all relevant indicators for the module and inverter. By optimally designing the cable Cross-section, we help you optimize customer benefits.

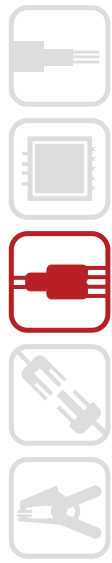
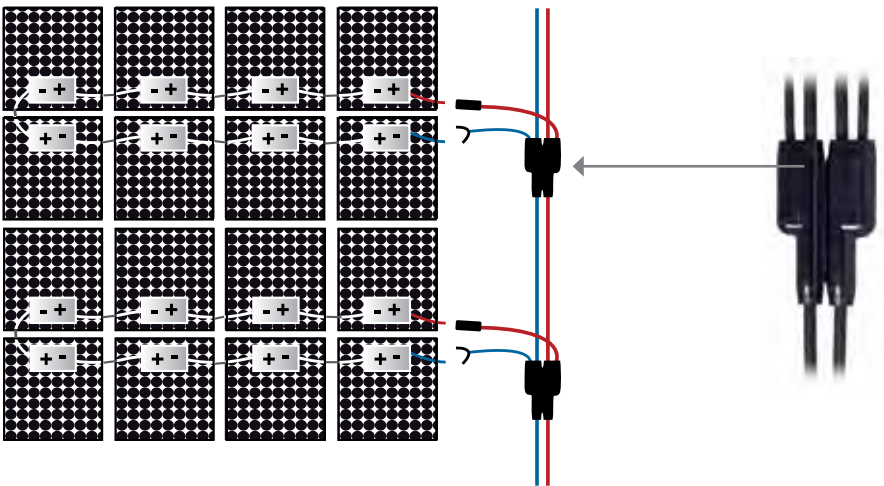
HISkon® T-SPLITTER



HISkon® DUO-SPLITTER



HISkon® DOUBLE-U-SPLITTER



EXTENSIONS

It's worth employing preassembled extensions!!

HISkon® offers a tried and tested alternative to on-site processing for the crystalline module technology in particular. Industrially manufactured extensions guarantee you optimal quality, safety and assembly comfort as the manufacturing conditions remain the same. Determine the lengths and configuration required using your construction plan. We will be happy to mark the extensions, package them according to your customer requirements and thus allow seamless development at the construction site. There's thus no reason for tight deadlines, misscuts, changeable external conditions and processing mistakes.

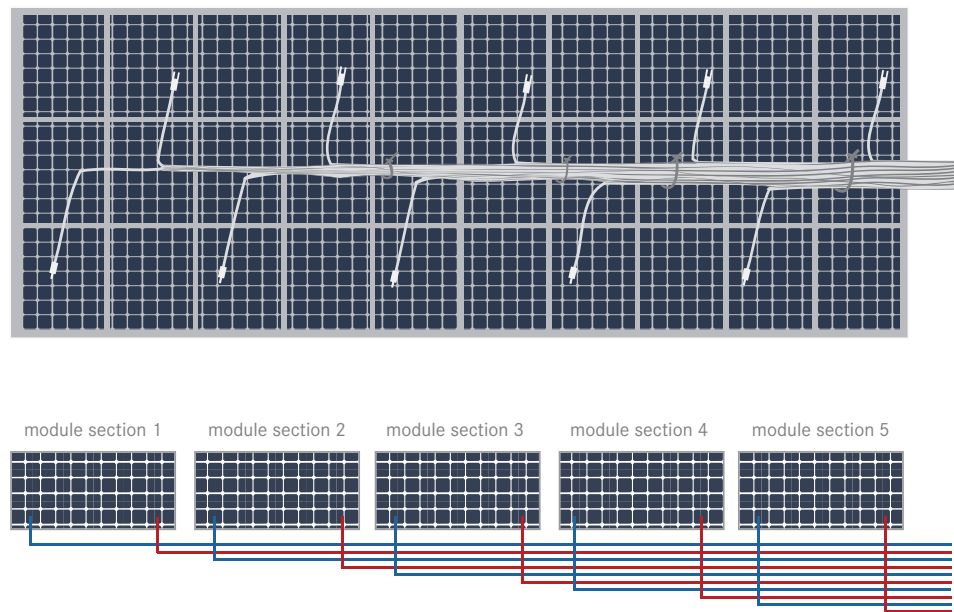


Options

- Both-sided or single-sided assembled
- A wide range of plug connectors
- Ring loops, core end sleeves
- Bared or uninsulated
- Individual labelling

HISkon® EXTENSION HARNESS

Utilise our industrial standard for photovoltaic systems. You can then insert the preassembled cable harness tailored to your requirements and you're ready to go! If you wish, our experienced team can even provide you with support right from the system planning stage.



Smaller cross sections can be collected together when combined with the distributor concept from HIS Solarsysteme. The HISkon® U distributor (e.g., two times 6 mm² on 16 mm²) or HISkon® E distributor (up to three times 10 mm² on 35 mm²) minimises yield losses over the longer distance and also reduces cabling expenses and efforts. All in all, a clean business!

STRING DIODES / IN-LINE FUSES

For the best possible efficiency and operating safety of solar equipment, we offer installation of HISkon® String Diodes or In-line Fuses. This gives you a broad spectrum of diodes and fuses to choose from.

TECHNICAL DATA	STRING DIODES	IN-LINE FUSES
	String Diode max. power 5 A	In-line Fuse 2 - 20 A
Voltage	1.000 V 2.000 V	Up to 1.000 V (depending on the URDC fuse)
IP class	IP67	IP67
Protection class	II (reinforced insulation)	II (reinforced insulation)
Minimal electrical loss	< 0.15 % at 800 V system voltage	< 0.15 % at 800 V system voltage
Temperature range	Suitable from -20° to +80° C	Suitable from -20° to +80° C
Low temperature flexibility	-25° C per ASTM D 3111	-25° C per ASTM D 3111
Over-mould	Hot melt in low-pressure process	Hot melt in low-pressure process
Thermal endurance	150° C per Henkel method MH11	150° C per Henkel method MH11
UV- and weather-resistant		



String Diodes

Order No.	Type	Cross-section in mm ²	Connector
DIODE0002K	HIKRA S	6.0	HIS TYP 3
DIODE0003K	HIKRA S	6.0	Amphenol H4
DIODE0005K	HIKRA S	6.0	Without connectors
DIODE0006K	HIKRA S	6.0	MC4
DIODE0012K	HIKRA S	6.0	MC3
DIODE0014K	HIKRA S	6.0	Eldra-Solinq



HISkon® String Diode included in an endless chain

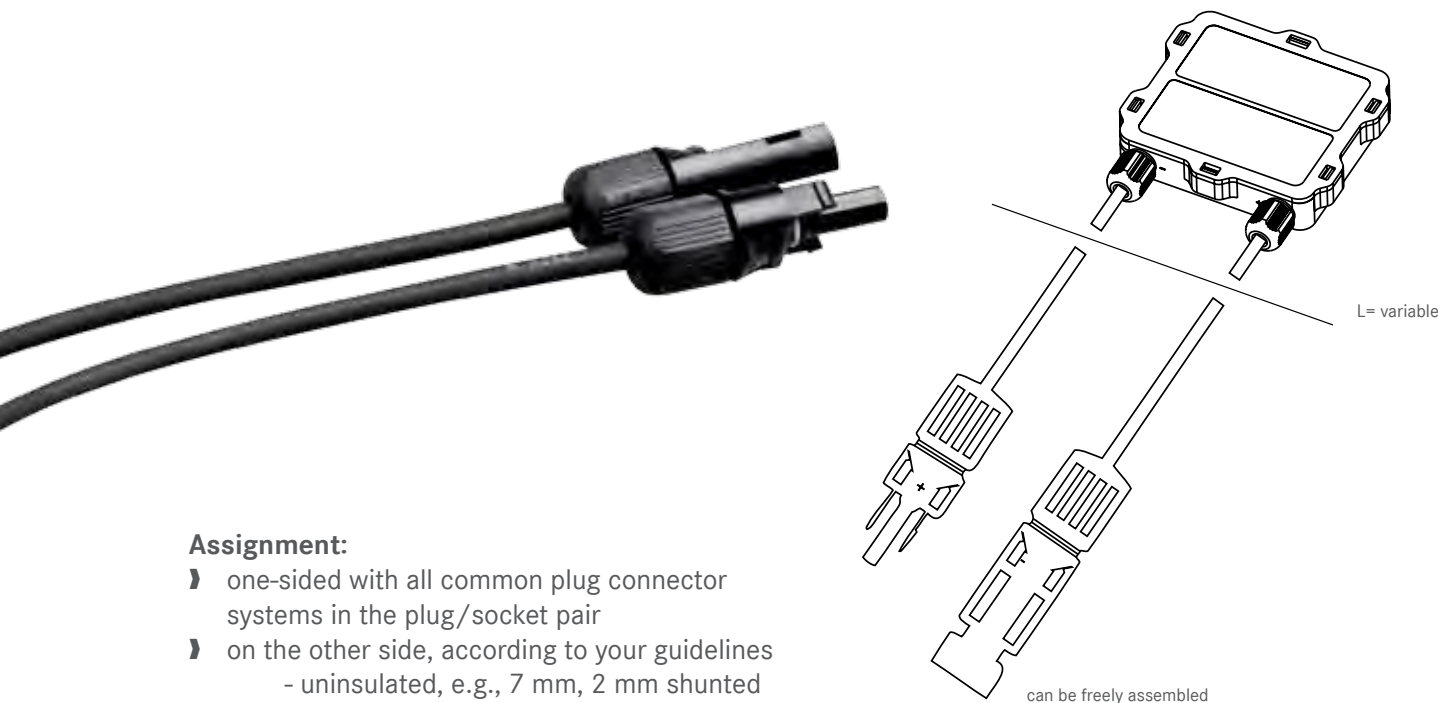
Do you need to retrofit an existing photovoltaic system or require personalised dimensions? Then please enter the following information:

- Cable type, length and Cross-section
- Maximum power current I_{mp} (A)
- Required configuration

ASSEMBLY SET

Prepared HISkon® Assembly Sets guarantee consistently high quality and can be made TÜV and / or UL compliant on request.

For the power lead to the junction box, we offer ready-made solutions. The assembly sets are contacted in any length and cable Cross-section you wish, fully automatic, including crimp force monitoring.



Assignment:

- › one-sided with all common plug connector systems in the plug/socket pair
- › on the other side, according to your guidelines
 - uninsulated, e.g., 7 mm, 2 mm shunted
 - tin-plated, and/or
 - ring contacted, e.g., with a ring loop core end sleeves
- › compaction

ASSEMBLY KIT

The Assembly Kit with plugs and everything that goes with them, loose in a polyethylene bag. Choose the cable length you want, and a plug from our broad assortment.

Your HISkon® Assembly Kit contains everything you need, loosely arranged in a plastic bag. It consists of:

- › 2 x HIKRA® Solar Cables, single-side assembled
- › 2 x polyolefin heat shrink tubes, medium wall, SV 4:1 adhesive interior
- › 2 x crimp barrels, 2.5 – 4.0 – 6.0 – 10.0 mm²



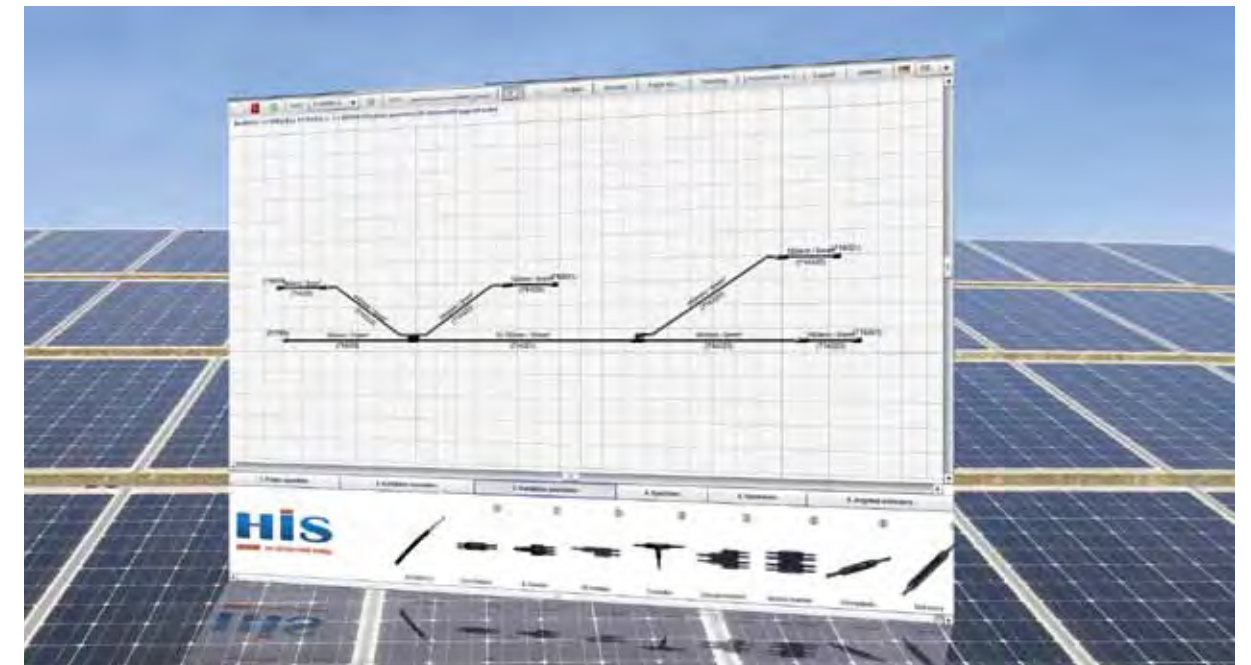
Create your own JB assembly sets online at www.his-solar.com.

You'll get an offer within 24 hours.

E-Mail: info@his-solar.de

+49 (0) 60 68 / 93 14 400

CABLE CONFIGURATION



› HISkon® CABLE CONFIGURATION

With amendments to the FIT out of turn, and the decision to reduce compensation for electricity fed into the grid, in PV system construction a new way is needed for the C item line. With the best possible PV cabling for the inverter and the energy supply company, you can maximize benefits for the end customer. Return on investment and cabling costs – you can easily and economically work out cabling with the HIS online Cable Configuration at www.his-solar.com!

HIS supports you with the online Cable Configuration:

- › Drag and drop to create the assembly order to your requirements
- › Errors are prevented by the HIS online cable configuration automatic plausibility checks; for example, this gives you the right plug connector type for the selected cable
- › Optimize profits for free
- › Noticeable reduction of cable scrap and drum remainders
- › The HIS online cable configuration optimizes the line cross-section on the frequently long path from the module field to the inverter
- › Save / copy / print your projects exclusively in your directory
- › You'll get your HIS offer within 24 hours, and with it a reliable basis for calculation

Step by step, the online cable configuration gets you to the end product. It will be produced to your desires and dimensions in 5 to 10 business days and, if you wish, delivered directly to your construction site.

We would be glad to send you your own personal access codes. Just request them by e-mail at info@his-solar.de or phone your HIS team at +49 (0) 60 68 / 93 14 400.

WEBSHOP

Profit from our new online shop!

Conveniently order HIS quality from home and profit from:

- › A wide range of products and services
- › Surprisingly low prices
- › The high level of quality of the products and components used and
- › The schedule effectiveness you have become accustomed to

The HIS webshop. 24/7 one-stop shopping for all-round solutions. Tailor-made to your needs fast and at the same level of high quality.



www.his-solar.com



HISconnect[®] Plug Connectors

HIS will help you select the right plug connector systems and supplies connectors from all the major manufacturers. As part of the Walther-Gebhardt Group, we have access to extensive storage and network facilities.

This allows us to deliver all parts reliably, quickly and at a fair price.

www.his-solar.com

AMPHENOL H4

TECHNICAL DATA

Rated current	36 A (2.5 mm²) 45 A (4.0 mm²) 52 A (6.0 mm²) 60 A (10.0 mm²)
Rated contact	1.000 V (IEC / CEI) 600 V (UL)
Transfer resistance	0.25 mΩ
Contact material	Tin-plated copper
Insulation material	PBT
Locking system	Snap lock (complied with NEC 2008)
Protection grade	IP68
Insulation material / Flame class	UL94-V0
Cable strain relief per	DIN V VDE 0126-3
Permissible ambient temperature	-40° to +90° C (IEC)
Crimp contact	Amphenol RADSOK®

H4 connection plug and socket

Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
71 63 58	Plug	2.5	4.5 – 7.8
71 63 55	Socket	2.5	4.5 – 7.8
71 60 27	Plug	4.0	4.5 – 7.8
71 60 28	Socket	4.0	4.5 – 7.8
71 60 31	Plug	6.0	4.5 – 7.8
71 60 32	Socket	6.0	4.5 – 7.8
71 75 87	Plug	10.0	4.5 – 7.8
71 75 88	Socket	10.0	4.5 – 7.8

H4 Y plug and socket

Order No.	Type	Cross-section Ø mm²
72 09 45	H4YMMF Plug	2.5 – 10.0
72 09 46	H4YFFM Socket	2.5 – 10.0

! Best values among the contact resistances in the connector test conducted by the specialist magazine Photon (source: Photon Profi 09/2011).



Amphenol

HISkon® E-Splitter H4

Order No.	Type	Cross-section Ø mm²
E-VERT0026K	Plug:Socket-Socket-Socket	2.5 – 10.0
E-VERT0027K	Socket:Plug-Plug-Plug	2.5 – 10.0



H4 built-in plug and socket

Order No.	Screwing	Type	Cross-section Ø mm²
71 63 66	M12 (M14, 71 86 55)	Plug	2.5
71 63 67	M12 (M14, 71 86 56)	Socket	2.5
71 63 65	M12 (M14, 71 86 57)	Plug	4.0
71 63 64	M12 (M14, 71 86 58)	Socket	4.0
71 63 68	M12 (M14, 71 86 59)	Plug	6.0
71 63 69	M12 (M14, 71 86 60)	Socket	6.0
72 39 68	H4CMM8DC M12	Plug	10.0
72 39 69	H4CFM8DC M12	Socket	10.0
72 42 45	H4CMN8DC M14	Plug	10.0
72 42 46	H4CFN8DC M 14	Socket	10.0



H4 protection cap

Order No.	Type
71 99 55	H4PM Plug
71 99 52	H4PF Socket

H4 diode connector

72 31 23 | H4 diode connector 5 A | 1.000 V

Installation tools

- 71 63 63 | amphenol crimping tool | 2.5 - 10.0 mm²
- 71 63 62 | amphenol stripping tool
- 72 21 31 | installation wrench
- 71 63 38 | aperture ring



MULTI-CONTACT MC 4



TECHNICAL DATA

Rated current	22 A (2.5 mm²) 30 A (4.0 to 6.0 mm²) 43 A (10.0 mm²)
Rated voltage	1.000 V (IEC / CEI) 600 V (UL)
Test voltage	6 kV (50 Hz, 1 min.)
Surge cat./dirt level	CATIII/2
Contact resistance of plug connector	0.5 mΩ
Contact material	Tin-plated copper
Contact system	MC contact lamellae
Insulation material	PC / PA
Locking system	Snap-in
Protection class	IP 67
Protection class	II
Flame class	UL94-V0
Cable strain relief per	DIN V VDE 0126-3
Ambient temperature range	-40° to +90° C (IEC / CEI) -40° to +75° C (UL)
Upper temperature limit	105° C (IEC / CEI)

MC4 connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 40 87	PV-KST4/2.5IUR	Plug	1.5 – 2.5	3.0 – 6.0
71 40 88	PV-KBT4/2.5IUR	Socket	1.5 – 2.5	3.0 – 6.0
71 13 90	PV-KST4/6IUR	Plug	4.0 – 6.0	3.0 – 6.0
71 13 93	PV-KBT4/6IUR	Socket	4.0 – 6.0	3.0 – 6.0
71 13 92	PV-KST4/2.5II	Plug	1.5 – 2.5	5.5 – 9.0
71 13 95	PV-KBT4/2.5II	Socket	1.5 – 2.5	5.5 – 9.0
70 86 68	PV-KST4/6II	Plug	4.0 – 6.0	5.5 – 9.0
70 86 69	PV-KBT4/6II	Socket	4.0 – 6.0	5.5 – 9.0
71 92 66	PV-KST4/10II	Plug	10.0	5.5 – 9.0
71 92 67	PV-KBT4/10II	Socket	10.0	5.5 – 9.0

MC4 quick

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
72 03 21	PV-KST4Q	Plug	4.0 – 10.0	5.8 – 8.2
72 03 22	PV-KBT4Q	Socket	4.0 – 10.0	5.8 – 8.2

MC4 Y plug and socket

Order No.	Type		Cross-section Ø mm²
71 40 48	PV-AZS4	Plug	1.5 – 10.0
71 40 47	PV-AZB4	Socket	1.5 – 10.0

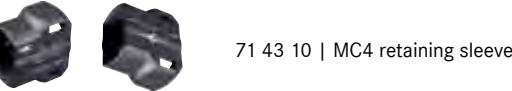
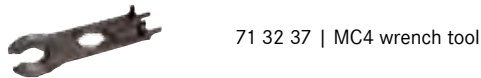
MC4 built-in plug and socket

Order No.	Type		Cross-section Ø mm²
71 51 43	PV-ADSP4/2.5	Built-in plug	1.5 – 2.5
71 51 46	PV-ADBP4/2.5	Built-in socket	1.5 – 2.5
71 26 76	PV-ADSP4/6	Built-in plug	4.0 – 6.0
71 26 78	PV-ADBP4/6	Built-in socket	4.0 – 6.0

MC4 protection cap

Order No.	Type	
71 40 86	PV-SVK4	Plug
71 40 85	PV-BVK4	Socket

Installation tools



MULTI-CONTACT MC 3

TECHNICAL DATA

Rated current	20 A (2.5 - 4.0 mm²) 30 A (6 mm²) 43 A (10.0 mm²)
Rated voltage	1.000 V (IEC/CEI) 600 V (UL)
Test voltage	6 kV (50 Hz, 1 min.)
Surge cat./dirt level	CATIII/2
Contact resistance of plug connector	0.5 mΩ
Contact material	Tin-plated copper
Contact system	MC contact lamellae
Insulation material	TPE/PA
Protection class	IP 67
Protection class	II
Flame class	UL94-HB / UL94-V0
Insertion force / withdrawal force	≤ 50N / ≥ 50 N
Connection type	Crimp connector
Ambient temperature range	-40 to +90° C (IEC / CEI)
Upper temperature limit	105° C (IEC / CEI)



MC3 connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 44 16	PV-KST3I	Plug	2.5	3.2 – 4.8
71 44 17	PV-KBT3I	Socket	2.5	3.2 – 4.8
71 18 97	PV-KST3II	Plug	4.0	4.9 – 7.1
71 18 98	PV-KBT3II	Socket	4.0	4.9 – 7.1
71 40 46	PV-KST3/6II	Plug	6.0	4.9 – 7.1
71 40 45	PV-KBT3/6II	Socket	6.0	4.9 – 7.1
72 04 19	PV-KST3IV	Plug	10.0	6.5 – 9.0
72 04 20	PV-KBT3IV	Socket	10.0	6.5 – 9.0

MC3 Y plug and socket

Order No.	Type		Cross-section Ø mm²
71 21 56	PV-AZS3-UR	Plug	2.5 – 10.0
71 21 57	PV-AZB3-UR	Socket	2.5 – 10.0

MC3 built-in plug and socket

Order No.	Type		Cross-section Ø mm²
71 26 57	PV-ADSP3/GWD	Built-in plug	2.5 – 4.0
71 26 58	PV-ADBP3/GWD	Built-in socket	2.5 – 4.0
71 51 44	PV-ADSP3/6/GWD	Built-in plug	6.0
71 51 45	PV-ADBP3/6/GWD	Built-in socket	6.0



HIS TYPE 3

TECHNICAL DATA

Rated current	20 A (2.5 - 4.0 mm²) 30 A (6.0 mm²)
Rated voltage	1.000 V (IEC / CEI) 600 V (UL)
Test voltage	6 KV (50 Hz, 1 min.)
Contact resistance	<0.5 mΩ
Contact material	Tin-plated copper
Contact type	Machined contact, contact lamellae
Handle material	TPE/PA
Protection class	IP 67
Protection class	II
Locking system	Contact lamellae
Flammability UL	UL94-HB/UL94-V0
Insertion force / withdrawal force	≤ 50 N / ≥ 50 Nm
Permissible ambient temperature	-40° to +90° C (IEC/CEI/per)
Upper temperature limit	105° C (IEC / CEI)



HIS Type 3 connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 48 20	PV-HIS3M2.5-4.0II	Plug	2.5 - 4.0	3.2 - 6.0
71 48 19	PV-HIS3F2.5-4.0II	Socket	2.5 - 4.0	3.2 - 6.0
71 48 63	PV-HIS3M-6.0II	Plug	6.0	5.2 - 7.0
71 48 64	PV-HIS3F-6.0II	Socket	6.0	5.2 - 7.0
70 73 12	PV-HIS3M2.5-4.0I	Plug	2.5 - 4.0	4.9 - 7.9
70 73 13	PV-HIS3F2.5-4.0I	Socket	2.5 - 4.0	4.9 - 7.9
70 79 85	PV-HIS3M-6.0I	Plug	6.0	6.5 - 9.1
70 79 86	PV-HIS3F-6.0I	Socket	6.0	6.5 - 9.1



Combine the HIS TYP 3 with our HISkon® distribution chain, e.g. for parallel switching of thin film modules.

HISkon® T-Splitter





TECHNICAL DATA

Dielectric strength	1.000 V DC
Current handling capacity	Up to 25 A
Test voltage	1 mΩ
Protection class	II
Working temperature	-40° to +105° C
Protection class (plugged)	IP 67
Contacts	Silver-plated
Withdrawal force	30 – 40 N
Other features	Contact-proof
Plug connectors	With crimp technology
Safe plugging	Through coded housing

Solarlok connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 29 64	1394461-7 (+)	Plug	2.5	4.5 – 6.9
71 29 63	4-1394462-6 (+)	Socket	2.5	4.5 – 6.9
70 85 59	7-1394461-0 (+)	Plug	4.0	4.5 – 6.9
70 85 60	4-1394462-8 (+)	Socket	4.0	4.5 – 6.9
70 86 70	7-1394461-3 (+)	Plug	6.0	4.5 – 6.9
70 86 71	6-1394462-3 (+)	Socket	6.0	4.5 – 6.9
71 29 62	1394461-8 (-)	Plug	2.5	4.5 – 6.9
71 29 61	4-1394462-7 (-)	Socket	2.5	4.5 – 6.9
70 97 46	7-1394461-1 (-)	Plug	4.0	4.5 – 6.9
70 97 72	4-1394462-9 (-)	Socket	4.0	4.5 – 6.9
70 95 98	7-1394461-4 (-)	Plug	6.0	4.5 – 6.9
70 95 97	6-1394462-6-4 (-)	Socket	6.0	4.5 – 6.9
71 44 83	6-1394461-3 (neutral)	Plug	2.5	4.5 – 6.9
71 13 12	7-1394461-2 (neutral)	Plug	4.0	4.5 – 6.9
71 34 31	7-1394461-5 (neutral)	Plug	6.0	4.5 – 6.9



Solarlok Y plug and socket

Order No.	Type		Cross-section Ø mm²
70 96 93	1534611-1 (+)	Plug	2.5 – 6.0
71 44 53	1740277-1 (+)	Socket	2.5 – 6.0
70 96 94	1534611-2 (-)	Plug	2.5 – 6.0
71 44 54	1740277-2 (-)	Socket	2.5 – 6.0

Solarlok safety clip

Order No.	Type	
72 03 24	1534226-1	Standard
72 03 25	2106207-1	NEC / UL certified

Solarlok built-in plug and socket

Order No.	Type		Cross-section Ø mm²
71 86 62	1394738-1 (+)	Plug	2.5
71 51 21	1394738-3 (+)	Plug	4.0
71 86 63	1394738-9 (+)	Plug	6.0
71 86 65	1394738-2 (-)	Socket	2.5
71 51 22	1394738-4 (-)	Socket	4.0
71 86 66	1394738-0 (-)	Socket	6.0

TYCO CODING SYSTEM

+ codation



- codation



! On request: Tyco Slimline



HUBER & SUHNER



TECHNICAL DATA

Rated voltage	1.000 V / DC
Resistance	≤4.0 mΩ
Current carrying capacity	28 A at +85° C (2.5 mm²) 38 A at +85° C (4.0 mm², 6.0 mm²)
Protection class	IP 67 (plugged)
Protection class	II
Contact material	Tin-plated brass
Withdrawal force when mated	~55 N
Ambient temperature range	-40° to +110° C
Approval	TÜV

Radox plug and socket

Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
71 47 24	24101617 Plug	2.5	5.2
71 47 25	24101616 Socket	2.5	5.2
71 12 86	24500070 Plug	4.0	5.8
71 12 87	24500072 Socket	4.0	5.8
71 38 72	24500095 Plug with Rotary lock	4.0	5.8
71 38 71	24500094 Socket with Rotary lock	4.0	5.8
71 40 67	24500092 Plug with Rotary lock	6.0	6.9
71 40 68	24500093 Socket with Rotary lock	6.0	6.9

Radox safety clip

Order No.	Type
72 00 82	NEC-Lock TL Plug / Socket

Radox built-in plug and socket

Order No.	Type	Cross-section Ø mm²
72 04 45	24500088 Plug	4.0
72 04 46	24500089 Socket	4.0

SUNCLIX



TECHNICAL DATA

Rated voltage	1.100 V (2.5 – 6.0 mm²) and 1.500 V (6.0 – 16.0 mm²)
Power	40 A (2.5 mm² – 6.0 mm²) and 65 A (6.0 –16.0 mm²)
Protection type	IP 68
Ambient temperature	-40° to +90° C
Protection class	II

Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
71 63 57	1774687 Plug	2.5 – 6.0	5.2 – 7.0
71 63 56	1774674 Socket	2.5 – 6.0	5.2 – 7.0
72 28 35	7190797 Plug	6.0 – 16.0	5.5 – 10.0
72 28 36	7190784 Socket	6.0 – 16.0	5.5 – 10.0

Sunclix Y plug and socket

Order No.	Type
Y-VERT0036	HISkon® Socket:Plug-Plug
Y-VERT0037	HISkon® Plug:Socket-Socket

Sunclix built-in plug and socket

Order No.	Type	Cross-section Ø mm²
722903	1805148 Plug	2.5
722902	1805135 Socket	2.5
722905	1805164 Plug	4.0
722904	1805151 Socket	4.0
722907	1805180 Plug	6.0
722906	1805177 Socket	6.0

Sunclix protection cap

Order No.	Type
72 03 18	1785430 Plug and Socket



YUKITA 25X / 18X

TECHNICAL DATA	YUKITA 25X	YUKITA 18X
Rated voltage	1.000 V	1.000 V
Rated current	max. 30 A	25 A
Resistance	≤5.0 mΩ	≤5.0 mΩ
Contact material	Brass (Sn plated)	Brass (Sn plated)
Protection class	IP 67	IP 67
Flame class	UL94-V0	UL94-V0
Ambient temperature range	-40° to +100° C	-40° to +85° C
Approval	TÜV	TÜV
Ozone- and UV-resistance		



YUKITA 25X

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
72 03 56	YS-254-11T	Plug	1.5 - 2.5	5.4 - 5.9
72 03 57	YS-255-11T	Socket	1.5 - 2.5	5.4 - 5.9
71 73 62	YS-254-12T	Plug	4.0 - 6.0	5.4 - 5.9
71 73 63	YS-255-12T	Socket	4.0 - 6.0	5.4 - 5.9
72 03 58	YS-254-21T	Plug	1.5 - 2.5	6.0 - 6.5
72 03 59	YS-255-21T	Socket	1.5 - 2.5	6.0 - 6.5
71 73 64	YS-254-22T	Plug	4.0 - 6.0	6.0 - 6.5
71 73 65	YS-255-22T	Socket	4.0 - 6.0	6.0 - 6.5
72 03 60	YS-254-31T	Plug	1.5 - 2.5	6.6 - 7.9
72 03 61	YS-255-31T	Socket	1.5 - 2.5	6.6 - 7.9
71 73 66	YS-254-32T	Plug	4.0 - 6.0	6.6 - 7.9
71 73 67	YS-255-32T	Socket	4.0 - 6.0	6.6 - 7.9

YUKITA 18X

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 54 45	YS-188-2.5	Plug	2.5 - 4.0	5.2 - 5.9
71 54 46	YS-189-2.5	Socket	2.5 - 4.0	5.2 - 5.9
71 54 48	YS 188-9-2.5	Plug	2.5 - 4.0	5.2 - 5.9
71 54 49	YS-189-8-2.5	Socket	2.5 - 4.0	5.2 - 5.9



ELDRA-SOLINQ



TECHNICAL DATA	
Rated voltage	1.000 V
Rated current	30 A (4.0 mm², 6.0 mm²)
Resistance	≤5.0 mΩ
Contact material	Cu, silver-plated (EpAg5~8)
Insulation material	PC/PA
Locking system	Snap-in
Protection class	IP 67 (IEC 60529)
Protection class	II
Flame class	UL94-V0
Ambient temperature range	-40° to +85° C
Approval	TÜV

Silverline connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 64 30	46011CM	Plug	2.5 - 6.0	5.2 - 6.6
71 64 31	46010CF	Socket	2.5 - 6.0	5.2 - 6.6
72 34 22	46510CM	Plug	10.0	
72 34 23	46511CF	Socket	10.0	

Silverline Y plug and socket

Order No.	Type		Cross-section Ø mm²
72 15 58	41010BM	Plug	2.5 - 10.0
72 15 57	41011BF	Socket	2.5 - 10.0

Silverline built-in plug and socket

Order No.	Type		Cross-section Ø mm²
72 34 29	47210CM	Built-in plug	4.0
72 34 31	41011BF	Built-in socket	4.0

Solinq protection cap

Order No.	Type	
72 04 47	CT00244M	Plug
72 04 48	CT00244F	Socket

Installation tools



71 65 95 | Solinq wrench tool

72 34 25 | Solinq retaining sleeve

WIELAND

TECHNICAL DATA

Rated voltage	1.000 V
Rated current	17.5 A (1.5 mm²) 24 A (2.5 mm²) 32 A (4.0 mm²) 40 A (6.0 – 10.0 mm²)
Current carrying capacity	Up to 40 A
Dirt level	III
Surge category	3
Protection class	IP 65 – IP 67 (plugged) (IP68 with closure on request)
Protection class	II
Ambient temperature range	-40° to +85° C
Approval	TÜV certificate per VDE 0126-3



Wieland connection plug and socket

Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
71 65 03	PST40i1 Plug	1.5	4.0 – 5.0
71 65 01	PST40i1 Socket	1.5	4.0 – 5.0
71 65 04	PST40i1 Plug	2.5	4.0 – 5.0
71 65 02	PST40i1 Socket	2.5	4.0 – 5.0
71 63 78	PST40i1 Plug	4.0	5.0 – 7.0
71 63 79	PST40i1 Socket	4.0	5.0 – 7.0
71 63 80	PST40i1 Plug	6.0	5.0 – 7.0
71 63 81	PST40i1 Socket	6.0	5.0 – 7.0
71 63 83	PST40i1 Plug	10.0	5.0 – 7.0
71 63 82	PST40i1 Socket	10.0	5.0 – 7.0

Wieland safety clip

Order No.	Type
72 03 46	PST40i1 Plug/Socket



Wieland protection cap

Order No.	Type
72 03 39	PST40i1 S Plug
72 03 42	PST40i1 B Socket



LINGYANG



Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
72 36 39	Plug	6.0	6.25 (+/- 0,15)
72 36 40	Socket	6.0	6.25 (+/- 0,15)

QC4



Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
72 36 70	Plug	2.5 – 6.0	5.4 – 7.5
72 36 73	Socket	2.5 – 6.0	5.4 – 7.5

HOSIDEN



Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
72 17 76	Plug	2.5	4.5
72 17 77	Socket	2.5	4.5
72 17 78	Plug	4.0	5.2
72 17 79	Socket	4.0	5.2
72 17 80	Plug	6.0	5.9
72 17 81	Socket	6.0	5.9

HIRSCHMANN SUNCON



Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
71 55 97	Plug	5.0 – 6.0	5.2 – 7.0
71 55 98	Socket	5.0 – 6.0	5.2 – 7.0

SMK



Order No.	Type	Cross-section Ø mm²	Outer sheath Ø mm
72 36 17	Plug	6.0	6.0 (+/- 0,15)
72 36 18	Socket	6.0	6.0 (+/- 0,15)



HIS BAJONETT*MOLDED*



TECHNICAL DATA

Rated current	1.5 to 2.5 mm² (22 A) 4.0 mm² (32 A) 6.0 mm² (42 A) 10.0 mm² (52 A)
Rated voltage	DC 1.000 V, 600 V (UL)
Test voltage	6 KV (50 Hz, 1 min.)
Contact resistance	<0.5 mΩ
Contact type	machined contact, contact lamellae
Contact material	MS tin-plated - silver-plated
Insulation material	m - PPE
Locking system	bajonett joint
IP class	IP 68
Protection class	II
Cable strain relief per	DIN V VDE 0 / 26-3
Ambient temperature	-40° to +125° C
Plug withdrawal force	<240 N
Insulation material / flame class	UL94-V-0/E41613

HIS Bajonett connection plug and socket

Order No.	Type		Cross-section Ø mm²	Outer sheath Ø mm
71 58 60	PV-SC1-M1.5	Plug	1.5	4.3
71 58 57	PV-SC1-F1.5	Socket	1.5	4.3
71 49 70	PV-SC1-M2.5	Plug	2.5	4.5
71 49 69	PV-SC1-F2.5	Socket	2.5	4.5
71 18 68	PV-SC1-M4.0	Plug	4.0	5.2
71 18 67	PV-SC1-F4.0	Socket	4.0	5.2
71 23 48	PV-SC1-M6.0	Plug	6.0	5.9
71 23 49	PV-SC1-F6.0	Socket	6.0	5.9
71 51 32	PV-SC1-M10.0	Plug	10.0	6.9
71 51 33	PV-SC1-F10.0	Socket	10.0	6.9

Tools and accessories

High-quality workmanship of all components is a prerequisite for the safe and efficient operation of your PV system. With the modular HIS tool system consisting of a crimping pliers, crimp insert and locator, you are well equipped for virtually all standard plug connector systems.

Our extensive range of accessories also offers you everything you need to ensure hassle-free installation.



CRIMP TOOLS

Crimping pliers

Order No.	Description	
71 25 73	Four-mandrel crimping pliers PEW 8.76	With locator No. 16 in plastic case. MC3, HIS TYP 3, Amphenol H4 2.5 - 6.0 mm²
71 31 00	Crimping system pliers PEW 12.194	4-edge crimping. MC3, HIS TYP 3, 2.5 - 6.0 mm² Yukita YS-188+189, 2.5 - 4.0 mm²
71 40 58	Crimping system pliers PEW 12.194	4-edge crimping with locator. MC3 and HIS TYP 3, 2.5 - 6.0 mm²
71 39 17	Crimping pliers PV-CZM-16100A	MC3 and HIS TYP 3, 2.5 - 6.0 mm²
72 04 42	Crimping pliers PV-CZM-1700	MC3, 4.0 and 10.0 mm²
72 24 74	Crimping system pliers PEW 12.1193	MC4 with locator, 4.0 - 10.0 mm²
71 12 66	Crimping pliers PV-CZM-19100	MC4, 2.5 - 6.0 mm²
72 04 44	Crimping pliers PV-CZM-20100	MC4, 4.0 and 10.0 mm²
71 90 81	Crimping system pliers PEW 12.1194	4-edge crimping with locator. Amphenol H4, 2.5 - 10.0 mm²
71 99 01	Crimping system pliers PEW 12.1194	4-edge crimping. Amphenol H4, 2.5 - 10.0 mm²
71 63 63	H4 Crimping pliers H4 TC 0001	Amphenol H4, 2.5 - 10.0 mm²
71 27 31	Tyco Crimping pliers	Tyco Solarlok with locator, 1.5 - 6.0 mm²
71 37 16	Crimping system pliers PEW 12.817	Tyco Solarlok with locator, 1.5 - 6.0 mm²
71 99 50	Crimping system pliers	Solinq Silverline/Goldline, 2.5 - 6.0 mm²
71 87 00	Crimping system pliers PEW 12.188	Huber & Suhner, 2.5 and 4.0 mm²
71 54 51	Crimping system pliers PEW 12.205	Huber & Suhner, 4.0 and 6.0 mm²
71 72 29	Crimping system pliers PEW 12.71-1	4-edge crimping. Wieland, 1.5 and 2.5 mm²
71 72 09	Crimping system pliers PEW 12.73-1	4-edge crimping. Wieland, 4.0 - 10.0 mm²
71 96 06	Crimping system pliers PEW 12.614	Hirschmann Suncon, 2.5 - 6.0 mm²
71 86 51	Crimping system pliers PEW 12.369	Yukita YS-254 and 255, 1.5 - 6.0 mm²
72 00 71	Crimping system pliers PEW 12.3	Cable lugs uninsulated, 4.0 - 10.0 mm²
72 01 67	Tool case Variant I	Contents: Four-mandrel crimping pliers PEW 8.76 with locator, stripping pliers, cable shears. For connectors 2.5 - 6.0 mm² MC3, HIS TYP 3, Amphenol H4
72 01 68	Tool case Variant II	Contents: Crimping system pliers PEW 12, stripping pliers, cable shears. Dies and locator for MC3, HIS TYP 3, Tyco, MC4, Yukita YS-188 + 189

Multifunction pliers

Order No.	Description	
71 72 07	CSCsolar 4.0 mm²	MC4 4.0 mm². For cutting, stripping and crimping plug connectors
71 72 08	CSCsolar 6.0 mm²	MC4 6.0 mm². For cutting, stripping and crimping plug connectors



Crimping pliers PEW 12 with locator
For uniform four-mandrel pressing of turned terminals 2.5 to 6.0 mm² MC4 (71 32 05)



Assembly case I
» Four-mandrel crimping pliers PEW 8.76 with locator
» Cable shears to 50.0 mm²
» Stripping pliers 2.5 to 10.0 mm² (72 01 67)

Crimping plier inserts

Order No.	Description	
71 42 40	Crimping plier insert PEW 12	MC3, HIS TYP 3, 2.5 - 6.0 mm². Yukita YS-188+189, 2.5 - 4.0 mm²
71 44 20	Crimping plier insert PV-ES-CZM-16100	MC3 and HIS TYP 3
72 04 41	Crimping plier insert PV-ES-CZM-17100	MC3 and HIS TYP 3, 4.0 and 10.0 mm²
71 32 02	Crimping plier insert PEW 12	MC4, 2.5 - 6.0 mm²
72 15 74	Crimping plier insert PEW 12	MC4, 4.0 - 10.0 mm²
71 45 63	Crimping plier insert PV-ES-CZM-19100	MC4, 2.5 - 6.0 mm²
72 04 43	Crimping plier insert PV-ES-CZM-20100	MC4, 4.0 and 10.0 mm²
71 90 82	Crimping plier insert PEW 12	Amphenol H4, 2.5 - 10.0 mm²
71 42 42	Crimping plier insert PEW 12	Tyco Solarlok, 1.5 - 6.0 mm²
71 87 10	Crimping plier insert PEW 12	Huber & Suhner, 2.5 and 4.0 mm²
71 66 00	Crimping plier insert PEW 12	Huber & Suhner, 4.0 and 6.0 mm²
71 72 32	Crimping plier insert PEW 12	Wieland, 1.5 and 2.5 mm²
71 72 10	Crimping plier insert PEW 12	Wieland, 4.0 - 10.0 mm²
71 57 07	Crimping plier insert PEW 12	Hirschmann Suncon, 2.5 - 6.0 mm²
71 86 94	Crimping plier insert PEW 12	Yukita YS-254 and -255, 1.5 - 6.0 mm²
72 01 48	Crimping plier insert PEW 12	Cable lugs uninsulated, 4.0 - 10.0 mm²



Crimping plier insert
(71 32 02)

Multifunction inserts

Order No.	Description	
71 72 12	Multi-function plier insert PEW 12	MC4 4.0 mm². For cutting, stripping and crimping plug connectors
71 72 13	Multi-function plier insert PEW 12	MC4 6.0 mm². For cutting, stripping and crimping plug connectors



Locator
(71 32 04)

Locator

Order No.	Description	
71 42 41	Locator plier PEW 12	MC3 and HIS TYP 3, 2.5 - 6.0 mm²
71 48 23	Locator plier PV-LOC-A	MC3 and HIS TYP 3
72 04 40	Locator plier PV-LOC-A10	MC3 4.0 and 10.0 mm²
71 32 04	Locator plier PEW 12	MC4 2.5 - 6.0 mm²
72 24 73	Locator plier PEW 12	MC4 4.0 - 10.0 mm²
72 00 15	Locator plier PV-LOC	MC4
71 90 83	Locator plier PEW 12	Amphenol H4, 2.5 - 10.0 mm²
71 42 43	Locator plier PEW 12	Tyco Solarlok 1.5 - 6.0 mm²
71 72 11	Locator plier PEW 12	Wieland 1.5 - 10.0 mm²
71 86 95	Locator plier PEW 12	Yukita YS-254 and -255, 1.5 - 6.0 mm²

ASSEMBLY AID

Order No.	Description	
72 01 66	Stripping pliers	For solar cable. Conductor cross-section 2.5 - 10.0 mm², bronzed
71 61 77	Stripping pliers insert	Conductor cross-section 2.5 - 10.0 mm², bronzed
71 40 77	Cable shears	Cable shears for conductors bis 50.0 mm²
71 72 04	Assembly tool PEW	MC3 and HIS TYP 3, 2.5 - 10.0 mm²
72 00 43	Cone PEW	Assembly tool PEW MC3- and HIS TYP 3-Isolatoren 2.5 and 4.0 mm²
72 00 44	Cone PEW	Assembly tool PEW MC3- and HIS TYP 3-Isolatoren 4.0 and 6.0 mm²
72 00 45	Cone PEW	Assembly tool PEW MC3-Isolatoren 10.0 mm²
70 76 11	Assembly tool PV-RWZ3	MC3 and HIS TYP 3, 2.5 - 6.0 mm²
71 41 34	Cone PV-KO3 I+II	Assembly tool PV-RWZ3. Socket and plug insulators sizes I + II, 2.5 and 4.0 mm²
71 41 35	Cone PV-KO3 II	Assembly tool PV-RWZ3. Socket and plug insulators sizes III, 6.0 mm²
71 72 05	MC4 installation wrench PEW	For screwing and unlocking housings MC4, 1.5 - 6 mm²
71 32 37	MC4 installation wrench set PV-MS	For screwing and unlocking housings MC4, 1.5 - 6 mm²
72 21 31	Amphenol installation wrench H4TW0001	For screwing and unlocking housings Amphenol H4, 2.5 - 10.0 mm²
71 61 38	Amphenol aperture ring PV-670804	For unlocking perforating Amphenol H4 housings 2.5 - 10.0 mm²
71 65 95	Solinq installation wrench	For screwing and unlocking Solinq housings, 2.5 - 6.0 mm²



Assembly tool PEW with mandrels
For coating sleeves 2.5 to 10.0 mm²
» HIS TYP 3
» MC 3
(71 72 04)



Cable shears
(71 40 77)



Stripping pliers
(72 01 66)

ACCESSORIES

Order No.	Description	
71 31 24	Drum dispenser HIS-Tool 250 Pocket	For cable drums and rings. Load capacity to 190 kg. Weight approx. 1 kg.
71 40 76	Drum dispenser Roll-Profi 90101	For cable drums up to 52 cm in diameter. Load capacity to 140 kg. Weight approx. 8.3 kg.
71 40 95	Cable protection tube Co-flex-PP-UV	NW 10. Outer dia. Ø 13.4 mm, inner dia. Ø 8.4 mm
71 40 96	Cable protection tube Co-flex-PP-UV	NW 14. Outer dia. Ø 18.5 mm, inner dia. Ø 12.5 mm
71 40 97	Cable protection tube Co-flex-PP-UV	NW 20. Outer dia. Ø 25.3 mm, inner dia. Ø 19.2 mm
71 40 98	Cable protection tube Co-flex-PP-UV	NW 23. Outer dia. Ø 30.8 mm, inner dia. Ø 23.4 mm
71 40 99	Cable protection tube Co-flex-PP-UV	NW 37. Outer dia. Ø 41.4 mm, inner dia. Ø 31.0 mm
71 41 00	Cable protection tube Co-flex-PP-UV	NW 45. Outer dia. Ø 54.0 mm, inner dia. Ø 42.7 mm
71 51 83	Cable protection tube PA6-UV	Sinus slotted. Outer dia. Ø 28.3 mm, inner dia. Ø 23.2 mm
71 51 84	Cable protection tube PA6-UV	Sinus slotted. Outer dia. Ø 42.4 mm, inner dia. Ø 36.0 mm
71 52 54	Cable insert tool	For sinus slotted cable protection tube
71 41 05	Mounting clip Co-flex COS PA 6	For cable protection system NW 10. Outer dia. Ø 19.0 mm
71 41 09	Mounting clip Co-flex COS PA 6	For cable protection system NW 37. Outer dia. Ø 52.0 mm
71 49 37	Cable ties PA 6.6	160 x 3.6 mm, black, UV resistant
71 49 38	Cable ties PA 6.6	200 x 3.6 mm, black, UV resistant
71 49 39	Cable ties PA 6.6	250 x 3.6 mm, black, UV resistant
71 49 40	Cable ties PA 6.6	300 x 3.6 mm, black, UV resistant
71 49 41	Cable ties PA 6.6	210 x 4.7 mm, black, UV resistant
71 49 42	Cable ties PA 6.6	290 x 4.7 mm, black, UV resistant
71 49 43	Cable ties PA 6.6	410 x 4.7 mm, black, UV resistant
70 10 34	Splice connector	4.0 - 6.0 mm², PVC insulated, yellow
70 04 31	Splice connector	6.0 - 10.0 mm², E-tinned copper
70 38 36	Shrink tubing	Black with interior adhesive fitted to 100 mm
71 59 25	End cap with internal adhesive	Length 40.0 mm. For solar cable 4.0 - 10.0 mm² internal diameter 13.0 mm before shrinking, after shrinking 4.5 mm
71 27 65	Closing cap PV-BVK3	MC3 Socket with cord
71 27 64	Closing cap PV-SVK3	MC3 Plug with cord
71 56 79	Closing cap PV-BVK3-OL	MC3 Socket ohne cord
71 56 80	Closing cap PV-SVK3-OL	MC3 Plug ohne cord



End cap with internal adhesive
(71 59 25)



Cable drum
(71 31 24)



Cable ties



Splice connector
(70 04 31)

CORRUGATED TUBE



HIS Twintube-PP

FEATURES

- › Double corrugated tube for fast installation
- › Specially stabilised against UV rays
- › Flame retardant (UL 94:HB), halogen-free
- › High low-temperature impact strength and elongation at break
- › High tensile strength
- › Very high chemical resistance
- › Conforms to RoHS and REACH
- › Retrofitting possible
- › Custom lengths/special dimensions upon request

TECHNICAL DATA

- › Polypropylene-modified special compound
- › Two-part lockable profile
- › Temperature range: 3,000h: -40° C to +100° C | 240h: -40° C to +125° C

Assembly aids



72 29 81 | Shears for corrugated tubes



72 33 61 | Universal pulling tool

Order No.	NW	Profile	Outer diameter in mm	Inner diameter in mm	Packaging unit in m
723332@0013	13	Normal	16.0	11.0	50
723332@0017	17	Normal	21.3	15.1	50
723332@0022	22	Normal	25.4	19.6	50
723332@0029	29	Normal	34.8	27.3	25
723332@0037	37	Normal	42.7	33.1	25
723332@0050	50	Normal	53.9	42.7	25

Accessories



Screwings



HIS cable conduits for underground

FEATURES

- › Flexible PE-HD cable protection tube
- › Can be laid underground
- › High pressure and impact resistance
- › Conforms to VDE 0605 and DIN EN 61386-24

TECHNICAL DATA

- › Material: PE-HD
- › Halogen-free
- › Minimum pressure resistance: >450N
- › Temperature range: -5° C to +80° C

Accessories

- › Double plug-in sleeve for a sandproof connection
- › Profile sealing ring for a waterproof connection of up to 0.5 bar
- › End cap

Order No.	Bending radius 20° C in mm	Weight in kg	Outer diameter in mm	Inner diameter in mm	Packaging unit in m
722556@0050	350	9.3	50.0	40.0	50
722556@0075	350	17.0	75.0	63.0	50
722556@0090	350	22.5	90.0	76.0	50
722556@0010	500	31.0	110.0	94.0	50
722556@0125	600	19.3	125.0	108.0	25
722556@0160	750	26.3	160.0	137.0	25

SCREWING

Order No.	Description	Diameter in mm	Lock nut	Seal ring
71 95 48	Screwing UV / sw M12 X1,5	4.5 - 10.0	71 95 53	72 42 47
71 95 49	Screwing UV / sw M16 X1,5	6.0 - 13.0	71 93 17	72 32 55
70 87 36	Screwing UV / sw M20 X1,5	9.0 - 17.0	70 87 37	72 32 54
70 90 77	Screwing UV / sw M25 X1,5	13.0 - 21.0	71 43 44	72 32 53
70 87 38	Screwing UV / sw M32 X1,5	16.0 - 28.0	70 87 39	72 39 39
71 95 50	Screwing UV / sw M40 X1,5	21.0 - 35.0	71 30 55	
71 95 51	Screwing UV / sw M50 X1,5	27.0 - 35.0	71 95 54	



Safety note
The products described are produced according to national or international standards, as well as world standards. Application safety according to the applicable safety guidelines, standards and legal regulations must be observed. Assuming proper installation and use, product-specific risks can be eliminated. Depending upon these, the DIN VDE requirements relevant to the product apply. However, installation and handling must be performed only by electricians. In the event of a functional error or damage to electric parts, such as to a cable or plug, the power must be turned off immediately and all defective parts must be replaced by experts.

Disclaimer
The data in this publication reflect the current status at the time of printing. We reserve the right to technical modifications. All data can be changed at any time without notice.

RoHS guidelines
We confirm that all products shown in this catalogue were produced in full compliance with EU guideline 2002/95/EG (RoHS).

Length marks
All length marks on the cables represent an aid. Variances from the line lengths indicated by the length marks do not create any legal obligation. To determine the cable length, only calibrated measuring instruments should be used.

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