



■ USA Cable Solutions

LUTZE

Flexible Cable and Wire Management for Industrial Automation

Control Cable
Electronic Cable
Actuator Sensor Cable
BUS and Network Cable
Motor Supply, VFD, Servo and Feedback Cable
Wire and Cable Management
Network Connectivity



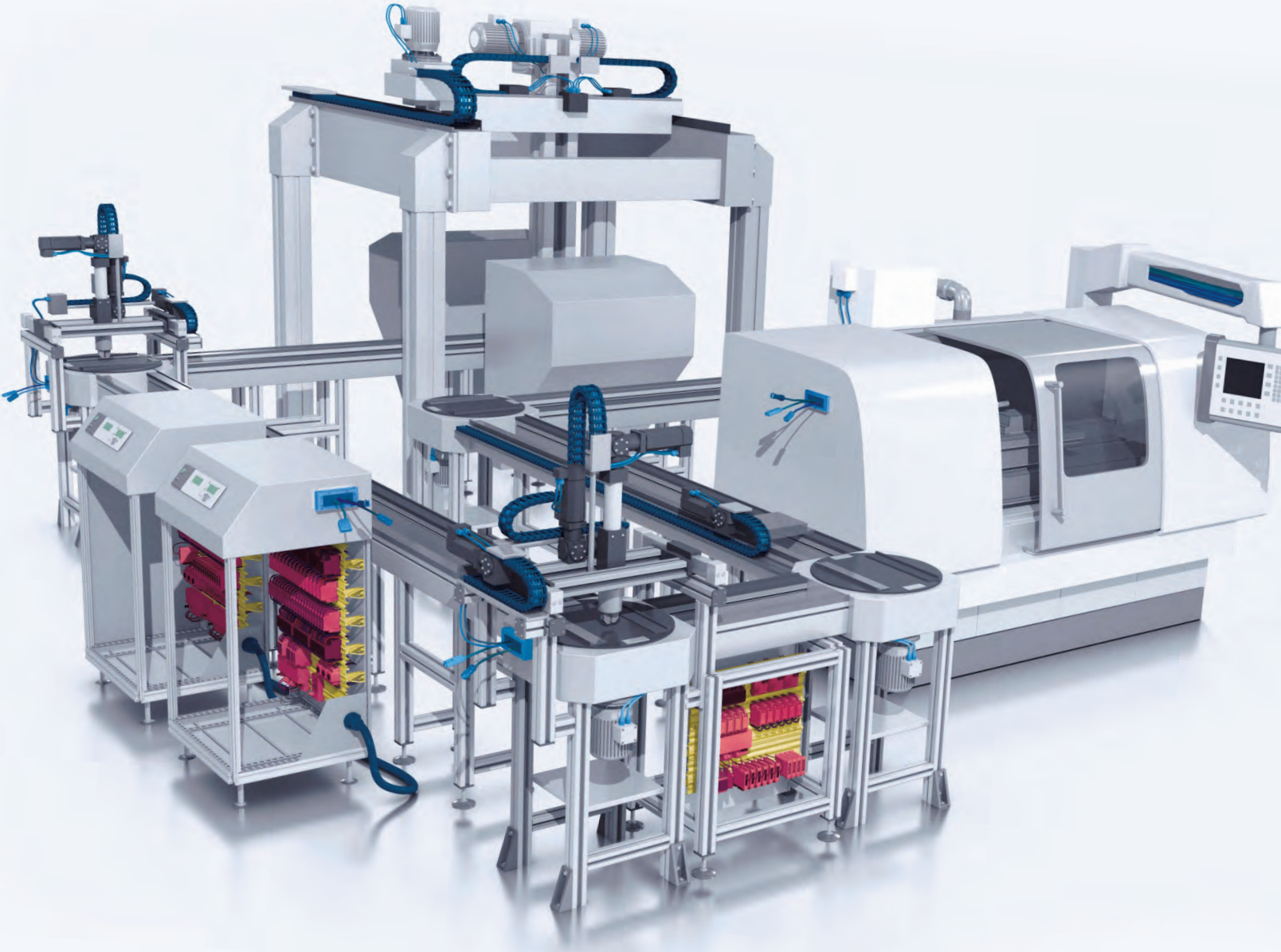
DESINA

RoHS

- **UL approvals**
- **NFPA 79 compliant cables**
- **Accepted by the Automotive Industry**
- **Suitable for the North American market**
- **Standard size reels available**
- **We cut cable to any length compliant with “UL processed wire respooled” procedure**
- **No minimum length required for standard items**
- **Low minimum order**
- **Our goal is “On time-All the time”**

Efficiency in Automation

Cable • Connectivity • Cabinet • Control



 Cable and Connectivity Installation Solutions

 Cabinet Solutions


 Control Solutions

Table of Contents



Chapter 1: Control Cable

LÜTZE SILFLEX® - Stationary and Flexible Applications

PVC Unshielded , Control TC-ER A308	6
PVC Shielded , Control TC-ER A309	8
PVC Unshielded , TC-ER A322	9
TPE Unshielded , Premium Tray and Machine Tool Cable, TC-ER A332	10
TPE Shielded , Premium Tray and Machine Tool Cable, TC-ER A331	11
PVC Unshielded , TC-ER with Blue Conductors A325	12
PVC Unshielded , Control 108XXXA.....	13
PVC Single Conductor, Multi-Norm	14
<u>LÜTZE SUPERFLEX® - Continuous Moving and High Flexing Applications</u>	
PVC Unshielded , Control A138.....	16
PVC Shielded , Control A139	17
PUR Unshielded , Control.....	18
PUR Shielded , Control	19



Chapter 2: Electronic Cable

LÜTZE SILFLEX® - Stationary and Flexible Applications

PVC Unshielded , Electronic PLTC A303.....	21
PVC Shielded , Electronic PLTC A313.....	22
PVC Shielded , Electronic TP PLTC A314	23
<u>LÜTZE SUPERFLEX® - Continuous Moving and High Flexing Applications</u>	
PUR Unshielded , Electronic.....	24
PUR Shielded , Electronic.....	25
PUR Shielded , Electronic, TP	26



Chapter 3: Actuator Sensor Cable

LÜTZE SUPERFLEX® - Continuous Moving and High Flexing Applications

PUR Unshielded , Tronic AS.....	28
PUR Shielded , Tronic AS.....	29

Table of Contents



Chapter 4: BUS and Network Cable

TPE Unshielded, Stationary and Flexible ASI BUS	31
PVC Shielded, Stationary and Flexible Profibus	32
PUR Shielded, High Flexing Profibus	33
PVC Shielded, Stationary and Flexible CAN-BUS	34
PUR Shielded, High Flexing CAN-BUS.....	35
PVC Shielded, Stationary and Flexible DeviceNet	36
PUR Shielded, High Flexing DeviceNet	37
PVC Shielded, Stationary and Flexible ETHERNET	38
PUR Shielded, High Flexing ETHERNET	39



Chapter 5: Motor Supply, VFD, Servo and Feedback Cable

LÜTZE SILFLEX® - Stationary and Flexible Applications

TPE Unshielded, Premium Tray and Machine Tool Cable, TC-ER A332	41
PVC Shielded, Motor Cable, TC-ER A116 & Composite Motor Cable, TC-ER A117 .	42
PVC Shielded, DRIVEFLEX® XLPE VFD, A216.....	43
PVC Shielded, DRIVEFLEX® XLPE VFD Servo I Motor Cable, A217	44
PVC Shielded, DRIVEFLEX® XLPE VFD, Servo II Motor Cable, A218	45
PVC Shielded, DRIVEFLEX® XLPE VFD 3 Symmetrical Grounds 1kV, A220	46
PVC Shielded, DRIVEFLEX® XLPE Control TP, A244	47
TPE Shielded, Motor Cable for Allen-Bradley® 2090 and other Systems, A316/A317	48
TPE Shielded, Feedback Cable for Allen-Bradley® and other Systems, A141.....	49

LÜTZE SUPERFLEX® - Continuous Moving and High Flexing Applications

PUR Unshielded, 0.6/1kV Motor Cable	50
PUR Shielded, 0.6/1kV Motor Cable	51
PUR Shielded, 0.6/1kV Composite Motor Cable, One Control Pair	52
PUR Shielded, 0.6/1kV Composite Motor Cable, Two Control Pairs	53
PUR Unshielded, 0.6/1kV Single Conductor Motor Cable	54
PUR Shielded, 0.6/1kV Single Conductor Motor Cable	55
PUR Shielded, Feedback Cable for Bosch-Rexroth® and other Systems	56
PUR Shielded, Feedback Cable for Allen Bradley® and other Systems	57
PUR Shielded, Feedback Cable for Siemens and other Systems	58
PUR Shielded, Feedback Resolver Cable for various Systems	59

Table of Contents



Chapter 6: Wire and Cable Management

Plastic Cable Fittings

NPT Fittings FPNPT	61
PG Fittings FPPG	62
Metric Fittings FPM	63
Locknuts NPT, PG and Metric LPNPT, LPPG, LPM	64
Metric and PG Reducer	65
PG Enlarger	66

Metal Cable Fittings

NPT Fittings FMNPT	67
PG Fittings FMPG	68
Metric Fittings FMM	69
Metric Fittings EMC	70
Metric Fittings EMC2, Quick Installation FMM, FMNPT	71
Locknuts PG, Metric and EMC Metric LMPG, LMM	72
PG and Metric Reducer	73
Metric to NPT Adapters AMM	74

Specialty Fittings & Accessories

Multihole Insert TPE PG, Metric, NPT	75
EMC rails with shield termination and strain relief	76
Cablefix Vario	78
Cablefix	80



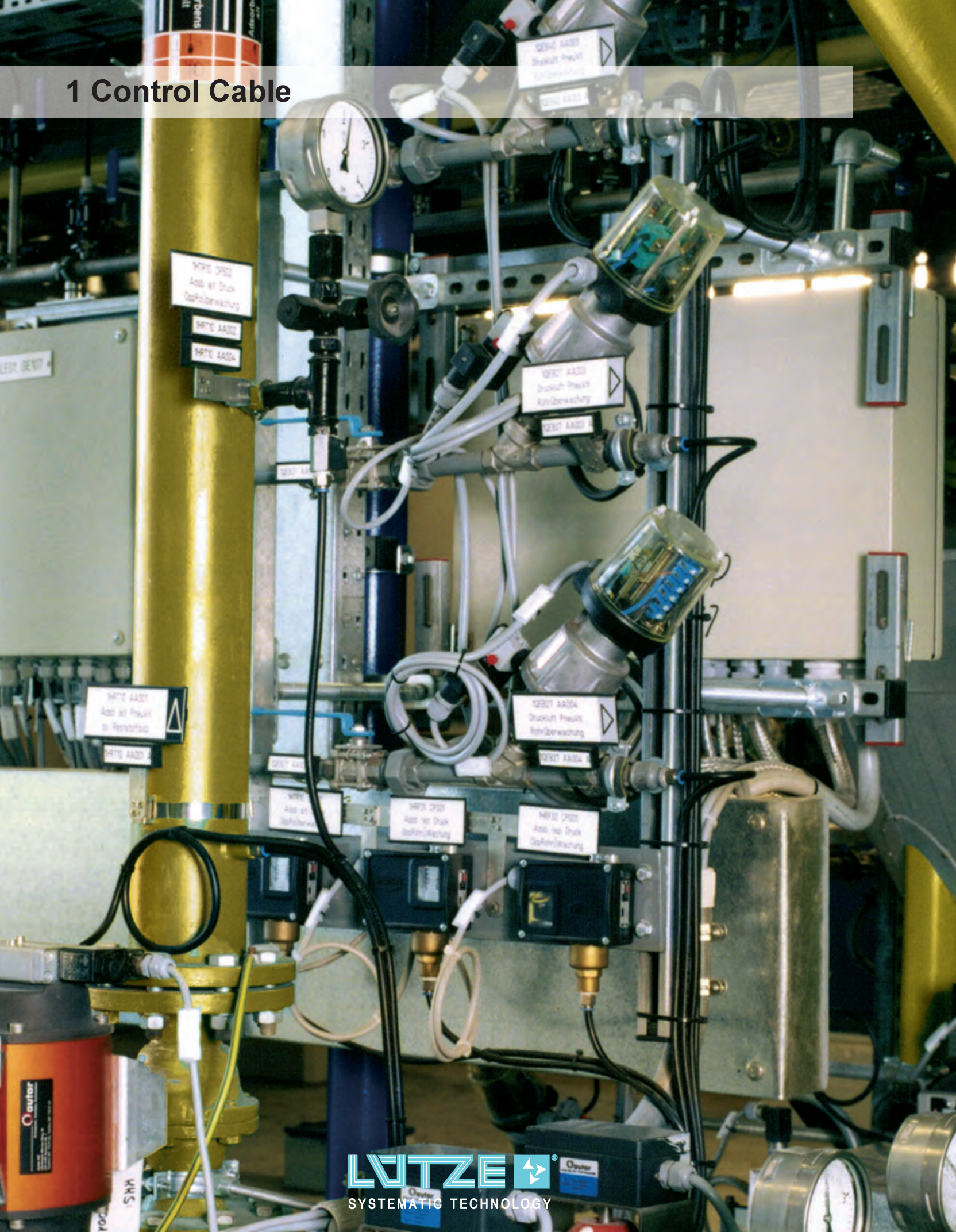
Chapter 7: Network Connectivity Products

USB 3.0 SuperSpeed Panel Connector	82
RJ45 Panel Pass Through	82
RJ45 IDC Industrial Connector	83
M12 / RJ45 Panel Pass Through	83

Chapter 8: Technical Overview.....84

Part Number Index..... 111

1 Control Cable



LÜTZE SILFLEX® Control Cable PVC, Unshielded

Flexible Control and Tray Cable with UL/TC-ER/WTTC/ITC-ER/PLTC-ER/MTW/CE Approvals



Application

- Multi-conductor cable for tray and control applications, with **exposed run** (open wiring) approval
- Machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- Compliant with **NFPA 79** requirements
- TC-ER for use on machines and in cable trays without conduit, which can reduce material and labor costs (AWG 18 and larger)
- WTTC – wind turbine tray cable rating for use in wind power generation (AWG 18 and larger)
- PLTC-ER – power limited tray cable exposed run
- ITC-ER – instrumentation tray cable
- Dry, damp or wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated jacket for oil resistance
- Gray jacket for control cable applications
- Non-wicking fillers
- Sunlight resistant
- Direct burial (AWG 18 and larger)
- Talc and Silicone free

Technical Data

Voltage	AWG 20 600V UL MTW 300V PLTC-ER
	AWG 18 and larger 600V UL TC-ER/MTW 1000V WTTC
Temperature	-40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground *2C no ground included
Oil resistance	Oil Res II
Approvals	UL/AWM/CE AWM Style 20886 (UL) Type MTW or DP-1 Class 1 Div. 2 per NEC Art. 336, 392, 501 C(UL) TC and CIC FT4 UL 1277 RoHS REACH
AWG specific approvals	AWG 20: PLTC-ER and ITC-ER AWG 18 to AWG 12: TC-ER and WTTC PLTC-ER and ITC-ER *2C TC only AWG 10 and larger: TC-ER and WTTC

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Oil resistant PVC jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 20 (10/30)					
A3082003	AWG20/03C	6.8	0.268	41	9
A3082004	AWG20/04C	7.3	0.287	49	13
A3082005	AWG20/05C	7.9	0.313	57	16
A3082007	AWG20/07C	8.5	0.335	70	22
A3082012	AWG20/12C	10.8	0.426	110	38
A3082018	AWG20/18C	12.5	0.492	152	56
A3082025	AWG20/25C	17.1	0.672	229	79
AWG 18 (19/30)					
A3081802	AWG18/02C*	7.0	0.276	46	12
A3081803	AWG18/03C	7.5	0.296	54	18
A3081804	AWG18/04C	8.1	0.320	65	24
A3081805	AWG18/05C	8.8	0.346	82	30
A3081807	AWG18/07C	9.5	0.373	102	42
A3081809	AWG18/09C	10.8	0.425	128	54
A3081812	AWG18/12C	12.1	0.477	157	72
A3081818	AWG18/18C	14.9	0.587	240	108
A3081825	AWG18/25C	17.2	0.677	314	151
A3081834	AWG18/34C	18.9	0.744	404	205
A3081841	AWG18/41C	22.8	0.896	520	248
A3081850	AWG18/50C	23.1	0.910	630	302
AWG 16 (26/30)					
A3081602	AWG16/02C*	7.7	0.305	53	16
A3081603	AWG16/03C	8.2	0.321	66	24
A3081604	AWG16/04C	8.7	0.347	77	32
A3081605	AWG16/05C	9.5	0.377	98	40
A3081607	AWG16/07C	10.2	0.406	122	57
A3081609	AWG16/09C	12.0	0.473	159	73
A3081612	AWG16/12C	13.4	0.527	196	98
A3081618	AWG16/18C	16.4	0.647	294	147
A3081625	AWG16/25C	19.0	0.748	391	204
A3081634	AWG16/34C	22.3	0.876	541	278
A3081641	AWG16/41C	25.0	0.983	670	335
AWG 14 (41/30)					
A3081403	AWG14/03C	8.8	0.348	87	38
A3081404	AWG14/04C	9.6	0.378	108	51
A3081405	AWG14/05C	10.4	0.410	125	64
A3081407	AWG14/07C	11.3	0.445	164	89
A3081409	AWG14/09C	13.1	0.516	213	115
A3081412	AWG14/12C	15.5	0.610	283	154
A3081418	AWG14/18C	18.2	0.715	404	231
A3081425	AWG14/25C	20.9	0.825	537	321

LÜTZE SILFLEX® Control Cable PVC, Unshielded

Flexible Control and Tray Cable with UL/TC-ER/WTTC/ITC-ER/PLTC-ER/MTW/CE Approvals



Application

- Multi-conductor cable for tray and control applications, with **exposed run** (open wiring) approval
- Machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- Compliant with **NFPA 79** requirements
- TC-ER for use on machines and in cable trays without conduit, which can reduce material and labor costs (AWG 18 and larger)
- WTTC – wind turbine tray cable rating for use in wind power generation (AWG 18 and larger)
- PLTC-ER – power limited tray cable exposed run
- ITC-ER – instrumentation tray cable
- Dry, damp or wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated jacket for oil resistance
- Gray jacket for control cable applications
- Non-wicking fillers
- Sunlight resistant
- Direct burial (AWG 18 and larger)
- Talc and Silicone free

Technical Data

Voltage	AWG 20 600V UL MTW 300V PLTC-ER
Temperature	AWG 18 and larger 600V UL TC-ER/MTW 1000V WTTC -40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground *2C no ground included
Oil resistance	Oil Res II
Approvals	UL/AWM/CE AWM Style 20886 (UL) Type MTW or DP-1 Class 1 Div. 2 per NEC Art. 336, 392, 501 C(UL) TC and CIC FT4 UL 1277 RoHS REACH
AWG specific approvals	AWG 20: PLTC-ER and ITC-ER AWG 18 to AWG 12: TC-ER and WTTC PLTC-ER and ITC-ER *2C TC only AWG 10 and larger: TC-ER and WTTC

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Oil resistant PVC jacket
- Gray jacket, similar RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 12 (65/30)					
A3081203	3	9.8	0.382	122	63
A3081204	4	11.1	0.437	150	84
A3081205	5	12.1	0.475	183	105
A3081207	7	14.1	0.556	255	147
AWG 10 (105/30)					
A3081004	4	14.6	0.573	239	130
A3081005	5	15.8	0.623	288	162
AWG 8 (168/30)					
A3080804	4	18.9	0.744	398	214
AWG 6 (266/30)					
A3080604	4	20.8	0.820	535	339
AWG 4 (413/30)					
A3080404	4	27.2	1.070	927	514
AWG 2 (665/30)					
A3080204	4	31.1	1.225	1352	874

LÜTZE SILFLEX® Control Cable (C) PVC, Shielded

Flexible Control and Tray Cable

with UL/TC-ER/WTTC/ITC-ER/PLTC-ER/MTW/CE Approvals



Application

- Multi-conductor cable for tray and control applications, with **exposed run** (open wiring) approval
- Machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- Compliant with **NFPA 79** requirements
- TC-ER for use on machines and in cable trays without conduit, which can reduce material and labor costs (AWG 18 and larger)
- WTTC – wind turbine tray cable rating for use in wind power generation (AWG 18 and larger)
- PLTC-ER – power limited tray cable exposed run
- ITC-ER – instrumentation tray cable
- Dry, damp or wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated jacket for oil resistance
- Gray jacket for control cable applications
- Non-wicking fillers
- Sunlight resistant
- Direct burial (AWG 18 and larger)
- Talc and Silicone free

Technical Data

Voltage	AWG 20 600V UL MTW 300V PLTC-ER AWG 18 and larger 600V UL TC-ER/MTW 1000V WTTC
Temperature	-40°C - +90°C static
Bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground *2C no ground included
Oil resistance	Oil Res II
Approvals	UL/AWM/CE AWM Style 20886 (UL) Type MTW or DP-1 Class 1 Div. 2 per NEC Art. 336, 392, 501 C(UL) TC and CIC FT4 UL 1277 RoHS REACH
AWG specific approvals	AWG 20 PLTC-ER and ITC-ER AWG 18 to AWG 12 TC-ER and WTTC PLTC-ER and ITC-ER *2C TC only AWG 10 and larger TC-ER and WTTC

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 20 (10/30)					
A3092003	AWG20/03C	7.5	0.295	56	20
A3092004	AWG20/04C	8.0	0.315	65	25
A3092005	AWG20/05C	8.5	0.336	74	28
A3092007	AWG20/07C	9.1	0.360	92	36
A3092012	AWG20/12C	11.4	0.450	131	56
A3092018	AWG20/18C	13.2	0.520	181	78
A3092025	AWG20/25C	15.7	0.620	246	102
AWG 18 (19/30)					
A3091802	AWG18/02C*	7.7	0.305	61	23
A3091803	AWG18/03C	8.1	0.320	71	30
A3091804	AWG18/04C	8.8	0.345	86	36
A3091805	AWG18/05C	9.3	0.368	100	44
A3091807	AWG18/07C	10.0	0.395	121	58
A3091812	AWG18/12C	12.7	0.500	180	91
A3091818	AWG18/18C	15.5	0.609	268	131
A3091825	AWG18/25C	17.6	0.692	342	177
AWG 16 (26/30)					
A3091603	AWG16/03C	8.7	0.343	87	39
A3091604	AWG16/04C	9.4	0.370	102	48
A3091605	AWG16/05C	10.1	0.398	119	58
A3091607	AWG16/07C	10.9	0.430	145	75
A3091612	AWG16/12C	14.6	0.575	239	121
A3091618	AWG16/18C	16.9	0.664	327	174
A3091625	AWG16/25C	19.6	0.757	423	233
AWG 14 (41/30)					
A3091403	AWG14/03C	9.5	0.375	110	57
A3091404	AWG14/04C	10.3	0.405	133	72
A3091405	AWG14/05C	11.2	0.440	154	85
A3091407	AWG14/07C	12.1	0.475	194	113
A3091412	AWG14/12C	16.3	0.640	316	182
AWG 12 (65/30)					
A3091203	AWG12/03C	10.8	0.425	150	89
A3091204	AWG12/04C	11.7	0.460	182	110
AWG 10 (105/30)					
A3091004	AWG10/04C	15.2	0.600	284	169

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Shielded with foil tape, tinned copper braid and drain wire
- Oil resistant PVC jacket, gray RAL 7001

LÜTZE SILFLEX® Tray-ER PVC, Unshielded

Flexible Tray Cable with UL/TC-ER/WTTC/MTW/CE Approvals



Application

- Multi-conductor cable for tray applications, with **exposed run** (open wiring) approval
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- Machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp and wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated jacket for oil resistance
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V WTTC
Temperature	-40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground *no ground included
Oil resistance	Oil Res II
Approvals	UL Type TC-ER UL/CE UL AWM (UL) Type MTW or DP-1 WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL1277 RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Oil resistant PVC jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (19/30)					
A3221803	AWG18/03C	7.5	0.296	54	18
A3221804	AWG18/04C	8.1	0.320	65	24
A3221805	AWG18/05C	8.8	0.346	82	30
A3221807	AWG18/07C	9.5	0.373	102	42
A3221812	AWG18/12C	12.1	0.477	157	72
A3221818	AWG18/18C	14.9	0.587	240	108
A3221825	AWG18/25C	17.2	0.677	314	151
AWG 16 (26/30)					
A3221603	AWG16/03C	8.1	0.321	66	24
A3221604	AWG16/04C	8.7	0.347	77	32
A3221605	AWG16/05C	9.5	0.377	98	40
A3221607	AWG16/07C	10.2	0.406	122	57
A3221612	AWG16/12C	13.4	0.527	196	98
A3221618	AWG16/18C	16.4	0.647	294	147
A3221625	AWG16/25C	19.0	0.748	391	204
AWG 14 (41/30)					
A3221403	AWG14/03C	8.8	0.348	87	38
A3221404	AWG14/04C	9.6	0.378	108	51
A3221405	AWG14/05C	10.4	0.410	125	64
A3221407	AWG14/07C	11.3	0.445	164	89
AWG 12 (65/30)					
A3221204	AWG12/04C	11.1	0.437	150	84
AWG 10 (105/30)					
A3221004	AWG10/04C	14.6	0.573	239	130

LÜTZE SILFLEX® Tray-ER TPE, Unshielded

Flexible Premium TPE Tray Cable with UL/TC-ER/WTTC/MTW/CE Approvals



Application

- Multi-conductor cable for tray applications, with **exposed run** (open wiring) approval
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- Metal cutting equipment, machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp and wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated TPE jacket for superior oil resistance
- Cutting oil resistant - mineral & bio/vegetable based oils *specifically tested with plant based cutting oil*
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 90C 600V UL MTW 90C 1000V WTTC 90C
Temperature	600V UL AWM 105C -40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground *2C no ground included
Oil resistance	Oil Res I and Oil Res II
Approvals	UL Type TC-ER *2C UL Type TC UL/CE UL AWM (UL) Type MTW or DP-1 WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL1277 RoHS REACH UL509 BUS Drop (4C & 5C only)

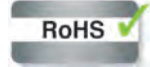
Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Extremely oil resistant TPE jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (16/30)					
A3321803	AWG18/03C	7.2	0.284	56	15
A3321804	AWG18/04C	7.6	0.300	67	21
A3321805	AWG18/05C	8.4	0.331	79	25
A3321807	AWG18/07C	9.1	0.356	95	35
A3321812	AWG18/12C	11.6	0.456	148	60
A3321818	AWG18/18C	14.2	0.558	217	90
A3321825	AWG18/25C	16.1	0.634	288	129
AWG 16 (26/30)					
A3321602	AWG16/02C*	7.5	0.296	59	17
A3321603	AWG16/03C	7.9	0.312	72	25
A3321604	AWG16/04C	8.4	0.331	85	33
A3321605	AWG16/05C	9.3	0.365	100	41
A3321607	AWG16/07C	10.0	0.395	125	58
A3321612	AWG16/12C	13.7	0.540	214	100
A3321618	AWG16/18C	15.8	0.623	300	150
A3321625	AWG16/25C	18.1	0.711	396	208
AWG 14 (41/30)					
A3321403	AWG14/03C	8.6	0.340	92	39
A3321404	AWG14/04C	9.4	0.368	108	52
A3321405	AWG14/05C	10.0	0.395	127	65
A3321407	AWG14/07C	11.0	0.434	167	92
A3321412	AWG14/12C	15.0	0.589	287	158
AWG 12 (65/30)					
A3321203	AWG12/03C	9.8	0.385	119	62
A3321204	AWG12/04C	10.5	0.413	146	83
A3321205	AWG12/05C	11.6	0.457	182	104
A3321207	AWG12/07C	12.6	0.497	238	145
AWG 10 (105/30)					
A3321003	AWG10/03C	11.7	0.461	178	100
A3321004	AWG10/04C	12.7	0.498	221	134
A3321005	AWG10/05C	14.8	0.582	285	167
AWG 8 (168/30)					
A3320804	AWG8/04C	18.1	0.711	392	214
AWG 6 (266/30)					
A3320604	AWG6/04C	20.1	0.790	552	339
AWG 4 (413/30)					
A3320404	AWG4/4C	26.3	1.033	910	516
AWG 2 (665/30)					
A3320204	AWG2/04C	30.8	1.214	1,391	883
1/0 (1064/30)					
A3321/004	1/0/4C	36.4	1.435	1,871	1,338
2/0 (1330/30)					
A3322/004	2/0/4C	39.2	1.544	2,257	1,685
3/0 (1665/30)					
A3323/004	3/0/4C	45.6	1.794	2,982	2,156
4/0 (2109/30)					
A3324/004	4/0/4C	48.3	1.903	3,549	2,676

LÜTZE SILFLEX® (C) Tray-ER TPE, Shielded

Flexible Shielded Premium TPE Tray Cable with UL/TC-ER/WTTC/MTW/CE Approvals



Application

- Shielded multi-conductor cable for tray applications, with **exposed run** (open wiring) approval
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- Metal cutting equipment, machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp and wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated TPE jacket for superior oil resistance
- Cutting oil resistant - mineral & bio/vegetable based oils *specifically tested with plant based cutting oil*
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 90C
	600V UL MTW 90C
	1000V WTTC 90C
Temperature	600V UL AWM 105C
	-40°C - +90°C static
Bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res I and Oil Res II
Approvals	UL Type TC-ER
	UL/CE
	UL AWM
	(UL) Type MTW or DP-1
	WTTC
	Class 1, Div. 2 per NEC
	Art. 336, 392, 501
	C(UL) TC
	CIC FT4
	UL1277
RoHS	
REACH	

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Shielded with foil tape, tinned copper braid and drain wire
- Extremely oil resistant TPE jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (16/30)					
A3311803	AWG18/03C	7.8	0.307	76	27
A3311804	AWG18/04C	8.2	0.323	87	36
A3311805	AWG18/05C	9.0	0.354	99	42
A3311807	AWG18/07C	9.6	0.379	116	54
A3311812	AWG18/12C	12.2	0.479	176	85
A3311818	AWG18/18C	14.9	0.588	264	127
A3311825	AWG18/25C	17.3	0.681	368	194
AWG 16 (26/30)					
A3311603	AWG16/03C	8.5	0.335	92	41
A3311604	AWG16/04C	9.0	0.354	106	51
A3311605	AWG16/05C	9.9	0.389	121	61
A3311607	AWG16/07C	10.6	0.418	149	80
A3311612	AWG16/12C	14.5	0.569	254	134
A3311618	AWG16/18C	16.6	0.655	353	191
A3311625	AWG16/25C	18.8	0.740	462	256
AWG 14 (41/30)					
A3311403	AWG14/03C	9.2	0.363	113	59
A3311404	AWG14/04C	9.9	0.391	133	74
A3311405	AWG14/05C	10.6	0.418	154	89
A3311407	AWG14/07C	11.6	0.457	200	117
A3311412	AWG14/12C	15.8	0.620	339	201
AWG 12 (65/30)					
A3311203	AWG12/03C	10.4	0.409	148	88
A3311204	AWG12/04C	11.1	0.437	179	111
A3311205	AWG12/05C	12.2	0.480	216	134
AWG 10 (105/30)					
A3311004	AWG10/04C	14.4	0.565	291	178

LÜTZE SILFLEX® Tray-ER Blue PVC, Unshielded

Flexible Control and Tray Cable with UL/TC-ER/MTW/CE Approvals, Blue Conductors for 24V Applications



Application

- Multi-conductor cable for tray applications, with **exposed run** (open wiring) approval
- Machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- **Automotive** applications with 24 Volt
- MTW rating as required per **NFPA 79** for machine tool wiring
- TC-ER for use on machines and in cable trays without conduit
- Dry, damp and wet conditions

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated jacket for oil resistance
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 600V UL AWM
Temperature	-40°C - +90°C static
Bending radius	4 x cable OD
Conductor marking	Blue with white numbers; and one green/yellow ground; No. 2 is white with a blue stripe * only two blue with white numbers and one green/yellow ground, no white with a blue stripe
Oil resistance	Oil Res I
Approvals	UL Type TC-ER UL/CE UL AWM (UL) Type MTW or DP-1 Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) CIC TC, FT4 UL1277 RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Oil resistant PVC jacket
- Gray jacket similar RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (19/30)					
A3251803	AWG18/3C*	7.3	0.288	47	18
A3251805	AWG18/5C	8.6	0.337	69	30
A3251807	AWG18/7C	9.4	0.370	89	42
A3251812	AWG18/12C	12.0	0.474	143	72
A3251819	AWG18/19C	14.9	0.588	219	108
A3251825	AWG18/25C	17.4	0.686	295	150
A3251837	AWG18/37C	19.9	0.782	410	223
AWG 16 (26/30)					
A3251603	AWG16/3C*	7.9	0.312	58	25
A3251604	AWG16/4C	8.7	0.341	72	33
A3251605	AWG16/5C	9.2	0.364	91	41
A3251607	AWG16/7C	10.1	0.398	116	57
A3251612	AWG16/12C	13.9	0.547	194	98
A3251619	AWG16/19C	16.2	0.638	271	155
A3251625	AWG16/25C	18.9	0.746	379	204
AWG 14 (41/30)					
A3251403	AWG14/3C	8.9	0.352	82	39
A3251404	AWG14/4C	9.8	0.384	103	52
AWG 12 (65/30)					
A3251204	AWG12/4C	10.9	0.428	137	85

LÜTZE SILFLEX® N PVC, Unshielded

Flexible Control Cable with UL/CSA/CE Approvals



Application

- Multi-conductor control cable for machine and plant construction, HVAC technology, assembly and production lines, and many other industrial applications
- Easy strip design specially suited for cable assemblies

Characteristics

- Most flexible design without Nylon for easy stripping and easy installation
- Easy routing and bending due to flexibility
- Specially formulated gray PVC jacket for oil resistance
- Resistant to mineral oils, coolants and solvents
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	600V UL AWM
Temperature	-40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground; *2C no ground included
Burning behavior	Flame retardant per UL-VW-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 2587 CSA AWM, I/II A/B FT4 CE RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC insulation
- Oil resistant PVC jacket
- Gray jacket similar RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 20 (10/30)					
108349A	AWG20/02C*	5.7	0.226	27	6.5
108350A	AWG20/03C	6.0	0.235	31	10
108351A	AWG20/04C	6.5	0.255	38	12
108352A	AWG20/05C	7.2	0.282	46	16
108353A	AWG20/07C	8.8	0.345	65	22
108354A	AWG20/12C	10.8	0.424	103	38
108355A	AWG20/18C	12.8	0.505	153	56
108356A	AWG20/25C	15.0	0.592	206	88
AWG 18 (16/30)					
108401A	AWG18/02C*	6.5	0.254	34	10
108357A	AWG18/03C	6.7	0.263	41	15
108358A	AWG18/04C	7.2	0.285	51	20
108359A	AWG18/05C	7.7	0.305	63	25
108360A	AWG18/07C	9.1	0.360	82	35
108392A	AWG18/09C	11.7	0.460	119	45
108361A	AWG18/12C	12.0	0.473	142	60
108362A	AWG18/18C	13.8	0.543	198	90
108363A	AWG18/25C	16.0	0.630	263	125
AWG 16 (26/30)					
108391A	AWG16/02C*	6.9	0.270	41	16
108372A	AWG16/03	7.4	0.290	55	24
108373A	AWG16/04	8.0	0.316	69	32
108374A	AWG16/05	8.7	0.341	84	40
108375A	AWG16/07	10.3	0.406	112	57
108393A	AWG16/09	13.0	0.511	159	73
108376A	AWG16/12	13.8	0.543	198	97
108377A	AWG16/18	15.5	0.610	274	147
108378A	AWG16/25	18.0	0.708	366	204
AWG 14 (41/30)					
108380A	AWG14/03	8.9	0.352	82	38
108381A	AWG14/04	9.8	0.384	103	51
108382A	AWG14/05	10.9	0.430	130	63
108383A	AWG14/07	13.4	0.529	183	89
108384A	AWG14/12	16.9	0.666	307	153
108385A	AWG14/18	19.7	0.774	433	230
108386A	AWG14/25	23.7	0.935	598	320

LUTZE Single Conductor Hook Up Wire, Multi-Norm

Flexible Single Conductor Hook Up Wire with UL/CSA/CE/MTW and HAR Approvals



Application

- Multi-rated single-conductor cable for wiring of cabinets and use in electrical and electronic equipment
- Specially suited for use in Europe (HAR) and North America (UL MTW + CSA TEW)
- MTW rating compliant with **NFPA 79** for machine tool wiring

Characteristics

- Fine stranding class 5, per VDE 0295
- Very flexible for easy installation
- Talc and Silicone free

Technical Data

Nominal voltage	H05V2-K 300/500V, H07V2-K 450/750V, UL 600V, style 1015
Test voltage	3000V
Bending radius	Fixed: 5 x cable OD
Temperature	Flexible -5°C - +105°C Fixed -40°C - +105°C H05/H07 up to +90°C
Conductor stranding	Fine wire, tinned copper per VDE 0295 class 5, IEC 60228 class 5
Insulation resistance	20MΩ x km
Burning behavior	Flame retardant per UL VW-1, IEC 60332-1
Approvals	HAR: HD 21.3 S3 - H05V-K (≤ AWG 18) - H07V-K (≥ AWG 16) UL 1063 MTW Listed UL AWM 1015 CSA TEW RoHS REACH
Put ups	AWG 19 – AWG 12 100m (328 ft) carton or ring 500m (1,640 ft) reel upon request AWG 10 and larger Cuts of any length up to 1,000m (3,280ft) reel

Construction

- Metric conductor
- Flexible stranded tinned copper conductors
- PVC insulation according to UL 1581, class 43 heat and humidity resistant
- Conditionally resistant to oils, solvents, acids and bases

Part No.	Description Color	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 19 / 0.75 mm²					
H05V2-K					
A61900	Green/Yellow	2.7	0.106	9	5
A61901	Black	2.7	0.106	9	5
A61902	Blue	2.7	0.106	9	5
A61903	Brown	2.7	0.106	9	5
A61904	Red	2.7	0.106	9	5
A61914	Dark Blue	2.7	0.106	9	5
AWG 18 / 1.0 mm²					
H05V2-K					
A61800	Green/Yellow	2.9	0.114	10	6
A61801	Black	2.9	0.114	10	6
A61802	Blue	2.9	0.114	10	6
A61803	Brown	2.9	0.114	10	6
A61804	Red	2.9	0.114	10	6
A61814	Dark Blue	2.9	0.114	10	6
A61844	White/Blue	2.9	0.114	10	6
AWG 16 / 1.5 mm²					
H07V2-K					
A61600	Green/Yellow	3.3	0.130	14	10
A61601	Black	3.3	0.130	14	10
A61602	Blue	3.3	0.130	14	10
A61603	Brown	3.3	0.130	14	10
A61604	Red	3.3	0.130	14	10
A61605	White	3.3	0.130	14	10
A61614	Dark Blue	3.3	0.130	14	10
A61615	Blue/White	3.3	0.130	14	10
A61644	White/Blue	3.3	0.130	14	10
AWG 14 / 2.5 mm²					
H07V2-K					
A61400	Green/Yellow	3.7	0.145	21	16
A61401	Black	3.7	0.145	21	16
A61402	Blue	3.7	0.145	21	16
A61403	Brown	3.7	0.145	21	16
A61404	Red	3.7	0.145	21	16
A61405	White	3.7	0.145	21	16
A61414	Dark Blue	3.7	0.145	21	16
AWG 12 / 4.0 mm²					
H07V2-K					
A61200	Green/Yellow	4.3	0.169	31	25
A61201	Black	4.3	0.169	31	25
AWG 10/ 6.0 mm²					
H07V2-K					
A61000	Green/Yellow	4.8	0.189	44	39
A61001	Black	4.8	0.189	44	39
AWG 8 / 10 mm²					
H07V2-K					
A60800	Green/Yellow	6.8	0.267	76	64
A60801	Black	6.8	0.267	76	64

More colors and sizes upon request. Please call us for information!

LUTZE Single Conductor Hook Up Wire, Multi-Norm

Flexible Single Conductor Hook Up Wire with UL/CSA/CE/MTW and HAR Approvals



Application

- Multi-rated single-conductor cable for wiring of cabinets and use in electrical and electronic equipment
- Specially suited for use in Europe (HAR) and North America (UL MTW + CSA TEW)
- MTW rating compliant with **NFPA 79** for machine tool wiring

Characteristics

- Fine stranding class 5, per VDE 0295
- Very flexible for easy installation
- MTW rated
- Talc and Silicone free

Technical Data

Nominal voltage	H05V2-K 300/500 V, H07V2-K 450/750 V, UL 600V, style 1015
Test voltage	3000V
Bending radius	Fixed: 5 x cable OD
Temperature	Flexible -5°C - +105°C Fixed -40°C - + 105°C H05/H07 up to +90°C
Conductor stranding	Fine wire, tinned copper per VDE 0295 class 5, IEC 60228 class 5
Insulation resistance	20MΩ x km
Burning behavior	Flame retardant per UL VW-1, IEC 60332-1
Approvals	HAR: HD 21.3 S3 - H05V-K (≤ AWG 18) - H07V-K (≥ AWG 16) UL 1063 MTW Listed UL AWM 1015 CSA TEW RoHS REACH
Put ups	AWG 19 – AWG 12 100m (328 ft) carton or ring 500m (1,640 ft) reel upon request AWG 10 and larger Cuts of any length up to 1,000m (3,280ft) reel

Part No.	Description Color	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 6 / 16 mm² X07V2-K					
A60600	Green/Yellow	8.6	0.338	126	103
A60601	Black	8.6	0.338	126	103
AWG 4 / 25 mm² H07V2-K					
A60400	Green/Yellow	10.0	0.394	180	161
A60401	Black	10.0	0.394	180	161
AWG 2 / 35 mm² H07V2-K					
A60200	Green/Yellow	11.0	0.433	247	225
A60201	Black	11.0	0.433	247	225
AWG 1 / 50 mm² X07V2-K					
A60100	Green/Yellow	14.0	0.551	347	322
A60101	Black	14.0	0.551	347	322
AWG 2/0 / 70 mm² X07V2-K					
A67000	Green/Yellow	15.6	0.614	475	452
A67001	Black	15.6	0.614	475	452
AWG 3/0 / 95 mm² X07V2-K					
A69500	Green/Yellow	17.8	0.701	629	613
A69501	Black	17.8	0.701	629	613

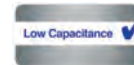
Construction

- Metric conductor
- Flexible stranded tinned copper conductors
- PVC insulation according to UL 1581, class 43 heat and humidity resistant
- Conditionally resistant to oils, solvents, acids and bases

More colors and sizes upon request. Please call us for information!

LÜTZE SUPERFLEX® N PVC, Unshielded

High Flexing Control Cable with UL/CE Approvals



Application

- Suitable for control, monitoring and instrumentation applications with continuous flexing cycles
- For flexing applications such as C-tracks and other applications where linear flexing occurs
- Compatible with all major brand C-tracks
- High performance linear flexing cable, compliant with **NFPA 79, 2012 Edition** Article 12.9 special cables and conductors

Characteristics

- Extremely small cable ODs due to special **TPE High Glide Insulation** compliant with UL
- TPE/PVC combination for high performance flexing and longer cable runs
- Very flexible with superfine stranding
- Specially formulated PVC jacket per UL Class 43
- Non-wicking fillers
- Abrasion, high wear and tear resistance
- Hydrolysis, microbe and decompose resistant
- UV resistant per EN ISO 4892-2-A
- Dry and wet conditions
- Talc and Silicone free

Technical Data

Voltage	600V UL AWM
Test voltage	3000V
Insulation resistance	Min 100 MΩ x km
Temperature	Moving -5°C - +80°C Fixed -40°C - +80°C
Minimum Bending radius	Moving 7.5 x cable OD Fixed 4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Burning behavior	Flame retardant per UL VW-1, DIN EN 50265-2-1
Oil resistance	4D100C, UL Oil res 80°C and DIN EN 60811-2-1
Approvals	cUL AWM Styles 10429/20207 CSA AWM I/II AB 80C 600V FT1, CE RoHS REACH

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 20 / 0.5 mm²					
A1382003	3G0.5	5.7	0.224	30	10
A1382004	4G0.5	6.1	0.240	36	13
A1382005	5G0.5	6.7	0.264	42	16
A1382007	7G0.5	7.7	0.303	53	23
A1382012	12G0.5	9.3	0.366	78	39
A1382018	18G0.5	10.7	0.421	109	59
A1382025	25G0.5	12.5	0.492	146	82

AWG 18 / 1.0 mm²					
A1381803	3G1.0	6.6	0.260	44	20
A1381804	4G1.0	7.2	0.283	54	27
A1381805	5G1.0	7.8	0.307	64	33
A1381807	7G1.0	9.1	0.358	83	46
A1381812	12G1.0	10.8	0.425	127	80
A1381818	18G1.0	12.7	0.500	179	120
A1381825	25G1.0	15.1	0.594	243	166
A1381834	34G1.0	17.8	0.701	318	226
A1381841	41G1.0	19.0	0.750	325	274
A1381850	50G1.0	21.3	0.839	332	335

AWG 16 / 1.5 mm²					
A1381603	3G1.5	7.2	0.283	58	30
A1381604	4G1.5	7.8	0.307	71	40
A1381605	5G1.5	8.6	0.339	84	49
A1381607	7G1.5	10.1	0.398	111	69
A1381612	12G1.5	12.4	0.488	173	119
A1381618	18G1.5	14.5	0.571	246	178
A1381625	25G1.5	16.8	0.661	336	231

AWG 14 / 2.5 mm²					
A1381404	4G2.5	9.1	0.358	107	65
A1381405	5G2.5	10.0	0.394	127	82
A1381407	7G2.5	12.1	0.476	170	115

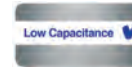
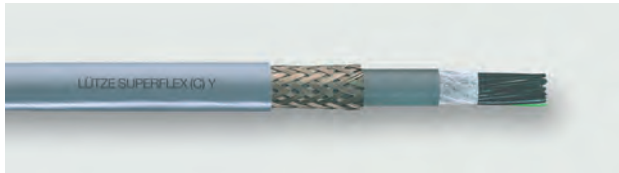
AWG 12 / 4 mm²					
A1381204	4G4	10.7	0.421	154	105
A1381207	7G4	14.0	0.551	253	183

Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Optimized construction for flexing applications
- Conductors cabled with fleece wrap
- Special high strength PVC Jacket per UL class 43 / VDE 0207 TM5, oil resistant
- Gray jacket RAL 7001

LÜTZE SUPERFLEX® N (C) PVC, Shielded

High Flexing Control Cable with UL/CE Approvals



Application

- Braid shielded, multi-conductor high flexing cable suitable for control, monitoring and instrumentation applications with continuous flexing in C-track
- Machine tools, gantry robots, conveyors and other continuous motion applications in industrial environments
- For flexing applications such as C-tracks and other applications where linear flexing occurs
- Compatible with all major brand C-tracks
- High performance linear flexing cable, compliant with **NFPA 79, 2012 Edition** Article 12.9 special cables and conductors

Characteristics

- Extremely small cable ODs due to special **TPE High Glide Insulation** compliant with UL
- Sub-Jacket for increased flex life in high performance flexing and long cable runs
- Very flexible with superfine stranding
- Specially formulated PVC jacket per UL Class 43
- Non-wicking fillers
- Abrasion, high wear and tear resistance
- Hydrolysis, microbe and decompose resistant
- UV resistant per EN ISO 4892-2-A
- Dry and wet conditions
- Talc and Silicone free

Technical Data

Voltage	600V UL AWM
Test voltage	3000V
Insulation resistance	Min 100MΩ x km
Temperature	Moving -5°C - +80°C Fixed -40°C - +80°C
Minimum Bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Burning behavior	Flame retardant per UL VW-1, DIN EN 50265-2-1 CSA FT1
Oil resistance	4D100C, UL Oil res 80°C and DIN EN 60811-2-1
Approvals	cUL AWM Styles 10429/2570 CSA AWM I/II A/B 80C 600V RoHS REACH

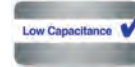
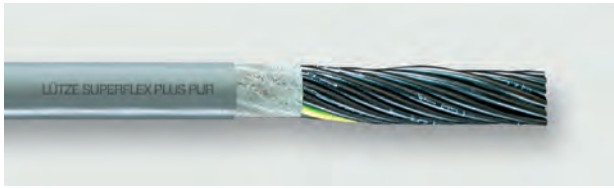
Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Optimized construction for flexing applications
- Conductors cabled with fleece wrap
- PVC Sub-Jacket
- Tinned copper braid shield
- Special high strength PVC Jacket per UL class 43 / VDE 0207 TM5, oil resistant
- Gray Jacket RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 20 / 0.5 mm²					
A1392003	(3G0.5)	7.4	0.292	54	21
A1392004	(4G0.5)	7.8	0.307	60	25
A1392005	(5G0.5)	8.5	0.333	71	29
A1392007	(7G0.5)	9.7	0.382	94	43
A1392012	(12G0.5)	11.3	0.444	129	64
A1392018	(18G0.5)	13.1	0.516	176	93
A1392025	(25G0.5)	15.1	0.593	202	119
AWG 18 / 1.0 mm²					
A1391803	(3G1.0)	8.2	0.323	71	32
A1391804	(4G1.0)	8.8	0.347	83	40
A1391805	(5G1.0)	9.6	0.378	103	54
A1391807	(7G1.0)	11	0.431	133	70
A1391812	(12G1.0)	13	0.512	189	110
A1391818	(18G1.0)	14.9	0.587	260	161
A1391825	(25G1.0)	17.6	0.691	318	224
A1391834	(34G1.0)	19.4	0.765	399	291
AWG 16 / 1.5 mm²					
A1391603	(3G1.5)	8.8	0.346	88	44
A1391604	(4G1.5)	9.6	0.378	109	60
A1391605	(5G1.5)	10.4	0.411	128	72
A1391607	(7G1.5)	11.9	0.469	165	95
A1391612	(12G1.5)	14.1	0.556	239	151
A1391618	(18G1.5)	16.2	0.638	336	224
A1391625	(25G1.5)	19.4	0.764	431	312
AWG 14 / 2.5 mm²					
A1391404	(4G2.5)	11	0.433	155	90
A1391405	(5G2.5)	11.9	0.469	179	109
A1391407	(7G2.5)	13.6	0.537	216	143
AWG 12 / 4 mm²					
A1391204	(4G4)	12.6	0.496	214	135

LÜTZE SUPERFLEX® Plus N PUR, Unshielded

High Flexing Control Cable with UL/CE Approvals



Application

- Multi-conductor cable for robots, handling equipment, machine tools, C-tracks and applications with extremely rough operating conditions
- For the most demanding flexing applications such as C-tracks and linear flexing
- Compatible with all major brand C-tracks
- High performance linear flexing cable, compliant with **NFPA 79, 2012 Edition** Article 12.9 special cables and conductors

Characteristics

- Superfine stranding per Class 6 for continuous moving applications
- Extremely small cable ODs due to special **TPE High Glide Insulation** compliant with UL
- Reduced friction
- PUR jacket
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- Dry and wet conditions
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	300/600V UL AWM
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum Bending radius	Moving 7.5 x cable OD Fixed 4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground; *no ground included
Isolation resistance	Min 100MΩ x km
Burning behavior	Flame retardant per DIN EN 50265-2-1 IEC 60332-1 UL VW-1 Flame test CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Optimized construction for flexing applications
- Conductors cabled with fleece wrap
- Extremely oil resistant PUR jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	--	------------------	------------------	-------------------	-------------------

300V UL AWM Style 20233

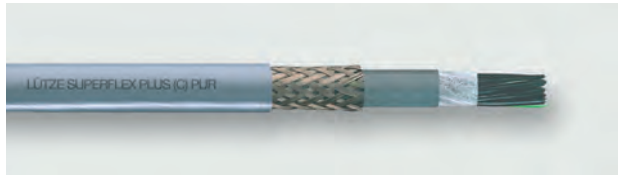
AWG 20 / 0.5 mm ²					
113431	2x0.5	4.8	0.189	19	7
113441	3G0.5	4.9	0.193	24	10
113442	4G0.5	5.4	0.213	28	13
113443	5G0.5	5.8	0.228	32	16
113444	7G0.5	6.6	0.260	43	23
113446	12G0.5	8.0	0.315	65	40
113438	18G0.5	9.3	0.366	91	59
113447	25G0.5	11.0	0.433	122	82
AWG 18 / 1.0 mm ²					
113484	2x1.0	5.8	0.288	31.5	13
113400	3G1.0	6.1	0.240	33.5	20
113433	4G1.0	6.6	0.260	48.2	27
113401	5G1.0	7.2	0.283	57.0	34
113402	7G1.0	8.7	0.343	77.1	46
113403	12G1.0	10.1	0.398	120.6	80
113404	18G1.0	11.6	0.457	180.9	119
113405	25G1.0	14.1	0.555	227.1	166

600V UL AWM Style 20234

AWG 18 / 1.0 mm ²					
113570	2x1.0	7.0	0.276	40	13
113571	3G1.0	7.4	0.291	48	20
113572	4G1.0	7.9	0.311	57	27
113573	5G1.0	8.5	0.335	68	34
113574	7G1.0	9.9	0.390	89	46
113575	12G1.0	11.9	0.469	135	80
113576	18G1.0	13.6	0.535	189	120
113577	25G1.0	16.3	0.642	255	167
AWG 16 / 1.5 mm ²					
113485	2x1.5	7.2	0.283	52	19
113406	3G1.5	8.0	0.315	62	30
113412	4G1.5	8.7	0.343	76	40
113407	5G1.5	9.5	0.374	89	50
113408	7G1.5	11.1	0.437	118	69
113409	12G1.5	13.2	0.520	180	118
113410	18G1.5	15.0	0.591	255	178
113411	25G1.5	18.4	0.724	346	247
AWG 14 / 2.5 mm ²					
113483	3G2.5	9.2	0.362	89	49
113415	4G2.5	9.9	0.390	109	66
113416	5G2.5	10.9	0.429	130	82
113417	7G2.5	12.6	0.496	174	114
113426	12G2.5	15.1	0.594	271	192
113479	18G2.5	17.6	0.693	388	294

LÜTZE SUPERFLEX® Plus N (C) PUR, Shielded

High Flexing Control Cable with UL/CE Approvals



Application

- Multi-conductor cable for robots, handling equipment, machine tools, C-tracks and applications with extremely rough operating conditions
- For the most demanding flexing applications such as C-tracks and linear flexing
- Compatible with all major brand C-tracks
- High performance linear flexing cable, compliant with **NFPA 79, 2012 Edition** Article 12.9 special cables and conductors

Characteristics

- Superfine stranding per Class 6 for continuous moving applications
- Extremely small cable ODs due to special **TPE High Glide Insulation** compliant with UL
- Reduced friction
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- Dry and wet conditions
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	300/600V UL AWM
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Isolation resistance	Min 100MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2-1 IEC 60332-1, UL VW-1 Flame test, CSA FT1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Optimized construction for flexing applications
- Conductors cabled with fleece wrap
- TPE subjacket for long flex life
- Tinned copper braid shield
- Extremely oil resistant PUR jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	--	------------------	------------------	-------------------	-------------------

300V UL AWM Style 20233

AWG 20 / 0.5 mm ^c					
113300	(3G0.5)	6.6	0.260	38	18
113347	(4G0.5)	7.0	0.276	43	22
113301	(5G0.5)	7.5	0.295	49	26
113302	(7G0.5)	8.3	0.327	61	34
113303	(12G0.5)	9.7	0.382	86	53
113304	(18G0.5)	11.0	0.433	120	80
113305	(25G0.5)	12.0	0.472	157	107

AWG 18 / 1.0 mm ²					
113312	(3G1.0)	7.8	0.307	61.1	30
113324	(4G1.0)	8.3	0.327	71.2	38
113313	(5G1.0)	8.9	0.350	82.0	46
113314	(7G1.0)	10.1	0.398	104.8	61
113315	(12G1.0)	11.5	0.453	161.3	103
113316	(18G1.0)	13.1	0.516	217.7	147
113317	(25G1.0)	15.8	0.622	295.7	204

600V UL AWM Style 20234

AWG 18 / 1.0 mm ²					
113360	(3G1.0)	8.7	0.382	69	32
113361	(4G1.0)	9.3	0.366	80	39
113362	(5G1.0)	9.9	0.390	92	47
113363	(7G1.0)	11.4	0.449	123	68
113364	(12G1.0)	13.3	0.524	175	106
113365	(18G1.0)	15.1	0.594	235	151
113366	(25G1.0)	17.9	0.705	329	223

AWG 16 / 1.5 mm ²					
113318	(3G1.5)	9.7	0.382	84	42
113331	(4G1.5)	10.5	0.413	99	58
113319	(5G1.5)	11.3	0.445	120	70
113320	(7G1.5)	12.9	0.508	153	93
113321	(12G1.5)	15.1	0.594	222	147
113322	(18G1.5)	17.2	0.677	308	217
113323	(25G1.5)	19.7	0.776	425	310

AWG 14 / 2.5 mm ²					
113341	(3G2.5)	10.6	0.417	113	64
113332	(4G2.5)	11.9	0.469	142	86
113339	(5G2.5)	12.6	0.496	165	105
113340	(7G2.5)	14.8	0.583	214	142
113344	(12G2.5)	16.7	0.657	325	236
113342	(18G2.5)	19.4	0.764	466	356

2 Electronic Cable



LUTZE Electronic PLTC PVC, Unshielded

Flexible Electronic Cable with UL/CE/PLTC Approvals



Application

- Industrial grade PLTC electronic cable for machine tools, process instrumentation and controls, computer peripherals, HVAC technology, assembly and production lines, low voltage interconnect and other industrial applications including **installation in cable trays**

Characteristics

- Flexible for easy installation
- Easy strip design
- Color coded conductors
- Specially formulated jacket for oil resistance
- Premium durability
- Extended temperature range
- **UL listed** and **NFPA 79** compliant
- Talc and Silicone free

Technical Data

Voltage	300V
Temperature	-25°C - +105°C
Minimum bending radius	4 x cable OD
Conductor marking	See tables
Burning behavior	Flame retardant per UL VW-1, CSA FT4
Oil resistance	Oil Res II
Approvals	UL Type PLTC UL Type CM AWM Style 2464 AWM II A/B CE Meets NEC 725, 760, 800 Class I Div. 2 (PLTC use only) RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors
- SR-PVC insulation
- Oil resistant premium PVC jacket
- Gray jacket similar to RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 22 (19/34)					
A3032202	AWG22/2C	4.4	0.172	17	4
A3032203	AWG22/3C	4.6	0.180	21	7
A3032204	AWG22/4C	4.9	0.193	26	9
A3032206	AWG22/6C	5.7	0.223	33	14
A3032208	AWG22/8C	6.2	0.243	42	19
A3032210	AWG22/10C	7.2	0.282	53	24
A3032215	AWG22/15C	8.1	0.318	70	35
A3032220	AWG22/20C	9.0	0.353	90	47
A3032225	AWG22/25C	10.3	0.407	117	59
AWG 20 (19/32)					
A3032002	AWG20/2C	5.0	0.195	21	7
A3032003	AWG20/3C	5.2	0.204	27	11
A3032004	AWG20/4C	5.6	0.220	33	15
A3032006	AWG20/6C	6.5	0.254	45	22
A3032008	AWG20/8C	7.2	0.282	58	30
A3032010	AWG20/10C	8.2	0.323	72	37
A3032015	AWG20/15C	9.2	0.364	99	56
A3032020	AWG20/20C	10.7	0.420	134	75
A3032025	AWG20/25C	11.7	0.461	163	94
AWG 18 (19/30)					
A3031802	AWG18/2C	5.4	0.213	27	12
A3031803	AWG18/3C	5.7	0.223	35	18
A3031804	AWG18/4C	6.1	0.242	43	24
A3031806	AWG18/6C	7.4	0.291	63	36
A3031808	AWG18/8C	7.9	0.312	79	49
A3031810	AWG18/10C	9.1	0.359	97	61
A3031815	AWG18/15C	10.8	0.427	145	91
A3031820	AWG18/20C	11.9	0.468	185	121
A3031825	AWG18/25C	13.1	0.515	226	152

Color Code Table AWG 22

1- BK	13- WH/RD
2- BN	14- WH/OG
3- RD	15- WH/YE
4- OG	16- WH/GN
5- YE	17- WH/BU
6- GN	18- WH/VT
7- BU	19- WH/GY
8- VT	20- WH/BK/BN
9- GY	21- WH/BK/RD
10- WH	22- WH/BK/OG
11- WH/BK	23- WH/BK/YE
12- WH/BN	24- WH/BK/GN
	25- WH/BK/BU

Color Code Table AWG 20 & 18

1- BK	13- RD/GN
2- RD	14- RD/YE
3- WH	15- RD/BK
4- GN	16- WH/BK
5- OG	17- WH/RD
6- BU	18- WH/GN
7- BN	19- WH/YE
8- YE	20- WH/BU
9- VT	21- WH/BN
10- GY	22- WH/OG
11- PK	23- WH/GY
12- TN	24- WH/VT
	25- WH/BK/RD

LUTZE Electronic (C) PLTC PVC, Shielded

Flexible Electronic Cable with UL/CE/PLTC Approvals



Application

- **Double shielded industrial grade PLTC** electronic cable for machine tools, process instrumentation and controls, computer peripherals, HVAC technology, assembly and production lines, low voltage interconnect and other industrial applications including **installation in cable trays**

Characteristics

- Flexible for easy installation
- Easy strip design
- Color coded conductors
- Specially formulated jacket for oil resistance
- Premium durability
- Extended temperature range
- **UL listed** and **NFPA 79** compliant
- Talc and Silicone free

Technical Data

Voltage	300V
Temperature	-25°C - +105°C
Minimum bending radius	6 x cable OD
Conductor marking	See tables
Burning behavior	Flame retardant per UL VW-1, CSA FT4
Oil resistance	Oil Res II
Approvals	UL Type PLTC UL Type CM AWM Style 2464 AWM II A/B CE Meets NEC 725, 760, 800 Class I Div. 2 (PLTC use only) RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors
- Shielded with foil tape, tinned copper braid and full sized drain wire
- SR-PVC insulation
- Oil resistant premium PVC jacket
- Gray jacket similar to RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 22 (19/34)					
A3132202	AWG22/2C	5.0	0.197	27	11
A3132203	AWG22/3C	5.2	0.205	32	15
A3132204	AWG22/4C	5.5	0.218	37	18
A3132206	AWG22/6C	6.3	0.247	47	24
A3132208	AWG22/8C	6.7	0.263	55	30
A3132210	AWG22/10C	7.7	0.303	67	36
A3132215	AWG22/15C	8.6	0.338	88	50
A3132220	AWG22/20C	9.4	0.369	109	62
A3132225	AWG22/25C	10.7	0.423	137	77
AWG 20 (19/32)					
A3132002	AWG20/2C	5.6	0.221	35	17
A3132003	AWG20/3C	5.8	0.230	42	22
A3132004	AWG20/4C	6.2	0.246	48	27
A3132006	AWG20/6C	7.2	0.284	64	37
A3132008	AWG20/8C	7.7	0.302	76	46
A3132010	AWG20/10C	8.7	0.343	91	55
A3132015	AWG20/15C	10.3	0.404	128	76
A3132020	AWG20/20C	10.9	0.430	157	97
A3132025	AWG20/25C	12.2	0.581	189	118
AWG 18 (19/30)					
A3131802	AWG18/2C	5.9	0.233	44	27
A3131803	AWG18/3C	6.2	0.243	53	34
A3131804	AWG18/4C	6.7	0.262	62	41
A3131806	AWG18/6C	7.9	0.311	85	55
A3131808	AWG18/8C	8.4	0.332	102	68
A3131810	AWG18/10C	9.6	0.379	123	83
A3131815	AWG18/15C	11.4	0.447	175	117
A3131820	AWG18/20C	12.4	0.488	217	150
A3131825	AWG18/25C	13.6	0.535	260	182

Color Code Table AWG 22

1- BK	13- WH/RD
2- BN	14- WH/OG
3- RD	15- WH/YE
4- OG	16- WH/GN
5- YE	17- WH/BU
6- GN	18- WH/VT
7- BU	19- WH/GY
8- VT	20- WH/BK/BN
9- GY	21- WH/BK/RD
10- WH	22- WH/BK/OG
11- WH/BK	23- WH/BK/YE
12- WH/BN	24- WH/BK/GN
	25- WH/BK/BU

Color Code Table AWG 20 & 18

1- BK	13- RD/GN
2- RD	14- RD/YE
3- WH	15- RD/BK
4- GN	16- WH/BK
5- OG	17- WH/RD
6- BU	18- WH/GN
7- BN	19- WH/YE
8- YE	20- WH/BU
9- VT	21- WH/BN
10 GY	22- WH/OG
11- PK	23- WH/GY
12- TN	24- WH/VT
	25- WH/BK/RD

LUTZE Electronic (C) PLTC PVC TP, Shielded

Flexible Electronic Cable with Twisted Pairs and UL/CE/PLTC Approvals



Application

- **Double shielded industrial grade PLTC** electronic cable for machine tools, process instrumentation and controls, computer peripherals, HVAC technology, assembly and production lines, low voltage interconnect and other industrial applications including **installation in cable trays**

Characteristics

- Flexible for easy installation
- Easy strip design
- Color coded conductors
- Conductors twisted in pairs
- Specially formulated jacket for oil resistance
- Premium durability
- Extended temperature range
- **UL listed** and **NFPA 79** compliant
- Talc and Silicone free

Technical Data

Voltage	300V
Temperature	-25°C - +105°C
Minimum bending radius	6 x cable OD
Conductor marking	See table
Burning behavior	Flame retardant per UL VW-1, CSA FT4
Oil resistance	Oil Res II
Approvals	UL Type PLTC UL Type CM AWM Style 2464 AWM II A/B CE Meets NEC 725, 760, 800 Class I Div. 2 (PLTC use only) RoHS REACH

Part No.	Description No. of pairs	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 22 (19/34)					
A3142202	AWG22/1TP	5.0	0.197	27	12
A3142204	AWG22/2TP	6.6	0.261	42	21
A3142206	AWG22/3TP	6.9	0.273	54	26
A3142208	AWG22/4TP	7.7	0.305	62	31
A3142210	AWG22/5TP	8.3	0.328	71	37
A3142212	AWG22/6TP	9.0	0.353	81	43
A3142216	AWG22/8TP	9.6	0.378	98	54

AWG 20 (19/32)					
A3142002	AWG20/1TP	5.7	0.225	35	18
A3142004	AWG20/2TP	7.6	0.301	55	30
A3142006	AWG20/3TP	8.0	0.315	67	38
A3142008	AWG20/4TP	8.7	0.341	81	47
A3142010	AWG20/5TP	9.3	0.368	95	55
A3142012	AWG20/6TP	10.5	0.413	115	66
A3142016	AWG20/8TP	11.3	0.443	139	84

AWG 18 (19/30)					
A3141802	AWG18/1TP	5.9	0.233	44	27
A3141804	AWG18/2TP	8.4	0.330	72	44
A3141806	AWG18/3TP	8.8	0.348	89	57
A3141808	AWG18/4TP	9.6	0.377	108	71
A3141810	AWG18/5TP	10.9	0.428	135	85
A3141812	AWG18/6TP	11.7	0.462	154	99
A3141816	AWG18/8TP	12.6	0.496	188	125

Color Code Table AWG 22 Pair#

1-	WH/BK
2-	WH/BN
3-	WH/RD
4-	WH/OG
5-	WH/YE
6-	WH/GN
7-	WH/BU
8-	WH/VT

Color Code Table AWG 20 & 18 Pair#

1-	BK/RD
2-	BK/WH
3-	BK/GN
4-	BK/BU
5-	BK/BN
6-	BK/YE
7-	BK/OG
8-	RD/GN

Construction

- AWG conductors
- Flexible fine wire stranded tinned copper conductors
- Shielded with foil tape, tinned copper braid and full sized drain wire
- SR-PVC insulation
- Oil resistant premium PVC jacket
- Gray jacket similar to RAL 7001

LÜTZE SUPERFLEX® Tronic PUR, Unshielded

High Flexing Electronic Cable with UL/CE Approvals



Application

- Multi-conductor cable for robots, handling equipment, machine tools, C-tracks and applications with extremely rough operating conditions
- For the most demanding flexing applications such as C-tracks and linear flexing
- Compatible with all major brand C-tracks

Characteristics

- Superfine stranding per Class 6 for continuous moving applications
- PUR jacket and TPE conductor insulation for use in extremely harsh operating conditions
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- Dry, wet and damp conditions
- UV resistant
- Talc and Silicone free

Technical Data

Voltage	300V UL AWM
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Color coded per DIN EN 50334 or DIN 47100
Isolation resistance	Min 20MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1, UL 1581 section VW-1 Flame test CSA FT1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 Class 6 or IEC 60228 Class 6
- TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Layer pitch optimized
- Fleece wrap over cabled conductors
- PUR jacket, matte, adhesion-free surface
- Extremely oil resistant PUR jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 24 / 0.25 mm²					
117039	2x0.25	3.8	0.150	12	3
117040	3x0.25	4.0	0.157	14	5
117041	4x0.25	4.3	0.170	17	7
117042	5x0.25	4.7	0.185	19	8
117043	7x0.25	5.4	0.213	25	11
117044	10x0.25	6.2	0.244	33	16
117028	15x0.25	7.0	0.276	46	24
117046	18x0.25	7.5	0.295	53	29
117047	25x0.25	8.8	0.346	71	40
AWG 22 / 0.34 mm²					
117048	2x0.34	4.0	0.157	13	6
117049	3x0.34	4.2	0.165	16	7
117050	4x0.34	4.5	0.177	19	9
117051	5x0.34	4.9	0.193	23	11
117052	7x0.34	5.7	0.224	30	15
117053	10x0.34	6.6	0.260	40	20
117029	15x0.34	7.5	0.295	56	30
117055	18x0.34	7.9	0.311	64	38
117056	25x0.34	9.3	0.366	86	52

LÜTZE SUPERFLEX® Tronic (C) PUR, Shielded

High Flexing Electronic Cable with UL/CE Approvals



Application

- Multi-conductor cable for robots, handling equipment, machine tools, C-tracks and applications with extremely rough operating conditions
- For the most demanding flexing applications such as C-tracks and linear flexing
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranded per Class 6 for continuous moving applications
- PUR jacket and TPE conductor insulation for use in extremely harsh operating conditions
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- Dry, wet and damp conditions
- UV resistant
- Talc and Silicone free

Technical Data

Voltage	300V UL AWM
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Conductor marking	Color coded per DIN EN 50334 or DIN 47100
Isolation resistance	Min. 20MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 CSA FT1, Flame Test, UL 1581 section VW-1 IEC 60332-1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- PUR jacket, matte, adhesion-free surface
- Extremely oil resistant PUR jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 24 / 0.25 mm²					
117099	(2x0.25)	4.3	0.169	18	9
117100	(3x0.25)	4.5	0.177	20	11
117101	(4x0.25)	4.9	0.193	24	13
117102	(5x0.25)	5.1	0.201	27	15
117103	(7x0.25)	5.9	0.232	34	21
117104	(10x0.25)	6.7	0.264	43	28
117123	(15x0.25)	7.5	0.295	58	40
117106	(18x0.25)	8.2	0.323	65	43
117107	(25x0.25)	9.4	0.370	85	57
AWG 22 / 0.34 mm²					
117108	(2x0.34)	4.5	0.177	20	10
117109	(3x0.34)	4.7	0.185	23	13
117110	(4x0.34)	5.1	0.201	27	16
117111	(5x0.34)	5.4	0.213	31	19
117112	(7x0.34)	6.2	0.244	39	25
117113	(10x0.34)	7.0	0.276	50	34
117124	(15x0.34)	7.3	0.287	68	50
117115	(18x0.34)	8.5	0.335	77	54
117116	(25x0.34)	9.6	0.378	107	77

LÜTZE SUPERFLEX® Tronic (C) PUR TP, Shielded

High Flexing Electronic Cable with UL/CE Approvals



Application

- Multi-conductor cable for robots, handling equipment, machine tools, C-tracks and applications with extremely rough operating conditions
- For the most demanding flexing applications such as C-tracks and linear flexing
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranded per Class 6 for continuous moving applications
- PUR jacket and TPE conductor insulation for use in extremely harsh operating conditions
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- Dry, wet and damp conditions
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	300V UL AWM
Temperature	Moving -25°C - +80°C
	Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD
	Fixed 6 x cable OD
Conductor marking	Color coded per DIN EN 50334 or DIN 47100 for twisted pairs
Isolation resistance	Min 20MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2
	DIN EN 50265-2
	UL VW-1, CSA FT1
	Flame test IEC 60332-1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM 20233
	RoHS
	REACH

Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- PUR jacket, matte, adhesion-free surface
- Extremely oil resistant PUR jacket
- Gray jacket RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 24 / 0.25 mm²					
117170	(2x2x0.25)	6.3	0.248	55	15
117171	(3x2x0.25)	6.6	0.260	61	19
117172	(4x2x0.25)	7.1	0.280	69	23
117173	(5x2x0.25)	7.5	0.295	79	27
117177	(6x2x0.25)	8.1	0.319	88	32
117174	(8x2x0.25)	9.4	0.370	108	40
117175	(10x2x0.25)	10.5	0.413	128	53
117176	(12x2x0.25)	10.8	0.425	139	61
AWG 22 / 0.34 mm²					
117180	(2x2x0.34)	6.6	0.260	62	17
117181	(3x2x0.34)	6.9	0.272	69	23
117182	(4x2x0.34)	7.4	0.291	79	28
117184	(6x2x0.34)	8.6	0.339	101	40
117185	(8x2x0.34)	10.0	0.394	129	56
117187	(12x2x0.34)	11.1	0.437	162	77
AWG 20 / 0.5 mm²					
117190	(2x2x0.5)	7.3	0.287	73	23
117191	(3x2x0.5)	7.7	0.303	83	30
117303	(4x2x0.5)	8.2	0.323	95	38
117193	(6x2x0.5)	9.9	0.390	124	54
117194	(8x2x0.5)	11.2	0.441	160	75
117196	(12x2x0.5)	13.0	0.512	203	105

3 Actuator Sensor Cable



LÜTZE SUPERFLEX® TRONIC AS PUR, Unshielded

High Flexing Actuator Sensor Cable with UL Approval



Application

- Termination cable for actor-sensor applications
- For continuous flexing use in C-tracks or free movement in the automation technology, transport and conveyor technology, machine tool manufacturing
- Full PUR jacket and TPE conductor insulation optimally suited for extremely harsh operating conditions, aggressive coolants and lubricants

Characteristics

- Very good alternating bending strength
- Good pressure and flexing stability
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant, and rot-resistant
- Weathering, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Largely resistant to oils, greases, alcohol-free benzines and kerosene
- Talc and Silicone free

Technical Data

UL approval	AWM 20549
Voltage	300V 80°C
Test voltage	3000V
Insulation resistance	Min. 100MΩ x km
Temperature range	Moving -20°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 8 x cable OD Fixed 4 x cable OD
Burning behavior	Flame retardant according to VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1 UL 1581 VW-1 Flame test CSA FT1
Halogen free	According to DIN EN 50267-2-1
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color coded per EN 60947-5-2
- Layer pitch optimized
- Fleece wrap over cabled conductors
- PUR jacket, matte, adhesion-free surface
- Black jacket RAL 9005

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG24 / 0.25 mm²					
117240	3x0.25 BN, BU, BK	4.0	0.157	13	5
117241	4x0.25 BN, WH, BU, BK	4.3	0.169	15	7
117242	8x0.25 WH, BN, GN, YE, GY, PK, BU, RD	5.9	0.232	28	14
AWG22 / 0.34 mm²					
117243	3x0.34 BN, BU, BK	4.2	0.165	15	7
117244	4x0.34 BN, WH, BU, BK	4.5	0.177	18	9
117245	5x0.34 BN, WH, BU, BK, GY	4.9	0.193	22	11
117246	5x0.34 BN, WH, BU, BK, GN-YE	4.9	0.193	22	11

With Power Supply Conductors

110872	3G1.0+8x0.34 1.0: BN, BU, GNYE 0.34: WH, BK, GN, YE, GY, PK, VT, RD	8.2	0.323	67	37
110874	3G1.0+16x0.34 1.0: BN, BU, GNYE 0.34: WH, GN, YE, GY, PK, RD, BK, VT, GYPK, RDBU, WHGN, BNGN, WHYE, YEBN, WHGY, GYBN	9.7	0.382	91	54

LÜTZE SUPERFLEX® TRONIC AS (C) PUR, Shielded

High Flexing Actuator Sensor Cable with UL Approval



Application

- Termination cable for actor-sensor applications
- For continuous flexing use in C-tracks or free movement in the automation technology, transport and conveyor technology, machine tool manufacturing
- Full PUR jacket and TPE conductor insulation optimally suited for extremely harsh operating conditions, aggressive coolants and lubricants

Characteristics

- High active and passive interference resistance (EMC)
- Very good alternating bending strength
- Good pressure and flexing stability
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant, and rot-resistant
- Weathering, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Largely resistant to oils, greases, alcohol-free benzines and kerosene
- Talc and Silicone free

Technical Data

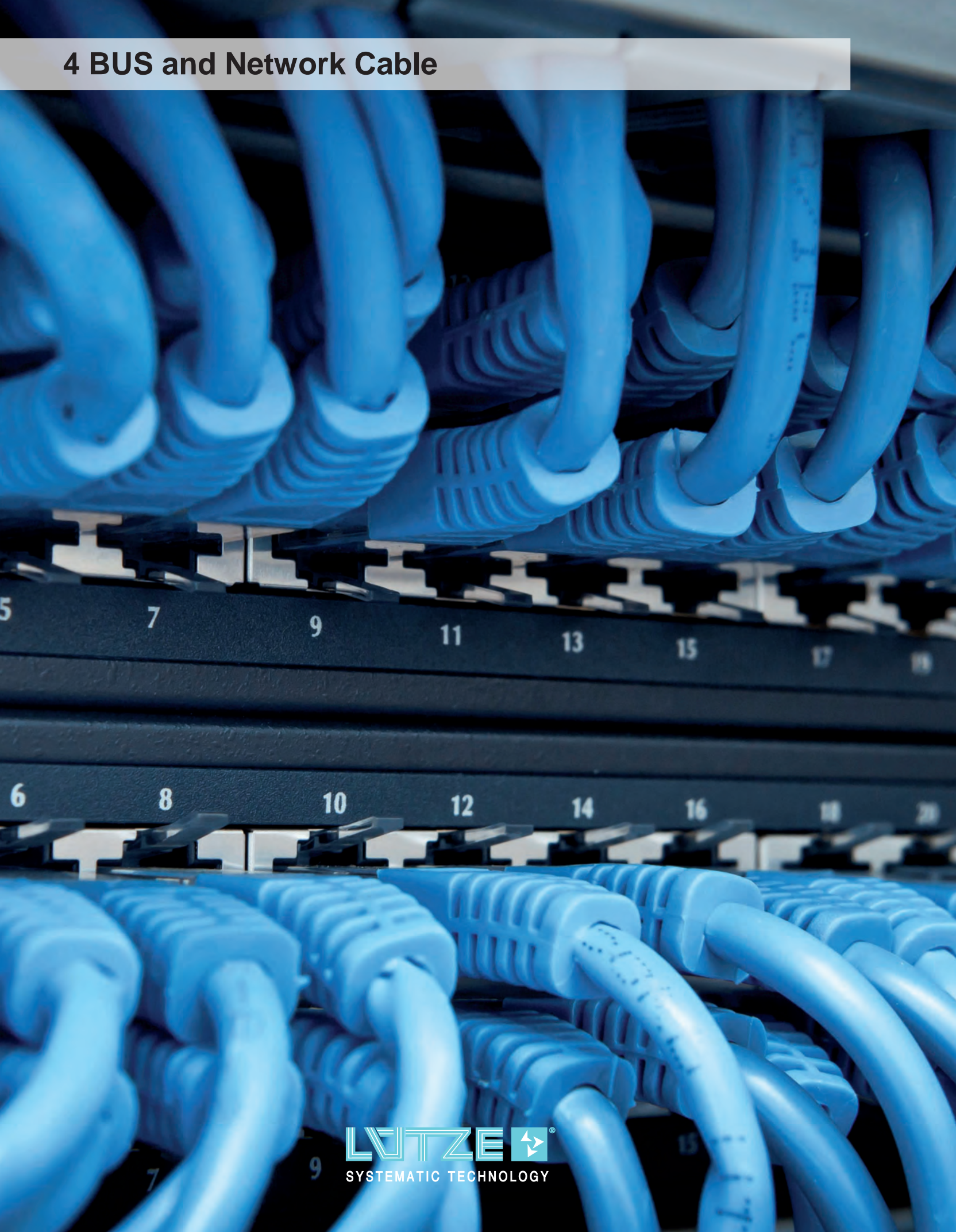
UL approval	AWM 20549
Voltage	300V 80°C
Test voltage	3000V
Insulation resistance	Min. 100MΩ x km
Temperature range	Moving -20°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1 UL 1581 VW-1 Flame test CSA FT1
Halogen free	According to DIN EN 50267-2-1
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper wire finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color coded per EN 60947-5-2
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- PUR jacket, matte, adhesion-free surface
- Black jacket RAL 9005

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG24 / 0.25 mm²					
117250	(3x0.25) BN, BU, BK	4.6	0.181	19	11
117251	(4x0.25) BN, WH, BU, BK	4.9	0.193	22	13
117252	(8x0.25) WH, BN, GN, YE, GY, PK, BU, RD	6.3	0.248	37	24
AWG22 / 0.34 mm²					
117253	(3x0.34) BN, BU, BK	4.8	0.189	22	13
117254	(4x0.34) BN, WH, BU, BK	5.1	0.201	26	16
117255	(5x0.34) BN, WH, BU, BK, GY	5.5	0.217	30	19

4 BUS and Network Cable



LUTZE Electronic BUS TPE

Flexible ASI BUS Cable



Application

- System cables for connection of actuator interface components
- Applications in the automation technology, in tool and machine construction, plants and device construction, transport and conveyor technology

Part No.	Description No. of conductors	Weight Lbs/Mft	Copper Lbs/Mft	Jacket
AWG16 / 1.5 mm²				
104216	2x1.5	46	19	Yellow
104217	2x1.5	46	19	Black

Characteristics

- Inverse-polarity-proof flat cable
- Fast contacting through penetration technology
- In the TPE design especially suitable in areas in with oils, greases and coolants and lubricants
- Talc and Silicone free

Technical data

Rated voltage	300V
Test voltage	2000V
Temperature range	Moving -5°C - +80°C Fixed -30°C - +80°C
Loop resistance	27.4mΩ/m
Approvals	RoHS REACH

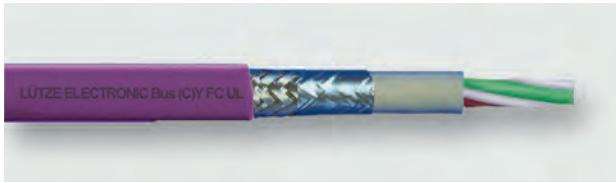
Construction

- Metric conductor
- Bare copper wire 1.5 mm² acc. to VDE 0295 class 5
- PVC conductor insulation color coded; brown and blue
- G: with GNYE ground conductor
x: without ground conductor
- TPE outer jacket
- Jacket color black: for auxiliary power 30 V_{DC}
- Jacket color yellow: for data and energy transmission

Specifications are subject to change without prior notice

LUTZE Electronic PROFIBUS (C) PVC, Shielded

Flexible PROFIBUS Cable with UL Approval



Application

- For the cabling of industrial field bus systems like PROFIBUS DP, F.I.P.
- With solid conductor AWG22/1 for hard wiring or with stranded conductor for flexible use and stationary application
- Automation technology, transport and conveyor technology, machine tool manufacturing

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Impedance	150Ω ± 15Ω
Loop resistance	Solid 22/1 <110Ω/km Flexible 24/7 <175.2Ω/km
Operating capacitance	Nominal 30pF/m
Rated voltage	300V CMX/CMG
Test voltage	1,500V, 50Hz
Temperature range	Moving -10°C - +70°C Fixed -40°C - +80°C
Minimum bending radius	Moving 15 x cable OD Fixed 7.5 x cable OD
Burning behavior	Flame retardant per CMX: FT1 UL 1581, IEC 60332-1 CMG: FT4 UL 1685, IEC 60332-3-24
Approvals	cULus CMX/CMG UL AWM RoHS REACH

Construction

- AWG conductor
- Bare copper wire
- Conductor insulation special polyolefin
- Stranding with filler
- ST static foil shield
- Tinned copper braid shield, optical coverage ≥ 70 %
- Special thermoplastic on PVC basis
- Violet jacket RAL 4001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

PROFIBUS, Solid UL/CMX/AWM 20601 300V

104378	(1x2xAWG22/1) RD, GN	8.0	0.315	40	20
--------	-------------------------	-----	-------	----	----

PROFIBUS, Flexible UL/CMG/AWM 21694 600V

104344	(1x2xAWG24/7) RD, GN	8.0	0.315	44	17
--------	-------------------------	-----	-------	----	----

PROFIBUS, Fast Connect UL/CMG/AWM 20201 600V

104293	(1x2xAWG22/1) RD, GN	7.8	0.307	50	20
--------	-------------------------	-----	-------	----	----

LÜTZE SUPERFLEX® PROFIBUS (C) PUR, Shielded

High Flexing PROFIBUS Cable with UL Approval



Application

- For the cabling of industrial field bus systems like PROFIBUS DP, SINEC L2, F.I.P.
- For continuous flexing applications in C-tracks or free movement in automation technology, transport and conveyor technology machine tool manufacturing

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Impedance	150Ω ± 15Ω
Loop resistance	<133Ω/km
Operating capacitance	<30pF/m
Rated voltage	300V (max. value)
Test voltage	1,500V, 50Hz
Temperature range	Moving -30°C - +70°C Fixed -40°C - +80°C
Minimum bending radius	Moving 7.5 x cable OD Fixed 5 x cable OD Moving Fast Connect 15 x cable OD Fixed Fast Connect 7.5 x cable OD
Burning behavior	Flame retardant per CSA FT1, UL 1581 VW-1 Flame test IEC 60332-1
Approvals	cULus CMX UL AWM 21198 300V 80C RoHS REACH

Construction

- AWG conductor
- Bare copper wire
- Special polyolefin conductor insulation
- Inner jacket versions with fast assembly FC
- ST static foil shield
- Tinned copper wire braid, optical coverage ≥ 85 %, for 104287 optical coverage ≥ 70 %
- Special PUR
- Violet jacket RAL 4001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	---------------------	------------------	-------------------	-------------------

PROFIBUS, UL/CMX

104265	(1x2xAWG24/19) RD, GN	8.0	0.315	37	16
--------	--------------------------	-----	-------	----	----

PROFIBUS, Fast Connect UL/CMX

104287	(1x2xAWG24/19) RD, GN	8.0	0.315	54	20
--------	--------------------------	-----	-------	----	----

PROFIBUS, ET200 UL/CMX

104275	((1x2xAWG24/19)ST+3x0.75)C RD/GN, BU, BK, GNYE	9.8	0.386	97	44
--------	---	-----	-------	----	----

LUTZE Electronic CAN Bus (C) PVC, Shielded

Flexible CAN Bus Cable with UL Approval



Application

- For wiring of industrial field bus systems
- For fix installation or flexible and stationary application
- Automation technology, transport and conveyor technology, machine tool manufacturing

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Rated voltage	300V CMX
Test voltage	1,500V
Impedance	nom. 120Ω
Loop resistance	AWG24/7 < 175.2Ω/km AWG22/7 < 110.8Ω/km
Operating capacitance	< 60pF/m
Temperature range	Moving -10 °C - +70 °C Fixed -40 °C - +75 °C
Minimum bending radius	Moving 15 x cable OD Fixed 7.5 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 IEC 60332-1
Approvals	cULus CMX RoHS REACH

Construction

- AWG conductor
- Bare copper wire
- Conductor insulation special polyolefin
- Conductors twisted pairs, cabled, foil banded
- Tinned copper braid shield, optical coverage ≥ 85 %
- Jacket special PVC TM2 according to HD21.1, matte, adhesion-free surface
- Violet jacket RAL 4001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

CAN Bus UL/CMX, 40 m / 131 ft max.

104386	(1x2xAWG24/7) WH/BN	5.7	0.224	29	13
104387	(2x2xAWG24/7) WH/BN, GN/YE	7.5	0.295	46	24

CAN Bus UL/CMX, 200 m / 656 ft max.

104388	(1x2xAWG22/7) WH/BN	6.8	0.268	39	18
104389	(2x2xAWG22/7) WH/BN, GN/YE	8.5	0.335	58	31

LÜTZE SUPERFLEX® CAN Bus (C) PUR, Shielded

High Flexing CAN Bus Cable with UL Approval



Application

- For wiring of industrial field bus systems
- For continuous flexing applications in C-tracks or free movement in the automation technology, transport and conveyor technology, machine tool manufacturing

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Rated voltage	300V CMX
Test voltage	3000V
Impedance	nom. 120Ω
Operating capacitance	< 60pF/m
Temperature range	Moving -30°C - +70°C Fixed -40°C - +75°C
Minimum bending radius	Moving 15 x cable OD Fixed 7.5 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 IEC 60332-1 UL 1581 section VW-1 Flame test CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	cULus CMX RoHS REACH

Construction

- AWG conductor
- Bare copper wire
- Conductor insulation special polyolefin
- Conductors twisted pairs or star quad cabled, foil banded
- Tinned copper braid shield, optical coverage ≥ 85 %
- Special PUR jacket, matte, adhesion-free surface
- Violet jacket RAL 4001

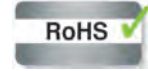
Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

CAN Bus UL/CMX, 40 m / 131 ft max.

104390	(1x2xAWG24/19) WH/BN	5.4	0.213	30	16
104391	(2x2xAWG24/19) WH/BN, YE/GN	7.2	0.283	48	22

LUTZE Electronic BUS (C) PVC, Shielded

Flexible DeviceNet™ Cable with UL Approval



Application

- For the wiring of industrial devices, sensors, control devices (SPS), valves
- DeviceNet™ is the leading BUS system for industry automation in the USA
- For flexible use and stationary application
- Automation technology, transport and conveyor technology, machine tool manufacturing

Characteristics

- 2-pair cable: The pair with the smaller cross section is for the data transmission, the pair with the larger cross section is for the power supply
- High active and passive interference resistance through double shielding (StC)
- Talc and Silicone free

Technical data

Impedance	120Ω ± 12Ω
Operating capacitance	< 40pF/m
Rated voltage	300V
Test voltage	3000V
Temperature range	Moving -10°C - +75°C Fixed -40°C - +75°C
Minimum bending radius	Moving 10 x cable OD Fixed 5 x cable OD
Burning behaviour	Flame retardant per VDE 0482 part 265-2 IEC 60332-1 UL 1581 section VW-1 Flame test CSA FT1
Approvals	cULus CMG RoHS REACH

Construction

- AWG conductor
- Tinned copper wire
- Conductor insulation special polyolefin
- Both pairs statically shielded with foil shield, 100% coverage, and drain wire
- Overall tinned copper braid shield
- Jacket special PVC, matte, adhesion-free surface
- 104288, 104282: Violet jacket RAL 4001
- 104281, 104280: Gray jacket RAL 7001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

DeviceNet™ Thick UL/CMG, PLTC, violet

104288	((2xAWG18)+(2xAWG16)) AWG16: RD, BK AWG18: WH, BU	12.2	0.480	136	59.1
---------------	---	------	-------	-----	------

DeviceNet™ Thin UL/CMG, violet

104282	((2xAWG24)+(2xAWG22)) AWG22: RD, BK AWG24: WH, BU	7.0	0.280	45	21.5
---------------	---	-----	-------	----	------

DeviceNet™ Thick UL/CM, PLTC, gray

104281	((2xAWG18)+(2xAWG16)) AWG16: RD, BK AWG18: WH, BU	12.1	0.480	136	48.0
---------------	---	------	-------	-----	------

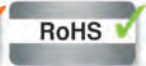
DeviceNet™ Thin UL/CM, CI2, gray

104280	((2xAWG24)+(2xAWG22)) AWG22: RD, BK AWG24: WH, BU	7.1	0.280	49	17.8
---------------	---	-----	-------	----	------

Specifications are subject to change without prior notice

LÜTZE SUPERFLEX® BUS (C) PUR, Shielded

High Flexing DeviceNet™ Cable with UL Approval



Application

- For the wiring of industrial devices, sensors, control devices (SPS), valves
- DeviceNet™ is the leading BUS system for industry automation in the USA
- For continuous flexing applications in C-tracks or free movement in the automation technology, transport and conveyor technology, machine tool manufacturing

Characteristics

- 2-pair cable: The pair with the smaller cross section is for the data transmission, the pair with the larger cross section is for the power supply
- High active and passive interference resistance through double shielding (StC)
- Talc and Silicone free

Technical data

Impedance	120Ω ± 12Ω
Operating capacitance	< 40pF/m
Rated voltage	300V
Test voltage	3000V
Temperature range	Moving -20°C - +75°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 IEC 60332-1 UL 1581 section VW-1 Flame test CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	cULus CMX RoHS REACH

Construction

- AWG conductor
- Tinned copper wire
- Conductor insulation special polyolefin
- Both pairs statically shielded with foil shield, 100% coverage and drain wire
- Overall tinned copper braid shield ≥ 85%
- Jacket special PUR, matte, adhesion-free surface
- Violet jacket RAL 4001

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

DeviceNet™ Thick UL/CMX

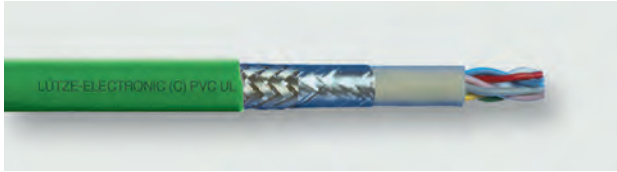
104279	((2xAWG18)+(2xAWG16)) WH/BU, RD/BK	12.2	0.480	97	14
---------------	---------------------------------------	------	-------	----	----

DeviceNet™ Thin UL/CMX

104289	((2xAWG24)+(2xAWG22)) AWG22: RD, BK AWG24: WH, BU	7.0	0.276	57	19
---------------	---	-----	-------	----	----

LUTZE Electronic ETHERNET BUS (C) PVC, Shielded

Flexible ETHERNET Cable with UL Approval



Application

- For the cabling of industrial field bus systems with the globally accepted TCP/IP protocol
- Application in automation technology, transport and conveyor technology, machine tool manufacture
- For flexible use and stationary application

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Impedance	100Ω ± 10Ω
Loop resistance	Solid AWG 22/1= 0,34 ² <110Ω/km
	Strand AWG 24/7= 0,22 ² <165Ω/km
	Strand AWG 26/7=0.14 ² <273Ω/km
Operating capacitance	< 50pF/m
Nominal voltage	300V
Test voltage	1500V
Temperature range	Moving -5°C - +70°C Fixed -30°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 IEC 60332-3-24 UL 1581 section VW-1 Flame test CSA FT 4
Approvals	cULus CMG RoHS REACH
AWG specific approvals	AWG22: cULus PLTC cURus AWM 600V

Construction

- AWG conductor
- Bare copper wire
- Conductor insulation special polyolefin
- ST static foil shield
- Tinned copper braid shield, optical coverage ≥ 85 %
- Jacket PVC, matte, adhesion-free surface
- Green jacket, RAL 6018

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

ELECTRONIC Industrial Ethernet/ProfiNet/EtherCat

104301	(2x2xAWG22/1) CMG, PLTC, AWM 20201 600V Cat5 100 MHz, SF/UTQ Star-Quad, FC, ProfiNet Type A WH/BU, YE/OG	6.5	0.256	44	25
104307	(2x2xAWG22/7) CMG, PLTC, AWM 20201 600V Cat5 100 MHz, SF/UTQ Star-Quad, FC, ProfiNet Type B WH/BU, YE/OG	6.5	0.256	44	21
104397	(4x(2xAWG22/1)) CMG, PLTC, AWM 2570 600V Cat6a 600 MHz, S/FTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	9.6	0.378	65	36

ELECTRONIC Industrial Ethernet/Ethernet IP

104335	(4x2xAWG26/7) CMG Cat5e 100 MHz, SF/UTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	6.3	0.248	37	20
104336	(4x2xAWG24/7) CMG Cat5e 100 MHz, SF/UTP WHBU/BU, WHOG/OG, WH GN/GN, WHBN/BN	7.3	0.287	46	26
104338	(4x(2xAWG26/7)) CMG Cat6a 500 MHz, S/FTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	6.4	0.252	36	22
104331	(4x(2xAWG26/7)) CMG Cat7 600 MHz, S/FTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	7.0	0.276	42	22

For further information, see ETHERNET pages in the Technical Overview

LÜTZE SUPERFLEX® ETHERNET BUS (C) PUR, Shielded

High Flexing ETHERNET Cable with UL Approval



Application

- For the cabling of industrial field bus systems with the globally accepted TCP/IP protocol
- Applicable in automation technology, transport and conveyor technology, machine tool manufacturing
- For continuous flexible applications in C-tracks or free movement

Characteristics

- High active and passive interference resistance (EMC)
- Talc and Silicone free

Technical data

Impedance	100Ω ± 10Ω
Loop resistance	Braid AWG 22/7= 0.34 ² <110Ω/km
	Braid AWG 24/19= 0.24 ² <155Ω/km
	Braid AWG 26/19=0.14 ² <280Ω/km
Operating capacitance	50pF/m
Nominal voltage	300V
Test voltage	1500V
Temperature range	Moving -30°C - +70°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2; IEC 60332-1; UL 1581 section VW-1 Flame test; CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	cULus CMX cURus AWM RoHS REACH

Construction

- AWG conductor
- Bare copper wire
- Conductor insulation special polyolefin
- ST static foil shield
- Tinned copper braid, optical coverage ≥ 85 %
- Jacket special-PUR, matte, adhesion-free surface
- Green jacket RAL 6018

For further information, see ETHERNET pages in the Technical Overview

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

SUPERFLEX Industrial Ethernet/ProfiNet/EtherCat

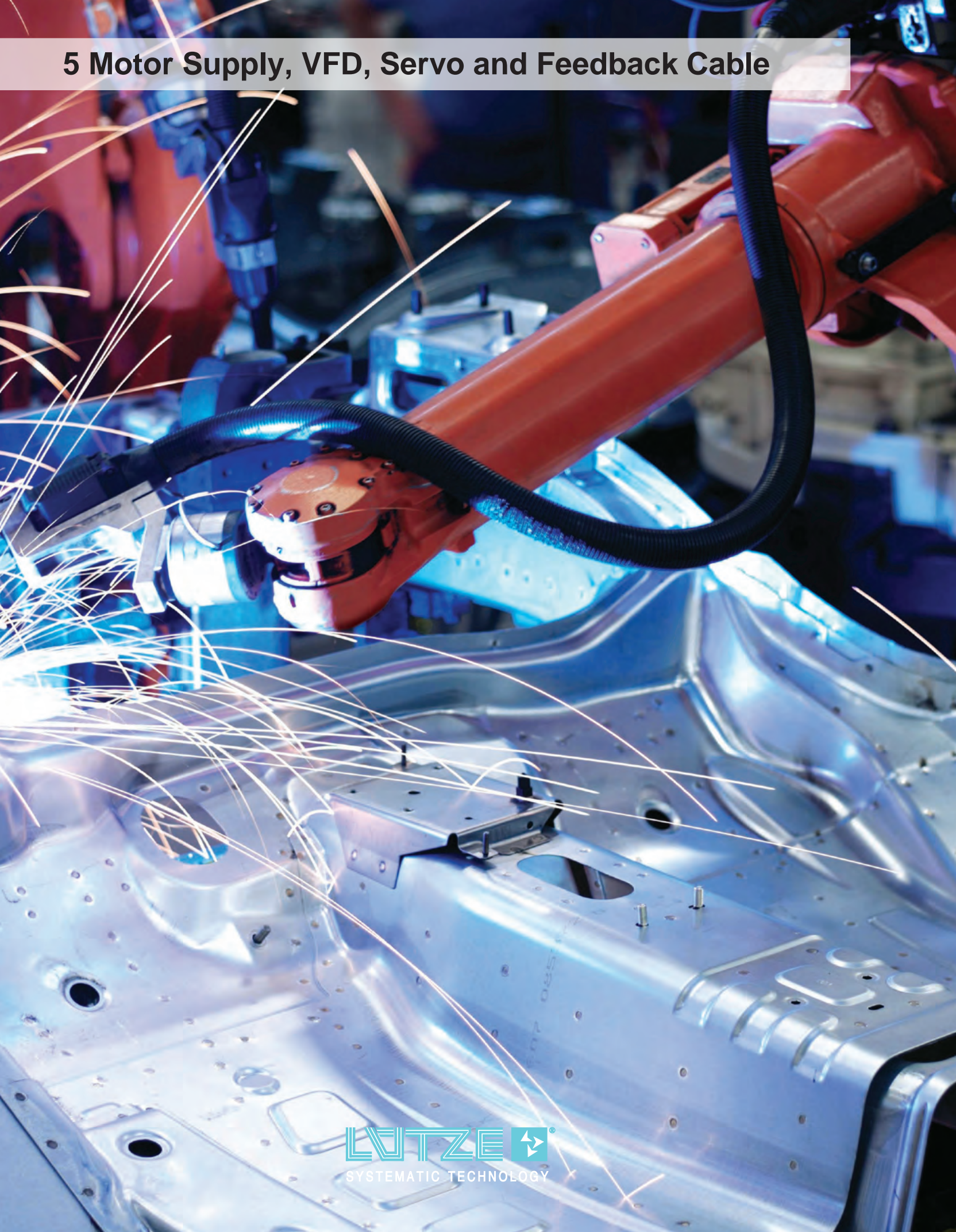
104302	(2x2xAWG22/19) CMX Cat5 100 MHz, SF/UTQ Star-Quad, FC WH/BU; YE/OG	6.6	0.260	50	25
104303	(2x2xAWG22/7) CMX Cat5 100 MHz, SF/UTQ Star-Quad, FC, ProfiNet Type C WH/BU; YE/OG	6.5	0.256	41	21

SUPERFLEX Industrial Ethernet/Ethernet IP

104379	(2x2xAWG26/19) AWM 21198 Cat5e 100 MHz, SF/UTQ WH/BU; YE/OG	5.3	0.209	24	12
104337	(4x2xAWG24/19) AWM 21198 Cat5e 100 MHz, S/UTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	7.8	0.307	46	37
104396	(4x2xAWG26/19) AWM 21198 Cat5e 100 MHz, SF/UTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	6.7	0.264	36	19
104347	(4x2xAWG26/19) CMX Cat6 350 MHz, SF/UTP WHBU/BU, WHOG/OG, WHGN/GN, WHBN/BN	7.9	0.311	42	28

Specifications are subject to change without prior notice

5 Motor Supply, VFD, Servo and Feedback Cable



LÜTZE SILFLEX® Tray-ER TPE, Unshielded

Flexible Premium TPE Tray Cable with UL/TC-ER/WTTC/MTW/CE Approvals



Application

- Multi-conductor cable for tray applications, with **exposed run** (open wiring) approval
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- Metal cutting equipment, machine tools, machine and plant construction, HVAC technology, assembly and production lines, and other industrial applications
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp and wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Specially formulated TPE jacket for superior oil resistance
- Cutting oil resistant - mineral & bio/vegetable based oils
**specifically tested with plant based cutting oil*
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 600V UL MTW 1000V WTTC 600V UL AWM 105C
Temperature	-40°C - +90°C static
Minimum bending radius	4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res I and Oil Res II
Approvals	UL Type TC-ER UL/CE UL AWM (UL) Type MTW or DP-1 UL1277 C(UL) TC WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 CIC FT4 RoHS REACH UL509 BUS Drop (4C & 5C only)

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation / THHN – THWN
- Oil resistant TPE jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 14 (41/30)					
A3321404	AWG14/04C	9.4	0.368	108	52
A3321405	AWG14/05C	10.0	0.395	127	65
AWG 12 (65/30)					
A3321204	AWG12/04C	10.5	0.413	146	83
A3321205	AWG12/05C	11.6	0.457	182	104
AWG 10 (105/30)					
A3321004	AWG10/04C	12.7	0.498	221	134
A3321005	AWG10/05C	14.8	0.582	285	167
AWG 8 (168/30)					
A3320804	AWG8/04C	18.1	0.711	392	214
AWG 6 (266/30)					
A3320604	AWG6/04C	20.1	0.790	552	339
AWG 4 (413/30)					
A3320404	AWG4/04C	26.3	1.033	910	516
AWG 2 (665/30)					
A3320204	AWG2/04C	30.8	1.214	1,391	883
1/0 (1064/30)					
A3321/004	1/0/4C	36.4	1.435	1,871	1,338
2/0 (1330/30)					
A3322/004	2/0/4C	39.2	1.544	2,257	1,685
3/0 (1665/30)					
A3323/004	3/0/4C	45.6	1.794	2,982	2,156
4/0 (2109/30)					
A3324/004	4/0/4C	48.3	1.903	3,549	2,676

LÜTZE SILFLEX® M (C) Motor PVC, Shielded

Flexible Motor Cable with UL/TC-ER/WTTC/MTW/CE Approvals



Application

- Shielded multi-conductor cable for Motor applications to connect power to 3-phase motors
- Power cable for electrical motors with direct, reversing or soft starters (For 3 phase VFD's, see Driveflex® A216/A217 series for long cable runs or use with VFD's)
- Cable design for harsh industrial environments and operating conditions with high noise levels
- Improved insulation design with additional **conductor stress relief layer** as a power distortion suppressant
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp and wet locations

Characteristics

- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- With reduced cable diameter
- Specially formulated jacket for oil resistance
- Semi-conductive layer reduces corona effects, thus increasing the reliability and lifetime
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- Talc and Silicone free

Technical Data

Voltage	600V 90C TC-ER, MTW 1000V 90C Flexible Motor Supply, WTTC, AWM
Temperature	-40°C - +90°C static
Minimum bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	Flexible Motor Supply Cable per UL 2277 TC-ER per UL 1277 UL AWM Style 20886 MTW per UL 1063 WTTC per UL 2277 Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- PVC/Nylon insulation
- Shielded with foil tape, tinned copper braid and drain wire
- Oil resistant PVC jacket
- Black jacket RAL 9005

Specifications are subject to change without prior notice

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (19/30)					
A1161804	AWG18/04C	9.8	0.385	99	37
AWG 16 (26/30)					
A1161604	AWG16/04C	10.4	0.410	116	49
AWG 14 (41/30)					
A1161404	AWG14/04C	11.6	0.455	153	73
AWG 12 (65/30)					
A1161204	AWG12/04C	13.0	0.510	209	112

Larger AWG available through special order or refer to Driveflex® A216 VFD cable series.

WITH ONE SHIELDED CONTROL PAIR

AWG 16 (26/30)					
A1171604	AWG16/04C+ 1 TSP AWG 18	12.1	0.477	150	69
AWG 14 (41/30)					
A1171404	AWG14/04C+ 1 TSP AWG 18	12.8	0.505	183	92
AWG 12 (65/30)					
A1171204	AWG12/04C+ 1 TSP AWG 16	15.1	0.595	260	138

Larger AWG available through special order or refer to DRIVEFLEX® A217 VFD cable series.

**TSP = Twisted
Shielded Pair**

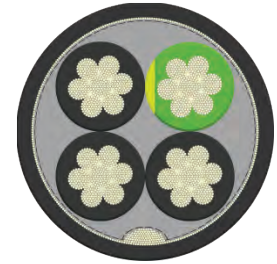
LUTZE DRIVEFLEX® XLPE (C) PVC, Shielded

Flexible VFD & Motor Supply Cable with UL/TC-ER/WTTC/CE Approvals



Application

- Shielded multi-conductor cable for VFD and Motor applications to connect power from drives to motors
- Cable design for harsh industrial environments and operating conditions with high noise levels
- XLPE thick wall insulation with low capacitance, ideal for applications with **high voltage spikes and long cable runs**
- Compliant with **NFPA 79** for wiring of industrial machinery
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions



Characteristics

- Flexible XLPE conductor design
- Non-wicking fillers
- Effective dual layer shield for EMC compliance
- Specially formulated jacket for oil resistance and easy strip design
- Low capacitance cable
- Sunlight resistant
- Direct burial
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V Flexible VFD Servo Cable 90C 1000V WTTC
Temperature	-40°C - +90°C static
Bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type "Flexible Motor Supply Cable (Flexible VFD Servo Cable)" UL Type TC-ER UL/CE UL DP-1 WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL 1277 Wet/Dry P-07-KA130021-MSHA RoHS REACH

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 16 (26/30)					
A2161604	AWG16/04C	12.4	0.490	149	57
AWG 14 (41/30)					
A2161404	AWG14/04C	14.2	0.560	200	80
AWG 12 (65/30)					
A2161204	AWG12/04C	15.6	0.615	262	128
AWG 10 (105/30)					
A2161004	AWG10/04C	17.8	0.700	359	186
AWG 8 (168/30)					
A2160804	AWG8/04C	23.5	0.925	603	295
AWG 6 (266/30)					
A2160604	AWG6/04C	25.7	1.010	763	425
AWG 4 (413/30)					
A2160404	AWG4/04C	29.3	1.155	1,126	632
AWG 2 (665/30)					
A2160204	AWG2/04C	34.2	1.345	1,559	997

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- XLPE insulation RHW-2, Wet/Dry
- Shielded with foil tape, tinned copper braid with ≥ 80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket RAL 9005

1-800-447-2371



www.lutze.com

Specifications are subject to change without prior notice

LUTZE DRIVEFLEX® XLPE (C) Servo I PVC, Shielded

Flexible Composite VFD, Servo & Motor Supply Cable with one Control Pair and UL/TC-ER/WTTC/CE Approvals



Application

- Shielded multi-conductor cable for VFD, Servo and Motor applications to connect power from drives to motors
- Cable design for harsh industrial environments and operating conditions with high noise levels
- XLPE thick wall insulation with low capacitance, ideal for applications with **high voltage spikes and long cable runs**
- Compliant with **NFPA 79** for wiring of industrial machinery
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

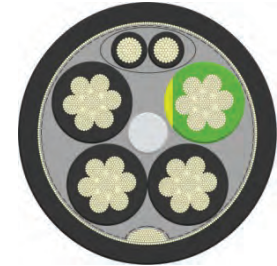
- Flexible XLPE conductor design
- Non-wicking fillers
- Effective dual layer shield for EMC compliance
- Specially formulated jacket for oil resistance and easy strip design
- Low capacitance cable
- Sunlight resistant
- Direct burial
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V Flexible VFD Servo Cable 90C 1000V WTTC
Temperature	-40°C - +90°C static
Minimum bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil Res II
Approvals	UL Type "Flexible Motor Supply Cable (Flexible VFD Servo Cable)" UL Type TC-ER UL/CE UL DP-1 WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL 1277 Wet/Dry P-07-KA130021-MSHA RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- XLPE insulation, Wet/Dry (4C RHW-2, 1 Pair XHHW-2)
- Shielded with foil tape, tinned copper braid with ≥80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket RAL 9005



WITH ONE SHIELDED CONTROL PAIR

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A2171604	AWG16/04C (26/30)+ 1 TSP AWG18 (19/30)	15.7	0.620	228	90
A2171404	AWG14/04C (41/30)+ 1 TSP AWG16 (26/30)	16.8	0.660	265	117
A2171204	AWG12/04C (65/30)+ 1 TSP AWG16 (26/30)	18.3	0.720	335	160
A2171004	AWG10/04C (105/30)+ 1 TSP AWG14 (41/30)	20.6	0.810	420	218
A2170804	AWG8/04C (168/30)+ 1 TSP AWG14 (41/30)	26.0	1.025	713	321
A2170604	AWG6/04C (266/30)+ 1 TSP AWG14 (41/30)	27.8	1.095	873	453
A2170404	AWG4/04C (413/30)+ 1 TSP AWG14 (41/30)	31.0	1.220	1,143	650
A2170204	AWG2/04C (665/30)+ 1 TSP AWG14 (41/30)	35.3	1.388	1,574	1,010

**TSP = Twisted
Shielded Pair**

LUTZE DRIVEFLEX® XLPE (C) Servo II PVC, Shielded

Flexible Composite VFD, Servo & Motor Supply Cable with two Control Pairs and UL/TC-ER/WTTC/CE Approvals



Application

- Shielded multi-conductor cable for VFD, Servo and Motor applications to connect power from drives to motors
- Cable design for harsh industrial environments and operating conditions with high noise levels
- XLPE thick wall insulation with low capacitance, ideal for applications with **high voltage spikes and long cable runs**
- Compliant with **NFPA 79** for wiring of industrial machinery
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

- Flexible XLPE conductor design
- Non-wicking fillers
- Effective dual layer shield for EMC compliance
- Specially formulated jacket for oil resistance and easy strip design
- Low capacitance cable
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V Flexible VFD Servo Cable 90C 1000V WTTC
Temperature	-40°C - +90°C static
Minimum bending radius	6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Oil resistance	Oil res II
Approvals	UL Type "Flexible Motor Supply Cable (Flexible VFD Servo Cable)" UL Type TC-ER UL/AWM/CE UL DP-1 WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL 1277 Wet/Dry P-07-KA130021-MSHA RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- XLPE insulation, Wet/Dry (4C RHW-2, 2 Pairs XHHW-2)
- Shielded with foil tape, tinned copper braid with ≥80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket RAL 9005



WITH TWO SHIELDED CONTROL PAIRS

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A2181404	AWG14/04C (41/30)+ 2 TSP AWG16 (26/30)	19.3	0.760	330	149
A2181204	AWG12/04C (65/30)+ 2 TSP AWG16 (26/30)	20.2	0.795	388	187
A2181004	AWG10/04C (105/30)+ 2 TSP AWG14 (41/30)	23.6	0.930	553	261
A2180804	AWG08/04C (168/30)+ 2 TSP AWG14 (41/30)	27.7	1.070	778	364

**TSP = Twisted
Shielded Pair**

LUTZE DRIVEFLEX® 3 Symmetrical Grounds, Shielded

Flexible Composite VFD & Motor Supply Cable with Three Symmetrical Grounds and UL 1kV Voltage Rating



Application

- Shielded VFD and Servo-Motor cable to connect power from drives to AC motors
- Three insulated symmetrical grounds design helps to reduce stray currents
- Cable design for harsh industrial environments and operating conditions with high noise levels
- 1 kV rated XLPE insulation with low capacitance, ideal for applications with **high voltage spikes and long cable runs**
- Compliant with **NFPA 79** for wiring of industrial machinery
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Characteristics

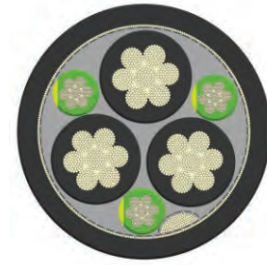
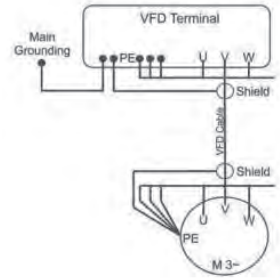
- Flexible XLPE conductors
- Three symmetrical, insulated grounds (PEs)
- Non-wicking fillers
- Effective dual layer shield for best EMC results
- Specially formulated jacket for oil resistance and easy strip design
- Low capacitance cable
- Sunlight resistant
- Direct burial
- Talc free and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V Flexible VFD Servo Cable 90C 1000V WTTC
Temperature	-40°C - +90°C static
Minimum bending radius	7.5 x cable OD fixed
Conductor marking	Black with white numbers and three green/yellow ground
Approvals	UL Type "Flexible Motor Supply Cable (Flexible VFD Servo Cable)" (AWG6 to 4/0 only) UL Types WTTC, TC-ER C(UL) TC CIC control cable FT4 CE Class 1, Div. 2 per NEC Art. 336, 392, 501 UL 1277, UL2277 Oil res II Wet/Dry P-07-KA130021-MSHA RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- XLPE insulation, Wet/Dry XHHW-2 (3C Power + 3C Grounds/PEs)
- Shielded with foil tape, tinned copper braid with ≥80% optical coverage, and drain wire
- Oil resistant PVC jacket
- Black jacket RAL 9005



WITH THREE SYMMETRICAL GROUNDS (3 Power + 3 Protective Earth Grounds)

Part No.	Description Power Ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
A2200603	AWG6/03C (206 strands)+ AWG12/03C (50 strands)	23.6	0.930	677	432
A2200403	AWG4/03C (322 strands)+ AWG12/03C (50 strands)	25.8	1.015	872	586
A2200203	AWG2/03C (511 strands)+ AWG10/03C (80 strands)	29.3	1.155	1,230	875
A2200103	AWG1/03C (644 strands)+ AWG8/03C (128 strands)	33.9	1.335	1,600	1,121
A2201/003	1/0/03C (812 strands)+ AWG8/03C (128 strands)	35.4	1.395	1,850	1,348
A2202/003	2/0/03C (1022 strands)+ AWG8/03C (128 strands)	38.1	1.500	2,187	1,620
A2203/003	3/0/03C (1288 strands)+ AWG6/03C (206 strands)	41.1	1.620	2,705	2,059
A2204/003	4/0/03C (1638 strands)+ AWG6/03C (206 strands)	47.4	1.865	3,336	2,461
A22025003	250MCM/03C* (1904 strands)+ AWG6/03C (206 strands)	50.3	1.980	3,815	2,851
A22035003	350MCM/03C* (2680 strands)+ AWG4/03C (322 strands)	56.4	2.220	5,153	3,993
A22050003	500MCM/03C* (3800 strands)+ AWG4/03C (322 strands)	63.6	2.505	6,803	5,397

*1000V WTTC, 600V TC-ER

LUTZE DRIVEFLEX® CONTROL TSP XLPE (C) PVC, Shielded

Twisted Shielded Pair Cable for Control Signals with UL/TC-ER/WTTC/CE Approvals



Application

- Twisted shielded pair cable for VFD & Motor applications to transmit control signals from drives to motors
- Cable design for harsh industrial environments and operating conditions with high noise levels
- XLPE insulation with low capacitance
- **TC-ER** for use with cable trays **without conduit** and **alongside power cables**
- Separating control from power allows full ampacity rating of the power cable
- Compliant with **NFPA 79** for wiring of industrial machinery
- WTTC – wind turbine tray cable rating for use in wind power generation
- Dry, damp or wet conditions

Part No.	Description No. of pairs	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 (16/30)					
A2441802	AWG18/1TSP	8.7	0.344	77	29
A2441804	AWG18/2TSP	15.9	0.625	164	58
AWG 16 (26/30)					
A2441602	AWG16/1TSP	9.4	0.370	88	36
A2441604	AWG16/2TSP	17.2	0.677	189	73
AWG 14 (41/30)					
A2441402	AWG14/1TSP	10.2	0.400	108	51
A2441404	AWG14/2TSP	18.8	0.739	237	102

Characteristics

- Flexible XLPE conductor design
- Non-wicking fillers
- Effective dual layer shield for EMC compliance
- Specially formulated jacket for oil resistance and easy strip design
- Low capacitance cable
- Sunlight resistant
- Direct burial
- Talc and Silicone free

Technical Data

Voltage	600V UL TC-ER 1000V Flexible VFD Servo Cable 1000V WTTC
Temperature	-40°C - +90°C static
Bending radius	6 x cable OD
Conductor marking	Black with white number print
Oil resistance	Oil Res II
Approvals	UL Type "Flexible Motor Supply Cable (Flexible VFD Servo Cable)" UL Type TC-ER UL/CE WTTC Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL 1277 Wet/Dry RoHS REACH

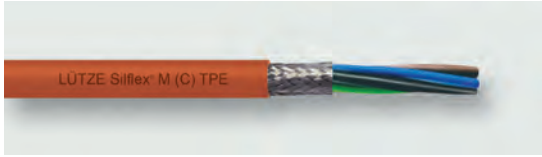
Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors for improved electrical characteristics and reduced oxidation
- XLPE insulation XHHW-2, Wet/Dry
- Each pair shielded with foil tape, drain wire, tinned copper braid (≥ 80% optical coverage), then wrapped in clear foil
- Oil resistant PVC jacket
- Black jacket RAL 9005

Specifications are subject to change without prior notice

LÜTZE SILFLEX® M (C) Motor TPE, Shielded

Flexible Motor Cable with UL/TC-ER/WTTC/MTW/CE Approvals
Similar to Allen-Bradley® 2090 and other servo system cables



Application

- Shielded multi-conductor cable for motor and servo motor applications
- Cable design for harsh industrial environments and operating conditions with high noise levels
- Improved insulation design with additional conductor stress relief layer as a power distortion suppressant
- Compliant with **NFPA 79** for machine tool wiring
- **TC-ER** for use with cable trays **without conduit**, which can reduce material and labor costs
- **UL Type 1000V Flexible Motor Supply Cable** for Motor/Power applications
- Dry, damp and wet locations

Characteristics

- Conductor stress relief layer prevents premature cable failure and reduces corona effects, increasing reliability and lifetime
- Flexible design with Nylon for crush impact resistance per UL 1277 and easy installation
- Very round cable with small diameter
- Specially formulated TPE jacket for superior oil resistance per Oil Res I and II
- Resistant to many mineral and vegetable based cutting oils
- Non-wicking fillers
- Sunlight resistant
- Direct burial
- UL Type TC-Exposed Run
- Talc free and Silicone free

Technical Data

Voltage	600V UL TC 600V UL MTW 1000V WTTC 1000V Flexible Motor Supply
Temperature	600V UL AWM 105C -40°C - +90°C (105C)
Bending radius	6 x cable OD
Conductor marking	Power: brown, black, blue Ground: green/yellow Control pair: black/white
Approvals	UL Flexible Motor Supply Cable UL TC-ER UL/AWM/CE UL MTW WTTC UL AWM Style 20328 Class 1, Div. 2 per NEC Art. 336, 392, 501 C(UL) TC CIC FT4 UL 1277 Oil Res I and II RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded bare copper conductors
- PVC/Nylon insulation with conductor stress relief layer
- Shielded with tinned copper braid, optical coverage ≥ 85%
- Oil resistant orange TPE jacket

Allen-Bradley® article designations are registered trademarks.
 Specifications are subject to change without prior notice

Part No.	Description No. of conductors incl. ground	OD - Ø ca. mm	OD - Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 16 (26/30)					
A3161604	AWG16/04C	10.5	0.410	124	50
AWG 14 (41/30)					
A3161404	AWG14/04C	11.6	0.455	159	71
AWG 12 (65/30)					
A3161204	AWG12/04C	13.1	0.510	214	107
AWG 10 (105/30)					
A3161004	AWG10/04C	16.5	0.650	321	161
AWG 8 (168/30)					
A3160804	AWG8/04C	21.0	0.825	490	267

WITH ONE SHIELDED CONTROL PAIR

AWG 16 (26/30)					
A3171604	AWG16/04C+ 1 TSP AWG18	12.1	0.477	161	72
AWG 14 (41/30)					
A3171404	AWG14/04C+ 1 TSP AWG18	12.8	0.505	196	92
AWG 12 (65/30)					
A3171204	AWG12/04C+ 1 TSP AWG18	14.2	0.581	263	128
AWG 10 (105/30)					
A3171004	AWG10/04C+ 1 TSP AWG18	18.1	0.716	380	191
AWG 8 (168/30)					
A3170804	AWG8/04C+ 1 TSP AWG18	22.5	0.890	568	285
AWG 6 (266/30)					
A3170604	AWG6/04C+ 1 TSP AWG18	24.6	1.000	786	417
AWG 4 (413/30)					
A3170404	AWG4/04C+ 1 TSP AWG16	29.5	1.162	1119	613
AWG 2 (665/30)					
A3170204	AWG2/04C+ 1 TSP AWG16	34.1	1.340	1543	983

**TSP = Twisted
Shielded Pair**

For standard three phase VFD applications, please refer to LUTZE Driveflex® cable series.

LÜTZE SILFLEX® (C) TPE Feedback, Shielded

Flexible Feedback Cable for Allen-Bradley® and other Systems



Application

- Incremental encoder cable and resolver cable for tachometer, brake sensor, speed sensor
- Cable design for harsh industrial environments and operating conditions with high noise level
- UL listed and NFPA 79 compliant
- Dry, damp and wet locations

Characteristics

- High active and passive interference resistance (EMC)
- Flexible for easy installation
- Specially formulated TPE jacket for superior oil resistance according to UL1581
- Resistant to many mineral & vegetable based cutting oils
- Non-wicking fillers
- Extended temperature range and premium durability
- Sunlight resistant
- Talc and Silicone free

Technical Data

Nominal Voltage	300V UL PLTC-ER 300V UL CM 600V UL AWM 90C
Test voltage	1.5 kV
Temperature range	-40°C to + 90°C static
Bending radius	6 x cable OD static
Burning behavior	Flame retardant per UL Vertical-Tray UL VW-1
Oil resistance	UL1581 4 days in Oil at 100°C 60 days in Oil at 75°C
Approvals	A1410001: UL PLTC-ER, meets NEC 725 and Class I Div. 2 A1410002: UL CM, meets NEC 800 Both: UL AWM Style 20626 CE RoHS REACH

Construction

- AWG conductor
- Flexible fine wire stranded tinned copper conductors
- Special PVC conductor insulation
- Conductors color-coded for specific system
- Shielded with foil tape, drain wire and tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant TPE jacket
- Green jacket similar RAL 6018

Additional feedback cables for other systems available. Please contact us for further information.

Allen Bradley® is a registered trademark.
Specifications are subject to change without prior notice

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

For Allen-Bradley® System and similar

A1410001	(5x2xAWG22) BK/BKWH, RD/RDWH, GN/GNWH, GY/GYWH, OG/OGWH	10.0	0.395	102	40
A1410002	(1x2xAWG16+1x2xAWG22+6x2xAWG26) AWG16: GY/GYWH AWG22: OG/OGWH AWG26: BK/BKWH, RD/RDWH, GN/GNWH, BL/BLWH, BN/BNWH, YE/YEWH	11.8	0.465	143	54

LÜTZE SUPERFLEX® Plus M PUR 0.6/1kV, Unshielded

High Flexing Motor Cable with UL/CE Approvals



Application

- High flexible multi-conductor cable for continuous moving applications such as machine tools, handling equipment and processing machines
- Designed for demanding industrial C-track applications
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranded per Class 6 for continuous moving applications
- TPE conductor insulation
- Low capacitance
- PUR jacket
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	1000V UL AWM U ₀ /U 0.6/1kV
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 7.5 x cable OD Fixed 4 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Isolation resistance	Min 100MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 UL VW-1 CSA FT1 IEC 60332-1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 21223 RoHS REACH

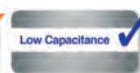
Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 Class 6 and IEC 60228 Class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Layer pitch optimized
- Fleece wrap over cabled conductor
- Extremely oil resistant PUR jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 16 / 1.5 mm²					
111370	4G1.5	7.7	0.303	81	39
AWG 14 / 2.5 mm²					
111371	4G2.5	9.3	0.366	96	64
AWG 12 / 4 mm²					
111372	4G4	10.8	0.425	156	103
111545	5G4	12.1	0.476	192	130
AWG 10 / 6 mm²					
111373	4G6	12.9	0.508	220	155
111430	5G6	14.5	0.571	269	194
AWG 8 / 10 mm²					
111374	4G10	15.5	0.610	352	257
111429	5G10	18.2	0.717	504	329
AWG 6 / 16 mm²					
111375	4G16	18.8	0.740	663	411
111548	5G16	20.8	0.819	784	516
AWG 4 / 25 mm²					
111376	4G25	23.7	0.933	804	643
AWG 2 / 35 mm²					
111377	4G35	26.6	1.041	1,240	901
AWG 1 / 50 mm²					
111378	4G50	31.8	1.252	1,642	1,286

LÜTZE SUPERFLEX® Plus M (C) PUR 0.6/1kV, Shielded

High Flexing Motor Cable with UL/CE/DESINA Approvals



Application

- High flexing Servo Motor, Motor and VFD Cable for continuous flexing applications
- Suitable for applications with extremely rough operating conditions and oil exposure
- Designed for demanding industrial C-track applications
- For Siemens (6FX8008) and similar systems
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranded per class 6 for continuous moving applications
- Reduced friction and low capacitance
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	1000V UL AWM U ₀ /U 0.6/1kV
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Isolation resistance	Min. 500MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60754-1 UL 1581 section 1080 VW-1 CSA FT1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 21223 RoHS REACH

Part No.	Description No. of conductors incl. ground	Siemens Designation	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG18 / 1.0 mm²						
111879	(4G1.0)	-	7.4	0.291	72.6	44
AWG 16 / 1.5 mm²						
111460	(4G1.5)	1BB11*	8.6	0.339	78.6	56
AWG 14 / 2.5 mm²						
111461	(4G2.5)	1BB21*	10.8	0.425	116.3	87
AWG 12 / 4 mm²						
111462	(4G4)	1BB31*	12.2	0.480	164.6	129
AWG 10 / 6 mm²						
111463	(4G6)	1BB41*	14.0	0.551	245.3	185
AWG 8 / 10 mm²						
111464	(4G10)	1BB51*	17.6	0.693	368.9	302
AWG 6 / 16 mm²						
111465	(4G16)	1BB61*	21.2	0.835	570.5	484
AWG 4 / 25 mm²						
111466	(4G25)	1BB25*	25.0	0.984	872.9	726
AWG 2 / 35 mm²						
111467	(4G35)	1BB35*	28.8	1.134	1,136.9	1,024
AWG 1 / 50 mm²						
111468	(4G50)	1BB50*	33.9	1.335	1,640.9	1,457

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Tinned copper braid shield
- Extremely oil resistant PUR jacket
- Orange jacket RAL 2003

*SIEMENS article designations are registered trademarks of SIEMENS AG.

LÜTZE SUPERFLEX® Plus M (C) PUR 0.6/1kV, Shielded

High Flexing Composite Motor Cable with UL/CE/DESINA Approvals



Application

- High flexing Servo Motor, Motor and VFD Cable for continuous flexing applications
- Suitable for applications with extremely rough operating conditions and oil exposure
- Designed for demanding industrial C-track applications
- With one control pair for SIEMENS (6FX8008) and similar systems
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranding per class 6 for continuous moving applications
- Reduced friction
- Low capacitance
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	1000V UL AWM U ₀ /U 0.6/1kV
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Isolation resistance	Min. 500MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60754-1 UL 1581 section 1080 VW-1 CSA FT1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 21223 RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Control pair individually shielded with foil and braid
- Control pair color-coded (bk, wh)
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Orange jacket RAL 2003

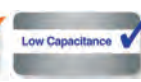
*SIEMENS article designations are registered trademarks of SIEMENS AG.

WITH ONE CONTROL PAIR

Part No.	Description No. of conductors incl. ground	Siemens Designation	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 16 / 1.5 mm²						
111420	(4G1.5 + (2x1.5))	1BA11*	11.4	0.449	141	100
AWG 14 / 2.5 mm²						
111421	(4G2.5 + (2x1.5))	1BA21*	12.9	0.508	158	130
AWG 12 / 4 mm²						
111422	(4G4 + (2x1.5))	1BA31*	14.5	0.571	215	171
AWG 10 / 6 mm²						
111423	(4G6 + (2x1.5))	1BA41*	16.1	0.634	289	228
AWG 8 / 10 mm²						
111424	(4G10 + (2x1.5))	1BA51*	19.5	0.768	457	353
AWG 6 / 16 mm²						
111425	(4G16 + (2x1.5))	1BA61*	23.6	0.929	642	519
AWG 4 / 25 mm²						
111426	(4G25 + (2x1.5))	1BA25*	28.5	1.122	917	761
AWG 2 / 35 mm²						
111427	(4G35 + (2x1.5))	1BA35*	31.0	1.220	1,845	1,068
AWG 1 / 50 mm²						
111428	(4G50 + (2x1.5))	1BA50*	34.5	1.358	2,511	1,505

LÜTZE SUPERFLEX® Plus M (C) PUR 0.6/1kV, Shielded

High Flexing Composite Motor Cable with UL/CE/DESINA Approvals



Application

- High flexing Servo Motor, Motor and VFD Cable for continuous flexing applications
- Suitable for applications with extremely rough operating conditions and oil exposure
- Designed for demanding industrial C-track applications
- With two control pairs for Indramat / Bosch Rexroth and similar systems
- Compatible with all major brand C-tracks

Characteristics

- Super finely stranding per Class 6 for continuous moving applications
- Reduced friction
- Low capacitance
- Highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Non-wicking fillers
- Talc and Silicone free

Technical Data

Voltage	1000V UL AWM U ₀ /U 0.6/1kV
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Conductor marking	Black with white numbers and one green/yellow ground
Isolation resistance	Min 500MΩ x km
Burning behavior	Flame retardant per IEC 60332-1-2 EN 50265-2 UL 1581 section 1080 VW-1 CSA FT1 IEC 60332-1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 21223 RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Control pairs individually shielded with foil and braid
- Control pairs number printed (5,6)(7,8)
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Orange jacket RAL 2003

WITH TWO CONTROL PAIRS

Part No.	Description No. of conductors incl. ground	Indramat Designation*	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 18 / 1.0 mm²						
111270	(4G1.0+ 2x(2x0.75))	INK 0653*	12.5	0.492	155	93
AWG 16 / 1.5 mm²						
111271	(4G1.5+ 2x(2x0.75))	INK 0650*	12.9	0.508	171	109
AWG 14 / 2.5 mm²						
111279	(4G2.5+ 2x(2x1.0))	INK 0602*	14.2	0.560	221	152
AWG 12 / 4 mm²						
111388	(4G4+(2x1.0)+ (2x1.5))	INK 0603*	16.3	0.641	255	221
AWG 10 / 6 mm²						
111998	(4G6+(2x1.0)+ (2x1.5))	INK 0604*	18.4	0.724	355	258
AWG 8 / 10 mm²						
111762	(4G10+(2x1.0)+ (2x1.5))	INK 0605*	22.3	0.878	513	383
AWG 6 / 16 mm²						
111276	(4G16+2x(2x1.5))	INK 0606*	26.8	1.055	714	598
AWG 4 / 25 mm²						
111277	(4G25+2x(2x1.5))	INK 0607*	29.3	1.154	1,151	847
AWG 2 / 35 mm²						
111278	(4G35+2x(2x1.5))	INK 0667*	32.5	1.280	1,462	1,102

*Indramat article designations are registered trademarks
Specifications are subject to change without prior notice

LÜTZE SUPERFLEX® Plus PUR 0.6/1kV, Unshielded

High Flexing Single Conductor Motor Cable 0.6/1kV, Unshielded



Application

- Performance flexing cable, specifically suitable for machine and device construction for transport and conveyor technology
- As motor supply or ground conductor
- Optimally suited for C-tracks in extremely harsh operating conditions
- Compatible with all major brand C-tracks

Characteristics

- Very good alternating bending strength
- Good pressure and roll-over resistance
- Super finely stranded per class 6 for continuous moving applications
- TPE insulation with very high break through resistance
- PUR jacket for highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Talc and Silicone free

Technical Data

Voltage	U ₀ /U 0.6/1kV
Test voltage	4000V
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 7.5 x cable OD Fixed 4 x cable OD
Isolation resistance	Min. 200MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1 UL 1581 section 1080 VW-1 CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 10587 RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- Extremely oil resistant PUR jacket
- Black jacket RAL 9005

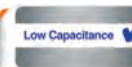
Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
AWG 8 / 10 mm²					
111126	1x10	8.4	0.331	93	62
AWG 6 / 16 mm²					
111127	1x16	9.8	0.386	138	99
AWG 4 / 25 mm²					
111128	1x25	11.4	0.449	206	157
AWG 2 / 35 mm²					
111129	1x35	13.4	0.528	290	219
AWG 1 / 50 mm²					
111130	1x50	15.2	0.598	384	321
2/0 / 70 mm²					
111131	1x70	16.6	0.654	526	433
3/0 / 95 mm²					
111132	1x95	19.2	0.756	701	597
4/0 / 120 mm²					
111133	1x120	22.2	0.874	874	806

Green/Yellow jacket

AWG 8 / 10 mm²					
111243	1x10	8.4	0.331	93	62
AWG 6 / 16 mm²					
111197	1x16	9.8	0.386	138	99
AWG 4 / 25 mm²					
111337	1x25	11.4	0.449	206	157
AWG 2 / 35 mm²					
111285	1x35	13.4	0.528	290	219

LÜTZE SUPERFLEX® Plus (C) PUR 0.6/1kV, Shielded

High Flexing Single Conductor Motor Cable 0.6/1kV



Application

- Performance flexing cable, specifically suitable for machine and device construction for transport and conveyor technology
- As motor supply or ground conductor
- Optimally suited for C-tracks in extremely harsh operating conditions
- Compatible with all major brand C-tracks

Characteristics

- Very good alternating bending strength
- Good pressure and roll-over resistance
- Super finely stranded per class 6 for continuous moving applications
- TPE insulation with very high break through resistance
- PUR jacket for highest level of resistance against cooling fluids, greases and oils
- Abrasion and hydrolysis resistant, low water absorption
- UV resistant
- Talc and Silicone free

Technical Data

Voltage	U ₀ /U 0.6/1kV
Test Voltage	4000V
Temperature	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 7.5 x cable OD Fixed 4 x cable OD
Isolation resistance	Min. 200MΩ x km
Burning behavior	Flame retardant per VDE 0482 part 265-2, DIN EN 50265-2, IEC 60332-1, UL 1581 section 1080 VW-1, CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Oil resistance	Oil Res II
Approvals	UL AWM Style 10587 RoHS REACH

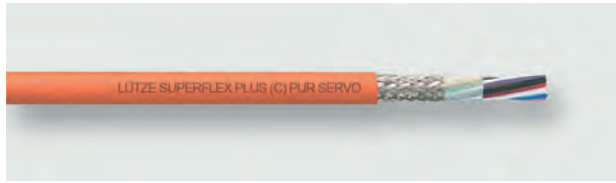
Construction

- Metric conductor
- Bare copper super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- Fleece wrap
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Black jacket RAL 9005

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
	AWG 8 / 10 mm²				
111289	(1x10)	9.0	0.354	115	81
	AWG 6 / 16 mm²				
111290	(1x16)	10.4	0.409	162	121
	AWG 4 / 25 mm²				
111291	(1x25)	12.0	0.472	237	183
	AWG 2 / 35 mm²				
111292	(1x35)	14.0	0.551	323	250
	AWG 1 / 50 mm²				
111293	(1x50)	15.8	0.622	424	356
	2/0 / 70 mm²				
111294	(1x70)	17.4	0.685	573	473
	3/0 / 95 mm²				
111295	(1x95)	20.2	0.795	770	657
	4/0 / 120 mm²				
111296	(1x120)	23.4	0.921	962	884

LÜTZE SUPERFLEX® Plus (C) PUR Feedback, Shielded

High Flexing Feedback Cable for Bosch-Rexroth and other Systems



Application

- Incremental encoder cable, termination cable for tachometer, brake sensor, speed sensor
- Full PUR jacket and TPE cable insulation optimally suited for C-tracks, extremely harsh operating conditions, aggressive coolants and lubricants
- Especially for industrial environments, machines and plants

Characteristics

- High active and passive interference resistance (EMC)
- Special braided shield, optimized for continuous flexing
- Very good alternating bending strength, for continuous flexing
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant, and rot-resistant
- Resistant to weather, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Resistant to most oils, greases, alcohol-free benzines and kerosene (see tech. information)
- Talc and Silicone free

Technical Data

UL-Approval	AWM 20233
Voltage	300V 80°C
Test voltage	2000V
Insulation resistance	Min. 2000MΩ x km
Temperature range	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1 UL 1581 section 1080 VW-1 CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	RoHS REACH

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color-coded for specific system
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Orange jacket RAL 2003

Additional feedback cables for other systems available. Please contact us for further information.

*Bosch Rexroth article designations are registered trademarks
Specifications are subject to change without prior notice

Part No.	Description No. of conductors incl. ground	INK* Description	OD / Ø mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	--	---------------------	--------------	------------------	-------------------	-------------------

For Bosch-Rexroth System and similar

110941	(2x1.0+4x2x0.25) 1.0: WH, BN 0.25: BN/GN, GY/PK, BU/VT, RD/BK	INK-0209*	8.9	0.350	81	43
111780	(2x0.5+4x2x0.25) 0.5: WH, BN 0.25: BN/GN, GN/PK, BU/VT, RD/BK	INK-0448*	8.7	0.343	67	40
110940	(9x0.5) Strand color according to DIN 47100	INK-0208*	8.8	0.346	84	50
111495	(4x1.0+4x2x0.14+(4x0.14)) 1.0: BU, WHGN, BNGN, WH 0.14: GY/PK, YE/VT, GN/BN, RD/BK (0.14): GNBK, BUBK, YEBK, RDBK	INK-0532*	9.5	0.374	92	65
111781	(2x0.5+2x2x0.25) 0.5: WH, BN 0.25: RD/BK, GY/PK	INK-0750*	7.6	0.299	60	28

LÜTZE SUPERFLEX® Plus (C) PUR Feedback, Shielded

High Flexing Feedback Cable for Allen-Bradley® and other Systems



LÜTZE SUPERFLEX®
Contract



Application

- Incremental encoder cable, termination cable for tachometer, brake sensor, speed sensor
- Full PUR jacket and special TPE cable insulation optimally suited for C-tracks, extremely harsh operating conditions, aggressive coolants and lubricants
- Especially for industrial environments, machines and plants

Characteristics

- High active and passive interference resistance (EMC)
- Special braided shield, optimized for continuous flexing
- Very good alternating bending strength, for continuous flexing
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant, and rot-resistant
- Resistant to weather, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Resistant to most oils, greases, alcohol-free benzines and kerosene (see tech, information)
- Talc and Silicone free

Technical Data

UL-Approval	AWM 21223
Nominal Voltage	1000V 80°C
Test voltage	3000V
Insulation resistance	Min. 100MΩ x km
Temperature range	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 10 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2; DIN EN 50265-2 IEC 60332-1 UL 1581 section 1080 VW-1 CSA FT 1
Halogen free	According to DIN EN 50267-2-1

Construction

- Metric conductor
- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color-coded for specific system
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Green jacket RAL 6018

Additional feedback cables for other systems available. Please contact us for further information.

Part No.	Description No. of conductors incl. ground	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	--	------------------	------------------	-------------------	-------------------

For Allen-Bradley® System and similar

111488	(5x2x0.34) BKWH/BK, RDWH/RD, GNWH/GN, GYWH/GY, OGWH/OG	9.2	0.362	72	36
111489	(2x1.5+2x0.34+6x2x0.14) 1.5: GY, WHGY 0.34: OG, WHOG 0.14: BKWH/BK, RDWH/RD, GNWH/GN, BNWH/BN, YEWY/YE, BUWH/BU	10.8	0.425	121	81

LÜTZE SUPERFLEX® Plus (C) PUR Feedback, Shielded

High Flexing Feedback Cable for Siemens and other Systems



LÜTZE SUPERFLEX®
Systematic



Application

- Incremental encoder cable, termination cable for tachometer, brake sensor, speed sensor
- Full PUR jacket and TPE cable insulation optimally suited for C-tracks, extremely harsh operating conditions, aggressive coolants and lubricants
- Especially for industrial environments, machines and plants

Characteristics

- High active and passive interference resistance (EMC)
- Special braided shield, optimized for continuous flexing
- Very good alternating bending strength, for continuous flexing
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant, and rot-resistant
- Resistant to weather, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Resistant to most oils, greases, alcohol-free benzines and kerosene (see tech, information)
- Talc and Silicone free

Technical Data

UL-Approval	AWM 20236
Voltage	30V 80°C
Test voltage	500V
Insulation resistance	Min. 2000MΩ x km
Temperature range	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 DIN EN 50265-2 IEC 60332-1 UL 1581 section 1080 VW-1 CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	RoHS REACH

Construction

- Bare copper wire super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color-coded for specific system
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Extremely oil resistant PUR jacket
- Green jacket RAL 6018

Additional feedback cables for other systems available.
Please contact us for further information.

*Siemens and DRIVE-CLiQ are registered trademarks
Specifications are subject to change without prior notice

Part No.	Description No. of conductors incl. ground	Siemens Designation	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	--	------------------------	------------------	------------------	-------------------	-------------------

For Siemens System, Standard 6FX8000* and similar

111412	(8x2x0.18) BK/BN, RD/OG, YE/GN, BU/VT, GY/WH, WHBK/WHBN, WHRD/WHOG, WHGN/WHYE	1BD11*	8.1	0.319	88	49
111456	(4x0.5+4x2x0.38) 0.5: WHBU, WHBK, WHRD, WHYE 0.38: BK/BN, RD/OG, GN/YE, BU/VT	1BD21*	9.2	0.362	89	58
111459	(2x(0.5)+3x(2x0.14)) (0.5): BK, RD 0.14: BK/BN, RD/OG, GN/YE	1BD31*	8.7	0.343	86	46
111458	(2x0.5+3x(2x0.14)+4x0.14) 0.5: BNBU, BNRD (0.14) BK/BN, RD/OG, GN/YE 0.14: BU, GY, WHBK, WHYE	1BD41*	9.0	0.354	82	41
111457	(2x0.5+3x(2x0.14)+ 4x0.23+4x0.14) 0.5: BNBU, BNRD 0.23: GNBK, GNRD, BNYE, BNGY (0.14) BK/BN RD/OG, YEGN 0.14: BU, GY, WHBK, WHYE	1BD51*	9.6	0.378	103	6.2
111453	(4x2x0.18) BK/BN, RD/OG, GN/YE, BU/VT	1BD61*	6.4	0.252	51	22
111452	(2x2x0.18) Star quad, BK, RD, OG, BN	1BD71*	5.0	0.197	28	15
111454	(12x0.23) BK, BN, RD, OG, GN, YE, BU, VT, GY, WH, WHBK, WHBN	1BD81*	6.7	0.264	57	32

For Siemens System DRIVE-CLiQ Standard System* and similar

104310	(2x2x0.15+1x2x0.34) 0.34: RD/BK 0.15: PK/BU, YE/GN	2DC00*	6.8	0.268	49	23
--------	--	--------	-----	-------	----	----

LÜTZE SUPERFLEX® Plus (C) PUR Feedback, Shielded

High Flexing Feedback Resolver Cable for Various Systems



LÜTZE SUPERFLEX®
Systematic



Application

- Industrial shielded feedback, resolver cable for tachometer, brake sensor, speed sensor etc.
- Full PUR jacket and TPE cable insulation optimally suited for C-tracks, extremely harsh operating conditions, aggressive coolants and lubricants
- Especially for industrial environments, machines and plants

Characteristics

- High active and passive interference resistance (EMC)
- Special braided shield, optimized for continuous flexing
- Very good alternating bending strength, for continuous flexing
- Low adhesion, abrasion-resistant, nick-resistant, tear-resistant
- Hydrolysis-resistant, microbe-resistant and rot-resistant
- Resistant to weather, ozone and UV resistant
- Salt water resistant
- Excellent coolant and lubricant resistance
- Resistant to most oils, greases, alcohol-free benzines and kerosene (see tech, information)
- Talc and Silicone free

Technical Data

UL-Approval	AWM 20233
Voltage	300V 80°C
Test voltage	2000V
Maximum conductor capacitance	ca. 60pF/m
Insulation resistance	Min. 2000MΩ x km
Temperature range	Moving -25°C - +80°C Fixed -40°C - +80°C
Minimum bending radius	Moving 12 x cable OD Fixed 6 x cable OD
Burning behavior	Flame retardant per VDE 0482 part 265-2 EN 50265-2 IEC 60332-1 UL 1581 section 1080 VW-1 CSA FT 1
Halogen free	According to DIN EN 50267-2-1
Approvals	RoHS REACH

Construction

- Bare copper wire, super finely stranded per DIN VDE 0295 class 6 and IEC 60228 class 6
- Special TPE conductor insulation
- G: with GNYE ground conductor
x: without ground conductor
- Conductors color-coded per DIN 47100
- Pairs individually shielded with foil and braid, and jacketed
- Layer pitch optimized
- Fleece wrap over cabled conductors
- Tinned copper braid shield, optical coverage ≥ 85 %
- Full PUR jacket, matte, adhesion-free surface
- Green jacket RAL 6018

Additional feedback cables for other systems available. Please contact us for further information.

Part No.	Description No. of conductors	OD / Ø ca. mm	OD / Ø inches	Weight Lbs/Mft	Copper Lbs/Mft
----------	----------------------------------	------------------	------------------	-------------------	-------------------

Individual Pair Shielding

111778	(3x(2x0.25)) DIN 47100 TSP GNBN, GYPK, BUVT	10.4	0.409	91	46
111779	(4x(2x0.25)) DIN 47100 TSP GNBN, GYPK, BUVT, RDBK	11.4	0.449	122	64

**TSP = Twisted
Shielded Pair**

1-800-447-2371



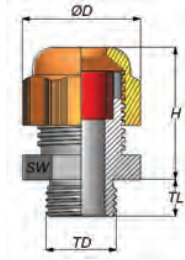
www.lutze.com

6 Wire and Cable Management



LUTZE TOP-T Fittings NPT

Plastic NPT



Characteristics

- Integrated strain relief
- Wide sealing and clamping range
- Easy to install
- Temperature range -20°C - +100°C/
-4°F - +212°F
- Max temporary temperature up to
+150°C/+300°F
- Protection class IP68

Specifications

Connecting thread	NPT
Material	Polyamide 6
Seal	CR Chloroprene Rubber
Color	Black RAL 9005 Gray RAL 7001

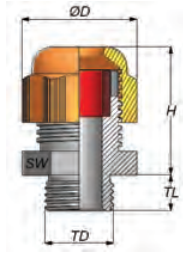
Item Specific Approvals

- UL Recognized (R) or UL Listed (L), as per table

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	D/SW mm	TD mm	H mm	UL R / L
BLACK								
FPNPT38B	NPT 3/8"	0.197-0.394	5-10	15	22	16.5	29	R
FPNPT12B	NPT 1/2"	0.394-0.551	10-14	15	27	20.7	32	L
FPNPT34B	NPT 3/4"	0.511-0.709	13-18	15	33	25.9	35	L
FPNPT10B	NPT 1"	0.709-0.984	18-25	18	42	32.4	40	L
GRAY								
FPNPT38G	NPT 3/8"	0.197-0.394	5-10	15	22	16.5	29	R
FPNPT12G	NPT 1/2"	0.394-0.551	10-14	15	27	20.7	32	L
FPNPT34G	NPT 3/4"	0.511-0.709	13-18	15	33	25.9	35	L
FPNPT10G	NPT 1"	0.709-0.984	18-25	18	42	32.4	40	L
REDUCED CLAMPING RANGE								
FPNPT38B-R	NPT 3/8"	0.118-0.276	3-7	15	22	16.5	29	
FPNPT12B-R	NPT 1/2"	0.276-0.472	7-12	15	27	20.7	32	
FPNPT34B-R	NPT 3/4"	0.354-0.630	9-16	15	33	25.9	35	
FPNPT10B-R	NPT 1"	0.472-0.787	12-20	18	42	32.4	40	

LUTZE TOP-T Fittings PG

Plastic PG



Characteristics

- Integrated strain relief
- Wide sealing and clamping range
- Easy to install
- Temperature range -20°C - +100°C/
-4°F - +212°F
- Max temporary temperature up to +150°C/+300°F
- Protection class IP68

Specifications

- Connecting thread PG as per DIN 40430
- Material Polyamide 6
- Seal CR Chloroprene Rubber
- Color Black RAL 9005
Gray RAL 7001

Item Specific Approvals

- UL Recognized (R) or UL Listed (L), as per table

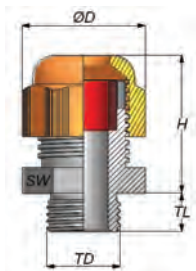
Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	D/SW mm	TD mm	H mm	UL R / L
BLACK								
FPPG7B	PG 7	0.118-0.256	3-6.5	8	15	12.4	23	R
FPPG9B	PG 9	0.157-0.315	4-8	8	19	15.1	26.5	R
FPPG11B	PG 11	0.197-0.394	5-10	8	22	18.5	22	R
FPPG13B	PG 13.5	0.236-0.472	6-12	10	24	20.3	29.5	L
FPPG16B	PG 16	0.394-0.551	10-14	10	27	22.5	32.5	L
FPPG21B	PG 21	0.512-0.709	13-18	11	33	28.1	35	L
FPPG29B	PG 29	0.709-0.984	18-25	11	42	37	42	L
FPPG36B	PG 36	0.866-1.260	22-32	13	53	46.8	52	L
FPPG42B	PG 42	1.181-1.496	30-38	13	60	54	54.5	L
FPPG48B	PG 48	1.339-1.732	34-44	14	65	59	54.5	L

GRAY								
FPPG7G	PG 7	0.118-0.256	3-6.5	8	15	12.4	23	R
FPPG9G	PG 9	0.157-0.315	4-8	8	19	15.1	26.5	R
FPPG11G	PG 11	0.197-0.394	5-10	8	22	18.5	22	R
FPPG13G	PG 13.5	0.236-0.472	6-12	10	24	20.3	29.5	L
FPPG16G	PG 16	0.394-0.551	10-14	10	27	22.5	32.5	L
FPPG21G	PG 21	0.512-0.709	13-18	11	33	28.1	35	L
FPPG29G	PG 29	0.709-0.984	18-25	11	42	37	42	L
FPPG36G	PG 36	0.866-1.260	22-32	13	53	46.8	52	L
FPPG42G	PG 42	1.181-1.496	30-38	13	60	54	54.5	L
FPPG48G	PG 48	1.339-1.732	34-44	14	65	59	54.5	L

REDUCED CLAMPING RANGE								
FPPG7G-R	PG 7	0.079-0.197	2-5	8	15	12.4	22	
FPPG9G-R	PG 9	0.079-0.236	2-6	8	19	15.1	25	
FPPG11G-R	PG 11	0.118-0.276	3-7	8	22	18.5	28	
FPPG13G-R	PG 13.5	0.197-0.354	5-9	10	24	20.3	29	
FPPG16G-R	PG 16	0.276-0.472	7-12	10	27	22.5	31	
FPPG21G-R	PG 21	0.354-0.630	9-16	11	33	28.1	35	
FPPG29G-R	PG 29	0.472-0.787	12-20	11	42	37	40	
FPPG36G-R	PG 36	0.787-1.024	20-26	13	53	46.8	49	

LUTZE TOP-T Fittings Metric

Plastic Metric



Characteristics

- Integrated strain relief
- Wide sealing and clamping range
- Easy to install
- Manufactured according to EN 50262 requirements
- Temperature range -20°C - +100°C/
-4°F - +212°F
- Max temporary temperature up to +150°C/
+300°F
- Protection class IP68

Specifications

Connecting thread	Metric as per EN 60423
Material	Polyamide 6
Seal	CR Chloroprene Rubber
Color	Black RAL 9005 Gray RAL 7001

Item Specific Approvals

- UL Recognized (R) or UL Listed (L), as per table

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	D/SW mm	TD mm	H mm	UL R / L
----------	--------	-------------------------	---------------------	-------	---------	-------	------	----------

BLACK

FPM12B	M12x1.5	0.118-0.256	3-6.5	8	15.0	12	23	R
FPM16B	M16x1.5	0.197-0.394	5-10	10	22.0	16	30	R
FPM20B	M20x1.5	0.315-0.551	10-14	10	27.0	20	33	L
FPM25B	M25x1.5	0.512-0.709	13-18	10	33.0	25	35.5	L
FPM32B	M32x1.5	0.709-0.984	18-25	15	42.0	32	41	L
FPM40B	M40x1.5	0.866-1.260	22-32	18	53.0	40	50	L
FPM50B	M50x1.5	1.181-1.496	30-38	18	60.0	50	54	L
FPM63B	M63x1.5	1.339-1.732	34-44	18	65.0	63	54.5	L

GRAY

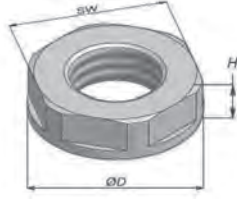
FPM12G	M12x1.5	0.118-0.256	3.0-6.5	8	15.0	12	23	R
FPM16G	M16x1.5	0.197-0.394	5-10	10	22.0	16	30	R
FPM20G	M20x1.5	0.315-0.551	10-14	10	27.0	20	33	L
FPM25G	M25x1.5	0.512-0.709	13-18	10	33.0	25	35.5	L
FPM32G	M32x1.5	0.709-0.984	18-25	15	42.0	32	41	L
FPM40G	M40x1.5	0.866-1.260	22-32	18	53.0	40	50	L
FPM50G	M50x1.5	1.181-1.496	30-38	18	60.0	50	54	L
FPM63G	M63x1.5	1.339-1.732	34-44	18	65.0	63	54.5	L

REDUCED CLAMPING RANGE

FPM12G-R	M12x1.5	0.079-0.197	2-5	8	15.0	12	23	
FPM16G-R	M16x1.5	0.118-0.276	3-7	10	22.0	16	30	
FPM20G-R	M20x1.5	0.276-0.472	7-12	10	27.0	20	33	
FPM25G-R	M25x1.5	0.354-0.630	9-16	10	33.0	25	35.5	
FPM32G-R	M32x1.5	0.472-0.787	12-20	15	42.0	32	41	
FPM40G-R	M40x1.5	0.787-1.024	20-26	18	53.0	40	50	
FPM50G-R	M50x1.5	0.984-1.220	25-31	18	60.0	50	54	
FPM63G-R	M63x1.5	1.142-1.378	29-35	18	65.0	63	54.5	

LUTZE TOP-T Locknuts Plastic

Plastic NPT, PG and Metric



Characteristics

- Hexagonal locknut for secure tightening of plastic cable fittings and accessories
- Easy to install
- Temperature range- -20°C - +100°C/
-4°F - +212°F
- Max temporary temperature up to +150°C/+300°F

Specifications

Material Polyamide 6, 30% glass fiber reinforced
Color Black RAL 9005
Gray RAL 7001

Flange is imprinted with locknut size for easy identification.

Part No.	Thread	OD - Ø mm	SW mm	H mm
NPT BLACK				
LPNPT38B	NPT 3/8"	25	22	5
LPNPT12B	NPT 1/2"	30.5	27	5
LPNPT34B	NPT 3/4"	37.5	33	5
LPNPT10B	NPT 1"	46.5	47	6
NPT GRAY				
LPNPT38G	NPT 3/8"	25	22	5
LPNPT12G	NPT 1/2"	30.5	27	5
LPNPT34G	NPT 3/4"	37.5	33	5
LPNPT10G	NPT 1"	46.5	47	6
PG BLACK				
LPPG7B	PG 7	21	19	5
LPPG9B	PG 9	24	22	5
LPPG11B	PG 11	26	24	5
LPPG13B	PG 13.5	29	27	6
LPPG16B	PG 16	33	30	6
LPPG21B	PG 21	39	36	7
LPPG29B	PG 29	50	46	7
LPPG36B	PG 36	66	60	8
LPPG42B	PG 42	73	65	8
LPPG48B	PG 48	78	70	8
PG GRAY				
LPPG7G	PG 7	21	19	5
LPPG9G	PG 9	24	22	5
LPPG11G	PG 11	26	24	5
LPPG13G	PG 13.5	29	27	6
LPPG16G	PG 16	33	30	6
LPPG21G	PG 21	39	36	7
LPPG29G	PG 29	50	46	7
LPPG36G	PG 36	66	60	8
LPPG42G	PG 42	73	65	8
LPPG48G	PG 48	78	70	8
METRIC BLACK				
LPM12B	M12x1.5	19.5	18	5
LPM16B	M16x1.5	24.2	22	5
LPM20B	M20x1.5	28.6	26	6
LPM25B	M25x1.5	35.0	32	6
LPM32B	M32x1.5	46.1	41	7
LPM40B	M40x1.5	55.3	50	7
LPM50B	M50x1.5	66.1	60	8
LPM63B	M63x1.5	82.5	75	8
METRIC GRAY				
LPM12G	M12x1.5	19.5	18	5
LPM16G	M16x1.5	24.2	22	5
LPM20G	M20x1.5	28.6	26	6
LPM25G	M25x1.5	35.0	32	6
LPM32G	M32x1.5	46.1	41	7
LPM40G	M40x1.5	55.3	50	7
LPM50G	M50x1.5	66.1	60	8
LPM63G	M63x1.5	82.5	75	8

LUTZE TOP-T Fittings Reducer

Plastic Metric Reducer and PG Reducer



Metric Reducer Characteristics

- Reduction of threaded or clearance holes to smaller thread size
- Temperature range -30°C - +100°C / -22°F - +212°F
- Material Polyamide PA6 GF30
- Internal/External thread Metric as per EN 60423
- Color Gray RAL 7035

PG Reducer Characteristics

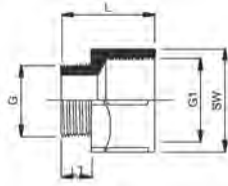
- Reduction of threaded or clearance holes to smaller thread size
- Temperature range -30°C - +100°C / -22°F - +212°F
- Material Polyamide PA6 GF30
- Internal/External thread PG as per DIN 40430
- Color Gray RAL 7035

Part No.	Thread G	Thread G1	SW mm	L mm	L1 mm
METRIC REDUCER					
600550	M20x1.5	M12x1.5	24	12	8
600551	M20x1.5	M16x1.5	24	12	8
600553	M25x1.5	M16x1.5	32	14	8
600554	M25x1.5	M20x1.5	32	14	8
600557	M32x1.5	M20x1.5	36	16	10
600558	M32x1.5	M25x1.5	36	16	10
600561	M40x1.5	M25x1.5	46	16	10
600562	M40x1.5	M32x1.5	46	16	10
600565	M50x1.5	M32x1.5	55	18	12
600566	M50x1.5	M40x1.5	55	18	12

Part No.	Thread G	Thread G1	SW mm	L mm	L1 mm
PG REDUCER					
600607	PG 13.5	PG 9	24	9	6
600604	PG 21	PG 16	32	16	11
600605	PG 29	PG 21	39	18	12
600606	PG 36	PG 29	50	24	18

LUTZE TOP-T Fittings Enlarger

Plastic PG Enlarger



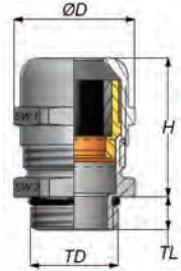
PG Enlarger Characteristics

- Enlarger of threaded or clearance holes to larger thread size
- Fiber glass reinforced
- Temperature range -30°C - +100°C / -22°F - +212°F
- Material Polyamide PA6 GF30
- Internal/External thread PG as per DIN 40430
- Color Gray RAL 7035

Part No.	Thread G	Thread G1	SW mm	L mm	L1 mm
PG ENLARGER					
600351	PG 7	PG 9	19	20.5	8
600352	PG 9	PG 11	22	22.5	8
600353	PG 11	PG 13.5	24	24	8
600355	PG 13.5	PG 16	27	27	9
600356	PG 16	PG 21	33	29	9
600357	PG 21	PG 29	43	33	10
600358	PG 29	PG 36	50	38	10
600359	PG 36	PG 42	60	40	12.5

LUTZE TOP-T Fittings NPT

Metal NPT



Characteristics

- Integrated strain relief
- Anti-twist design
- Wide sealing and clamping range
- Easy to install
- Temperature range -20°C - +100°C / -4°F - +212°F
- Protection class IP68

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	SW1 mm	SW2 mm	H mm	UL R / L
NPT								
FMNPT38	NPT 3/8"	0.157-0.315	4-8	11.5	20	20	23	R
FMNPT12	NPT 1/2"	0.236-0.472	6-12	13	22	22	25.5	L
FMNPT34	NPT 3/4"	0.512-0.709	13-18	13	30	30	34	L
FMNPT10	NPT 1"	0.709-0.984	18-25	13	40	43	43	L

Specifications

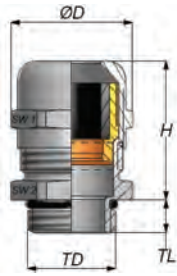
Design allows for shield termination	
Connecting thread	NPT
Material	Brass, nickel plated
Clamping insert	Polyamide 6
Seal	CR Chloroprene Rubber
O-ring	NBR

Item Specific Approvals

- UL Recognized (R) or UL Listed (L), as per table
- Type 4X for UL Recognized and UL Listed items

LUTZE TOP-T Fittings PG

Metal PG



Characteristics

- Integrated strain relief
- Anti-twist design
- Wide sealing and clamping range
- Easy to install
- Temperature range
-20°C - +100°C
-4°F - +212°F
- Protection class
IP68

Fitting Specifications

Connecting thread	PG as per DIN 40430
Material	Brass, nickel plated
Clamping insert	Polyamide 6
Seal	CR Chloroprene
	Rubber
O-ring	NBR

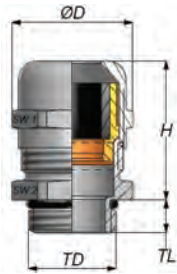
Item Specific Approvals

- UL Recognized (R) or UL Listed (L), as per table
- Type 4X for UL Recognized and UL Listed items

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	SW1 mm	SW2 mm	H mm	UL R / L
PG								
FMPG7	PG 7	0.118-0.256	3-6.5	6	14	14	21.8	R
FMPG9	PG 9	0.157-0.315	4-8	6	17	17	22.6	
FMPG11	PG 11	0.197-0.394	5-10	6	20	20	25.3	
FMPG13	PG 13.5	0.236-0.472	6-12	6.5	22	22	24.1	R
FMPG16	PG 16	0.394-0.551	10-14	6.5	24	24	27.5	
FMPG21	PG 21	0.512-0.709	13-18	7.2	30	30	31.2	L
FMPG29	PG 29	0.709-0.984	18-25	8	40	40	39.3	L
FMPG36	PG 36	0.866-1.260	22-32	9	50	50	47.2	L
FMPG42	PG 42	1.181-1.496	30-38	12	58	58	47.7	L
FMPG48	PG 48	1.339-1.732	34-44	14	64	64	52.0	L
LONG THREAD								
FMPG7-L	PG 7	0.118-0.256	3-6.5	10	14	14	21.8	R
FMPG9-L	PG 9	0.157-0.315	4-8	10	17	17	22.6	
FMPG11-L	PG 11	0.197-0.394	5-10	10	20	20	25.3	
FMPG13-L	PG 13.5	0.236-0.472	6-12	10	22	22	24.1	R
FMPG16-L	PG 16	0.394-0.551	10-14	10	24	24	27.5	L
FMPG21-L	PG 21	0.512-0.709	13-18	12	30	30	31.2	L
FMPG29-L	PG 29	0.709-0.984	18-25	12	40	40	39.3	L

LUTZE TOP-T Fittings Metric

Metal Metric



Characteristics

- Integrated strain relief
- Anti-twist design
- Wide sealing and clamping range
- Easy to install
- Temperature range -20°C - +100°C / -4°F - +212°F
- Protection class IP68

Fitting Specifications

Connecting thread	Metric as per EN 60423
Material	Brass, nickel plated
Clamping insert	Polyamide 6
Seal	CR Chloroprene Rubber
O-ring	NBR

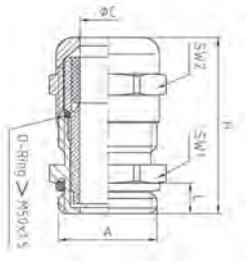
Item Specific Approvals

- UL Recognized (R) or UL Listed (L) as per table
- Type 4X for UL Recognized and UL Listed items

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	SW1 mm	SW2 mm	H mm	UL R / L
METRIC								
FMM12	M12x1.5	0.118-0.256	3-6.5	6	14	14	21.5	R
FMM16	M16x1.5	0.157-0.315	4-8	7	17	18	23	R
FMM20	M20x1.5	0.236-0.472	6-12	8	22	22	24.3	L
FMM25	M25x1.5	0.394-0.551	10-14	8	24	27	27.6	L
FMM32	M32x1.5	0.512-0.709	13-18	9	30	34	31.2	L
FMM40	M40x1.5	0.709-0.984	18-25	9	40	43	38.5	L
FMM50	M50x1.5	0.866-1.260	22-32	9	50	55	47.3	L
FMM63	M63x1.5	1.339-1.732	34-44	14	64	68	50.3	L
LONG THREAD								
FMM12-L	M12x1.5	0.118-0.256	3-6.5	12	14	14	21.5	
FMM16-L	M16x1.5	0.157-0.315	4-8	12	17	18	23	
FMM20-L	M20x1.5	0.236-0.472	6-12	12	22	22	24.3	
FMM25-L	M25x1.5	0.394-0.551	10-14	12	24	27	27.6	
FMM32-L	M32x1.5	0.512-0.709	13-18	15	30	34	31.2	
FMM40-L	M40x1.5	0.709-0.984	18-25	15	40	43	38.5	
FMM50-L	M50x1.5	0.866-1.260	22-32	15	50	55	47.3	
FMM63-L	M63x1.5	1.339-1.732	34-44	18	64	68	50.3	

LUTZE TOP-T Fittings Metric EMC

Metal Metric EMC (Electro Magnetic Compatibility)



Characteristics

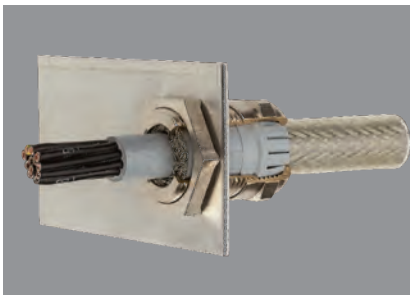
- For shielded cable
- Integrated strain relief (per DIN EN 50262)
- Anti-twist design
- Wide sealing and clamping range
- Easy to install
- Waterproof
- Temperature range -30°C - +120°C
-22°F - +248°F

- Protection class IP68 (5 bar)

Fitting Specifications

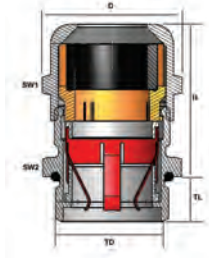
Connecting thread	Metric per DIN EN 60423
Strain relief	per DIN EN 50262
Dome nut	Brass CuZn39Pb3, nickel plated
Clamping insert	Polyamide PA6
Sealing ring	Chloroprene CR
Gland body	Brass CuZn39Pb3, nickel plated
O-ring at external thread	NBR-Oz

Part No.	Thread A	Clamping Range Ø inches	Clamping Range Ø mm	L mm	SW1 mm	SW2 mm
EMC						
600170	M12x1.5	0.118-0.256	3-6.5	5.0	14	14
600171	M16x1.5	0.217-0.394	5.5-10	5.5	17	17
600172	M20x1.5	0.315-0.512	8-13	6.0	22	22
600173	M25x1.5	0.433-0.709	11-18	7.0	30	30
600174	M32x1.5	0.591-0.827	15-21	8.0	34	34
600175	M40x1.5	0.748-1.063	19-27	8.0	44	44
600176	M50x1.5	1.024-1.378	26-35	9.0	55	55
600177	M63x1.5	1.535-1.890	39-48	10.0	66	66



LUTZE TOP-T Fittings EMC2 Metric and NPT

Metal EMC2 (Electro Magnetic Compatibility), Quick Installation



Characteristics

- Adapts to different size cable shields
- 360° shield termination
- Integrated strain relief
- Wide sealing and clamping range
- Fast and easy to install
- Temperature range
-20°C - +100°C /
-4°F - +212°F
- Protection class
IP68

Fitting Specifications

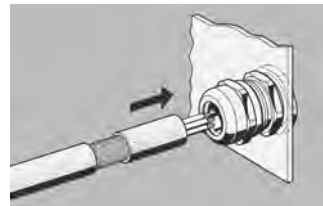
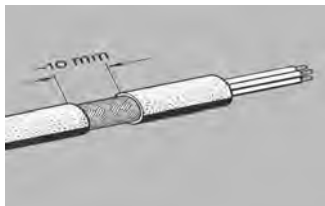
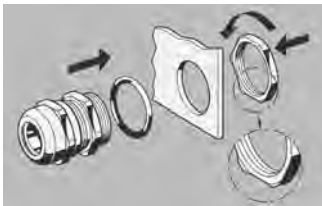
Connecting thread	Metric as per EN 60423
Material	Brass, nickel plated
Clamping insert	Polyamide 6
Seal	CR Chloroprene Rubber
O-ring	NBR

Part No.	Thread	Clamping Range Ø inches	Clamping Range Ø mm	TL mm	SW1 mm	SW2 mm	H mm	UL R / L
METRIC								
FMM12-C2	M12x1.5	0.118-0.256	3-6.5	6	14	14	21.5	R/L
FMM16-C2	M16x1.5	0.197-0.394	5-10	7	20	20	25.3	R/L
FMM20-C2	M20x1.5	0.236-0.472	6-12	8	22	22	26.5	R/L
FMM25-C2	M25x1.5	0.433-0.669	11-17	8	27	27	32.7	R/L
FMM32-C2	M32x1.5	0.590-0.827	15-21	8	34	34	36.3	L
FMM40-C2	M40x1.5	0.748-1.102	19-28	9	43	43	44.5	L
FMM50-C2	M50x1.5	1.063-1.496	27-38	9	58	58	51.5	L
FMM63-C2	M63x1.5	1.339-1.732	34-44	14	64	68	52.9	L
NPT								
FMNPT38-C2	NPT 3/8"	0.197-0.394	5-10	11.5	20	20	40.5	R
FMNPT12-C2	NPT 1/2"	0.236-0.472	6-12	13	22	22	38.3	L
FMNPT34-C2	NPT 3/4"	0.512-0.709	13-18	13	30	30	47.4	L
FMNPT10-C2	NPT 1"	0.709-0.984	18-25	13	40	40	55.2	L

Item Specific Approvals

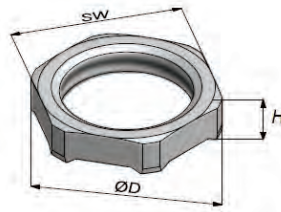
- UL Recognized (R) or UL Listed (L), as per table
- Type 4X for UL Recognized and UL Listed items

Long thread EMC2 fittings
available through special order.
Please contact us.



LUTZE TOP-T Locknuts Metal

Metal PG, Metric and EMC Metric



Characteristics

- Hexagonal locknut for secure tightening of cable fittings and accessories
- Temperature range up to +200°C/+392°F

Locknut Specifications

Material Brass, nickel plated

Part No.	Thread	OD - Ø mm	SW mm	H mm
PG				
LMPG7	PG 7	16.5	15	2.8
LMPG9	PG 9	19.8	18	2.8
LMPG11	PG 11	23.1	21	3
LMPG13	PG 13.5	25.3	23	3
LMPG16	PG 16	28.6	26	3
LMPG21	PG 21	35.2	32	3.5
LMPG29	PG 29	45.1	41	4.0
LMPG36	PG 36	56.1	51	5.0
LMPG42	PG 42	66.0	60	5.0
LMPG48	PG 48	70.4	64	5.5

Due to tapered NPT thread, we recommend using plastic locknuts with metal NPT fittings if locknut is required.

METRIC				
LMM12	M12x1.5	16.5	15	2.8
LMM16	M16x1.5	20.9	19	3.0
LMM20	M20x1.5	26.4	24	3.5
LMM25	M25x1.5	33	30	4.0
LMM32	M32x1.5	39.6	36	5.0
LMM40	M40x1.5	50.6	46	5.0
LMM50	M50x1.5	66	60	5.0
LMM63	M63x1.5	77	70	6.0

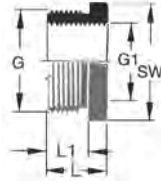
EMC Cutting Teeth Metric

- For secure tightening of EMC cable fittings
- To cut through paint layers or powder coatings ensuring optimal contact
- Increased vibration resistance

EMC - CUTTING TEETH METRIC				
600460	M12x1.5	16.5	15	4.5
600461	M16x1.5	20.9	19	4.5
600462	M20x1.5	26.4	24	5.5
600463	M25x1.5	33	30	5.5
600464	M32x1.5	39.7	36	5.5
600465	M40x1.5	50.6	46	6.0
600466	M50x1.5	66	60	6.0

LUTZE TOP-T Fittings Reducer

Metal PG and Metric Reducer



PG Reducer Characteristics

- Reduction of threaded or clearance holes to smaller thread size
- Temperature range -30°C - +100°C / -22°F - +212°F
- Reduction Brass, nickel plated
- Internal/External thread PG as per DIN 40430

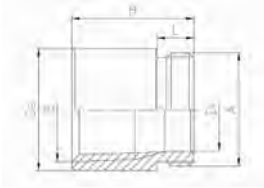
Metric Reducer Characteristics

- Reduction of threaded or clearance holes to smaller thread size
- Temperature range -30°C - +100°C / -22°F - +212°F
- Reduction Brass, nickel plated
- Internal/External thread Metric as per EN 60423

Part No.	Thread G	Thread G1	SW mm	L mm	L1 mm
PG					
600400	PG 9	PG 7	17	8.5	6
600411	PG 11	PG 7	20	8.5	6
600401	PG 11	PG 9	20	8.5	6
600408	PG 13.5	PG 9	22	9	6.5
600402	PG 13.5	PG 11	22	9	6.5
600409	PG 16	PG 9	24	9.5	6.5
600410	PG 16	PG 11	24	9.5	6.5
600403	PG 16	PG 13.5	24	9.5	6.5
600413	PG 21	PG 11	30	10	7
600414	PG 21	PG 13.5	30	10	7
600404	PG 21	PG 16	30	10	7
600407	PG 29	PG 16	39	11.5	8
600405	PG 29	PG 21	39	11.5	8
600412	PG 36	PG 21	50	12.5	9
600406	PG 36	PG 29	50	12.5	9
600416	PG 42	PG 36	57	14	10
METRIC					
600220	M16x1.5	M12x1.5	18	8.5	6.0
600221	M20x1.5	M12x1.5	24	9	6.5
600222	M20x1.5	M16x1.5	24	9	6.5
600223	M25x1.5	M16x1.5	28	10	7
600224	M25x1.5	M20x1.5	28	10	7
600225	M32x1.5	M20x1.5	34	11.5	8
600226	M32x1.5	M25x1.5	34	11.5	8
600227	M40x1.5	M25x1.5	45	11.5	8
600228	M40x1.5	M32x1.5	45	11.5	8
600229	M50x1.5	M32x1.5	55	14	10
600230	M50x1.5	M40x1.5	55	14	10

LUTZE TOP-T Fittings Adapter

Metric to NPT Adapters



Adapter METRIC to NPT Characteristics

- Adapter from metric to NPT thread
- Temperature range up to +200°C/+392°F
- Adapter Brass CuZn39Pb3, nickel-plated
- External thread Metric as per EN 60423
- Internal thread NPT

Part No.	Thread A	Thread B	L mm	H mm	Da mm	Di mm
METRIC TO NPT						
AMM16-12	M16x1.5	NPT 1/2"	6.5	25	24	11
AMM20-12	M20x1.5	NPT 1/2"	6.5	25	24	15
AMM25-34	M25x1.5	NPT 3/4"	7	28	30	18
AMM32-34	M32x1.5	NPT 3/4"	8	26	37	23
AMM32-10	M32x1.5	NPT 1"	8	33	38	27

LUTZE TOP-T Fittings Accessories

Multihole Insert TPE PG, Metric, NPT



Characteristics

- Multiple hole insert for two or more cables in one fitting
- Replaces the existing rubber insert to offer multiple hole installation
- Suitable for plastic and metal fittings
- Solid inserts can be drilled to suit any application
- Minimum quantity 100 pcs/package

Insert Specifications

Material TPE

Part No.	Fits Size PG	Fits Size Metric	Fits Size NPT	Outer - Ø mm	Number of Cables x OD - Ø mm
600626	PG 9	M16 (metal only)		10	2 x 3.0
600627	PG 9	M16 (metal only)		10	4 x 3.0
600541	PG 9	M16 (metal only)		10	0 x 0.0
600628	PG 11	M16 (plastic only)	3/8"	13	2 x 4.0
600629	PG 11	M16 (plastic only)	3/8"	13	2 x 4.5
600635	PG 11	M16 (plastic only)	3/8"	13	3 x 4.0
600636	PG 11	M16 (plastic only)	3/8"	13	3 x 5.0
600542	PG 11	M16 (plastic only)	3/8"	13	0 x 0.0
600638	PG 13.5	M20		15	2 x 4.5
600639	PG 13.5	M20		15	2 x 5.0
600640	PG 13.5	M20		15	2 x 6.0
600637	PG 13.5	M20		15	3 x 4.0
600630	PG 13.5	M20		15	3 x 5.0
600543	PG 13.5	M20		15	0 x 0.0
600641	PG 16		1/2"	17	2 x 4.0
600644	PG 16		1/2"	17	2 x 6.0
600631	PG 16		1/2"	17	3 x 4.0
600643	PG 16		1/2"	17	3 x 5.0
600646	PG 16		1/2"	17	4 x 6.0
600633	PG 16		1/2"	17	5 x 4.0
600544	PG 16		1/2"	17	0 x 0.0
600645	PG 16		1/2"	17	3 x 6.0
600647	PG 16		1/2"	17	3 x 6.5
600642	PG 16		1/2"	17	4 x 4.0
600632	PG 16		1/2"	17	4 x 5.0
600648	PG 21	M25	3/4"	22	2 x 7.0
600651	PG 21	M25	3/4"	22	2 x 8.0
600653	PG 21	M25	3/4"	22	2 x 9.0
600649	PG 21	M25	3/4"	22	3 x 7.0
600652	PG 21	M25	3/4"	22	3 x 8.0
600634	PG 21	M25	3/4"	22	4 x 7.0
600545	PG 21	M25	3/4"	22	0 x 0.0
600656	PG 29	M32	1"	29.5	5 x 8.5
600654	PG 29	M32	1"	29.5	6 x 5.0
600655	PG 29	M32	1"	29.5	8 x 5.0
600546	PG 29	M32	1"	29.5	0 x 0.0

LUTZE EMC Cabinet Accessories

EMC rails with shield termination and strain relief options within the control cabinet



Part No.	EMC Rail Type	Dimensions WxHxL mm	No. of shield points	Weight grams
346813	EMVS 04-55813	15x32x1,155	55	466
346812	EMVS 03-46812	21.5x75x1,173	46	1,169

EMC Rail Characteristics

- Material
- Storage Temperature Formed sheet metal
-30°C - +90°C,
-22°F - +194°F
- Operational Temperature -5°C - +80°C,
+23°F - +176°F

Mounting Bracket Characteristics

- 346814 Standard M5 thread
- 346860 Standard M8 thread

Part No.	Mounting bracket Type	Dimensions WxHxL mm	Suitable for Rail	Weight grams
346814	HW-EMVS 04	29.8x14x24	346813	8
346860	HW-EMVS 03	18x80x65	346812	98

Shield Clamp Characteristics

- Material Sheet steel
- Temperature range 0°C - +60°C,
+32°F - +140°F

Part No.	Shield Clamp Type	Cable Clamping Range Ø mm	Length mm	Weight grams
330089	EMVSK 12	0-12	36	2.5
330071	EMVFSK1	12 - 20	42	3
330072	EMVFSK2	20 - 30	55	5
330073	EMVFSK3	30 - 50	74	7

Strain Relief Characteristics

- Fits rails 346812, 346813
- Material Galvanized Steel
- Hexagon screw Slotted
- Bottom clip use is optional

Part No.	Strain Relief Type	Cable Clamping Range Ø mm	Thread	Weight grams
331000	KS0	8 - 12	M6	30
331001	KS1	12 - 16	M6	32
331002	KS2	16 - 22	M6	35
331003	KS3	34 - 40	M6	68
331004	KS4	52 - 58	M8	60

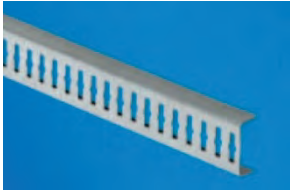
Metal Tie Wrap Characteristics

Stainless Steel

Part No.	Metal Tie Wrap Type	Length mm	Material	Weight grams
330060	KSE	250	Stainless Steel	30

LUTZE EMC Cabinet Accessories

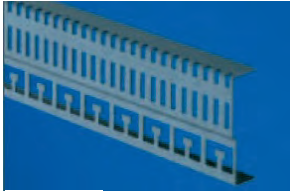
Assembly of EMC rails with shield termination and strain relief options



346813



346814



346812



346860

System advantages at a glance:

- Provides shield termination and strain relief within the control cabinet
- Easy to install
- Zip ties can be used with both rails if desired

1. Choose EMC rail based on application requirements.

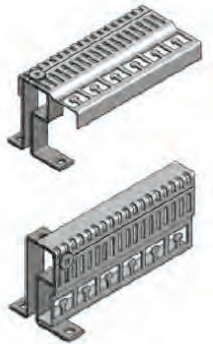
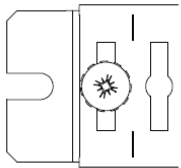
Lutze EMC rails can be used in any control cabinet either with traditional set up or together with Lutze LSC-Wiring system.

Determine application requirements:

- EMC shielding required only, choose narrower rail 346813
- For both EMC shielding and strain relief needs, choose wider rail 346812
- Cut rail to desired length to fit your cabinet

2. Choose appropriate brackets to install the rail inside the cabinet.

- Use mounting brackets 346814 to secure rail 346813. Uses standard M5 bolts.
- Use mounting brackets 346860 to secure rail 346812. Rail can be mounted into the cabinet in two different ways: see pictures to the left. Mounting holes, 8.5 mm, to be made by the user.



3. Choose appropriate shield clamps.

- Determine the desired shielding clamp



330089



330071 - 330073



331000 - 331004

4. Select optional strain relief if required in the application.

- Rail 346813 provides shield termination or strain relief
- Rail 346812 provides combined shield termination and strain relief

LUTZE Cablefix Vario

Modular Strain Relief System with Plastic or Aluminum Frame for Cable Assemblies



Characteristics

- Frame material
- Protection class

Polished Aluminum or Polyamide 66 (GF30) IP65

Small (VK) Insert Characteristics

- Material
- Temperature range
- Resistance

TPE
-40°C - +135°C,
-40°F - +275°F
UV, ozone, oils and fuels,
acids and dyes, solvents
and salt water

Large (VG) Insert Characteristics

- Material
- Temperature range
- Resistance

TPE
-40°C - +135°C,
-40°F - +275°F
UV, ozone, oils and fuels,
acids and dyes, solvents
and salt water

Blanking Plug Characteristics

- Material

PA6 (GF15)
Gray

Part No.	Frame Type	Dimensions WxHxD mm	No. of Small VK Inserts	No. of Large VG Inserts
PLASTIC				
606052	KKLR1	136 x 71 x 30	4	2
606053	KKLR2	164 x 71 x 30	6	3
ALUMINUM				
606001	AKLR1	108 x 68 x 30	4	2
606002	AKLR2	148 x 68 x 30	6	3
606004	AKLR4	148 x 108 x 30	12	6
606005	AKLR5	188 x 78 x 30	8	4
606007	AKLR7	188 x 118 x 30	16	8

Part No.	Type Small VK	Clamping Range Ø mm	No of Holes
606150	VK0	SOLID	0
606151	VK4	4 – 4.5	14
606152	VK5	4.5 – 5.5	8
606153	VK6	5.5 – 6.5	8
606154	VK7	6.5 – 7.5	5
606155	VK8	7.5 – 8.5	5
606156	VK9	8.5 – 9.5	3
606157	VK10	9.5 – 10.5	3
606158	VK12	10.5 – 12.5	2
606159	VK14	12.5 – 14.5	2
606160	VK16	14.5 – 16.5	2

Part No.	Type Large VG	Clamping Range Ø mm	No of Holes
606200	VG0	SOLID	0
606201	VG18	16.5 – 18.5	2
606202	VG20	18.5 – 20.5	1
606203	VG22	20.5 – 22.5	1
606204	VG24	22.5 – 24.5	1
606205	VG26	24.5 – 26.5	1
606206	VG28	26.5 – 28.5	1
606207	VG30	28.5 – 30.5	1
606208	VG32	30.5 – 32.5	1
606209	VG34	32.5 – 34.5	1

Part No.	Fits Insert Part No.	Type	OD - Ø mm	Length mm
606250	606151	BL4	4	30
606251	606152	BL5	5	30
606252	606153	BL6	6	30
606253	606154	BL7	7	30
606254	606155	BL8	8	30
606255	606156	BL9	9	30
606256	606157	BL10	10	30
606257	606158	BL12	12	30
606258	606159	BL14	14	30
606259	606160	BL16	16	30
606260	606201	BL18	18	30

LUTZE Cablefix Vario

Assembly of Modular Strain Relief System



1. Choose aluminum or plastic frame.

The Cablefix Vario features outstanding material characteristics for harsh industrial environments and a high sealing protection of IP65. Every frame ships with an included drill pattern for proper mounting to the cabinet. The plastic frames are made of reinforced polyamide 66 with brass support. The aluminum version is made entirely of solid polished aluminum. Cablefix Vario offers strain relief options for cable ranges from 4.5 to 34.5mm in diameter. The versatile system is ideal for installations and retrofitting, and offers proper strain relief for already connectorized cables. This is a great advantage over conventional solutions with standard cable fittings.



2. Choose appropriate inserts for the selected frame.

Example:

606052 can hold either

- 4 inserts type VK or
- 2 inserts type VG
- 2 VK inserts replace 1 VG insert

VK small	VK small	VG large	VG large	VG large	VK small
VK small	VK small				VK small



- The tongue and groove design makes combining different inserts quick and easy.
- The slotted design allows easy installation by sliding the assembled cables in from the side.



3. Select appropriately sized blanking plugs for unused holes.

Once all unused holes are plugged, the system provides a protection rating IP65. The rubber components do not require the use of grease, which is advantageous over other similar systems.

The advantages at a glance:

- Minimum space requirement
- Simple insertion of rubber inserts due to tongue and groove design
- Very versatile
- Allows future expansion
- Ideal for retrofitting of existing cabinets

LUTZE Fittings Cablefix

Cablefix



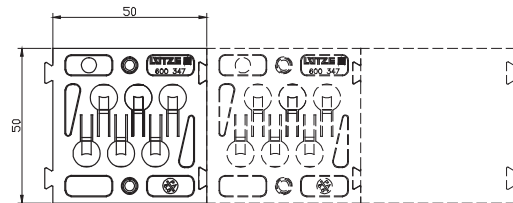
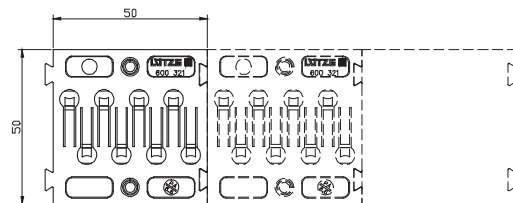
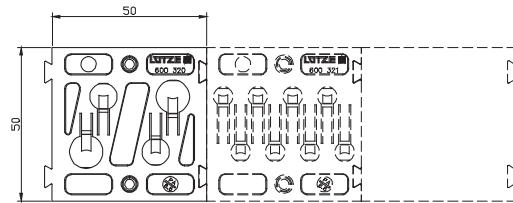
Characteristics

- Integrated strain relief in one direction
- Easy to install: cable pushes easily into position, locks itself and it can no longer be pulled out unless the clamp is released
- An integrated seal protects up to IP55
- Individual cables can be easily loosened and replaced for troubleshooting, maintenance or retrofitting
- Mix & Match: interlocking seal allows for any combination of the three different cablefix versions to custom fit it to your application
- Blanking plugs are supplied to seal unused holes

Fitting Specifications

Material	Polyamide PA
Temperature range	-30°C - +70°C / 22°F - +212°F
Halogen free	Yes
Burning behavior	Polyamide plate according to UL 94 V2
Silicone free	Yes
Enclosure wall thickness	maximum 3 mm
Protection class	IP55
Seal	NBR60 oil resistant

Part No.	Type	Dimensions (WxHxD) mm	Cut out W x H mm	Number of Cables x Cable OD - Ø mm
600320	1xB/V	50.0 x 50.0 x 10.0	46 x 46	2 x 6.1-8.8 + 2 x 7.8-10.7
600321	1xS/A	50.0 x 50.0 x 10.0	46 x 46	8 x 3.8-6.3
600347	1xST	50.0 x 50.0 x 10.0	46 x 46	6 x 6.3-8.9



8 Network Connectivity

Industrial Connectors and Panel Pass Through Devices



LUTZE Network Connectivity Products

Industrial Network Connectors



Application

- Industrial USB connectivity

Characteristics

- Available with or without cord
- 7 different cord lengths
- Female / Female 1:1 or Female / Male 1:1
- Backwards compatible with USB 2.0
- Standard 22.5 mm cut out
- Easy to install

Technical Data

Temperature	-25°C - +70°C/ -13°F - +158°F
Protection class	Type 12 IP65 cap closed, IP20 in inserted operation
Shielding	yes
Transmission	5 Gigabit/sec
Performance	
Contact material	CuSN, gold-plated
Rated current	900 mA per contact
Bending radius	15 x cable OD
Dimensions (DxD)	29.5 mm x 29 mm
Approvals	UL

USB 3.0 “SuperSpeed” Panel Connector



Part No.	Description	Cord Length
490112	USB 3.0 A/A F/F	N/A
490113.0030	USB 3.0 A/A F/M	0.3 m / 11.8"
490113.0060	USB 3.0 A/A F/M	0.6 m / 32.6"
490113.0080	USB 3.0 A/A F/M	0.8 m / 31.5"
490113.0150	USB 3.0 A/A F/M	1.5 m / 59.0"
490113.0200	USB 3.0 A/A F/M	2.0 m / 78.7"
490113.0300	USB 3.0 A/A F/M	3.0 m / 118.0"
490113.0500	USB 3.0 A/A F/M	5.0 m / 196.8"

Application

- Industrial Ethernet connectivity
- Cat5e or Cat6 available

Characteristics

- Female / Female 1:1
- Gold-plated 8 pin (4 pair) connection
- Standard 22.5 mm cut out installation
- Easy to install

Technical Data

Temperature	-25°C - +70°C/ -13°F - +158°F
Protection class	Type 12 IP65 cap closed, IP20 in inserted operation
Shielding	360°
Contact material	CuSN, gold-plated
Rated current	1.5A
Dimensions (DxD)	29.5 mm x 29 mm
Approvals	UL

RJ45 Panel Pass Through



Part No.	Description	Category	Transmission Performance
492075	RJ45 F/F 8/8	Cat5e	100 MHz
491075	RJ45 F/F 8/8	Cat6	250 MHz

LUTZE Network Connectivity Products

Industrial Network Connectors



Application

- Industrial Ethernet connectivity
- Power over Ethernet
- Cat6a

Characteristics

- Insulation Displacement Connector (IDC)
- Zinc die-cast housing
- Quick connect technology
- Field wireable
- Easy to install

Technical Data

Temperature	-40°C - +70°C/ -40°F - +158°F IP20
Protection class	IP20
Transmission frequency	10 Gigabits/s
Rated current	Max 1.0A per contact
Shielding	360°
Contact material	Spring steel 0.8 µm gold-plated
Fits cable ODs	AWG 27-22
Clamping Range	5 – 9 mm
Approvals	UL

RJ45 IDC Industrial Connector



Part No.	Description	Cable Cross section	Transmission Performance
490128	RJ45 – M 8 pol. Cat6a Color code: T568B	Solid 24/1-22/1 Stranded 27/7-22/7	10 Gigabit/sec
490129	RJ45 – M 8 pol. Cat6a Color code: T568A	Solid 24/1-22/1 Stranded 27/7-22/7	10 Gigabit/sec
490138	RJ45 – M 8 pol. Cat6a Color code: T568B	Solid 26/1-24/1 Stranded 27/7-24/7	10 Gigabit/sec

Application

- Industrial Ethernet connectivity

Characteristics

- 17 mm cut out installation
- Female / Female 4:4 or 8:8
- Easy to install

Technical Data

Temperature	-25°C - +85°C/ -13°F - +185°F
Protection class	IP 67 in inserted operation
Rated current	Max 1.0A per contact
Shielding	360°
Contact material	gold-plated phosphor bronze
Dimensions	29.5 x 29 mm

M12 / RJ45 Panel Pass Through



Part No.	Description	No. Poles	Transmission Performance
490105	M12 / RJ45 F/F 90° Cat5	4	100 Megabit/sec
490106	M12 / RJ45 F/F 180° Cat5	4	100 Megabit/sec
490107	M12 / RJ45 F/F 90° Cat5e	8	1 Gigabit/sec
490108	M12 / RJ45 F/F 180° Cat5e	8	1 Gigabit/sec

9 Technical Overview

LÜTZE SILFLEX®	85
LÜTZE SUPERFLEX®	86
LÜTZE SUPERFLEX® High Flexing Cable Cycle Rating	87
Handling and Installation of LÜTZE SUPERFLEX®	88
BUS and Network	90
ETHERNET – Overview	91
DRIVEFLEX® VFD and Servo Motor Cable	93
Motor, Servo and Drive Applications	94
Approvals for North America	95
NFPA 79, 2012 Edition	96
Ampacity per National Electric Code (USA)	97
Motor, VFD and Servo Cable Selection by Horsepower	98
Conductor Stranding	99
Conductor Markings	100
Chemical Resistance of PVC, TPE and PUR Cable Jackets	102
Protection Class Designation	103
Thread Tables and Torque Recommendations for Cable Fittings ..	104
Fittings Selection Chart	105
Part Number Index	112

LÜTZE SILFLEX®

LÜTZE SILFLEX® - The Flexible Cable for Harsh Industrial Environments

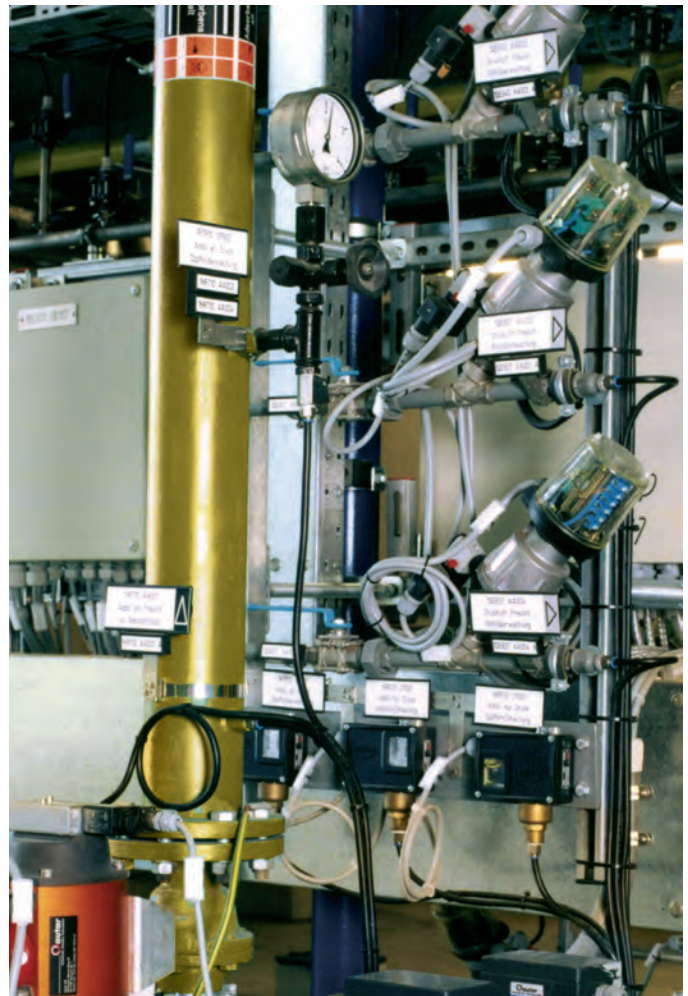
LÜTZE SILFLEX® cables are suitable for stationary and flexible applications without continuous linear movement (not recommended for drag chains) and allow easy installation in the field.

LÜTZE SILFLEX® cables are available in control and power cable configurations.

These cables are flexible for easy routing to the machine and are designed to withstand the exposure to various harsh industrial environments.

LÜTZE SILFLEX® can be used in machine tools, machine and plant construction, industrial HVAC technology, assembly and production lines as well as many other industrial applications.

LÜTZE SILFLEX® cables are silicone free and are approved by many Automotive manufacturing plants.



LÜTZE SUPERFLEX® and LÜTZE SUPERFLEX® PLUS



LÜTZE SUPERFLEX® sets Industry standards: Longevity, Reliability, Flexibility

LÜTZE offers a variety of high flexing cables specifically designed for use in continuous motion applications such as drag chains. LÜTZE SUPERFLEX® and LÜTZE SUPERFLEX® Plus cables include high flexing control and motor supply cables, as well as electronic and network cables.

All LÜTZE SUPERFLEX® cables are compatible with all major brand drag chains.

LÜTZE SUPERFLEX® N is designed for moderate to higher performance flexing in short to medium length drag chains. LÜTZE SUPERFLEX® N is offered with PVC or High Glide Insulation (TPE) insulation and with specially formulated PVC jacket.

LÜTZE SUPERFLEX® Plus PUR is designed for high performance flexing or longer drag chains. LÜTZE SUPERFLEX® Plus PUR contains high grade premium materials such as High Glide TPE insulation and PUR jackets for high performance applications in modern high speed machine tools.

All high flexing cables require special handling and installation techniques which are different from those of standard flexible control cables. To ensure the longest possible life span for your cable, it is important to follow installation procedures precisely.



LUTZE Technical Overview

LÜTZE SUPERFLEX® High Flexing Cable Cycle Ratings

The demanding mechanical requirements in c-tracks require the use of specially designed cables, constructed for continuous flexing. The lifetime of cables in c-tracks highly depends on the mechanical parameters of the application, but also on proper handling and installation of the cable.

Cable Type	Traveling distances	Bending Radius	Speed	Acceleration	Cycles
LÜTZE SUPERFLEX® PLUS PUR					

Unshielded cables with special TPE or High Glide Insulation, PUR or TPE jackets	< 16 ft / 5 m	> 10 Ø	< 3 m/s	< 5 m/s ²	20,000,000
	< 67 ft / 20 m	> 7 Ø	< 5 m/s	< 10 m/s ²	10,000,000
	< 328 ft / 100 m	> 7 Ø	< 5 m/s	< 10 m/s ²	2,000,000

LÜTZE SUPERFLEX® PLUS (C) PUR					
--------------------------------------	--	--	--	--	--

Shielded cables with special TPE or High Glide Insulation, special sub-jackets, and PUR or TPE jackets	< 16 ft / 5 m	> 12 Ø	< 3 m/s	< 5 m/s ²	20,000,000
	< 67 ft / 20 m	> 10 Ø	< 5 m/s	< 10 m/s ²	10,000,000
	< 328 ft / 100 m	> 10 Ø	< 5 m/s	< 10 m/s ²	2,000,000

LÜTZE SUPERFLEX® N					
---------------------------	--	--	--	--	--

Unshielded cables with special TPE or High Glide Insulation, PVC and Alloy jackets e.g. A138 series	< 16 ft / 5 m	> 12 Ø	< 3 m/s	< 5 m/s ²	10,000,000
	< 49 ft / 15 m	> 10 Ø	< 5 m/s	< 10 m/s ²	5,000,000

LÜTZE SUPERFLEX® N (C)					
-------------------------------	--	--	--	--	--

Shielded cables with special TPE or High Glide Insulation, fleece wrap or sub-jackets PVC and Alloy jackets e.g. A139 series	< 16 ft / 5 m	> 15 Ø	< 3 m/s	< 5 m/s ²	10,000,000
	< 49 ft / 15 m	> 12 Ø	< 5 m/s	< 10 m/s ²	5,000,000

The data in this table shows actual application parameters and accomplished cycles in independent tests. Flexing cycle performance can only be compared by looking at all the data. A rating of "millions of operations" is meaningless if the distance, speed and bend radius is unknown.

LÜTZE SUPERFLEX® Plus M (C) PUR UL Servo 0,6/1 kV, per SIEMENS®* standard acc. to SIEMENS MOTION-CONNECT 800PLUS*

Traveling distances	Bending Radius	Speed	Acceleration
< 10 ft / 3 m	> 10 Ø	< 5 m/s	< 50 m/s ²
< 16 ft / 5 m	> 10 Ø	< 5 m/s	< 30 m/s ²
< 32 ft / 10 m	> 10 Ø	< 5 m/s	< 15 m/s ²
< 49 ft / 15 m	> 10 Ø	< 5 m/s	< 10 m/s ²
< 164 ft / 50 m	> 10 Ø	< 5 m/s	< 5 m/s ²

*registered trademark


Handling & Installation LÜTZE SUPERFLEX® – Quick Overview

1. Selecting Cables for Continuous Motion Applications – C-Tracks

We recommend special high flexing cables such as LÜTZE SUPERFLEX® cables, for use in C-tracks to ensure long life times:

- LÜTZE SUPERFLEX® cable is proven to be compatible with all major brands of C-tracks.
- LÜTZE SUPERFLEX® N is designed for moderate flexing in short to medium length C-tracks.
- LÜTZE SUPERFLEX® Plus **PUR** is designed for high performance flexing or longer C-tracks.

High Flexing Cables such as LÜTZE SUPERFLEX® cables are different from standard flexible cables:

Standard Flexible Cables – LÜTZE SILFLEX®	High Flexing Cables – LÜTZE SUPERFLEX®
 <ul style="list-style-type: none">• Low number of strands per conductor• longer pitch layering• designed as a pliable cable for easy routing and installation   <ul style="list-style-type: none">• no central core• mostly PVC as insulation material• foil shield or braid shield• jacket material depends on application	 <ul style="list-style-type: none">• high number of super fine strands per conductor• short pitch layering• conductors are cabled without back twist• higher quality of materials• slower and more complex manufacturing process on high-end equipment• designed for linear constant motion   <ul style="list-style-type: none">• central core for single layer construction• special PVC or TPE as insulation material• tinned copper braid shield• high abrasion resistant jacket material such as PUR

Handling & Installation LÜTZE SUPERFLEX® – Quick Overview

2. Correct Handling of LÜTZE SUPERFLEX® Cables

- When unreeling the cable, do not change the bend direction. The cable has to go on the new reel in the same direction it came off the reel. Low and equal tensile force during spooling!



DO ✓

DO NOT ✗

- Ring put ups require careful uncoiling by rolling the ring upright over the floor.



- Do not twist the cable when unwinding. Always unwind straight from spool.



DO NOT ✗

3. Correct Installation of LÜTZE SUPERFLEX® Cables

- Cable retains bend from reel. Do not flex against original bend or relax cable for 24 hrs by laying it flat.



DO ✓

DO NOT ✗

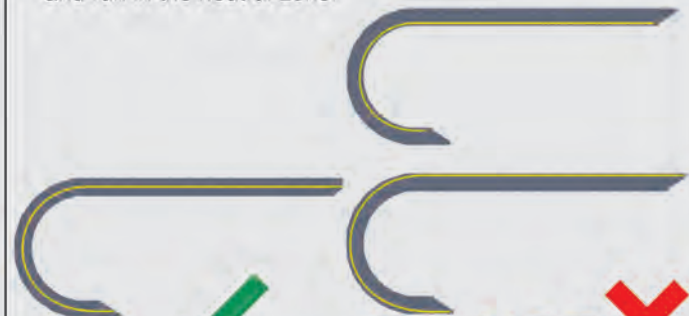
- Try to ensure balanced weight distribution. If you have more than one heavy cable, we recommend installing the heavy cables evenly to each side of the track.



- Use dividers horizontally and vertically to separate the track into separate cavities. Install just one cable per separated cavity. If absolutely necessary, two small or a small and a big cable can share a cavity.



- Observe the minimum bending radius for optimum performance. Make sure that all cables are length-adjusted and run in the neutral zone.



DO ✓

DO NOT ✗

For further information please visit: www.lutze.com/superflex

BUS and Network Cables



BUS and Network cables

BUS-Systems have become a very vital part of factory automation and it is hard to imagine automation without them. Besides hardware and software components, passive components such as bus cables and connectors play an important role for reliable function of the system. Bus cables must comply with all electrical parameters of the particular system. There is no universally applicable bus cable as the individual requirements are too diverse.

Lutze offers robust, industrial grade Bus and Network cables for the most common used systems worldwide. These cables are being offered for stationary and flexible applications as well as continuous moving applications in drag chains.

Systems:

ASI – Actuator-Sensor-Interface

The AS-Interface per EN 50295 is a serial Actuator Sensor Network being used for digital signals in lower field levels. It works in accordance to the Master Slave Principle and presents a cost effective alternative to other serial bus systems

Profibus

Profibus is the most common Bus System used in Europe in the area of automated manufacturing.

Profibus PA

The engineering of these cables per IEC 61158-2 fulfills the requirements in process automation and also offers intrinsically safe connection to the field devices. Profibus PA is a synchronous protocol with DC-current flow free transmission, which is also often designated as H1. The IEC 61158-2 technique is applied at the Profibus PA.

Profibus DP

This Profibus variant, optimized through increased transmission speed and low installation cost, was especially designed for the communication between automation systems and decentralized peripheral devices in the field range. Profibus DP substitutes the conventional parallel data communication with 24V or 0-20 mA. Lutze Profibus cables meet the specification for Profibus DP type A according to EN 50254. Profibus DP und Profibus FMS use the same transmission technology as well as a unified BUS protocol. Both variants can be operated simultaneously on one cable.

Profibus Fast Connect®

These cables have an optimized radial, symmetrical construction and can facilitate the application of special tools. Thereby, bus connector plugs are able to be assembled in a fast and installation-friendly way.

CAN-Bus

CAN-Bus is specified according to ISO 11898. Primarily designed for automotive applications CAN-Buses are used today for the exchange of digital information, Controller Area Network (CAN) for faster data transfer/data exchange.

Interbus

The Interbus-S was published in 1987 as an open sensor/actuator bus protocol. As a typical sensor/actuator fieldbus, it is configured for the cyclic processing of process data and hence differentiates significantly from data orientated field buses. The main application area of Interbus-S lays in production engineering, process engineering, as well as transport and logistics. Here the main focus is both the automotive industry and the drive technology.

DeviceNet

DeviceNet is a service related Network, based on the proven CAN-Technology for fast data exchange. The configuration consists of thick cable (aka Trunk cable) and thin cable (aka drop cable). The use of high flexing cables in drag chains is likewise possible. DeviceNet has been standardized by Open DeviceNet Vendor Association (ODVA) and is the leading bus system for industrial automation in North America.

Industrial ETHERNET

ETHERNET is the most commonly used communication technology. The ETHERNET Standard allows for a remarkable increase in the bandwidth, from 12 Mbits/s for a bus system, to up to 10Gbit/s. In the office world the ETHERNET Standard has already established itself as the standard technology, however the requirements for wiring systems and active components in the industrial environment differ greatly from those in an office environment. On one hand the infrastructure must be more robust; and on the other hand criteria such as real time application require special IT solutions. Consequently, this has resulted in the development of various proprietary systems such as ProfiNet, EtherCAT, Modbus TCP and Powerlink with system specific components which may not be compatible with others. A structured Ethernet cabling according to EN 50173-3 should support each proprietary system. While Lutze offers a large number of industrial ETHERNET cable solutions we are pleased to offer a special innovation with our drag chain suitable Cat6 ETHERNET cable.

ETHERNET – Overview

1) Correct Handling and Installation of Network Copper Cable

- Do not subject cable to tension
- Do not kink the cable
- Do not bend the cable more than 90° (See individual specifications for bending radius)
- Strip the cable as short as possible
- Do not crush cable when fastening
- Do not untwist the conductor pairs by more than 0.5 inch
- Terminate the shielding on both ends

2) LÜTZE ETHERNET Cables

We recommend shielded industrial ETHERNET cable, such as Lütze ETHERNET cable, for use in industrial environment to ensure secure connectivity. Motors and other electrical noise producing devices are often located in close proximity to network cabling. EMI (Electro Magnetic Interference) and RFI (Radio Frequency Interference) can distort data transmission on copper-based network cable. To lessen or eliminate interference, called alien-crosstalk, the use of shielded industrial cable and connectors is recommended.

Available Lütze ETHERNET Cables:



S/UTP	SF/UTP	SF/UTQ	S/FTP
some	low	low	low
104337 CAT 5e	104335 CAT 5e 104336 CAT 5e 104396 CAT 5e 104347 CAT 6	104301 CAT 5 104307 CAT 5 104302 CAT 5 104303 CAT 5 104379 CAT 5e	104338 CAT 6 _A 104397 CAT 6 _A 104331 CAT 7

3) Key for Twisted Pair Cables according to ISO/IEC-11801 (2002)E

XX/YYZ

XX for the outer shielding / **Y** for the pair shielding / **ZZ** for the pair arrangement

U = unshielded / **U** = unshielded / **TP** = twisted pair (regular)
F = foiled shield / **F** = foiled shield / **TQ** = quad pair (star quad)
S = braided shield / **S** = braided shield
SF = braided and foiled shield

In order to utilize EMI/RFI shielding, the shield must be properly terminated at both ends!

4) ProfiNet Star Quad Design and Termination

The star quad is a specific low-impedance cable configuration. Four conductors are twisted on a common axis. The conductors across from each other make a pair.

In **Figure 1** the pairs are as follows:

Pair 1:
 Conductor A ↔ Conductor D

Pair 2:
 Conductor B ↔ Conductor C



Figure 1

Other terminations than in Figure 1 lead to interferences, decreased connectivity or no connectivity at all.

ETHERNET – Overview

5) Pin Assignment and Installation

RJ45 is the most common ETHERNET connector and is available both shielded and unshielded. All pins of the RJ45 connector are used for 1000 Mbit/s (4-pair transmission). Four pins are used for 10/100 Mbit/s (2-pair transmission).

According to the EN 50173 standard, two color codes are defined for installation: T568A and T568B. It makes no difference which color code is used, however the same code should be used consistently throughout the entire installation. Mixing up the two color codes will result in malfunctions.

Pin assignment RJ 45 - Color code according to EN 50173 – hard wiring:

ETHERNET cables									
Star Quad (ProfiNet)			Regular Twisted Pair						
PIN#	100BASE-TX	Color code	10BASE-T, 100BASE-TX	1000BASE-T		Color code T568A		Color code T568B	
1	Transmit+	yellow	Transmit+	BI_DA+	(bidirectional)	WH/GN		WH/OG	
2	Transmit-	orange	Transmit-	BI_DA-	(bidirectional)	GN		OG	
3	Receive+	white	Receive+	BI_DB+	(bidirectional)	WH/OG		WH/GN	
4	-		-	BI_DC+	(bidirectional)	BU		BU	
5	-		-	BI_DC-	(bidirectional)	WH/BU		WH/BU	
6	Receive-	blue	Receive-	BI_DB-	(bidirectional)	OG		GN	
7	-		-	BI_DD+	(bidirectional)	WH/BN		WH/BN	
8	-		-	BI_DD-	(bidirectional)	BN		BN	

6) ETHERNET Categories and Classes

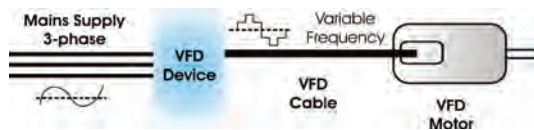
	ProfiNet®	CAT 5	CAT 5e	CAT 6	CAT 6a	CAT 7
Class	D	D	De	E	Ea	F
Construction	2 pair (AWG 22)	2 pair (AWG 24, AWG 26)	4 pair (AWG 24, AWG 26)	4 pair (26 AWG)	4 pair (26 AWG)	4 pair (26 AWG)
Speed	10/100 Mbit/s	10/100 Mbit/s	10/100/1000 Mbit/s	10/100/1000 Mbit/s	10/100/1000/10000 Mbit/s	10/100/1000/10000 Mbit/s
LAN Applications (max.)	10BASE-T (2 pair) 100BASE-TX (2 pair)	10BASE-T (2 pair) 100BASE-TX (2 pair)	10BASE-T (2 pair) 100BASE-TX (2 pair) 1000BASE-T (4 pair)	10BASE-T 100BASE-TX 1000BASE-T 10GBASE-T	10BASE-T 100BASE-TX 1000BASE-T 10GBASE-T	10BASE-T 100BASE-TX 1000BASE-T 10GBASE-T
Nominal impedance	100 Ohm	100 Ohm	100 Ohm	100 Ohm	100 Ohm	100 Ohm
Bandwidth	100 MHz	100 MHz	100 MHz	250 MHz	500 MHz	600 MHz
Max. length	328 ft (10BASE-T) 328 ft (100BASE-TX)	328 ft (10BASE-T) 328 ft (100BASE-TX)	328 ft (10BASE-T) 328 ft (100BASE-TX) 328 ft (1000BASE-T)	328 ft (10BASE-T) 328 ft (100BASE-TX) 328 ft (1000BASE-T)	328 ft (10BASE-T) 328 ft (100BASE-TX) 328 ft (1000BASE-T) 328 ft (10GBASE-T)	328 ft (10BASE-T) 328 ft (100BASE-TX) 328 ft (1000BASE-T) 328 ft (10GBASE-T)
CAT compatibility	CAT 5	CAT 5	CAT 5	CAT 5, CAT 5e	CAT 5, CAT 6	CAT 5, CAT 6, CAT 6a
ISO/IEC standard	-	ISO/IEC 11801	ISO/IEC 11801	ISO/IEC 11801	Amendment 1 to ISO/IEC 11801	ISO/IEC 11801
ANSI/TIA standard	-	ANSI/TIA-568-B	ANSI/TIA-568-C.2	ANSI/TIA-568-C.2	ANSI/TIA-568-C.2	Not recognized

LUTZE Technical Overview

LUTZE DRIVEFLEX® VFD and Servo Motor Cable

A Variable Frequency Drive (VFD) is a device designed for alteration of a motor's rotational speed by changing the frequency and the voltage of the electrical power supplied to it. In this manner, the rotational speed can be adjusted within a wide range from standstill to above the nominal rotation speed at 60 hertz.

The second main feature of a VFD is that it offers motor torque control. To avoid overload of the motor, the torque has to decrease when running the motor at higher speeds and vice versa. In VFD applications the constant frequency of 60 hertz in a sinusoidal waveform is altered into a variable frequency as shown in the Illustration.



The use of VFD technology poses high demands on the cable connecting the motor to the drive. Standard 600V control cable does not meet the requirements of VFD applications, thus causing operating malfunctions and may result in premature cable failure. High switching frequencies and harmonic waves cause high capacitive charging current and overvoltage spikes well beyond the 600V rating of standard control cables. These problems put tremendous stress on cables and the stress even increases further the longer the distance between drive and motor.

Another stress factor is called "corona discharge effect". Insulated conductors have very small gaps between the copper strands and the insulation material caused by the irregular surface of stranded conductors. This can lead to an uncontrolled corona discharge

across these gaps and break down the insulation over time. This problem is well known in medium voltage applications. LUTZE offers a premium solution to address the different requirements for VFD and motor cable:

LUTZE DRIVEFLEX® VFD and Servo Cable

A premium solution with XLPE insulation

XLPE is an insulation material with very low capacitance offering superior electrical characteristics for use as a VFD cable, especially in long cable runs. The XLPE insulation is a thermo-set material with a very high voltage breakdown level, thus inherently addressing the corona discharge effect and making it the premium insulation for any type of drive application. XLPE insulation is recommended by most drive manufacturers, and LUTZE DRIVEFLEX® exceeds the VFD cable requirements by Rockwell™ as stated in the "Wiring and Grounding Guidelines for Pulse Width Modulated (PWM) AC Drives" document. The extra thick insulation offers a 1000V rating per UL. A foil and braid shield combination with drain wire ensures compliance with EMC requirements. LUTZE DRIVEFLEX® XLPE is the most flexible XLPE cable in its class - offering easy stripping & installation, thus saving time and money.

DRIVEFLEX® has also been evaluated as flexible VFD and Servo cable and is UL listed for use on Drives and Servos, as well as tray cable exposed run (TC-ER). The DRIVEFLEX® cable family includes many different configurations compatible with many standard Drive and Servo Systems. For more information, please visit www.driveflex.com.



Motor, Servo and Drive Applications

LUTZE offers a wide range of cables especially designed for motor supply applications

Unshielded Motor Supply Cable

For any standard motor supply application where shielding is not required, we recommend the use of **LÜTZE SILFLEX® Tray-ER TPE, unshielded** cables with PVC/Nylon insulation. These cables are available in sizes up to 4/0 and offer superior flexibility paired with ruggedness due to the premium TPE jacket. These power tray cables offer the ability to be installed within and outside the cable tray due to the TC-ER and MTW ratings in accordance with NEC article 336.

Standard Shielded Motor Cable for Direct, Reversing and Soft Starter Applications

For any direct, reversing or soft starter application, we recommend the use of **LÜTZE SILFLEX® M (C) MOTOR PVC, shielded** cables with PVC/Nylon Insulation. These cables offer the ability to be installed within and outside the cable tray due to the TC-ER and MTW ratings in accordance with NEC article 336. Additionally, this construction offers very good flexibility and an easy strip jacket and is thus ideal for field installation or routing to the machine. This design is also offered with shielded control pair(s).

Servo Systems

For any motor supply application with a Servo Drive, we recommend our special low capacitance cables with TPE or LÜTZE High Glide Insulation (HGI) based on Polypropylene such as **LÜTZE SILFLEX®M (C) PVC UL SERVO 0,6/1 kV**, or **LÜTZE SUPERFLEX®PLUS M (C) PUR UL SERVO 0,6/1 kV** for high flexing applications in drag chains.

For installation in cable trays per NEC Article 336 we recommend **LUTZE DRIVEFLEX®** products with **XLPE** insulation. These cables are UL listed Flexible motor supply / Flexible VFD Servo cable and TC-ER Power Tray cables.

Variable Frequency Drives (VFD, VSD)

For any motor supply application involving a Servo or Variable Frequency Drive, we recommend **LUTZE DRIVEFLEX®** cables with **XLPE** insulation. These cables have very low capacitance, high impedance and high voltage breakthrough resistance. This design is the superior choice for long cable runs with pulse width modulation (PWM) drives creating high voltage spikes. These cables are UL listed Flexible motor supply / Flexible VFD Servo cable and TC-ER Power Tray cables.



LUTZE DRIVEFLEX® XLPE (C) PVC, Shielded A216

Flexible VFD & Motor Supply Cable with 4 conductors including one full size ground. Suitable for all generic drive applications with classic three phase wiring.



LUTZE DRIVEFLEX® XLPE (C) Servo I PVC, Shielded A217

Flexible VFD & Motor Supply Cable with 4 conductors including one full size ground, plus one twisted shielded pair for feedback. Suitable for servo systems such as Rockwell*, Siemens* etc., which require one control pair.



LUTZE DRIVEFLEX® XLPE (C) Servo II PVC, Shielded A218

Flexible VFD & Motor Supply Cable with 4 conductors including one full size ground, plus two twisted shielded pairs for feedback. Suitable for servo systems such as Rockwell*, Indramat* etc., which require two control pairs.



LUTZE DRIVEFLEX® XLPE (C) Symmetrical Grounds PVC, Shielded A220 1kV

Flexible VFD & Motor Supply Cable with 3 symmetrical grounds 1kV. The symmetry in the conductor design reduces motor frame voltage induced by high motor current. Symmetrical ground cable is recommended by ABB* and Rockwell* for larger horsepower motors.



*registered trademarks not associated with Lutze

Approvals for North America

Different UL Ratings for Cables

Product approvals in North America will often be conducted by the National Recognized Testing Laboratories (NRTL). The NRTLs are determined by the Occupational Safety and Health Administration (OSHA). You can find a list of the current NRTLs on www.osha.gov. LUTZE mainly uses Underwriters Laboratories (UL) to certify the products. UL (USA) and CSA (Canada) have an agreement that allows the usage of one approval for both USA and Canada.

In general there are two main certification classes:

Certification	Logo	Meaning
UL Recognized		“UL Recognized” signifies that the product is rated as a component. A component is a part of an application. Cables with an “Appliance Wiring Material” (AWM per Standard 758) are always “recognized”. Typically these cables are already installed on the machine when it ships.
UL Listed		“UL Listed” signifies a cable as actually tested and proven for a specific use. This way the cable has to match the UL Standards and the requirements of the National Electric Code (NEC). Typically, cables with a UL Listing are used for field wiring in North America.

UL Listing type	Description	Meaning
CM	Communication	Cables for data communication per UL category DUZX and NEC 800
CMG	Communication General	Cables for data communication per UL category DUZX and NEC 800
CMX	Communication Residential	Cables for data communication with restrictions per UL category DUZX and NEC 800
PLTC	Power Limited Tray Cable	Cables for tray applications per UL category QPTZ and NEC 725
PLTC-ER	Power Limited Tray Cable	Exposed Run Cables for tray applications per UL category QPTZ and NEC 725 (exposed use possible)
ITC	Instrumentation Tray Cable	Instrumentation cables for tray applications per UL category NYTT and NEC 727
ITC-ER	Instrumentation Tray Cable	Instrumentation cables for tray applications per UL category NYTT and NEC 727 (exposed use possible)
TC	Power and Control Tray Cable	Power and control cables for tray applications per UL category QPOR and NEC 336
TC-ER	Power and Control Tray Cable	Power and control cables for tray applications per UL category QPOR and NEC 336 (exposed use possible)
MTW	Machine Tool Wire	Single or multi conductor control cables for Machine Tool Wiring per UL category ZKHZ and NEC 670
Flexible VFD and Servo	Flexible VFD and Servo aka Flexible Motor Supply Cable	Power cables for motor and variable frequency drive applications per UL category ZJFH
WTTC	Wind Turbine Tray Cable	Power and control cables for wind turbine applications per UL category ZGZN

This list only shows the common UL Listings for typical applications in the field of automation and does not stand for a complete overview of the current UL Listings.

It is possible to combine different UL Listings in one cable. LUTZE offers a variety of cables with UL Listings for various industrial applications.

LUTZE Technical Overview

NFPA 79, 2012 Edition

NFPA 79 is the electrical standard for Industrial Machinery in the USA. The 2012 edition has again a number of significant updates implemented which affect cable. The NFPA 79 is a standard published by the National Fire Protection Agency, the same Agency that publishes the National Electric Code (a.k.a. NEC or NFPA 70).

The NFPA 79 has special provisions addressing safe wiring practices for industrial machinery such as machine tools. The new 2012 edition allows the use of appliance wiring material (type AWM) to be used with Industrial machinery again. The use of such cable had been prohibited under the previous edition 2007 and this change had caused a lot hardship for most machine manufacturers, which is now resolved.

NFPA 79 still prefers listed cable types to be used. These cables carry a NRTL listed logo such as the “UL listed” logo. It should be noted that cables can have dual or multi ratings and carry both marks, UL recognized and UL listed along with other marks, the listing will prevail.

Permitted:



Appliance Wiring Material is regulated by UL 758 and carries the recognized logo:

Now permitted:



In order to use AWM type cable on Industrial machinery and be compliant with NFPA 79 AWM, the cable must accommodate the provisions stated in article 12.9 “Special Cables and Conductors” of the NFPA 2012 edition.

It is sufficient to comply with one of the sections in sections 12.9.2.1 through 12.9.2.3 instead of meeting their requirements in combination. For example:

1. It is permissible to use AWM cable or conductors if part of a listed assembly.
2. Or it is permissible to use AWM cable or conductors if specified for use with approved equipment and in accordance with the equipment manufacturer’s instructions. One example would be a Servo Drive system with a cable assembly made per the Servo-Drive System Manufacturer’s specification and installed per the manufacturer’s instructions.
3. Or it is permissible to use AWM cable or conductors if compliant with 12.9.2.3 and the modifications as described. These modifications will allow those types of AWM cables which are suitable for industrial use by their nature. However, it will control the misuse of AWM cables which do not meet industrial application requirements, e.g. voltage rating, insulation thickness, oil resistance, etc.

All LUTZE AWM cables are designed for use in industrial environments and the AWM style and voltage rating is clearly marked on each cable jacket. However, for field installation it will still be safest to rely on cable that is UL listed and verified for the intended use. UL listed cable will make it easier to evaluate a machine in the field and will therefore remain a very important choice for most machine builders in the USA. UL listed cable will also eliminate the need for documentation that the use of AWM cable may require.

Please contact your LUTZE representative on questions regarding our offering on UL listed and UL recognized cable to help you be compliant with the latest standards for industrial machinery.

LUTZE offers listed types with MTW, TC-ER, PLTC and CM marks. Cables with these markings are considered listed types and are always permitted to be used in NFPA 79 compliant applications.

Ampacity per National Electric Code (USA)

Calculation of the max. ampacity (Based on „NEC 2014 Edition“)

Allowable Ampacities of Insulated Conductors Rated 0 Through 2000 Volts, 60°C - 90°C (140°F - 194°F), Not More Than Three Current Carrying Conductors in Raceway, Cable or Earth (Directly Buried), Based on Ambient Temperature of 30°C (86°F)* (Based on Table 310.15(B)(16))

Size AWG or kcmil	Temperature Rating of Conductor		
	60 °C (140 °F) Types TW, UF	75 °C (167 °F) Types RHW, THHW, THW, THWN, XHHW, USE, ZW	90 °C (194 °F) Types TBS, SA, SIS, FEP, FEPB, MI, RHH, RHW-2, THHN, THHW, THW-2, THWN-2, USE-2, XHH, XHHW, XHHW- 2, ZW-2
	COPPER		
18**	–	–	14
16**	–	–	18
14**	15	20	25
12**	20	25	30
10**	30	35	40
8	40	50	55
6	55	65	75
4	70	85	95
3	5	100	115
2	95	115	130
1	110	130	145
1/0	125	150	170
2/0	145	175	195
3/0	165	200	225
4/0	195	230	260
250	215	255	290
350	260	310	350
500	320	380	430
750	400	475	535

* Refer to 310.15(B)(2) for the ampacity correction factors where the ambient temperature is other than 30°C (86°F)

** Refer to 240.4(D) for conductor overcurrent protection limitations

Correction Factors

1. Ambient temperature (Based on Table 310.15(B)(2))

For ambient temperatures other than 30 °C (86 °F),

multiply the allowable ampacities shown above by the appropriate factor shown below.

Ambient temp. °C	60 °C (140 °F)	75 °C (167 °F)	90 °C (194 °F)
21-25 (70-77 °F)	1.08	1.05	1.04
26-30 (78-86 °F)	1	1	1
31-35 (87-95 °F)	0.91	0.94	0.96
36-40 (96-104 °F)	0.82	0.88	0.91
41-45 (105-113 °F)	0.71	0.82	0.87
46-50 (114-122 °F)	0.58	0.75	0.82
51-55 (123-131 °F)	0.41	0.67	0.76
56-60 (132-140 °F)	–	0.58	0.71
61-65 (141-149 °F)	–	0.47	0.65
66-70 (150-158 °F)	–	0.33	0.58

2. Number of current carrying conductors (Based on Table 310.15(B)(3)A)

Adjustment Factors for more than three current carrying conductors in Raceway or cable.

Number of Current-Carrying Conductors	Percent of Values in Tables 310.15(B) through 310.15(B)(19) as Adjusted for Ambient Temperature if Necessary
1-3	100
4-6	80
7-9	70
10-20	50
21-30	45
31-40	40
40 and more	35

Number of conductors is the total number of conductors in the raceway or cable adjusted in accordance with 310.15(B)(5) and (6)

Example:

Application with a Lutze DRIVEFLEX® XLPE (C) Servo I PVC, Shielded with control pair and an ambient temperature of 43 °C and a required ampacity of 34 Ampere.

- Factor ambient temperature: 0.87
 - Percentage factor current carrying conductors: 80
- 55 A x 0.87 x 0.8 = 38 A > 34 A
Our recommendation is a AWG8 + 1 TSP AWG14,
Item no. **A2170804**

Note: The given values are reference numbers to calculate the required cable sizes. Lutze Inc. is not responsible for the conformity of the values provided by the NEC.

LUTZE Technical Overview

Simplified Motor, VFD and Servo Cable Selection by Horsepower (HP)

Part#	Amps	AWG (POWER)	230V-3 Ø	460V-3 Ø	575V-3 Ø
A2161604	4C	18	16 AWG	N/A	N/A
A2161404	4C	25	14 AWG	5 HP	10 HP
A2161204	4C	30	12 AWG	7.5 HP	15 HP
A2161004	4C	40	10 AWG	10 HP	20 HP
A2160804	4C	55	8 AWG	15 HP	30 HP
A2160604	4C				40 HP
A2190603	3C	75	6 AWG	20 HP	40 HP
A2200603	3C				50 HP
A2160404	4C				
A2190403	3C	95	4 AWG	25 HP	50 HP
A2200403	3C				60 HP
A2160204	4C				
A2190203	3C	130	2 AWG	40 HP	75 HP
A2200203	3C				100 HP
A2190103	3C	145	1 AWG	40 HP	75 HP
A2200103	3C				100 HP
A2191/003	3C	170	1/0	50 HP	100 HP
A2201/003	3C				125 HP
A2192/003	3C	195	2/0	60 HP	125 HP
A2202/003	3C				150 HP
A2193/003	3C	225	3/0	60 HP	150 HP
A2203/003	3C				150 HP
A2194/003	3C	260	4/0	75 HP	150 HP
A2204/003	3C				200 HP
A22025003	3C	290	250 kcmil	75 HP	150 HP
A22035003	3C	350	350 kcmil	100 HP	200 HP
A22050003	3C	430	500 kcmil	125 HP	250 HP

Number of current carrying conductors is three (3) + green/yellow ground(s)

Part#	Amps	AWG (POWER)	230V-3Ø	460V-3 Ø	575V-3 Ø
A2171604	4C+1TSP	14	16 AWG	N/A	N/A
A2171404	4C+1TSP	20	14 AWG	5 HP	10 HP
A2171204	4C+1TSP	24	12 AWG	5 HP	10 HP
A2171004	4C+1TSP	32	10 AWG	7.5 HP	15 HP
A2170804	4C+1TSP	44	8 AWG	10 HP	25 HP
A2170604	4C+1TSP	60	6 AWG	15 HP	30 HP
A2170404	4C+1TSP	76	4 AWG	20 HP	40 HP
A2170204	4C+1TSP	104	2 AWG	30 HP	60 HP

Number of current carrying conductors is five (5) + 1 green/yellow ground

Part#	Amps	AWG (POWER)	230V-3Ø	460V-3 Ø	575V-3 Ø
A2181604	4C+2TSP	12.5	16 AWG	N/A	N/A
A2181404	4C+2TSP	17.5	14 AWG	3 HP	10 HP
A2181204	4C+2TSP	21	12 AWG	5 HP	10 HP
A2181004	4C+2TSP	28	10 AWG	7.5 HP	15 HP
A2180804	4C+2TSP	38.5	8 AWG	10 HP	20 HP

Number of current carrying conductors is seven (7) + 1 green/yellow ground

Notes:

Type of Motor is design B
 Class of Service is continuous
 Duty-Cycle Service is continuous
 Conductor is copper 90°C
 Ambient temperature is 26-30°C
 Values are based on 2011 NEC 430.250 multiplied x 1.25
 Ampacities are based on 2011 NEC 310.15 (B)(16) 90°
 Cables with Signal pair(s) have been de-rated in accordance to 2011 NEC 310.15(B)(3)(a)

*All values given are calculated based on 2011 NEC. For actual amperage consult your Motor/Drive manual and your local code restrictions. This guideline is simplified in order to select cable sizes. This document has no legal meaning, the interpretation of the NEC code has to be verified by the Authority Having Jurisdiction (AHJ).

LUTZE Technical Overview

Conductor Stranding according to DIN VDE 0295/IEC 60228

Cross section mm	Fine stranded conductor class 5 per VDE 0295	Superfine stranded conductor class 6 per VDE 0295
0.14		18x0.10
0.25	14x0.15	32x0.10
0.34	19x0.15	42x0.10
0.38	12x0.20	21x0.15
0.50	16x0.20	28x0.15
0.75	24x0.20	42x0.15
1.00	32x0.20	56x0.15
1.50	30x0.25	84x0.15
2.50	50x0.25	140x0.15
4	56x0.30	224x0.15
6	84x0.30	192x0.20
10	80x0.40	320x0.20
16	128x0.40	512x0.20
25	200x0.40	800x0.20
35	280x0.40	1120x0.20
50	400x0.40	705x0.30
70	356x0.50	990x0.30
95	485x0.50	1340x0.30
120	614x0.50	1690x0.30
150	765x0.50	2123x0.30
185	944x0.50	1470x0.40
240	1225x0.50	1905x0.40
300	1530x0.50	2385x0.40

The number of strands is non-binding and may vary slightly to meet specified wire resistance. The VDE 0296 determines only the maximum diameter of the single wire that is required for compliance with the maximum wire resistance at 20°C.

Conductor Stranding Class K according to ASTM B172

Comparison Class K with Class B and Metric

Size AWG	Size Metric	Class K Stranding	Class B Stranding
20	0.52	10/AWG30	7
18	0.82	16/AWG30	7
16	1.31	26/AWG30	7
14	2.08	41/AWG30	7
12	3.31	65/AWG30	7
10	5.26	104/AWG30	7
9	6.32	133/AWG30	7
8	8.39	168/AWG30	7
7	10.55	210/AWG30	7
6	13.29	266/AWG30	7
5	16.77	336/AWG30	7
4	21.15	420/AWG30	7
3	26.69	532/AWG30	7
2	33.62	665/AWG30	7
1	42.41	836/AWG30	19
1/0	53.5	1,064/AWG30	19
2/0	67.4	1,323/AWG30	19
3/0	85.0	1,666/AWG30	19
4/0	107	2,107/AWG30	19

LUTZE Technical Overview

Conductor Marking According to DIN 47100

No. Base/ring colors	No. Base/ring colors	No. Base/ring colors	No. Base/ring colors
1 white WH	16 yellow/brown	31 green/blue	46 brown
2 brown BN	17 white/grey	32 yellow/blue	47 green
3 green GN	18 grey/brown	33 green/red	48 yellow
4 yellow YE	19 white/pink	34 yellow/red	49 grey
5 grey GY	20 pink/brown	35 green/black	50 pink
6 pink PK	21 white/blue	36 yellow/black	51 blue
7 blue BU	22 brown/blue	37 grey/blue	52 red
8 red RD	23 white/red	38 pink/blue	53 black
9 black BK	24 brown/red	39 grey/red	54 violet
10 violet VT	25 white/black	40 pink/red	55 grey/pink
11 grey/pink	26 brown/black	41 grey/black	56 red/blue
12 red/blue	27 grey/green	42 pink/black	57 white/green
13 white/green	28 yellow/grey	43 blue/black	58 brown/green
14 brown/green	29 pink/green	44 red/black	59 white/yellow
15 white/yellow	30 yellow/pink	45 white	60 yellow/brown
			61 white/grey

Conductor Marking According to DIN 47100 for Twisted Pairs (TP)

Pair No. Conductor A & B	Pair No. Conductor A/B	Pair No. Conductor A/B	Pair No. Conductor A/B
1 white & brown	4 blue & red	7 white/green & brown/green	10 white/pink & pink/brown
2 green & yellow	5 black & violet	8 white/yellow & yellow/brown	11 white/blue & brown/blue
3 grey & pink	6 grey/pink & red/blue	9 white/grey & grey/brown	12 white/red & brown/red

Color Chart for Hook Up Wire

Color	Abbreviation	LÜTZE Color No.	RAL No.
black	BK	01	9005
blue	BU	02	5015
red	RD	04	3000
brown	BN	03	8003
green/yellow	GN/YE	00	6018/1021
orange	OG	09	2003
dark blue	DBU	14	5010
blue/white	BU/WH	15	5015/9010
white/blue	WH/BU	44	9010/5015

LUTZE Technical Overview

Conductor Marking for LUTZE Electronic Cables

Electronic PLTC A313, A303

AWG 22				AWG 20 and 18			
1-	Black			1-	Black		
2-	Brown			2-	Red		
3-	Red			3-	White		
4-	Orange			4-	Green		
5-	Yellow			5-	Orange		
6-	Green			6-	Blue		
7-	Blue			7-	Brown		
8-	Purple			8-	Yellow		
9-	Gray			9-	Purple		
10-	White			10-	Gray		
11-	White	Black		11-	Pink		
12-	White	Brown		12-	Tan		
13-	White	Red		13-	Red	Green	
14-	White	Orange		14-	Red	Yellow	
15-	White	Yellow		15-	Red	Black	
16-	White	Green		16-	White	Black	
17-	White	Blue		17-	White	Red	
18-	White	Purple		18-	White	Green	
19-	White	Gray		19-	White	Yellow	
20-	White	Black	Brown	20-	White	Blue	
21-	White	Black	Red	21-	White	Brown	
22-	White	Black	Orange	22-	White	Orange	
23-	White	Black	Yellow	23-	White	Gray	
24-	White	Black	Green	24-	White	Purple	
25-	White	Black	Blue	25-	White	Black	Red

Electronic TP PLTC A314

AWG 22			AWG 20 and 18		
1-	White	Black	1-	Black	Red
2-	White	Brown	2-	Black	White
3-	White	Red	3-	Black	Green
4-	White	Orange	4-	Black	Blue
5-	White	Yellow	5-	Black	Brown
6-	White	Green	6-	Black	Yellow
7-	White	Blue	7-	Black	Orange
8-	White	Purple	8-	Red	Green

LUTZE Technical Overview

Chemical Resistance of PVC, TPE and PUR Cable Jackets

Inorganic	Concentration	PVC	TPE	PUR
Alum	c.s.	+	+	
Aluminum salts	ec.	+	+	+
Ammonia, a	10 %	+	+	+
Ammonium acetate, a	ec.	+	+	
Ammonium carbonate, a	ec.	+	+	-
Ammonium chloride, a	ec.	+	+	+
Barium salts	ec.	+	+	+
Boric acid	100 %	+	+	O
Calcium chloride, a	c.s.	+	+	O
Calcium chloride, a	10 % and 40 %			+
Calcium nitrate, a	c.s.	+	+	
Chrome salts, a	c.s.	+	+	+
Potassium carbonate, a (potash)		+	+	
Potassium chlorate, a	c.s.	+	+	
Potassium chloride, a	c.s.	+	+	O
Calcium dichromate, a		+	+	
Calcium iodide, a		+	+	
Calcium nitrate, a	c.s.	+	+	+
Potassium permanganate, a		O	O	-
Potassium sulfate, a		+	+	+
Copper salts, a	c.s.	+	+	+
Magnesium salts, a	c.s.	+	+	O
Sodium carbonate, a (natron)		+	+	O
Sodium bisulfate, a		+	+	
Sodium chloride, a (common salt)		+	+	+
Sodium thiosulfate, a (fixing salt)		+	+	O
Nickel salts, a	c.s.	+	+	+
Phosphoric acid	50 %	+	+	-
Mercury	100 %	+	+	+
Mercury salts, a	c.s.	+	+	+
Nitric acid	30 %	-	-	-
Hydrochloric acid	concentrated	-	-	-
Sulfur	100 %	+	+	+
Sulfur dioxide	gaseous	+	+	O
Carbon disulfide		-	-	-
Hydrogen sulfide		+	+	-
Sea water		+	+	+
Silver salts, a		+	+	+
Hydrogen peroxide, a	3 %	+	+	+
Zinc salts, a		+	+	-
Tin (II) chloride		+	+	

Organic	Concentration	PVC	TPE	PUR
Ethyl alcohol	100 %	-	-	-
Formic acid	30 %	-	-	-
Benzine/Benzene		-	O	+
Succinic acid, a	c.s.	+	+	-
Acetic acid	20 %	O	O	O
Hydraulic oil		-	*	O*
Isopropyl alcohol	100 %	-	-	O
Kerosene			O	O
Machine oil		O*	O*	+
Methyl alcohol, a	100 %	O	O	O
Mineral oil, depending on type (ASTM)			*	*
Oxalic acid, a	c.s.	+	+	
Paraffin oil			+	+
Plant oils and greases		O/+*	+	+
Cutting oil		O*	O/+*	+
Tartaric acids, a		+	+	
Citric acid		+	+	

Legend: ec. = each concentration
c.s. = cold saturated
a = aqueous
* = depending on the additive in oil results may vary greatly
+ = resistant
O = conditionally resistant
- = unstable

Disclaimer: The information is to be used ONLY as a guide in selecting equipment for appropriate chemical compatibility. Before permanent installation, test the equipment with the chemicals and under the specific conditions of your application. LUTZE Inc. makes no guarantee or representation as to the completeness or accuracy thereof, and disclaims all liability for any loss or damage resulting from use or reliance upon any information, recommendations or suggestions contained herein.

LUTZE Technical Overview

Protection Class Designation according to EN 60529

The protection of electrical equipment through corresponding enclosure is specified with code letters and code numbers. This protection class designation consists of the letters "IP" and two code numbers from 0 to 8. The first code number stands for the protection against contact and foreign substances, the second number specifies the degree of protection against water. The higher the respective code number is, the higher the offered protection. The protection class for each product is specified in the respective technical information.

For example:

IP 65	Code letter IP	IP	
	First code number	6	corresponds to: Protection against entrance of dust
	Second code number	5	corresponds to: Protection against sprayed water

For protection against contact and foreign substances

First code number	Protection scope designation	Explanation
0	No protection	No special protection of persons from accidental contact with standing or moving parts under voltage. No protection of the equipment against entry of solid foreign substances.
1	1 Protection against foreign substances > 50 mm	Protection against accidental contact of large area surfaces of standing and internally moving parts under voltage, e.g. with the hand, but no protection against intentional access to these parts. Protection against entry of solid foreign substances with a diameter larger than 50 mm.
2	Protection against foreign substances > 12 mm voltage	Protection against contact by the fingers of standing or internally moving parts under voltage. Protection against entry of solid foreign substances with a diameter larger than 12 mm.
3	Protection against foreign substances > 2.5 mm tools	Protection against contact of standing or internally moving parts under voltage with, wires or similar of a thickness larger than 2.5 mm. Protection against entry of solid foreign substances with a diameter larger than 2.5 mm.
4	Protection against foreign substances > 1 mm	Protection against contact of standing or internally moving parts under voltage with tools, wires or similar of a thickness larger than 1 mm. Protection against entry of solid foreign substances with a diameter larger than 1 mm.
5	Protection against dust accumulation	Full protection against contact of standing or internally moving parts under voltage moving parts under voltage. Protection against dust accumulation. The entry of dust is not fully prevented but the dust may not enter in such quantities that the functioning is impaired.
6	Protection against dust accumulation	Full protection against contact of standing or internally moving parts under voltage moving parts under voltage. Protection against entry of dust.

For water protection

Second code number	Protection scope designation	Explanation
0	No protection	No special protection.
1	Protection against vertically falling dripping water	Water drops that fall vertically may not have any damaging effect.
2	Protection against dripping water falling at an angle	Water drops that fall at an arbitrary angle of up to 15° to vertical may not have any damaging effect.
3	Protection against sprayed water	Water that falls in an arbitrary angle up to 60° to vertical may not have a damaging effect.
4	Protection against splashed water	Water that is splashed from all directions against the equipment may not have a damaging effect.
5	Protection against water projected from a nozzle	Water projected from a nozzle that is aimed at the equipment from all directions may not have any damaging effect.
6	Protection against flooding	Water may not enter into the equipment in damaging amounts during temporary flooding (e.g. by heavy seas)
7	Protection against immersion	Water may not enter in damaging amounts if the equipment is immersed in water for the defined pressure and time conditions.
8	Protection against submersion	Water may not enter in damaging amounts if the equipment is submerged in water for the defined pressure and indefinite amount of time.

LUTZE Technical Overview

Thread Tables for LUTZE Cable Fittings - NPT, PG, Metric

NPT	Pitch mm	Outside Diameter mm	Number of Threads per Unit Length	Clearance Hole mm
NPT 3/8"	1.411	17.055	18	17.0
NPT 1/2"	1.814	21.223	14	22
NPT 3/4"	1.814	26.568	14	29
NPT 1"	2.208	33.227	11.5	33.5

PG to DIN 40430	Pitch mm	Outside Diameter mm	Core Diameter mm	Clearance Hole mm
PG7	1.270	12.5	11.28	12.7
PG9	1.410	15.2	13.86	15.4
PG11	1.410	18.6	17.26	18.8
PG13	1.410	20.4	19.06	20.7
PG16	1.410	22.5	21.16	22.8
PG21	1.588	28.3	26.78	28.6
PG29	1.588	37.0	35.48	37.4
PG36	1.588	47.0	45.48	47.5
PG42	1.588	54.0	52.48	54.5
PG48	1.588	59.3	57.78	59.8

Metric to EN 60423	Pitch mm	Outside Diameter mm	Core Diameter mm	Clearance Hole mm
M12x1.5	1.5	12	10.5	12.2
M16x1.5	1.5	16	14.5	16.2
M20x1.5	1.5	20	18.5	20.2
M25x1.5	1.5	25	23.5	25.2
M32x1.5	1.5	32	30.5	32.2
M40x1.5	1.5	40	38.5	40.2
M50x1.5	1.5	50	48.5	50.2
M63x1.5	1.5	63	61.5	63.2

Torque Recommendations for LUTZE Cable Fittings - Plastic and Metal Dome Nuts

Nominal Size	Recommended Torque in Nm	
	Plastic	Metal
NPT 3/8"	2.5	4.5
NPT 1/2"	3.0	5
NPT 3/4"	5.0	7.0
NPT 1"	5.0	7.0
PG7	2.5	6.25
PG9	3.75	6.25
PG11	3.75	6.25
PG13.5	3.75	6.25
PG16	5.0	7.5
PG21	7.5	10.0
PG29	7.5	10.0
PG36	7.5	10.0
PG42	7.5	10.0
PG48	7.5	10.0
M12x1.5	1.0	5
M16x1.5	2.5	5
M20x1.5	4.0	7.5
M25x1.5	6.0	10
M32x1.5	7.0	15
M40x1.5	7.5	18
M50x1.5	8.0	20
M63x1.5	9.0	20

The specified values are recommended for achieving the protection class IP68 at 5 bar. Please choose the suitable torque for the material and cable application. The actual crush resistance of each cable must be considered. The values shown are for reference only.

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
104265	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111291	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
104275	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111292	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
104279	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM20	111293	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
104282	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111294	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104287	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111295	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104288	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	111296	N/A	FPPG36	FPM40	N/A	FMPG36	FMM40
104289	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12	111370	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
104293	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16	111371	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
104301	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	111372	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
104302	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG11	FMM16	111373	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
104303	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111374	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
104307	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	111375	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104310	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG11	FMM16	111376	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104331	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111377	N/A	FPPG36	FPM40	N/A	FMPG36	FMM40
104335	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	111378	N/A	FPPG36	FPM40	N/A	FMPG36	FMM40
104336	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111388	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
104337	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111412	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
104338	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	111420	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
104344	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111421	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
104347	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111422	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
104378	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	111423	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
104386	FPNPT38B-R	FPPG9	FPM12	FMNPT38	FMPG9	FMM16	111424	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104387	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	111425	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
104388	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG11	FMM16	111426	N/A	FPPG36	FPM40	N/A	FMPG36	FMM40
104389	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20	111427	N/A	FPPG36	FPM40	N/A	FMPG36	FMM40
104390	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG11	FMM16	111428	N/A	FPPG48	FPM63	N/A	FMPG48	FMM63
104391	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20	111429	FPNPT10B-R	FPPG29	FPM32G-R	FMNPT10	FMPG29	FMM40
110872	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	111430	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
110874	FPNPT12	FPPG11	FPM20	FMNPT12	FMPG13	FMM20	111452	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
110940	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111453	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG11	FMM16
110941	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111454	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16
111126	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111456	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
111127	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111457	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
111128	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	111458	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
111129	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	111459	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
111130	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	111460	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
111131	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	111461	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
111132	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	111462	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25
111133	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	111463	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
111270	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	111464	FPNPT10B-R	FPPG29	FPM32G-R	FMNPT34	FMPG21	FMM32
111271	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	111465	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
111276	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50	111466	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
111277	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50	111467	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
111278	N/A	FPPG42	FPM50	N/A	FMPG42	N/A	111468	N/A	FPPG42	FPM50	N/A	FMPG42	N/A
111279	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	111488	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20
111289	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111489	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20
111290	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	111495	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
111545	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	113409	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
111548	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40	113410	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
111762	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40	113411	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
111778	FPNPT12 B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	113412	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
111779	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	113415	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
113301	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	113416	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
113302	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	113417	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
113303	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	113426	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
113304	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113431	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113305	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113433	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113312	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	111780	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
113313	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	111781	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
113314	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	111879	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
113315	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	111998	FPNPT10B-R	FPPG29	FPM32G-R	FMNPT10	FMPG29	FMM40
113316	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	113300	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113317	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	113438	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
113318	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	113441	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113319	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113442	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113320	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	113443	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113321	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	113444	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113322	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	113446	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
113323	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	113447	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
113324	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	113479	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
113331	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113483	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
113332	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113484	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113339	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	113485	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12
113340	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	113570	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
113341	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	113571	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG11	FMM20
113342	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	113572	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20
113344	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	113573	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20
113347	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	113574	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20
113360	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	113575	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
113361	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20	113576	FPNPT34	FPPG16	FPM20	FMNPT34	FMPG21	FMM32
113362	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	113577	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
113363	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG16	FMM25	117028	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
113364	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	117029	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
113365	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	117039	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113366	FPNPT10B-R	FPPG29 G-R	FPM32G-R	FMNPT10	FMPG21	FMM32	117040	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113400	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117041	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113401	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	117042	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113402	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	117043	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113403	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	117044	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113404	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	117046	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
113405	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	117047	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
113406	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	117048	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113407	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	117049	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
113408	FPNPT38	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	117050	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
117051	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117244	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117052	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117245	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117053	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117246	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117055	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	117250	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117056	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	117251	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117099	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117252	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16
117100	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117253	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117101	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117254	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117102	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117255	FPNPT38B-R	FPPG9	FPM12	FMNPT38	FMPG7	FMM12
117103	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	117303	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
117104	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108349A	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117106	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	108350A	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117107	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	108351A	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117108	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108352A	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
117109	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108353A	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
117110	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108354A	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117110	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108355A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117111	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108356A	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
117112	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108357A	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12
117113	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	108358A	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
117115	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	108359A	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
117116	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	108360A	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
117123	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	108361A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117124	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	108362A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117170	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108363A	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
117171	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	108372A	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
117172	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12	108373A	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16
117173	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	108374A	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
117174	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	108375A	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117175	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	108376A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117176	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	108377A	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
117177	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16	108378A	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
117180	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108380A	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
117181	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108381A	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
117182	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108382A	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117184	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108383A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117185	FPNPT12 B-R	FPPG13	FPM20-R	FMNPT12	FMPG13	FMM20	108384A	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
117187	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	108385A	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
117190	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108386A	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
117191	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	108391A	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12
117193	FPNPT12 B-R	FPPG13	FPM20-R	FMNPT12	FMPG13	FMM20	108392A	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117194	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	108393A	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117196	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	108401A	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
117240	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A1161204	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
117241	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A1161404	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117242	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM16	A1161604	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
117243	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A1161804	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
A1171204	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A1391812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25
A1171404	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A1391818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1171604	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	A1391825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1381204	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A1391834	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1381207	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A1392003	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A1381404	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A1392004	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A1381405	FPNPT38	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A1392005	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A1381407	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A1392007	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A1381603	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A1392012	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A1381604	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A1392018	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25
A1381605	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A1392025	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1381607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A1410001	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20
A1381612	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A1410002	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
A1381618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A2160204	N/A	FPPG42	FPM50	N/A	FMPG42	FMM50
A1381625	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A2160404	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1381803	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A2160604	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1381804	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A2160804	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1381805	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A2161004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1381807	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A2161204	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1381812	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A2161404	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1381818	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A2161604	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25
A1381825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A2170204	N/A	FPPG42	FPM50	N/A	FMPG42	FMM63
A1381834	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A2170404	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1381841	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	A2170604	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1381850	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	A2170804	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1382003	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A2171004	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1382004	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A2171204	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1382005	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12	A2171404	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1382007	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A2171604	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A1382012	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A2180804	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1382018	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A2181004	FPNPT10	FPPG29	FPM40	FMNPT10	FMPG29	FMM40
A1382025	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A2181204	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1391204	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	A2181404	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A1391404	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A2181604	FPNPT34	FPPG29	FPM25	FMNPT34	FMPG21	FMM32
A1391405	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	A2200103	N/A	FPPG42	FPM50	N/A	FMPG42	N/A
A1391407	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	A2200203	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1391603	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A2200403	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A1391604	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A2200603	N/A	FPPG29	FPM32	FMNPT10	FMPG36	FMM40
A1391605	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A2201/003	N/A	FPPG42	FPM50	N/A	FMPG42	FMM63
A1391607	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	A2202/003	N/A	FPPG48	FPM63	N/A	FMPG48	FMM63
A1391612	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A22025003	N/A	N/A	N/A	N/A	N/A	N/A
A1391618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A2203/003	N/A	FPPG48	FPM63	N/A	FMPG48	FMM63
A1391625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40	A22035003	N/A	N/A	N/A	N/A	N/A	N/A
A1391803	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A2204/003	N/A	N/A	N/A	N/A	FMPG48	N/A
A1391804	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A22050003	N/A	N/A	N/A	N/A	N/A	N/A
A1391805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A2441402	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20
A1391807	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A2441404	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
A2441602	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A3081418	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A2441604	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A3081425	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A2441802	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20	A3081602	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A2441804	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A3081603	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
A3031802	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081604	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3031803	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081605	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3031804	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3081607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3031806	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16	A3081609	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3031808	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3081612	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3031810	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3081618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3031815	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3081625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A3031820	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	A3081634	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A3031825	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	A3081641	FPNPT10	FPPG36	FPM40	FMNPT10	FMPG36	FMM40
A3032002	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081802	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3032003	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081803	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3032004	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081804	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16
A3032006	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3081805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3032008	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3081807	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3032010	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3081809	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3032015	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3081812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3032020	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3081818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3032025	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM20	A3081825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3032202	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081834	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A3032203	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081841	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A3032204	FPNPT38 B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3081850	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A3032206	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3082003	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12
A3032208	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3082004	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3032210	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3082005	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3032215	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3082007	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3032220	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3082012	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3032225	FPNPT12B-R	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3082018	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3080204	N/A	FPPG42	FPM50	N/A	FMPG42	FMM50	A3082025	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3080404	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50	A3091004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3080604	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40	A3091203	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3080804	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	A3091204	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3081004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3091403	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3081005	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A3091404	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3081203	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3091405	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3081204	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3091407	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3081205	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A3091412	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3081207	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3091603	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3081403	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3091604	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3081404	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3091605	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3081405	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3091607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3081407	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3091612	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3081409	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A3091618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3081412	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3091625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
A3091802	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3141812	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
A3091803	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3141816	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25
A3091804	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3142002	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
A3091805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3142004	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3091807	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3142006	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3091812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A3142008	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3091818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3142010	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3091825	FPNPT10	FPPG21	FPM25	FMNPT10	FMPG21	FMM25	A3142012	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3092003	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3142016	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM25
A3092004	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16	A3142202	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
A3092005	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3142204	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3092007	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3142206	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3092012	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3142208	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3092018	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A3142210	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3092025	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3142212	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20
A3131802	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16	A3142216	FPNPT12B-R	FPPG13	FPM20 G-R	FMNPT12	FMPG13	FMM20
A3131803	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16	A3160804	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A3131804	FPNPT38	FPPG11	FPM16	FMNPT38	FMPG9	FMM16	A3161004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3131806	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3161204	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM32
A3131808	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3161404	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
A3131810	FPNPT38B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3161604	FPNPT12	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3131815	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG13	FMM20	A3170204	N/A	FPPG42	FPM50	N/A	FMPG42	FMM63
A3131820	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	A3170404	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50
A3131825	FPNPT34B-R	FPPG21	FPM25G-R	FMNPT34	FMPG21	FMM32	A3170604	FPNPT10	FPPG36	FPM40	FMNPT10	FMPG36	FMM50
A3132002	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3170804	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A3132003	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3171004	FPNPT10	FPPG29-R	FPM32G-R	FMNPT10	FMPG29	FMM40
A3132004	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3171204	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3132006	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3171404	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25
A3132008	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3171604	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25
A3132010	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3132015	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3221204	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3132020	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3221403	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3132025	FPNPT12	FPPG16	FPM20	N/A	FMPG16	FMM25	A3221404	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3132202	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3221405	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3132203	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3221407	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3132204	FPNPT38B-R	FPPG7	FPM12	FMNPT38	FMPG7	FMM12	A3221603	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3132206	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3221604	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3132208	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16	A3221605	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3132210	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3132215	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221612	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3132220	FPNPT12-R	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3132225	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3221625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32
A3141802	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG11	FMM16	A3221803	FPNPT38	FPPG9	FPM16	FMNPT38	FMPG9	FMM16
A3141804	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221804	FPNPT38	FPPG9	FPM16	FMNPT12	FMPG9	FMM16
A3141806	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3221805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3141808	FPNPT12B-R	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3221807	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3141810	FPNPT12	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3221812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20

LUTZE Fittings Selection Chart

Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric	Part#	Plastic NPT	Plastic PG	Plastic Metric	Metal NPT	Metal PG	Metal Metric
A3221818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321004	N/A	FPPG48	FPM63	N/A	FMPG48	FMM63
A3221825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321003	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
A3251204	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG13	FMM20	A3321004	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25
A3251403	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3321005	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3251404	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3321203	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3251603	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3321204	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3251604	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3321205	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG13	FMM25
A3251605	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3321207	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25
A3251607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3321403	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG11	FMM20
A3251612	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321404	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3251619	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321405	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3251625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	A3321407	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3251803	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3321412	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3251805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM20	A3321602	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
A3251807	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16	A3321603	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3251812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20	A3321604	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3251819	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321605	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20
A3251825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25	A3321607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3251837	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM32	A3321612	FPNPT34	FPPG21	FPM20	FMNPT34	FMPG21	FMM32
A3311004	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A3321618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3311203	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG13	FMM25	A3321625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40
A3311204	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	A3321803	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG13	FMM20
A3311205	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	A3321804	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG14	FMM20
A3311403	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A3321805	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG15	FMM20
A3311404	FPNPT38	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3321807	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG16	FMM20
A3311405	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20	A3321812	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25
A3311407	FPNPT12	FPPG16	FPM20	FMNPT12	FMPG16	FMM25	A3321818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3311412	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A3321825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32
A3311603	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A3322/004	N/A	FPPG48	FPM63	N/A	FMPG48	FMM63
A3311604	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A3323/004	N/A	N/A	N/A	N/A	N/A	N/A
A3311605	FPNPT38	FPPG13	FPM20G-R	FMNPT12	FMPG13	FMM20	A3324/004	N/A	N/A	N/A	N/A	N/A	N/A
A3311607	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM25	A601XX	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM20
A3311612	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A602XX	FPNPT12	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3311618	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A604XX	FPNPT38	FPPG13	FPM20	FMNPT12	FMPG13	FMM20
A3311625	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40	A606XX	FPNPT38	FPPG11	FPM16	FMNPT12	FMPG11	FMM16
A3311803	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A608XX	FPNPT38	FPPG9	FPM12	FMNPT38	FMPG9	FMM12
A3311804	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A610XX	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
A3311805	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A612XX	FPNPT38	FPPG7	FPM12	FMNPT38	FMPG7	FMM12
A3311807	FPNPT38	FPPG13	FPM16	FMNPT12	FMPG13	FMM20	A614XX	FPNPT38	FPPG7	FPM12	N/A	FMPG7	FMM12
A3311812	FPNPT12	FPPG16	FPM20	FMNPT34	FMPG16	FMM25	A616XX	FPNPT38	FPPG7	FPM12	N/A	FMPG7	FMM12
A3311818	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A618XX	N/A	FPPG7G-R	FPM12G-R	N/A	N/A	N/A
A3311825	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM32	A619XX	N/A	FPPG7G-R	FPM12G-R	N/A	N/A	N/A
A3320204	N/A	FPPG42	FPM50	N/A	FMPG42	FMM50	A6700X	FPNPT34	FPPG21	FPM25	FMNPT34	FMPG21	FMM25
A3320404	N/A	FPPG36	FPM40	N/A	FMPG36	FMM50	A6950X	FPNPT10	FPPG29	FPM32G-R	FMNPT34	FMPG21	FMM32
A3320604	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40							
A3320804	FPNPT10	FPPG29	FPM32	FMNPT10	FMPG29	FMM40							

LUTZE Part Number Index

Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page
104216	31	111293	55	113304	19	113485	18	117190	26	600221	73
104217	31	111294	55	113305	19	113570	18	117191	26	600222	73
104265	33	111295	55	113312	19	113571	18	117193	26	600223	73
104275	33	111296	55	113313	19	113572	18	117194	26	600224	73
104279	37	111337	54	113314	19	113573	18	117196	26	600225	73
104280	36	111370	50	113315	19	113574	18	117240	28	600226	73
104281	36	111371	50	113316	19	113575	18	117241	28	600227	73
104282	36	111372	50	113317	19	113576	18	117242	28	600228	73
104287	33	111373	50	113318	19	113577	18	117243	28	600229	73
104288	36	111374	50	113319	19	117028	24	117244	28	600230	73
104289	37	111375	50	113320	19	117029	24	117245	28	600320	80
104293	32	111376	50	113321	19	117039	24	117246	28	600321	80
104301	38	111377	50	113322	19	117040	24	117250	29	600347	80
104302	39	111378	50	113323	19	117041	24	117251	29	600351	66
104303	39	111388	53	113324	19	117042	24	117252	29	600352	66
104307	38	111412	58	113331	19	117043	24	117253	29	600353	66
104310	58	111420	52	113332	19	117044	24	117254	29	600355	66
104331	38	111421	52	113339	19	117046	24	117255	29	600356	66
104335	38	111422	52	113340	19	117047	24	117303	26	600357	66
104336	38	111423	52	113341	19	117048	24	330060	76	600358	66
104337	39	111424	52	113342	19	117049	24	330071	76	600359	66
104338	38	111425	52	113344	19	117050	24	330072	76	600400	73
104344	32	111426	52	113347	19	117051	24	330073	76	600401	73
104347	39	111427	52	113360	19	117052	24	330089	76	600402	73
104378	32	111428	52	113361	19	117053	24	331000	76	600403	73
104379	39	111429	50	113362	19	117055	24	331001	76	600404	73
104386	34	111430	50	113363	19	117056	24	331002	76	600405	73
104387	34	111452	58	113364	19	117099	25	331003	76	600406	73
104388	34	111453	58	113365	19	117100	25	331004	76	600407	73
104389	34	111454	58	113366	19	117101	25	346812	76	600408	73
104390	35	111456	58	113400	18	117102	25	346813	76	600409	73
104391	35	111457	58	113401	18	117103	25	346814	76	600410	73
104396	39	111458	58	113402	18	117104	25	346860	76	600411	73
104397	38	111459	58	113403	18	117106	25	490105	83	600412	73
110872	28	111460	51	113404	18	117107	25	490106	83	600413	73
110874	28	111461	51	113405	18	117108	25	490107	83	600414	73
110940	56	111462	51	113406	18	117109	25	490108	83	600416	73
110941	56	111463	51	113407	18	117110	25	490112	82	600460	72
111126	54	111464	51	113408	18	117111	25	490113.0030	82	600461	72
111127	54	111465	51	113409	18	117112	25	490113.0060	82	600462	72
111128	54	111466	51	113410	18	117113	25	490113.0080	82	600463	72
111129	54	111467	51	113411	18	117115	25	490113.0150	82	600464	72
111130	54	111468	51	113412	18	117116	25	490113.020	82	600465	72
111131	54	111488	57	113415	18	117123	25	490113.030	82	600466	72
111132	54	111489	57	113416	18	117124	25	490113.050	82	600541	75
111133	54	111495	56	113417	18	117170	26	490128	83	600542	75
111197	54	111545	50	113426	18	117171	26	490129	83	600543	75
111243	54	111548	50	113431	18	117172	26	490138	83	600544	75
111270	53	111762	53	113433	18	117173	26	491075	82	600545	75
111271	53	111778	59	113438	18	117174	26	492075	82	600546	75
111276	53	111779	59	113441	18	117175	26	600170	70	600550	65
111277	53	111780	56	113442	18	117176	26	600171	70	600551	65
111278	53	111781	56	113443	18	117177	26	600172	70	600553	65
111279	53	111879	51	113444	18	117180	26	600173	70	600554	65
111285	54	111998	53	113446	18	117181	26	600174	70	600557	65
111289	55	113300	19	113447	18	117182	26	600175	70	600558	65
111290	55	113301	19	113479	18	117184	26	600176	70	600561	65
111291	55	113302	19	113483	18	117185	26	600177	70	600562	65
111292	55	113303	19	113484	18	117187	26	600220	73	600565	65

LUTZE Part Number Index

Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page
600566	65	606206	78	A1381407	16	A2161404	43	A3080404	7	A3091612	8
600604	65	606207	78	A1381603	16	A2161604	43	A3080604	7	A3091618	8
600605	65	606208	78	A1381604	16	A2170204	44	A3080804	7	A3091625	8
600606	65	606209	78	A1381605	16	A2170404	44	A3081004	7	A3091802	8
600607	65	606250	78	A1381607	16	A2170604	44	A3081005	7	A3091803	8
600626	75	606251	78	A1381612	16	A2170804	44	A3081203	7	A3091804	8
600627	75	606252	78	A1381618	16	A2171004	44	A3081204	7	A3091805	8
600628	75	606253	78	A1381625	16	A2171204	44	A3081205	7	A3091807	8
600629	75	606254	78	A1381803	16	A2171404	44	A3081207	7	A3091812	8
600630	75	606255	78	A1381804	16	A2171604	44	A3081403	6	A3091818	8
600631	75	606256	78	A1381805	16	A2180804	45	A3081404	6	A3091825	8
600632	75	606257	78	A1381807	16	A2181004	45	A3081405	6	A3092003	8
600633	75	606258	78	A1381812	16	A2181204	45	A3081407	6	A3092004	8
600634	75	606259	78	A1381818	16	A2181404	45	A3081409	6	A3092005	8
600635	75	606260	78	A1381825	16	A2200103	46	A3081412	6	A3092007	8
600636	75	108349A	13	A1381834	16	A2200203	46	A3081418	6	A3092012	8
600637	75	108350A	13	A1381841	16	A2200403	46	A3081425	6	A3092018	8
600638	75	108351A	13	A1381850	16	A2200603	46	A3081602	6	A3092025	8
600639	75	108352A	13	A1382003	16	A2201/003	46	A3081603	6	A3131802	22
600640	75	108353A	13	A1382004	16	A2202/003	46	A3081604	6	A3131803	22
600641	75	108354A	13	A1382005	16	A22025003	46	A3081605	6	A3131804	22
600642	75	108355A	13	A1382007	16	A2203/003	46	A3081607	6	A3131806	22
600643	75	108356A	13	A1382012	16	A22035003	46	A3081609	6	A3131808	22
600644	75	108357A	13	A1382018	16	A2204/003	46	A3081612	6	A3131810	22
600645	75	108358A	13	A1382025	16	A22050003	46	A3081618	6	A3131815	22
600646	75	108359A	13	A1391204	17	A2441402	47	A3081625	6	A3131820	22
600647	75	108360A	13	A1391404	17	A2441404	47	A3081634	6	A3131825	22
600648	75	108361A	13	A1391405	17	A2441602	47	A3081641	6	A3132002	22
600649	75	108362A	13	A1391407	17	A2441604	47	A3081802	6	A3132003	22
600651	75	108363A	13	A1391603	17	A2441802	47	A3081803	6	A3132004	22
600652	75	108372A	13	A1391604	17	A2441804	47	A3081804	6	A3132006	22
600653	75	108373A	13	A1391605	17	A3031802	21	A3081805	6	A3132008	22
600654	75	108374A	13	A1391607	17	A3031803	21	A3081807	6	A3132010	22
600655	75	108375A	13	A1391612	17	A3031804	21	A3081809	6	A3132015	22
600656	75	108376A	13	A1391618	17	A3031806	21	A3081812	6	A3132020	22
606001	78	108377A	13	A1391625	17	A3031808	21	A3081818	6	A3132025	22
606002	78	108378A	13	A1391803	17	A3031810	21	A3081825	6	A3132202	22
606004	78	108380A	13	A1391804	17	A3031815	21	A3081834	6	A3132203	22
606005	78	108381A	13	A1391805	17	A3031820	21	A3081841	6	A3132204	22
606007	78	108382A	13	A1391807	17	A3031825	21	A3081850	6	A3132206	22
606052	78	108383A	13	A1391812	17	A3032002	21	A3082003	6	A3132208	22
606053	78	108384A	13	A1391818	17	A3032003	21	A3082004	6	A3132210	22
606150	78	108385A	13	A1391825	17	A3032004	21	A3082005	6	A3132215	22
606151	78	108386A	13	A1391834	17	A3032006	21	A3082007	6	A3132220	22
606152	78	108391A	13	A1392003	17	A3032008	21	A3082012	6	A3132225	22
606153	78	108392A	13	A1392004	17	A3032010	21	A3082018	6	A3141802	23
606154	78	108393A	13	A1392005	17	A3032015	21	A3082025	6	A3141804	23
606155	78	108401A	13	A1392007	17	A3032020	21	A3091004	8	A3141806	23
606156	78	A1161204	42	A1392012	17	A3032025	21	A3091203	8	A3141808	23
606157	78	A1161404	42	A1392018	17	A3032202	21	A3091204	8	A3141810	23
606158	78	A1161604	42	A1392025	17	A3032203	21	A3091403	8	A3141812	23
606159	78	A1161804	42	A1410001	49	A3032204	21	A3091404	8	A3141816	23
606160	78	A1171204	42	A1410002	49	A3032206	21	A3091405	8	A3142002	23
606200	78	A1171404	42	A2160204	43	A3032208	21	A3091407	8	A3142004	23
606201	78	A1171604	42	A2160404	43	A3032210	21	A3091412	8	A3142006	23
606202	78	A1381204	16	A2160604	43	A3032215	21	A3091603	8	A3142008	23
606203	78	A1381207	16	A2160804	43	A3032220	21	A3091604	8	A3142010	23
606204	78	A1381404	16	A2161004	43	A3032225	21	A3091605	8	A3142012	23
606205	78	A1381405	16	A2161204	43	A3080204	7	A3091607	8	A3142016	23

LUTZE Part Number Index

Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page	Part#	Page
A3142202	23	A3311204	11	A3321805	10	AMM20-12	74	FPM20B	63	LMM25	72
A3142204	23	A3311205	11	A3321807	10	AMM25-34	74	FPM20G	63	LMM32	72
A3142206	23	A3311403	11	A3321812	10	AMM32-10	74	FPM20G-R	63	LMM40	72
A3142208	23	A3311404	11	A3321818	10	AMM32-34	74	FPM25B	63	LMM50	72
A3142210	23	A3311405	11	A3321825	10	FMM12	69	FPM25G	63	LMM63	72
A3142212	23	A3311407	11	A3322/004	10	FMM12-C2	71	FPM25G-R	63	LMPG11	72
A3142216	23	A3311412	11	A3322/004	41	FMM12-L	69	FPM32B	63	LMPG13	72
A3160804	48	A3311603	11	A3323/004	10	FMM16	69	FPM32G	63	LMPG16	72
A3161004	48	A3311604	11	A3323/004	41	FMM16-C2	71	FPM32G-R	63	LMPG21	72
A3161204	48	A3311605	11	A3324/004	10	FMM16-L	69	FPM40B	63	LMPG29	72
A3161404	48	A3311607	11	A3324/004	41	FMM20	69	FPM40G	63	LMPG36	72
A3161604	48	A3311612	11	A60100	15	FMM20-C2	71	FPM40G-R	63	LMPG42	72
A3170204	48	A3311618	11	A60101	15	FMM20-L	69	FPM50B	63	LMPG48	72
A3170404	48	A3311625	11	A60200	15	FMM25	69	FPM50G	63	LMPG7	72
A3170604	48	A3311803	11	A60201	15	FMM25-C2	71	FPM50G-R	63	LMPG9	72
A3170804	48	A3311804	11	A60400	15	FMM25-L	69	FPM63B	63	LPM12B	64
A3171004	48	A3311805	11	A60401	15	FMM32	69	FPM63G	63	LPM12G	64
A3171204	48	A3311807	11	A60600	15	FMM32-C2	71	FPM63G-R	63	LPM16B	64
A3171404	48	A3311812	11	A60601	15	FMM32-L	69	FPNPT10B	61	LPM16G	64
A3171604	48	A3311818	11	A60800	14	FMM40	69	FPNPT10B-R	61	LPM20B	64
A3221004	9	A3311825	11	A60801	14	FMM40-C2	71	FPNPT10G	61	LPM20G	64
A3221204	9	A3320204	10	A61000	14	FMM40-L	69	FPNPT12B	61	LPM25B	64
A3221403	9	A3320204	41	A61001	14	FMM50	69	FPNPT12B-R	61	LPM25G	64
A3221404	9	A3320404	10	A61200	14	FMM50-C2	71	FPNPT12G	61	LPM32B	64
A3221405	9	A3320404	41	A61201	14	FMM50-L	69	FPNPT34B	61	LPM32G	64
A3221407	9	A3320604	10	A61400	14	FMM63	69	FPNPT34B-R	61	LPM40B	64
A3221603	9	A3320604	41	A61401	14	FMM63-C2	71	FPNPT34G	61	LPM40G	64
A3221604	9	A3320804	10	A61402	14	FMM63-L	69	FPNPT38B	61	LPM50B	64
A3221605	9	A3320804	41	A61403	14	FMNPT10	67	FPNPT38B-R	61	LPM50G	64
A3221607	9	A3321/004	10	A61404	14	FMNPT10-C2	71	FPNPT38G	61	LPM63B	64
A3221612	9	A3321/004	41	A61405	14	FMNPT12	67	FPPG11B	62	LPM63G	64
A3221618	9	A3321003	10	A61414	14	FMNPT12-C2	71	FPPG11G	62	LPNPT10B	64
A3221625	9	A3321004	10	A61600	14	FMNPT34	67	FPPG11G-R	62	LPNPT10G	64
A3221803	9	A3321004	41	A61601	14	FMNPT34-C2	71	FPPG13B	62	LPNPT12B	64
A3221804	9	A3321005	10	A61602	14	FMNPT38	67	FPPG13G	62	LPNPT12G	64
A3221805	9	A3321005	41	A61603	14	FMNPT38-C2	71	FPPG13G-R	62	LPNPT34B	64
A3221807	9	A3321203	10	A61604	14	FMPG11	68	FPPG16B	62	LPNPT34G	64
A3221812	9	A3321204	10	A61605	14	FMPG11-L	68	FPPG16G	62	LPNPT38B	64
A3221818	9	A3321204	41	A61614	14	FMPG13	68	FPPG16G-R	62	LPNPT38G	64
A3221825	9	A3321205	10	A61615	14	FMPG13-L	68	FPPG21B	62	LPPG11B	64
A3251204	12	A3321205	41	A61644	14	FMPG16	68	FPPG21G	62	LPPG11G	64
A3251403	12	A3321207	10	A61800	14	FMPG16-L	68	FPPG21G-R	62	LPPG13B	64
A3251404	12	A3321403	10	A61801	14	FMPG21	68	FPPG29B	62	LPPG13G	64
A3251603	12	A3321404	10	A61802	14	FMPG21-L	68	FPPG29G	62	LPPG16B	64
A3251604	12	A3321404	41	A61803	14	FMPG29	68	FPPG29G-R	62	LPPG16G	64
A3251605	12	A3321405	10	A61804	14	FMPG29-L	68	FPPG36B	62	LPPG21B	64
A3251607	12	A3321405	41	A61814	14	FMPG36	68	FPPG36G	62	LPPG21G	64
A3251612	12	A3321407	10	A61844	14	FMPG42	68	FPPG36G-R	62	LPPG29B	64
A3251619	12	A3321412	10	A61900	14	FMPG48	68	FPPG42B	62	LPPG29G	64
A3251625	12	A3321602	10	A61901	14	FMPG7	68	FPPG42G	62	LPPG36B	64
A3251803	12	A3321603	10	A61902	14	FMPG7-L	68	FPPG48B	62	LPPG36G	64
A3251805	12	A3321604	10	A61903	14	FMPG9	68	FPPG48G	62	LPPG42B	64
A3251807	12	A3321605	10	A61904	14	FMPG9-L	68	FPPG7G-R	62	LPPG42G	64
A3251812	12	A3321607	10	A61914	14	FPM12B	63	FPPG9B	62	LPPG48B	64
A3251819	12	A3321612	10	A67000	15	FPM12G	63	FPPG9G	62	LPPG48G	64
A3251825	12	A3321618	10	A67001	15	FPM12G-R	63	FPPG9G-R	62	LPPG7B	64
A3251837	12	A3321625	10	A69500	15	FPM16B	63	LMM12	72	LPPG7G	64
A3311004	11	A3321803	10	A69501	15	FPM16G	63	LMM16	72	LPPG9B	64
A3311203	11	A3321804	10	AMM16-12	74	FPM16G-R	63	LMM20	72	LPPG9G	64



SYSTEMATIC TECHNOLOGY



LUTZE Allen-Bradley® Servo Cable Assemblies

ONE YEAR
WARRANTY

- Available for static and continuous flexing applications
- Fully compatible with respective Rockwell Allen-Bradley® systems
- Easy crossing by AB2090 or Motor part numbers
- Manufactured exactly like the AB originals including conductor ends, exposed shield, shrink tubing, flying lead configuration, label positions and markings
- Identical motor connectors, including tamper proof and SpeedTec options
- Detailed packing insert contains exact pin out, measurement and installation information
- Every assembly is tested for full functionality, conductivity, pin outs, and “hipot” voltage for electrical safety
- 0.5m increments to suit each application: no need for extra cable lengths
- Competitive lead times and pricing

LUTZE Inc .
13330 South Ridge Drive,
Charlotte, North Carolina 28273

1-800-447-2371
info@lutze.com
www.lutze.com

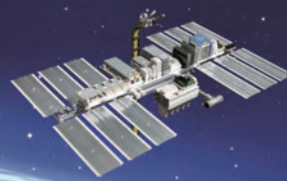


SYSTEMATIC TECHNOLOGY

* Allen-Bradley® is a registered trademark of Rockwell Allen Bradley.

Efficiency in Automation

Cable • Connectivity • Cabinet • Control



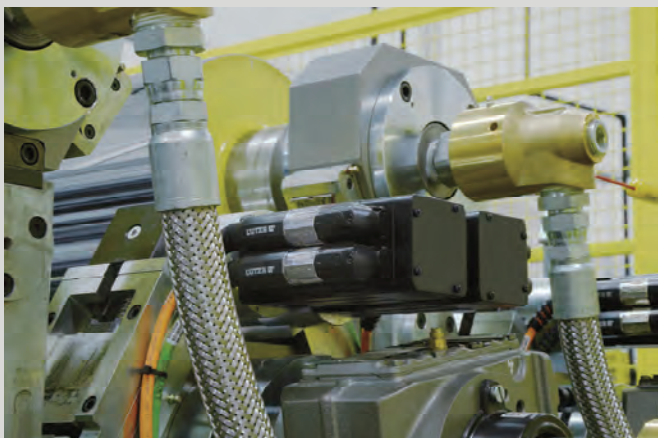
LUTZE Allen-Bradley® Servo Cable Assemblies for static and continuous flexing applications

LÜTZE Silfex® static cable features:

- semi-conductive layer for high voltage spikes, reducing likelihood of corona-effect
- increased reliability and lifetime
- superior EMC compliance with 85% optical coverage of flexible braid shield

LÜTZE Superflex® Plus continuous flexing cable features:

- PP insulation with better electrical values and lower capacitance than PVC/Nylon
- rugged PUR jacket delivers improved mechanical performance and long flex life
- for the most demanding continuous flexing applications



LUTZE Inc .
13330 South Ridge Drive,
Charlotte, North Carolina 28273

1-800-447-2371
info@lutze.com
www.lutze.com



SYSTEMATIC TECHNOLOGY

* Allen-Bradley® is a registered trademark of Rockwell Allen Bradley.

LUTZE Product Overview

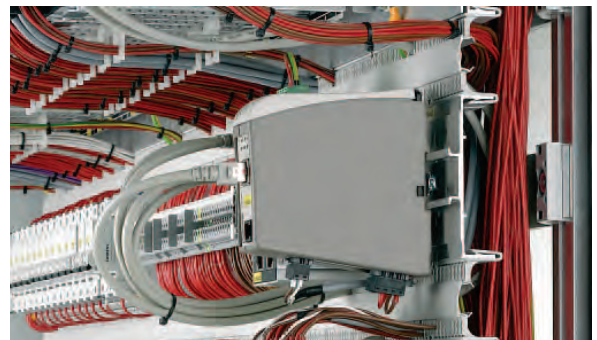
Cable and Connectivity Solutions

LUTZE specializes in flexible and continuous flexing industrial control, power and network cables, such as LUTZE Silflex®, LUTZE Superflex®, and DRIVEFLEX® VFD cables, for various applications in factory automation. Servo cable assemblies as well as wire and cable management components for industrial automation complement the offering.



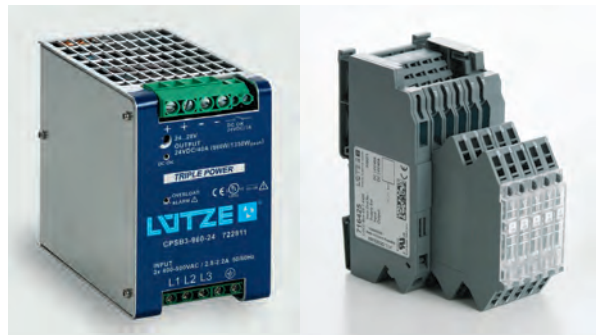
Cabinet Solutions

LUTZE LSC Wiring System saves space, time and cost. LSC is an aluminum frame that replaces the traditional back panel and wire duct for mounting and wiring of electrical components in a control enclosure. LSC shortens wiring times and improves heat dissipation within the cabinet to enhance component longevity.



Control Solutions

LUTZE offers din rail mountable compact power supplies, industrial Ethernet switches, and intelligent control circuit protection with the LUTZE LOCC-Box.



Transportation Solutions

LUTZE supplies high-tech electronic modules for railway applications. LUTZE control modules are proven to be long lasting and highly reliable in applications with extended temperature range, vibration and other harsh external influences.



LUTZE Inc.
13330 South Ridge Drive
Charlotte, NC 28273
Tel.: (704) 504-0222
Fax: (704) 504-0223
info@lutze.com

Efficiency in Automation

Cable • Connectivity • Cabinet • Control

- Flexible and High Flexing Cable and Wire Management
- Cable Assemblies
- Compact Power Supplies
- LOCC-Box Current Control
- LSC-Wiring System
- Ethernet Connectivity
- Interface Technology

www.lutze.com

1-800-447-2371



M120415