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UNITRONIC®

Data communication systems

Our high-quality UNITRONIC® data network cables and field bus components provide a forward-looking solution for all applications in industrial machinery and plant engineering. From transmission of simple control signals to field bus signals in complex network structures – we offer a dependable cabling and connection solution for almost every situation.

Application range

- Industrial machinery and plant engineering
- Sensors and actuating elements
- Appliances
- Measurement and control technology
- Automated production processes and industrial robots
- Bus systems
- Computing and communication systems

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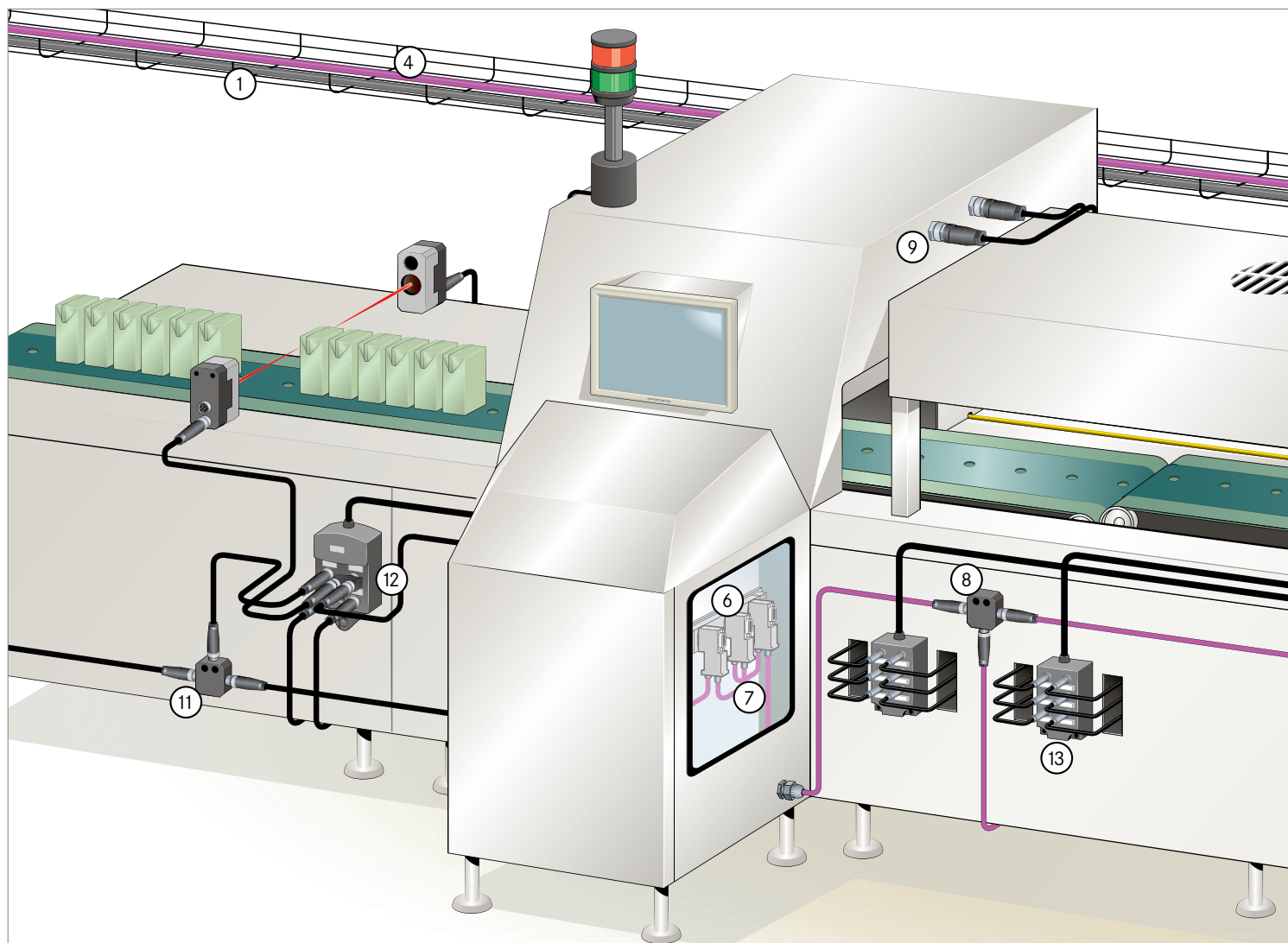
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Low frequency data cables

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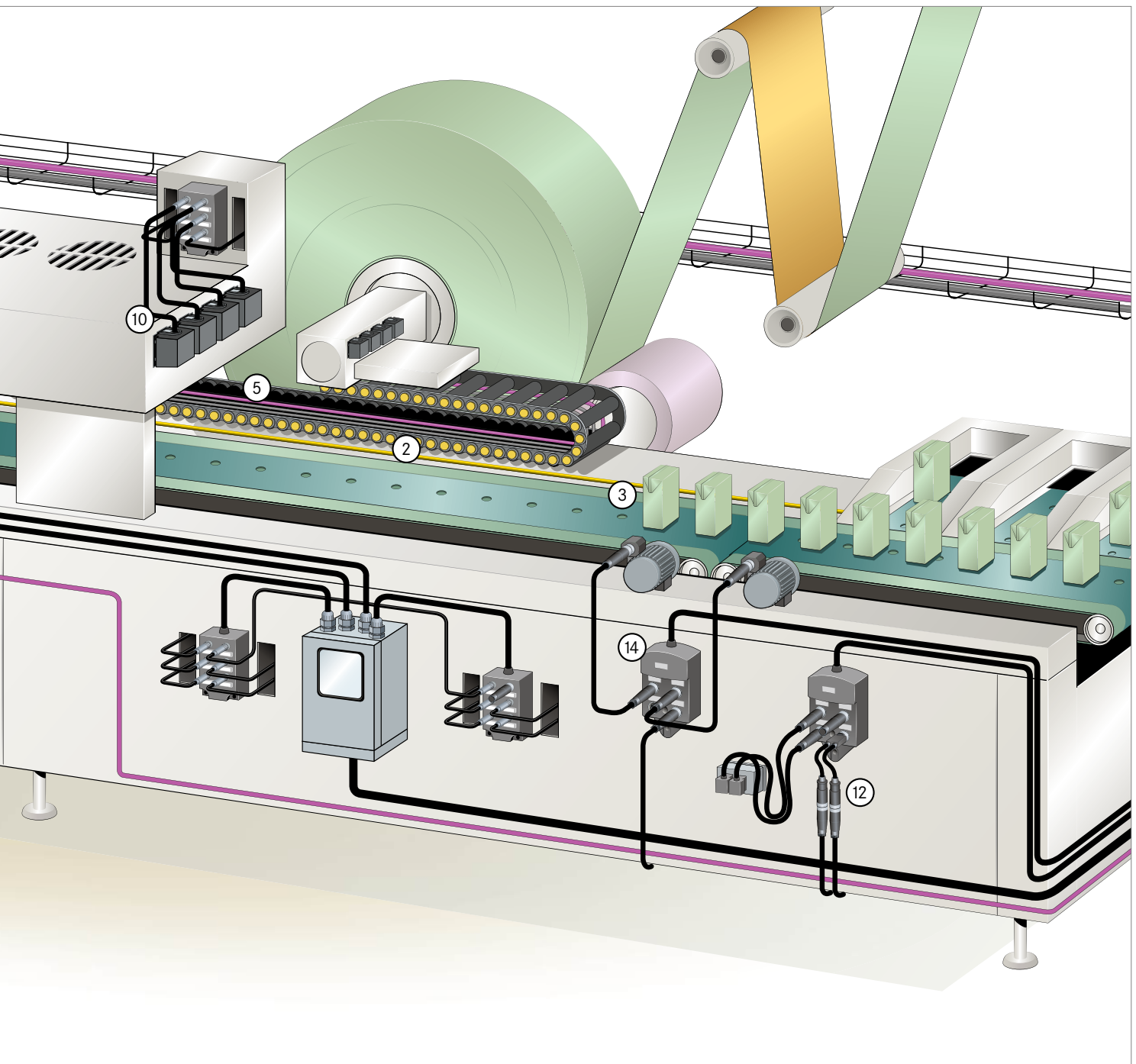
Installation/data cables for low frequency transmission – for fixed and flexible installation, continuous flexing application.

Coaxial cables

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RG (MIL-DTL 17 H) and RGB cables for high frequency data transmission, fixed and conditional flexing, in- and outdoor applications, extreme temperatures.



Bus systems

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Support of all major fieldbus systems, among others PROFIBUS® (DP and PA), CAN, DeviceNet™, CC-Link®, AS-Interface, ISOBUS, Foundation Fieldbus™, KNX®. Cables for in- and outdoor, extreme temperatures, fixed/flexible installation and high flexible application. M12- and Sub-D connectors, cordsets and accessories.

Sensor/actuator cabling

Page 383 to page 412



The complete range of M8-, M12- and valve connectors, cables, cordsets, matching distribution boxes and accessories. Available as shielded/unshielded version, optional LEDs, with different cable materials and connection technologies.



UNITRONIC® 100

Control and signal cable with small cross-sections



Info

- UNITRONIC® colour code with protective conductor

UNITRONIC® 100 CY

Screened control and signal cable with small cross-sections



Application range

- These control and signal cables are used in the milliamperage range for computer systems, electronic control equipment, office machines, balances etc. and wherever the thinnest possible control cables are required.

Product features

UNITRONIC® 100

- Robust, flexible and resistant outer sheath
- Small outer diameter despite high number of cores
- Flame-retardant according IEC 60332-1-2
- 3 cores with earth wire (green-yellow)
2 cores (black/blue)

UNITRONIC® 100 CY

- Robust, flexible and resistant outer sheath
- Small outer diameter despite high number of cores
- Cable similar to UNITRONIC® 100, but with copper braiding
- Flame-retardant according IEC 60332-1-2
- 3 cores with earth wire (green-yellow)
2 cores (black/blue)

Norm references / Approvals

- Based on: VDE 0814 or VDE 0812

Product Make-up

UNITRONIC® 100

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

UNITRONIC® 100 CY

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Inner sheath made of PVC
- For the cross section of 0.14 mm², a polyester tape is used underneath the screen braiding instead of the inner sheath.
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

Refer to Appendix T7 for the UNITRONIC® colour codes



Mutual capacitance

Approx. 120 nF/km



Peak operating voltage

(not for power applications)
500 V



Inductivity

approx. 0.7 mH/km



Conductor stranding

Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius

UNITRONIC® 100

Occasional flexing: 15 x outer diameter

Fixed installation: 4 x outer diameter

UNITRONIC® 100 CY

Occasional flexing: 20 x outer diameter

Fixed installation: 6 x outer diameter



Protective conductor

Green-yellow



Temperature range

Occasional flexing: -5°C to +70°C

Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® 100				
0028009	2 x 0,14	3	2.8	12
0028010	3 x 0,14	3.2	4.2	17
0028012	5 x 0,14	3.7	7	22
0028014	7 x 0,14	4	9.8	27
0028015	10 x 0,14	5	14	41
0028019	24 x 0,14	7.2	33.6	94
0028025	52 x 0,14	10	72.8	198
0028030	3 x 0,25	3.8	7.5	21
0028031	7 x 0,25	4.9	17.5	48
0028032	10 x 0,25	6.4	25	77
0028033	14 x 0,25	6.9	35	95
0028034	16 x 0,25	7.3	40	112
0028035	21 x 0,25	8.5	52.5	139
0028036	24 x 0,25	9	60	163
0028037	27 x 0,25	9.2	67.5	171
0028038	30 x 0,25	9.9	75	187
0028039	36 x 0,25	10.7	90	235

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
0028040	40 x 0,25	11.6	100	266
0028042	52 x 0,25	12.5	130	343
0028044	61 x 0,25	13.3	152.5	398
0028047	3 x 0,34	4.2	10.5	33
0028048	7 x 0,34	5.5	22.8	62
0028051	16 x 0,34	8.3	54.4	131
UNITRONIC® 100 CY				
0034006	2 x 0,14	3.7	12	20
0034007	3 x 0,14	3.9	13	28
0034008	4 x 0,14	4.1	14.3	33
0034009	5 x 0,14	4.4	15.5	38
0034010	7 x 0,14	4.7	20.3	49
0034011	10 x 0,14	5.7	34.3	66
0034012	14 x 0,14	6.3	32	80
0034013	16 x 0,14	6.6	40.9	90
0034016	27 x 0,14	8.1	70.6	148
0031031	3 x 0,25	5.4	20.2	48
0031066	4 x 0,25	5.7	24	61
0031067	5 x 0,25	6.3	29	72
0031032	7 x 0,25	6.7	37.6	82
0031033	10 x 0,25	8.2	48.8	129
0031034	14 x 0,25	8.7	64.6	147
0031068	2 x 0,34	5.6	20	45
0031048	3 x 0,34	5.8	24.1	62
0031069	4 x 0,34	6.4	29	65
0031070	5 x 0,34	6.9	42	95
0031049	7 x 0,34	7.3	50	106
0031050	10 x 0,34	9	67.7	167
0031052	16 x 0,34	10.5	95	219
0031060	52 x 0,34	17.6	336	629

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® LiYY refer to page 278
- UNITRONIC® LiYCY refer to page 279

Accessories

UNITRONIC® 100

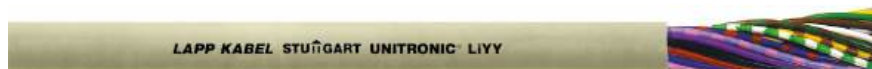
- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985

UNITRONIC® 100 CY

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B
- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985

UNITRONIC® LiYY

Data transmission cable with colour code acc. to DIN 47100



Info

- The classic for multi-functional use
- Further dimensions/colours on request

Benefits

- Space-saving installation due to small cable diameters
- Multifunctional application possibilities
- Depending on the quantity, the outer sheath can also be produced in other colours to match your application needs

Application range

- UNITRONIC® LiYY is also used as a control and signal cable in electronics of computer systems, electronic control equipment, office machines, balances, etc.
- Dry or damp rooms
- Occasional flexing

Product features

- Despite the large number of cores, LiYY data cables have small outer diameters
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100 without colour repetition, refer to Appendix T9



Mutual capacitance

Approx. 120 nF/km



Peak operating voltage

(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius

Occasional flexing: 10 x outer diameter
Fixed installation: 4 x outer diameter



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYY				
0028202	2 x 0.14	3.2	2.7	13.2
0028203	3 x 0.14	3.4	4.05	16
0028204	4 x 0.14	3.6	5.4	18.9
0028205	5 x 0.14	3.9	6.72	22.2
0028207	7 x 0.14	4.2	9.45	28.4
0028208	8 x 0.14	4.9	10.2	35.2
0028210	10 x 0.14	5.2	13.5	41.2
0028212	12 x 0.14	5.6	16.2	48.4
0028214	14 x 0.14	5.8	18.9	52.9
0028216	16 x 0.14	6.1	21.6	59.1
0028220	20 x 0.14	7	27	70.8
0028225	25 x 0.14	7.8	33.6	87.2
0028236	36 x 0.14	8.6	48.6	126.8
0028237	37 x 0.14	8.9	49.7	118
0028240	40 x 0.14	9.3	54	139.1
0028250	50 x 0.14	10.4	67.5	170.9
0028256	56 x 0.14	10.7	78.4	187
0028302	2 x 0.25	3.8	4.8	18
0028303	3 x 0.25	4	7.2	22
0028304	4 x 0.25	4.3	9.6	26.2
0028305	5 x 0.25	4.7	12	31
0028306	6 x 0.25	5.1	14.4	39
0028307	7 x 0.25	5.1	16.8	42
0028308	8 x 0.25	6.2	19.2	49.2
0028310	10 x 0.25	6.8	24	58
0028312	12 x 0.25	7	28.8	67
0028314	14 x 0.25	7.3	33.6	75.3
0028316	16 x 0.25	7.7	38.4	84.3
0028318	18 x 0.25	8.1	43.2	93
0028320	20 x 0.25	8.6	48	102
0028325	25 x 0.25	9.6	60	134
0028330	30 x 0.25	10.3	72	155
0028332	32 x 0.25	10.7	76.8	164
0028336	36 x 0.25	11.1	86.4	182.2
0028337	37 x 0.25	11.4	88.8	185

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
0028340	40 x 0.25	12	96.1	200
0028350	50 x 0.25	12.9	120	257.1
0028402	2 x 0.34	4.2	6.6	25
0028403	3 x 0.34	4.4	9.9	31
0028404	4 x 0.34	4.8	13.1	43.2
0028405	5 x 0.34	5.5	16.5	53.8
0028406	6 x 0.34	5.9	19.6	55
0028407	7 x 0.34	5.9	22.8	62
0028408	8 x 0.34	7.1	26.1	73.1
0028410	10 x 0.34	7.6	32.6	82
0028412	12 x 0.34	7.8	39.1	102
0028414	14 x 0.34	8.2	45.7	109
0028416	16 x 0.34	8.7	52	127
0028420	20 x 0.34	9.6	65.2	159.3
0028421	21 x 0.34	10.4	68.6	167
0028425	25 x 0.34	11.2	81.6	190
0028430	30 x 0.34	11.6	98	226
0028436	36 x 0.34	12.5	118	284
0028440	40 x 0.34	13.5	131	317
0028450	50 x 0.34	15	163	407
0028502	2 x 0.50	4.7	9.6	30
0028503	3 x 0.50	5	14.4	39
0028504	4 x 0.50	5.6	19.2	49
0028505	5 x 0.50	6.1	24	65
0028507	7 x 0.50	6.9	33.6	82
0028508	8 x 0.50	8	38.4	90
0028510	10 x 0.50	8.6	48	117
0028512	12 x 0.50	8.9	58	133
0028516	16 x 0.50	10.2	77	170
0028520	20 x 0.50	11.4	96	214
0028525	25 x 0.50	12.7	120	265
0028530	30 x 0.50	13.2	144	304
0028540	40 x 0.50	15.8	192	392
0028602	2 x 0.75	5.1	14.4	48
0028603	3 x 0.75	5.6	21.6	57
0028604	4 x 0.75	6.1	28.8	69

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
0028605	5 x 0.75	6.9	36	78
0028607	7 x 0.75	7.5	50	112
0028608	8 x 0.75	8.7	58	126
0028610	10 x 0.75	9.4	72	149
0028612	12 x 0.75	10.1	86	176
0028616	16 x 0.75	11.2	115	218
0028620	20 x 0.75	12.4	144	274
0028625	25 x 0.75	14	180	320

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® LiYY (TP) refer to page 281
- UNITRONIC® LiYY A refer to page 300

Accessories

- SKINTOP® ST-M refer to page 684
- SKINTOP® ST-M Small PU
- STAR STRIP stripping tool refer to page 985
- SENSOR STRIP stripping tool refer to page 987



Benefits

- Overall braid minimises electrical interference
- Multifunctional application possibilities

Application range

- Screened cables with small dimensions are suitable for use in computer systems, instrumentation technology, office equipment, balances.
- Dry or damp rooms

Product features

- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Screened data transmission cable with colour code acc. to DIN 47100



Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104

ETIM 5.0/6.0 Class-Description:

Control cable



Core identification code

DIN 47100 without colour repetition, refer to Appendix T9



Mutual capacitance

C/C: approx. 120 nF/km

C/S: approx. 160 nF/km



Peak operating voltage

(not for power applications)

at 0.14 mm²: 350 V

at ≥ 0.25 mm²: 500 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Stranded, fine-wire

0.34 mm²: 7-wire



Minimum bending radius

Occasional flexing: 15 x outer diameter

Fixed installation: 6 x outer diameter



Temperature range

Occasional flexing: -5°C to +70°C

Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYYC				
0034302	2 x 0.14	3.9	12	20
0034303	3 x 0.14	4.1	13	28
0034304	4 x 0.14	4.3	14.3	33
0034305	5 x 0.14	4.6	15.5	38
0034306	6 x 0.14	4.9	18.2	38
0034307	7 x 0.14	4.9	19	49
0034308	8 x 0.14	5.8	21.2	56
0034310	10 x 0.14	6.1	28.5	66
0034312	12 x 0.14	6.3	30.4	78
0034314	14 x 0.14	6.7	32	80
0034315	15 x 0.14	6.9	37.8	86
0034316	16 x 0.14	7	43	90
0034318	18 x 0.14	7.3	48.8	95
0034320	20 x 0.14	7.7	53.9	100
0034321	21 x 0.14	7.9	55.5	105
0034324	24 x 0.14	8.3	61	112
0034325	25 x 0.14	8.5	63	120
0034328	28 x 0.14	8.5	66.1	141
0034330	30 x 0.14	8.7	69	155
0034336	36 x 0.14	9.3	83	170
0034340	40 x 0.14	10.4	87.5	178
0034344	44 x 0.14	10.7	110.5	185
0034350	50 x 0.14	11.1	122.5	195
0034402	2 x 0.25	4.5	16	32
0034403	3 x 0.25	4.7	21	37
0034404	4 x 0.25	5	24	41.3
0034405	5 x 0.25	5.6	29	51.2
0034406	6 x 0.25	6	30	58

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
0034407	7 x 0.25	6	37	65
0034408	8 x 0.25	7.1	42	73
0034410	10 x 0.25	7.5	46	82
0034412	12 x 0.25	7.7	53	98
0034414	14 x 0.25	8	59	99
0034415	15 x 0.25	8.3	61	111
0034416	16 x 0.25	8.4	64	119
0034418	18 x 0.25	8.8	83	125
0034420	20 x 0.25	9.3	88	136
0034421	21 x 0.25	9.6	93	161
0034425	25 x 0.25	10.7	114	172
0034428	28 x 0.25	10.8	126	181.1
0034432	32 x 0.25	11.4	138	203
0034436	36 x 0.25	11.8	148	220
0034440	40 x 0.25	12.7	157	248
0034450	50 x 0.25	13.8	178	318
0034461	61 x 0.25	15	205	365.2
0034502	2 x 0.34	4.9	21	37
0034503	3 x 0.34	5.1	27	42
0034504	4 x 0.34	5.7	28	52
0034505	5 x 0.34	6.2	30	60
0034506	6 x 0.34	6.8	45	64
0034507	7 x 0.34	6.8	48	83
0034508	8 x 0.34	7.8	52	94
0034510	10 x 0.34	8.3	74	105
0034512	12 x 0.34	8.5	80	123
0034514	14 x 0.34	8.9	86	154
0034515	15 x 0.34	9.2	90	155
0034516	16 x 0.34	9.4	94	160
0034518	18 x 0.34	10.2	103	173
0034520	20 x 0.34	10.7	112	192
0034521	21 x 0.34	11.1	116	199.2
0034525	25 x 0.34	11.9	135	259
0034528	28 x 0.34	12	153	280
0034530	30 x 0.34	12.3	159	291.1
0034532	32 x 0.34	13	165	305
0034536	36 x 0.34	13.4	179	331
0034540	40 x 0.34	14.8	200	365
0034550	50 x 0.34	15.9	235	431
0034602	2 x 0.50	5.6	29	47
0034603	3 x 0.50	5.9	38	55
0034604	4 x 0.50	6.3	43	70
0034605	5 x 0.50	7	51	90
0034606	6 x 0.50	7.6	59	104
0034607	7 x 0.50	7.6	65	112
0034608	8 x 0.50	8.7	70	120
0034610	10 x 0.50	9.3	88	139
0034612	12 x 0.50	9.6	99	177
0034618	18 x 0.50	11.8	134	239
0034620	20 x 0.50	12.1	149	276
0034625	25 x 0.50	13.7	211	352
0034630	30 x 0.50	14.5	230	397
0034702	2 x 0.75	6	38	53
0034703	3 x 0.75	6.3	49	65
0034704	4 x 0.75	7	58	79
0034705	5 x 0.75	7.6	67	109
0034707	7 x 0.75	8.2	100	156
0034710	10 x 0.75	10.5	130	187
0034712	12 x 0.75	10.8	154	218
0034718	18 x 0.75	13	195	327
0034725	25 x 0.75	15.3	280	454
0034730	30 x 0.75	15.8	312	486
0034802	2 x 1.00	6.3	43	72
0034803	3 x 1.00	6.8	56	90
0034804	4 x 1.00	7.3	68	109
0034805	5 x 1.00	8	79	126
0034807	7 x 1.00	8.6	118	171
0034810	10 x 1.00	11.1	140	228
0034812	12 x 1.00	11.4	168	259
0034818	18 x 1.00	13.4	252	389
0034825	25 x 1.00	16.2	335	517
0034902	2 x 1.50	7.1	58	90
0034903	3 x 1.50	7.5	74	115
0034904	4 x 1.50	8.1	108	129
0034905	5 x 1.50	8.8	129	176
0034907	7 x 1.50	9.5	164	220
0034912	12 x 1.50	12.7	254	376
0034918	18 x 1.50	15.3	350	519
0034925	25 x 1.50	17.9	550	901

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® LiCY (TP) refer to page 282
- UNITRONIC® PUR CP refer to page 289
- UNITRONIC® LiCY A refer to page 301

Accessories

- SKINTOP® MS-SC refer to page 777
- Multipurpose shears A and B
- UNIVERSAL STRIP stripping tool refer to page 990



UNITRONIC® LiYY (TP)

Data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Info

- TP = twisted pair

Benefits

- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Electronic devices tend to leave little room for installing cables, meaning short travel distances and small bending radii are required. This cable ideally meets these requirements.
- Dry or damp rooms

Product features

- Twisted in pairs to reduce decoupling. As a result, additional screening is often not required.
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance Approx. 120 nF/km
	Peak operating voltage (not for power applications) at 0.14 mm²: 350 V at ≥ 0.25 mm²: 500 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Fine copper wire strands
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiYY (TP)				
0035101	2 x 2 x 0.14	4.5	5.4	25.5
0035102	3 x 2 x 0.14	5	8	32
0035103	4 x 2 x 0.14	5.6	10.7	38.5
0035104	5 x 2 x 0.14	5.8	13.4	45.5
0035105	6 x 2 x 0.14	6.3	16.1	51
0035108	10 x 2 x 0.14	8.1	26.9	77.5
0035110	12 x 2 x 0.14	8.3	32.3	94.5
0035113	16 x 2 x 0.14	9.2	43	110.5
0035160	2 x 2 x 0.25	5.7	9.6	38
0035161	3 x 2 x 0.25	6.3	14.4	48
0035162	4 x 2 x 0.25	7	19.2	59
0035163	6 x 2 x 0.25	7.9	28.8	80
0035164	8 x 2 x 0.25	9.3	38.4	98
0035170	2 x 2 x 0.5	7.3	19.2	72
0035171	3 x 2 x 0.5	8.1	28.8	83
0035172	4 x 2 x 0.5	8.8	38.4	115
0035174	8 x 2 x 0.5	12.3	76.8	206
0035175	10 x 2 x 0.5	13.3	96	247

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® LiYCY (TP) refer to page 282
- UNITRONIC® LiYCY (TP) A refer to page 302

Accessories

- SKINTOP® CLICK refer to page 687
- KS 15 cable shears



UNITRONIC® LiYCY (TP)

Screened data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Info

- TP = twisted pair
- Further dimensions/colours on request

Benefits

- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Overall braid minimises electrical interference

Application range

- Can be used multifunctional in electronics of computer systems, electronic control equipment, office machines, balances, etc.
- Dry or damp rooms

Product features

- Good protection against capacitive interference from electric fields (e.g. power cable)
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100, refer to Appendix T9



Mutual capacitance

C/C: approx. 120 nF/km
C/S: approx. 160 nF/km



Peak operating voltage

(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Fine copper wire strands



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter



Temperature range

Occasional flexing: -5 °C to +70 °C
Fixed installation: -40 °C to +80 °C

Article number	Dimension and cross section in mm ²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYCY (TP)				
0035131	2 x 2 x 0.14	5.3	18.5	39
0035141	3 x 2 x 0.14	5.8	23	48
0035132	4 x 2 x 0.14	6.2	26.6	54
0035133	6 x 2 x 0.14	7.1	48.5	85
0035150	8 x 2 x 0.14	8.2	53.7	97
0035134	10 x 2 x 0.14	8.7	59	110
0035135	12 x 2 x 0.14	8.9	66	142
0035136	16 x 2 x 0.14	10.2	79	154
0035142	20 x 2 x 0.14	11.3	97	184
0035137	25 x 2 x 0.14	12.5	113	238
0035800	2 x 2 x 0.25	6.3	28	54
0035801	3 x 2 x 0.25	7.1	39.6	68.5
0035802	4 x 2 x 0.25	7.6	44.9	81
0035803	6 x 2 x 0.25	8.5	69.5	115
0035804	8 x 2 x 0.25	10.3	76.9	130
0035805	10 x 2 x 0.25	11	102	158
0035806	12 x 2 x 0.25	11.3	120	190
0035807	16 x 2 x 0.25	12.5	146.5	238

Article number	Dimension and cross section in mm ²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
0035808	25 x 2 x 0.25	16.1	205	344
0035810	2 x 2 x 0.50	7.9	48.1	93
0035811	3 x 2 x 0.50	8.7	73.7	116
0035812	4 x 2 x 0.50	9.4	82	127
0035813	6 x 2 x 0.50	11.1	110	198
0035814	8 x 2 x 0.50	13.1	139	259
0035816	12 x 2 x 0.50	14.9	198.3	354
0035817	16 x 2 x 0.50	16.5	240	459
0035820	2 x 2 x 0.75	8.5	58	106
0035821	3 x 2 x 0.75	9.4	84	140
0035822	4 x 2 x 0.75	10.7	108	179
0035827	5 x 2 x 0.75	11.1	126	215
0035823	6 x 2 x 0.75	12.1	146	246
0035824	8 x 2 x 0.75	14.7	180	305
0035825	12 x 2 x 0.75	16.2	261	456
0035830	2 x 2 x 1.00	9	84	142
0035831	3 x 2 x 1.00	10	96	173
0035832	4 x 2 x 1.00	11.3	121	212
0035836	5 x 2 x 1.00	11.8	161	266

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® CY PiDY (TP) refer to page 286
- UNITRONIC® PUR CP (TP) refer to page 290
- UNITRONIC® Li2YCY (TP) fine-wire refer to page 291
- UNITRONIC® LiYCY (TP) A refer to page 302

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B
- STAR STRIP stripping tool refer to page 985



UNITRONIC® EB CY (TP)

Screened data transmission cable with twisted pairs and blue outer sheath



Info

- Hazard protection type -i- is required where there is a risk of explosion

Benefits

- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Reliable data transmission in intrinsically safe circuits
- In EMC-sensitive environments (electromagnetic compatibility)

Product features

- For intrinsically safe circuits (type of protection i - intrinsic safety) according to IEC 60079-14:2013 / EN 60079-14:2014 / VDE 0165-1:2014, section 16.2.2
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: sky blue (RAL 5015)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C approx. 100 nF/km C/S approx. 140 nF/km
	Peak operating voltage (not for power applications) 900 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Strand, fine-wire in accordance with IEC 60228 Cl. 5
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Test voltage 2500 V
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® EB CY (TP)				
0012620	2 x 2 x 0.75	8.7	58	106
0012621	3 x 2 x 0.75	9.6	84	140
0012622	4 x 2 x 0.75	10.9	108	179
0012624	6 x 2 x 0.75	12.3	146	246
0012626	10 x 2 x 0.75	16.1	220	392

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- JE-LiYCY...BD EB refer to page 318

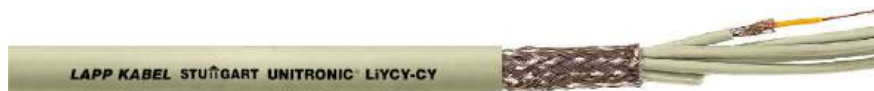
Accessories

- SKINTOP® K-M ATEX plus blue refer to page 695
- Multipurpose shears A and B



UNITRONIC® LIYCY-CY

Screened data transmission cable with individually screened cores



Benefits

- Overall braid minimises electrical interference
- Individually screened cores minimise crosstalk between cables routed in parallel

Application range

- When a lossless transmission of data has to be guaranteed in fields with strong interference, cables with individually screened cores and an additional overall screening are used
- Dry or damp rooms

Product features

- Wire-screen can be used as outer conductor
- The cable remains flexible despite multiple screening
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding for each core
- Inner sheath made of PVC over each screened core
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance Approx. 230 nF/km
	Peak operating voltage (not for power applications) 250 V
	Inductivity Approx. 0.2 mH/km
	Conductor stranding Stranded conductor, fine-wire
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 7.5 x outer diameter
	Temperature range Occasional flexing: -5 °C to +70 °C Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LIYCY-CY				
0032302	2 x 0.25	6.9	41.5	69
0032303	3 x 0.25	7.2	53	106
0032304	4 x 0.25	7.8	65	130
0032305	5 x 0.25	8.5	78	161

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® CY PiDY (TP) refer to page 286

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B
- UNIVERSAL STRIP stripping tool refer to page 990
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® LiFYCY (TP)

Screened miniature data transmission cable



Info

- For requirements of microelectronics

Benefits

- Space-saving installation due to small cable diameters
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Overall braid minimises electrical interference

Application range

- For protection against high-frequency interference, screened, fine-wire cables are used in many devices.
- Wherever screened cables with smallest dimensions are required
- Examples: microelectronics, hearing aids etc.

Product features

- Very small dimensions
- Flame-retardant according IEC 60332-1-2

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C approx. 80 nF/km C/S approx. 120 nF/km
	Peak operating voltage (not for power applications) 150 V
	Coupling At 1 kHz: approx. 300 pF/100 m
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire, cross-section 0.08 mm ²
	Minimum bending radius Occasional flexing: 7.5 x outer diameter Fixed installation: 4 x outer diameter
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Dimension and cross section in mm ²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiFYCY (TP)				
0034231	4 x 2 x 0.08	5.4	19.4	37
0034233	8 x 2 x 0.08	7.1	23.7	76

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- EASY STRIP stripping and cutting tool refer to page 988
- Multipurpose shears A and B
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® CY PiDY (TP)

Screened data transmission cable with copper-wrapped twisted pairs



Info

- PiDY = Pairs with copper wire wrapping and PVC sheath

Benefits

- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Individually screened pairs and the overall braid minimise electrical interference

Application range

- Cable should be used in areas with high levels of electromagnetic interferences
- Data processing, process control systems, machining centres, security systems and electronics
- Suitable for the transmission with varying in frequency and voltage or sensitive signals
- For fixed installation and flexible use
- Dry or damp rooms

Product features

- The cable remains flexible despite multiple screening
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- Cores twisted into pairs
- Copper wrapping over pairs
- Inner sheath made of PVC over screened pairs
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100, refer to Appendix T9



Mutual capacitance

C/C: approx. 120 nF/km
C/S: approx. 160 nF/km



Peak operating voltage

(not for power applications)
350 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Stranded conductor, fine-wire



Minimum bending radius

Fixed installation: 6 x outer diameter



Loop resistance

< 160 Ω/km



Characteristic impedance

Approx. 65 Ω



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Dimension and cross section in mm²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® CY PiDY (TP)				
0034250	2 x 2 x 0.25	9.3	59.6	112
0034251	3 x 2 x 0.25	9.8	72.7	136
0034252	4 x 2 x 0.25	10.7	88.2	168
0034253	5 x 2 x 0.25	11.7	103.8	201
0034254	6 x 2 x 0.25	13.1	125.7	244
0034256	8 x 2 x 0.25	15.7	161	325
0034257	10 x 2 x 0.25	16.9	186.8	342
0034258	12 x 2 x 0.25	17.4	239.5	416
0034259	16 x 2 x 0.25	19.3	316.7	542

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® Li2CY PiMF refer to page 293

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985

**UNITRONIC® ST**

Static screened data transmission cable similar to UL AWM 2092

**Benefits**

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields

Application range

- Especially designed for the transmission of the smallest measurement and control signals at minimal space requirements
- Internal wiring of electronic equipment
- For fixed and limited flexible installation
- For use in dry, damp and wet rooms

Product features

- Protection against interferences at medium and high frequencies by aluminium-laminated plastic foil, combination of flexibility and good screening (normal requirements)
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on UL AWM Style 2092 / 2093

Product Make-up

- 7-wire tinned stranded copper conductor
- Core insulation made of polyethylene (PE)
- Plastic-laminated aluminium foil with tinned copper drain wire
- Outer sheath made of PVC, Colour of the outer sheath: Similar to Silver-grey / RAL 7001

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code 2 cores: black, transparent 3 cores: black, red, transparent
	Mutual capacitance C/C approx. 90 nF/km C/S approx. 160 nF/km
	Peak operating voltage (not for power applications) 500 V
	Inductivity approx. 0.65 mH/km
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 6 x outer diameter
	Characteristic impedance Approx. 95 Ω
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of conductors and AWG size	Conductor cross-section (mm²)	Core insulation material	Outer sheath material	Outer diameter [mm]	Copper index (kg/km)
UNITRONIC® ST						
0033000	2 x AWG 20/7	0.52	PE	PVC	5.2	17.2
0033001	3 x AWG 20/7	0.52	PE	PVC	5.3	23

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- UNIVERSAL STRIP stripping tool refer to page 990
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® LiYD11Y

Data transmission cable with copper wrapping and PUR outer sheath

LAPP KABEL STUTTGART UNITRONIC® LiYD11Y

Benefits

- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Resistant to contact with many mineral oil-based lubricants, diluted acids, aqueous alkaline solutions and other chemical media

Application range

- Intended for use in industrial environments, where cables should have excellent mechanical and chemical resistance.
- Screened cables with small dimensions are suitable for use in computer systems, instrumentation technology, office equipment, balances.
- Can be used in dry or damp rooms
- Outdoor use is possible within the indicated operating temperature range

Product features

- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion
- Low-adhesive surface
- Good UV-resistance
- Flame retardant according to IEC 60332-2-2
- Spiral versions with similar properties are also available: "UNITRONIC® SPIRAL"

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Wrapped with bare copper wires
- Outer sheath made of PUR
- Outer sheath colour: black (RAL 9005)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance C/C approx. 140 nF/km C/S approx. 150 nF/km
	Peak operating voltage (not for power applications) 250 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 6 x outer diameter
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYD11Y				
0033202	2 x 0.14	4.1	9.6	20
0033203	3 x 0.14	4.3	11	25
0033204	4 x 0.14	4.5	12	27
0033205	5 x 0.14	4.8	14.4	33
0033206	6 x 0.14	5.5	17.6	38
0033207	7 x 0.14	5.9	21.5	41
0033212	12 x 0.14	7.2	33.2	62
0033218	18 x 0.14	8	44.2	83
0033302	2 x 0.25	4.7	11.8	25
0033303	3 x 0.25	5.3	15.6	31
0033304	4 x 0.25	5.6	18.2	36
0033305	5 x 0.25	6	21.4	42
0033306	6 x 0.25	6.8	26.1	49
0033307	7 x 0.25	7.3	27.8	53
0033312	12 x 0.25	8.4	48.1	81
0033318	18 x 0.25	9.7	69	117

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® SPIRAL LiF2Y11Y refer to page 258
- UNITRONIC® SPIRAL refer to page 260

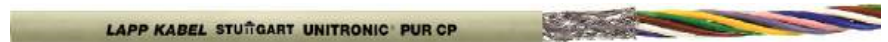
Accessories

- Multipurpose shears A and B
- UNIVERSAL STRIP stripping tool refer to page 990
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® PUR CP

Screened data transmission cable with PUR outer sheath for harsh conditions



Benefits

- Data transmission cable with PUR sheath for increased mechanical stress, wear- and tear-resistant
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Overall braid minimises electrical interference

Application range

- Further development of the UNITRONIC® range for harsher ambient conditions where robust and screened cables in small dimensions are required.

Product features

- Low-adhesive surface
- PUR outer sheath is resistant to most oils and hydraulic fluids
- Special notch and tear-resistance
- Good UV-resistance
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of PUR
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C: approx. 120 nF/km C/S: approx. 160 nF/km
	Peak operating voltage (not for power applications) at 0.14 mm ² : 350 V at ≥ 0.25 mm ² : 500 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, fine-wire 0.34 mm ² : 7-wire
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® PUR CP				
0032801	3 x 0.25	4.7	21	40
0032802	4 x 0.25	5	24	44
0032803	5 x 0.25	5.6	29	55
0032804	7 x 0.25	6	37	68
0032805	10 x 0.25	7.5	46	85
0032806	12 x 0.25	7.7	59	91
0032812	4 x 0.34	5.7	28	49
0032813	5 x 0.34	6.2	30	60
0032821	3 x 0.50	5.9	38	70
0032822	4 x 0.50	6.3	43	80
0032824	7 x 0.50	7.6	65	115
0032830	2 x 0.75	6	38	67
0032836	12 x 0.75	10.8	154	225

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Similar products

- UNITRONIC® FD Li2YCY (TP) A BE refer to page 307
- UNITRONIC® FD Li2YCY (TP) A BA refer to page 308
- UNITRONIC® PUR CP (TP) refer to page 290
- UNITRONIC® FD CP plus refer to page 311
- UNITRONIC® FD CP (TP) plus refer to page 312

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- SMART STRIP stripping tool



UNITRONIC® PUR CP (TP)

Screened data transmission cable with PUR outer sheath and twisted pairs for harsh conditions



Info

- TP = twisted pair

Benefits

- Data transmission cable with PUR sheath for increased mechanical stress, wear- and tear-resistant
- Increased durability under harsh conditions thanks to robust PUR outer sheath
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- For harsh environmental conditions where robust and screened cables with small dimensions are necessary

Product features

- Low-adhesive surface
- PUR outer sheath is resistant to most oils and hydraulic fluids
- Special notch and tear-resistance
- Good UV-resistance
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of PVC
- TP structure
- Tinned-copper braiding
- Outer sheath made of PUR
- Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100, refer to Appendix T9



Mutual capacitance

C/C: approx. 120 nF/km
C/S: approx. 160 nF/km



Peak operating voltage

(not for power applications)
at 0.14 mm²: 350 V
at ≥ 0.25 mm²: 500 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Fine copper wire strands



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® PUR CP (TP)				
0032850	2 x 2 x 0.25	6.3	28	54
0032851	3 x 2 x 0.25	7.1	40	66
0032852	4 x 2 x 0.25	7.6	45	81
0032854	6 x 2 x 0.25	8.5	70	115
0032860	2 x 2 x 0.5	7.9	48	93
0032861	3 x 2 x 0.5	8.7	74	129
0032862	4 x 2 x 0.5	9.4	82	146
0032864	6 x 2 x 0.5	11.1	110	198

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® FD Li2YCY (TP) A BE refer to page 307
- UNITRONIC® FD Li2YCY (TP) A BA refer to page 308
- UNITRONIC® FD CP (TP) plus refer to page 312

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- SMART STRIP stripping tool



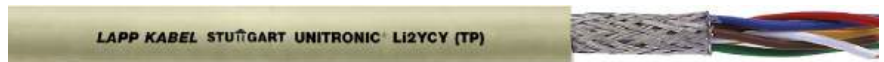
UNITRONIC® Li2YCY (TP)

Screened data transmission cable mit PE core insulation, 7-wire strands and twisted pairs



Info

- Cables for RS485/RS422



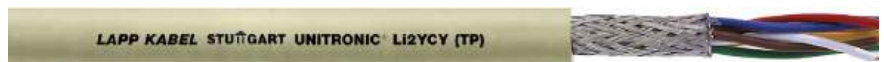
UNITRONIC® Li2YCY (TP) fine-wire

Screened data transmission cable mit PE core insulation, fine wire strands and twisted pairs



Info

- Cables for RS485/RS422



UNITRONIC® Li2YCYv (TP)

Screened data transmission cable mit PE core insulation, reinforced outer sheath and twisted pairs



Info

- Cables for RS485/RS422



Benefits

- 7-wire stranded conductor (UNITRONIC® Li2YCY (TP) and UNITRONIC® Li2YCYv (TP) can be used for Maxi TERMI-POINT® wiring)
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Particularly suitable for wiring data systems with transmission rates up to 10 Megabits per second, and is qualified for the RS422 and RS485 interfaces.
- For fixed and limited flexible installation
- Can be used in dry or damp rooms
- Signal-, control- and measuring cable, for transmission of low, sensitive signals and high bit rates
- **UNITRONIC® Li2YCYv (TP)** with its reinforced, nominal/ minimum average wall thickness of at least 1.8 mm of the black outer sheath (Yv) is designed for indoor and outdoor use as well as for applications where a reinforced outer sheath may turn out to be advantageous

Product features

- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

UNITRONIC® Li2YCY (TP)

- 7-wire bare stranded copper conductor
- Core insulation made of polyethylene (PE)
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

UNITRONIC® Li2YCY (TP) fine-wire

- Conductors: Finely stranded bare copper
- Core insulation made of polyethylene (PE)
- TP structure
- Tinned-copper braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

UNITRONIC® Li2YCYv (TP)

- 7-wire bare stranded copper conductor
- Core insulation made of polyethylene (PE)
- TP structure
- Tinned-copper braiding
- Wall thickness of the outer sheath is increased ("Yv")
- Outer sheath colour: black (RAL 9005)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100, refer to Appendix T9



Mutual capacitance

At 800 Hz: max. 60 nF/km



Peak operating voltage

(not for power applications) 250 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

UNITRONIC® Li2YCY (TP)

Stranded conductor, based on VDE 0881, 7-wire

UNITRONIC® Li2YCY (TP) fine-wire

Stranded conductor, fine-wire

UNITRONIC® Li2YCYv (TP)

Stranded conductor, based on VDE 0881, 7-wire



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter

Short-range crosstalk attenuation

Up to 1 MHz min. 50 dB
Up to 10 MHz min. 40 dB



Test voltage

Core/core: 2000 V
Core/screen: 1000 V



Characteristic impedance

100 ± 15 Ω (> 1 MHz)



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® Li2YCY (TP)				
0031320	2 x 2 x 0,22	6.5	24.2	59
0031321	3 x 2 x 0,22	7.1	28.6	66
0031322	4 x 2 x 0,22	7.3	34.2	78
0031323	8 x 2 x 0,22	9.1	70	125
0031324	10 x 2 x 0,22	10.4	76	143
0031335	1 x 2 x 0,34	5.8	20	44
0031325	2 x 2 x 0,34	7.7	34.1	79
0031326	3 x 2 x 0,34	8.4	43	89
0031327	4 x 2 x 0,34	8.7	47	101
0031328	8 x 2 x 0,34	11	85.8	176
0031336	1 x 2 x 0,5	6.3	29	53
0031330	2 x 2 x 0,5	8.5	37	85
0031331	3 x 2 x 0,5	9.3	55	105
0031332	4 x 2 x 0,5	9.6	60	122
0031333	8 x 2 x 0,5	12.7	113.3	213
0031334	10 x 2 x 0,5	14.8	154	261
UNITRONIC® Li2YCY (TP) fine-wire				
0031370	1 x 2 x 0,25	5.7	14	38
0031371	2 x 2 x 0,25	6.9	28	43
0031372	3 x 2 x 0,25	7.5	39.6	64
0031373	5 x 2 x 0,25	8.3	50	93
UNITRONIC® Li2YCYv (TP) black for outdoor installation and direct burial, 7-wire				
0031350	2 x 2 x 0,22	8.1	24.2	79
0031351	3 x 2 x 0,22	8.7	28.6	93
0031352	4 x 2 x 0,22	8.9	34.2	100
0031353	8 x 2 x 0,22	10.7	70	156
0031354	10 x 2 x 0,22	12	76	185
0031365	1 x 2 x 0,34	7.4	20	69
0031355	2 x 2 x 0,34	9.3	34.1	102
0031356	3 x 2 x 0,34	10	43	117
0031357	4 x 2 x 0,34	10.3	52.8	130
0031358	8 x 2 x 0,34	12.6	85.8	206
0031366	1 x 2 x 0,5	7.9	29	79
0031360	2 x 2 x 0,5	10.1	37	120
0031361	3 x 2 x 0,5	10.9	55	142
0031362	4 x 2 x 0,5	11.2	60	160
0031363	8 x 2 x 0,5	13.9	113.3	251
0031364	10 x 2 x 0,5	16	148	303

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

TERMI-POINT® is a registered trademark of AMP

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

Similar products

- UNITRONIC® BUS LD refer to page 326

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B
- STAR STRIP stripping tool refer to page 985
- STEEL GUN HT-338 cable tie pliers refer to page 1049
- LS steel cable ties refer to page 1047



UNITRONIC® Li2YCY PiMF

Screened data transmission cable with PE core insulation and pairs in metalfoil



Info

- Metal foil screened pairs

Benefits

- Data transmission cable with low capacitance, pair screening and overall copper braiding
- Particularly suitable for wiring data systems and controls in large industrial plants
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring
- Individually screened pairs and the overall braid minimise electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- For enhanced requirements in near-end cross-talk attenuation and high electrical interference in the circuits
- Suitable for the transmission with varying in frequency and voltage or sensitive signals
- Can be used multifunctional in electronics of computer systems, electronic control equipment, office machines, balances, etc.
- For measurement value transmission and serial 2-wire interfaces
- Intended for limited flexible use, and for fixed installation in dry or damp interiors

Product features

- Flame-retardant according IEC 60332-1-2

Product Make-up

- 7-wire or fine-wire (from 1 mm²) strands made of bare copper wires
- Core insulation made of polyethylene (PE)
- Cores twisted into pairs
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire for each pair
- Bare copper screen braiding
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

0.22 mm²-0.5 mm²:
according to DIN 47100, see table T9
1.0 mm²:
a-core: white, b-core: black



Mutual capacitance

At 800 Hz:
0.22 mm²: max. 70 nF/km
0.34 mm²: max. 70 nF/km
0.5 mm²: max. 75 nF/km
1.0 mm²: max. 85 nF/km



Peak operating voltage

(not for power applications) 250 V



Inductivity

Approx. 0.4 mH/km



Conductor stranding

Stranded conductor, based on VDE 0881, 7-wire



Minimum bending radius

Occasional flexing: 20 x outer diameter
Fixed installation: 10 x outer diameter



Test voltage

Core/core: 2000 V
Core/screen: 1000 V



Characteristic impedance

approx. 85 Ω (> 1 MHz)



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -40°C to +80°C

Article number	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® Li2YCY PiMF				
7-wire				
0034040	2 x 2 x 0,22	7.7	33	75.4
0034041	3 x 2 x 0,22	8.1	42	86
0034042	4 x 2 x 0,22	8.7	50	99
0034043	8 x 2 x 0,22	10.9	85	161.4
0034044	10 x 2 x 0,22	12	100	186.4
0034045	2 x 2 x 0,34	9	43	70
0034046	3 x 2 x 0,34	9.4	55	85
0034047	4 x 2 x 0,34	9.8	64	103
0034048	8 x 2 x 0,34	12.9	127	191
0034060	2 x 2 x 0,5	9.9	51	96
0034061	3 x 2 x 0,5	10.4	66	116
0034062	4 x 2 x 0,5	11.3	71	141
0034063	5 x 2 x 0,5	11.8	92	180
0034064	8 x 2 x 0,5	14.5	153	271
0034065	10 x 2 x 0,5	16.6	182	327
Fine wire				
0034070	2 x 2 x 1	11.7	82	126
0034071	3 x 2 x 1	11.8	109	196
0034072	4 x 2 x 1	12.7	133	220
0034073	10 x 2 x 1	19.7	326	492

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum / Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Similar products

- UNITRONIC® RE-2Y(ST)Yv PiMF refer to page 315

Accessories

- Cable shears with double edge refer to page 980
- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- STAR STRIP stripping tool refer to page 985
- KS 20 cable shears



UNITRONIC® ROBUST

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media

LAPP KABEL STUTTGART UNITRONIC® ROBUST



Info

- Excellent weather resistance
- Good chemical resistance

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Outer sheath made of special TPE
- Outer sheath colour: Black

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance C/C approx. 60 nF/km
	Peak operating voltage (not for power applications) at 0.14 mm ² : 350 V at ≥ 0.25 mm ² : 500 V
	Specific insulation resistance > 20 GOhm x cm
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, fine-wire 0.34 mm ² : 7-wire
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Test voltage At 0.14 mm ² : 1200 V
	Temperature range Occasional flexing: -40°C to +90°C Fixed installation: -50°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST				
1032000	2 x 0.14	3.2	2.8	15
1032001	3 x 0.14	3.4	4.2	17
1032002	4 x 0.14	3.6	5.6	21
1032003	5 x 0.14	3.9	7	25
1032004	7 x 0.14	4.2	9.8	30
1032005	8 x 0.14	4.9	11.2	40
1032006	10 x 0.14	5.2	14	41
1032007	12 x 0.14	5.6	16.8	50
1032009	16 x 0.14	6.1	22.4	63
1032011	25 x 0.14	7.7	35	95
1032012	2 x 0.25	3.8	4.8	21
1032013	3 x 0.25	4	7.2	25
1032014	4 x 0.25	4.3	9.6	31
1032015	5 x 0.25	4.7	12	38
1032016	7 x 0.25	5.1	16.8	47

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1032017	8 x 0.25	6.2	19.2	66
1032018	10 x 0.25	6.8	24	71
1032019	12 x 0.25	7	28.8	81
1032021	16 x 0.25	7.7	38.4	104
1032024	25 x 0.25	9.5	60	151
1032025	2 x 0.34	4.2	6.5	29
1032026	3 x 0.34	4.4	9.8	32
1032027	4 x 0.34	4.8	13.1	41
1032028	5 x 0.34	5.5	16.3	52
1032030	7 x 0.34	5.9	22.9	65
1032031	8 x 0.34	7.1	26.1	90
1032032	10 x 0.34	7.6	32.6	93
1032033	12 x 0.34	7.8	39.2	107
1032035	16 x 0.34	8.7	52.2	138
1032038	25 x 0.34	11.2	81.6	213

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® ST-HF-M refer to page 693
- KT 11 cable shears
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® ROBUST C

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



Info

- Excellent weather resistance
- Good chemical resistance

LAPP KABEL STUTTGART UNITRONIC® ROBUST C



Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Tinned-copper braiding
- Outer sheath made of special TPE
- Outer sheath colour: Black

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance C/C approx. 60 nF/km C/S approx. 100 nF/km
	Peak operating voltage (not for power applications) at 0.14 mm ² : 350 V at ≥ 0.25 mm ² : 500 V
	Specific insulation resistance > 20 GOhm x cm
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, fine-wire 0.34 mm ² : 7-wire
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Test voltage At 0.14 mm ² : 1200 V
	Temperature range Occasional flexing: -40°C to +90°C Fixed installation: -50°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST C				
1032050	2 x 0.14	3.9	9.3	25
1032051	3 x 0.14	4.1	10.8	28
1032052	4 x 0.14	4.3	13.5	34
1032053	5 x 0.14	4.6	15	38
1032055	7 x 0.14	4.9	19	46
1032056	8 x 0.14	5.8	22	60
1032057	10 x 0.14	6.1	25.8	63
1032058	12 x 0.14	6.3	28.9	70
1032061	25 x 0.14	8.4	56.1	128
1032062	2 x 0.25	4.5	12.7	33
1032063	3 x 0.25	4.7	16.3	40
1032064	4 x 0.25	5	18.8	46
1032065	5 x 0.25	5.6	22.5	57
1032067	7 x 0.25	6	28.6	69

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1032068	8 x 0.25	7.1	33.6	92
1032069	10 x 0.25	7.5	42.8	101
1032070	12 x 0.25	7.7	47.7	111
1032073	25 x 0.25	10.6	86.5	202
1032074	2 x 0.34	4.9	15.7	44
1032075	3 x 0.34	5.1	20.4	54
1032076	4 x 0.34	5.7	23.6	66
1032077	5 x 0.34	6.2	28.2	78
1032079	7 x 0.34	6.8	36	95
1032080	8 x 0.34	7.8	45.3	127
1032081	10 x 0.34	8.3	53.9	137
1032082	12 x 0.34	8.5	60.7	152
1032084	16 x 0.34	9.4	77.9	191
1032086	25 x 0.34	11.9	115.7	288

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® ST-HF-M refer to page 693
- KT 11 cable shears
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® ROBUST C (TP)

Halogen-free data transmission cable with colour code acc. to DIN 47100 - resistant to a wide range of chemical media



Info

- Excellent weather resistance
- Good chemical resistance

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant to contact with organic oils and the related emulsions as well as a multitude of plant, animal or synthetic-based greases and waxes
- Good resistance to ammonia compounds and bio-gases
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning

Application range

- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For indoor and outdoor use

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812
- Certified resistance to disinfection and cleaning solutions used in food and beverage industry

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- TP structure
- Tinned-copper braiding
- Outer sheath made of special TPE
Outer sheath colour: black (RAL 9005)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance C/C approx. 60 nF/km C/S approx. 100 nF/km
	Peak operating voltage (not for power applications) at 0.14 mm ² : 350 V at ≥ 0.25 mm ² : 500 V
	Specific insulation resistance > 20 GOhm x cm
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, fine-wire 0.34 mm ² : 7-wire
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 4 x outer diameter
	Test voltage At 0.14 mm ² : 1200 V
	Temperature range Occasional flexing: -40°C to +90°C Fixed installation: -50°C to +90°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® ROBUST C (TP)				
1032100	2 x 2 x 0.14	5.3	16.1	31
1032101	3 x 2 x 0.14	5.8	19	38
1032102	4 x 2 x 0.14	6.2	23.1	46
1032103	5 x 2 x 0.14	6.4	27.2	54
1032104	6 x 2 x 0.14	7.1	31.3	63
1032105	8 x 2 x 0.14	8.2	43.4	90
1032106	10 x 2 x 0.14	8.7	50.9	93
1032107	12 x 2 x 0.14	8.9	56.6	102
1032108	2 x 2 x 0.25	6.3	22.7	43
1032109	3 x 2 x 0.25	7.1	28.9	56
1032110	4 x 2 x 0.25	7.6	38.3	72
1032111	5 x 2 x 0.25	7.9	45.1	85
1032112	6 x 2 x 0.25	8.5	48.7	96
1032113	8 x 2 x 0.25	10.3	64.3	135
1032114	2 x 2 x 0.34	7.1	27.6	56
1032115	3 x 2 x 0.34	7.8	38.8	74
1032116	4 x 2 x 0.34	8.4	47.5	90

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
1032117	5 x 2 x 0.34	8.8	58.2	110
1032118	1 x 2 x 0.5	5.6	20.1	37
1032119	2 x 2 x 0.5	7.9	40.3	72
1032120	3 x 2 x 0.5	8.7	51.7	91
1032121	4 x 2 x 0.5	9.4	64.1	112
1032122	5 x 2 x 0.5	10.3	76.6	141
1032123	6 x 2 x 0.5	11.1	91.7	170
1032124	8 x 2 x 0.5	13.1	123.2	238
1032125	10 x 2 x 0.5	14.5	146.4	247
1032126	2 x 2 x 0.75	8.5	48.4	84
1032127	3 x 2 x 0.75	9.4	68.9	114
1032128	4 x 2 x 0.75	10.7	86.2	149
1032129	6 x 2 x 0.75	12.1	131.9	225
1032130	8 x 2 x 0.75	14.7	168.2	315
1032131	2 x 2 x 1.0	9	64.1	98
1032132	3 x 2 x 1.0	10.4	83.5	135
1032133	4 x 2 x 1.0	11.3	105.7	168

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® ST-HF-M refer to page 693
- DATA STRIP stripping tool refer to page 986
- KT 11 cable shears
- Fibre Strip DC



UNITRONIC® LiHH

Halogen-free data transmission cable with colour code acc. to DIN 47100



Info

- For use within public buildings and industrial plants
- Further dimensions/colours on request

Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Small outer diameters despite a high number of cores

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)
- Dry or damp rooms

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Outer sheath made of special halogen-free compound
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance Approx. 80 nF/km
	Peak operating voltage (not for power applications) 250 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, fine-wire 0.34 mm²: 7-wire
	Minimum bending radius Occasional flexing: 10 x outer diameter Fixed installation: 6 x outer diameter
	Test voltage 1200 V
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -30°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LiHH				
0037104	6 x 0.14	4.4	8.1	25
0037120	2 x 0.25	4	4.8	22
0037121	3 x 0.25	4.2	7.2	25
0037122	4 x 0.25	4.5	9.6	28
0037124	6 x 0.25	5.3	14.4	39
0037125	7 x 0.25	5.3	16.8	42
0037126	8 x 0.25	6.4	19.2	50
0037128	12 x 0.25	7.2	28.8	67
0037140	2 x 0.34	4.4	6.5	28
0037141	3 x 0.34	4.6	9.8	30
0037142	4 x 0.34	5	13.1	40

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
0037143	5 x 0.34	5.7	16.3	44
0037147	12 x 0.34	8	39.2	97
0037150	2 x 0.5	4.9	9.6	31
0037151	3 x 0.5	5.2	14.4	37
0037152	4 x 0.5	5.8	19.2	45
0037153	5 x 0.5	6.3	24	58
0037154	7 x 0.5	7.1	33.6	72
0037160	2 x 0.75	5.3	14.4	41
0037162	4 x 0.75	6.3	28.8	60
0037165	12 x 0.75	10.4	86.4	165
0037171	3 x 1.0	6.1	28.8	57
0037172	4 x 1.0	6.6	38.4	67

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

TERMI-POINT® is a registered trademark of AMP

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

Similar products

- UNITRONIC® LiHCH refer to page 298

Accessories

- SKINTOP® ST-HF-M refer to page 693
- KT 11 cable shears
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® LIHCH

Screened halogen-free data transmission cable with colour code acc. to DIN 47100



Info

- For use within public buildings and industrial plants
- Further dimensions/colours on request

Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Overall braid minimises electrical interference

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances - wherever screened, halogen-free, small-diameter cables are needed.
- 7-wire stranded conductor can be used for Maxi TERMI-POINT® wiring (for this product the 0,34mm² version only)

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire/multi-wire (0.34 mm²) strand made of bare copper wires
- Core insulation made of special halogen-free compound
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound

Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100 without colour repetition, refer to Appendix T9



Mutual capacitance

C/C approx. 80 nF/km
C/S approx. 120 nF/km



Peak operating voltage

(not for power applications) 250 V



Inductivity

approx. 0.65 mH/km



Conductor stranding

Stranded, fine-wire
0.34 mm²: 7-wire



Minimum bending radius

Occasional flexing: 10 x outer diameter
Fixed installation: 6 x outer diameter



Test voltage

1200 V



Temperature range

Occasional flexing: -5°C to +70°C
Fixed installation: -30°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIHCH				
0037302	2 x 0.14	4.1	12	22
0037304	4 x 0.14	4.5	15.9	29
0037308	8 x 0.14	6	26	41
0037312	12 x 0.14	6.5	30.4	78
0037325	25 x 0.14	8.7	63	149
0037402	2 x 0.25	4.7	15	25
0037403	3 x 0.25	4.9	18	30
0037404	4 x 0.25	5.2	22	35
0037406	6 x 0.25	6.2	30	49
0037407	7 x 0.25	6.2	32	52
0037408	8 x 0.25	7.3	35	58
0037410	10 x 0.25	7.7	42	81
0037425	25 x 0.25	10.9	114	172
0037502	2 x 0.34	5.1	17	30
0037503	3 x 0.34	5.3	21	35
0037504	4 x 0.34	5.9	25	42
0037507	7 x 0.34	7	42	73
0037508	8 x 0.34	8	45	84
0037510	10 x 0.34	8.5	63	101
0037516	16 x 0.34	9.6	94	160

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

TERMI-POINT® is a registered trademark of AMP

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

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
0037525	25 x 0.34	12.1	144	259
0037602	2 x 0.5	5.8	29	38
0037603	3 x 0.5	6.1	35	47
0037604	4 x 0.5	6.5	45	67
0037605	5 x 0.5	7.2	50	76
0037606	6 x 0.5	7.8	59	84
0037607	7 x 0.5	7.8	68	91
0037608	8 x 0.5	8.9	75	135
0037610	10 x 0.5	9.5	93	160
0037612	12 x 0.5	9.8	99	177
0037618	18 x 0.5	11.7	134	239
0037702	2 x 0.75	6.2	35	45
0037703	3 x 0.75	6.5	46	69
0037704	4 x 0.75	7.2	56	80
0037802	2 x 1.0	6.5	43	72
0037803	3 x 1.0	7	56	90
0037804	4 x 1.0	7.5	68	109
0037807	7 x 1.0	8.8	118	171
0037902	2 x 1.5	7.3	58	90
0037903	3 x 1.5	7.7	74	115

Similar products

- UNITRONIC® LIHCH (TP) refer to page 299

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B



UNITRONIC® LIHCH (TP)

Screened halogen-free data transmission cable with colour code acc. to DIN 47100 and twisted pairs



Info

- TP = twisted pair



Benefits

- Halogen-free: to protect human life and valuable assets in the event of a fire, through low smoke density and low amount of corrosive gases
- Low capacitance due to polyolefin-based insulation
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Suitable for areas with a high density of people as well as high-value property that must be protected in the event of a fire
- For use within public buildings, transport systems and industrial plants
- For data processing, measurement and control engineering, safety related systems and as electronics cable
- For use in computer systems, instrumentation systems, office equipment, balances - wherever screened, halogen-free, small-diameter cables are needed.

Product features

- Flame-retardant according IEC 60332-1-2
- Low smoke zero halogen (LSZH)
- Halogen-free as per IEC 60754-1, Low corrosivity/ acidity of combustion gases per IEC 60754-2, Low toxicity of comb. gases per EN 50305
- Low smoke density according to IEC 61034-2

Norm references / Approvals

- Based on VDE 0812

Product Make-up

- Fine-wire strand made of bare copper wires
- Core insulation made of special halogen-free compound
- TP structure
- Tinned-copper braiding
- Outer sheath made of special halogen-free compound
- Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Mutual capacitance C/C approx. 80 nF/km C/S approx. 120 nF/km
	Peak operating voltage (not for power applications) 250 V
	Coupling At 1 kHz: approx. 300 pF/100 m
	Inductivity approx. 0.65 mH/km
	Conductor stranding Fine copper wire strands
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Test voltage 1200 V
	Temperature range Occasional flexing: -5°C to +70°C Fixed installation: -30°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® LIHCH (TP)				
0038302	2 x 2 x 0.14	5.5	18.5	39
0038303	3 x 2 x 0.14	6	23	48
0038304	4 x 2 x 0.14	6.4	26.6	54
0038308	8 x 2 x 0.14	8.4	53.7	97
0038312	12 x 2 x 0.14	9.1	66	142
0038316	16 x 2 x 0.14	10.4	79	154
0038325	25 x 2 x 0.14	12.7	113	238
0038402	2 x 2 x 0.25	6.5	28	54
0038403	3 x 2 x 0.25	7.3	39.6	66
0038404	4 x 2 x 0.25	7.8	44.9	81
0038406	6 x 2 x 0.25	8.7	69.5	115
0038408	8 x 2 x 0.25	10.5	76.9	130
0038412	12 x 2 x 0.25	11.5	120	190

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
0038416	16 x 2 x 0.25	12.7	146.5	238
0038602	2 x 2 x 0.5	8.1	48.1	93
0038603	3 x 2 x 0.5	8.9	73.7	129
0038604	4 x 2 x 0.5	9.6	82	146
0038606	6 x 2 x 0.5	11.3	110	198
0038608	8 x 2 x 0.5	13.3	139	259
0038612	12 x 2 x 0.5	15.1	198.3	354
0038616	16 x 2 x 0.5	16.7	240	459
0038702	2 x 2 x 0.75	8.7	58	106
0038704	4 x 2 x 0.75	10.9	108	179
0038708	8 x 2 x 0.75	14.9	180	305
0038802	2 x 2 x 1.0	9.2	84	142
0038803	3 x 2 x 1.0	10.6	96	173
0038804	4 x 2 x 1.0	11.5	121	212

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B



UNITRONIC® LiYY A

Data transmission cable with colour code acc. to DIN 47100 - UL/CSA recognized

LAPP KABEL STUTTGART UNITRONIC® LiYY A



Info

- A for Advanced here: UL and CSA certifications
- Further dimensions/colours on request

Benefits

- For various applications

Application range

- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA certified cables are used.
- For the North American market

Product features

- Flame-retardant acc. to IEC 60332-1-2, UL VW-1 & CSA FT 1

Norm references / Approvals

- UL AWM Style 2464
- CSA AWM I/II A
- UL File No. E63634

Product Make-up

- Multi-wire strand made of tinned copper wires
 - Core insulation made of PVC
 - Outer sheath made of special PVC compound
- Outer sheath colour: Dark grey

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100 without colour repetition, refer to Appendix T9



Peak operating voltage

(not for power applications)
300 V



Conductor stranding

AWG conductor sizes, 7 or 19 wires



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 4 x Outer diameter



Nominal voltage

UL/CSA: 300 V



Test voltage

1500 V



Temperature range

Occasional flexing: -5 °C up to +70 °C
(UL: +80 °C)
Fixed installation (IEC):
-40 °C up to +80 °C
UL: max. +80 °C

Article number	Number of cores and AWG per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYY A				
0022403	3 x AWG26/7	3.8	4.2	18
0022404	4 x AWG26/7	4	5.6	23
0022405	5 x AWG26/7	4.3	7	25
0022408	8 x AWG26/7	5.1	11.2	34
0022412	12 x AWG26/7	5.8	16.8	47
0022416	16 x AWG26/7	6.3	22.4	58
0022421	21 x AWG26/7	7	29.4	63
0022502	2 x AWG24/7	4	4.6	20
0022505	5 x AWG24/7	4.8	11.5	32
0022508	8 x AWG24/7	5.7	18.4	46
0022512	12 x AWG24/7	6.6	27.6	64
0022602	2 x AWG22/7	4.8	6.8	32.8
0022603	3 x AWG22/7	5	10.2	35
0022604	4 x AWG22/7	5.4	13.6	45.9
0022605	5 x AWG22/7	5.9	17	55.8
0022607	7 x AWG22/7	6.4	23.3	68.9
0022608	8 x AWG22/7	6.9	27.2	75.5
0022612	12 x AWG22/7	8.2	40.8	103
0022616	16 x AWG22/7	9.1	54.4	131.2
0022624	24 x AWG22/7	11.6	81.6	190
0022632	2 x AWG20/7	5.3	11.2	40
0022642	2 x AWG19/19	5.6	15	48

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

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

Packaging size: Coil 152 m; Drum 305 m

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

Similar products

- UNITRONIC® LiYCY A refer to page 301
- UNITRONIC® 300 / UNITRONIC® 300 S refer to page 303

Accessories

- SKINTOP® CLICK refer to page 687
- KT 11 cable shears
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® LiYCY A

Screened data transmission cable with colour code acc. to DIN 47100 UL/CSA recognized



Info

- A for Advanced here: UL and CSA certifications
- Further dimensions/colours on request



Benefits

- Overall braid minimises electrical interference

Application range

- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA certified cables are used.
- For the North American market

Product features

- Flame-retardant acc. to IEC 60332-1-2, UL VW-1 & CSA FT 1

Norm references / Approvals

- UL AWM Style 2464
- CSA AWM I/II A
- UL File No. E63634

Product Make-up

- Multi-wire strand made of tinned copper wires
- Core insulation made of PVC
- Tinned-copper braiding
- Outer sheath made of special PVC compound
- Outer sheath colour: Dark grey

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100 without colour repetition, refer to Appendix T9
	Peak operating voltage (not for power applications) 300 V
	Conductor stranding AWG conductor sizes, 7 or 19 wires
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 6 x outer diameter
	Nominal voltage UL/CSA: 300 V
	Test voltage 1500 V
	Temperature range Occasional flexing: -5°C up to +70°C (UL: +80 °C) Fixed installation (IEC): -40°C up to +80°C UL: max. +80°C

Article number	Number of cores and AWG per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYCY A				
0044602	2 x AWG26/7	4.3	15.6	25
0044604	4 x AWG26/7	4.7	18	30
0044652	2 x AWG24/7	4.7	17.6	29
0044655	5 x AWG24/7	5.5	28.5	44
0044658	8 x AWG24/7	6.4	31.1	61
0044662	12 x AWG24/7	7.3	51.8	96
0044702	2 x AWG22/7	5.5	17.6	44
0044703	3 x AWG22/7	5.7	21.2	49
0044704	4 x AWG22/7	6.1	27.3	59
0044705	5 x AWG22/7	6.6	30.8	63
0044707	7 x AWG22/7	7.1	46.4	87
0044712	12 x AWG22/7	8.9	66.8	120
0044716	16 x AWG22/7	9.8	83.9	145
0044721	21 x AWG22/7	11.3	109.4	204
0044732	2 x AWG20/7	6	24.4	41
0044733	3 x AWG20/7	6.3	29.9	47
0044735	5 x AWG20/7	7.3	49.2	91
0044738	8 x AWG20/7	8.5	70.8	102
0044746	2 x AWG19/19	6.3	27.9	66
0044850	7 x AWG18/19	8.9	93.2	160.8
0044851	10 x AWG18/19	11.5	130.9	200

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

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

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

Packaging size: Coil 152 m; Drum 305 m

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

Similar products

- UNITRONIC® LiYCY (TP) A refer to page 302

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- KS 15 cable shears
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

**UNITRONIC® LiYCY (TP) A**

Screened data transmission cable with colour code acc. to DIN 47100 and twisted pairs - UL/CSA recognized

**Info**

- A for Advanced here: UL and CSA certifications
- Further dimensions/colours on request

Benefits

- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- For the North American market
- Wiring of devices, machines and plants intended for export to the North American market or countries where UL-/CSA certified cables are used.

Product features

- Flame-retardant acc. to IEC 60332-1-2, UL VW-1 & CSA FT 1

Norm references / Approvals

- UL AWM Style 2464
- CSA AWM I/II A
- UL File No. E63634

Product Make-up

- Multi-wire strand made of tinned copper wires
 - Core insulation made of PVC
 - TP structure
 - Tinned-copper braiding
 - Outer sheath made of special PVC compound
- Outer sheath colour: Dark grey

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description: Control cable
- Core identification code**
DIN 47100 without colour repetition, refer to Appendix T9
- Peak operating voltage**
(not for power applications)
300 V
- Minimum bending radius**
Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter
- Nominal voltage**
UL/CSA: 300 V
- Test voltage**
1500 V
- Temperature range**
Occasional flexing: -5 °C up to +70 °C (UL: +80 °C)
Fixed installation (IEC): -40 °C up to +80 °C
UL: max. +80 °C

Article number	Number of cores and AWG per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® LiYCY (TP) A				
0066202	2 x 2 x AWG26/7	5.5	18	38
0066204	4 x 2 x AWG26/7	6.4	24	58
0066205	5 x 2 x AWG26/7	6.6	30	58
0066208	8 x 2 x AWG26/7	7.9	53	85
0066210	10 x 2 x AWG26/7	8.7	55	106
0066212	12 x 2 x AWG26/7	8.9	64	113
0066216	16 x 2 x AWG26/7	10.2	87	149
0066232	2 x 2 x AWG24/7	6.1	24.5	50
0066233	3 x 2 x AWG24/7	6.7	28.9	62
0066234	4 x 2 x AWG24/7	7.2	33.5	70
0066235	5 x 2 x AWG24/7	7.5	46.3	91
0066238	2 x 2 x AWG22/7	7.4	38	71
0066239	3 x 2 x AWG22/7	8.1	45.1	95
0066240	4 x 2 x AWG22/7	8.8	54.6	102
0066242	2 x 2 x AWG20/7	8.2	49.7	93
0066243	3 x 2 x AWG20/7	9.1	60.1	102
0066244	4 x 2 x AWG20/7	10.2	78.7	120
0066219	5 x 2 x AWG20/7	10.7	88.9	156
0066220	6 x 2 x AWG20/7	11.6	100.6	184
0066262	2 x 2 x AWG19/19	8.7	65.2	140
0066221	3 x 2 x AWG19/19	10	69.2	145

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

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

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

Packaging size: Coil 152 m; Drum 305 m

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

Similar products

- UNITRONIC® FD Li2YCY (TP) A BE refer to page 307
- UNITRONIC® FD Li2YCY (TP) A BA refer to page 308
- UNITRONIC® FD CP (TP) plus refer to page 312

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® 300 / UNITRONIC® 300 S

Control and signal cables with small cross sections - UL/CSA listed



Info

- Designation of shielded version: Formerly "UNITRONIC® 300 CY", now "UNITRONIC® 300 S"
- Other sizes on request
- Especially for 20 AWG and 18 AWG: With standard core color code, up to 60 conductors producible/ With non-standard color code, e.g., green-yellow grounding conductor, up to 100 cores

Benefits

- Wide application range due to multiple certifications
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)

Application range

- Control and signal cables for internal and external wiring
- For the North American market
- On the basis of CMG, PLTC or ITC direct laying on cable tray in the USA, in conjunction with -ER (Exposed Run) for unprotected transition sections with a length of not more than 6 ft. each
- Thanks to the DIRECT BURIAL approval, direct burial of versions with the nominal conductor cross sections 18 AWG and 16 AWG is normatively permitted in the USA
- Torsion resistant up to $\pm 150^\circ/\text{m}$ for the drip loop of wind turbine generators

Product features

- Oil-resistant according to UL OIL RES I
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Norm references / Approvals

- USA: (UL) CMG [E130334], (UL) PLTC-ER (18 AWG + 16 AWG) [E216027], (UL) PLTC (>24 AWG) [E216027], (UL) ITC-ER (18 AWG + 16 AWG) [E196134], UL AWM Style 2464 [E100338], DIR BUR (18 AWG + 16 AWG)
- CAN: c(UL) CMG FT4 [E130334], CSA AWM I/II A/B FT1

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Core insulation made of PVC compound
- UNITRONIC® 300 S: with overall foil tape wrapping, drain wire, tin-plated copper braiding (75 % coverage)
- Outer jacket: Specially Formulated PVC
- Color of the outer jacket: Dark gray (similar to RAL 7005)

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description: Data cable
- Core identification code**
refer to Appendix T9
- Conductor stranding**
Fine wire
- Torsion movement in WTG**
TW-0 & TW-2, refer to Appendix T0
- Minimum bending radius**
During installation: 4 x cable diameter
Screened: 6 x outer diameter
- Nominal voltage**
according to UL: 300 V
IEC: not for power transmission
- Test voltage**
1500 V
- Temperature range**
Occasional flexing/ North America: -25°C to +105°C (AWM for USA: +80°C)
Fixed installation/ North America: -40°C to +105°C (AWM for USA: +80°C)

Article number	Article designation	Number of cores and AWG size	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® 300					
301602	UNITRONIC® 300	2 x AWG16	6.7	25	83
301802	UNITRONIC® 300	2 x AWG18	6.1	18.3	61
302006	UNITRONIC® 300	6 x AWG20	7.5	29.5	97
302015	UNITRONIC® 300	15 x AWG20	11.5	73.7	178
302020	UNITRONIC® 300	20 x AWG20	12.6	98.1	259
302025	UNITRONIC® 300	25 x AWG20	14.1	122.6	354
302204	UNITRONIC® 300	4 x AWG22	5	13.7	33
302210	UNITRONIC® 300	10 x AWG22	7	34.9	67
302215	UNITRONIC® 300	15 x AWG22	7.9	51.3	91
302220	UNITRONIC® 300	20 x AWG22	9	68.5	116
302225	UNITRONIC® 300	25 x AWG22	10.5	85.6	180
302410	UNITRONIC® 300	10 x AWG24	6.4	21.4	51
UNITRONIC® 300 S					
301602S	UNITRONIC® 300 S	2 x AWG16	7.6	50.6	101
301606S	UNITRONIC® 300 S	6 x AWG16	9.9	105.7	210
301802S	UNITRONIC® 300 S	2 x AWG18	6.8	37.2	75
301803S	UNITRONIC® 300 S	3 x AWG18	7.3	49.1	85
301804S	UNITRONIC® 300 S	4 x AWG18	7.9	59.6	104
301825S	UNITRONIC® 300 S	25 x AWG18	16.8	278.4	448
302002S	UNITRONIC® 300 S	2 x AWG20	6.3	28.3	60
302004S	UNITRONIC® 300 S	4 x AWG20	7.3	40.2	88
302006S	UNITRONIC® 300 S	6 x AWG20	8.4	55.1	119
302206S	UNITRONIC® 300 S	6 x AWG22	6.4	35.7	68

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

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

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

Packaging size: Coil 152 m; Drum 305 m

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

Similar products

- ÖLFLEX® TRAY II refer to page 57
- ÖLFLEX® TRAY II CY refer to page 58
- UNITRONIC® 300 STP refer to page 304

Accessories

- SKINTOP® ST-M refer to page 684
- SKINTOP® ST-M Small PU
- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985



UNITRONIC® 300 STP

Screened control and signal cables with small cross sections and twisted pairs - UL/CSA listed

LAPP KABEL STUTTGART UNITRONIC® 300 STP



Info

- Other sizes on request
- Especially for 20 AWG and 18 AWG: With standard core color code, up to 37 pairs producible/ With non-standard color code, e.g., with green-yellow grounding conductor, up to 50 pairs

Benefits

- Wide application range due to multiple certifications
- Cost-saving, easy installation due to omission of closed raceways (suitable for open wiring)
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Control and signal cables for internal and external wiring
- For the North American market
- On the basis of CMG, PLTC or ITC direct laying on cable tray in the USA, in conjunction with -ER (Exposed Run) for unprotected transition sections with a length of not more than 6 ft. each
- Thanks to the DIRECT BURIAL approval, direct burial of versions with the nominal conductor cross-section 18 AWG in the USA
- Torsion resistant up to $\pm 150^\circ/\text{m}$ for the drip loop of wind turbine generators

Product features

- Oil-resistant according to UL OIL RES I

Norm references / Approvals

- USA: (UL) CMG [E130334], (UL) PLTC-ER (18 AWG) [E216027], (UL) PLTC (>24 AWG) [E216027], (UL) ITC-ER (18 AWG) [E196134], UL AWM Style 2464 [E100338], DIR BUR (18 AWG)
- CAN: c(UL) CMG FT4 [E130334], CSA AWM I/II A/B FT1

Product Make-up

- Fine-wire strand made of tinned-copper wires
- Core insulation made of PVC
- TP structure
- Overall foil tape wrapping, drain wire, tin-plated copper braiding (75 % coverage)
- Outer jacket: Specially Formulated PVC, dark gray (similar to RAL 7005)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Core identification code

Pair 1: black, red
Pair 2: black, white
Pair 3: black, green
Pair 4: black, blue
Pair 5: black, yellow
Pair 6: black, brown
Exception single-paired, 24-22 AWG:
black, white



Peak operating voltage

(not for power applications)
300 V
UL/CSA: 300 V



Torsion movement in WTG

TW-0 & TW-2, refer to Appendix T0



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 6 x outer diameter



Nominal voltage

according to UL: 300 V
IEC: not for power transmission



Test voltage

1500 V



Temperature range

Occasional flexing/ North America:
-25°C to +105°C (AWM for USA: +80°C)
Fixed installation/ North America:
-40°C to +105°C (AWM for USA: +80°C)

Article number	Number of pairs and AWG size	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® 300 STP				
302402STP	2 x 2 x 24 AWG	6.5	25.5	59
302403STP	3 x 2 x 24 AWG	6.8	31.1	65
302406STP	6 x 2 x 24 AWG	8.7	49.7	106
302201STP	1 x 2 x 22 AWG	5.1	19.1	39
302203STP	3 x 2 x 22 AWG	7.7	38.2	71
302206STP	6 x 2 x 22 AWG	9.6	70	125
302002STP	2 x 2 x 20 AWG	9.4	47.7	128
302003STP	3 x 2 x 20 AWG	10.5	68.2	161
302006STP	6 x 2 x 20 AWG	13.3	106.5	321
301801STP	1 x 2 x 18 AWG	6.8	37.8	106
301802STP	2 x 2 x 18 AWG	10.7	66.2	122
301806STP	6 x 2 x 18 AWG	14.6	153.1	324

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

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

Packaging size: Coil 152 m; Drum 305 m

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

Similar products

- UNITRONIC® FD Li2YCY (TP) A BE refer to page 307
- UNITRONIC® FD Li2YCY (TP) A BA refer to page 308
- UNITRONIC® FD CP (TP) plus refer to page 312

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® FD

Highly flexible data transmission cable with PVC outer sheath for power chain use



Benefits

- Well-proven and reliable
- Optimized cable construction for power chain use
- Cost-effective solution

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Flame-retardant according IEC 60332-1-2
- Designed for 2 up to 8 million bending/unbending cycles in power chain applications

Norm references / Approvals

- Based on VDE 0812
- For travel distances up to 10 m.
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Non-woven wrapping
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C: approx. 100 nF/km
	Peak operating voltage (not for power applications) 350 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire
	Minimum bending radius Flexing: 5 x outer diameter Fixed installation: 3 x outer diameter
	Test voltage 1500 V
	Temperature range Flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD				
0027841	3 x 0.14	3.9	4.2	26
0027842	4 x 0.14	4.2	5.6	31
0027843	5 x 0.14	4.5	7	35
0027844	7 x 0.14	5.1	9.8	50
0027845	10 x 0.14	6.1	14	63
0027846	14 x 0.14	6.2	19.6	77
0027847	18 x 0.14	6.8	25.2	91
0027848	25 x 0.14	8.3	35	125
0027855	2 x 0.25	4.3	5	27
0027856	3 x 0.25	4.5	7.5	33
0027857	4 x 0.25	4.9	10	40
0027858	5 x 0.25	5.3	12.5	45
0027859	7 x 0.25	6.1	17.5	59
0027860	10 x 0.25	7.4	25	75
0027861	14 x 0.25	7.5	35	108
0027863	18 x 0.25	8.5	45	130
0027865	25 x 0.25	10.4	62.5	178
0027870	2 x 0.34	4.7	6.8	30
0027871	3 x 0.34	5	10.2	43
0027872	4 x 0.34	5.4	13.6	57
0027873	5 x 0.34	5.9	17	65
0027874	7 x 0.34	6.8	23.8	85
0027875	10 x 0.34	8.5	34	117
0027876	14 x 0.34	8.6	47.6	151
0027877	18 x 0.34	9.7	61.2	182
0027878	25 x 0.34	11.9	85	250

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® FD CY refer to page 306
- UNITRONIC® FD P plus refer to page 310

Accessories

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® FD CY

Screened highly flexible data transmission cable with PVC outer sheath for power chain use



Benefits

- Well-proven and reliable
- Optimized cable construction for power chain use
- Cost-effective solution
- Overall braid minimises electrical interference

Application range

- Automated production processes require data transmission cables that offer high flexibility and durability, as well as excellent screening
- Suitable for use in measuring, control and regulating circuits
- Assembly lines, production lines, in all kinds of machines

Product features

- Low-adhesive surface
- Flame-retardant according IEC 60332-1-2
- Designed for 2 up to 8 million bending/unbending cycles in power chain applications

Norm references / Approvals

- Based on VDE 0812
- For travel distances up to 10 m.
- For use in power chains: Please comply with assembly guideline Appendix T3

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation made of PVC
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: grey (RAL 7001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C approx. 110 nF/km C/S: approx. 110 nF/km
	Peak operating voltage (not for power applications) 350 V
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire
	Minimum bending radius Flexing: 7.5 x outer diameter Fixed installation: 4 x Outer diameter
	Test voltage 1500 V
	Temperature range Flexing: -5 °C to +70 °C Fixed installation: -40 °C to +80 °C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CY				
0027411	3 x 0.14	4.5	14.1	37
0027412	4 x 0.14	4.8	15.5	42
0027413	5 x 0.14	5.1	18.3	47
0027414	7 x 0.14	5.7	27.6	55
0027416	10 x 0.14	6.7	39.3	63
0027418	14 x 0.14	6.8	45.3	96
0027420	18 x 0.14	7.4	54.1	105
0027422	25 x 0.14	8.9	68.4	163
0027425	2 x 0.25	4.9	14.9	39
0027426	3 x 0.25	5.1	18.8	46
0027427	4 x 0.25	5.5	21.3	53
0027428	5 x 0.25	5.9	31	71
0027429	7 x 0.25	6.7	39.6	75
0027431	10 x 0.25	8.2	53.9	100
0027434	14 x 0.25	8.3	64.2	120
0027436	18 x 0.25	9.1	78.4	167
0027438	25 x 0.25	11	101	221
0027440	2 x 0.34	5.3	16.1	47
0027441	3 x 0.34	5.6	28.7	55
0027442	4 x 0.34	6	35.7	76
0027443	5 x 0.34	6.5	39.1	80
0027444	7 x 0.34	7.4	52.7	104
0027446	10 x 0.34	9.1	67.4	115
0027448	14 x 0.34	9.2	85.3	132
0027450	18 x 0.34	10.3	99.7	225
0027452	25 x 0.34	12.5	155	327

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- ÖLFLEX® CLASSIC FD 810 CY refer to page 119
- UNITRONIC® FD CP plus refer to page 311

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- STAR STRIP stripping tool refer to page 985



UNITRONIC® FD Li2YCY (TP) A BE

Shielded, low-capacitance/twisted-pair PE/PVC data cable for chain/power track/cable carrier, UL AWM for USA+CAN



Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A BE: DIN 47100, refer to Appendix T9

Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in drag chain/cable carrier/power track in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track - in case of horizontal installation travel distances up to 50 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside drag chain/cable carrier/power track
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

LAPP KABEL STUTTGART UNITRONIC® FD Li2YCY (TP) A BE



Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance HDPE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: black (similar to RAL 9005)

Technical data



Core identification code
UNITRONIC® FD Li2YCY (TP) A BE:
DIN 47100, refer to Appendix T9



Mutual capacitance
Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km



Inductivity
approx. 0.65 mH/km



Conductor stranding
Fine wire
From 0.5 mm²: Finest wire/Conductor class 6 acc. to IEC 60228



Minimum bending radius
Flexing: 7.5 x outer diameter
Fixed installation: 4 x outer diameter



Loop resistance
Ohmic (DC) and loop/bidirectional @ 20 °C
0.14 mm² (26 AWG): 276.0 Ω/km;
0.25 mm² (24 AWG): 158.0 Ω/km;
0.34 mm² (22 AWG): 110.8 Ω/km;
0.5 mm² (21 AWG): 78.0 Ω/km;
0.75 mm² (19 AWG): 52.0 Ω/km;
1 mm² (18 AWG): 39.0 Ω/km



Temperature range
Flexing:
VDE: -5 °C to 70 °C
UL AWM: -5 °C to 80 °C
Stationary use:
VDE: -40 °C to 70 °C
UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section in mm²	Outer diameter [mm]	Weight [kg/km]
UNITRONIC® FD Li2YCY (TP) A BE			
0031377	1 x 2 x 0.14	4.3	23
0031378	2 x 2 x 0.14	5.9	42
0031379	3 x 2 x 0.14	6.2	47
0031380	4 x 2 x 0.14	6.7	57
0031381	5 x 2 x 0.14	7.3	68
0031382	6 x 2 x 0.14	7.5	86
0031383	8 x 2 x 0.14	8.8	109
0031384	10 x 2 x 0.14	10.1	120
0031385	12 x 2 x 0.14	9.8	150
0031386	1 x 2 x 0.25	4.7	27
0031387	2 x 2 x 0.25	6.6	57
0031388	3 x 2 x 0.25	7	72
0031389	4 x 2 x 0.25	7.6	85
0031390	5 x 2 x 0.25	8.5	92
0031391	6 x 2 x 0.25	8.8	114
0031392	8 x 2 x 0.25	10.3	145
0031393	10 x 2 x 0.25	11.8	182
0031394	14 x 2 x 0.25	12	213
0031395	25 x 2 x 0.25	16.3	310
0031396	1 x 2 x 0.34	5.1	36
0031397	2 x 2 x 0.34	7.3	69
0031398	3 x 2 x 0.34	8	93
0031399	4 x 2 x 0.34	8.7	106
0031400	5 x 2 x 0.34	9.7	136
0031401	6 x 2 x 0.34	10	165
0031402	8 x 2 x 0.34	11.8	221
0031403	10 x 2 x 0.34	13.7	274
0031404	1 x 2 x 0.50	5.5	47
0031405	2 x 2 x 0.50	8.3	99
0031406	3 x 2 x 0.50	8.8	120
0031407	4 x 2 x 0.50	9.8	130
0031408	5 x 2 x 0.50	10.7	164

Article number	Dimension and cross section in mm ²	Outer diameter [mm]	Weight [kg/km]
0031409	6 x 2 x 0.50	11.3	182
0031410	8 x 2 x 0.50	13.2	278
0031411	10 x 2 x 0.50	15.2	325
0031412	14 x 2 x 0.50	15.5	401
0031413	1 x 2 x 0.75	5.9	61
0031414	2 x 2 x 0.75	9	104
0031415	3 x 2 x 0.75	9.8	148
0031416	4 x 2 x 0.75	10.7	167
0031417	5 x 2 x 0.75	11.9	202
0031418	6 x 2 x 0.75	12.3	233
0031419	8 x 2 x 0.75	14.7	330
0031420	10 x 2 x 0.75	16.7	390
0031421	14 x 2 x 0.75	17	515
0031422	1 x 2 x 1.00	6.3	71
0031423	2 x 2 x 1.00	9.9	126
0031424	3 x 2 x 1.00	10.5	167
0031425	4 x 2 x 1.00	11.8	213
0031426	5 x 2 x 1.00	13.1	247

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- STAR STRIP stripping tool refer to page 985



UNITRONIC® FD Li2YCY (TP) A BA

Shielded, low-capacitance/twisted-pair PE/PVC data cable for chain/power track/cable carrier, UL AWM for USA+CAN

LAPP KABEL STUTTGART UNITRONIC® FD Li2YCY (TP) A BA



Info

- Better priced than UNITRONIC® FD CP (TP) plus
- Low capacitance, AWM by UL for USA+CAN
- UNITRONIC® FD Li2YCY (TP) A BA: North-American Core Identification Colors

Benefits

- Improved transmission characteristics thanks to low-capacitance core insulation and twisted pairs
- Cable specification optimized for use in drag chain/cable carrier/power track in the USA, on the basis of NFPA 79, Section 12.9.2

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Use in drag chain/cable carrier/power track - in case of horizontal installation travel distances up to 50 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3

Product features

- Low capacitance
- EMC optimized thanks to overall copper braid shielding
- Flexibility for use inside drag chain/cable carrier/power track
- Oil-resistant according to DIN EN 50290-2-22 (TM54)
- Flame-retardant acc. to IEC 60332-1-2, UL VW-1, Cable Flame Test, CSA FT 1

Norm references / Approvals

- Based on VDE 0812
- UL AWM Style 2570 80°C 1000V (external interconnection) for USA (UL File No.: E63634) and in line with NFPA 79, Section 12.9.2
- AWM I/II A/B 80°C 1000V acc. to CSA C22.2 No. 210-15 and certified by UL (cRU) for Canada
- EU conformity and mark with regard to the European RoHS Directive

Product Make-up

- Flexible conductor made of bare copper strands
- Low-capacitance HDPE core insulation
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of PVC
Outer sheath colour: black (similar to RAL 9005)

Technical data



Core identification code

UNITRONIC® FD Li2ZCY (TP) A BA:

- Pair 01: Black, Red;
- Pair 02: Black, White;
- Pair 03: Black, Green;
- Pair 04: Black, Blue;
- Pair 05: Black, Yellow;
- Pair 06: Black, Brown;
- Pair 07: Black, Orange;
- Pair 08: Red, White;
- Pair 09: Red, Green;
- Pair 10: Red, Blue;
- Pair 11: Red, Yellow;
- Pair 12: Red, Brown;
- Pair 13: Red, Orange;
- Pair 14: Green, White;
- Pair 15: Green, Blue;
- Pair 16: Green, Yellow;
- Pair 17: Green, Brown;

- Pair 18: Green, Orange;
- Pair 19: White, Blue;
- Pair 20: White, Yellow;
- Pair 21: White, Brown;
- Pair 22: White, Orange;
- Pair 23: Blue, Yellow;
- Pair 24: Blue, Brown;
- Pair 25: Blue, Orange;
- Exception Single-paired/24 - 22 AWG: Black, White



Mutual capacitance

- Up to 0.5 mm²: 60 nF/km
- Up to 1.0 mm²: 70 nF/km



Inductivity

- approx. 0.65 mH/km



Conductor stranding

- Fine wire
- From 0.5 mm²: Finest wire/Conductor class 6 acc. to IEC 60228



Minimum bending radius

- Flexing: 7.5 x outer diameter
- Fixed installation: 4 x outer diameter



Loop resistance

- Ohmic (DC) and loop/bidirectional @ 20 °C
- 0.14 mm² (26 AWG): 276.0 Ω/km;
- 0.25 mm² (24 AWG): 158.0 Ω/km;
- 0.34 mm² (22 AWG): 110.8 Ω/km;
- 0.5 mm² (21 AWG): 78.0 Ω/km;
- 0.75 mm² (19 AWG): 52.0 Ω/km;
- 1 mm² (18 AWG): 39.0 Ω/km



Temperature range

- Flexing:
- VDE: -5 °C to 70 °C
- UL AWM: -5 °C to 80 °C
- Stationary use:
- VDE: -40 °C to 70 °C
- UL AWM: -5 °C to 80 °C

Article number	Dimension and cross section in mm ²	Outer diameter [mm]	Weight [kg/km]
UNITRONIC® FD Li2ZCY (TP) A BA			
0031427	1 x 2 x 0.14	4.3	23
0031428	2 x 2 x 0.14	5.9	42
0031429	3 x 2 x 0.14	6.2	47
0031430	4 x 2 x 0.14	6.7	57
0031431	5 x 2 x 0.14	7.3	68
0031432	6 x 2 x 0.14	7.5	86
0031433	8 x 2 x 0.14	8.8	109
0031434	10 x 2 x 0.14	10.1	120
0031435	12 x 2 x 0.14	9.8	150
0031436	1 x 2 x 0.25	4.7	27
0031437	2 x 2 x 0.25	6.6	57
0031438	3 x 2 x 0.25	7	72
0031439	4 x 2 x 0.25	7.6	85
0031440	5 x 2 x 0.25	8.5	92
0031441	6 x 2 x 0.25	8.8	114
0031442	8 x 2 x 0.25	10.3	145
0031443	10 x 2 x 0.25	11.8	182
0031444	14 x 2 x 0.25	12	213
0031445	25 x 2 x 0.25	16.3	310
0031446	1 x 2 x 0.34	5.1	36
0031447	2 x 2 x 0.34	7.3	69
0031448	3 x 2 x 0.34	8	93
0031449	4 x 2 x 0.34	8.7	106
0031450	5 x 2 x 0.34	9.7	136
0031451	6 x 2 x 0.34	10	165
0031452	8 x 2 x 0.34	11.8	221
0031453	10 x 2 x 0.34	13.7	274
0031454	1 x 2 x 0.50	5.5	47
0031455	2 x 2 x 0.50	8.3	99
0031456	3 x 2 x 0.50	8.8	120
0031457	4 x 2 x 0.50	9.8	130
0031458	5 x 2 x 0.50	10.7	164
0031459	6 x 2 x 0.50	11.3	182
0031460	8 x 2 x 0.50	13.2	278
0031461	10 x 2 x 0.50	15.2	325
0031462	14 x 2 x 0.50	15.5	401
0031463	1 x 2 x 0.75	5.9	61
0031464	2 x 2 x 0.75	9	104
0031465	3 x 2 x 0.75	9.8	148
0031466	4 x 2 x 0.75	10.7	167
0031467	5 x 2 x 0.75	11.9	202
0031468	6 x 2 x 0.75	12.3	233
0031469	8 x 2 x 0.75	14.7	330
0031470	10 x 2 x 0.75	16.7	390
0031471	14 x 2 x 0.75	17	515
0031472	1 x 2 x 1.00	6.3	71
0031473	2 x 2 x 1.00	9.9	126
0031474	3 x 2 x 1.00	10.5	167
0031475	4 x 2 x 1.00	11.8	213
0031476	5 x 2 x 1.00	13.1	247

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701

- STAR STRIP stripping tool refer to page 985



UNITRONIC® FD P plus

Highly flexible data cable with PUR jacket and AWM certification for US & Canadian use

LAPP KABEL STUTTGART UNITRONIC® FD P plus



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C approx. 60 nF/km
	Peak operating voltage Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire
	Minimum bending radius Flexing: 5 x outer diameter Fixed installation: 3 x outer diameter
	Test voltage 1500 V
	Temperature range Flexing: -40°C to +80°C Fixed installation: -40°C to +80°C cRUus AWM: max. +80°C

Benefits

- Well-proven and reliable
- Wide temperature range for applications in harsh climatic environments
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Highly flexible data cable with PUR outer sheath, meets the highest service life requirements, even under harsh climatic conditions
- Suitable for use in measuring, control and regulating circuits
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3

Product features

- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Flame retardance ratings: IEC 60332-1-2, FT2 (Horizontal flame test)
- Halogen-free, has low capacitance and is flexible down to -40°C
- Oil-resistant
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant

Norm references / Approvals

- Based on VDE 0812
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Non-woven wrapping
- Outer sheath made of special PUR compound
Outer sheath colour: grey (RAL 7001)

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD P plus				
0028647	2 x 0.14	3.7	2.8	20
0028650	3 x 0.14	3.9	4.1	25
0028651	4 x 0.14	4.2	5.6	30
0028652	5 x 0.14	4.5	7	34
0028677	6 x 0.14	4.8	8.4	42
0028653	7 x 0.14	5.1	9.8	48
0028654	10 x 0.14	6.1	14	60
0028678	12 x 0.14	5.9	16.8	67
0028656	18 x 0.14	6.8	25.2	87
0028657	25 x 0.14	8.3	35	120
0028658	2 x 0.25	4.1	5	27
0028659	3 x 0.25	4.3	7.5	32
0028660	4 x 0.25	4.7	10	35
0028661	5 x 0.25	5	12.5	49
0028679	6 x 0.25	5.4	15	55
0028662	7 x 0.25	5.8	17.5	43
0028663	10 x 0.25	7	25	72
0028680	12 x 0.25	6.7	30	87
0028664	14 x 0.25	7.1	35	73
0028665	18 x 0.25	8	45	104
0028666	25 x 0.25	9.8	62.5	133
0028667	2 x 0.34	4.5	6.8	33
0028668	3 x 0.34	4.8	10.2	39
0028669	4 x 0.34	5.2	13.6	41
0028670	5 x 0.34	5.6	17	44
0028671	7 x 0.34	6.5	23.8	55
0028672	10 x 0.34	8	34	85
0028673	14 x 0.34	8.2	47.6	94
0028674	18 x 0.34	9	61.2	131
0028675	25 x 0.34	11	85	200

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- ÖLFLEX® CLASSIC FD 810 P refer to page 131
- UNITRONIC® FD CP plus refer to page 311

Accessories

- SMART STRIP stripping tool



UNITRONIC® FD CP plus

Screened highly flexible data transmission cable with PUR outer sheath - UL/CSA-listed



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- Overall braid minimises electrical interference
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Suitable for use in measuring, control and regulating circuits
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free, has low capacitance and is flexible down to -40°C
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant
- Flame retardance: IEC 60332-1-2, VW-1, FT2
- Designed for 5 up to 10 million bending/unbending cycles (constant flex) in drag chains

Norm references / Approvals

- CULus CMX certified by UL (UL: E236660)
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of special PUR compound
- Outer sheath colour: grey (RAL 7001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code DIN 47100, refer to Appendix T9
	Mutual capacitance C/C approx. 60 nF/km
	Peak operating voltage Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)
	Inductivity approx. 0.65 mH/km
	Conductor stranding Stranded, extra-fine wire
	Torsion movement in WTG TW-0 & TW-2, refer to Appendix T0
	Minimum bending radius Flexing: 7.5 x outer diameter Fixed installation: 4 x outer diameter
	Test voltage Core/core: 1500 V rms Core/screen: 500 V
	Temperature range Flexing: -40°C to +80°C Fixed installation: -40°C to +80°C cULus CMX: max. +75°C cRUus AWM: max. +80°C

Article number	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP plus				
0028880	2 x 0.14	4.3	11.2	33
0028881	3 x 0.14	4.5	14.1	36
0028882	4 x 0.14	4.8	15.5	40
0028883	5 x 0.14	5.1	18.3	45
0028884	7 x 0.14	5.7	27.8	51
0028885	10 x 0.14	6.7	39.3	59
0028886	14 x 0.14	6.8	45.3	62
0028887	18 x 0.14	7.4	54.1	118
0028888	25 x 0.14	8.9	68.4	157
0028889	2 x 0.25	4.7	14.9	38
0028890	3 x 0.25	4.9	18.8	45
0028891	4 x 0.25	5.3	21.3	52
0028892	5 x 0.25	5.6	31	69
0028893	7 x 0.25	6.4	39.6	76
0028894	10 x 0.25	7.6	53.9	98
0028895	14 x 0.25	7.9	64.2	120
0028896	18 x 0.25	8.6	78.4	142
0028897	25 x 0.25	10.4	101	213
0028898	2 x 0.34	5.1	18.1	40
0028899	3 x 0.34	5.4	28.7	50
0028900	4 x 0.34	5.8	35.7	60
0028901	5 x 0.34	6.2	39.1	70
0028902	7 x 0.34	7.1	52.7	109
0028903	10 x 0.34	8.6	67.4	147
0028904	14 x 0.34	8.8	85.8	166
0028905	18 x 0.34	9.8	99.7	190
0028906	25 x 0.34	11.8	155	260

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

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

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths / Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® FD Li2YCY (TP) A BE refer to page 307
- UNITRONIC® FD Li2YCY (TP) A BA refer to page 308
- UNITRONIC® FD CP (TP) plus refer to page 312

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- STAR STRIP stripping tool refer to page 985



UNITRONIC® FD CP (TP) plus

Screened highly flexible data transmission cable with PUR outer sheath and twisted pairs - UL/CSA-listed



Info

- Flexible at low temperatures
- Low capacitance
- Halogen-free

Benefits

- Wide temperature range for applications in harsh climatic environments
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- UL AWM voltage rating 1000V in case of internal wiring allows for internal laying next to power cables with applied UL rating of 1kV
- In the USA inside of industrial machines, per NFPA 79, 2015 Ed., 12.9.2 (condition 3 under 12.9.2: Through 1 mm² and <16 AWG)

Application range

- Suitable for use in measuring, control and regulating circuits
- Linear robots, automated handling equipment
- Drag chain use - in case of horizontal installation travel distances up to 100 m
- For use in drag chains: Please respect the assembly guidelines listed in Appendix T3
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free, has low capacitance and is flexible down to -40°C
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Low-adhesive surface, resistant to hydrolysis and microbes, oil resistant
- Flame retardance: IEC 60332-1-2, VW-1, FT2
- Designed for 10 million alternating bending cycles and horizontal travel distances up to 100 meter

Norm references / Approvals

- CULus CMX certified by UL (UL: E236660)
- CRUus AWM certified by UL (UL: E63634): UL AWM Style 21576 and AWM A/B I/II

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: Based on Polyolefin TP structure
- Non-woven wrapping
- Tinned-copper braiding
- Outer sheath made of special PUR compound
- Outer sheath colour: grey (RAL 7001)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

DIN 47100, refer to Appendix T9



Mutual capacitance

Up to 0.5 mm²: 60 nF/km
Up to 1.0 mm²: 70 nF/km



Peak operating voltage

Peak: 250 V (not for power current use or continuous operating voltage to ground above 49VAC or 74VDC)



Inductivity

approx. 0.65 mH/km



Conductor stranding

Stranded, extra-fine wire
From 0.5 mm²: extra-fine wire according to IEC 60228 class 6



Torsion movement in WTG

TW-0 & TW-2, refer to Appendix T0



Minimum bending radius

Flexing: 7.5 x outer diameter
Fixed installation: 4 x outer diameter



Test voltage

Core/core: 1500 V rms
Core/screen: 500 V



Temperature range

Flexing: -40°C to +80°C
Fixed installation: -40°C to +80°C
cULus CMX: max. +75°C
cRUus AWM: max. +80°C

Article number	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® FD CP (TP) plus				
0030910	2 x 2 x 0.14	5.9	19.4	42
0030911	3 x 2 x 0.14	6.2	23.4	47
0030912	4 x 2 x 0.14	6.7	27.1	59
0030913	5 x 2 x 0.14	7.3	37.4	68
0030914	6 x 2 x 0.14	7.5	49.4	91
0030915	8 x 2 x 0.14	8.8	54.8	109
0030916	10 x 2 x 0.14	10.1	60.1	120
0030962	1 x 2 x 0.25	4.7	14	27
0030919	2 x 2 x 0.25	6.6	32	60
0030920	3 x 2 x 0.25	7	38.4	72
0030921	4 x 2 x 0.25	7.6	43.2	85
0030922	5 x 2 x 0.25	8.5	51.5	92
0030923	6 x 2 x 0.25	8.8	71.8	114
0030924	8 x 2 x 0.25	10.3	74.4	155
0030925	10 x 2 x 0.25	11.8	90	186
0030926	14 x 2 x 0.25	12	111.2	219
0030963	1 x 2 x 0.34	5.1	20	36
0030928	2 x 2 x 0.34	7.3	41	69
0030929	3 x 2 x 0.34	8	52	101
0030930	4 x 2 x 0.34	8.7	59	106
0030932	6 x 2 x 0.34	10	86.2	165
0030934	10 x 2 x 0.34	13.7	131.1	274
0030964	1 x 2 x 0.5	5.5	22	47

Article number	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
0030937	2 x 2 x 0.5	8.3	50	99
0030938	3 x 2 x 0.5	8.8	71.8	130
0030939	4 x 2 x 0.5	9.8	74.4	148
0030940	5 x 2 x 0.5	10.7	84.5	168
0030941	6 x 2 x 0.5	11.3	99.6	194
0030942	8 x 2 x 0.5	13.2	144.3	284
0030943	10 x 2 x 0.5	15.2	176	343
0030944	14 x 2 x 0.5	15.5	215.4	401
0030965	1 x 2 x 0.75	5.9	34	61
0030946	2 x 2 x 0.75	9	60	112
0030947	3 x 2 x 0.75	9.8	85.7	157
0030948	4 x 2 x 0.75	10.7	93.6	172
0030950	6 x 2 x 0.75	12.3	130.4	231
0030951	8 x 2 x 0.75	14.7	192.2	342
0030952	10 x 2 x 0.75	16.7	258	390
0030953	14 x 2 x 0.75	17	316.6	545
0030955	1 x 2 x 1.0	6.3	42	71
0030956	2 x 2 x 1.0	9.9	73	129
0030957	3 x 2 x 1.0	10.5	93.6	169
0030958	4 x 2 x 1.0	11.8	117.8	204
0030959	5 x 2 x 1.0	13.1	139	237

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- STAR STRIP stripping tool refer to page 985



UNITRONIC® RE-2Y(ST)Yv

Instrumentation cable with reinforced outer sheath



Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Low capacitance due to polyolefin-based insulation

Application range

- In measurement and control engineering
- Electrically intended for use when modern process computers have to process large volumes of data, e.g. high-capacity computer systems in waste incineration plants or sewage treatment plants
- These cables are suitable for fixed installation in dry or damp rooms and, in case of versions with a black outer sheath, also for outdoor use
- Thanks to reinforced, nominal/ minimum average wall thickness of the outer sheath of at least 1.8 mm, for applications, where a reinforced outer sheath may turn out to be advantageous.

Product features

- Outer sheath colour: black for outdoor applications or blue for intrinsically safe systems
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- In the style of EN 50288-7

Product Make-up

- 7-wire bare stranded copper conductor, core insulation made of polyethylene (PE), cores twisted into pairs, pairs stranded in layers
- Complete stranding contains 1 core for communication (core colour orange); the communication core is omitted on single-pair versions
- Foil wrapping, static screening made of aluminium-laminated plastic film with tinned drain wire
- Reinforced outer sheath made of PVC
- Outer sheath colour: black (RAL 9005) or blue (RAL 5015)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable



Core identification code

a-core: black; b-core: white
with consecutive numbers:
1-1, 2-2, 3-3, 4-4 etc.
Three-way version: black, white, red



Mutual capacitance

(guideline values at 800 Hz):
C/C: 0.5 mm²: max. 75 nF/km
(guideline values at 800 Hz):
C/C: 1.3 mm²: max. 100 nF/km



Peak operating voltage

(not for power applications)
300 V



Conductor resistance

0.5 mm²: max. 39.2 Ω/km
1.3 mm²: max. 14.3 Ω/km



Minimum bending radius

Occasional flexing: 15 x outer diameter
Fixed installation: 7.5 x outer diameter

Short-range crosstalk attenuation

At 60 kHz: min. 0.88 dB/km



Test voltage

Core/core: 2000 V
Core/screen: 1000 V



Characteristic impedance

approx. 100 ohms



Temperature range

Occasional flexing: -5 °C to +50 °C
Fixed installation: -40 °C to +80 °C

Article number	Dimension and cross section in mm²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
RE-2Y(ST)Yv				
0.5 mm² blue				
0032400	1 x 2 x 0,50	7.2	15	74
0032401	2 x 2 x 0,50	9.5	30	117
0.5 mm² black				
0032411	1 x 2 x 0,50	7.2	15	74
0032412	2 x 2 x 0,50	9.5	30	117
0032413	4 x 2 x 0,50	11.1	50	140
0032415	10 x 2 x 0,50	14.5	110	240
0032418	20 x 2 x 0,50	17.9	210	385
0032420	36 x 2 x 0,50	22.6	370	656
0032421	48 x 2 x 0,50	27.1	490	854
1.3 mm² blue				
0032422	1 x 2 x 1,30	8.6	31	102
0032423	2 x 2 x 1,30	11.5	62	161
0032424	4 x 2 x 1,30	13.8	114	230
0032428	24 x 2 x 1,30	27.5	684	952
1.3 mm² black				
0032430	1 x 2 x 1,30	8.6	31	102
0032431	2 x 2 x 1,30	11.5	62	161
0032432	4 x 2 x 1,30	13.8	114	230
0032433	8 x 2 x 1,30	16.9	218	377
0032434	12 x 2 x 1,30	19.3	322	520
0032436	24 x 2 x 1,30	27.5	684	952

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Similar products

- UNITRONIC® RE-2Y(ST)Yv PIMF refer to page 315

Accessories

- Cable shears with double edge refer to page 980
- Ratchet cutter refer to page 980
- KS 20 cable shears
- KT cable shears



UNITRONIC® RE-2Y(ST)Yv PiMF

Instrumentation cable with reinforced outer sheath and pairs in metalfoil

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000104 ETIM 5.0/6.0 Class-Description: Control cable
	Core identification code a-core: black; b-core: white with consecutive numbers: 1-1, 2-2, 3-3, 4-4 etc.
	Mutual capacitance (at 800 Hz max): C/C: 0.5 mm²: 75 nF/km (at 800 Hz max): C/C: 1.3 mm²: 100 nF/km
	Peak operating voltage (not for power applications) 300 V
	Inductivity max. 0.75 mH/km
	Conductor resistance 0.5 mm²: max. 39.2 Ω/km 1.3 mm²: max. 14.2 Ω/km
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 7.5 x outer diameter
	Short-range crosstalk attenuation At 60 kHz: min. 1.02 dB/km
	Test voltage Core/core: 2000 V Core/screen: 600 V
	Characteristic impedance approx. 100 ohms
	Temperature range Occasional flexing: -5°C to +50°C Fixed installation: -40°C to +80°C



Benefits

- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- Low capacitance due to polyolefin-based insulation

Application range

- In measurement and control engineering
- Electrically intended for use when modern process computers have to process large volumes of data, e.g. high-capacity computer systems in waste incineration plants or sewage treatment plants
- These cables are suitable for fixed installation in dry or damp rooms and, in case of versions with a black outer sheath, also for outdoor use
- Thanks to reinforced, nominal/ minimum average wall thickness of the outer sheath of at least 1.8 mm, for applications, where a reinforced outer sheath may turn out to be advantageous.

Product features

- Computer cable with screened pairs and reinforced outer sheath
- Outer sheath colour: black for outdoor applications or blue for intrinsically safe systems
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- In the style of EN 50288-7

Product Make-up

- 7-wire bare stranded copper conductor, core insulation made of polyethylene (PE), cores twisted into pairs, pair screening made of aluminium-laminated plastic foil with bare copper drain wire, PiMF marking using numbered foil, pairs stranded in layers
- Complete stranding contains 1 core for communication (core colour orange); the communication core is omitted on single-pair versions
- Aluminium-laminated plastic foil static screen with tinned drain wire
- Reinforced outer sheath made of PVC
- Outer sheath colour: black (RAL 9005) or blue (RAL 5015)

Article number	Dimension and cross section in mm²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
RE-2Y(ST)Yv PiMF				
0.5 mm² blue				
0032438	2 x 2 x 0,50	10	35	128
0032442	12 x 2 x 0,50	16.7	161	325
0.5 mm² black				
0032448	2 x 2 x 0,50	10	35	128
0032449	4 x 2 x 0,50	11.6	60	170
0032450	8 x 2 x 0,50	14.4	121	261
0032451	10 x 2 x 0,50	15.9	136	285
0032453	16 x 2 x 0,50	19.1	212	430
1.3 mm² blue				
0032458	2 x 2 x 1,30	12.4	68	184
1.3 mm² black				
0032464	2 x 2 x 1,30	12.4	68	184
0032465	4 x 2 x 1,30	14.2	124	269
0032466	8 x 2 x 1,30	18.5	239	442
0032467	12 x 2 x 1,30	22.2	353	593

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- Ratchet cutter refer to page 980
- KT cable shears



RD-Y(ST)Y

Static screened data transmission cable for control technology



Benefits

- In order to reduce costs, the multi-wire stranded copper cable has been provided for Maxi TERMI-POINT® connecting technology. This wiring method (semi-automatic) considerably reduces the time and the costs required for installation.
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- RD-Y(ST)Y is used as a data transmission cable for applications such as monitoring systems and control units
- Measurement, control and regulation technology and also in control rooms of power plants and industrial facilities.
- Suitable for transmission of analog and digital signals up to a frequency of about 10 kHz
- Designed for fixed installations in enclosed rooms.

Product features

- Outer sheath colour: grey or blue for intrinsically safe systems
- Variant with 2 double cores twisted as star quad
- Flame retardant acc. to IEC 60332-1-2

Norm references / Approvals

- Based on DIN VDE 0815

Product Make-up

- 7-wire bare stranded copper conductor, core insulation made of PVC
- Cores twisted into pairs, 4 pairs twisted into a bundle, bundles labelled using numbered foil
- Aluminium-laminated plastic foil static screen with tinned drain wire
- Outer sheath made of PVC
- Outer sheath colour: grey

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000104
ETIM 5.0/6.0 Class-Description:
Control cable

Core identification code
Pair no. 1: a-conductor: blue
b-conductor: red
Pair no. 2: a-conductor: grey
b-conductor: yellow
Pair no. 3: a-core: green
b-core brown
Pair no. 4: a-core: white
b-core black

Mutual capacitance
At 800 Hz: ≤ 100 nF/km
The values may be exceeded by 20 % on cables with up to 4 double cores.

Peak operating voltage
(not for power applications) 225 V

Conductor resistance
(loop): ≤ 73.6 Ω/km

Cable attenuation/attenuation
At 1 kHz: approx. 1.2 dB/km
At 10 kHz: approx. 2.8 dB/km

Minimum bending radius
Occasional flexing: 15 x outer diameter
Fixed installation: 7.5 x outer diameter

Short-range crosstalk attenuation
At 10 kHz and 500 m cable length:
min. 60 dB

Test voltage
C/C: 2000 V
C/S: 2000 V

Characteristic impedance
At 1 kHz: approx. 370 Ω
At 10 kHz: approx. 130 Ω

Temperature range
Occasional flexing: -5°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Dimension and cross section in mm ²	Number of bundles	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
RD-Y(ST)Y grey					
0032470	2 x 2 x 0.50		6.5	25	65
0032471	4 x 2 x 0.50	1	9	45	110
0032472	8 x 2 x 0.50	2	11.5	85	180
0032474	16 x 2 x 0.50	4	15.5	165	310
0032475	24 x 2 x 0.50	6	19	245	450
0032477	48 x 2 x 0.50	12	25.5	485	810

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- Cable shears with double edge refer to page 980
- Ratchet cutter refer to page 980
- STAR STRIP stripping tool refer to page 985
- KS 20 cable shears
- KT cable shears



JE-Y(ST)Y...BD

Static screened installation cable for industrial electronics



Info

- In accordance with DIN VDE 0815



JE-Y(ST)Y...BD EB

Static screened installation cable for industrial electronics



Info

- Blue version:
Hazard protection type -i- is required where there is a risk of explosion



Benefits

- Perfect for cost-effective installation, e.g. connections with insulation displacement technology (IDC).
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Connection cable for fixed installation in industrial control systems, as required in measurement, control, signalling and data applications
- Industrial electronics
- For fixed installation on and under plaster, in dry and damp rooms
- For outdoor use this cable should be installed under plaster only

Product features

- The 2-pair version (2x2x0.8) is twisted into a star quad
- Flame-retardant according IEC 60332-1-2
- JE-Y(ST)Y...BD EB:
For intrinsically safe circuits (type of protection i - intrinsic safety) according to IEC 60079-14:2013 / EN 60079-14:2014 / VDE 0165-1:2014, section 16.2.2

Norm references / Approvals

- In accordance with DIN VDE 0815 type JE-Y(ST)Y...BD

Product Make-up

JE-Y(ST)Y...BD

- Solid bare copper conductor
- Core insulation made of PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.8 as star quad cable)
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

JE-Y(ST)Y...BD EB

- Solid bare copper conductor
- Core insulation made of PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.8 as star quad cable)
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: sky blue (RAL 5015)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000829 ETIM 5.0/6.0 Class-Description: Signal-/telecommunications cable
	Core identification code according to VDE 0815, refer to Appendix T10
	Mutual capacitance max. 100 nF/km
	Peak operating voltage (not for power applications) 225 V
	Coupling approx. 200 pF/100 m
	Inductivity approx. 0.65 mH/km
	Conductor stranding Single-wire (solid conductor) 0.8 mm: 0.50 mm ²
	Minimum bending radius Fixed installation: 6 x outer diameter
	Test voltage JE-Y(ST)Y...BD Core/core: 500 V Core/screen: 2000 V JE-Y(ST)Y...BD EB Core/Core: 1000 V Core/screen: 2000 V
	Loop resistance max. 73.2 Ω/km
	Temperature range Occasional flexing: -5°C to +50°C Fixed installation: -30°C to +70°C

Article number	Number of cores and cable diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
JE-Y(ST)Y...BD				
0034190	2 x 2 x 0.8	6	25	60
0034191	4 x 2 x 0.8	8.5	45	96
0034192	8 x 2 x 0.8	11	85	158
0034193	12 x 2 x 0.8	13	126	225
0034194	16 x 2 x 0.8	14.5	166	290
0034195	20 x 2 x 0.8	16	206	350
0034197	40 x 2 x 0.8	22	407	660
JE-Y(ST)Y...BD EB, blue outer sheath				
0034120	2 x 2 x 0.8	6	25	60
0034121	4 x 2 x 0.8	8.5	45	100
0034122	8 x 2 x 0.8	11	85	165
0034123	12 x 2 x 0.8	13	126	240
0034125	20 x 2 x 0.8	16	206	360
0034126	32 x 2 x 0.8	20	327	555

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 100/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- STAR STRIP stripping tool refer to page 985



JE-LiYCY...BD

Screened data transmission cable for industrial electronics



Info

- In accordance with DIN VDE 0815

JE-LiYCY...BD EB

Screened data transmission cable for industrial electronics



Info

- Blue version:
Hazard protection type -i- is required where there is a risk of explosion

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000829 ETIM 5.0/6.0 Class-Description: Signal-/telecommunications cable
	Core identification code according to VDE 0815, refer to Appendix T10
	Mutual capacitance max. 100 nF/km
	Peak operating voltage (not for power applications) 225 V
	Coupling approx. 200 pF/100 m
	Inductivity approx. 0.65 mH/km
	Conductor stranding Multi-wire, 7 x 0.3mm
	Minimum bending radius Occasional flexing: 15 x outer diameter Fixed installation: 5 x outer diameter
	Test voltage JE-LiYCY...BD Core/core: 500 V Core/screen: 2000 V JE-LiYCY...BD EB Core/Core: 1000 V Core/screen: 2000 V
	Loop resistance max. 78.4 Ω/km
	Temperature range Occasional flexing: -5°C to +50°C Fixed installation: -30°C to +70°C

Benefits

- Can be used for Maxi TERMI-POINT® wiring
- Overall braid minimises electrical interference
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Connection cable for use in electronics and in measurement, control and signal applications
- This cable is also used as a pulse and data transmission cable
- JE-LiYCY...BD has also proved to be an efficient connection cable for telephone systems, e.g. paging and intercom systems.
- For fixed installation on and under plaster, in dry and damp rooms
- For outdoor use this cable should be installed under plaster only

Product features

- The 2-pair version (2 x 2 x 0.5) is twisted into a star quad
- Flame-retardant according IEC 60332-1-2
- JE-LiYCY...BD EB:
For intrinsically safe circuits (type of protection i - intrinsic safety) according to IEC 60079-14:2013 / EN 60079-14:2014 / VDE 0165-1:2014, section 16.2.2

Norm references / Approvals

- In accordance with DIN VDE 0815 type JE-LiYCY...BD

Product Make-up

JE-LiYCY...BD

- 7-wire bare stranded copper conductor
- Core insulation made of PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.5 as star quad cable)
- Bundles twisted in layers, foil wrapping, screening braid made of tinned copper wires
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

JE-LiYCY...BD EB

- 7-wire bare stranded copper conductor
- Core insulation made of PVC
- 2 cores twisted into a pair, and 4 pairs into units (for 2 x 2 x 0.5 as star quad cable)
- Bundles twisted in layers, foil wrapping, screening braid made of tinned copper wires
- Outer sheath made of PVC
Outer sheath colour: sky blue (RAL 5015)

Article number	Number of pairs and conductor cross section (mm²)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
JE-LiYCY...BD				
0034200	2 x 2 x 0.5	7.5	51	70
0034201	4 x 2 x 0.5	10	87	155
0034202	8 x 2 x 0.5	13	144	260
0034208	12 x 2 x 0.5	15.5	195	340
0034203	16 x 2 x 0.5	17	249	430
0034210	20 x 2 x 0.5	18.5	298	495
0034204	24 x 2 x 0.5	20.5	348	605
0034212	32 x 2 x 0.5	22.5	441	738
JE-LiYCY...BD EB, blue outer sheath				
0034220	2 x 2 x 0.5	7.5	51	95
0034221	4 x 2 x 0.5	10	87	155
0034222	8 x 2 x 0.5	13	144	260
0034223	12 x 2 x 0.5	15.5	193	340
0034224	16 x 2 x 0.5	17	249	430
0034225	20 x 2 x 0.5	18.5	298	495
0034226	24 x 2 x 0.5	20.5	348	605
0034227	32 x 2 x 0.5	22.5	441	738
0034228	40 x 2 x 0.5	24	531	845

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985



J-Y(ST)Y...LG Indoor Cable

Installation cable in accordance with DIN VDE 0815



Benefits

- Indoor telephone cables transmit analogue or digital signals
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- Connection cable for use in electronics and in measurement, control and signal applications
- In news and communication applications, the following connections can be installed: telephone, telefax, telex, standard modems for postal services; burglar and fire alarm systems (cf. fire alarm cables); communication and paging systems; access control, time and data control systems
- Can be used in dry and wet interiors for fixed installation on and under plaster

Product features

- The 2-paired versions = star quad cable design
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- In accordance with DIN VDE 0815 type J-Y(ST)Y...LG

Product Make-up

- Solid bare copper conductor
- Core insulation made of PVC
- Cores twisted in pairs, pairs twisted together, foil wrapping over cable core, static screen made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: pebble grey (RAL 7032)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000829 ETIM 5.0/6.0 Class-Description: Signal-/telecommunications cable
	Core identification code according to VDE 0815, refer to Appendix T 10
	Peak operating voltage (not for power applications) 300 V
	Coupling (800 Hz): K1: 80% ≤ 300 pF/100m
	Conductor cross-section in 0.6 mm: 0.28 mm ² 0.8 mm: 0.50 mm ²
	Cable attenuation/attenuation 0.6 mm: 1.7 dB/km 0.8 mm: 1.1 dB/km
	Minimum bending radius Fixed installation: 10 x outer diameter
	Test voltage Core/core: 800 V Core/screen: 800 V
	Loop resistance 0.6 mm: max. 130 Ω/km 0.8 mm: max. 73.2 Ω/km
	Temperature range Occasional flexing: -5°C to +50°C Fixed installation: -30°C to +70°C

Article number	Number of double cores	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
J-Y(ST)Y...LG copper conductor 0.6 mm				
1591301	2	5.5	13	40
1591302	3	6.3	18	50
1591303	4	6.7	24	60
1591304	5	7.2	30	70
1591305	6	7.5	35	80
1591306	8	8	46	90
1591307	10	9	58	110
1591308	12	9.5	71	130
1591310	16	10.5	93	160
1591311	20	11	116	190
1591312	24	11.5	139	220
1591313	30	13	172	280
1591315	50	17	286	430
1591318	100	23	568	850

Article number	Number of double cores	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
J-Y(ST)Y...LG copper conductor 0.8 mm				
1591500	1	6	11	40
1591501	2	7	21	60
1591502	3	8.5	31	80
1591503	4	9	41	100
1591505	6	10.5	62	140
1591506	8	11.5	82	170
1591507	10	13	102	220
1591508	12	14	123	250
1591511	20	16.5	204	380

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 100/100 kg. Refer to catalogue appendix T 17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Similar products

- J-2Y(ST)Y...ST III BD refer to page 321

Accessories

- UNIVERSAL STRIP stripping tool refer to page 990
- STAR STRIP stripping tool refer to page 985



J-Y(ST)Y...LG Fire Alarm Cable

Installation cable in accordance with DIN VDE 0815 with red outer sheath



Benefits

- The cable is marked with the phrase "Fire alarm cable" at regular intervals on the sheath. It is therefore used especially for installation in fire alarm systems.
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)

Application range

- This installation cable is used to transmit signals.
- For fixed installation on and under plaster, in dry and damp rooms
- For outdoor use this cable should be installed under plaster only

Product features

- The 2-pair version (2x2x0.8) is twisted into a star quad
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on DIN VDE 0815 type J-Y(ST)Y...LG

Product Make-up

- Solid bare copper conductor
- Core insulation made of PVC
- Cores twisted in pairs, pairs twisted together, foil wrapping over cable core, static screen made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
Outer sheath colour: flame red (RAL 3000)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000829
ETIM 5.0/6.0 Class-Description:
Signal-/telecommunications cable



Core identification code

according to VDE 0815,
refer to Appendix T10



Peak operating voltage

(not for power applications)
300 V



Coupling

(800 Hz): K1: 80% ≤ 300 pF/100m



Conductor cross-section in

0.8 mm: 0.50 mm²

Cable attenuation/attenuation

0.8 mm: 1.1 dB/km



Minimum bending radius

Fixed installation:
10 x outer diameter



Test voltage

Core/core: 800 V
Core/screen: 800 V



Loop resistance

max. 73.2 Ω/km



Temperature range

Occasional flexing: -5°C to +50°C
Fixed installation: -30°C to +70°C

Article number	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
J-Y(ST)Y...LG Fire Alarm Cable				
1708001	1 x 2 x 0.8	6	11	40
1708002	2 x 2 x 0.8	7	21	60
1708004	4 x 2 x 0.8	9	41	100
1708010	10 x 2 x 0.8	13.5	102	220

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

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

Accessories

- Cable shears with double edge refer to page 980
- STAR STRIP stripping tool refer to page 985
- KS 20 cable shears



J-2Y(ST)Y...ST III BD

Installation cable in accordance with DIN VDE 0815 with PE core insulation

J-2Y(ST)Y...STIIIBD

Benefits

- Suitable for data transmission rates of up to 16 Mbits/s
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields

Application range

- Connection cable for use in electronics and in measurement, control and signal applications
- Examples of use: for connecting EDP system units or for circuits for airfield lighting, ISDN private branch exchanges, operating data acquisition, operating data entry, access control and time recording systems, industrial electronics, all designed for maximum security and speed
- Can be used in dry and wet interiors for fixed installation on and under plaster

Product features

- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Based on DIN VDE 0815

Product Make-up

- Solid bare copper conductor
- Core insulation made of polyethylene (PE)
- Cores twisted into star quads, 5 star quads are twisted into a bundle, bundles stranded in layers
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of PVC
- Outer sheath colour: pebble grey (RAL 7032)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000829
ETIM 5.0/6.0 Class-Description:
Signal-/telecommunications cable



Core identification code

according to VDE 0815,
refer to Appendix T 10



Mutual capacitance

(800 Hz) max. 52 nF/km



Peak operating voltage

(not for power applications)
300 V



Coupling

K1: 98 % < 400 pF/300 m
K9-12: 98 % < 100 pF/300 m



Conductor cross-section in

0.6 mm: 0.28 mm²

Cable attenuation/attenuation

At 16 MHz: < 8 dB/100 m



Minimum bending radius

Fixed installation: 10 x outer diameter

Short-range crosstalk attenuation

4-16 MHz: 2-pair ≥ 45 dB

4-16 MHz: >2-pair ≥ 20 dB



Test voltage

Core/core: 500 V
Core/screen: 2000 V



Loop resistance

max. 130 Ω/km



Characteristic impedance

100 Ω ± 15%



Temperature range

Occasional flexing: -5°C to +50°C
Fixed installation: -30°C to +70°C

Article number	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
J-2Y(ST)Y...ST III BD				
0034171	2 x 2 x 0.6	5.5	13	40
0034173	4 x 2 x 0.6	7.5	24	60
0034176	10 x 2 x 0.6	9.5	58	148
0034178	20 x 2 x 0.6	13.5	116	190

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

Copper price basis: EUR 100/100 kg. Refer to catalogue appendix T 17 for the definition and calculation of copper-related surcharges.

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

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

Similar products

- UNITRONIC® Li2YCY (TP) refer to page 291

Accessories

- STAR STRIP stripping tool refer to page 985



J-H(ST)H...BD

Halogen-free installation cable in accordance with DIN VDE 0815



Info

- In accordance with DIN VDE 0815

J-H(ST)H...BD Fire Alarm Cable

Halogen-free installation cable in accordance with DIN VDE 0815 with red outer sheath



Benefits

- Used to meet enhanced fire protection requirements concerning protection of people and high-value property
- Does not emit any toxic or corrosive gases in the event of fire and resists the spread of fire
- Aluminium-laminated plastic foil static screen with tin-plated drain wire minimises the interference of high frequency, electromagnetic fields
- Decoupling of circuits by means of twisted-pair (TP) design (crosstalk effects)
- J-H(ST)H...BD Fire Alarm Cable is marked with the phrase "Fire alarm cable" at regular intervals on the sheath. It is therefore used especially for installation in fire alarm systems.

Application range

- This halogen-free, flame-retardant installation cable with static screen is used for telephone, data and signal transmission in subscriber stations and private branch exchange construction for telephone systems
- For fixed installation on and under plaster, in dry and damp rooms

Product features

- Flame-retardant according IEC 60332-1-2
- No flame-propagation according to IEC 60332-3-24 respectively IEC 60332-3-25 (Flame spread on vertical cable or wire bundle)
- Halogen-free according to EN 50267-2-1/-2

Norm references / Approvals

J-H(ST)H...BD

- In accordance with DIN VDE 0815 type J-H(ST)H...BD

J-H(ST)H...BD Fire Alarm Cable

- Based on DIN VDE 0815

Product Make-up

J-H(ST)H...BD

- Solid bare copper conductor
- Core insulation made of special halogen-free compound
- Cores twisted into star quads, 5 star quads are twisted into a bundle, bundles stranded in layers
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of special halogen-free compound
Outer sheath colour: grey (RAL 7001)

J-H(ST)H...BD Fire Alarm Cable

- Solid bare copper conductor
- Core insulation made of special halogen-free compound
- Cores twisted into star quads, 5 star quads are twisted into a bundle, bundles stranded in layers
- Foil wrapping, static screening made of aluminium-laminated plastic film with copper drain wire
- Outer sheath made of special halogen-free compound
Outer sheath colour: flame red (RAL 3000)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000829
ETIM 5.0/6.0 Class-Description:
Signal-/telecommunications cable



Core identification code

according to VDE 0815,
refer to Appendix T10



Mutual capacitance

max. 120 nF/km



Peak operating voltage

(not for power applications)
300 V



Coupling

K1: approx. 300 pF/100 m
K9-12: approx. 100 pF/100 m



Minimum bending radius

Fixed installation: 8 x outer diameter



Test voltage

Core/core: 800 V
Core/screen: 800 V



Loop resistance

0.6 mm: max. 130 Ω/km
0.8 mm: max. 73.2 Ω/km



Conductor cross-section

0.6 mm: 0.28 mm²
0.8 mm: 0.50 mm²



Temperature range

Occasional flexing: -5°C to +50°C
Fixed installation: -30°C to +70°C

Article number	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
J-H(ST)H...BD				
30017787	2 x 2 x 0,8	7	25	77
30017788	4 x 2 x 0,8	9.2	45	135
J-H(ST)H...BD Fire Alarm Cable				
30017798	2 x 2 x 0,8	7	25	77
30017801	10 x 2 x 0,8	11.3	106	250

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

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



A-2Y(L)2Y...ST III BD Telephone Outdoor Cable



Application range

- External cables for telecommunication and data processing systems
- Do not install cables that are meant to be placed in ducts or for direct burial in areas exposed to fire hazards

Product features

- Outer sheath colour: black (RAL 9005)
- UV-resistant and laterally watertight
- Filled version (A-2YF(L)2Y...ST III BD) is additionally longitudinal watertight

Norm references / Approvals

- In accordance with DIN VDE 0816

Product Make-up

A-2Y(L)2Y...ST III BD Telephone Outdoor Cable

- Solid bare copper conductor
- Core insulation made of polyethylene (PE)
- 5 star-quads are twisted into each basic unit, which is then twisted together with the main unit to form the cable core
- Paper tape wrapping
- Laminated sheath with aluminium-coated plastic tape, PE outer sheath

A-2YF(L)2Y...ST III BD Outdoor Cable

- Similar to A-2Y(L)2Y, but with petroleum-jelly filling, laminated sheath made of aluminium-coated plastic tape, and black PE outer sheath

A-2YF(L)2Y...ST III BD Outdoor Cable



Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000829
ETIM 5.0/6.0 Class-Description:
Signal-/telecommunications cable

Core identification code
According to VDE 0816,
refer to Appendix T 10

Mutual capacitance
At 800 Hz: max. 52 nF/km

Peak operating voltage
(not for power applications) 225 V

Coupling
K1: 98 % < 400 pF/300 m
K9-12: 98 % < 100 pF/300 m

Conductor cross-section in
0.6 mm: 0.28 mm²
0.8 mm: 0.50 mm²

Cable attenuation/attenuation A-2Y(L)2Y...ST III BD Telephone Outdoor Cable

At 800 Hz 0.6 mm: approx. 1.04 dB/km
At 800 Hz 0.8 mm: approx. 0.78 dB/km
A-2YF(L)2Y...ST III BD Outdoor Cable
At 800 Hz 0.6 mm: approx. 1.0 dB/km
At 800 Hz 0.8 mm: approx. 0.8 dB/km

Minimum bending radius
10 x outer diameter

Test voltage
Core/core: 500 V
Core/screen: 2000 V

Loop resistance
0.6 mm: 130 Ω/km
0.8 mm: 73.2 Ω/km

Temperature range
During installation: -20 °C to +50 °C
After installation: ≤ +70 °C

Article number	Number of double cores	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
A-2Y(L)2Y...STIII BD copper conductor 0.6 mm				
1591050	2	8.1	11	80
1591052	6	10.3	34	130
1591053	10	11.5	57	165
A-2Y(L)2Y...ST III BD copper conductor 0.8 mm				
1591150	2	8.6	20	100
1591151	4	10.9	40	160
1591152	6	11.5	60	175
1591153	10	13.5	101	235
1591154	20	17.3	201	390
A-2YF(L)2Y...ST III BD copper conductor 0.6 mm				
1591028	2	8.3	11	67
1591029	4	10.4	23	104
1591030	6	11	34	130
1591031	10	12.5	57	180
1591032	20	16	113	300
1591033	30	19	170	420
1591035	50	22.3	283	620
1591037	100	30.5	565	1225
A-2YF(L)2Y...ST III BD copper conductor 0.8 mm				
1591217	2	8.8	20	83
1591218	4	11.2	40	134
1591221	6	12	60	180
1591222	10	14	101	250
1591223	20	19.1	201	460
1591224	30	22	302	630
1591225	40	24	402	800
1591226	50	26	503	975
1591228	100	36	1005	1900

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

Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T 17 for the definition and calculation of copper-related surcharges.

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

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

Accessories

- SKINTOP® MS-HF-M SC refer to page 707
- SKINTOP® MS-SC-M refer to page 701
- Multipurpose shears A and B
- STAR STRIP stripping tool refer to page 985



Coaxial - RG



Benefits

- Coaxial cables allow distortion-free and low-attenuation transmission of signals with a high bandwidth.
- High frequencies

Application range

- For applications with limited movements and for fixed installation in dry or damp interiors and outdoors
- For radio and computer systems, as well as all applications related to commercial radio-frequency technology and electronics

Product features

- Flame-retardant

Product Make-up

- Coaxial cables are significantly less sensitive to external interference due to their structure.

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000019
ETIM 5.0/6.0 Class-Description:
Coaxial cable

Dielectric constant
- Polyethylene (PE) 2.3-
Polyethylene, hollow (PE-ho) 1.5-
Polytetrafluoroethylene (PTFE) 2.1

Minimum bending radius
Fixed installation: 6 x outer diameter

Specifications and approvals
Similar to MIL-DTL17 H

Temperature range
Fixed installation: PE outer sheath:
-40°C to +80°C
Fixed installation: PVC outer sheath:
-40°C to +80°C
Fixed installation: fluoroplastic
-55°C to +250°C

Article number	Article designation	Characteristic impedance in Ω	Capacity pF/m	Attenuation approx. dB/100 m at 200 MHz/400 MHz	Propagation rate (%)	Operating voltage 50 Hz eff. kV	Test voltage (kV)	Inner conductor material	Internal $\emptyset$	Dielectric material	Dielectric $\emptyset$	Outer conductor material	Outer cable sheath	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Characteristic impedance: 50 Ω																
2170000	RG-58 C/U	50 +/- 2 Ω	101	24 / 33	66	2	5	CuLivz	0.9	PE	2.95	Cvz	PVC	4.95	19.1	38
2170001	RG-174 A/U	50 +/- 2 Ω	101	40 / 59	66	1.5	2	StCuLibl	0.48	PE	1.52	Cvz	PVC	2.80	5.4	12
2170002	RG-178 B/U	50 +/- 2 Ω	95	63 / 93	70	0.7	2	StCuLivs	0.3	PTFE	0.86	Cvs	FEP	1.91	4.4	9
2170003	RG-188 A/U	50 +/- 2 Ω	95	47 / 56	70	1.5	2	StCuLivs	0.51	PTFE	1.52	Cvs	PTFE	2.76	8.3	17.5
2170005	RG-213 /U	50 +/- 2 Ω	101	10 / 15	66	5	10	CuLibl	2.25	PE	7.25	Cbl	PVC	10.30	75.8	157
2170006	RG-214 /U	50 +/- 2 Ω	101	9 / 14	66	5	10	CuLivs	2.25	PE	7.25	CvsCvs	PVC	10.80	117.8	207
2170007	RG-223 /U	50 +/- 2 Ω	101	23 / 34	66	2	3	CuMvs	0.89	PE	2.95	CvsCvs	PVC	5.50	38.5	60
Characteristic impedance: 75 Ω																
2170016	RG-6 A/U	75 +/- 3 Ω	67	14 / 20	66	2	5	StCuMbl	0.72	PE	4.7	Cbl	PVC	8.40	72	120
2170009	RG-11 A/U	75 +/- 3 Ω	67	11 / 16	66	5	10	CuLivz	1.2	PE	7.3	Cbl	PVC	10.30	55.5	140
2170011	RG-11 A/U outdoor	75 +/- 3 Ω	67	11 / 16	66	5	10	CuLivz	1.2	PE	7.3	Cbl	PVC	12.10	55.5	170
2170012	RG-59 B/U	75 +/- 3 Ω	67	16.5/23	66	1.7	7	StCuMbl	0.6	PE	3.7	Cbl	PVC	6.15	25	57
2170010	RG-187 A/U	75 +/- 3 Ω	65	47 / 56	70	1.5	2	StCuLivs	0.31	PTFE	1.52	Cvs	PTFE	2.80	7.3	17
Characteristic impedance: 100 Ω																
2170008	RG-62 A/U	93 +/- 5 Ω	43	15 / 19	75	0.8	2	StCuMbl	0.65	PE hollow	3.7	Cbl	PVC	6.15	26	52

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

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

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

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



Multi coaxial cables RG 59 B/U



Benefits

- In extended systems, the use of the RG 59 B/U multi-coaxial cable as a screened supply cable prevents an accumulation of individual cables running in parallel over long distances.
- This saves installation costs and provides greater mechanical protection for the each sensitive cable.

Product features

- Multi-coaxial cables provide an easier installation than individual installation

Product Make-up

- 2 x single coaxial cables type RG 59 B/U
- Twin cable
- PVC sheath
- Colour: black

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000019 ETIM 5.0/6.0 Class-Description: Coaxial cable
	Based on Similar to MIL specification MIL-DTL 17 H
	Minimum bending radius Fixed installation: 15 x outer diameter
	Temperature range Fixed installation: -40°C to +80°C

Article number	Number of single cables x RG type	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Characteristic impedance: 75 Ω				
2170056	2 x RG 59 B/U	6.5 x 13.0	50	116

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

	Info
• Connecting Cable for Colour Monitors	



Benefits

- Low attenuation ensures a longer transmission distance
- Transmission of the red (R), green (G) and blue (B) colour signals

Application range

- Colour monitor cable for PCs and CAD workstations, process visualisation
- For fixed installation in rooms (RGB CY..x Kx 0.4/1.8)
- For highly flexible applications in power chains (energy supply chains) and continuously moving machine components (RGB-FD..x Kx 0.6L/2.4)

Product Make-up

- Conductor: tinned-copper wire
- Dielectric: cellular polyolefin
- Outer conductor: copper braiding or tinned-copper wire wrapping
- Red (R), green (G), blue (B) elements - for RGB 5 x Kx 0.4/1.8 red, green, blue, white, black
- PVC outer sheath
FD Version with PUR outer sheath

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000019 ETIM 5.0/6.0 Class-Description: Coaxial cable
	Mutual capacitance 60 nF/km
	Minimum bending radius 15 x outer diameter
	Characteristic impedance 75 Ω
	Temperature range -10 °C to +80 °C Occasional flexing: -5°C to +70°C

Article number	Article designation	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Fixed Installation				
0034245	RGB CY 3 x Kx 0,4/1,8 + 3 x 0,25	8.0	51	97
0034246	RGB DY 5 x Kx 0,4/1,8	9.7	60	132
Flexible and highly flexible applications				
0034247	RGB-FD 3 x Kx 0,6L/2,4	10.8	29	100

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

Accessories

- STAR STRIP stripping tool refer to page 985
- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC



UNITRONIC® BUS LD

Flexible buscable with PVC outer sheath, for use in different bussystems

LAPP KABEL STUTTGART UNITRONIC® BUS LD



Info

- LD is a LAPP abbreviation for long distance

Benefits

- Suitable for multiple Bus systems based on RS485 / RS422

Application range

- For fixed installation
Maximum electromagnetic screening
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)
- Dry or damp rooms

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
- 9.6-93.75 kbit/s = 1200m
- 187.5 kbit/s = max. 1,000 m
- 500 kbit/s = max. 400 m

Norm references / Approvals

- UNITRONIC® BUS LD A:
UL versions with certification:
UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- Stranded conductor, bare, 7-wire
- Core insulation: PE
- Colour code DIN 47100
- Overall screening of braided tinned-copper strands
- Outer sheath: PVC, violet (RAL 4001)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Mutual capacitance

Flexible use: 10 x outer diameter



Peak operating voltage

(not for power applications) 250 V



Conductor resistance

(loop): max. 186 Ω/km



Minimum bending radius

Fixed installation: 8 x outer diameter



Test voltage

Core/core: 1500 V rms



Characteristic impedance

100 - 120 Ω



Temperature range

Fixed installation: -40°C to +80°C
Flexing: -5°C to +70°C

Article number	Article designation	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
for fixed installation					
2170203	UNITRONIC® BUS LD	1 x 2 x 0,22	5.7	18	37
2170204	UNITRONIC® BUS LD	2 x 2 x 0,22	7.1	28	45
2170205	UNITRONIC® BUS LD	3 x 2 x 0,22	7.2	37	72
For fixed installation - UL/CSA CMX certification					
2170803	UNITRONIC® BUS LD A	1 x 2 x 0,22	5.7	18	39

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

Modbus is owned by the Modbus-IDA Organisation. SUCOnet P is a registered trademark of the Moeller Group. Modulink P is a registered trademark of Weidmüller GmbH & Co. VariNet is a registered trademark of Pepperl+Fuchs GmbH.

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



UNITRONIC® BUS LD FD P

Highly flexible buscable with PUR outer sheath, for use in different bussystems



Info

- LD is a LAPP abbreviation for long distance

Benefits

- Suitable for multiple Bus systems based on RS485 / RS422
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains
- Under consideration of the temperature range also suitable for outdoor use

Application range

- For highly flexible applications (power chains, moving machine parts)
- Bus cables for bus systems such as e.g. Modbus, SUCOnet P, Modulink P, VariNet-P)

Product features

- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
- 9.6-93.75 kbit/s = 1200m
- 187.5 kbit/s = max. 1,000 m
- 500 kbit/s = max. 400 m
- UV-resistant (but colour may change after some time)

Norm references / Approvals

- UNITRONIC® BUS LD FD P A: UL versions with certification: UL/CSA type CMX acc. to UL 444 and CSA C22.2 no. 214-02
- Flame-retardant according IEC 60332-1-2

Product Make-up

- Extra-fine wire strand made of bare copper
- Colour code DIN 47100
- Core insulation: PE
- Overall screening of braided tinned-copper strands
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz) max. 60 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 159.8 Ω/km
	Minimum bending radius One bend at end of core: 3 x cable diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 - 120 Ω
	Temperature range Fixed installation: -40°C to +80°C Flexing: -30°C to +70°C

Article number	Article designation	Number of pairs and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications					
2170213	UNITRONIC® BUS LD FD P	1 x 2 x 0,25	6	18	39
2170214	UNITRONIC® BUS LD FD P	2 x 2 x 0,25	7.9	33	65
2170215	UNITRONIC® BUS LD FD P	3 x 2 x 0,25	8	39	77
For highly flexible applications - with UL/CSA CMX certification					
2170813	UNITRONIC® BUS LD FD P A	1 x 2 x 0,25	6.2	18	39
2170814	UNITRONIC® BUS LD FD P A	2 x 2 x 0,25	8.3	33	65
2170815	UNITRONIC® BUS LD FD P A	3 x 2 x 0,25	8.4	39	77

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SMART STRIP stripping tool



UNITRONIC® BUS ASI

AS-INTERFACE cables for networking systems in the field

LAPP KABEL STUTTGART UNITRONIC® BUS ASI

LAPP KABEL STUTTGART UNITRONIC® BUS ASI

LAPP KABEL STUTTGART UNITRONIC® BUS ASI



Info

- “LD” = Long Distance

Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected. AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- The rubber versions are halogen-free

Application range

- Communication at sensor/actuator level
- Sensor-/actuator wiring
- For fixed installation as well as occasional flexing at free, non-continuously recurring movement without tensile load
- The TPE version has an oil-resistant outer sheath. It is suitable for wet areas, in particular in conjunction with water-soluble cooling lubricants.

Product features

- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Norm references / Approvals

- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- PVC A version with UL/CSA (CMX) certification
- UL/CSA version: CMG c(UL)us or (UL)CL2 or AWM 300V FT4 certified

Product Make-up

- Conductor: fine-wire tinned-copper strands
- Core insulation: blue and brown
- Outer sheath: rubber (G), halogenfree thermoplastic elastomers (TPE) PVC
- Outer sheath: yellow (RAL 1023), black (RAL 9005), red (RAL 3000)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Peak operating voltage

Yellow: 300 V (not for power applications)
Black: 300 V (not for power applications)
Red: 300 V



Conductor resistance

1.5 mm²: max. 13.7 Ω/km
2.5 mm²: max. 8.21 Ω/km



Minimum bending radius

Fixed installation: 12 mm
Flexible use 24 mm



Test voltage

Core/core: 2000 V



Temperature range

Dependent on outer sheath material:
PVC: -30 °C to +90 °C
Other materials: -40 °C to +85 °C
During installation:
PVC -20 °C to +90 °C
Other materials:
-30 °C to +85 °C

Article number	Article designation	Outer sheath colour	Application	Number of cores and mm ² per conductor	Copper index (kg/km)	Weight (kg/km)
Gummi/EPDM						
2170228	UNITRONIC® BUS ASI (G)	yellow	Data and power transmission	2 x 1,5	29	85
2170229	UNITRONIC® BUS ASI (G)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	85
2170371	UNITRONIC® BUS ASI LD (G)	yellow	Data and power transmission	2 x 2,5	48	85
2170372	UNITRONIC® BUS ASI LD (G)	black	Transmission of 30 V DC auxiliary power	2 x 2,5	48	85
TPE						
2170230	UNITRONIC® BUS ASI (TPE)	yellow	Data and power transmission	2 x 1,5	29	64
2170231	UNITRONIC® BUS ASI (TPE)	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	64
2170232	UNITRONIC® BUS ASI (TPE)	red	Transmission of 230 V AC auxiliary power	2 x 1,5	29	64
PVC						
2170842	UNITRONIC® BUS ASI (PVC) A	yellow	Data and power transmission	2 x 1,5	29	70
2170843	UNITRONIC® BUS ASI (PVC) A	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	70
2170844	UNITRONIC® BUS ASI (PVC) A	red	Transmission of 230 V AC auxiliary power	2 x 1,5	29	70

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

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

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

Lapp Kabel is a member of the AS-International Association

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

Accessories

- SKINTOP® DIX-M AUTOMATION refer to page 719
- AS-I clip clamp / AS-I end sealing
- UNIVERSAL STRIP stripping tool refer to page 990
- AS-I STRIP special stripping tool refer to page 987
- AS-I STRIP special
- SKINTOP® DIX ASI



UNITRONIC® BUS ASI FD

High flexible AS-INTERFACE cables for networking systems in the field

Info

- “FD” = suitable for power chains
- “LD” = Long Distance



Benefits

- The new BUS ASI LD 2 x 2.5 (Long Distance) allows even modules located further away to be connected. AS-I power supplies can be reduced. The BUS ASI LD is downwards-compatible with version 1.5.
- For highly flexible applications (power chains, moving machine parts)
- High oil-resistance

Application range

- Communication at sensor/actuator level
- Sensor-/actuator wiring

Product features

- PUR versions are halogen-free according to IEC 60754-1
- Flame-retardant according to IEC 60332-1-2, UL FT-2 flame test
- Data and power are transmitted via an unscreened, geometrically coded two-core flat cable (protection against polarity reversal).
- The conductor is contacted by “piercing technology” within the ASI modules.
- The sensors are connected to the ASI modules (coupling modules) using round cables (connection cables).

Norm references / Approvals

- ASI is standardised Europe-wide in EN 50295 and internationally in IEC 62026-2.
- TPE variant: UL AWM Style 2103 CSA AWM II A/B
- PUR versions: UL AWM Style 20549

Product Make-up

- Extra-fine wire, tinned copper strands
- Core insulation: halogen-free compound
- Outer sheath: TPE PUR
- Outer sheath: yellow (RAL 1023), black (RAL 9005)

Technical data

- Classification ETIM 5/6**
 ETIM 5.0/6.0 Class-ID: EC000830
 ETIM 5.0/6.0 Class-Description: Data cable
- Peak operating voltage**
 300 V (not for power applications)
- Conductor resistance**
 1.5 mm²: max. 13.7 Ω/km
 2.5 mm²: max. 8.21 Ω/km
- Minimum bending radius**
 Fixed installation: 12 mm
 Flexing without fixing: 24 mm
 Flexing with fixing: 60 mm (15 x D)
- Test voltage**
 Core/core: 2000 V
- Temperature range**
 Fixed installation:
 -40°C to +80°C (TPE +105°C)
 Flexing without fixing:
 -30 °C to +70 °C (TPE +105 °C)

Article number	Article designation	Outer sheath colour	Application	Number of cores and mm ² per conductor	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (power chains, moving machine parts)						
2170357	UNITRONIC® BUS ASI FD P FRNC	yellow	Data and power transmission	2 x 1,5	29	64
2170358	UNITRONIC® BUS ASI FD P FRNC	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	64
2170317	UNITRONIC® BUS ASI LD FD P	yellow	Data and power transmission	2 x 2,5	48	74
2170318	UNITRONIC® BUS ASI LD FD P	black	Transmission of 30 V DC auxiliary power	2 x 2,5	48	74
For high flexible application - TPE UL/CSA (AWM)						
2170830	UNITRONIC® BUS ASI FD (TPE) A	yellow	Data and power transmission	2 x 1,5	29	64
2170831	UNITRONIC® BUS ASI FD (TPE) A	black	Transmission of 30 V DC auxiliary power	2 x 1,5	29	64

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Lapp Kabel is a member of the AS-International Association
 Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- SKINTOP® DIX-M AUTOMATION refer to page 719
- AS-I clip clamp / AS-I end sealing
- UNIVERSAL STRIP stripping tool refer to page 990
- AS-I STRIP special stripping tool refer to page 987
- AS-I STRIP special
- SKINTOP® DIX ASI



ASI Distributor

AS-Interface Distributor



Benefits

- Cost-efficient and rational wiring for AS-Interface installations
- Space-saving due to compact dimensions
- Easy to install

Product features

- Field mountable distributor with flat cable clamp
- On 2 flat cables or straight M12 socket (A-coded)
- Suitable for drag chains
- Panel mounting
- Rated current ≤ 4 A (H-distributor: ≤ 8 A)

Product Make-up

- Wire cross-section: 0,34 mm²
- Colour-code: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR halogen-free, black

Suitable cables

- UNITRONIC® BUS ASI Page 328
- UNITRONIC® BUS ASI FD Page 329

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002585
ETIM 5.0/6.0 Class-Description: Passive sensor-actuator interface

Connection type
Penetration technique for flat cable

Protection rating
IP 67
(H-distributor: IP69)

Ambient temperature (operation)
-25 °C to +75 °C

Article number	Article designation	Length (m)	PU
Distribution of 1 flat cable			
on 2 flat cables (H distributor)			
22260802	AB-ASI-J-Y-Y-N		1
on M12 socket (2-pos.)			
22260800	AB-ASI-J-Y-N-M12FS		1
22260803	AB-ASI-J-Y-N-PUR-1,0-M12FS	1	1
22260804	AB-ASI-J-Y-N-PUR-2,0-M12FS	2	1
Distribution of 2 flat cables			
on M12 socket (4-pos.)			
22260801	AB-ASI-J-Y-B-M12FS		1
22260805	AB-ASI-J-Y-B-PUR-1,0-M12FS	1	1
22260806	AB-ASI-J-Y-B-PUR-2,0-M12FS	2	1

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- Kraftform® adjustable torque screwdriver/Kraftform Kompakt® Set refer to page 1060



UNITRONIC® BUS PB TRAY

PROFIBUS cable with PLTC-ER approval for unprotected use on cable trays



Info

- PLTC-ER (power limited tray cable - exposed run)



Benefits

- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- PLTC-ER approval for open wiring between cable tray and industrial machines/plants acc. to NEC 725.154 (D)
- No additional protection of the cable needed

Application range

- For fixed installation or applications with occasional movements
- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m
- UV-resistant UL SUN RES
- Flame retardant acc. UL 1685 - FT4 (vertical tray)

Norm references / Approvals

- c(UL)us Typ CMG (75°C) acc.to UL 444 / CSA 22.2
- UL Type PLTC-ER acc. to UL 13

Product Make-up

- Bare copper wire, 0,64 mm diameter
- Core colours: red, green
- Overall screening with copper braid and plastic-laminated aluminium foil
- PVC inner sheath and outer sheath
- Colour: violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (1 kHz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Impedance 150 +/- 15 Ω
	Conductor resistance (loop): max. 110 Ω/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 2000 V
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -10°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB TRAY					
2170856	UNITRONIC® BUS PB TRAY	1x2x0,64	8.4	26	82

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS PB

PROFIBUS cables for fixed applications



Info

- Lapp Kabel is a member of the PROFIBUS User Organisation (PNO)
- A for Advanced here: UL and CSA certifications

Application range

- For fixed installation
Maximum electromagnetic screening
- Dry or damp rooms
- Item nos. 2170233, 2170333, 2170820, 2170824, 2170826 are all UV-resistant

Product features

- These bus cables can be used for PROFIBUS-DP as well as for PROFIBUS-FMS and FIP
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Norm references / Approvals

- In accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC NET, also suitable for FIP (Factory Instrumentation Protocol)
- See below for UL certification type

Product Make-up

- FC: Fast Connect cable design
- P: Polyurethane
- H: Halogen-free
- PE: polyethylene outer sheath, black
- 7-W: 7-wire, e.g. for applications where vibrations occur
- COMBI: Data transmission and power supply in one cable

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 Ω/km. see also datasheet
	Minimum bending radius Fixed installation: see data sheet
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 150 ± 15 Ω

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Conventional cable makeup					
2170220	UNITRONIC® BUS PB	1 x 2 x 0.64	8	30.1	74
2170233	UNITRONIC® PB PE	1 x 2 x 0.64	8	30.1	57
2170226	UNITRONIC® BUS PB H 7-W	1 x 2 x 0.64	8	30.1	55
2170225	UNITRONIC® BUS PB COMBI 7-W	1 x 2 x 0,64 Ø + 3 x 1,0 mm ²	9.8	59	92
Conventional cable makeup - UL/CSA CMX certification					
2170219	UNITRONIC® BUS PB A	1 x 2 x 0.64	8		57
Conventional cable makeup - UL/CSA CMG certification					
2170824	UNITRONIC® BUS PB 7-W A	1 x 2 x 0.64	8	30.1	55
Fast Connect					
2170333	UNITRONIC® BUS PB PE FC	1 x 2 x 0.64	8	26	67
Fast Connect - UL/CSA CMX certification					
2170330	UNITRONIC® BUS PB P FC	1 x 2 x 0.64	8	26	71
Fast Connect cable makeup - UL/CSA CMG certification					
2170820	UNITRONIC® BUS PB FC	1 x 2 x 0.64	8	26	84
2170826	UNITRONIC® BUS PB 7-W FC	1 x 2 x 0.64	8	26	67
2170326	UNITRONIC® BUS PB-H FC	1 x 2 x 0.64	8	26	72

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Similar products

- UNITRONIC® BUS PB ROBUST refer to page 333
- UNITRONIC® BUS PB 105 refer to page 334

Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986
- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® BUS PB ROBUST

Halogen-free PROFIBUS cable - resistant to a wide range of chemical media



Info

- Excellent weather resistance
- Good chemical resistance

Benefits

- Robust PROFIBUS cable for use under harsh environmental conditions

Application range

- For use for PROFIBUS-DP or FIP in harsh industrial environments
- Fixed Installation

Product features

- Significantly extended use and application areas, water and chemical resistance for use in industrial conditions.
- High resistance to tensides, soaps etc.
- UV-resistant
- Flame-retardant according IEC 60332-1-2
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Product Make-up

- Solid and bare copper conductor
- Core insulation: cellular PE, O2Y(S)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: Specially formulated TPE, violet (RAL 4001)
- With conventional cable design

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (1 kHz): approx. 28.5 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 75 mm
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170620	UNITRONIC® BUS PB ROBUST	1 x 2 x 0.64	8	26	55

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS PB 105

PROFIBUS cable with an extended temperature range up to +105°C

LAPP KABEL STUTTGART UNITRONIC® BUS PB 105

Application range

- Cable has been designed for use in factory halls where temperatures up to max. 105°C may occur.

Product features

- High temperature resistance
- Flame-retardant according IEC 60332-1-2
- Oil-resistant

Product Make-up

- Stranded conductor, 7-wire, bare
- Conductor diameter: 0,64 mm (AWG24)
- Core insulation: PP
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PVC, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance Approx. 28.5 nF/km
	Peak operating voltage max. 100 V (not for power applications)
	Minimum bending radius Fixed installation: 45 mm once Flexing: 65 mm
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range -30°C to +105°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB 105					
2170630	UNITRONIC® BUS PB 105	1 x 2 x 0.64	8	30.1	72

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

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

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

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Accessories

- Multipurpose shears A and B



UNITRONIC® BUS PB 105 plus

PROFIBUS cable with an extended temperature range up to +105°C; short term +120°C

LAPP KABEL STUTTGART UNITRONIC® BUS PB 105 plus

Benefits

- No need for additional cable protection against high temperatures
- High temperature resistance

Application range

- For installation in hollow shaft between gear units and pitch system
- Suitable for fixed installation and occasionally flexible use in high temperature areas

Product features

- Permanent load up to +105°C, temporary load +120°C

Norm references / Approvals

- In accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC NET, also suitable for FIP (Factory Instrumentation Protocol)

Product Make-up

- Stranded conductor, 7-wire, bare
- Core insulation: polypropylene (PP)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: TPE, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 45 mm once Flexing: 65 mm
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V eff.
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range Fixed installation: -40°C to +105°C Short-term: up to +120 °C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)
UNITRONIC® BUS PB 105 plus				
2170635	UNITRONIC® BUS PB 105 plus	1x2x0,64	8	30.1

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UNITRONIC® BUS PB HEAT 180

PROFIBUS cable with an extended temperature range up to +180 °C

LAPP KABEL STUTTGART UNITRONIC® BUS PB HEAT 180

Benefits

- No need for additional cable protection against high temperatures
- High temperature resistance

Application range

- Fixed Installation
- For use in high temperature areas with up to 180 °C

Product features

- High oil-resistance

Product Make-up

- Solid and bare copper conductor
- Wire insulation Fluorethylen
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: FEP, violet (RAL 4001)

Suitable connectors

- Sub-D Bus-Connectors

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance approx. 28 nF / km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Repeated: 7 x Outer Diameter Single: 5 x Outer Diameter
	Test voltage 3600 V DC (3 sec.)
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range -50 to +180 °C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Copper index (kg/km)	Weight (kg/km)
3031981	UNITRONIC® BUS PB HEAT 180	1 x 2 x 0,64	21.7	0.064

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
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UNITRONIC® BUS PB FRNC FC

FRNC PROFIBUS cable UL/CSA certified

LAPP KABEL STUTTGART UNITRONIC® BUS PB FRNC FC



Info

- FRNC = Flame Retardant Non Corrosive
 - Reduction of flame-propagation and density and toxicity of smoke gases in the event of fire
 - Minimisation of damage to buildings and production facilities
 - Safety for staff and in areas with high density of people

Benefits

- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Fast Connect (FC) cable design

Application range

- This cable provides special advantages for use in sensitive areas where fire propagation must be avoided and the presence of toxic fumes would cause personal injury and damage to equipment.

Product features

- Halogen-free
- High flame retardancy in accordance with IEC 60332-3 and FT4
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 - 93.75 kbit/s = 1200 m
 - 187.5 kbit/s = 1000 m
 - 500 kbit/s = 400 m
 - 1.5 Mbit/s = 200 m
 - 12.0 Mbit/s = 100 m

Norm references / Approvals

- UL/CSA-certified

Product Make-up

- Solid and bare copper conductor
- Core insulation: PE
- Inner sheath, screening foil and braiding
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Certifications UL/CSA (CMG)
	Mutual capacitance Approx. 28.5 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius 80 mm
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range -30°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170853	UNITRONIC® BUS PB FRNC FC	1 x 2 x 0.64	8	30.1	75

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS PB ARM

Armored PROFIBUS cable for use in harsh industrial environments

LAPP KABEL STUTTGART UNITRONIC® BUS PB ARM

Benefits

- EMC-optimised design

Application range

- For use for PROFIBUS-DP or FIP in harsh industrial environments
- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Flame-retardant according IEC 60332-1-2
- UV-resistant

Product Make-up

- Solid and bare copper conductor
- Core insulation: cellular PE, O2Y(S)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Overlapping plastic tape
- Copper tape, welded longitudinally
- Outer sheath: PVC, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 100 V
	Minimum bending radius Fixed installation: 7.5 x outer diameter Fixed installation: 3.5 x cable diameter once
	Test voltage 3600 V DC (3 sec.)
	Characteristic impedance 150 ± 15 Ω
	Temperature range -40°C to +70°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB ARM					
2170247	UNITRONIC® BUS PB ARM	1 x 2 x 0.65	11.1	86.9	131

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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UNITRONIC® BUS PB Yv

PROFIBUS cable with reinforced PVC outer sheath for outdoor/direct burial use



Benefits

- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Reinforced outer sheath made of PVC

Product Make-up

- Solid and bare copper conductor
- Foam Skin - core isolation (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: reinforced PVC, black

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Mutual capacitance

(800 Hz): max. 30 nF/km



Peak operating voltage

(not for power applications) 250 V



Minimum bending radius

Fixed installation: 75 mm once
Fixed installation: 150 mm



Test voltage

Core/core: 1500 V rms
Core/screen: 1500 V



Characteristic impedance

150 ± 15 Ω



Temperature range

Flexing: -5°C to +50°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Suitable for outdoor use and direct burial					
2170223	UNITRONIC® BUS PB Yv	1 x 2 x 0.64	9.4	30.1	106

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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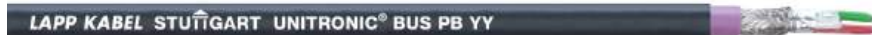
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UNITRONIC® BUS PB YY

PROFIBUS cable with double PVC outer sheath for outdoor/direct burial use - Fast Connect cable make up



Benefits

- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Double PVC outer sheath

Product Make-up

- Solid and bare copper conductor
- Core insulation: PE
- Overall screening with copper braid and plastic-laminated aluminium foil
- Inner sheath: PVC, violet RAL (4001), outer diameter: 7.4 mm
- Outer sheath, PVC, black RAL (9005), outer diameter: 9.5 mm

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 75 mm once Fixed installation: 10 x outer diameter
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -5°C to +50°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170236	UNITRONIC® BUS PB YY	1 x 2 x 0.64	9.5	30.1	87

Suitable for outdoor use and direct burial

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T 17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors
- Multipurpose shears A and B



UNITRONIC® BUS PB BURIAL FC

PROFIBUS cable with double outer sheath for outdoor/direct burial use

LAPP KABEL STUTTGART UNITRONIC® BUS PB BURIAL FC

Benefits

- Fast Connect (FC) cable design
- Rugged, UV-resistant and weatherproof
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- Second PE outer sheath

Product Make-up

- Solid and bare copper conductor
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Inner sheath: PVC, violet RAL (4001), outer diameter: 8.0 mm
- Outer sheath, PE, black RAL (9005), outer diameter: 10.8 mm

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 100 V
	Minimum bending radius Fixed installation: 3.5 x cable diameter once Fixed installation: 7.5 x outer diameter
	Test voltage 3600 V DC (3 sec.)
	Characteristic impedance 150 ± 15 Ω
	Temperature range -40 °C to +60 °C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Suitable for outdoor use and direct burial					
2170323	UNITRONIC® BUS PB BURIAL FC	1 x 2 x 0.64	10.8	26	115

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS PB Y 7-W FC BK

UV-resistant PROFIBUS cable for outdoor applications



Benefits

- Fast Connect (FC) cable design
- 7-W: 7-wire, e.g. for applications where vibrations occur
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- UV-resistant and weather-resistant
- Resistant to acids, alkalis and certain oils at room temperature

Product Make-up

- Stranded conductor, 7-wire, bare
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PVC, black RAL (9005)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 8 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V rms Core/screen: 1500 V
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -10°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB Y 7-W FC BK					
2170310	UNITRONIC® BUS PB Y 7-W FC BK	1 x 2 x 0.64	7.8	30.1	80

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS PB FD P

Halogenfree, highly flexible PROFIBUS cable

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD P

Benefits

- Due double screening it is suitable for installation in electromagnetically demanding areas
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free
- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Torsion movement in WTG (wind turbine generator) TW-0 & TW-2, refer to Appendix T0
	Minimum bending radius 65 mm
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
For highly flexible applications (e.g. power chains) - conventional cable assembly					
2170222	UNITRONIC® BUS PB FD P	1 x 2 x 0.64	8	30.1	64

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS PB FD P A

Halogenfree, highly flexible PROFIBUS cable - UL/CSA certified



Info

- A for Advanced here: UL and CSA certifications

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)
- Suitable for torsional applications which are typical for the loop in wind turbine generators (WTG)

Product features

- Halogen-free
- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Norm references / Approvals

- Certification: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Torsion movement in WTG (wind turbine generator) TW-0 & TW-2, refer to Appendix T0
	Minimum bending radius 65 mm
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170822	UNITRONIC® BUS PB FD P A	1 x 2 x 0.64	8	30.1	58

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS PB FD P FC

Halogenfree, highly flexible PROFIBUS cable - with fast connect cable make up, UL/CSA certified

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD P FC

Benefits

- Fast Connect (FC) cable design
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).
- For highly flexible applications (power chains, moving machine parts)

Product features

- Flame-retardant according IEC 60332-1-2
- Oil-resistant
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 93.75 kbit/s = 1200 m
 187.5 kbit/s = 1000 m
 500 kbit/s = 400 m
 1.5 Mbit/s = 200 m
 12.0 Mbit/s = 100 m

Norm references / Approvals

- Certification: UL/CSA type CMX in accordance with UL 444 and CSA C22.2 no. 214

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Fast connect inner sheath: PVC, nature
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Flexing: 15 x outer diameter
	Test voltage 3600 V DC (3 sec.)
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170322	UNITRONIC® BUS PB FD P FC	1 x 2 x 0.64	8	26	79

Highly flexible application

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS PB FD FRNC FC

Flame retardant, highly flexible PROFIBUS cable - with fast connect cable make up, UL/CSA certified

LAPP KABEL STUTTGART UNITRONIC® BUS PB FD FRNC FC

Benefits

- Fast Connect (FC) system
- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- For highly flexible use in energy supply chains or permanently moving machines and linear robots
- This cable provides special advantages for use in sensitive areas where fire propagation must be avoided and the presence of toxic fumes would cause personal injury and damage to equipment.

Product features

- Halogen-free
- Oil-resistant
- High flame retardancy in accordance with IEC 60332-3 and FT4
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply
(cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Norm references / Approvals

- The cable is UL/CSA-certified (CMG)

Product Make-up

- Stranded bare copper wire
- Core insulation: foam skin, (O2YS)
- Overall screening with copper braid and plastic-laminated aluminium foil
- Fast connect inner sheath: PVC, nature
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance nom. 28 nF/km
	Peak operating voltage (not for power applications) 250 V
	Minimum bending radius Fixed installation: 10 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance (3 - 20 MHz): 150 ± 15 Ω
	Temperature range Flexing: -30°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170854	UNITRONIC® BUS PB FD FRNC FC	1x2x0,64	8	26	75

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Accessories

- Sub-D Bus-Connectors
- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS PB FD P COMBI

Highly flexible, halogenfree PROFIBUS HYBRID cables



UNITRONIC® BUS PB FD P HYBRID



Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply
- Flame-retardant according IEC 60332-1-2

Product Make-up

UNITRONIC® BUS PB FD P COMBI

- Fine-wire, bare copper strand
- 1x2x0.64: red, green
- 3x1.0 (AWG18): green/yellow, black, blue
- Core insulation: PE
- Tin-plated copper wire braiding
- Outer sheath: PUR, violet (RAL 4001)

UNITRONIC® BUS PB FD P HYBRID

- Fine-wire, bare copper strand
- 1x2x0.64 : red, green
- 4 x 1.5 (AWG16): black with white numbers
- Core insulation: PE
- Tin-plated copper wire braiding
- Outer sheath: PUR, violet (RAL 4001)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable

Mutual capacitance
(800 Hz): max. 30 nF/km

Peak operating voltage
(not for power applications) 100 V

UNITRONIC® BUS PB FD P HYBRID
Flexing: 15 x outer diameter

Test voltage
UNITRONIC® BUS PB FD P COMBI
Core/core: 600 V
UNITRONIC® BUS PB FD P HYBRID
Core/core: 600 V
Core/screen: 600 V

Characteristic impedance
150 ± 15 Ω

Temperature range
UNITRONIC® BUS PB FD P COMBI
Flexing: -5°C to +50°C
Fixed installation: -40°C to +80°C
UNITRONIC® BUS PB FD P HYBRID
Flexing: -30°C to +60°C
Fixed installation: -40°C to +70°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS PB FD P COMBI					
2170227	UNITRONIC® BUS PB FD P COMBI	1 x 2 x 0.64 Ø + 3 x 1.0 mm ²	10.1	59	125
UNITRONIC® BUS PB FD P HYBRID					
2170495	UNITRONIC® BUS PB FD P HYBRID	1 x 2 x 0.64 Ø + 4 x 1.5 mm ²	11.3	89	148

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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UNITRONIC® BUS PB FD Y HYBRID

Highly flexible PROFIBUS HYBRID cable, UL-verified



Benefits

- For highly flexible applications (power chains, moving machine parts)
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- CL3 for installation on trays

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- HYBRID: cable for data transmission + power supply

Norm references / Approvals

- With UL/CSA certification (CMG, CL3, SUN RES, Oil Res I)
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Product Make-up

- Fine-wire, bare copper strand
- 1x2x0.64: red, green
Core insulation: Foam Skin PE
4x1.5: black with white numbers 1-4
Core insulation: PVC
- Tin-plated copper wire braiding
- Outer sheath: PVC, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage 600 V (not for power applications)
	Minimum bending radius Fixed installation: 5 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 2000 V Core/screen: 2000 V
	Characteristic impedance 150 ± 15 Ω
	Temperature range -5°C to +80°C

Article number	Article designation	Number of pairs and conductor diameter (mm)	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
2170875	UNITRONIC® BUS PB FD Y HYBRID	1 x 2 x 0.64 Ø + 4 x 1.5 mm ²	11.3	89	155

Highly flexible application

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS PB TORSION

Flame retardant, highly flexible PROFIBUS cable for torsion load

LAPP KABEL STUTTGART UNITRONIC® BUS PB TORSION

Benefits

- For use where the combination of a halogen-free outer sheath with properties similar to PUR and enhanced flame-retardance is required
- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- TORSION: for torsional stress, e.g. robot application; $\pm 180^\circ$ per 1 m
- Halogen-free
- Flame-retardant according IEC 60332-1-2
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
 $93.75 \text{ kbit/s} = 1200 \text{ m}$
 $187.5 \text{ kbit/s} = 1000 \text{ m}$
 $500 \text{ kbit/s} = 400 \text{ m}$
 $1.5 \text{ Mbit/s} = 200 \text{ m}$
 $12.0 \text{ Mbit/s} = 100 \text{ m}$

Norm references / Approvals

- Certification: UL type CMX in accordance with UL 444

Product Make-up

- Stranded bare copper wire
- Core insulation: PE
- Overall screening with copper braid and plastic-laminated aluminium foil
- Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage (not for power applications) 300 V
	Torsion movement in WTG (wind turbine generator) Max. torsion load $\pm 180^\circ/\text{m}$
	Minimum bending radius Fixed installation: 4 x outer diameter Flexing: 7.5 x outer diameter
	Test voltage 3600 V DC (3 sec.)
	Characteristic impedance $150 \pm 15 \Omega$
	Temperature range Operating temperature: -25°C to 75°C Storage temp.: -40°C to 80°C

Article number	Article designation	Number of cores and mm ² per conductor	Dimension and cross section in mm ²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
2170332	UNITRONIC® BUS PB TORSION	1 x 2 x 0.38	1 x 2 x 0.38	8	31	66

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

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

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

Packaging size: coil $\leq 30 \text{ kg}$ or $\leq 250 \text{ m}$, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS PB FESTOON

PROFIBUS cable for cable trolley applications

LAPP KABEL STUTTGART UNITRONIC® BUS PB FESTOON

Benefits

- Cables can be used for PROFIBUS-DP as well as PROFIBUS-FMS and FIP
- CL3 for installation on trays

Application range

- PROFIBUS DP (in accordance with DIN 19245 and EN 50170, e.g. for SIEMENS SIMATIC® NET, also suitable for FIP - Factory Instrumentation Protocol).

Product features

- FESTOON: for cable trolley (festoon)
- Based on the bit rates listed, in accordance with PNO specifications the following maximum cable lengths for a bus segment apply (cable type A, PROFIBUS-DP):
93.75 kbit/s = 1200 m
187.5 kbit/s = 1000 m
500 kbit/s = 400 m
1.5 Mbit/s = 200 m
12.0 Mbit/s = 100 m

Norm references / Approvals

- With UL/CSA certification (CMG, CL3, SUN RES, Oil Res I)
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- Oil-resistant according to UL OIL RES I

Product Make-up

- Outer sheath: special PVC compound

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 30 nF/km
	Peak operating voltage 600 V (not for power applications)
	Minimum bending radius Flexing: 70 mm Fixed installation: 30 mm once
	Test voltage Core/core: 2000 V
	Characteristic impedance 150 ± 15 Ω
	Temperature range Flexing: -5°C to +70°C Fixed installation: -40°C to +80°C

Article number	Article designation	Number of cores and mm² per conductor	Dimension and cross section in mm²	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
2170331	UNITRONIC® BUS PB Festoon	1 x 2 x 0.64	1 x 2 x 0.64	8	26	64

Highly flexible application

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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Accessories

- Sub-D Bus-Connectors



EPIC® DATA PB Sub-D

PROFIBUS connectors with screw terminals | REPEATER function | ATEX



Info

- Optional with LED diagnostic
- M12, REPEATER and ATEX version
- Versions with 2nd Sub-D interface

Benefits

- Easy connection with tried-and-tested M12 / screw terminal technology
- Sensor/ ac
- Terminating resistor (integrated) can be switched
- REPEATER version: Regeneration of data signal (slope, power and mark-to-space ratio)
- ATEX version: For use within intrinsically-safe circuits in zone 2 areas with an explosion hazard (explosive gas atmosphere occurs only rarely and briefly)

Product features

- Max. transmission rate 12 Mbit/s possible
- Current consumption max. 12,5 mA (with LED 35 mA / REPEATER 100 mA)
- Supply voltage 4.75 - 5.25 V DC (supplied from the terminal)
- Terminating resistor "ON" - the outbound bus cable is disconnected
- REPEATER version: Easy extension of the PROFIBUS network:
 - up to 3 repeaters
 - 1 additional PROFIBUS segment
 - galvanic isolation

Norm references / Approvals

- IEC 61158, IEC 61784
- UL File No. E331560
- ATEX version: DIN EN 60079-0:2006, DIN 60079-15:2005 (category 3G zone 2)

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Improved electromagnetic compatibility (EMC) by metallized housing
- Versions with additional Sub-D interface for programming/diagnostic ("PG")
- For cable outer diameter: 5 8 mm / M12 B-coded cordsets
- LED Version indicate:
 - bus operation - (green)
 - station transmission - (blue)
 - terminating resistor "on" - (orange)

Suitable cables

- UNITRONIC® BUS PB Page 332
- UNITRONIC® BUS PB M12 Page 355
- UNITRONIC® BUS PB M12-M12 Page 356

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1060

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001132
ETIM 5.0/6.0 Class-Description:
D-Sub connector

Dimensions
54 mm x 40 mm x 17 mm - 35°
64 mm x 40 mm x 17 mm - 90°
68 mm x 40 mm x 17 mm - 180°
70 mm x 40 mm x 17 mm - M12 (LxWxH)

Connection type
Screwing
M12

Protection rating
IP 20

Terminating resistor
150 Ω

Interfaces
Sub-D socket, 9-pin
Terminal blocks up to 1.0 mm² / M12 B-coded

Permissible ambient conditions
Operating temperature: -25°C to +85°C

*The max. temperature for UL is 60 °C.

Article number	Article designation	Version	PG-Interface	Diagnostic LEDs	PU
35° cable outlet					
21700507	ED-PB-35		no	no	1
21700506	ED-PB-35-PG		yes	no	1
90° cable outlet					
21700504	ED-PB-90		no	no	1
21700503	ED-PB-90-PG		yes	no	1
21700530	ED-PB-90-LED		no	yes	1
21700529	ED-PB-90-PG-LED		yes	yes	1
21700520	ED-PB-PG-90-M12	M12	yes	no	1
21700541	ED-PB-90-RP-PG	REPEATER	yes	yes	1
21700543	ED-PB-90-ATEX	ATEX	no	no	1
21700542	ED-PB-90-PG-ATEX	ATEX	yes	no	1
180° (AX) cable outlet					
21700505	ED-PB-AX		no	no	1

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EPIC® DATA PB Sub-D FC

PROFIBUS Connectors Fast Connect

Info

- New innovative insulation displacement terminals suitable for solid and flexible conductors (90° and 180° versions)
- Versions with 2nd Sub-D interface
- Optional with LED diagnostic



Benefits

- Quick installation with Fast Connect (‘FC’) technology
- Sensor/ ac
- No loose parts
- Visual bus connection control
- Terminating resistor (integrated) can be switched

Product features

- Fully compatible with market standard
- Max. transmission rate 12 Mbit/s possible
- Current consumption max. 12,5 mA (with LED 35 mA)
- Supply voltage 4.75 - 5.25 V DC (supplied from the terminal)
- Terminating resistor “ON” - the outbound bus cable is disconnected

Norm references / Approvals

- IEC 61158, IEC 61784
- UL File No. E331560

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Improved electromagnetic compatibility (EMC) by metallized housing
- Max. cable outer diameter: 8 mm
- Versions with additional Sub-D interface for programming/diagnostic (‘PG’)
- LED Version indicate:
bus operation - (green)
station transmission - (blue)
terminating resistor “on” - (orange)

Suitable cables

- Bus system PROFIBUS-DP/FMS/FIP

Suitable tools

- FC STRIP stripping tool refer to page 986
- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1060

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001132 ETIM 5.0/6.0 Class-Description: D-Sub connector
	Dimensions 95 mm x 70 mm x 17 mm - 35° 72 mm x 40 mm x 17 mm - 90° 70 mm x 35 mm x 17 mm - 180° (LxWxH)
	Connection type Fast Connect
	Protection rating IP 20
	Terminating resistor 150 Ω
	Interfaces Sub-D socket, 9-pin PROFIBUS FC standard cable, Ø 0.64 mm
	Permissible ambient conditions Operating temperature: -25°C to +85°C *The max. temperature for UL is 60 °C.

Article number	Article designation	PG-Interface	Diagnostic LEDs	PU
35° cable outlet for solid conductor				
21700511	ED-PB-35-FC	no	no	1
21700513	ED-PB-35-PG-FC	yes	no	1
35° cable outlet for 7-/ 19-wire stranded conductor				
21700514	ED-PB-35-FC-FLEX	no	no	1
21700515	ED-PB-35-PG-FC-FLEX	yes	no	1
90° cable outlet for solid/ 7-/ 19-wire stranded conductor				
21700502	ED-PB-90-FC	no	no	1
21700501	ED-PB-90-PG-FC	yes	no	1
21700547	ED-PB-90-LED-FC	no	yes	1
21700546	ED-PB-90-PG-LED-FC	yes	yes	1
180° (AX) cable outlet for solid/ 7-/ 19-wire stranded conductor				
21700544	ED-PB-AX-FC	no	no	1

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



EPIC® DATA PB Sub-D M12

PROFIBUS Connectors M12



Info

- Plug & Play together with ready-to-use PROFIBUS M12 cordsets

Benefits

- Cost-efficient due to quick installation (Plug & Play)
- Sensor/ ac
- No loose parts
- Terminating resistor (integrated) can be switched
- Suitable for assembled M12 PB cables

Product features

- Max. transmission rate 12 Mbit/s possible
- Current consumption max. 12,5 mA
- Supply voltage 4.75 - 5.25 V DC (supplied from the terminal)
- Switch can also be operated when the connector is plugged and setting is clearly visible
- Terminating resistor "ON" - the outbound bus cable is disconnected

Norm references / Approvals

- IEC 61158, IEC 61784
- UL File No. E331560

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Connector M12, B-coded
- Improved electromagnetic compatibility (EMC) by metallized housing
- Version with additional Sub-D port for programming/diagnostic ('PG')

Suitable cables

- UNITRONIC® BUS PB M12 Page 355
- UNITRONIC® BUS PB M12-M12 Page 356

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001132
ETIM 5.0/6.0 Class-Description:
D-Sub connector



Dimensions

70 mm x 40 mm x 17 mm (L x W x H)

Connection type

M12



Protection rating

IP 20

Terminating resistor

150 Ω

Interfaces

PROFIBUS station:
D-Sub socket, 9-pin
PROFIBUS cable:
M12 PB system cabling



Permissible ambient conditions

Operating temperature: -25 °C to +85 °C

*The max. temperature for UL is 60 °C.

Article number	Article designation	Version	PG-Interface	Diagnostic LEDs	PU
EPIC® DATA PB Sub-D M12					
21700520	ED-PB-PG-90-M12	M12	yes	no	1

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



EPIC® DATA PB Sub-D PRO

PROFIBUS Connectors full-metall M12 connection /spring type connection



Info

- For high mechanical stress
- High EMC protection



Benefits

- Optimum EMC protection
- Robust housing material for harsh environments
- No loose parts
- Cost-efficient due to quick installation (Plug & Play)
- Terminating resistor (integrated) can be switched

Product features

- Extended temperature range
- High mechanical strength (200 contact durability)
- Less transmission loss
- Max. transmission rate 12 Mbit/s possible
- Supply voltage 4.75 - 5.25 V DC (supplied from the terminal)

Norm references / Approvals

- IEC 61158, IEC 61784

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- 360° shielding due full-metall housing (ZnAl)
- With additional Sub-D port for programming/diagnostic 'PG' (35° and 90° version)
- With EMC connector protection (PG port)
- M12 version: 5-pin connector, M12 B-coded

Suitable cables

- UNITRONIC® BUS PB M12 Page 355
- UNITRONIC® BUS PB M12-M12 Page 356

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1060

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001132 ETIM 5.0/6.0 Class-Description: D-Sub connector
	Dimensions see technical data sheet
	Connection type M12 or Internal spring type terminal
	Protection rating IP 30
	Terminating resistor 150 Ω
	Interfaces Sub-D socket, 9-pin Spring terminal for solid conductors / M12 B-coded 0,08 - 0,5 mm² (AWG28 - AWG14) Cable diameter: 8 - 9 mm
	Permissible ambient conditions Operating temperature: -20°C to +70°C

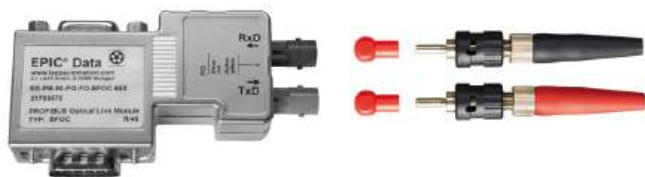
Article number	Article designation	Connection type	PG-Interface	PU
EPIC® DATA PB Sub-D PRO				
21700563	ED-PB-AX-M12-PRO	M12	no	1
21700561	ED-PB-35-PG-M12-PRO	M12	yes	1
21700562	ED-PB-90-PG-M12-PRO	M12	yes	1
180° (AX) cable outlet				
21700566	ED-PB-AX-M12-PRO	Internal spring type	no	1
35° cable outlet				
21700564	ED-PB-35-PG-ST-PRO	Internal spring type	yes	1
90° cable outlet				
21700565	ED-PB-90-PG-ST-PRO	Internal spring type	yes	1

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



EPIC® DATA PB Sub-D FO

PROFIBUS Connectors Optical Link Modul



Info

- PROFIBUS repeater with integrated optical interface

Benefits

- Easy covering of large distances (PCF 250 m / POF 65 m)
- Cost-efficient due to quick installation (Plug & Play)
- Galvanic isolation in case of potential differences within PROFIBUS network
- For EMC critical environments
- Integrated repeater functionality: Regeneration of data signal (slope, power and mark-to-space ratio)

Product features

- Max. distance:
POF fiber: 65 m
PCF fiber: 250 m
- Diagnostic LEDs (blue, green, red, yellow)
- Bus termination is integrated
- Current consumption typ. 100 mA
- Supply voltage 5.0 V DC (supplied from the terminal)

Norm references / Approvals

- IEC 61158, IEC 61784

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Improved electromagnetic compatibility (EMC) by metallized housing
- Versions with additional Sub-D interface for programming/diagnostic ('PG')
- An external 24 V supply is not necessary
- Connection for optical cable (POF or PCF)

Suitable cables

- HITRONIC® POF DUPLEX BUFFERED FIBRES Page 482
- HITRONIC® POF DUPLEX CABLE Page 483
- HITRONIC® POF cables for PROFINET Applications Page 484

Suitable connectors

- HBFR, SMA and BFOC(ST)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001132 ETIM 5.0/6.0 Class-Description: D-Sub connector
	Dimensions 64 mm x 40 mm x 17 mm (LxWxH)
	Protection rating IP 20
	Interfaces Sub-D socket, 9-pin Fibre optic cable: POF / PCF, 650 nm
	Permissible ambient conditions Operating temperature: 0°C to +60°C

Article number	Article designation	PG-Interface	Diagnostic LEDs	PU
90° cable outlet				
For HFBR connector				
21700568	ED-PB-90-PG-FO-HFBR-650	yes	yes	1
For SMA connector				
21700569	ED-PB-90-PG-FO-SMA-650	yes	yes	1
For BFOC(ST) connector				
21700570	ED-PB-90-PG-FO-BFOC-650	yes	yes	1

Applicable optical connectors (POF) included

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

Note: For one optical link 2 modules are required

Accessories

- PCF Assembly Sets refer to page 496
- PCF Connector HFBR refer to page 495
- PCF Connector F-SMA and ST(BFOC) refer to page 495
- POF Assembly Sets refer to page 488
- POF Connector F-SMA and ST(BFOC) refer to page 486
- POF Connector SC-RJ refer to page 487



UNITRONIC® BUS PB M12

PROFIBUS cable: M12 plug/socket on free conductor end



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request



Benefits

- Cost efficient and rational wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Fast and easy error tracking

Application range

- Mechanical and plant engineering

Product features

- 2-core PROFIBUS cable, shielded
- Connector M12, B-coded with quick locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Core cross section: 0.25 mm²
- Core colours: red, green
- Outer sheath: PUR halogen-free, violett
- Outer diameter: 7.8 mm
- Shielded version
- Shielding is conducted over the knurl

Suitable connectors

- Sub-D Bus-Connectors
- EPIC® DATA PB M12 357
- EPIC® DATA PB M12/M12 358
- EPIC® DATA PB M12T 359

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -30°C to +80°C
Drag chain application ≤ 70 °C

Coding

B - inverse

Rated current (A)

4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug						
22260767	AB-PB-M12MS-2,0PUR	2	2	straight	250	1
22260768	AB-PB-M12MS-5,0PUR	5	2	straight	250	1
22260769	AB-PB-M12MS-10,0PUR	10	2	straight	250	1
22260956	AB-PB-M12MA-2,0PUR	2	2	angled	250	1
Socket						
22260770	AB-PB-2,0PUR-M12FS	2	2	straight	250	1
22260771	AB-PB-5,0PUR-M12FS	5	2	straight	250	1
22260772	AB-PB-10,0PUR-M12FS	10	2	straight	250	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- FLEXIMARK® Label LMB refer to page 942



UNITRONIC® BUS PB M12-M12

PROFIBUS Cable: M12 connector on M12 socket



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost efficient and rational wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Fast and easy error tracking

Application range

- Mechanical and plant engineering

Product features

- 2-core PROFIBUS cable, shielded
- Connector M12, B-coded with quick locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Core cross section: 0.25 mm²
- Core colours: red, green
- Outer sheath: PUR halogen-free, violet
- Outer diameter: 7.8 mm
- Shielded version
- Shielding is conducted over the knurl

Suitable connectors

- EPIC® DATA PB M12 357
- EPIC® DATA PB M12/M12 358
- EPIC® DATA PB M12T 359
- EPIC® DATA PB Sub-D M12 352

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25 °C to +90 °C
Fixed installation -40 °C to +80 °C
Flexing -30 °C to +80 °C
Drag chain application ≤ 70 °C

Coding

B - inverse

Rated current (A)

4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug on socket						
22260955	AB-PB-M12MS-0,2PUR-M12FS	0.2	2	straight-straight	250	1
22260773	AB-PB-M12MS-0,3PUR-M12FS	0.3	2	straight-straight	250	1
22260774	AB-PB-M12MS-1,0PUR-M12FS	1	2	straight-straight	250	1
22260775	AB-PB-M12MS-2,0PUR-M12FS	2	2	straight-straight	250	1
22260869	AB-PB-M12MS-3,0PUR-M12FS	3	2	straight-straight	250	1
22260776	AB-PB-M12MS-5,0PUR-M12FS	5	2	straight-straight	250	1
22260777	AB-PB-M12MS-10,0PUR-M12FS	10	2	straight-straight	250	1
22260907	AB-PB-M12MS-15,0PUR-M12FS	15	2	straight-straight	250	1
22260908	AB-PB-M12MS-20,0PUR-M12FS	20	2	straight-straight	250	1
22260079	AB-PB-M12MA-5,0PUR-M12FA	5	2	angled-angled	250	1
22260904	AB-PB-M12MA-10,0PUR-M12FA	10	2	angled-angled	250	1
22260905	AB-PB-M12MA-15,0PUR-M12FA	15	2	angled-angled	250	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

Accessories

- FLEXIMARK® Label LMB refer to page 942



EPIC® DATA PB M12

Field mountable M12 BUS-connectors, shielded for PROFIBUS



Benefits

- Quick and easy on-site assembly
- For creating of individual cable lengths
- Cost efficient and rational wiring for BUS installations
- Space-saving due to compact dimensions

Product features

- Screened version
- Connector M12, B-coded
- PG9- / PG11-thread
- Screw connection

Suitable cables

- Bus system PROFIBUS-DP/FMS/FIP
- UNITRONIC® BUS PB M12 Page 355

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector

Material
Contact: CuSn
Contact surface: Au
Contact carrier: PA66
Sealing: NBR
Knurl: Nickel-plated brass
Gripping body: Zinc die-cast, nickel-plated

Protection rating
IP 67

Ambient temperature (operation)
Plug/socket -40°C to +85°C

Coding
B - inverse (PROFIBUS)

Rated current (A)
4 A

Article number	Article designation	Number of pins	Conductor cross-section (mm²)	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight						
22260653	AB-C5-M12MSB-PG9-SH-AU	5	0.25 - 0.75	6.0 - 8.5	60	1
22262078	AB-C5-M12MSB-PG11-SH-AU	5	0.25 - 0.75	8.0 - 10.0	60	1
Socket, straight						
22260646	AB-C5-M12FSB-PG9-SH-AU	5	0.25 - 0.75	6.0 - 8.5	60	1
22260889	AB-C5-M12FSB-PG11-SH-AU	5	0.25 - 0.75	8.0 - 10.0	60	1

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



EPIC® DATA PB M12/M12

PROFIBUS M12 control cabinet feed-through, shielded



Benefits

- M12 connector on both sides
- Plug & Play for flexible connection solutions

Application range

- Mechanical and plant engineering

Product features

- For PROFIBUS applications
- Bipolar/screw mounting

Product Make-up

- 5-pin control cabinet feed-through, M12 B-coded
- M12 plug on M12 socket
- Screened version

Suitable cables

- UNITRONIC® BUS PB M12 Page 355
- UNITRONIC® BUS PB M12-M12 Page 356

Suitable connectors

- EPIC® DATA PB M12 357

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002061
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector chassis



Material

Contact: CuZn
Contact surface: Au (gold)
Contact carrier: PA 66
Knurl: Nickel-plated brass
Sealing: FKM



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket
-25°C to +85°C

Coding

B - inverse (PROFIBUS)

Rated current (A)

4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Control cabinet feed through				
22262021	AB-C5-DSI-M12MSB-M12FSB-M16-SH	5	60	1

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



EPIC® DATA PB TR M12

M12 Terminating resistor for PROFIBUS



Benefits

- Cost efficient termination of a bus systems
- Space-saving due to compact dimensions
- Robust design

Application range

- Mechanical and plant engineering

Product features

- 150 Ω terminating resistor for PROFIBUS

Product Make-up

- Straight connector M12 with integrated termination resistor
- Straight connector M12, with integrated termination resistor, shielded



Info

- Fully suitable for industrial use

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000448
ETIM 5.0/6.0 Class-Description:
Terminal resistor



Protection rating

IP65/IP67 (plug)
IP 67 (socket)



Ambient temperature (operation)

-25°C to +90°C (plug)
-40°C to +85°C (socket)

Contact material

CuSn

Coding

B - inverse (PROFIBUS)

Rated current (A)

4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Plug, unshielded (terminating resistor)				
22260722	AB-C4-M12MS-PB-TR	4	60	5
Socket, shielded (terminating resistor)				
22261001	AB-C5-M12FS-PB-TR-SH	4	32	1

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

Accessories

- EPIC® DATA PB M12T refer to page 359



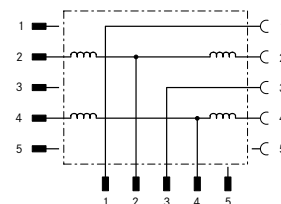
EPIC® DATA PB M12T

M12 T distributor, shielded for PROFIBUS



Info

- Fully suitable for industrial use



Benefits

- Cost efficient and rational wiring for PROFIBUS installations
- Space-saving due to compact dimensions
- Robust design

Application range

- Mechanical and plant engineering

Product features

- For PROFIBUS stubs
- Screened version

Product Make-up

- 4-pin PROFIBUS T-connector
- M12 plug to M12 plug and M12 socket

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002585
ETIM 5.0/6.0 Class-Description:
Passive sensor-actuator interface



Material

Contact: CuSn
Contact surface: Ni/Au
Contact carrier: PUR
Knurl: Nickel-plated brass
Gripping body: PUR
Sealing: FKM



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket
-25°C to +80°C

Coding

B - inverse

Rated current (A)

4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
T distributor				
22260761	AB-C2-M12T-2XM12FS PB	4	60	1

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

Accessories

- EPIC® DATA PB TR M12 refer to page 358



UNITRONIC® BUS PA

PROFIBUS cables for applications in manufacturing and process automation



Info

- PA = Process Automation
- Variant with UL/CSA CMG

Benefits

- FC (Fast Connect) version is oil and UV-resistant

Application range

- Process-automation application for connecting sensors and actuators - including areas with risks of explosion.
- Fixed Installation

Product features

- Bit rate = 31.25 kbit/s. Transmission technology RS485 also possible but bit rate is limited to 1.5 Mbit/s
- Maximum cable length is dependent on several factors (e.g. supply voltage, current demand).
- Technical Data: refer to the overview on "UNITRONIC® Bus Cables"
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- PROFIBUS® PA is standardised in EN 50170 as PROFIBUS® DP and PROFIBUS® FMS
- Transmission technology for PROFIBUS-PA in accordance with international standard IEC 61158-2
- FC variant with UL/CSA certification (CMG / PLTC)

Product Make-up

- UNITRONIC® BUS PA
Stranded conductor
Copper braiding
Outer sheath: PVC, blue, (RAL 5015)
intrinsically safe area, black (RAL 9005)
- UNITRONIC® BUS PA FC
Bare copper wire
Fast Connect inner sheath
Cu-Geflecht
Outer sheath: PVC, blue (RAL 5015), black (RAL 9005)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 44 Ω/km
	Minimum bending radius Fixed installation: 10 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 ± 20 Ω
	Temperature range Fixed installation: -30°C to +80°C During installation: -5°C to +50°C

Article number	Article designation	Number of pairs and cable diameter per conductor in mm	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Conventional cable makeup					
2170234	UNITRONIC® BUS PA (BU)	1 x 2 x 1,3	8	45	84
2170235	UNITRONIC® BUS PA (BK)	1 x 2 x 1,3	8	45	84
Fast Connect cable makeup - UL/CSA CMG certification					
2170334	UNITRONIC® BUS PA FC (BU)	1 x 2 x 1.00	8	45.5	103
2170335	UNITRONIC® BUS PA FC (BK)	1 x 2 x 1.00	8	45.5	103

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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Armoured

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

Accessories

- Multipurpose shears A and B
- STAR STRIP stripping tool refer to page 985
- FC STRIP stripping tool refer to page 986



UNITRONIC® DeviceNet THICK + THIN

DeviceNet Buscable based on the CAN technology



Application range

- Fixed Installation
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

Product features

- Resistant to oils
- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- FRNC Version: Halogene free and flame retardant
- Refer to data sheet for more details

Norm references / Approvals

- CMG UL/CSA certification 75°C or PLTC, Sun Res
- FRNC variant additionally with Germanischer Lloyd certification

Product Make-up

- Tinned copper wire
- Core insulation: foam skin
- Tinned-copper braiding with drain wire
- Outer sheath: FRNC or PVC

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code Data pair: light blue + white Power supply: red + black
	Mutual capacitance (800 Hz): max. 39.8 nF/km
	Peak operating voltage 300 V (not for power applications)
	Conductor resistance Thick (loop): max. 45 Ω/km Thin (loop): max. 180 Ω/km
	Minimum bending radius Fixed installation: 15 x outer diameter
	Test voltage Core/core: 2000 V
	Characteristic impedance 120 Ω
	Temperature range Fixed installation: -25°C to +80°C

Article number	Article designation	Number of pairs and AWG size	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
Halogen-free					
2170340	UNITRONIC® BUS DN THICK FRNC	1x2xAWG18 + 1x2xAWG15	12.2	82.8	195
2170341	UNITRONIC® BUS DN THIN FRNC	1x2xAWG24 + 1x2xAWG22	6.9	33.4	69.5
PVC					
2170342	UNITRONIC® BUS DN THICK Y	1x2xAWG18 + 1x2xAWG15	12.2	88.4	192
2170343	UNITRONIC® BUS DN THIN Y	1x2xAWG24 + 1x2xAWG22	6.9	33.4	66.9

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

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

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

FRNC means Flame-Retardant, Non-Corrosive; and DeviceNet is a registered trademark of ODVA.

Lapp Kabel is a member of the PROFIBUS user organisation (PNO)

ECO is the cost-efficient version of article no. 2170342 and 2170343, with a slight modification to the outer sheath and UL/CSA-approved (CMG).

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



UNITRONIC® DeviceNet FD THICK+THIN

High flexible DeviceNet Buscable based on the CAN technology

LAPP KABEL STUTTGART UNITRONIC® BUS DN THICK FD P

LAPP KABEL STUTTGART UNITRONIC® BUS DN THIN FD P

Application range

- For highly flexible applications
- DeviceNet™ connects industrial devices e.g. limit switches, photoelectric switches, valve islands, motor starters, drives, PLCs, etc.

Product features

- Based on proven CAN (Controller Area Network) technology.
- Permissible cable lengths vary with the data rate and the cable thickness
- Refer to data sheet for more details
- PUR (P) Version: Halogene free
- PVC (Y) Version: Flame retardant (UL FT4)
- UV-resistant (but colour may change after some time)

Norm references / Approvals

- PUR: UL/CSA-certified (CMX)
- PVC: UL/CSA CMG 75°C FT4 Sun Res Oil Res, at 2170346 also PLTC

Product Make-up

- Core insulation: PE
- Outer sheath of Polyurethan (PUR) or Polyvinylchlorid (PVC)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Core identification code Data pair: light blue + white Power supply: red + black
	Mutual capacitance (800 Hz): max. 39.8 nF/km
	Peak operating voltage 300 V (not for power applications)
	Conductor resistance Thick (loop): max. 45 Ω/km Thin (loop): max. 180 Ω/km
	Minimum bending radius Fixed installation: 7.5 x outer diameter Flexing: 15 x outer diameter
	Test voltage Core/core: 2000 V
	Characteristic impedance 120 Ω
	Temperature range PUR: -40°C to +80°C PVC: -10°C to +80°C

Article number	Article designation	Number of pairs and AWG size	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
PUR					
2170344	UNITRONIC® BUS DN THICK FD P	1x2xAWG18 + 1x2xAWG15	12.2	94	184
2170345	UNITRONIC® BUS DN THIN FD P	1x2xAWG24 + 1x2xAWG22	6.9	33.4	67.7
PVC					
2170346	UNITRONIC® BUS DN THICK FD Y	1x2xAWG18 + 1x2xAWG15	12.2	94	195
2170347	UNITRONIC® BUS DN THIN FD Y	1x2xAWG24 + 1x2xAWG22	6.9	33.4	69.8

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

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

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

DeviceNet is a registered trademark of ODVA

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

Accessories

- SMART STRIP stripping tool

UNITRONIC® BUS CAN

CAN Buscables for fixed installation - UL/SCA certified

Info

- CAN = Controller Area Network

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance UNITRONIC® BUS CAN (800 Hz) max. 40 nF/km UNITRONIC® BUS CAN FD P Flexible use: 10 x outer diameter
	Peak operating voltage UNITRONIC® BUS CAN (not for power applications) 250 V UNITRONIC® BUS CAN FD P 250 V (not for power transmission)
	Conductor resistance UNITRONIC® BUS CAN (loop): max. 186 Ω/km UNITRONIC® BUS CAN FD P (loop): max. 159.8 Ω/km
	Minimum bending radius UNITRONIC® BUS CAN Fixed installation: 8 x outer diameter UNITRONIC® BUS CAN FD P Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 120 Ω
	Temperature range UNITRONIC® BUS CAN Fixed installation: -30°C to +80°C Flexing: -5°C to +70°C UNITRONIC® BUS CAN FD P Fixed installation: -40°C to +80°C Flexing: -30°C to +70°C

LAPP KABEL STUTTGART UNITRONIC® BUS CAN



UNITRONIC® BUS CAN FD P

CAN Buscables for highly flexible application - UL/SCA certified

LAPP KABEL STUTTGART UNITRONIC® BUS CAN FD P



Application range

- UNITRONIC® BUS CAN**
 - Fixed Installation
- UNITRONIC® BUS CAN FD P**
 - For highly flexible applications

Product features

- UNITRONIC® BUS CAN**
 - Maximum bit rate: 1 Mbit/s for 40 m segment length
 - Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
 - ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
 - Flame-retardant according IEC 60332-1-2
- UNITRONIC® BUS CAN FD P**
 - Halogen-free
 - Maximum bit rate: 1 Mbit/s for 40 m segment length
 - Larger conductor cross-section is necessary with increasing length. Refer to the table below (reference values from ISO 11898).
 - ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
 - Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Standardised internationally in ISO 11898
- UL/CSA type CMX (UL 444)

Product Make-up

- UNITRONIC® BUS CAN**
 - 0.22 + 0.34 + 0.5: bare stranded conductor, 7-wire
 - 0.75: bare stranded conductor, fine-wire
 - Core insulation: foam skin
 - Colour-coded in accordance with DIN 47100
 - Copper braid
 - Outer sheath: PVC, violet (RAL 4001)
- UNITRONIC® BUS CAN FD P**
 - Stranded bare conductor
 - Core insulation: foam skin
 - Screening: wrapped with braided copper wires
 - Outer sheath: PUR, violet (RAL 4001)
 - UV-resistant (but colour may change after some time)

Article number	Article designation	Number of pairs/ conductor cross section (mm ²)	Outer diameter [mm]	Conductor resistance	Copper index (kg/km)	Weight (kg/km)
for fixed installation						
2170260	UNITRONIC® BUS CAN	1 x 2 x 0,22	5.7	186	16.7	42
2170261	UNITRONIC® BUS CAN	2 x 2 x 0,22	7.6	186	34.8	68
2170263	UNITRONIC® BUS CAN	1 x 2 x 0,34	6.8	115	25	55
2170264	UNITRONIC® BUS CAN	2 x 2 x 0,34	8.5	115	46.4	88
2170266	UNITRONIC® BUS CAN	1 x 2 x 0,5	7.5	78	41.6	90
2170267	UNITRONIC® BUS CAN	2 x 2 x 0,5	9.6	78	59.4	106
2170269	UNITRONIC® BUS CAN	1 x 2 x 0,75	8.7	52	52.7	108
2170270	UNITRONIC® BUS CAN	2 x 2 x 0,75	11.5	52	80.6	142
For highly flexible applications (power chains, moving machine parts)						
2170272	UNITRONIC® BUS CAN FD P	1 x 2 x 0,25	6.4	159.8	24	40
2170273	UNITRONIC® BUS CAN FD P	2 x 2 x 0,25	8.4	159.8	33	65
2170275	UNITRONIC® BUS CAN FD P	1 x 2 x 0,34	6.8	122	32.8	60
2170276	UNITRONIC® BUS CAN FD P	2 x 2 x 0,34	9.6	122	52.4	88
2170278	UNITRONIC® BUS CAN FD P	1 x 2 x 0,5	8	72.8	41.9	74
2170279	UNITRONIC® BUS CAN FD P	2 x 2 x 0,5	10.8	72.8	59.4	100

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- Multipurpose shears A and B
- SMART STRIP stripping tool
- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® BUS CAN TRAY

CAN Bus cable with PLTC-ER approval - for open wiring between cable trays and industrial machines

LAPP KABEL STUTTGART UNITRONIC® BUS CAN TRAY



Info

- CAN = Controller Area Network

Benefits

- PLTC-ER approval for open wiring between cable tray and industrial machines/plants acc. to NEC 725.154 (D)
- No additional protection of the cable needed

Application range

- Fixed Installation

Product features

- Maximum bit rate: 1 Mbit/s for 40 m segment length
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- UV-resistant UL SUN RES
- Oil-resistant according to UL OIL RES I
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test

Norm references / Approvals

- Standardised internationally in ISO 11898
- c(UL)us Typ CMG (75°C) acc.to UL 444 / CSA 22.2
- UL Type PLTC-ER acc. to UL 13

Product Make-up

- 7-wire bare stranded copper conductor
- Core insulation: foam skin
- Inner sheath: PVC
- Copper braid
- Outer sheath: PVC, violet (RAL 4001)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Mutual capacitance

(800 Hz) max. 40 nF/km



Peak operating voltage

(not for power applications) 250 V
Rated voltage: 600 V (UL)



Conductor resistance

(loop): max. 110,8 Ω/km



Minimum bending radius

Fixed installation: 8 x outer diameter
Flexing: 15 x outer diameter



Test voltage

Core/core: 2000 V



Characteristic impedance

120 Ω



Temperature range

Fixed installation: -40°C to +80°C
Flexing: -10°C to +70°C

Article number	Article designation	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
2170857	UNITRONIC® BUS CAN TRAY	2 x 2 x 0,34	7.5	35	81

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- Multipurpose shears A and B
- SMART STRIP stripping tool



UNITRONIC® BUS CAN BURIAL

CAN bus cable with double outer sheath for outdoor/direct burial use

Info

- Suitable for direct burial



Benefits

- Suitable for CAN communication according to ISO 11898
- Double-sheathed version, extremely tough, for installation without corrugated tubing
- Rugged, UV-resistant and weatherproof
- Diameter of inner sheath suitable for common connectors

Application range

- Useable for CAN based communication systems like CANopen
- Suitable for direct burial
- For outdoor applications
- For fixed installation or applications with occasional movements

Product Make-up

- Copper stranded 7x0,32
- Core insulation: PE
- Overall screening of braided tinned-copper strands
- Inner sheath: PVC, violet RAL (4001), outer diameter: 7.1 mm
- Outer sheath: PE, black RAL (9005), outer diameter: 9.0 mm

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (1 kHz): max. 40 nF/km
	Peak operating voltage 300 V (not for power applications)
	Conductor resistance (Loop): max. 74 Ω /km
	Minimum bending radius Flexible use: 8 x Outer Diameter Fixed Installation: 4 x Outer Diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 120 Ω
	Temperature range Fixed installation: -40°C to +80°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® BUS CAN BURIAL				
2170500	4 x 1 x 0,5	9	41.8	91

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
 Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
 Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
 Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
 Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
 Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- Sub-D Bus-Connectors



UNITRONIC® BUS HEAT 6722

CAN bus cable for utility vehicles

LAPP KABEL STUTTGART UNITRONIC® BUS HEAT 6722



Info

- Designed according to ISO 6722
- Tested acc.to ECE-R 118.01

Benefits

- Extended temperature range
- Good resistance to oil, petrol, acids and alkalis

Application range

- Suitable for connecting to of e.g. camera systems, enter-/ infotainment for passengers, ticketing systems
- For fixed, occasionally flexible and protected use inside of utility vehicles

Product features

- Halogen-free outer sheath
- Maximum bit rate: 1 Mbit/s for 40 m segment length
- Temperature class B on the basis of ISO 6722-1
- ISO 11898 makes recommendations for the segment length, cable cross section and bit rate
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- Standardised internationally in ISO 11898
- UL/CSA type CMX (UL 444)

Product Make-up

- Stranded bare conductor
- PUR outer sheath
- Colour: black
- UV-resistant (but colour may change after some time)
- Screening: wrapped with braided copper wires

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC000830
ETIM 5.0/6.0 Class-Description:
Data cable



Mutual capacitance

40 nF/km (800 Hz)



Peak operating voltage

250 V (not for power transmission)



Conductor resistance

(loop): max. 159.8 Ω/km



Minimum bending radius

Flexing: 15 x outer diameter



Test voltage

Core/core: 1500 V rms



Characteristic impedance

120 Ω



Temperature range

Fixed installation: -40°C to +105°C
occasionally flexing: -30°C to +105°C

Article number	Article designation	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
UNITRONIC® BUS HEAT 6722					
2170385	UNITRONIC® BUS HEAT 6722	1 x 4 x 0,25	6.45	26	46
2170386	UNITRONIC® BUS HEAT 6722	1 x 4 x 0,34	7.54	33	61
2170387	UNITRONIC® BUS HEAT 6722	1 x 4 x 0,5	8.36	41	70
2170388	UNITRONIC® BUS HEAT 6722	1 x 4 x 0,75	9.79	59	95

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- Multipurpose shears A and B
- SMART STRIP stripping tool
- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® TRAIN

Bus cables - MVB and WTB - Electron beam cross-linked for high requirements in railway applications



Info

- Small outer diameters for maximum saving of space and weight
- Extremely low attenuation ≤ 5 MHz

Benefits

- Good chemical resistance
- Resistant to mechanical influences in harsh environmental conditions
- Extended temperature range
- Reduced flame spreading increase the protection against damage to persons and property in the event of a fire
- EMC-optimised design

Application range

- The communication systems WTB (wire train bus) and MVB (multifunction vehicle bus) make up the so-called TCN (train communication network)
- UNITRONIC® TRAIN bus cables are designed for use in TCN acc. IEC 61375 MVB according IEC 61375-3-1 WTB according IEC 61375-2-1
- For use in railway vehicles and buses, for fixed installations and applications where limited movement may occur
- Also applicable within oily environments and areas with increased ambient temperature

Product features

- Fire behaviour according to EN/IEC:
 - Halogen-free acc. to EN 60754-1
 - No corrosive gases acc. to EN 60754-2
 - No fluorine acc. to EN 60684-2
 - No toxic gases acc. to EN 50305
 - Low smoke density acc. to EN 61034-2
 - Flame-retardant acc. to EN 60332-1-2
 - No flame propagation acc. to EN 60332-3-25
- Fire behaviour according to NF:
 - Toxicity of gases acc. to NF X 70-100
 - Low smoke density acc. to NF X 10-702
 - No flame propagation acc. to NF C 32-070, Cat. C1 and C2
- Chemical properties:
 - Oil resistant acc. to EN 50264-1
 - Fuel resistant acc. to EN 50264-1
 - Acid resistant acc. to EN 50264-1
 - Alkali resistant acc. to EN 50264-1
 - Ozone resistant acc. to EN 50264-3-2

Norm references / Approvals

- EN 45545-2 HL1, HL2, HL3
- EN 50264-1

Product Make-up

- Stranded tinned 19-wire conductor
- Core insulation: Based on Polyolefin
- Outer sheath: electron beam cross-linked polymer-compound EM 104
- Outer sheath colour: Black

Technical data

- Classification ETIM 5/6**
 ETIM 5.0/6.0 Class-ID: EC000830
 ETIM 5.0/6.0 Class-Description: Data cable
- Peak operating voltage**
 (not for power applications) 125 V
- Minimum bending radius**
 Flexing: 10 x outer diameter
 Fixed installation: 6 x outer diameter
- Test voltage**
 Core/core: 1000 V
 Core/screen: 1000 V
- Characteristic impedance**
 120 Ω ($\pm 10\%$)
- Temperature range**
 Fixed installation: -45°C to +90°C
 Occasional flexing: -35°C up to +90°C

Article number	Article designation	Number of cores and mm² per conductor	Outer diameter [mm]	Copper index (kg/km)
Cables for MVB				
2173000	UNITRONIC® TRAIN MVB 1x2x0,5	1x2x0,5	7.4	34
2173001	UNITRONIC® TRAIN MVB 1x2x0,5+1x0,5	1x2x0,5+1x0,5	7.4	
2173002	UNITRONIC® TRAIN MVB 2x2x0,5	2x2x0,5	8.1	
2173003	UNITRONIC® TRAIN MVB 2x2x0,5+4x0,25	2x2x0,5+4x0,25	8.1	
Cables for WTB				
2173004	UNITRONIC® TRAIN WTB 1x2x0,75	1x2x0,75	8.4	

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



EPIC® DATA CAN Sub-D

CAN Bus-Connectors with screw connection



Benefits

- Terminating resistor (integrated) can be switched
- Sensor/ ac
- No loose parts
- With additional 24 V DC output to supply external devices (90° version only)

Product features

- Max. transmission rate 1 Mbit/s possible
- Terminating resistor "ON" - the outbound bus cable is disconnected
- The integrated, connectable terminating resistor enable the CAN-Bus to be terminated or connected through
- Sub-D pin assignment:
CAN Low = Pin 2
CAN High = Pin 7
CAN Gnd = Pin 3
GND = Pin 6 (90° version only)
CAN V+ = Pin 9 (90° version only)
(shield = housing)

Norm references / Approvals

- UL File No. E331560

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- Screw connection
- Improved electromagnetic compatibility (EMC) by metallized housing
- For cable outer diameter: 5 - 8 mm

Suitable cables

- Bus system CAN / DeviceNet

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1060

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001132
ETIM 5.0/6.0 Class-Description:
D-Sub connector

Dimensions
60 mm x 40 mm x 17 mm - 90°
67,5 mm x 35 mm x 17 mm - 180°
(LxWxH)

Connection type
Screwing

Protection rating
IP 20

Terminating resistor
120 Ω

Interfaces
CAN bus station:
D-Sub socket, 9-pin
CAN bus cable:
6 terminal blocks for wires up to
0.8 mm²

Permissible ambient conditions
Operating temperature: -25°C to +85°C
*The max. temperature for UL is 60 °C.

Article number	Article designation	Cable outlet	PG-Interface	PU
Sub-D connector				
21700537	ED-CAN-90	90°	no	1
21700536	ED-CAN-90-PG	90°	yes	1
21700538	ED-CAN-AX	180° axial	no	1

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EPIC® DATA CAN Sub-D PRO

CAN Bus-Connectors full-metall

Info

- High EMC protection
- For cable diameters up to 10 mm



Benefits

- High flexibility by extended cable clamping range
- Cost-saving due to quick and easy installation
- Robust housing material for harsh environments
- For EMC critical environments

Product features

- Extended temperature range
- High mechanical strength (200 contact durability)
- Less transmission loss
- Bus termination is integrated
- Sub-D pin assignment:
CAN Low = Pin 2
CAN High = Pin 7
CAN Gnd = Pin 3
GND = Pin 6 (90° version only)
CAN V+ = Pin 9 (90° version only)
(shield = housing)

Product Make-up

- D-Sub plug, 9-pin, fixing screws 4-40 UNC
- 360° shielding due full-metall housing (ZnAl)
- External cable clamp connection (7 - 10 mm)
- 90° version: With additional Sub-D port for programming/diagnostic ('PG')
- 90° version: PG port with undetachable EMC Sub-D protection

Suitable cables

- UNITRONIC® DeviceNet THICK + THIN Page 361
- UNITRONIC® BUS CAN Page 363
- UNITRONIC® DeviceNet FD THICK+THIN Page 362
- UNITRONIC® BUS CAN FD P Page 363
- UNITRONIC® BUS CAN TRAY Page 364
- UNITRONIC® BUS HEAT 6722 Page 366
- UNITRONIC® BUS CAN BURIAL Page 365

Suitable tools

- Kraftform® adjustable torque screwdriver/ Kraftform Kompakt® Set refer to page 1060

Technical data

Classification ETIM 5/6
 ETIM 5.0/6.0 Class-ID: EC001132
 ETIM 5.0/6.0 Class-Description:
 D-Sub connector

Dimensions
 63 x 45 x 18 - 90°
 81 x 36 x 15 - 180°
 (LxWxH)

Connection type
 Screwing

Protection rating
 IP 30

Terminating resistor
 120 Ω

Interfaces
 CAN-Bus station:
 D-SUB socket, 9-pin
 CAN-Bus cable:
 - screw terminals for wires
 0.14 - 0.5 mm²

Permissible ambient conditions
 Operating temperature: -20°C to +70°C

Article number	Article designation	Cable outlet	PG-Interface	PU
Sub-D connector				
21700590	ED-CAN-90-PG-PRO	90°	yes	1
21700591	ED-CAN-AX-PRO	180° axial	no	1

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UNITRONIC® BUS CAN M12

DeviceNet/CANopen Cable: M12 plug/socket on free conductor end



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Robust design

Application range

- Mechanical and plant engineering

Product features

- 5-core DeviceNet/CANopen cable, shielded
- M12 connector, A-coded with quick-locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Signal line: 2 x 0.25 mm²
Power supply: 2 x 0.34 mm²
Drain wire: 1 x 0.34 mm²
- Core colours: red/black, blue/white
- Outer sheath: PUR halogen-free, violett
- Outer diameter: 6.7 mm
- Shielded version

Suitable connectors

- Sub-D Bus-Connectors
- EPIC® DATA CAN M12 372
- EPIC® DATA CAN M12/M12 372
- EPIC® DATA CAN TR M12 373
- EPIC® DATA CAN M12T 374
- EPIC® DATA CAN CCR 374

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -20°C to +80°C
Drag chain application ≤ 70 °C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug						
22260789	AB-DN-M12MS-2,0PUR	2	5	straight	60	1
22260790	AB-DN-M12MS-5,0PUR	5	5	straight	60	1
22260791	AB-DN-M12MS-10,0PUR	10	5	straight	60	1
22262004	AB-DN-M12MA-2,0PUR	2	5	angled	60	1
Socket						
22260792	AB-DN-2,0PUR-M12FS	2	5	straight	60	1
22260793	AB-DN-5,0PUR-M12FS	5	5	straight	60	1
22260794	AB-DN-10,0PUR-M12FS	10	5	straight	60	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

Accessories

- FLEXIMARK® Label LMB refer to page 942



UNITRONIC® BUS CAN M 12-M 12

DeviceNet/CANopen Cable: M 12 connector on M 12 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Robust design

Application range

- Mechanical and plant engineering

Product features

- 5-core DeviceNet/CANopen cable, shielded
- M 12 connector, A-coded with quick-locking system
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Signal line: 2 x 0.25 mm²
- Power supply: 2 x 0.34 mm²
- Drain wire: 1 x 0.34 mm²
- Core colours: red/black, blue/white
- Outer sheath: PUR halogen-free, violett
- Outer diameter: 6.7 mm
- Shielded version

Suitable connectors

- EPIC® DATA CAN M 12 372
- EPIC® DATA CAN M 12/M 12 372
- EPIC® DATA CAN TR M 12 373
- EPIC® DATA CAN M 12T 374

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Flexing: 70 mm



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -20°C to +80°C
Drag chain application ≤ 70 °C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Length (m)	Number of pins	Design	Rated voltage (V)	PU
Plug on socket						
22260795	AB-DN-M12MS-0,3PUR-M12FS	0.3	5	straight-straight	60	1
22260796	AB-DN-M12MS-1,0PUR-M12FS	1	5	straight-straight	60	1
22260797	AB-DN-M12MS-2,0PUR-M12FS	2	5	straight-straight	60	1
22260798	AB-DN-M12MS-5,0PUR-M12FS	5	5	straight-straight	60	1
22260799	AB-DN-M12MS-10,0PUR-M12FS	10	5	straight-straight	60	1

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

No copper surcharge.

DeviceNet is a registered trademark of ODVA

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



EPIC® DATA CAN M12

Field mountable M12 BUS-connectors shielded for DeviceNet/CANopen



Technical data

Connection type

Screwing



Material

Contact: CuSn
Contact surface: Au
Contact carrier: PA66
Sealing: NBR
Knurl: Nickel-plated brass
Gripping body: Zinc die-cast, nickel-plated



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket -40°C to +85°C

Coding

A - Standard
(CANopen/DeviceNet/CC-Link)

Rated current (A)

4 A

Benefits

- Quick and easy on-site assembly
- For creating of individual cable lengths
- Cost efficient and rational wiring for BUS installations
- Space-saving due to compact dimensions

Product Make-up

- M12 plug, 5-pins, A-coded
- Screw connection
- PG9 thread
- Screened version

Article number	Article designation	Design	Number of pins	Cross-section in mm ²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight							
22260135	AB-C5-M12MS-PG9-SH	screw	5	0.25 - 0.75	6.0 - 8.0	60	1
Socket, straight							
22260136	AB-C5-M12FS-PG9-SH	screw	5	0.25 - 0.75	6.0 - 8.0	60	1

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EPIC® DATA CAN M12/M12

M12 control cabinet feed-through, shielded for CAN/DeviceNet/ S/A cabling



Technical data



Material

Contact: CuZn
Contact surface: Au (gold)
Contact carrier: PA 66
Knurl: Nickel-plated brass
Sealing: FKM



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket
-25°C to +85°C

Coding

A - Standard
(CANopen/DeviceNet/CC-Link)

Rated current (A)

4 A

Benefits

- M12 connector on both sides
- Plug & Play for flexible connection solutions

Product features

- For CANopen/DeviceNet applications
- For sensor/actuator cabling
- Bipolar/screw mounting

Product Make-up

- 5-pin control cabinet feed-through, M12 A-coded
- M12 plug on M12 socket
- Screened version

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Control cabinet feed through				
22262020	AB-C5-DSI-M12MS-M12FS-M16-SH	5	24	1

DeviceNet is a registered trademark of ODVA

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EPIC® DATA CAN TR M12

M12 Terminating resistor for DeviceNet/CANopen



Info

- Fully suitable for industrial use

Benefits

- Cost efficient termination of a bus systems
- Space-saving due to compact dimensions
- Robust design

Application range

- Mechanical and plant engineering

Product features

- 120 Ω terminating resistor for DeviceNet/CANopen

Product Make-up

- Straight connector M12 with integrated termination resistor

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000448 ETIM 5.0/6.0 Class-Description: Terminal resistor
	Protection rating IP65/IP67
	Ambient temperature (operation) -25°C to +90°C
	Contact material CuSn
	Coding A - Standard (CANopen/DeviceNet)
	Rated current (A) 4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Plug, unshielded (terminating resistor)				
22260766	AB-C5-M12MS-DN-TR	5	60	5

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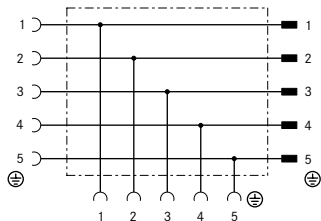
Accessories

- EPIC® DATA CAN M12T refer to page 374



EPIC® DATA CAN M12T

M12 T parallel distributor for CAN/ DeviceNet/ S/A cabling



Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Robust design

Product features

- For CANopen/DeviceNet applications
- PWIS-free

Product Make-up

- 5-pin parallel distributor
- M12 socket on M12 plug and M12 socket

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002585
ETIM 5.0/6.0 Class-Description:
Passive sensor-actuator interface



Material

Contact: CuZn
Contact surface: Ni/Au
Contact carrier: TPU GF
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing
Sealing: NBR



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C

Coding

A - Standard
(CANopen/DeviceNet/CC-Link)

Rated current (A)

4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
T distributor				
22260765	AB-C5-M12T-2XM12FS DN	5	60	5

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EPIC® DATA CAN CCR

Cable coupler round, shielded for e.g. sensor-actuator / PROFIBUS / CAN cables



Benefits

- Time-saving assembly with IDC connection technology
- Optimum EMC protection with 360 ° shielding

Application range

- To extend existing cable systems
- Repairkit for damaged cables

Product features

- 5-pin cable coupler round
- Screened version

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002925
ETIM 5.0/6.0 Class-Description:
Sensor-actuator adapting connector



Material

Contact: CuZn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: Zinc die-cast, nickel-plated



Protection rating

IP65/IP67



Ambient temperature (operation)

-40°C to +85°C

Rated current (A)

4 A

Article number	Article designation	Number of pins	Cross-section in mm ²	Cable diameter in mm	Rated voltage (V)	PU
Cable coupler round						
21700641	AB-C5-CCR-SH	5	0.14 - 0.50	5.0 - 9.7	60	1

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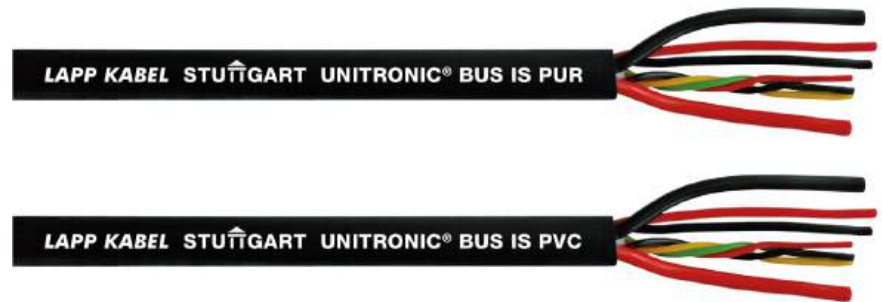
UNITRONIC® BUS IS

ISOBUS cables for use in agricultural vehicles



Info

- Lapp cable is member of the AEF - Agricultural Industry Electronics Foundation



Benefits

- Cable according ISOBUS standard (ISO 11783-2) for use in agricultural vehicles.
- HYBRID: cable for data transmission + power supply

Application range

- For outdoor applications
- Connection cable between tractor and pulled machinery

Product features

- Flame-retardant according to IEC standard 60332-1
- UV-resistant
- Resistant against oil, benzine and diesel
- PUR (Polyurethane) Version with increased robustness

Norm references / Approvals

- ISO 11783-2:2012

Product Make-up

- Fine-wired copper conductor of bare copper strands in line with conductor class 5 acc. IEC 60228
- 4x 0,5 mm² (red, yellow, black, green)
2x 2,5 mm² (red, black)
2x 6 mm² (red, black)
- Outer sheath: PUR and PVC, black (RAL 9005)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage 60 V
	Minimum bending radius Fixed installation: 10 x outer diameter Flexing: 15 x outer diameter
	Test voltage 0,5 mm - 2,5 mm ² core / core = 1,5 kV; 6 - 10 mm ² core / core = 2,5 kV
	Characteristic impedance Characteristic impedance: 75 Ω
	Temperature range PUR: -40°C to +85°C PVC: -30°C to +85°C

Article number	Article designation	Number of cores/pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)
PUR				
2170561	UNITRONIC® BUS IS PUR 2x6+2x2,5+1x4x0,5	2x6+2x2,5+1x4x0,5	15.6	182.4
PVC				
2170560	UNITRONIC® BUS IS PVC	2x6+2x2,5+1x4x0,5	15.6	182.4

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
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UNITRONIC® BUS FF

FOUNDATION Fieldbus cable for use in Process Automation - UL-verified



Benefits

- Cables meet the requirements of ISA/SP50 and the FOUNDATION™ field bus for the cable type A.

Application range

- FOUNDATION™ Fieldbus is used in intrinsically safe areas, especially in the field of Process Automation
- Fixed Installation

Product features

- UV-resistant
- Extended temperature range

Norm references / Approvals

- With UL/CSA certification (CMG/PLTC)

Product Make-up

- 2-core, not armoured, with device ground
- 3-core, unarmoured, with device ground
- 3-core, armoured (longitudinally welded, spiral corrugated copper sheath) with device ground
- Outer sheath: PVC, yellow
Armoured Version: PVC, yellow and blue

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage 300 V
	Conductor resistance ≤ 24 Ω/km
	Minimum bending radius 15 x outer diameter
	Test voltage 1500 V
	Characteristic impedance 100 ± 20 Ω at 31.25 kHz
	Temperature range -40 °C or -25 °C to +105 °C, see data sheet

Article number	Article designation	Number of pairs and cable diameter	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS FF					
2170350	UNITRONIC® BUS FF 3	1x2x1.1 + 1x1.1 Ø	7.9	48.3	93
PVC - Armoured					
2170351	UNITRONIC® BUS FF 3 ARM (YE)	1x2x1.1 + 1x1.1 Ø	12.3	125	182
2170353	UNITRONIC® BUS FF 3 ARM (BU)	1x2x1.1 + 1x1.1 Ø	12.3	125	182
PVC					
2170352	UNITRONIC® BUS FF 2	1 x 2 x 1.1	7.9	39.7	82

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

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

Foundation™ is a trademark of the Fieldbus Foundation

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UNITRONIC® BUS CC

CC-Link bus cable for fixed installation - UL-verified

Info

- Lapp Kabel is a regular member of the user organisation CC-Link Partner Association (CLPA), Japan.

Benefits

- The CC-Link® system was developed by Mitsubishi Electric Automation, Japan.
- This CC-Link® bus cable has successfully passed the CC-Link® Conformance Test in Japan.

Application range

- CC-Link® (Control & Communication Link) = field bus network, for both control as well as information data to provide efficient, integrated factory and process automation.
- Fixed installation of the CC-Link® network

LAPP KABEL STUTTGART UNITRONIC® BUS CC

Product features

- Transmission rate in relation to the distance
- 156 kbit/s 1.200 m
- 625 kbit/s 600 m
- 2,5 Mbit/s 200 m
- 5,0 Mbit/s 110-150 m
- 10 Mbit/s 50-100 m
- Flame-retardant according to CSA FT4 UL Vertical-Tray Flame Test
- SUN RES acc. to UL 1581

Norm references / Approvals

- CM UL/CSA certification 75°C or PLTC Sun Res

Product Make-up

- Bare stranded copper wires
- Core insulation: PE
- Overall screening of braided tinned-copper strands
- Outer sheath: PVC, red (RAL 3000)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage 300 V
	Conductor resistance 11 Ω/1,000 ft. (305 m) at 20°C
	Minimum bending radius Fixed installation: 5 x outer diameter Flexing: 8 x outer diameter
	Test voltage 2000 V
	Characteristic impedance 110 Ω at 1 MHz
	Temperature range -40°C to +70°C

Article number	Article designation	Number of cores and AWG size	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS CC					
2170360	UNITRONIC® BUS CC	3 x 1 x AWG20	7.7	38.8	76.6

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

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

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths / CC-Link® is a registered trademark of CC-Link Partner Association, Japan (CLPA)

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UNITRONIC® BUS CC FD P FRNC

CC-Link bus cable for high flexible applications - UL-verified

Info

- Lapp Kabel is a regular member of the user organisation CC-Link Partner Association (CLPA), Japan.

Benefits

- The CC-Link® system was developed by Mitsubishi Electric Automation, Japan.

Application range

- CC-Link® (Control & Communication Link) = field bus network, for both control as well as information data to provide efficient, integrated factory and process automation.
- For highly flexible applications (power chains, moving machine parts)

LAPP KABEL STUTTGART UNITRONIC® BUS CC FD P

Product features

- Transmission rate in relation to the distance
- 156 kbit/s 1.200 m
- 625 kbit/s 600 m
- 2,5 Mbit/s 200 m
- 5,0 Mbit/s 110-150 m
- 10 Mbit/s 50-100 m
- Halogen-free
- Flame-retardant according to IEC 60332-1-2

Norm references / Approvals

- AWM 20233 80 °C 300V

Product Make-up

- Bare stranded copper wires
- Core insulation: PE
- Inner sheath: FRNC
- Overall screening of braided tinned-copper strands
- Outer sheath: PUR, red (RAL 3000)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Certifications UL AWM Style 20233
	Peak operating voltage 300 V
	Conductor resistance 11 Ω/1,000 ft. (305 m) at 20°C
	Minimum bending radius Fixed installation: 4 x outer diameter Moved: 10 x outer diameter
	Test voltage 2000 V
	Characteristic impedance 110 Ω at 1 MHz
	Temperature range -40°C to +80°C

Article number	Article designation	Number of cores and AWG size	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS CC FD P FRNC					
2170370	UNITRONIC® BUS CC FD P FRNC	3 x 1 x AWG20	8.5	39.9	84

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

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

Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths / CC-Link® is a registered trademark of CC-Link Partner Association, Japan (CLPA)

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UNITRONIC® BUS SAFETY

SafetyBUS cables for transmission of safety-oriented data

LAPP KABEL STUTTGART UNITRONIC® BUS SAFETY

Benefits

- For serial transmission of safety-oriented data

Application range

- UNITRONIC® BUS SAFETY - fixed Installation
- UNITRONIC® BUS SAFETY FD P - highly flexible applications
- For systems such as SafetyBUS p®, based on the well-known CAN bus system

Product features

- The stated bit rates result in the following cable lengths (maximum) for a bus segment:
- 500 kbit/s = max. 100 m
- 250 kbit/s = max. 250 m
- 125 kbit/s = max. 500 m
- 50 kbit/s = max. 1,000 m

Norm references / Approvals

- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- Bare stranded copper wires
- Core insulation: foam skin
- Tin-plated copper wire braiding
- Outer sheath: halogen-free, flame-retardant compound
- Outer sheath: yellow

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Certifications Version UNITRONIC® BUS SAFETY FC: AWM Style 2464 (80°C 300 V)
	Mutual capacitance (800 Hz): max. 45 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 52 Ω/km
	Minimum bending radius Fixed installation: 5 x outer diameter
	Test voltage Core/core: 3000 V Core/core: 1500 V (FD- version)
	Characteristic impedance 120 Ω
	Temperature range UNITRONIC BUS SAFETY: Fixed installation: -30°C to +80°C UNITRONIC BUS SAFETY FD P: Fixed installation -40°C to +80°C Moved: -30 to +80°C

Article number	Article designation	Number of cores and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Fixed Installation					
2170295	UNITRONIC® BUS SAFETY	3 x 0.75	7.6	49	68
Highly flexible applications					
2170885	UNITRONIC® BUS SAFETY FD P	3 x 0.75	7.8	49	68

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

SafetyBUS p® is a registered trademark of Pilz GmbH & Co.

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

Accessories

- FC STRIP stripping tool refer to page 986



UNITRONIC® BUS IBS

INTERBUS cables for fixed installation



Info

- IBS - INTERBUS

Benefits

- Certified by INTERBUS CLUB

Application range

- Fixed Installation

Product features

- IBS cable - for fixed installation
- Remote bus cable + installation remote bus cable
- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
500 kbit/s = max. 400 m
- Halogen-free
- Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- According to DIN EN 61158

Product Make-up

- **UNITRONIC® BUS IBS**
Bare copper wire
Core insulation: PE
Overall copper braid screen
Outer sheath: PVC, violet (RAL 4001)
- **UNITRONIC® BUS IBS P COMBI**
Bare copper wire
Core insulation: PE
Overall copper braid screen
Outer sheath: PUR, violet (RAL 4001)
- **UNITRONIC® BUS IBS A**
similar to UNITRONIC BUS IBS, but with UL/CSA certification

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance Flexible use: 10 x outer diameter
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 Ω/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 Ω
	Temperature range Fixed installation: -30°C to +80°C Flexing: -5°C to +70°C

Article number	Cable type	Article designation	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Fixed Installation						
2170206	Remote bus cable (RBC)	UNITRONIC® BUS IBS Bare copper wire Core insulation: PE Overall copper braid screen Outer sheath: PVC, violet (RAL 4001)	3 x 2 x 0.22	7.2	37	72
2170208	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS P COMBI Bare copper wire Core insulation: PE Overall copper braid screen Outer sheath: PUR, violet (RAL 4001)	3 x 2 x 0.22 + 3 x 1.0	7.9	60	85
For fixed installation - UL/CSA CMX certification						
2170209	Remote bus cable (RBC)	UNITRONIC® BUS IBS A	3 x 2 x 0.22	7.2	37	72

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.
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Accessories

- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® BUS IBS Yv COMBI

INTERBUS cables for fixed installation - outdoor/direct burial



Benefits

- Certified by INTERBUS CLUB

Application range

- Suitable for outdoor use and direct burial

Product features

- IBS cable - for outdoor use or direct burial, UV-resistant (remote bus cable + installation remote bus cable)
- The stated bit rates result in the following cable lengths (maximum) of one bus segment:
 - 500 kbit/s = max. 400 m
 - Flame-retardant according IEC 60332-1-2

Norm references / Approvals

- According to DIN EN 61158

Product Make-up

- **UNITRONIC® BUS IBS Yv**
stranded bare conductor
Core insulation: PE
Tinned copper screen braiding
Outer sheath: PVC, black (RAL 9005)
- **UNITRONIC® BUS IBS Yv COMBI**
Stranded bare conductor
Core insulation: PE
3x2x0,22:
white/brown, green/yellow, grey/pink
3x1,0:
red, blue, green/yellow
Tinned copper screen braiding
Inner sheath: PVC, violet RAL (4001),
Outer diameter: 7,9 mm
Outer sheath: PVC, black (RAL 9005)
Outer diameter: 9,4 mm

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 186 Ω/km
	Minimum bending radius Fixed installation: 8 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 Ω
	Temperature range Fixed installation: -40°C to +70°C

Article number	Cable type	Article designation	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
UNITRONIC® BUS IBS Yv COMBI						
2170207	Remote bus cable (RBC)	UNITRONIC® BUS IBS Yv COMBI	3 x 2 x 0,22	9.3	37	94
UNITRONIC® BUS IBS Yv COMBI						
2170217	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS Yv COMBI	3 x 2 x 0,22 + 3 x 1,0	9.4	60	128

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

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

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

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.

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UNITRONIC® BUS IBS FD P

INTERBUS cables for use in high flexible applications



Info

- IBS - INTERBUS

Benefits

- Certified by INTERBUS CLUB

Application range

- For highly flexible use in energy supply chains or permanently moving machines and linear robots
- Dry or damp rooms
- Harsh industrial environment

Product features

- Halogen-free
- Remote bus cable + installation remote bus cable
- 500 kbit/s = max. 400 m (remote bus cable)
- Max. 50 m (installation remote bus cable)
- PUR outer sheath, tear and notch-resistant, resistant to mineral oils and abrasion when used in power chains

Norm references / Approvals

- According to DIN EN 61158
- Flame retardant acc. to IEC 60332-1-2

Product Make-up

- **UNITRONIC® BUS IBS FD P**
Bare copper wire, extra fine
core identification: acc. to DIN 47100
Overall copper braid screen
Outer sheath: PUR, violet (RAL 4001)
- **UNITRONIC® BUS IBS FD P COMBI**
Stranded bare conductor
Core insulation: PE
3x2x0,25:
white/brown, green/yellow, grey/pink
3x1,0:
red, blue, green/yellow
Tinned copper screen braiding
Outer sheath: PUR, violet (RAL 4001)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz): max. 60 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 159.8 Ω/km
	Minimum bending radius Flexing: 15 x outer diameter
	Test voltage Core/core: 1500 V rms
	Characteristic impedance 100 Ω
	Temperature range Fixed installation: -40°C to +80°C Flexing: -30°C to +70°C

Article number	Cable type	Article designation	Number of pairs and mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/km)
Highly flexible applications						
2170216	Remote bus cable (RBC)	UNITRONIC® BUS IBS FD P	3 x 2 x 0,25	7.9	39	64
2170218	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS FD P COMBI	3 x 2 x 0,25 + 3 x 1,0	7.9	62	92
Highly flexible applications - with UL/CSA (CMX) certification						
2170818	Installation remote bus cable (INBC)	UNITRONIC® BUS IBS FD P COMBI A	3 x 2 x 0,25 + 3 x 1,0	7.9	62	92

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: EUR 150/100 kg. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Please find our standard lengths at: www.lappkabel.de/en/cable-standardlengths
Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum
Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).
INTERBUS is a registered trademark of Phoenix Contact GmbH & Co.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- Multipurpose shears A and B
- SMART STRIP stripping tool



UNITRONIC® BUS EIB / KNX



Info

- EIB / European Installation Bus
- KNX/communication in building management

Application range

- The product is designed for use in building management, e.g. for decentralised control of lighting, heating, air-conditioning, ventilation, energy management, blinds, time management, locking systems etc.
- The cable can be laid on or under plaster; in pipes, cable ducts; in dry, damp or wet environments.
- EIB installation mainly consists of sensors/command-transmitters (e.g. light barriers, switches, thermostats, infrared, wind meters, timers), and actuators (e.g. engines, heaters, ventilators, lights, blinds).
- KNX technology was formed from the merging of three established European bus standards: EIP, EHS (household appliances and consumer electronics) and Batibus (heating/ventilation/air conditioning)

Product features

- Serial data transmission
- EIB cable has been tested at 4 kV (1 min.) in a water bath

Product Make-up

- Screened installation cable based on type J-Y(ST)Y according to DIN VDE 0815
- **UNITRONIC® BUS EIB**
Bare solid copper wire
2x2x0,8: red and black, white and yellow
Core insulation: PVC
Overall aluminum foil
Outer sheath: PVC, green (RAL 6017)
- **UNITRONIC® BUS EIBCOMBI**
Bare solid copper wire
Core insulation: PVC
2x2x0,8: red and black, white and yellow
3x1,5: brown, blue, green/yellow
Overall aluminum foil
Outer sheath: PVC, green (RAL 6017)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC000830 ETIM 5.0/6.0 Class-Description: Data cable
	Mutual capacitance (800 Hz) max. 100 nF/km
	Peak operating voltage (not for power applications) 250 V
	Conductor resistance (loop): max. 73.2 Ω/km
	Minimum bending radius Fixed installation: 5 x outer diameter
	Test voltage Core/core: 4000 V
	Temperature range Fixed installation: -30°C to +70°C

Article number	Article designation	Number of pairs and mm or mm ² per conductor	Outer diameter [mm]	Copper index (kg/km)	Weight (kg/m)
PVC					
2170240	UNITRONIC® BUS EIB	2 x 2 x 0.8	6.6	21	54
2170242	UNITRONIC® BUS EIB COMBI	2 x 2 x 0,8 mm + 3 x 1,5 mm ²	12.7	64	128
Halogen-free					
2170241	UNITRONIC® BUS EIB H	2 x 2 x 0.8	6.6	21	54

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

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

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

Packaging size: coil ≤ 30 kg or ≤ 250 m, otherwise drum

Please specify the preferred type of packaging (e.g. 1 x 500 m drum or 5 x 100 m coils).

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

Accessories

- SENSOR STRIP stripping tool refer to page 987



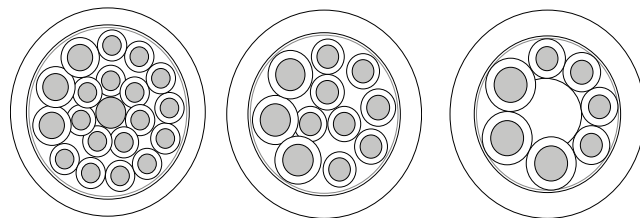
UNITRONIC® SENSOR master cable



Info

- Customised construction can be supported

LAPP KABEL STUTTGART UNITRONIC® SENSOR Li9Y11Y



Benefits

- Cost efficient and rational wiring for S/A boxes with detachable master cable connection
- Can be used universally for S/A installations

Application range

- Automation technology
- Mechanical engineering
- Plant engineering
- Tool shop
- Automotive industry

Product features

- Cores for Power Supply:
3 x 0.75 mm² and 3 x 1.0 mm²
- Cores for Signalling cable:
4 x 0.34 mm², 8 x 0.5 mm², 16 x 0.5 mm²
- Suitable for drag chains
- Halogen-free according to VDE 0472-815
- Flame-retardant according to UL 1581 FT-2

Norm references / Approvals

- UL-AWM-Style 21198 (80 °C / 300 V)

Product Make-up

- Fine-wire, bare copper strand
- Single wire diameter:
0.34 mm² = (43 x 0.10 mm)
0.5mm² = (19 x 0.18 mm)
0.75 mm² = (21 x 0.205 mm)
1.0 mm² = (55 x 0.15 mm)
- Core insulation: PP
- Outer sheath: PUR, black

Technical data

- Classification ETIM 5/6**
 ETIM 5.0/6.0 Class-ID: EC001578
 ETIM 5.0/6.0 Class-Description:
 Flexible cable
- Conductor stranding**
 Stranded conductor, fine-wire
- Minimum bending radius**
 Flexing: 10 x outer diameter
- Temperature range**
 Fixed installation: -40°C to +80°C
 Flexing: -5°C to +80°C

Article number	Article designation	Dimensions (mm²)	Outer diameter [mm]	Core/outer sheath material	Copper index [kg/km]
UNITRONIC® SENSOR COMBI					
7038880	Li9Y11Y	3 x 0.75 + 4 x 0.34	6.6	PP/PUR	34.5
7038881	Li9Y11Y	3 x 1.0 + 8 x 0.5	8.4	PP/PUR	67.2
7038882	Li9Y11Y	3 x 1.0 + 16 x 0.5	9.8	PP/PUR	105.6

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

Packaging size: Coil 100m

Cables are printed

Other variations are available upon request.

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

For detailed technical information please refer to the data sheet

Accessories

- Distribution Box M12 refer to page 409



UNITRONIC® SENSOR

Flexible cable for sensor/actuator cabling



Benefits

- Easy installation (through cable trays, tubes, cabinets)
- Easy stripping and processing
- Space-saving due to compact dimensions

Application range

- Automation technology
- Sensor/ actuator cabling

Product features

- Core colour code in accordance with DIN EN 50044
- Black version: UV-resistant
- For higher mechanical stress (LifY11Y/Desina®)

Norm references / Approvals

- UL recognized (LifYY A)

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: PVC
- Colour-code:
3-pin: bn, bu, bk
4-pin: bn, wh, bu, bk
5-pin: bn, wh, bu, bk, gy
- DESINA® 4x0,34: bn, wh, bu, bk
- Outer sheath: PVC or PUR
- Sheath colour: black (RAL 9005)
- DESINA® yellow (RAL 1021)

Info

- Easy cable preparation
- UL recognized (LifYY A)

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC001578
ETIM 5.0/6.0 Class-Description:
Flexible cable
- Peak operating voltage**
300 V (not for power applications)
- Conductor stranding**
Extra-fine wire acc. to VDE 0295, class 6/ IEC 60228 class 6
- Minimum bending radius**
Flexing: 15 x outer diameter
Fixed installation: 8 x outer diameter
- Temperature range**
PVC/PVC:
Fixed installation: -40°C to +80°C
Flexing: -5°C to +80°C
PVC/PUR:
Fixed installation: -30°C to +80°C
Flexing: -10°C to +80°C

Article number	Article designation	Dimensions (mm ²)	Outer diameter [mm]	Core/outer sheath material	Colour	UL	Copper index [kg/km]
UNITRONIC® SENSOR PVC							
7038898	LifYY	3x0.25	3.8	PVC/PVC	black		7.5
7038899	LifYY	4x0.25	4.2	PVC/PVC	black		10.2
7038900	LifYY	3 x 0.34	4.1	PVC/PVC	black		9.8
7038901	LifYY	4 x 0.34	4.4	PVC/PVC	black		13
7038902	LifYY	5 x 0.34	4.8	PVC/PVC	black		16
UNITRONIC® SENSOR PVC UL							
7038903	LifYY A	3x0.25	4.3	PVC/PVC	black	yes	7.5
7038904	LifYY A	4x0.25	4.6	PVC/PVC	black	yes	10.2
7038905	LifYY A	3 x 0.34	4.4	PVC/PVC	black	yes	9.8
7038906	LifYY A	4 x 0.34	4.8	PVC/PVC	black	yes	13
7038907	LifYY A	5 x 0.34	5.2	PVC/PVC	black	yes	16
UNITRONIC® SENSOR PVC/PUR							
7038861	LifY11Y	4 x 0.34	4.8	PVC/PUR	black		13.1
7038862	LifY11Y	5 x 0.25	4.9	PVC/PUR	black		12
0040434	DESINA	4 x 0.34	5.2	PVC/PUR	yellow		13.5

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

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

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

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

Accessories

- EPIC® SENSOR M12 refer to page 398
- EPIC® SENSOR M12 V4A refer to page 399
- EPIC® SENSOR M8 refer to page 391
- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® SENSOR FD

High flexible cable for sensor/actuator cabling for use in drag chains, halogen-free



Info

- For increased mechanical stress and harsh operating conditions



Benefits

- Designs for highly flexible use
- Abrasion-resistant
- Wear-resistant
- Space-saving due to compact dimensions

Application range

- Automation technology
- Sensor/ actuator cabling
- Mechanical and plant engineering
- Assembly and production lines

Product features

- UV-resistant
- Halogen-free according to VDE 0472-815
- Flame-retardant according to IEC UL 1581 FT-2
- Suitable for drag chains
- Designed for 4 million alternating bending cycles and travel distances up to 10 m

Norm references / Approvals

- UL AWM Style 20549

Product Make-up

- Extra-fine wire strand made of bare copper wires
- Core insulation: PP
- Colour-code:
3-pin: bn, bu, bk
4-pin: bn, wh, bu, bk
5-pin: bn, wh, bu, bk, gy
8-pin: bn, wh, gn, ye, gy, pk, bu, rd
- Outer sheath: PUR, black

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC001578
ETIM 5.0/6.0 Class-Description:
Flexible cable
- Peak operating voltage**
300 V (not for power applications)
- Conductor stranding**
Extra-fine wire acc. to VDE 0295,
class 6/ IEC 60228 class 6
- Minimum bending radius**
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter
- Temperature range**
Occasional flexing: -25°C to +80°C
Fixed installation: -40°C to +80°C

Article number	Article designation	Dimensions (mm ²)	Outer diameter [mm]	Core/outer sheath material	Colour	Copper index [kg/km]
UNITRONIC® SENSOR FD						
7038883	Lif9Y11Y	3x0.25	4.4	PP/PUR	black	7.5
7038884	Lif9Y11Y	4x0.25	4.7	PP/PUR	black	10.2
7038867	Lif9Y11Y	5 x 0.25	4.7	PP/PUR	black	12
7038868	Lif9Y11Y	8 x 0.25	5.9	PP/PUR	black	19
7038864	Lif9Y11Y	3 x 0.34	4.6	PP/PUR	black	9.8
7038865	Lif9Y11Y	4 x 0.34	4.7	PP/PUR	black	13
7038866	Lif9Y11Y	5 x 0.34	5.1	PP/PUR	black	16
UNITRONIC® SENSOR FD - optimized						
7038889	Lif9Y11Y	3x0.25	3.6	PP/PUR	black	7.5
7038890	Lif9Y11Y	4x0.25	3.8	PP/PUR	black	10.2
7038893	Lif9Y11Y	5 x 0.34	4.5	PP/PUR	black	
UNITRONIC® SENSOR FD screened						
7038885	Lif9YC11Y	3 x 0.34	4.3	PP/PUR	black	19.1
7038886	Lif9YC11Y	4 x 0.34	4.6	PP/PUR	black	23.5
7038887	Lif9YC11Y	5 x 0.34	5	PP/PUR	black	27.5

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

Accessories

- EPIC® SENSOR M12 refer to page 398
- EPIC® SENSOR M12 V4A refer to page 399
- EPIC® SENSOR M8 refer to page 391
- STAR STRIP stripping tool refer to page 985
- SMART STRIP stripping tool



UNITRONIC® ROBUST S/A FD

High flexible, halogen-free sensor/actuator cable - resistant to a wide range of chemical media



Info

- Good chemical resistance
- Excellent weather resistance
- Flexible at low temperatures

Benefits

- Outstanding weather, ozone and UV resistance together with the wide temperature range enable versatile use for indoor and outdoor applications
- Resistant against organic oils, emulsions, greases and waxes based on organic, animal or synthetic
- Good resistance to cold and hot water as well as water-soluble cleaning and cooling agents
- Well-suited to steam cleaning
- Good resistance to ammonia compounds and bio-gases

Application range

- Automation technology
- Machine tool building, medical technology, laundries, car washing equipment, chemical industry, composting plants, sewage works
- Food and beverage industry, especially for production and processing equipment of milk and meat products

Product features

- Good chemical resistance to ester-based hydraulic fluids
- Ozone, UV and weather-resistant according to EN 50396 and HD 605 S2
- Suitable for drag chains
- Torsion-resistant
- Halogen-free

Norm references / Approvals

- Certified resistance to disinfection and cleaning solutions used in food and beverage industry
- ECOLAB®
Industry standard in the field of professional cleaning and disinfection in the food and beverage industry

Product Make-up

- Extra-fine wire strand made of bare copper
- Core insulation: PE
- Colour-code:
3-pin: bn, bu, bk
4-pin: bn, wh, bu, bk
5-pin: bn, wh, bu, bk, gy
- Outer sheath made of special TPE
- Color of the outer jacket: Black

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001578
ETIM 5.0/6.0 Class-Description:
Flexible cable



Core identification code

acc. to EN 60947-5-2



Conductor stranding

Extra-fine wire according to VDE 0295, class 6/IEC 60228 class 6



Minimum bending radius

Flexing: 5 x outer diameter
Fixed installation: 3 x outer diameter



Temperature range

Flexing: -40°C to +90°C
Fixed installation: -50°C to +90°C

Article number	Dimensions (mm²)	Outer diameter [mm]	Colour	Copper index [kg/km]
UNITRONIC® ROBUST S/A FD				
7038897	4x0.25	4.9	black	
7038895	3 x 0.34	5	black	
7038894	4 x 0.34	5.4	black	13.1
7038896	5 x 0.34	5.9	black	

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

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

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

Other types of composition are available upon request.

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

Accessories

- EPIC® SENSOR M12 refer to page 398
- EPIC® SENSOR M12 V4A refer to page 399
- EPIC® SENSOR M8 refer to page 391
- STAR STRIP stripping tool refer to page 985



UNITRONIC® SENSOR M8

M8 plug/socket on free conductor end



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
3-pin							
Plug							
22260204	AB-C3-M8MS-2,0PUR	3	2	straight	no	60	1
22260205	AB-C3-M8MS-5,0PUR	3	5	straight	no	60	1
22260218	AB-C3-M8MS-10,0PUR	3	10	straight	no	60	1
22260053	AB-C3-M8MA-2,0PUR	3	2	angled	no	60	1
22260987	AB-C3-M8MA-5,0PUR	3	5	angled	no	60	1
22260055	AB-C3-M8MA-10,0PUR	3	10	angled	no	60	1
Socket							
22260202	AB-C3-2,0PUR-M8FS	3	2	straight	no	60	1
22260200	AB-C3-5,0PUR-M8FS	3	5	straight	no	60	1
22260219	AB-C3-10,0PUR-M8FS	3	10	straight	no	60	1
22260203	AB-C3-2,0PUR-M8FA	3	2	angled	no	60	1
22260201	AB-C3-5,0PUR-M8FA	3	5	angled	no	60	1
22260220	AB-C3-10,0PUR-M8FA	3	10	angled	no	60	1
22260275	AB-C3-2,0PUR-M8FA-2L	3	2	angled	2 LEDs	24	1
22260276	AB-C3-5,0PUR-M8FA-2L	3	5	angled	2 LEDs	24	1
22260277	AB-C3-10,0PUR-M8FA-2L	3	10	angled	2 LEDs	24	1
4-pin							
Plug							
22260300	AB-C4-M8MS-2,0PUR	4	2	straight	no	30	1
22260308	AB-C4-M8MS-5,0PUR	4	5	straight	no	30	1
22260318	AB-C4-M8MS-10,0PUR	4	10	straight	no	30	1
22260056	AB-C4-M8MA-2,0PUR	4	2	angled	no	30	1
22260057	AB-C4-M8MA-5,0PUR	4	5	angled	no	30	1
22260058	AB-C4-M8MA-10,0PUR	4	10	angled	no	30	1
Socket							
22260309	AB-C4-2,0PUR-M8FS	4	2	straight	no	30	1
22260310	AB-C4-5,0PUR-M8FS	4	5	straight	no	30	1
22260317	AB-C4-10,0PUR-M8FS	4	10	straight	no	30	1
22260311	AB-C4-2,0PUR-M8FA	4	2	angled	no	30	1
22260312	AB-C4-5,0PUR-M8FA	4	5	angled	no	30	1
22260319	AB-C4-10,0PUR-M8FA	4	10	angled	no	30	1

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

No copper surcharge.

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

UL certifications can be found in the data sheet.

Accessories

- EPIC® SENSOR M8 refer to page 391



UNITRONIC® SENSOR M8-M8

M8 plug on M8 socket



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
Plug on socket							
3-pin							
22260206	AB-C3-M8MS-0,3PUR-M8FS	3	0.3	straight-straight	no	60	1
22260207	AB-C3-M8MS-0,6PUR-M8FS	3	0.6	straight-straight	no	60	1
22260208	AB-C3-M8MS-1,0PUR-M8FS	3	1	straight-straight	no	60	1
22260209	AB-C3-M8MS-2,0PUR-M8FS	3	2	straight-straight	no	60	1
22260210	AB-C3-M8MS-0,3PUR-M8FA	3	0.3	straight-angled	no	60	1
22260211	AB-C3-M8MS-0,6PUR-M8FA	3	0.6	straight-angled	no	60	1
22260212	AB-C3-M8MS-1,0PUR-M8FA	3	1	straight-angled	no	60	1
22260213	AB-C3-M8MS-2,0PUR-M8FA	3	2	straight-angled	no	60	1
22260214	AB-C3-M8MS-0,3PUR-M8FA-2L	3	0.3	straight-angled	2 LEDs	24	1
22260215	AB-C3-M8MS-0,6PUR-M8FA-2L	3	0.6	straight-angled	2 LEDs	24	1
22260216	AB-C3-M8MS-1,0PUR-M8FA-2L	3	1	straight-angled	2 LEDs	24	1
22260217	AB-C3-M8MS-2,0PUR-M8FA-2L	3	2	straight-angled	2 LEDs	24	1
4-pin							
22260313	AB-C4-M8MS-0,3PUR-M8FS	4	0.3	straight-straight	no	30	1
22260314	AB-C4-M8MS-0,6PUR-M8FS	4	0.6	straight-straight	no	30	1
22260315	AB-C4-M8MS-1,0PUR-M8FS	4	1	straight-straight	no	30	1
22260316	AB-C4-M8MS-2,0PUR-M8FS	4	2	straight-straight	no	30	1
22260059	AB-C4-M8MS-0,3PUR-M8FA	4	0.3	straight-angled	no	30	1
22260060	AB-C4-M8MS-0,6PUR-M8FA	4	0.6	straight-angled	no	30	1
22260061	AB-C4-M8MS-1,0PUR-M8FA	4	1	straight-angled	no	30	1
22260062	AB-C4-M8MS-2,0PUR-M8FA	4	2	straight-angled	no	30	1

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

No copper surcharge.

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

UL certifications can be found in the data sheet.



UNITRONIC® SENSOR M8-M12

M8 plug on M12 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request



Benefits

- Cost-efficient due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code: 3-pin: bn (1), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001855 ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord
	Material Contact: CuSn Contact surface: Ni/Au Knurl: Zinc die-cast, nickel-plated Gripping body: TPU, flame-retardant, self-extinguishing
	Minimum bending radius Fixed installation: 5 x outer diameter Flexing: 10 x outer diameter
	Protection rating IP65/IP67
	Ambient temperature (operation) Plug/socket -25°C to +90°C Fixed installation -40°C to +80°C Flexing -25°C to +80°C
	Coding A-standard
	Rated current (A) 4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
3-pin							
22260241	AB-C3-M8MS-0,3PUR-M12FS	3	0.3	straight-straight	no	60	1
22260242	AB-C3-M8MS-0,6PUR-M12FS	3	0.6	straight-straight	no	60	1
22260243	AB-C3-M8MS-1,0PUR-M12FS	3	1	straight-straight	no	60	1
22260244	AB-C3-M8MS-2,0PUR-M12FS	3	2	straight-straight	no	60	1
22260245	AB-C3-M8MS-0,3PUR-M12FA	3	0.3	straight-angled	no	60	1
22260246	AB-C3-M8MS-0,6PUR-M12FA	3	0.6	straight-angled	no	60	1
22260247	AB-C3-M8MS-1,0PUR-M12FA	3	1	straight-angled	no	60	1
22260248	AB-C3-M8MS-2,0PUR-M12FA	3	2	straight-angled	no	60	1
22260271	AB-C3-M8MS-0,3PUR-M12FA-2L	3	0.3	straight-angled	2 LEDs	24	1
22260272	AB-C3-M8MS-0,6PUR-M12FA-2L	3	0.6	straight-angled	2 LEDs	24	1
22260273	AB-C3-M8MS-1,0PUR-M12FA-2L	3	1	straight-angled	2 LEDs	24	1
22260274	AB-C3-M8MS-2,0PUR-M12FA-2L	3	2	straight-angled	2 LEDs	24	1

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

No copper surcharge.

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

UL certifications can be found in the data sheet.

**UNITRONIC® SENSOR PVC M8**

M8 plug/socket on free conductor end

**Info**

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Application range

- For medium mechanical stress in dry conditions

Product features

- Partly oil and chemical resistant
- PWIS-free
- Including tag carrier

Norm references / Approvals

- Flame-retardant according to style 2464
- UL File Number: E249137

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PVC, black

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data**Material**

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

**Protection rating**

IP65/IP67

**Ambient temperature (operation)**

Plug/socket -25°C to +90°C
Fixed installation -25°C to +80°C
Flexing -5°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	Rated voltage (V)	PU
3-pin						
Plug						
22260847	AB-C3-M8MS-2,0PVC	3	2	straight	60	1
22260665	AB-C3-M8MS-5,0PVC	3	5	straight	60	1
22260848	AB-C3-M8MS-10,0PVC	3	10	straight	60	1
Socket						
22262093	AB-C3-2,0PVC-M8FA	3	2	angled	60	1
22262081	AB-C3-5,0PVC-M8FA	3	5	angled	60	1
22260370	AB-C3-10,0PVC-M8FA	3	10	angled	60	1
4-pin						
Plug						
22262105	AB-C4-M8MS-2,0PVC	4	2	straight	30	1
22262106	AB-C4-M8MS-5,0PVC	4	5	straight	30	1
22262107	AB-C4-M8MS-10,0PVC	4	10	straight	30	1
Socket						
22260846	AB-C4-2,0PVC-M8FA	4	2	angled	30	1
22260845	AB-C4-5,0PVC-M8FA	4	5	angled	30	1
22260844	AB-C4-10,0PVC-M8FA	4	10	angled	30	1

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

No copper surcharge.

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

UL certifications can be found in the data sheet.

Accessories

- EPIC® SENSOR M8 refer to page 391



EPIC® SENSOR M8

Field mountable connectors M8



Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector



Material

Contact: CuZn
Contact surface: Au (gold)



Protection rating

IP 65/IP 67 (IDC)
IP 68 (piercing)
IP 67 (screw)



Ambient temperature (operation)

Plug/socket
-25°C to +80°C (IDC)
-25°C to +85°C (piercing)
-40°C to +85°C (screw)

Coding

A-standard

Rated current (A)

4 A

Benefits

- Easy connection with proven screw clamp connection
- For creating of individual cable lengths
- Quick and easy on-site assembly
- No special tools required for connecting the cables
- Time-saving assembly with IDC connection technology

Product features

- 3 and 4-pin version
- Version with piercing, insulation displacement contacts (IDC) or screw connection
- PWIS-free

Suitable cables

- UNITRONIC® SENSOR Page 384
- UNITRONIC® SENSOR FD Page 385
- UNITRONIC® ROBUST S/A FD Page 386

Article number	Article designation	Number of pins	Connection type	Cross-section in mm²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight							
22260993	AB-C3-M8MS-F0,25	3	IDC	0.08 - 0.25	2.5 - 5	60	1
22260985	AB-C3-M8MS-F0,5	3	IDC	0.25 - 0.5	2.5 - 5	60	1
22260043	AB-C4-M8MS-F0,25	4	IDC	0.08 - 0.25	2.5 - 5	30	1
22260044	AB-C4-M8MS-F0,5	4	IDC	0.25 - 0.5	2.5 - 5	30	1
22260122	AB-C3-M8MS-P	3	Piercing	0.14 - 0.38	3 - 5	60	1
22260123	AB-C4-M8MS-P	4	Piercing	0.14 - 0.38	3 - 5	30	1
22260120	AB-C3-M8MS	3	screw	0.14 - 0.5	3.5 - 5	60	1
22260121	AB-C4-M8MS	4	screw	0.14 - 0.5	3.5 - 5	30	1
Plug, straight shielded							
22262025	AB-C3-M8MS-M-0,34-SH	3	screw	0.14 - 0.5	3.5 - 5.5	60	1
22262027	AB-C4-M8MS-M-0,34-SH	4	screw	0.14 - 0.5	3.5 - 5	30	1
Plug, angled							
22262110	AB-C3-M8MA	3	screw	0.14 - 0.5	3.5 - 5	60	1
22262111	AB-C4-M8MA	4	screw	0.14 - 0.5	3.5 - 5	30	1
Socket, straight							
22260994	AB-C3-M8FS-F0,25	3	IDC	0.08 - 0.25	2.5 - 5	60	1
22260986	AB-C3-M8FS-F0,5	3	IDC	0.25 - 0.5	2.5 - 5	60	1
22260045	AB-C4-M8FS-F0,25	4	IDC	0.08 - 0.25	2.5 - 5	30	1
22260046	AB-C4-M8FS-F0,5	4	IDC	0.25 - 0.5	2.5 - 5	30	1
22260124	AB-C3-M8FS-P	3	Piercing	0.14 - 0.38	3 - 5	60	1
22260119	AB-C4-M8FS-P	4	Piercing	0.14 - 0.38	3 - 5	30	1
22260125	AB-C3-M8FS	3	screw	0.14 - 0.5	3.5 - 5	60	1
22260126	AB-C4-M8FS	4	screw	0.14 - 0.5	3.5 - 5	30	1
Socket, straight shielded							
22262026	AB-C3-M8FS-M-0,34-SH	3	screw	0.14 - 0.5	3.5 - 5.5	60	1
22262028	AB-C4-M8FS-M-0,34-SH	4	screw	0.14 - 0.5	3.5 - 5.5	30	1
Socket, angled							
22262112	AB-C3-M8FA	3	screw	0.14 - 0.5	3.5 - 5	60	1
22262113	AB-C4-M8FA	4	screw	0.14 - 0.5	3.5 - 5	30	1

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



EPIC® SENSOR Flush-type M8



Benefits

- Flexible connection solutions for individual device concepts
- Simple installation in devices (e.g. cabinet)

Application range

- Connection of enclosures and cabinets

Product features

- M8 fastening thread
- Designs for front mounting
- PWIS-free

Product Make-up

- TPE single strands, l = 0.5 m
- Core cross section: 0.25 mm²

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002061
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector chassis



Material

Contact: CuSn
Contact surface: Ag



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket
-25°C to +85°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Panel-mount connector male				
22260100	AB-C3-M8MS-0,5	3	60	1
22260101	AB-C4-M8MS-0,5	4	30	1
Panel-mount connector female				
22260102	AB-C3-M8FS-0,5	3	60	1
22260103	AB-C4-M8FS-0,5	4	30	1

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

Accessories

- Matching fitting nut: 22260104



UNITRONIC® SENSOR M12 open-ended Cordsets

i Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Wire cross-section: 0.34mm² (8-pin: 0.25mm²)
- Colour-code:
 - 3-pin: bn (1), bu (3), bk (4)
 - 4-pin: bn (1), wh (2), bu (3), bk (4)
 - 5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
 - 8-pin: wh (1), bn (2), gn (3), ye (4), gy (5), pk (6), bu (7), rd (8)
- Outer sheath: PUR, black

Suitable tools

- DATA STRIP stripping tool refer to page 986

Technical data**Classification**

ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord

**Material**

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

**Minimum bending radius**

Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

**Protection rating**

IP 65/IP 67

**Ambient temperature (operation)**

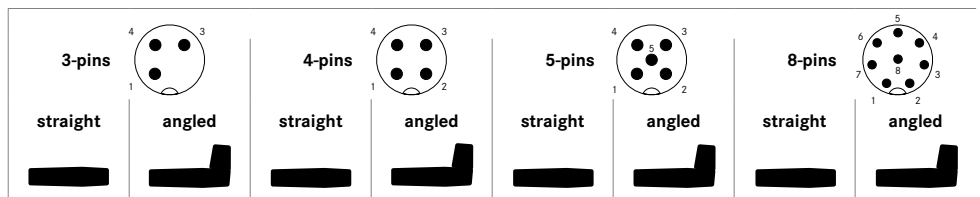
Plug/socket: -25°C to +90°C
Fixed installation: -40°C to +80°C
Flexing: -25°C to +80°C

Coding

A-standard

Rated current (A)

4 A
2 A (8-pin)



Product	Length	Article number							
Plug, unshielded	2.0m	22260221	22260223	22260320	22260301	22260400	22260402	22260091	22260094
	5.0m	22260222	22260224	22260321	22260302	22260401	22260403	22260092	22260095
	10.0m	22260249	22260256	22260342	22260303	22260414	22260417	22260093	22260096
Socket, unshielded	2.0m	22260257	22260258	22260322	22260324	22260404	22260406	22260726	22260141
	5.0m	22260250	22260259	22260323	22260325	22260405	22260407	22260728	22260615
	10.0m	22260251	22260260	22260343	22260341	22260415	22260418	22260729	22260616
Socket with LEDs, unshielded	2.0m	22260252	22260253	22260344	22260326	On request	22260408	On request	On request
	5.0m	22260265	22260254	22260345	22260327		22260409		
	10.0m	22260266	22260255	22260346	22260340		22260416		
Plug, shielded	2.0m	22260453	On request	22260459	On request	22260465	22261004	On request	On request
	5.0m	22260454		22260460		22260466	22261005		
	10.0m	22260455		22260461		22260467	On request		
Socket, shielded	2.0m	22260450	22260074	22260456	22260074	22260462	22260946	On request	On request
	5.0m	22260451	22260675	22260457	22260675	22260463	22260714	22260863	22260859
	10.0m	22260452	22260680	22260458	22260680	22260464	22260991	22262001	On request

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.



UNITRONIC® SENSOR M12 Cordsets



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Wire cross-section: 0.34mm² (8-pin: 0.25mm²)
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
8-pin: wh (1), bn (2), gn (3), ye (4), gy (5), pk (6), bu (7), rd (8)
- Outer sheath: PUR, black

Technical data



Classification

ETIM 5.0 Class-ID: EC001855
ETIM 5.0 Class-Description: Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter



Protection rating

IP 65/IP 67



Ambient temperature (operation)

Plug/socket: -25°C to +90°C
Fixed installation: -40°C to +80°C
Flexing: -25°C to +80°C

Coding

A-standard

Rated current (A)

4 A
2 A (8-pin)

Socket	Length	Article number							
		3-pins		4-pins		5-pins		8-pins	
		straight	angled	straight	angled	straight	angled	straight	angled
	0.3m	22260233	On request	22260328	22260304	22260410	On request	22260097	On request
	0.6m	22260234		22260329	22260305	22260411		22260098	
	1.0m	22260235		22260330	22260306	22260412		22260099	
	2.0m	22260236		22260331	22260307	22260413		22260042	
	0.3m	22260237	On request	22260332	On request	22260063	On request	22260137	On request
	0.6m	22260238		22260333		22260064		22260138	
	1.0m	22260239		22260334	22260965	22260065		22260139	
	2.0m	22260240		22260335	22260693	22260066		22260140	
	0.3m	22260261	On request	22260336	On request	22260067	On request	On request	On request
	0.6m	22260262		22260337		22260068			
	1.0m	22260263		22260338		22260069			
	2.0m	22260264		22260339		22260070			

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

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

UL certifications can be found in the data sheet.



UNITRONIC® SENSOR M12-M8

M12 plug on M8 socket

Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Integrated vibration protection (mechanical lock-in)
- Gold-plated contacts for low transfer resistance

Application range

- For increased mechanical stress and harsh operating conditions

Product features

- UV-resistant
- Good resistance to oils and chemicals
- PWIS and PVC free
- Suitable for drag chains
- Including tag carrier

Norm references / Approvals

- Halogenfree according to DIN VDE 0472
- UL File Number: E249137
- Flame-retardant according to UL 1581 FT-2

Product Make-up

- Core cross section: 0.25 mm²
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: PUR, black

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001855 ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord
	Material Contact: CuSn Contact surface: Ni/Au Knurl: Zinc die-cast, nickel-plated Gripping body: TPU, flame-retardant, self-extinguishing
	Minimum bending radius Fixed installation: 5 x outer diameter Flexing: 10 x outer diameter
	Protection rating IP65/IP67
	Ambient temperature (operation) Plug/socket -25°C to +90°C Fixed installation -40°C to +80°C Flexing -25°C to +80°C
	Coding A-standard
	Rated current (A) 4 A

Article number	Article designation	Length (m)	Design	LED	Rated voltage (V)	PU
Plug on socket						
3-pin						
22260225	AB-C3-M12MS-0,3PUR-M8FS	0.3	straight-straight	no	60	1
22260226	AB-C3-M12MS-0,6PUR-M8FS	0.6	straight-straight	no	60	1
22260227	AB-C3-M12MS-1,0PUR-M8FS	1	straight-straight	no	60	1
22260228	AB-C3-M12MS-2,0PUR-M8FS	2	straight-straight	no	60	1
22260229	AB-C3-M12MS-0,3PUR-M8FA	0.3	straight-angled	no	60	1
22260230	AB-C3-M12MS-0,6PUR-M8FA	0.6	straight-angled	no	60	1
22260231	AB-C3-M12MS-1,0PUR-M8FA	1	straight-angled	no	60	1
22260232	AB-C3-M12MS-2,0PUR-M8FA	2	straight-angled	no	60	1
22260267	AB-C3-M12MS-0,3PUR-M8FA-2L	0.3	straight-angled	2 LEDs	24	1
22260268	AB-C3-M12MS-0,6PUR-M8FA-2L	0.6	straight-angled	2 LEDs	24	1
22260269	AB-C3-M12MS-1,0PUR-M8FA-2L	1	straight-angled	2 LEDs	24	1
22260270	AB-C3-M12MS-2,0PUR-M8FA-2L	2	straight-angled	2 LEDs	24	1
4-pin						
22260347	AB-C4-M12MS-0,3PUR-M8FS	0.3	straight-straight	no	30	1
22260349	AB-C4-M12MS-0,6PUR-M8FS	0.6	straight-straight	no	30	1
22260350	AB-C4-M12MS-1,0PUR-M8FS	1	straight-straight	no	30	1
22260348	AB-C4-M12MS-2,0PUR-M8FS	2	straight-straight	no	30	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

Accessories

- FLEXIMARK® Label LMB refer to page 942

**UNITRONIC® SENSOR PVC M12 | M12-M12**

M12 plug/socket on M12 plug/socket/free conductor end

**Info**

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking
- Gold-plated contacts for low transfer resistance
- Integrated vibration protection (mechanical lock-in)

Application range

- For medium mechanical stress in dry conditions

Product features

- Partly oil and chemical resistant
- Including tag carrier
- PWIS-free

Norm references / Approvals

- Flame-retardant according to style 2464
- UL File Number: E249137

Product Make-up

- Wire cross-section: 0,34 mm²
- Colour-code:
3-pin: bn (1), bu (3), bk (4)
4-pin: bn (1), wh (2), bu (3), bk (4)
5-pin: bn (1), wh (2), bu (3), bk (4), gn/ye (5)
- Outer sheath: PVC, black

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data**Classification ETIM 5/6**

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord

**Material**

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing

**Minimum bending radius**

Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter

**Protection rating**

IP65/IP67

**Ambient temperature (operation)**

Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	Rated voltage (V)	PU
3-pin						
Socket						
22260080	AB-C3-2,0PVC-M12FS	3	2	straight	250	1
22260663	AB-C3-5,0PVC-M12FS	3	5	straight	250	1
22260081	AB-C3-10,0PVC-M12FS	3	10	straight	250	1
22262095	AB-C3-2,0PVC-M12FA	3	2	angled	250	1
22260661	AB-C3-5,0PVC-M12FA	3	5	angled	250	1
22262083	AB-C3-10,0PVC-M12FA	3	10	angled	250	1
Plug on socket						
22262096	AB-C3-M12MS-2,0PVC-M12FA	3	2	straight-angled	250	1
22262097	AB-C3-M12MS-5,0PVC-M12FA	3	5	straight-angled	250	1
22262098	AB-C3-M12MS-10,0PVC-M12FA	3	10	straight-angled	250	1
4-pin						
Socket						
22260688	AB-C4- 2,0PVC-M12FS	4	2	straight	250	1
22260689	AB-C4-5,0PVC-M12FS	4	5	straight	250	1
22260685	AB-C4-10,0PVC-M12FS	4	10	straight	250	1
22260841	AB-C4- 2,0PVC-M12FA	4	2	angled	250	1
22260678	AB-C4-5,0PVC-M12FA	4	5	angled	250	1
22260683	AB-C4-10,0PVC-M12FA	4	10	angled	250	1
Plug on socket						
22260832	AB-C4-M12MS-2,0PVC-M12FA	4	2	straight-angled	250	1
22260705	AB-C4-M12MS-5,0PVC-M12FA	4	5	straight-angled	250	1
22260833	AB-C4-M12MS-10,0PVC-M12FA	4	10	straight-angled	250	1
5-pin						
Socket						
22262099	AB-C5-2,0PVC-M12FS	5	2	straight	60	1
22262100	AB-C5-5,0PVC-M12FS	5	5	straight	60	1
22262101	AB-C5-10,0PVC-M12FS	5	10	straight	60	1
Plug on socket						
22262102	AB-C5-M12MS-2,0PVC-M12FA	5	2	straight-angled	60	1
22262103	AB-C5-M12MS-5,0PVC-M12FA	5	5	straight-angled	60	1
22262104	AB-C5-M12MS-10,0PVC-M12FA	5	10	straight-angled	60	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

UL certifications can be found in the data sheet.

Accessories

- EPIC® SENSOR M12 refer to page 398
- EPIC® SENSOR M12 V4A refer to page 399

- FLEXIMARK® Label LMB refer to page 942



UNITRONIC® SENSOR HD M12

S/A cable: Hygienic Design for Food&Beverage

Info

- IP69 for high-pressure cleaning
- - 40 °C to + 105 °C



Benefits

- Hygienic Design for ideal cleaning results
- Guaranteed density by meeting the highest protection class
- Stainless steel knurl to ensure protection against corrosion
- Bright colors to detect contamination quickly

Application range

- Food production and packaging machinery
- Freezing plants, cold storage
- Washdown area with frequent contact with cleaning agents

Product features

- Suitable for drag chains
- 4-pin plug/socket M12 on free conductor end

Norm references / Approvals

- ECOLAB®
Industry standard in the field of professional cleaning and disinfection in the food and beverage industry
- FDA 21 CFR 177.2600
Special sealing element for food and beverage industry in North America

Product Make-up

- Wire cross-section: 0,34 mm²
- Colour-code:
4-pin: bn (1), wh (2), bu (3), bk (4)
- Outer sheath: TPE halogen-free, grey (similar to RAL 7035)

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord
- Material**
Contact: CuSn
Contact surface: Ni/Au
Knurl: Stainless steel (V4A)
Gripping body: PP
- Minimum bending radius**
Fixed installation: 5 x outer diameter
Flexing: 10 x outer diameter
- Protection rating**
IP65/IP67/IP68/IP69
- Ambient temperature (operation)**
Fixed installation -40 °C to +105 °C
Flexing -25 °C to +105 °C
- Coding**
A-standard
- Rated current (A)**
4 A

Article number	Article designation	Number of pins	Length (m)	Design	LED	Rated voltage (V)	PU
4-pin							
Plug							
22262040	AB-C4-M12MS-2,0TPE-HD	4	2	straight	no	250	1
22262041	AB-C4-M12MS-5,0TPE-HD	4	5	straight	no	250	1
22262060	AB-C4-M12MS-7,5TPE-HD	4	7.5	straight	no	250	1
22262042	AB-C4-M12MS-10,0TPE-HD	4	10	straight	no	250	1
22262061	AB-C4-M12MS-15,0TPE-HD	4	15	straight	no	250	1
Socket							
22262043	AB-C4-2,0TPE-M12FS-HD	4	2	straight	no	250	1
22262044	AB-C4-5,0TPE-M12FS-HD	4	5	straight	no	250	1
22262062	AB-C4-7,5TPE-M12FS-HD	4	7.5	straight	no	250	1
22262045	AB-C4-10,0TPE-M12FS-HD	4	10	straight	no	250	1
22262063	AB-C4-15,0TPE-M12FS-HD	4	15	straight	no	250	1
22262046	AB-C4-2,0TPE-M12FA-HD	4	2	angled	no	250	1
22262047	AB-C4-5,0TPE-M12FA-HD	4	5	angled	no	250	1
22262064	AB-C4-7,5TPE-M12FA-HD	4	7.5	angled	no	250	1
22262048	AB-C4-10,0TPE-M12FA-HD	4	10	angled	no	250	1
22262065	AB-C4-15,0TPE-M12FA-HD	4	15	angled	no	250	1

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

No copper surcharge.

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

Accessories

- EPIC® SENSOR M12 refer to page 398
- EPIC® SENSOR M12 V4A refer to page 399
- EPIC® SENSOR M12/M12 refer to page 400



EPIC® SENSOR M12

Field mountable connectors M12



Benefits

- For creating of individual cable lengths
- No special tools required for connecting the cables
- Time-saving assembly with IDC connection technology
- Easy connection with proven screw clamp connection

Product features

- 4, 5 and 8-pin version
- Screened and non-screened version
- Screw connection or insulation displacement contacts (IDC)
- PWIS-free

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector

Material
Contact: CuZn
Contact surface: CuSnZn

Protection rating
IP 65/IP 67 (IDC)
IP 67 (screw)

Ambient temperature (operation)
Plug/socket
-25°C to +80°C (IDC)
-40°C to +85°C (screw)

Coding
A-standard

Rated current (A)
4 A
2 A (8-pin)

Article number	Article designation	Number of pins	Connection type	Cross-section in mm²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight							
22260132	AB-C4-M12MS-F0,34	4	IDC	0.14 - 0.34	3.5 - 6	125	1
22260134	AB-C4-M12MS-F0,75	4	IDC	0.34 - 0.75	4 - 8	250	1
22260649	AB-C4-M12MS-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260995	AB-C4-M12MS-PG9	4	screw	0.25 - 0.75	6 - 8	250	1
22260129	AB-C5-M12MS-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260651	AB-C5-M12MS-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22260996	AB-C5-M12MS-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Plug, straight shielded							
22260135	AB-C5-M12MS-PG9-SH	5	screw	0.25 - 0.75	6 - 8	60	1
22260825	AB-C8-M12MS-PG9-SH	8	screw	0.25 - 0.75	6 - 8	30	1
Plug, angled							
22260647	AB-C4-M12MA-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260130	AB-C5-M12MA-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260648	AB-C5-M12MA-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22262023	AB-C5-M12MA-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Plug angled, shielded							
22262108	AB-C5-M12MA-PG7-SH	5	screw	0.25 - 0.75	4 - 6	60	1
Socket, straight							
22260131	AB-C4-M12FS-F0,34	4	IDC	0.14 - 0.34	3.5 - 6	125	1
22260133	AB-C4-M12FS-F0,75	4	IDC	0.34 - 0.75	4 - 8	250	1
22260640	AB-C4-M12FS-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260641	AB-C4-M12FS-PG9	4	screw	0.25 - 0.75	6 - 8	250	1
22260127	AB-C5-M12FS-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260644	AB-C5-M12FS-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22260997	AB-C5-M12FS-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Socket, straight shielded							
22260136	AB-C5-M12FS-PG9-SH	5	screw	0.25 - 0.75	6 - 8	60	1
22260826	AB-C8-M12FS-PG9-SH	8	screw	0.25 - 0.75	6 - 8	30	1
Socket, angled							
22260636	AB-C4-M12FA-PG7	4	screw	0.25 - 0.75	4 - 6	250	1
22260128	AB-C5-M12FA-PG7	5	screw	0.25 - 0.75	4 - 6	60	1
22260638	AB-C5-M12FA-PG9	5	screw	0.25 - 0.75	6 - 8	60	1
22262024	AB-C5-M12FA-PG9-SKINTOP®	5	screw	0.25 - 0.75	6 - 8	60	1
Socket angled, shielded							
22262109	AB-C5-M12FA-PG7-SH	5	screw	0.25 - 0.75	4 - 6	60	1

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



EPIC® SENSOR M12 V4A

Field mountable connectors M12 for Food & Beverage/ Outdoor



Benefits

- Stainless steel knurl to ensure protection against corrosion
- Quick and easy on-site assembly
- For creating of individual cable lengths
- Space-saving due to compact dimensions
- Easy connection with proven screw clamp connection

Application range

- Automation systems
- Conveyor and transport systems
- Food production and packaging machinery
- Version SKINTOP® for Outdoor applications

Product features

- 4-pin connector
- Screw connection
- PWIS-free

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector



Material

Contact: CuZn
Contact surface: Au (gold)
Knurl: Stainless steel (V4A)



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket -40°C to +85°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Cross-section in mm ²	Cable diameter in mm	Rated voltage (V)	PU
Plug, straight						
22262049	AB-C4-M12MS-PG7-VA	4	0.25 - 0.75	4 - 6	250	1
22262123	AB-C4-M12MS-PG7-VA-SKINTOP	4	0.25 - 0.75	4.0 - 6.5	250	1
Socket, straight						
22262050	AB-C4-M12FS-PG7-VA	4	0.25 - 0.75	4 - 6	250	1
22262124	AB-C4-M12FS-PG7-VA-SKINTOP	4	0.25 - 0.75	4.0 - 6.5	250	1
Socket angled						
22262051	AB-C4-M12FA-PG7-VA	4	0.25 - 0.75	4 - 6	250	1

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



EPIC® SENSOR M12/M12

M12 control cabinet feed-through, shielded for CAN/DeviceNet/ S/A cabling



Benefits

- Plug & Play for flexible connection solutions
- M12 connector on both sides

Product features

- For CANopen/DeviceNet applications
- For sensor/actuator cabling
- Bipolar/screw mounting

Product Make-up

- 5-pin control cabinet feed-through, M12 A-coded
- M12 plug on M12 socket
- Screened version

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002061
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector chassis



Material

Contact: CuZn
Contact surface: Au (gold)
Contact carrier: PA 66
Knurl: Nickel-plated brass
Sealing: FKM



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket
-25°C to +85°C

Coding

A - Standard
(CANopen/DeviceNet/CC-Link)

Rated current (A)

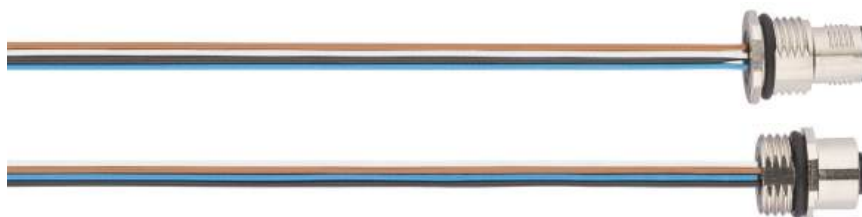
4 A

Article number	Article designation	Number of pins	Rated voltage (V)	PU
Control cabinet feed through				
22262020	AB-C5-DSI-M12MS-M12FS-M16-SH	5	24	1

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



EPIC® SENSOR Flush-type M12



Benefits

- Flexible connection solutions for individual device concepts
- Simple installation in devices (e.g. cabinet)
- Outside pluggable with M12 connection, inside housing connected with fixed wires

Application range

- Connection of enclosures and cabinets

Product features

- With M12, M16 or PG9 fastening thread
- Designs for front and rear wall-mounting
- M12 connector, A-coded with quick-locking system
- PWIS-free
- Rear wall-mounting versions inclusive fitting nut

Norm references / Approvals

- UL File Number: E249137

Product Make-up

- TPE single strands, l = 0.5 m
- Wire cross-section: 0,34 mm²

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC002061 ETIM 5.0/6.0 Class-Description: Sensor-actuator connector chassis
	Material Contact: CuZn Contact surface: Au (gold)
	Protection rating IP 67
	Ambient temperature (operation) Plug/socket -25°C to +85°C
	Coding A-standard
	Rated current (A) 4 A

Article number	Article designation	Number of pins	Fastening thread	Rated voltage (V)	PU
Plug for front-mounting					
22260108	AB-C4-M12MS-M16-0,5	4	M16	250	1
22260106	AB-C5-M12MS-M16-0,5	5	M16	60	1
22260083	AB-C4-M12MS-M16-PO-0,5	4	M16 positionable	250	1
22260084	AB-C5-M12MS-M16-PO-0,5	5	M16 positionable	60	1
22260113	AB-C4-M12MS-PG9-0,5	4	PG9	250	1
22260112	AB-C5-M12MS-PG9-0,5	5	PG9	60	1
22260087	AB-C4-M12MS-PG9-PO-0,5	4	PG9 positionable	250	1
22260088	AB-C5-M12MS-PG9-PO-0,5	5	PG9 positionable	60	1
Plug for rear-mounting					
22260999	AB-C4-DSI-M12MS-M12-0,5	4	M12	250	1
22260117	AB-C4-DSI-M12MS-PG9-0,5	4	PG9	250	1
22260115	AB-C5-DSI-M12MS-PG9-0,5	5	PG9	60	1
Socket for front-mounting					
22260107	AB-C4-M12FS-M16-0,5	4	M16	250	1
22260105	AB-C5-M12FS-M16-0,5	5	M16	60	1
22260085	AB-C4-M12FS-M16-PO-0,5	4	M16 positionable	250	1
22260086	AB-C5-M12FS-M16-PO-0,5	5	M16 positionable	60	1
22260114	AB-C4-M12FS-PG9-0,5	4	PG9	250	1
22260111	AB-C5-M12FS-PG9-0,5	5	PG9	60	1
22260089	AB-C4-M12FS-PG9-PO-0,5	4	PG9 positionable	250	1
22260090	AB-C5-M12FS-PG9-PO-0,5	5	PG9 positionable	60	1
Socket for rear-mounting					
22260118	AB-C4-DSI-M12FS-PG9-0,5	4	PG9	250	1
22260116	AB-C5-DSI-M12FS-PG9-0,5	5	PG9	60	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

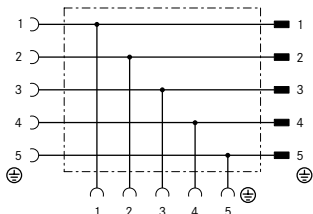
Accessories

- Matching fitting nut: 22261062 (M12), 52003500 (PG9), 22260110 (M16)



EPIC® SENSOR M12 T-distributor

M12 T parallel distributor for CAN/ DeviceNet/ S/A cabling



Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Robust design

Product features

- PWIS-free

Product Make-up

- 5-pin parallel distributor
- M12 socket on M12 plug and M12 socket

Technical data



Material

Contact: CuZn
Contact surface: Ni/Au
Contact carrier: TPU GF
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing
Sealing: NBR



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25 °C to +90 °C

Coding

A - Standard
(CANopen/DeviceNet/CC-Link)

Rated current (A)

4 A

Article number	Article designation	PU
T distributor		
22260765	AB-C5-M12T-2XM12FS DN	5

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



EPIC® SENSOR CCR

Cable coupler round, shielded for e.g. sensor-actuator / PROFIBUS / CAN cables



Benefits

- Optimum EMC protection with 360 ° shielding
- Time-saving assembly with IDC connection technology

Application range

- To extend existing cable systems
- Repairkit for damaged cables

Product features

- 5-pin cable coupler round
- Screened version

Technical data



Material

Contact: CuZn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: Zinc die-cast, nickel-plated



Protection rating

IP65/IP67



Ambient temperature (operation)

-40 °C to +85 °C

Rated current (A)

4 A

Article number	Article designation	Number of pins	Cross-section in mm ²	Cable diameter in mm	Rated voltage (V)
Cable coupler round					
21700641	AB-C5-CCR-SH	5	18 - 26	5.0 - 9.7	60

DeviceNet is a registered trademark of ODVA

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



UNITRONIC® SENSOR Valve

valve connector on free conductor end



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- Suitable for drag chains
- With protective circuit (Z diode), PE-bridged (except type AD)
- With LED status indicator (yellow)
- With display switch state (2 LEDs, red/green)
- Including tag carrier
- PWIS-free

Product Make-up

- 3 or 5 x 0.5 mm²
- Core identification code: Black cores with white numbers +green/yellow
- Outer sheath: PUR halogen-free, black
- Outer diameter: 4.5 mm (3 pins) 5.3 mm (5 pins)

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001855 ETIM 5.0/6.0 Class-Description: Sensor-actuator patch cord
	Material Contact: CuSn Contact surface: Ag
	Protection rating IP65/IP67
	Ambient temperature (operation) Valve connector -20°C to +85°C Fixed installation -40°C to +80°C Flexing -20°C to +80°C
	Coding A-standard
	Rated current (A) 4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
Valve connector type A (18 mm)						
22260584	AB-C3- 2,0PUR-A-1L-S	3	2	1 LED	24	1
22260576	AB-C3- 5,0PUR-A-1L-S	3	5	1 LED	24	1
22260577	AB-C3-10,0PUR-A-1L-S	3	10	1 LED	24	1
Valve connector type A (18mm) for pressure switch						
22260589	AB-C5- 2,0PUR-AD-2L	5	2	2 LEDs	24	1
22260590	AB-C5- 5,0PUR-AD-2L	5	5	2 LEDs	24	1
22260591	AB-C5-10,0PUR-AD-2L	5	10	2 LEDs	24	1
Valve connector type B (10 mm)						
22260585	AB-C3- 2,0PUR-B-1L-S	3	2	1 LED	24	1
22260578	AB-C3- 5,0PUR-B-1L-S	3	5	1 LED	24	1
22260579	AB-C3-10,0PUR-B-1L-S	3	10	1 LED	24	1
Valve connector type BI (11 mm)						
22260586	AB-C3- 2,0PUR-BI-1L-S	3	2	1 LED	24	1
22260580	AB-C3- 5,0PUR-BI-1L-S	3	5	1 LED	24	1
22260581	AB-C3-10,0PUR-BI-1L-S	3	10	1 LED	24	1
Valve connector type C (8 mm)						
22260587	AB-C3- 2,0PUR-C-1L-S	3	2	1 LED	24	1
22260582	AB-C3- 5,0PUR-C-1L-S	3	5	1 LED	24	1
22260583	AB-C3-10,0PUR-C-1L-S	3	10	1 LED	24	1
Valve connector type CI (9.4 mm)						
22260588	AB-C3- 2,0PUR-CI-1L-S	3	2	1 LED	24	1
22260574	AB-C3- 5,0PUR-CI-1L-S	3	5	1 LED	24	1
22260575	AB-C3-10,0PUR-CI-1L-S	3	10	1 LED	24	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- FLEXIMARK® Label LMB refer to page 942
- SENSOR STRIP stripping tool refer to page 987



UNITRONIC® SENSOR Valve-M 12

valve connector on straight M12 plug



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- Suitable for drag chains
- With protective circuit (Z diode), PE-bridged (except type AD)
- With LED status indicator (yellow)
With display switch state (2 LEDs, red/green)
- Including tag carrier
- PWIS-free

Product Make-up

- 3 or 5 x 0.5 mm²
- Core identification code:
Black cores with white numbers +green/yellow
- Outer sheath: PUR halogen-free, black
- Outer diameter:
4.5 mm (3 pins)
5.3 mm (5 pins)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating

IP65/IP67



Ambient temperature (operation)

Valve connector -20°C to +85°C
Connector/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -20°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
Straight connector to valve connector type A (18 mm)						
22260550	AB-C3-M12MS-0,3PUR-A-1L-S	3	0.3	1 LED	24	1
22260551	AB-C3-M12MS-0,6PUR-A-1L-S	3	0.6	1 LED	24	1
22260552	AB-C3-M12MS-1,0PUR-A-1L-S	3	1	1 LED	24	1
22260553	AB-C3-M12MS-2,0PUR-A-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type A (18mm) for pressure switch						
22260573	AB-C5-M12MS-0,3PUR-AD-2L	5	0.3	2 LEDs	24	1
22260572	AB-C5-M12MS-0,6PUR-AD-2L	5	0.6	2 LEDs	24	1
22260571	AB-C5-M12MS-1,0PUR-AD-2L	5	1	2 LEDs	24	1
22260570	AB-C5-M12MS-2,0PUR-AD-2L	5	2	2 LEDs	24	1
Straight connector to valve connector type B (10 mm)						
22260558	AB-C3-M12MS-0,3PUR-B-1L-S	3	0.3	1 LED	24	1
22260559	AB-C3-M12MS-0,6PUR-B-1L-S	3	0.6	1 LED	24	1
22260560	AB-C3-M12MS-1,0PUR-B-1L-S	3	1	1 LED	24	1
22260561	AB-C3-M12MS-2,0PUR-B-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type BI (11 mm)						
22260554	AB-C3-M12MS-0,3PUR-BI-1L-S	3	0.3	1 LED	24	1
22260555	AB-C3-M12MS-0,6PUR-BI-1L-S	3	0.6	1 LED	24	1
22260556	AB-C3-M12MS-1,0PUR-BI-1L-S	3	1	1 LED	24	1
22260557	AB-C3-M12MS-2,0PUR-BI-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type C (8 mm)						
22260566	AB-C3-M12MS-0,3PUR-C-1L-S	3	0.3	1 LED	24	1
22260567	AB-C3-M12MS-0,6PUR-C-1L-S	3	0.6	1 LED	24	1
22260568	AB-C3-M12MS-1,0PUR-C-1L-S	3	1	1 LED	24	1
22260569	AB-C3-M12MS-2,0PUR-C-1L-S	3	2	1 LED	24	1
Straight connector to valve connector type CI (9.4 mm)						
22260562	AB-C3-M12MS-0,3PUR-CI-1L-S	3	0.3	1 LED	24	1
22260563	AB-C3-M12MS-0,6PUR-CI-1L-S	3	0.6	1 LED	24	1
22260564	AB-C3-M12MS-1,0PUR-CI-1L-S	3	1	1 LED	24	1
22260565	AB-C3-M12MS-2,0PUR-CI-1L-S	3	2	1 LED	24	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

Accessories

- FLEXIMARK® Label LMB refer to page 942



UNITRONIC® SENSOR M12Y

M12 Y plug straight on 2x free conductor end



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions

Product features

- 4-pin M12Y plug on free conductor end
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- 3 x 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating
IP65/IP67



Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Length (m)	LED	Rated voltage (V)	PU
Y plug to 2 x free conductor end					
22260500	AB-C3-M12Y-2,0PUR	2	no	250	1
22260513	AB-C3-M12Y-5,0PUR	5	no	250	1
22260526	AB-C3-M12Y-10,0PUR	10	no	250	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.
UL certifications can be found in the data sheet.

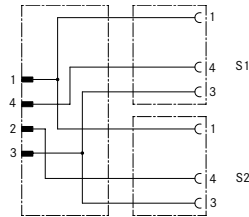
Accessories

- FLEXIMARK® Label LMB refer to page 942



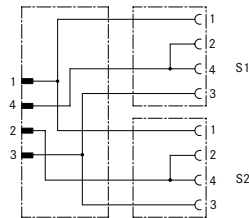
UNITRONIC® SENSOR M 12Y-M8

M 12 Y plug straight on 2x M8 socket



UNITRONIC® SENSOR M 12Y-M 12

M 12 Y plug straight on 2x M 12 socket



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- 4-pin M 12Y connector on 2 x M 12 socket (4-pin), Pin 2+4 bridged
- 4-pin M 12Y plug on 2 x M8 socket (3-pin)
- Including tag carrier
- PWIS-free
- Suitable for drag chains

Product Make-up

- M 12Y-M8: 3 x 0.25 mm²
- M 12Y-M 12: 3 x 0.34 mm²
- Core colours: bn, bu, bk
- Outer sheath: PUR halogen-free, black

Technical data



Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material
Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Protection rating
IP65/IP67



Ambient temperature (operation)
Plug/socket -25°C to +90°C
Fixed installation -40°C to +80°C
Flexing -25°C to +80°C

Coding
A-standard

Rated current (A)
4 A

Article number	Article designation	Number of pins	Length (m)	LED	Rated voltage (V)	PU
M 12Y on 2x M8						
Straight socket						
22260514	AB-C3-M12Y-0,3PUR-M8FS	3	0.3	no	60	1
22260515	AB-C3-M12Y-0,6PUR-M8FS	3	0.6	no	60	1
22260516	AB-C3-M12Y-1,0PUR-M8FS	3	1	no	60	1
22260517	AB-C3-M12Y-2,0PUR-M8FS	3	2	no	60	1
Angled socket						
22260518	AB-C3-M12Y-0,3PUR-M8FA	3	0.3	no	60	1
22260519	AB-C3-M12Y-0,6PUR-M8FA	3	0.6	no	60	1
22260520	AB-C3-M12Y-1,0PUR-M8FA	3	1	no	60	1
22260521	AB-C3-M12Y-2,0PUR-M8FA	3	2	no	60	1
Angled socket with LEDs						
22260522	AB-C3-M12Y-0,3PUR-M8FA-2L	3	0.3	2 LEDs	24	1
22260523	AB-C3-M12Y-0,6PUR-M8FA-2L	3	0.6	2 LEDs	24	1
22260524	AB-C3-M12Y-1,0PUR-M8FA-2L	3	1	2 LEDs	24	1
22260525	AB-C3-M12Y-2,0PUR-M8FA-2L	3	2	2 LEDs	24	1
M 12Y on 2x M 12						
Straight socket						
22260501	AB-C3-M12Y-0,3PUR-M12FS-B	3	0.3	no	250	1
22260502	AB-C3-M12Y-0,6PUR-M12FS-B	3	0.6	no	250	1
22260503	AB-C3-M12Y-1,0PUR-M12FS-B	3	1	no	250	1
22260504	AB-C3-M12Y-2,0PUR-M12FS-B	3	2	no	250	1
Angled socket						
22260505	AB-C3-M12Y-0,3PUR-M12FA-B	3	0.3	no	250	1
22260506	AB-C3-M12Y-0,6PUR-M12FA-B	3	0.6	no	250	1
22260507	AB-C3-M12Y-1,0PUR-M12FA-B	3	1	no	250	1
22260508	AB-C3-M12Y-2,0PUR-M12FA-B	3	2	no	250	1
Angled socket with LEDs						
22260509	AB-C3-M12Y-0,3PUR-M12FA-2L-B	3	0.3	2 LEDs	24	1
22260510	AB-C3-M12Y-0,6PUR-M12FA-2L-B	3	0.6	2 LEDs	24	1
22260511	AB-C3-M12Y-1,0PUR-M12FA-2L-B	3	1	2 LEDs	24	1
22260512	AB-C3-M12Y-2,0PUR-M12FA-2L-B	3	2	2 LEDs	24	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

UL certifications can be found in the data sheet.

Accessories

- FLEXIMARK® Label LMB refer to page 942



EPIC® SENSOR M8Y | M12Y

Y distributor M8 | M12



Benefits

- Cost-saving due to quick and easy installation
- Space-saving due to compact dimensions
- Fast and easy error tracking

Product features

- Design: Plug on 2x socket
- M12 design with screw hole
- PWIS-free

Product Make-up

- 22260600: M12, 3-pin+ PE, straight M12 plug on 2x straight M12 socket, pin 2+4 bridged
- 22260601: M12, 3-pin+ PE, straight M12 plug on 2x straight M12 socket
- 22260602: M12, 5-pin straight M12 plug on 2x 3-pin straight M8 socket, parallel distributor
- 22260603: M8, 4-pin M8 plug on 2x 3pin M8 socket
- 22260604: M8 plug on M8 socket, 3-pin parallel distributor

Technical data

- Classification ETIM 5/6**
ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description: Sensor-actuator connector
- Material**
Contact: CuZn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing
- Protection rating**
IP65/IP67
- Ambient temperature (operation)**
Plug/socket -25°C to +90°C
- Coding**
A-standard
- Rated current (A)**
4 A

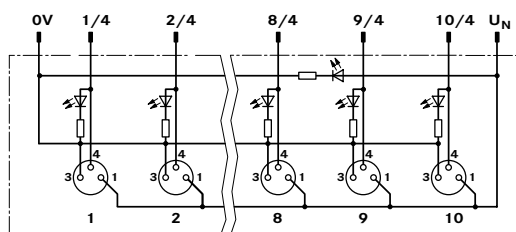
Article number	Article designation	Rated voltage (V)	PU
M12 Y distributor			
22260600	AB-C3-M12Y-2XM12FS B E	60	5
22260601	AB-C3-M12Y-2XM12FS E	60	5
22260602	AB-C5-M12Y-2XM12FS V	60	5
M8 Y distributor			
22260603	AB-C3-M8Y-2XM8FS	30	5
22260604	AB-C3-M8Y-2XM8FS V	60	5

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



Distribution Box M8

Distribution box with M8 slots and master cable/connection M12/M16



Benefits

- Cost efficient and rational wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- Hybrid cable for signal and power transmission
- There are no assembly costs as the master cable is already pre-assembled
- Suitable for drag chains

Product features

- Single-occupied boxes
- With fixed master cable or M12/M16 socket
- LEDs indicate the operating mode of the distributor and the status of the sensors
- PWIS-free

Norm references / Approvals

- E-File number: E75770

Product Make-up

- Core insulation: PVC
- Outer sheath: PUR, black

Suitable cables

- M12 master cable
8-pos. 5/10 m: 22260615/22260616
- M16 master cable
8-pos 5/10m: 22260607/22260608
10-pos 5/10m: 22260609/22260610
12-pos 5/10m: 22260611/22260612
14-pos 5/10m: 22260613/22260614

Suitable tools

- Suitable tools are available upon request (e.g. M8 torque screwdriver)

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC002585
ETIM 5.0/6.0 Class-Description:
Passive sensor-actuator interface

Protection rating
IP65/IP67

Ambient temperature (operation)
-30°C to +80°C
Fixed installation -40°C to +90°C
Flexing -5°C to 80°C

Current rating per slot
2 A

Article number	Article designation	Connection cable (No. of poles)	Length (m)	Number of slots	Status display
Fixed master cable					
22260026	AB-B4-M8L-4-5,0PUR		5	4	With LEDs
22260027	AB-B4-M8L-4-10,0PUR		10	4	With LEDs
22260028	AB-B6-M8L-6-5,0PUR		5	6	With LEDs
22260029	AB-B6-M8L-6-10,0PUR		10	6	With LEDs
22260030	AB-B8-M8L-8-5,0PUR		5	8	With LEDs
22260031	AB-B8-M8L-8-10,0PUR		10	8	With LEDs
22260032	AB-B10-M8L-10-5,0PUR		5	10	With LEDs
22260033	AB-B10-M8L-10-10,0PUR		10	10	With LEDs
M12 connection					
22260038	AB-B4-M8L-4-M12	8		4	With LEDs
22260039	AB-B6-M8L-6-M12	8		6	With LEDs
M16 connection					
22260034	AB-B4-M8L-4-M16	8		4	With LEDs
22260035	AB-B6-M8L-6-M16	10		6	With LEDs
22260036	AB-B8-M8L-8-M16	12		8	With LEDs
22260037	AB-B10-M8L-10-M16	14		10	With LEDs

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

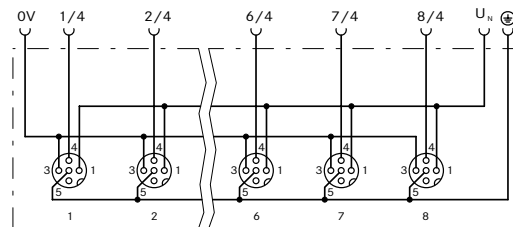
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Unoccupied slots must be covered with protective caps - ArtNo. 22260606 (M8); 22260605 (M12).



Distribution Box M12

Distribution box with M12 slots and master cable/mountable/M23 connection



Benefits

- Cost efficient and rational wiring of sensors and actuators
- Instead of numerous individual conductors, one master cable is laid to the control unit
- Hybrid cable for signal and power transmission

Product features

- With fixed master cable, mountable or M23 socket
- Single or double-occupied sensor/actuator box
- M12 quick-locking system, optional LED diagnostic
- Suitable for drag chains
- PWIS-free

Norm references / Approvals

- E-File number: E75770

Product Make-up

- Core insulation: PVC
- Outer sheath: PUR, black

Suitable cables

- UNITRONIC® SENSOR master cable Page 383
- M23 connection cable: 10 m: 22260852; 15 m: 22260853; 30 m: 22260959

Suitable tools

- Suitable tools are available upon request (e.g. M12 torque screwdriver)

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC002585 ETIM 5.0/6.0 Class-Description: Passive sensor-actuator interface
	Protection rating IP65/IP67 (M23 connection) IP65/IP67/IP69
	Ambient temperature (operation) -25°C to +75°C (M23 connection) -30°C to +90°C Fixed installation -40°C to +90°C Flexing -5 °C up to +80 °C
	Max. current rating per path 2 A
	Current rating per slot 4 A

Article number	Article designation	Length (m)	Number of slots	Status display
Single-occupied boxes				
Fixed master cable				
22260010	AB-B4-M12-4-5,0PUR	5	4	no
22260011	AB-B4-M12-4-10,0PUR	10	4	no
22260014	AB-B8-M12-8-5,0PUR	5	8	no
22260015	AB-B8-M12-8-10,0PUR	10	8	no
22260018	AB-B4-M12L-4-5,0PUR	5	4	With LEDs
22260019	AB-B4-M12L-4-10,0PUR	10	4	With LEDs
22260970	AB-B6-M12L-6-5,0PUR	5	6	With LEDs
22260022	AB-B8-M12L-8-5,0PUR	5	8	With LEDs
22260023	AB-B8-M12L-8-10,0PUR	10	8	With LEDs
Field mountable				
22260005	AB-B4-M12-4-C		4	no
22260007	AB-B8-M12-8-C		8	no
22260001	AB-B4-M12L-4-C		4	With LEDs
22260003	AB-B8-M12L-8-C		8	With LEDs
M23 connection				
22260618	AB-B6-6-L-M23		6	With LEDs
22260619	AB-B8-8-L-M23		8	With LEDs
Double-occupied boxes				
Fixed master cable				
22260012	AB-B4-M12-8-5,0PUR	5	4	no
22260013	AB-B4-M12-8-10,0PUR	10	4	no
22260016	AB-B8-M12-16-5,0PUR	5	8	no
22260017	AB-B8-M12-16-10,0PUR	10	8	no
22260020	AB-B4-M12L-8-5,0PUR	5	4	With LEDs
22260021	AB-B4-M12L-8-10,0PUR	10	4	With LEDs
22260024	AB-B8-M12L-16-5,0PUR	5	8	With LEDs
22260025	AB-B8-M12L-16-10,0PUR	10	8	With LEDs
Field mountable				
22260006	AB-B4-M12-8-C		4	no
22260008	AB-B8-M12-16-C		8	no
22260002	AB-B4-M12L-8-C		4	With LEDs
22260004	AB-B8-M12L-16-C		8	With LEDs
M23 connection				
22260621	AB-B8-16-M23		8	no
22260620	AB-B8-16-L-M23		8	With LEDs

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

Unoccupied slots must be covered with protective caps - ArtNo. 22260606 (M8); 22260605 (M12).

UL certifications can be found in the data sheet.



UNITRONIC® SENSOR M12 Power

Power cable: M12 plug/socket on free conductor



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request

Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Customise assembly of the free conductor end

Product features

- 4-core power cable
- M12 connector, A-coded with quick-locking system
- Including tag carrier
- Suitable for drag chains
- PWIS-free

Product Make-up

- 4 x 0.75 mm²
- 4-pin: bn (1), wh (2), bu (3), bk (4)
- Core insulation: PVC
- Outer sheath: PUR, black
- Outer diameter: 5.9 mm

Suitable tools

- DATA STRIP stripping tool refer to page 986
- Fibre Strip DC

Suitable connectors

- EPIC® SENSOR M12 398

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Flexing: 10 x outer diameter



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -25°C to +80°C
Flexing -5°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	Rated voltage (V)	PU
Straight connector						
22260778	AB-PC4-M12MS-2,0PUR	4	2	straight	250	1
22260779	AB-PC4-M12MS-5,0PUR	4	5	straight	250	1
22260780	AB-PC4-M12MS-10,0PUR	4	10	straight	250	1
Straight socket						
22260781	AB-PC4-2,0PUR-M12FS	4	2	straight	250	1
22260782	AB-PC4-5,0PUR-M12FS	4	5	straight	250	1
22260783	AB-PC4-10,0PUR-M12FS	4	10	straight	250	1

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

Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.

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

Accessories

- FLEXIMARK® Label LMB refer to page 942



UNITRONIC® SENSOR M12-M12 Power

Power cable: M12 straight plug on M12 straight socket



Info

- Other types are available at www.lappgroup.com/assemblyfinder or on request



Benefits

- Cost-effective, efficient wiring of fieldbus and sensor/ actuator installations
- Space-saving due to compact dimensions
- Fast and easy assembly

Product features

- 4-core power cable
- M12 connector, A-coded with quick-locking system
- Straight plug to straight socket
- PWIS-free
- Suitable for drag chains

Product Make-up

- 4 x 0.75 mm²
- 4-pin: bn (1), wh (2), bu (3), bk (4)
- Core insulation: PVC
- Outer sheath: PUR, black
- Outer diameter: 5.9 mm

Technical data

Classification ETIM 5/6
ETIM 5.0/6.0 Class-ID: EC001855
ETIM 5.0/6.0 Class-Description:
Sensor-actuator patch cord



Material

Contact: CuSn
Contact surface: Ni/Au
Knurl: Zinc die-cast, nickel-plated
Gripping body: TPU, flame-retardant, self-extinguishing



Minimum bending radius

Flexing: 10 x outer diameter



Protection rating

IP65/IP67



Ambient temperature (operation)

Plug/socket -25°C to +90°C
Fixed installation -25°C to +80°C
Flexing -5°C to +80°C

Coding

A-standard

Rated current (A)

4 A

Article number	Article designation	Number of pins	Length (m)	Design	Rated voltage (V)	PU
Plug on socket						
22260784	AB-PC4-M12MS-0,3PUR-M12FS	4	0.3	straight-straight	250	1
22260785	AB-PC4-M12MS-1,0PUR-M12FS	4	1	straight-straight	250	1
22260786	AB-PC4-M12MS-2,0PUR-M12FS	4	2	straight-straight	250	1
22260787	AB-PC4-M12MS-5,0PUR-M12FS	4	5	straight-straight	250	1
22260788	AB-PC4-M12MS-10,0PUR-M12FS	4	10	straight-straight	250	1

Unless specified otherwise, the shown product values are nominal values. Detailed values (e.g. tolerances) are available upon request.
Copper price basis: inclusive of copper. Refer to catalogue appendix T17 for the definition and calculation of copper-related surcharges.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

Accessories

- FLEXIMARK® Label LMB refer to page 942



EPIC® POWER M12 60V

Field mountable M12 POWER connectors



Info

- DC high-power connector
- 60 VDC / 12 A

Benefits

- Compact and standardized M12 design saves space and costs
- Fault proof connection through M12 T coding of the connector face
- Low voltage drop
- Safety use in field environment by high protection class

Application range

- Power Supply for small devices
- Tool shop
- Wiring of machines, tools, devices, appliances and control cabinets
- Suitable for use in measuring, control and regulating circuits

Product features

- Robust M12 circular connector with screw connection and knurled screw
- Screw-on terminals for different conductors

Norm references / Approvals

- UL File Number: E249137

Product Make-up

- PVC single stranded wires, l = 0.2 m (4x AWG 16)
- 4-pin: bn (1), wh (2), bu (3), bk (4)
- High quality gold-plated contacts
- For screw contacts: 0,75 mm² - 1,5 mm² (AWG 18 - AWG 16)

Suitable cables

- ÖLFLEX® FD 855 P Page 140
- (ÖLFLEX® FD 855 P: Example for harsh conditions)

Technical data



Classification ETIM 5/6

ETIM 5.0/6.0 Class-ID: EC002062
ETIM 5.0/6.0 Class-Description:
Sensor-actuator connector



Material

Contact: CuZn
Contact surface: Au (gold)
Knurl: Zinc die-cast, nickel-plated
Gripping body: PA



Protection rating

IP 67



Ambient temperature (operation)

Plug/socket -40 °C to +85 °C

Coding

T - Power

Rated current (A)

12 A

Article number	Article designation	Design	Number of pins	Cable diameter in mm	Rated voltage (V)	PU
EPIC® POWER M12 60V						
Plug						
22262010	AB-C4-M12MST-PG11	straight	4	8.0 - 10.0	60	1
22262012	AB-C4-M12MAT-PG11	angled	4	8.0 - 10.0	60	1
Socket						
22262011	AB-C4-M12FST-PG11	straight	4	8.0 - 10.0	60	1
22262013	AB-C4-M12FAT-PG11	angled	4	8.0 - 10.0	60	1

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