

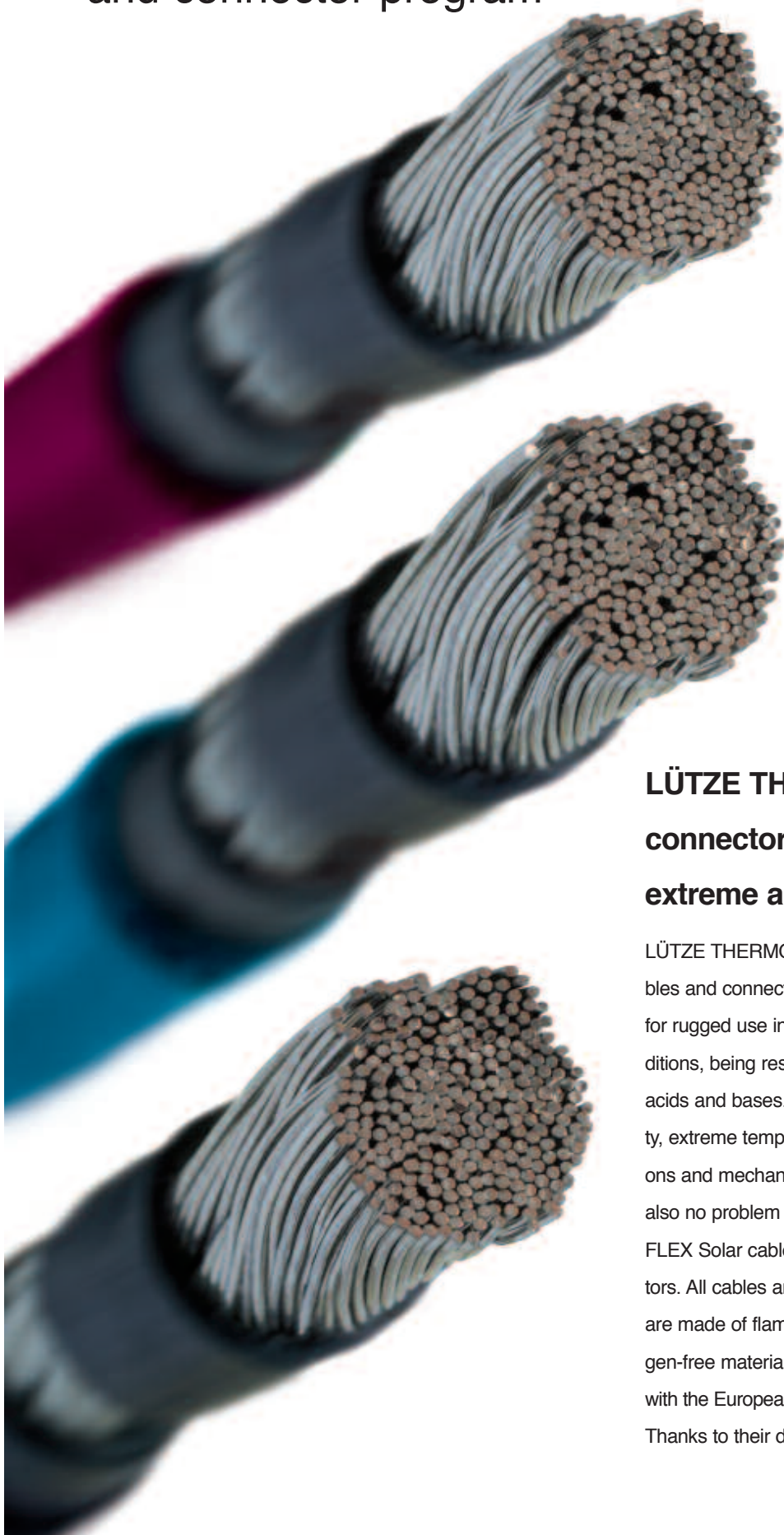


■ Installation Solutions

# Solutions for Solar Systems

# TÜV and VDE certified

The LÜTZE THERMOFLEX solar cable and connector program



• BALIART  
• GEPRÜFT  
• TYPE  
• APPROVED



## LÜTZE THERMOFLEX solar cables and connector are particularly suitable for extreme all-weather conditions

LÜTZE THERMOFLEX Solar cables and connectors are suitable for rugged use in all weather conditions, being resistant to UV light, acids and bases. High air humidity, extreme temperature fluctuations and mechanical stresses are also no problem for THERMOFLEX Solar cables and connectors. All cables and connectors are made of flame retardant, halogen-free materials and comply with the European RoHS Directive. Thanks to their durable structure,

LÜTZE can guarantee constant electrical and mechanical properties over a service life of more than 25 years. The THERMOFLEX SOLAR range has approvals for Europe, Asia and North America.

LÜTZE also supplies "plug & play solutions" ex stock in completely assembled sets.

Additionally available: Accessories, like UVsteady cable straps as well as issuing and crimping tools.

# Solar Cables

## LÜTZE THERMOFLEX Solar XPE



### Application

- Photovoltaic cable type PV1-F for cabling of solar plants
- Fixed installation and moving application without tensile load
- Suitable for installation in dry and humid rooms, for outdoor use, in direct sun radiation too
- Not suitable for direct burial

### Properties

- LÜTZE THERMOFLEX Solar XPE is halogen free, flame resistant and fire retardant
- No corrosive gases will be released in case of fire, the smoke density is low
- Material of insulation and jacket are excellent resistant to weathering, UV-radiation and abrasion
- The large temperature range enables the use of this cable in extreme climatic environment
- The cable is flexible and designed for high mechanical load
- A product life cycle of 25 years for THERMOFLEX Solar XPE is to be expected
- Insulation and jacket are easily removable
- Widely resistant to Sea water (not verified by TÜV)<sup>1)</sup>, Ozone, acids and bases
- All materials used in the cable are conform to European RoHS-directive
- VDE-approval acc. to German DKE specification for photovoltaic cables, dated 12.02.2008, VDE Reg.-No. 8293
- TÜV-approval acc. to TÜV-Specification 2 PFG 1169/08.2007

### Technical data

Voltage	
U <sub>0</sub> /U	AC 0.6/1 kV, DC 0.9/1.5 kV
Test voltage	
(online testing)	10 kV
Insulation resistance	at 20 °C ≥ 800 MΩ × km
Short-circuit-proof	at 200 °C / 5 s
Hot elongation test	200 °C TÜV 2 PFG 1169 250 °C <sup>1)</sup>
Temperature test	20.000 h at 120 °C
Temperature range	
fixed	-40 °C bis +90 °C TÜV 2PFG 1169
fixed	-50 °C bis +150 °C <sup>1)</sup>
moving	-25 °C bis +125 °C <sup>1)</sup>
Minimum bending radius	
fixed	D × 5
moving	D × 10

### Design

- Tinned stranded conductor according to DIN VDE 0295 class 5 and IEC 60228 class 5
- Outer jacket black. Differentiation of Plus- and Minus the signs "+" and "-" are printed on the jacket
- Additional Types of PV-cables are available on request:  
**Coloured Versions:**  
outer jacket coloured red or blue  
**Duplex version: (without TÜV approval)**  
double core cable, "figure 8", to be separated easily
- **LÜTZE THERMOFLEX Solar XPE UL:**  
Construction acc. to US-standards, listed acc. to UL subject 4703 certified special version for the US market  
technical Data and ordering information on request
- <sup>1)</sup>**Sea Water Resistance, Heat Elongation Test and Temperature Range:** This product properties exceed the requirements of TÜV Specification 2PFG 1169/08.2007. Thus in the TÜV certification testing these parameters were evaluated only to the values specified there.

Part-No.	Number of strands/cross-section	Outer-Ø approx. mm	Weight kg/100 m	Cu-Index kg/100 m
<b>Signs "+"</b>				
103149	1×2,5	4.5	4.0	2.4
103150	1×4	5.2	5.9	3.8
103151	1×6	5.9	8.1	5.8
103152	1×10	6.9	12.7	9.6
103153	1×16	8.3	19.3	15.3
103154	1×25	9.9	28.4	24.0
103155	1×35	11.0	37.8	33.6
<b>Signs "-"</b>				
103159	1×2,5	4.5	4.0	2.4
103160	1×4	5.2	5.9	3.8
103161	1×6	5.9	8.1	5.8
103162	1×10	6.9	12.7	9.6
103163	1×16	8.3	19.3	15.3
103164	1×25	9.9	28.4	24.0
103165	1×35	11.0	37.8	33.6

# Solar Connector · for Photovoltaic Arrays

## Connector – Self-locked Type for Photovoltaic Panel Mounting (Apply to Junction Box) TÜV



Description	Part-No.	Type	PU
<b>Male</b>			
Cable diameter	5.5 – 7.3 mm	199947	LC04 M-9947L
<b>Female</b>			
Cable diameter	5.5 – 7.3 mm	199948	LC04 F-9948L
<b>Technical data</b>			
<b>199947</b>			
Pin dimensions	4 mm		
Cable diameter	5.5 – 7.3 mm		
Gauge	4.0 – 6.0 mm <sup>2</sup> AWG 12 – AWG 10		
Nominal voltage	DC 1000 V		
Rated current	30 A at 70 °C / 25 A at 85 °C		
Test Voltage	AC 6 kV 1 min.		
Contact resistance	<5 mΩ		
<b>General</b>			
Contact material	Tin plated copper		
Housing material	PPO		
Protection class	67 (IEC 60529)		
Temperature range	-40 °C to +90 °C		
Class of flammability according to UL 94	V0		
Approvals	TÜV-Certification 2 PfG 1161/01.06		
<b>Comments</b>			
Y-distributors, string couplers and more types on request!			
All cables and connectors can be supplied in customized assembly on request.			

# Solar Connector · for Photovoltaic Arrays

## Connector – Self-locked Type to MC 4 for Cable Assembling TÜV



Description	Part-No.	Type	PU	
<b>Male</b>				
Cable diameter	5.5 – 7.3 mm	199945	LC04 M-9945L	100
	5.0 – 6.3 mm	199945.1000	LC04 M-9945S	100
<b>Female</b>				
Cable diameter	5.5 – 7.3 mm	199946	LC04 F-9946L	100
	5.0 – 6.3 mm	199946.1000	LC04 F-9946S	100
<b>Technical data</b>				
	<b>199945</b>	<b>199945.1000</b>		
Pin dimensions		4 mm		
Cable diameter	5.5 – 7.3 mm		5.0 – 6.3 mm	
Gauge	4.0 – 6.0 mm <sup>2</sup> AWG 12 – AWG 10		2.5 – 4.0 mm <sup>2</sup> AWG 14 – AWG 12	
Nominal voltage		DC 1000 V		
Rated current		30 A at 70 °C / 25 A at 85 °C		
Test Voltage		AC 6 kV 1 min.		
Contact resistance		<5 mΩ		
<b>General</b>				
Contact material		Tin plated copper		
Housing material		PPO		
Protection class		67 (IEC 60529)		
Temperature range		-40 °C to +90 °C		
Class of flammability according to UL 94		V0		
Approvals		TÜV-Certification: 2 PfG 1161/01.06		
<b>Comments</b>				
Y-distributors, string couplers and more types on request!				
All cables and connectors can be supplied in customized assembly on request.				

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### Cables and Cords

### Cable Assembly

### C-Tracks

### Cable fittings

### Cable conduits

### LSC-Wiring-System

### Module- and Interface Technology

### Ethernet Connectivity

### Suppression Technology

### Power Supplies

### Railway-Technology

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