

Product **FOCUS**

Efficiency in Automation

Cable • Connectivity • Cabinet • Control

90 °C control cables by LÜTZE

Optimization of the LÜTZE
SUPERFLEX® cables



NOW
with
90 °C

The LÜTZE SUPERFLEX® control cables for the highest requirements

LÜTZE optimizes its proven LÜTZE SUPERFLEX® control cables for a reliable temperature range of up to 90 °C. This allows higher power loads without having to change the cable cross-section. The new 90 °C rated cables offer many highlights for numerous applications.



Highlights:

- Higher current range
- Improved reliability
- Improved temperature range of up to 90 °C, thanks to improved insulation and jacket mix
- Corresponding labeling in UL Style
- Thanks to 1000 V UL Style, corresponding parallel installation acc. to NFPA 79 is allowed (applies to product families:
LÜTZE SUPERFLEX® PLUS 4000 PUR and
LÜTZE SUPERFLEX® PLUS 4100 (C) PUR)

LÜTZE SUPERFLEX® PLUS 4000 PUR

Control cables for installation in drag chains with continuous linear motion and high requirements. Thanks to the 1000 V UL-Style, corresponding parallel installation acc. to NFPA 79 is allowed.



Technical Data

Rated voltage UL	1000 V
Test voltage	4000 V
Temperature range moving	-25 °C ... +90 °C
Temperature range fixed	-40 °C ... +90 °C
Minimum bending radius moving	7.5 OD
Minimum bending radius fixed	4 OD
Bending cycles	≥ 10 mill.
Speed	5 m/s
Acceleration	10 m/s ²
Torsion cycles	≥ 1 mill.
Speed torsion	60 °/s
Acceleration torsion	30 °/s

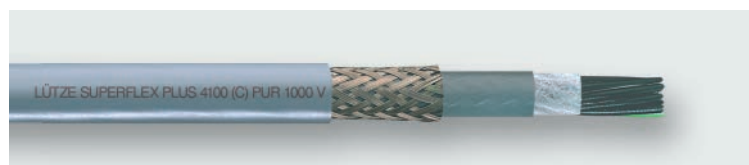
Design

UL Style	AWM 21209
Conductor category	DIN EN 60228, Class 6
Conductor insulation	DIN EN 13602 TPE
Jacket material	PUR

New Part Number	Number of conductors / cross-section	Outer diameter mm	Torsion
113100	2x1.0	6.0	± 60°/m
113101	3G1.0	6.3	± 60°/m
113102	4G1.0	6.9	± 60°/m
113103	5G1.0	7.5	± 60°/m
113104	7G1.0	8.7	± 60°/m
113105	12G1.0	10.3	± 60°/m
113106	18G1.0	11.9	± 60°/m
113107	25G1.0	14.7	± 60°/m
113108	2x1.5	7.0	± 60°/m
113109	3G1.5	7.3	± 60°/m
113110	4G1.5	7.9	± 60°/m
113111	5G1.5	8.6	± 60°/m
113112	7G1.5	10.3	± 60°/m
113113	12G1.5	12.1	± 60°/m
113114	18G1.5	14.1	± 60°/m
113115	25G1.5	17.4	± 60°/m
113117	3G2.5	8.3	± 60°/m
113118	4G2.5	9.1	± 60°/m
113119	5G2.5	10.1	± 60°/m
113120	7G2.5	12.2	± 60°/m
113121	12G2.5	14.0	± 60°/m
111122	18G2.5	17.5	± 60°/m
113123	25G2.5	20.8	± 60°/m

LÜTZE SUPERFLEX® PLUS 4100 (C) PUR

LÜTZE SUPERFLEX® cables for the highest requirements as control, measuring and control cables, especially in harsh environments. The cables can be used for installation in drag chains with continuous linear motion. Thanks to the 1000 V UL Style, corresponding parallel installation acc. to NFPA 79 is allowed.



Technical data

Rated voltage UL	1000 V
Test voltage	4000 V
Temperature range moving	-25 °C ... +90 °C
Temperature range fixed	-40 °C ... +90 °C
Minimum bending radius moving	7.5 OD
Minimum bending radius fixed	5 OD
Bending cycles	≥ 10 mill.
Speed	5 m/s
Acceleration	10 m/s ²
Torsion cycles	≥ 1 mill.
Speed torsion	60 °/s
Acceleration torsion	30 °/s

Design

UL Style	AWM 21209
Conductor category	DIN EN 60228, Class 6
Conductor insulation	DIN EN 13602 TPE
Overall shield	Braided shield Tinned copper wires optical cover approx. 85 % PUR
Jacket material	PUR

New Part Number	Number of conductors / cross-section	Outer diameter mm	Torsion
113211	2x1.0	8.1	± 30°/m
113212	3G1.0	8.4	± 30°/m
113213	4G1.0	8.9	± 30°/m
113214	5G1.0	9.5	± 30°/m
113215	7G1.0	11	± 30°/m
113216	12G1.0	13.2	± 30°/m
113217	18G1.0	15.0	± 30°/m
113218	25G1.0	18.0	± 30°/m
113219	2x1.5	9.0	± 30°/m
113220	3G1.5	9.4	± 30°/m
113221	4G1.5	10.0	± 30°/m
113222	5G1.5	11.0	± 30°/m
113223	7G1.5	13.0	± 30°/m
113224	12G1.5	15.2	± 30°/m
113225	18G1.5	17.4	± 30°/m
113227	25G1.5	21.0	± 30°/m
113228	3G2.5	10.8	± 30°/m
113229	4G2.5	11.9	± 30°/m
113230	5G2.5	12.9	± 30°/m
113231	7G2.5	15.2	± 30°/m
113232	12G2.5	17.7	± 30°/m
113233	18G2.5	20.4	± 30°/m

LÜTZE SUPERFLEX® PLUS 3000 PUR

LÜTZE SUPERFLEX® PUR control cables for the highest requirements in the drag chain for an allowed temperature range up to 90 °C.



Technical Data

Rated voltage U_0/U	300/500 V
Rated voltage UL	300 V
Test voltage	2000 V
Temperature range moving	-25 °C ... +90 °C
Temperature range fixed	-40 °C ... +90 °C
Minimum bending radius moving	7.5 OD
Minimum bending radius fixed	4 OD
Bending cycles	≥ 10 mill.
Speed	5 m/s
Acceleration	10 m/s ²
Torsion cycles	≥ 1 mill.
Speed torsion	60 °/s
Acceleration torsion	30 °/s

Design

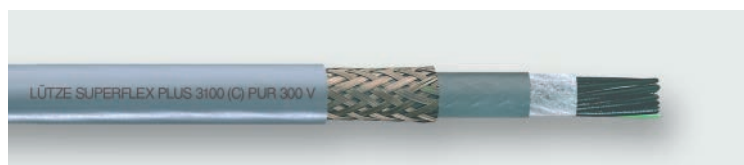
UL Style	AWM 21209
Conductor category	DIN EN 60228, Class 6
	IEC 60228, Class 6
	DIN EN 13602
Conductor insulation	TPE
Jacket material	PUR

New Part Number	Number of conductors / cross-section	Outer diameter mm	Torsion
113032	2x0.5	4.8	± 60°/m
113033	3G0.5	5.0	± 60°/m
113034	4G0.5	5.4	± 60°/m
113035	5G0.5	5.8	± 60°/m
113036	7G0.5	6.7	± 60°/m
113037	12G0.5	8.0	± 60°/m
113038	18G0.5	9.3	± 60°/m
113039	25G0.5	11.0	± 60°/m
113040	2x0.75	5.2	± 60°/m
113041	3x0.75	5.5	± 60°/m
113042	3G0.75	5.5	± 60°/m
113043	4G0.75	5.9	± 60°/m
113044	5G0.75	6.4	± 60°/m
113045	7G0.75	7.5	± 60°/m
113046	12G0.75	9.0	± 60°/m
113047	18G0.75	10.5	± 60°/m
113048	25G0.75	12.4	± 60°/m
113049	2x1.0	5.6	± 60°/m
113050	3G1.0	5.9	± 60°/m
113051	4G1.0	6.4	± 60°/m
113052	5G1.0	7.0	± 60°/m
113053	7G1.0	8.2	± 60°/m
113054	12G1.0	9.8	± 60°/m
113055	18G1.0	11.4	± 60°/m
113056	25G1.0	13.6	± 60°/m

In case of special application requirements, e.g. drag chain compatible or torsion-capable cables, please contact us. The LÜTZE Cable expert team will be happy to help!

LÜTZE SUPERFLEX® PLUS 3100 (C) PUR

LÜTZE SUPERFLEX® control cables for the highest requirements for installation in drag chains. The shielded cables should be used in applications where electrical interference fields can influence the signal transmission.



Technical Data

Rated voltage U_0/U	300/500 V
Rated voltage UL	300 V
Test voltage	3000 V
Temperature range moving	-25 °C ... +90 °C
Temperature range fixed	-40 °C ... +90 °C
Minimum bending radius moving	7.5 OD
Minimum bending radius fixed	5 OD
Bending cycles	≥ 10 mill.
Speed	5 m/s
Acceleration	10 m/s ²
Torsion cycles	≥ 1 mill.
Speed torsion	60 °/s
Acceleration torsion	30 °/s

Design

UL Style	AWM 21209
Conductor category	DIN EN 60228, Class 6
	IEC 60228, Class 6
	DIN EN 13602
Conductor insulation	TPE
Overall shield	Braided shield Tinned copper wires optical cover approx. 85 %
Jacket material	PUR

New Part Number	Number of conductors / cross-section	Outer diameter mm	Torsion
113070	3G0.5	6.6	± 30°/m
113071	4G0.5	7	± 30°/m
113072	5G0.5	7.5	± 30°/m
113073	7G0.5	8.3	± 30°/m
113074	12G0.5	9.7	± 30°/m
113075	18G0.5	11	± 30°/m
113076	25G0.5	13.1	± 30°/m
113077	2×0.75	6.9	± 30°/m
113079	3G0.75	7.3	± 30°/m
113078	3×0.75	7.3	± 30°/m
113080	4×0.75	7.8	± 30°/m
113081	4G0.75	7.8	± 30°/m
113082	5G0.75	8.3	± 30°/m
113083	7G0.75	9.4	± 30°/m
113084	12G0.75	11.3	± 30°/m
113085	18G0.75	13	± 30°/m
113086	25G0.75	14.9	± 30°/m
113087	3G1.0	7.8	± 30°/m
113088	4G1.0	8.3	± 30°/m
113089	5G1.0	9	± 30°/m
113090	7G1.0	10.2	± 30°/m
113091	12G1.0	12.1	± 30°/m
113092	18G1.0	13.7	± 30°/m
113093	25G1.0	16	± 30°/m

Sustainable answers and solutions!

As part of the *SkyBLUE* sustainability initiative, LÜTZE develops and markets highly sustainable and innovative solutions.



Sustainability at LÜTZE:
<http://www.luetze.de/skyblue>

Specifically, the new **LÜTZE SUPERFLEX® cables** offer benefits that make a positive contribution to sustainability. On the one hand, the use of **qualitatively improved materials** with the same cable cross-section allows a higher current carrying capacity, and on the other hand, these cables can be used thanks to the **updated UL approvals** for 90 °C application according to US standards of NEC and NFPA. **NFPA 79** stands for 'National Fire Protection Association' and is the equivalent to the European Norm EN 60204-1.

The new **LÜTZE SUPERFLEX® cables** also offer economic benefits. Depending on the specified current range, customers now have the option to use **cables with smaller cross-section** their applications. This reduces material input costs and also **saves space** in the drag chain or allows the use of a smaller drag chain.

Ampacity per NFPA 79 (2018 Edition)

Conductor Size (AWG)	Ampacity			Percent (%)
	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)	
30	—	0.5	0.5	
28	—	0.8	0.8	
26	—	1	1	
24	2	2	2	
22	3	3	3	
20	5	5	5	
18	7	7	14	100
16	10	10	18	80
14	20	20	25	25
12	25	25	30	20
10	30	35	40	14.2
8	40	50	55	10
6	55	65	75	15.4
4	70	85	95	11.7
3	85	100	110	15
2	95	115	130	13
1	110	130	150	
1/0	125	150	170	
2/0	145	175	195	

As shown in the **example**, the effect is particularly noticeable between 1 and 2.5 mm² that corresponds to the AWG equivalents AWG18 - AWG14.

As the material now allows 90 °C instead of the 75 °C defined in the NFPA 79, it is possible to increase the **power load capacity by 100 %** from 7 to 14 A, e.g. when using AWG18 conductor size. This example clearly shows that the higher temperature range allows higher currents to be transmitted.

Other products by **LÜTZE**



Connectivity for Industry 4.0

Distributing ever larger quantities of data to the correct units in shorter and shorter times places huge demands on the cable and connection equipment. LÜTZE offers a proven program for safe connections.

Ethernet Cat. 6A



490174



490151



490209



492076



192766.XXXX
available in
various lengths



192017.XXXX
available in
various length

Profinet



490177



490178



492075



192015.XXXX
available in
various length



490212



490214

New Ethernet cables for PROFINET



104110



104050



104401



For information about our
Connectivity and Cable products,
please see our **online catalogue**



**Network solutions for
Industrial Ethernet**

Cable Solutions

High flexing cables for industrial applications

Connectivity Solutions

Industrial Ethernet, assembled cables, Actuator Sensor Interface, connectors and suppression technology

Cabinet Solutions

AirSTREAM complete system for thermally optimized and space-saving cabinet wiring

Control Solutions

Industrial Power Supplies and electronic current control for Industrial Internet of Things. Infrastructure for industrial networks, signal converter, relays and modular electronics housing

Transportation Solutions

Solutions for the demanding Railway Sector, for example control technology, Interface solutions and signalling and passenger information systems

Germany

Friedrich Lütze GmbH
Postfach 12 24 (PLZ 71366)
Bruckwiesenstraße 17-19
D-71384 Weinstadt
Tel.: +49 71 51 60 53-0
Fax: +49 71 51 60 53-277(-288)
info@luetze.de

USA

LUTZE Inc.
13330 South Ridge Drive
Charlotte, NC 28273
Tel.: +1 704 504-0222
Fax: +1 704 504-0223
info@luetze.com

United Kingdom

LÜTZE Ltd.
Unit 3 Sandy Hill Park
Sandy Way, Amington
Tamworth, Staffs, B77 4DU
Tel.: +44 1827 313330
Fax: +44 1827 313332
sales.gb@luetze.co.uk

Austria

LÜTZE Elektrotechnische
Erzeugnisse Ges.m.b.H.
office@luetze.at

Switzerland

LÜTZE AG
info@luetze.ch

France

LUTZE SASU
lutze@luetze.fr

Spain

LUTZE, S.L.
info@luetze.es

China

Luetze Trading (Shanghai) Co.Ltd.
info@luetze.cn



RoHS

www.luetze.com

Protected trademarks and trade names are not always labelled as such in this publication. This does not mean they are free names as defined in the trademark and brand mark law. Publication does not imply that the descriptions or pictures used are free from rights of third parties.

