

THE WORLD OF LAPP

Renewable Energy





Welcome

Please come in and look around. Irrespective of which cable, line, plug and accessory you require for your particular application, you will find exactly what you need here. We have more than 40,000 different standard articles in stock. We also deliver within 24 or 48 hours. Special tasks demand special solutions. In this case too, you need look no further than our company. In addition to the comprehensive range of standard Lapp products, we can also offer you individual cable assemblies and the engineering involved.

You should also be aware of the following: Lapp is one of the leading international system providers. Our brands are used in the most varied of applications, branches and global markets. One of our principles states: when striving for perfection we should rely on no-one but ourselves. This is why we manufacture everything in our own production sites. We also have numerous sales companies and logistics centres around the world, which enable us to be close to our customers. We're somewhere near you too!

To contact your local Lapp Group representative please visit www.lappgroup.com/worldwide

ÖLFLEX® SOLAR XLS-R T

Electron beam cross-linked solar twin-cables - separable
 Easy to split into two separate cables
 Reduced outer diameters enable space and weight saving installation
 Robust against mechanical impacts
 Reduction of flame propagation and of toxic combustion gases in the event of fire
 Exact quantity control during installation by meter marking on the cable sheath



Suitable for outdoor use



Halogen-free



Cold-resistant



Solar Energy



UV-resistant

Info

Optimised cable design -thin, light and robust
 Time-saving installation
 Ideal for stand-alone PV power systems

Application range

Ideal for stand-alone PV power systems
 Gable and flat roof photovoltaic systems
 Photovoltaic plants and solar parks
 Flexible or building-integrated PV systems

Product Make-up

Fine-wire, tinned-copper conductor
 Core insulation made of electron beam cross-linked copolymer
 Outer sheath made of electron beam cross-linked copolymer
 Outer sheath colour: Black
 Cores connected in parallel with a separating strip

Norm references / Approvals

Also available as TÜV PV1-F certified version upon request

Product features

Weather/UV-resistant acc. to HD 605/A1
 Ozone-resistant according to EN 50396
 Halogen-free and flame-retardant
 Good notch and abrasion resistance
 XLS-R T= X-Linked Standard-Reduced Twin
 Proven electron beam cross-linked quality

ÖLFLEX® SOLAR XLS-R T

Technical Data

Core identification code:	black / red blue / red
Classification:	ETIM 5.0 Class-ID: EC001578 ETIM 5.0 Class-Description: Flexible cable
Conductor stranding:	Fine wire according to VDE 0295, class 5/IEC 60228 class 5
Minimum bending radius:	Fixed installation: 4 x outer diameter
Nominal voltage:	AC U_0/U : 600/1000 V DC U_0/U : 900/1500 V Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)
Test voltage:	AC 6500 B
Temperature range:	Fixed installation: -40°C to +100°C max. conductor temperature

Note

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

Part number	Number of cores and mm ² per conductor	Outer dimensions/ width x height (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLS-R T Core insulation: red / black				
0023982	2 X 2,5	9,9 x 4,8	48.0	94
0023984	2 X 4	10,7 x 5,2	76.8	128
0023986	2 X 6	11,9 x 5,8	115.2	174
0023989	2 X 10	14,3 x 7	192.0	267



ÖLFLEX® SOLAR XLR-R

Electron beam cross-linked solar cables with reduced diameters - TÜV type approved

i Info

- Optimised cable design - thin, light and robust
- TÜV Type PV1-F (2 PFG 1169/08.2007)



Benefits

- Reduced outer diameters enable space and weight saving installation
- Reduction of flame propagation and of toxic combustion gases in the event of fire
- Robust against mechanical impacts
- Extruded colour stripe serves as reverse polarity protection during installation.
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as extension cable between the module strings and the DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Flexible or building-integrated PV systems
- Not suitable for direct burial, Installation according to IEC 60364-5-52, respectively HD 60364-5-52

Product features

- Weather/UV-resistant acc. to HD 605/A1
- Ozone-resistant according to EN 50396
- Halogen-free and flame-retardant
- Good notch and abrasion resistance
- XLR-R = X-Linked Radiated-Reduced
- Proven electron beam cross-linked quality
- Version without colour stripe for size up to 300mm² on request

Norm references / Approvals

- PV1-F (TÜV type approved according to 2 PFG 1169/08.2007)

Product Make-up

- Fine-wire, tinned-copper conductor
- Core insulation made of electron beam cross-linked copolymer
- Colour of core insulation: white
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: black respectively black with red or blue stripe

Technical data

Classification
 ETIM 5.0 Class-ID: EC001578
 ETIM 5.0 Class-Description: Flexible cable

Conductor stranding
 Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
 Fixed installation: 4 x outer diameter

Nominal voltage
 AC U₀/U : 600/1000 V
 DC U₀/U : 900/1500 V
 Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)

Test voltage
 AC 6500 V

Current rating
 In compliance with TÜV 2 PFG 1169/08.2007 table 1

Temperature range
 -40°C to +120°C max. conductor temperature based on EN 60216-1
 Ambient temperature according to TÜV 2 PFG 1169/08.07: -40°C to +90°C

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR-R				
Core insulation: white / Outer sheath: black				
0023175	1.5	4.4	14.4	34
0023176	2.5	4.8	24	46
0023177	4.0	5.2	38.4	63
0023178	6.0	5.8	57.6	86
0023179	10.0	7	96	132
0023180	16.0	8.3	153.6	197
Core insulation: white / Outer sheath: black with red stripe				
0023360	2.5	4.8	24	46
0023361	4.0	5.2	38.4	63
0023362	6.0	5.8	57.6	86
0023363	10.0	7	96	132
0023364	16.0	8.3	153.6	197
Core insulation: white / Outer sheath: black with blue stripe				
0023370	2.5	4.8	24	46
0023371	4.0	5.2	38.4	63
0023372	6.0	5.8	57.6	86
0023373	10.0	7	96	132
0023374	16.0	8.3	153.6	197

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request. Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLR WP refer to page 153

Accessories

- EPIC® SOLAR 4 M refer to page 703
- EPIC® SOLAR 4 F refer to page 703
- UNIVERSAL STRIP stripping tool refer to page 1006
- KS 20 cable shears refer to page 999



ÖLFLEX® SOLAR XLS-R

Electron beam cross-linked solar cables with reduced outer diameters



Info

- Optimised cable design - thin, light and robust

Benefits

- Reduced outer diameters enable space and weight saving installation
- Robust against mechanical impacts
- Reduction of flame propagation and of toxic combustion gases in the event of fire
- Extruded colour stripe serves as reverse polarity protection during installation.
- Exact quantity control during installation by meter marking on the cable sheath

Application range

- For the cabling between the solar modules and as extension cable between the module strings and the DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Flexible or building-integrated PV systems
- Not suitable for direct burial, Installation according to IEC 60364-5-52, respectively HD 60364-5-52

Product features

- Weather/UV-resistant acc. to HD 605/A1
- Ozone-resistant according to EN 50396
- Halogen-free and flame-retardant
- Good notch and abrasion resistance
- XLS-R = X-Linked Standard - Reduced Proven electron beam cross-linked quality

Product Make-up

- Fine-wire, tinned-copper conductor
- Core insulation made of electron beam cross-linked copolymer
- Colour of core insulation: white
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: black respectively black with red or blue stripe

Technical data

Classification
ETIM 5.0 Class-ID: EC001578
ETIM 5.0 Class-Description:
Flexible cable

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Fixed installation: 4 x outer diameter

Nominal voltage
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage:
DC 1,8 kV (Conductor-conductor, non earthed system)

Test voltage
AC 6500 V

Temperature range
Fixed installation: -40°C to +100°C
max. conductor temperature

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLS-R				
0023136	2.5	4.8	24	46
0023137	4.0	5.2	38.4	63
0023138	6.0	5.8	57.6	86
0023104	10.0	7	96	132
0023105	16.0	8.3	153.6	197
Core insulation: white / Outer sheath: black with red stripe				
0023390	2.5	4.8	24	46
0023391	4.0	5.2	38.4	63
0023392	6.0	5.8	57.6	86
0023393	10.0	7	96	132
0023394	16.0	8.3	153.6	197
Core insulation: white / Outer sheath: black with blue stripe				
0023395	2.5	4.8	24	46
0023396	4.0	5.2	38.4	63
0023397	6.0	5.8	57.6	86
0023398	10.0	7	96	132
0023399	16.0	8.3	153.6	197

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

Similar products

- ÖLFLEX® SOLAR XLR-R refer to page 151

Accessories

- EPIC® SOLAR 4 M refer to page 703
- EPIC® SOLAR 4 F refer to page 703
- UNIVERSAL STRIP stripping tool refer to page 1006
- KS 20 cable shears refer to page 999



ÖLFLEX® SOLAR XLR WP

Electron beam cross-linked solar cables with optimized performance in water - TÜV type

Info

- Optimised cable design - constant high volume resistance even after long-term period in water
- TÜV Type PV1-F (2 PFG 1169/08.2007)



Benefits

- The alternative for long-term storage in water, e.g. as it can occur in case after flooding or in buried conduits
- Reduction of flame propagation and of toxic combustion gases in the event of fire
- Robust against mechanical impacts
- Extruded colour stripe serves as reverse polarity protection during installation.
- Exact quantity control during installation by meter marking on the cable sheath

Product features

- Weather/UV-resistant acc. to HD 605/A1
- Ozone-resistant according to EN 50396
- Halogen-free and flame-retardant
- Good notch and abrasion resistance
- XLR WP = X-Linked Radiated Water-Proof Proven electron beam cross-linked quality

Technical data

Classification
ETIM 5.0 Class-ID: EC001578
ETIM 5.0 Class-Description: Flexible cable

Conductor stranding
Fine wire according to VDE 0295, class 5/IEC 60228 class 5

Minimum bending radius
Fixed installation: 4 x outer diameter

Nominal voltage
AC U_0/U : 600/1000 V
DC U_0/U : 900/1500 V
Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)

Test voltage
AC 6500 V

Current rating
In compliance with TÜV 2 PFG 1169/08.2007 table 1

Temperature range
-40°C to +120°C max. conductor temperature based on EN 60216-1
Ambient temperature according to TÜV 2 PFG 1169/08.07: -40°C to +90°C

Application range

- For underground installation in conduits, in which water, heat and moisture can accumulate
- For the cabling between the solar modules and as extension cable between the module strings and the DC/AC inverter
- Gable and flat roof photovoltaic systems
- Photovoltaic plants and solar parks
- Suitable for direct burial: see data sheet

Norm references / Approvals

- PV1-F (TÜV type approved according to 2 PFG 1169/08.2007)

Product Make-up

- Fine-wire, tinned-copper conductor
- Core insulation made of electron beam cross-linked copolymer
- Colour of core insulation: white
- Outer sheath made of electron beam cross-linked copolymer
- Outer sheath colour: black respectively black with red or blue stripe

Article number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR XLR WP				
Core insulation: white / Outer sheath: black				
1023501	2.5	5.2	24	48
1023502	4.0	5.6	38.4	65
1023503	6.0	6.2	57.6	88
1023504	10.0	7.4	96	135
1023505	16.0	8.7	153.6	207
Core insulation: white / Outer sheath: black with red stripe				
1023521	2.5	5.2	24	48
1023522	4.0	5.6	38.4	65
1023523	6.0	6.2	57.6	88
1023524	10.0	7.4	96	135
1023525	16.0	8.7	153.6	207
Core insulation: white / Outer sheath: black with blue stripe				
1023526	2.5	5.2	24	48
1023527	4.0	5.6	38.4	65
1023528	6.0	6.2	57.6	88
1023529	10.0	7.4	96	135
1023530	16.0	8.7	153.6	207

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: Coil 100 m; Drum (500; 1000) m
Photographs are not to scale and do not represent detailed images of the respective products.

Accessories

- EPIC® SOLAR 4 M refer to page 703
- EPIC® SOLAR 4 F refer to page 703
- UNIVERSAL STRIP stripping tool refer to page 1006
- KS 20 cable shears refer to page 999

ÖLFLEX® SOLAR V4A

Extra robust solar cables with high-grade steel protection braiding

High-grade stainless steel wire braiding (class V4A) provides highly effective protection against martens, rodents and even termites

Robust against mechanical impacts

Reduction of flame propagation and of toxic combustion gases in the event of fire



Suitable for outdoor use



Halogen-free



Cold-resistant



Corrosion-resistant



Mechanical resistance



Solar Energy



UV-resistant

Application range

For use in PV systems that are installed on the roofs of stables or barns situated in farmsteads or densely-forested areas

Gable and flat roof photovoltaic systems

Photovoltaic plants and solar parks

Product Make-up

Fine-wire, tinned-copper conductor

Core insulation made of electron beam cross-linked copolymer

Outer sheath made of electron beam cross-linked copolymer

Outer sheath colour: Black

Armouring made of stainless V4A high-grade steel wire braiding

Product features

Weather/UV-resistant acc. to HD 605/A1

Halogen-free and flame-retardant

Good mechanical strength

ÖLFLEX® SOLAR V4A

Technical Data

Core identification code:	Black
Classification:	ETIM 5.0 Class-ID: EC001578 ETIM 5.0 Class-Description: Flexible cable
Conductor stranding:	Fine wire according to VDE 0295, class 5/IEC 60228 class 5
Minimum bending radius:	Fixed installation: 5 x outer diameter
Nominal voltage:	AC U_0/U : 600/1000 V DC U_0/U : 900/1500 V Max. permissible operating voltage: DC 1,8 kV (Conductor-conductor, non earthed system)
Test voltage:	AC 6500 B
Temperature range:	Fixed installation: -40°C to +100°C max. conductor temperature

Note

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths

Packaging size: Coil 100 m; Drum (500; 1000) m

Photographs are not to scale and do not represent detailed images of the respective products.

Part number	Conductor cross-section (mm ²)	Outer diameter (mm)	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® SOLAR V4A stainless steel				
0025960	4	7.0	38.4	98
0025961	6	8.0	57.6	158



EPIC® SOLAR 4 M

Info

- 4 mm connector system with double hook
- Field-mountable solar connector



EPIC® SOLAR 4 F

Info

- 4 mm connector system with double hook
- Field-mountable solar connector



Benefits

- Low contact-resistance for efficient power transmission
- Crimp connection for field mounting
- Suitable for various ÖLFLEX® SOLAR cables

Application range

- Photovoltaic plants
- Crystalline and thin-film constructions
- Solartracker

Product features

EPIC® SOLAR 4 M

- 4 mm connector system with double hook
- TÜV Rheinland certified
- Inclusive contacts

EPIC® SOLAR 4 F

- 4 mm connector system with double hook
- TÜV Rheinland certified
- UL pending
- Inclusive contacts

Suitable cables

- ÖLFLEX® SOLAR XLR-R Page 151
- ÖLFLEX® SOLAR XLR WP Page 153
- ÖLFLEX® SOLAR XLS-R Page 152
- ÖLFLEX® SOLAR XLR 1,5kV
- ÖLFLEX® SOLAR XLR 1,5kV WP
- ÖLFLEX® SOLAR XLc

Suitable tools

- EPIC® SOLAR TOOL
- For easier assembly of the plastic parts, use EPIC® SOLAR 4 Assembly Tool Set (2 pieces). Holder for insulation body, spanner for cap nut and pins for unlocking

Suitable connectors

EPIC® SOLAR 4 F

- EPIC® SOLAR 4 THIN
- EPIC® SOLAR 4 M Page 703
- EPIC® SOLAR 4Plus F

Technical data

	ETIM 5.0 Class-ID: EC002641 ETIM 5.0 Class-Description: Modular connector (industrial connector)
	Rated voltage (V) 1000 V AC/DC
	Rated impulse voltage 8 kV
	Degree of soiling 3
	Contact resistance < 0.5 mOhm
	Protection rating IP 67
	Protection class II
	Temperature range -40°C ... +105°C

Article number	Article designation	Cross-section (mm ²)	Clamping range in mm	Rated current (A)	PU
EPIC® SOLAR 4 male field-mountable, inclusive contacts					
44428200	EPIC® SOLAR 4 M 2.5 mm ²	2.5	4.8 - 6.0	22	100
44428201	EPIC® SOLAR 4 M 4mm ² ... 6mm ²	4 - 6	5.2 - 7.1	30	100
EPIC® SOLAR 4 male contacts as spare part					
44428217	EPIC® SOLAR 4 PIN M 2.5mm ²	2.5			100
44428219	EPIC® SOLAR 4 PIN M 4mm ² ... 6mm ²	4 - 6			100
EPIC® SOLAR 4 female field-mountable, inclusive contacts					
44428203	EPIC® SOLAR 4 F 2.5 mm ²	2.5	5.2 - 6.5	22	100
44428204	EPIC® SOLAR 4 F 4mm ² ... 6mm ²	4 - 6	5.0 - 7.2	30	100
EPIC® SOLAR 4 female contacts without as spare part					
44428218	EPIC® SOLAR 4 PIN F 2.5mm ²	2.5			100
44428220	EPIC® SOLAR 4 PIN F 4mm ² ... 6mm ²	4 - 6			100
EPIC® SOLAR 4 assembly tool					
44428224	EPIC® SOLAR 4 Assembly Tool Set				1

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® SOLAR 4 Splitter

Pre-assembled solar cables for weatherproof cabling of photovoltaic systems

Info

- 4 mm connector system with double hook
- Splitter for parallel connection of photovoltaic modules



Benefits

- Splitter for parallel connection of PV-modules and strings
- Easy plug and play
- Fixing option for a clear installation with a Ø 5mm mounting hole

Application range

- Photovoltaic plants
- Crystalline and thin-film constructions
- Solartracker

Product features

- Mateable with EPIC® SOLAR 4 THIN, EPIC® SOLAR 4PLUS, EPIC® SOLAR 4
- Splitter MFF 1x connection male, 2x connection female
- Splitter MFF 1x connection female, 2x connection male

Suitable connectors

- EPIC® SOLAR 4
- EPIC® SOLAR 4 THIN
- EPIC® SOLAR 4Plus
- EPIC® SOLAR 4 Built in socket

Technical data

	ETIM 5.0 Class-ID: EC002314 ETIM 5.0 Class-Description: Cap for industrial connectors
	Rated voltage (V) 1000 V AC/DC
	Rated impulse voltage 8 kV
	Rated current (A) 30 A
	Degree of soiling 3
	Protection rating IP65/IP67
	Cycle of mechanical operation 100
	Protection class II
	Temperature range -40 °C ... +85 °C

Article number	Article designation	PU
EPIC® SOLAR 4 Splitter		
44428226	EPIC® SOLAR 4 Splitter MFF	25
44428227	EPIC® SOLAR 4 Splitter FMM	25

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® SOLAR PL008

Pre-assembled solar cables for weatherproof cabling of photovoltaic systems



Info

- Plastic junction box for ambient resistant cabling and connecting of photovoltaic systems

Benefits

- Cable variations and 4 diodes version on request
- Cost-efficient plastic junction box
- Factory assembled and tested
- Traceability of every junction box ensured by barcode

Application range

- Photovoltaic plants

Product features

- Robust junction box for cabling of photovoltaic modules
- Version with 3 diodes for three-string modules
- PTFE membrane equalize the pressure balance and enables humidity to stay out of the junction box
- Assembled with EPIC® SOLAR 4 connector and ÖLFLEX® SOLAR cable 4mm²

Technical data

	ETIM 5.0 Class-ID: EC002637 ETIM 5.0 Class-Description: Printed circuit board connector
	Rated voltage (V) 1000 V
	Rated current (A) 11 A
	Protection rating IP 65
	Protection class II
	Temperature range -40 °C ... +105 °C

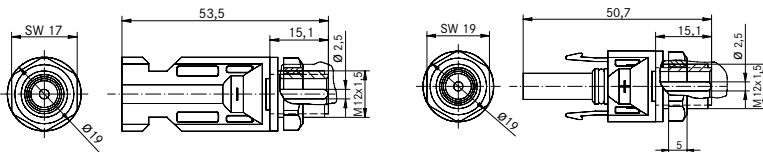
Article number	Article description	PU
EPIC® SOLAR PL008		
44428214	EPIC® SOLAR PL008/3/11 4THIN 4/1	1

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® SOLAR 4 Built in socket

Pre-assembled solar cables for weatherproof cabling of photovoltaic systems



Info

- 4 mm connector system with double hook
- Built in socket for use in inverters

Benefits

- Built in fitting for inverters, PV string circuit breakers and fuse boxes

Application range

- Photovoltaic plants
- Inverters
- PV string circuit breakers

Product features

- PV panel connector to be screwed in directly or fastening with the included plastic locknut
- Internal plug connector diameter 2.5mm, flush connector pin
- Installation hole: drilling diameter 12mm
- Other types of connection on request

Suitable connectors

- EPIC® SOLAR 4
- EPIC® SOLAR 4 THIN
- EPIC® SOLAR 4Plus
- EPIC® SOLAR 4 Splitter

Technical data

	ETIM 5.0 Class-ID: EC002640 ETIM 5.0 Class-Description: I/O connector	Contact resistance < 0.5 mOhm
	Rated voltage (V) 1000 V AC/DC	Protection rating IP 67
	Rated impulse voltage 8 kV	Cycle of mechanical operation 100
	Rated current (A) 30 A	Protection class II
	Degree of soiling 3	Temperature range -40°C ... +105°C

Article number	Article designation	PU
EPIC® SOLAR 4 built in socket with counter nut		
44428222	EPIC® SOLAR 4 AD M Pin 2.5	100
44428223	EPIC® SOLAR 4 AD F Pin 2.5	100

Photographs are not to scale and do not represent detailed images of the respective products.



EPIC® CRIMPTOOL

For inserts and modules of the EPIC® rectangular connectors



EPIC® SOLAR TOOL CSC

Cutting, stripping and crimping with just one tool



i Info

- Cutting, stripping and crimping with just one tool

EPIC® SOLAR TOOL

3 cross section in one tool



i Info

- 3 cross section in one tool

Application range

EPIC® SOLAR TOOL CSC

- For crimping of the photovoltaic connector EPIC® SOLAR 4 in the field
- For EPIC® SOLAR 4 and MC4 suitable

EPIC® SOLAR TOOL

- For crimping of the photovoltaic connector EPIC® SOLAR 4 in the field
- For EPIC® SOLAR 4 and MC4 suitable

Product features

EPIC® SOLAR TOOL CSC

- Multifunctional die for cutting, stripping and crimping with just one tool
- Locator for the safe and accurate positioning of the crimping contacts

EPIC® SOLAR TOOL

- Crimping die for the cable cross sections of 2.5mm², 4mm² and 6mm²
- Locator for the safe and accurate positioning of the crimping contacts

Suitable cables

EPIC® SOLAR TOOL CSC

- ÖLFLEX® SOLAR XLR-R Page 151
- ÖLFLEX® SOLAR XLR WP Page 153
- ÖLFLEX® SOLAR XLS-R Page 152
- ÖLFLEX® SOLAR XLR 1,5kV
- ÖLFLEX® SOLAR XLR 1,5kV WP
- ÖLFLEX® SOLAR XLc

Suitable connectors

EPIC® SOLAR TOOL CSC

- EPIC® SOLAR 4

EPIC® SOLAR TOOL

- EPIC® SOLAR 4

Article number	Article description	Cross-section (min) in mm ²	Cross-section (max) in mm ²	PU
Tools				
11147000	Crimping tool			1
Multi-functional die CSC				
44428992	EPIC® SOLAR TOOL CSC DIE 4mm ²		4	1
44428993	EPIC® SOLAR Tool CSC DIE 6mm ²		6	1
44428994	EPIC® SOLAR TOOL LOC 4, 6mm ²	4	6	1
Crimping die				
44428995	EPIC® SOLAR Tool DIE 2.5, 4, 6mm ²	2.5	6	1
44428996	EPIC® SOLAR Tool LOC 2.5, 4, 6mm ²	2.5	6	1

Photographs are not to scale and do not represent detailed images of the respective products.

SKINTOP® SOLAR

SKINTOP® for photovoltaics
 SKINTOP® SOLAR, plastic cable gland for photovoltaics, UV and ozone-resistant, with vibration protection and strain relief, extremely flame-retardant



Cold-resistant



Robust



Solar Energy



UV-resistant



Variety of approval certifications

Info

Cable gland for photovoltaic applications, based on EN 50262, EN 50548 and UL 1703.
 Extended temperature range

Application range

Photovoltaic plants and solar parks

Benefits

UV and ozone-resistant
 UL 746 C - UL F1 outdoor use
 High strain relief
 Permanent vibration protection
 Extremely flame-retardant according to UL 94V-0 / 94-5VA

Product Make-up

Metric connection thread acc. to DIN EN 60423
 Basis for technical information EN 50262

Norm references / Approvals

UL File Nr. E79903

Technical Data

Caution:	Refer to Appendix T21 for the installation dimensions and torques
Classification:	ETIM 5.0 Class-ID: EC000441 ETIM 5.0 Class-Description: Cable screw gland
Colour delivered:	RAL 9005 black/UV-resistant
Material:	Body: Polycarbonate Seal: CR
Tests:	Cold impact test according to UL 1703/UL 746 C
Protection rating:	IP 68 - 5 bar
Temperature range:	-40°C to +100°C

Note

Photographs are not to scale and do not represent detailed images of the respective products.

Part number	Article designation / size	Clamping range ØF (mm)	SW wrench size mm	Overall length/ C (mm)	Thread length/ D (mm)	Pieces / PU
SKINTOP® SOLAR						
53113300	SOLAR M12x1,5	3,5-7	15	36.0	15.0	100
53113310	SOLAR M16x1,5	7-9	19	34.0	8.0	100

SKINTOP® SOLAR plus

SKINTOP® for photovoltaics
SKINTOP® SOLAR plus Cable gland for Solar applications



Info

Cable gland for photovoltaik applications, based on EN 50262, EN 50548 and UL 1703.

Application range

Photovoltaic plants and solar parks

Benefits

UV and ozone-resistant
UL 746 C - UL F1 outdoor use
High strain relief
Permanent vibration protection
Extremely flame-retardant according to UL 94V-0 / 94-5VA

Product Make-up

Metric connection thread acc. to DIN EN 60423
Basis for technical information EN 50262

Norm references / Approvals

UL File Nr. E79903

Note

Counter nut to be used: SKINDICHT® SM-M
Counter nut to be used: SKINTOP® GMP-GL-M

Technical Data

Caution:	Refer to Appendix T21 for the installation dimensions and torques
Classification:	ETIM 5.0 Class-ID: EC000441 ETIM 5.0 Class-Description: Cable screw gland
Colour delivered:	RAL 9005 black/UV-resistant
Material:	Body: Polycarbonate Seal: Silicone O-Ring: Silicone
Tests:	Cold impact test according to UL 1703/UL 746 C
Protection rating:	IP 68 - 5 bar
Temperature range:	-40°C to +125°C

Note

Photographs are not to scale and do not represent detailed images of the respective products.

Part number	Article designation / size	Clamping range ØF (mm)	SW wrench size mm	Overall length/ C (mm)	Thread length/ D (mm)	Pieces / PU
SKINTOP® SOLAR plus						
53113321	SOLAR plus M12x1,5	3,5-7	15	36.0	15.0	100
53113331	SOLAR plus M16x1,5	7-9	19	34.0	8.0	100



New

SKINTOP® CLICK / SKINTOP® CLICK-R



Info

- The most innovative cable insertion system on the market for very fast, highly flexible assembly. Simply click in - turn to left - turn to right - finished. Result: fixed, centred, strain relieved and maximum protection class in seconds.



Benefits

SKINTOP® CLICK

- Fewer parts, counter nut no longer needed
- Up to 70% time saving due to innovative CLICK system
- Simple, free assembly in any position
- Vibration protection
- No thread required

SKINTOP® CLICK-R

- Benefits see SKINTOP® CLICK

Application range

SKINTOP® CLICK

- Automation technology
- Solar applications
- Switch cabinet building
- Measurement, control and electrical applications
- Air conditioning technology

SKINTOP® CLICK-R

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals (Norm references)



Scope of delivery

- Disassembly tool contained in the delivery scope

Technical data

RAL	Colour delivered RAL 7001 silver-grey RAL 7035 light grey RAL 9005 black / UV resistant
Material	Body: special polyamide Seal: special elastomer
IP	Degree of protection SKINTOP® CLICK IP 68 - 4 bar (M12) IP 68 - 5 bar (M16 - M32)
Temperature	Range of temperature -20°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	M (hole mm)	SW1 / SW2 mm	Overall length C mm	Thread length D mm	S (wall thickness mm)	Pieces / PU
SKINTOP® CLICK light grey								
53112692	CLICK 12	3.5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112686	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112687	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112688	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112694	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK silver grey								
53112921	CLICK 12	3.5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112876	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112877	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112878	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112922	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK black								
53112923	CLICK 12	3.5 - 7	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112882	CLICK 16	5 - 9	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112883	CLICK 20	7 - 13	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112884	CLICK 25	9 - 17	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112924	CLICK 32	11 - 21	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R light grey								
53112925	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112689	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112690	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112691	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112926	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R silver grey								
53112927	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112879	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112880	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112881	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112928	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25
SKINTOP® CLICK-R black								
53112929	CLICK-R 12	1 - 5	12,3 (-0,2)	15 / 18	40,0	8,0	1,0 - 4,0	50
53112885	CLICK-R 16	4 - 7	16,3 (-0,2)	19 / 22	42,0	8,0	1,0 - 4,0	50
53112886	CLICK-R 20	5 - 10	20,3 (-0,2)	25 / 27	45,5	8,0	1,0 - 4,0	25
53112887	CLICK-R 25	6 - 13	25,3 (-0,2)	30 / 34	48,5	8,0	1,0 - 4,0	25
53112931	CLICK-R 32	7 - 15	32,3 (-0,2)	36 / 40	55,0	8,0	1,0 - 4,0	25

Accessories see main catalogue 2010/11

SKINTOP® CLICK

- SKINTOP® DIX-M see page 662
- SKINTOP® DIX-M AUTOMATION see page 663
- SKINTOP® SDV-M ATEX see page 664
- SKINTOP® SD-M see page 665
- SKINTOP® DV-M see page 665

SKINTOP® CLICK-R

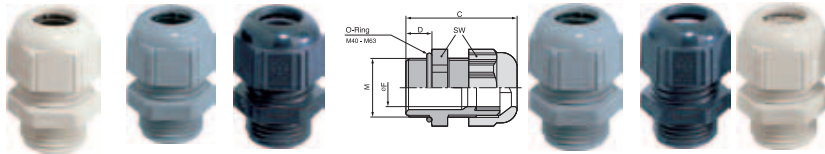
- SKINTOP® SDVR-M ATEX see page 664

Cable glands

SKINTOP® cable glands polyamide metric



SKINTOP® ST-M / SKINTOP® STR-M



SKINTOP® ST-M

SKINTOP® STR-M

Benefits

SKINTOP® ST-M

- Increased oil resistant for maximum reliability
- Permanent vibration protection
- Large, variable clamping ranges
- Optimal strain relief
- Various accessories (e. g. multiple sealing inserts)

SKINTOP® STR-M

- Benefits see SKINTOP® ST-M

Application range

SKINTOP® ST-M

- Everywhere where cables must be safely inserted into housings.
- Machine and apparatus construction
- Photovoltaic
- Automation technology
- Mobile off shore units, equipment and ship yards

SKINTOP® STR-M

- With reducing seal insert, to seal cables with smaller outer diameters.

Approvals (Norm references)



Design

- Metric connection thread acc. to EN 50262

Note

SKINTOP® ST-M

- For suitable accessories see SKINTOP® metric accessories
- Counter nut to be used SKINTOP® GMP-GL-M
- SKINTOP® ST M ISO types have a extralong connection thread
- Versions SKINTOP® ST M ISO with extra long connection thread, see table, have no DNV approval

SKINTOP® STR-M

- For suitable accessories see SKINTOP® metric accessories
- Counter nut to be used SKINTOP® GMP-GL-M
- SKINTOP® STR M ISO types have a extralong connection thread
- Versions SKINTOP® STR M ISO with extra long connection thread, see table, have no DNV approval

Suitable cables

- For IP 69 K applications we recommend to use the following cables:
ÖLFLEX® ROBUST 200
H07RN8-F

Suitable tools

SKINTOP® ST-M

- SKINMATIC® QUICK Set 1 see main catalogue 2010/11 page 703
- SKINMATIC® RZ see main catalogue 2010/11 page 704



Info

- Now with IP 69 K approval! Proven functionality also during hardest cleaning procedures at industrial machinery with high-pressure cleaners and hot water!

Technical data



Caution

Installation dimensions and tightening torques see main catalogue 2010/11 Appendix T21



Colour delivered

RAL 7001 silver-grey
RAL 7035 light grey
RAL 9005 black / UV resistant



Material

Body: Polyamide
Seal: CR

Tests

GGVS: TÜ.EGG.020-95



Degree of protection

IP 68 - 5 bar
IP 69 K



Range of temperature

Static: -40°C up to +100°C
Dynamic: -20°C up to +100°C

Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® ST-M silver grey						
53111000	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111010	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111020	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111030	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111040	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111050	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111060	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111070	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M black						
53111200	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111210	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111220	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111230	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111240	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111250	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111260	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111270	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST-M light grey						
53111400	ST-M 12 x 1,5	3,5-7	15	30,0	8,0	100
53111410	ST-M 16 x 1,5	4,5-10	19	34,0	8,0	100
53111420	ST-M 20 x 1,5	7-13	25	37,0	9,0	100
53111430	ST-M 25 x 1,5	9-17	30	40,0	10,0	50
53111440	ST-M 32 x 1,5	11-21	36	47,0	10,0	25
53111450	ST-M 40 x 1,5	19-28	46	52,0	10,0	10
53111460	ST-M 50 x 1,5	27-35	55	62,0	12,0	5
53111470	ST-M 63 x 1,5	34-45	66	71,0	12,0	5
SKINTOP® ST M ISO silver-grey (with long metric connecting thread)						
53017010	ST M 16 x 1,5	3,5-8	19	40,0	12,0	100
53017030	ST M 20 x 1,5	5-12	24	45,0	13,0	100
53017040	ST M 25 x 1,5	9-14	27	47,0	13,0	50



Part number	Part designation / size	Clamping range ØF mm	SW mm	Overall length C mm	Thread length D mm	Pieces / PU
SKINTOP® ST M ISO black (with long metric connecting thread)						
53017210	ST M 16 x 1,5	3,5-8	19	40.0	12.0	100
53017230	ST M 20 x 1,5	5-12	24	45.0	13.0	100
53017240	ST M 25 x 1,5	9-14	27	47.0	13.0	50
SKINTOP® STR-M silver grey						
53111100	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111110	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111120	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111130	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111140	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111150	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111160	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111170	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M black						
53111300	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111310	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111320	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111330	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111340	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111350	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111360	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111370	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR-M light grey						
53111500	STR-M 12 x 1,5	1-5	15	30.0	8.0	100
53111510	STR-M 16 x 1,5	2-7	19	34.0	8.0	100
53111520	STR-M 20 x 1,5	5-10	25	37.0	9.0	100
53111530	STR-M 25 x 1,5	6-13	30	40.0	10.0	50
53111540	STR-M 32 x 1,5	7-15	36	47.0	10.0	25
53111550	STR-M 40 x 1,5	15-23	46	52.0	10.0	10
53111560	STR-M 50 x 1,5	22-29	55	62.0	12.0	5
53111570	STR-M 63 x 1,5	28-39	66	71.0	12.0	5
SKINTOP® STR M ISO silver-grey (with long metric connecting thread)						
53017110	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017130	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017140	STR M 25 x 1,5	6-12	27	47.0	13.0	50
SKINTOP® STR M ISO black (with long metric connecting thread)						
53017310	STR M 16 x 1,5	2-6	19	40.0	12.0	100
53017330	STR M 20 x 1,5	4-9	24	45.0	13.0	100
53017340	STR M 25 x 1,5	6-12	27	47.0	13.0	50

■ Accessories see main catalogue 2010/11

SKINTOP® ST-M

- SKINTOP® DIX-M see page 662
- SKINTOP® GMP-GL-M see page 660
- SKINTOP® DIX-M AUTOMATION see page 663
- SKINTOP® SDV-M ATEX see page 664
- SKINTOP® SD-M see page 665
- SKINTOP® DV-M see page 665

SKINTOP® STR-M

- SKINTOP® GMP-GL-M see page 660
- SKINTOP® SDVR-M ATEX see page 664
- SKINTOP® SD-M see page 665

ÖLFLEX®

UNITRONIC®

ETHERLINE®

HITRONIC®

EPIC®

SKINTOP®

SILVYN®

FLEXIMARK®



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