



ÖLFLEX® TRUCK 170 FLRY



Info

- For commercial vehicles
- For hazardous materials transportation



Benefits

- Special ADR approval
- ADR approval enables use in vehicles transporting hazardous goods

Application range

- For commercial vehicles
- Wiring of electrical equipments in all trailers and semi-trailers

Product features

- UV-resistant
- Resistant to cold temperatures
- Resistant to most oils, chemicals and weather conditions

Norm references / Approvals

- ISO 4141 and DIN/ISO 6722

Product Make-up

- Conductor made of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based outer sheath

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 ISO 4141-3
	Capacity of data pairs Related to length between cores, max. 50 pF/m and between each data transmission core and all other cores in the cable, max. 100 pF/m
	Conductor stranding Fine wire according to DIN/ISO 6722
	Minimum bending radius 12 x outer diameter
	Nominal voltage 60 V
	Test voltage 5 kV rms for at least 5 min.
	Temperature range Area of application, Class A Fixed installation: -40°C to +85°C

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRUCK 170 FLRY					
7027060	2 x 1,0	6.0	white-black	19.2	55
7027061	2 x 1,0	6.0	white-brown	19.2	55
7027000	2 x 1,5	6.6	white-black	28.8	68
7027001	2 x 1,5	6.6	white-brown	28.8	68
7027062	3 x 1,0	6.3	black-brown-blue	28.8	63
7027012	3 x 1,0	6.3	white/brown/blue, newest ISO design	28.8	63
7027063	4 x 1,0	6.8	white/black/red/brown	38.4	81
7027034	4 x 1,5	7.5	white/black/red/brown	57.6	106
7027064	5 x 1,0	7.5	white/brown/green/red/grey	48	97
7027065	5 x 1,0 + 1 x 2,5	9.0	1.0 = green/brown/red/blue/violet; 2.5 = white	72	133
7027066	5 x 1,0 + 1 x 2,5	9.0	1.0 = yellow/black/red/blue/violet; 2.5 = white	72	133
7027015	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/green/red/grey/violet; 2.5 = white, newest ISO design	72	133
7027016	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/yellow/red/grey/violet; 2.5 = white, newest ISO design	72	133
7027007	7 x 0,75	7.3	white/black/yellow/red/green/brown/blue	50.4	101
7027067	7 x 1,5	8.9	white/black/yellow/red/green/brown/blue	100.8	166
7027068	6 x 1,5 + 1 x 2,5	10.3	ISO 4141 1.5 = black/yellow/red/green/brown/blue; 2.5 = white	110.4	187
7027069	8 x 1,5 + 1 x 2,5	11.7	ISO 4141 + grey/violet	139.2	239
7027070	10 x 1,5 + 3 x 2,5 + 1x(2x1,5)	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13; 1.5 = no. 14, 15	244.8	391
7027010	10 x 1,5 + 3 x 2,5 + 1x(2x1,5)	14.4	ISO 12098	244.8	391
7027071	10 x 1,5 + 3 x 2,5	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13	216	367
7027035	2 x 0,75 + 2 x 1,5	7.2	0.75 = white-brown; 1.5 = yellow-green	43.2	85
7027017	5 x 1,5 + 2 x 2,5	10.3	1.5 = black/yellow/green/brown/blue; 2.5 = white/red	120	217
7027004	8 x 1,5 + 5 x 2,5	14.8	1.5 = yellow/blue/green/brown/red/black/pink/white-blue; 2.5 = white/orange/grey/white-black/white-red	235.2	360
7027073	9 x 1,5 + 4 x 2,5	14.8	white with black numbers; 1.5 = no. 2, 4 - 8, 10 - 12; 2.5 = no. 1, 3, 9, 13	225.6	352
7027074	4 x 6 + 1 x 1,5	13.7	1.5 = grey; 6.0 = brown/red/black/blue	244.8	352

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® TRUCK 470 P FLRY11Y refer to page 164

Power and control cables

Special applications • Commercial vehicles



ÖLFLEX® TRUCK 470 P FLRYY11Y



Info

- For commercial vehicles
- For hazardous materials transportation
- Hydrolysis and microbe resistant

Benefits

- Special ADR approval
- ADR approval enables use in vehicles transporting hazardous goods

Application range

- For commercial vehicles
- Wiring of electrical equipments in all trailers and semi-trailers

Product features

- UV-resistant
- Resistant to cold temperatures
- Resistant to most oils, chemicals and weather conditions
- Resistant to hydrolysis and microbes

Norm references / Approvals

- ISO 4141 and DIN/ISO 6722

Product Make-up

- Conductor made of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based inner sheath
- Outer sheath made of special polyurethane

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

ISO 4141-3

Capacity of data pairs

Related to length between cores, max.
50 pF/m and between each data
transmission core and all other cores in
the cable, max. 100 pF/m



Conductor stranding

Fine wire according to DIN/ISO 6722



Minimum bending radius

12 x outer diameter



Nominal voltage

60 V



Test voltage

5 kV rms for at least 5 min.



Temperature range

Fixed installation: -40°C to +85°C
Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer diameter [mm]	Colour	Copper index (kg/km)	Weight (kg/km)
ÖLFLEX® TRUCK 470 P FLRYY11Y					
7027080	2 x 1,0	6.0	white-black	19.2	55
7027081	2 x 1,0	6.0	white-brown	19.2	55
7027020	2 x 1,5	6.6	white-black	28.8	68
7027021	2 x 1,5	6.6	white-brown	28.8	68
7027082	3 x 1,0	6.3	black-brown-blue	28.8	67
7027022	3 x 1,0	6.3	white/brown/blue, newest ISO design	28.8	67
7027083	4 x 1,0	6.8	white/black/red/brown	38.4	81
7027038	4 x 1,5	7.5	white/black/red/brown	57.6	106
7027084	5 x 1,0	7.5	white/brown/green/red/grey	48	97
7027085	5 x 1,0 + 1 x 2,5	9.0	1.0 = green/brown/red/blue/violet; 2.5 = white	72	133
7027086	5 x 1,0 + 1 x 2,5	9.0	1.0 = yellow/black/red/blue/violet; 2.5 = white	72	133
7027025	5 x 1,0 + 1 x 2,5	9.0	1.0 = brown/green/red/grey/violet; 2.5 = white, newest ISO design	72	133
7027087	6 x 1,5 + 1 x 2,5	10.3	ISO 4141 1.5 = black/yellow/red/green/brown/blue; 2.5 = white	110.4	187
7027130	7 x 0,75	7.3	white/black/yellow/red/green/brown/blue	50.4	101
7027088	7 x 1,5	8.9	white/black/yellow/red/green/brown/blue	100.8	166
7027089	8 x 1,5 + 1 x 2,5	11.7	ISO 4141 + grey/violet	139.2	239
7027090	10x1,5+3x2,5+1x(2x1,5)	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13; 1.5 = no. 14, 15	244.8	391
7027030	10x1,5+3x2,5+1x(2x1,5)	14.4	ISO 12098	244.8	395
7027091	10x1,5+3x2,5	14.4	white with black numbers; 1.5 = no. 1 - 3, 5 - 8, 10 - 12; 2.5 = no. 4, 9, 13	216	367
7027031	10x1,5+3x2,5	14.4	1.5 = yellow/green/blue/black/brown/red/pink/grey/white-black/white-blue; 2.5 = white/orange/white-red	216	367
7027046	2 x 0,75 + 2 x 1,5	7.2	0.75 = white-brown; 1.5 = yellow-green	43.2	85
7027092	2 x 6 + 3 x 1,5 ABS	12.1	DIN 72570 6.0 = red/brown; 1.5 = black/yellow/white	158.4	267
7027093	2x6+3x1,5+1x(2x1,5) EBS	12.1	DIN 72570 6.0 = red/brown; 1.5 = black/yellow/white; 1.5 = white-grey/white-brown	187.2	321
7027094	2x4+3x1,5+1x(2x1,5) EBS	11.9	4.0=red/brown; 1.5=black/yellow/white; 1.5=white-grey/white-brown	148.8	257
7027024	18 x 1,5	13.7	white with black numbers	259.2	407
7027032	25 x 1,5	16.1	white with black numbers	360	560

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.



ÖLFLEX® TRUCK 170 TWIN



Info

- Battery twin cable
- For commercial vehicles
- For hazardous materials transportation



Benefits

- Polarity identification is possible without stripping the sheath or external marking (the item designation is always printed on the positive pole). This rules out incorrect connections.
- No brushing of cores after stripping and therefore optimum subsequent handling, for example when crimping/contacting
- Special ADR approval

Application range

- Battery cable between the power source and the end user
- For commercial vehicles

Product features

- Double-sheathed version, extremely tough, for installation without corrugated tubing
- Very strong connection but offering easy separation of the cable by hand

Norm references / Approvals

- ADR approval TÜ.EGG.091-04

Product Make-up

- Conductor made of bare copper wires
- Core insulation: Based on PVC
- Special PVC-based outer sheath

Technical data

	Classification ETIM 5/6 ETIM 5.0/6.0 Class-ID: EC001578 ETIM 5.0/6.0 Class-Description: Flexible cable
	Minimum bending radius 15 x outer diameter
	Nominal voltage 60 V DC
	Test voltage 3000 V AC
	Temperature range Fixed installation: -40°C to +85°C Area of application, Class A

Article number	Number of cores and mm ² per conductor	Outer dimensions, width x height (mm)	Copper index (kg/km)
ÖLFLEX® TRUCK 170 TWIN PVC/PVC			
7027055	PVC/PVC 2 x 6,0	15.2 x 7.1	115.2
7027056	PVC/PVC 2 x 10,0	18.8 x 8.9	192
7027057	PVC/PVC 2 x 16,0	21.0 x 10.0	307.2
7027058	PVC/PVC 2 x 25,0	25.6 x 12.3	480
7027059	PVC/PVC 2 x 35,0	28.4 x 13.5	672
7027054	PVC/PVC 2 x 50,0	33.0 x 16.0	960
7027052	PVC/PVC 2 x 70,0	39.8 x 18.4	1344

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).
Details of the clamping force are available upon request, halogen-free.
Photographs and graphics are not to scale and do not represent detailed images of the respective products.

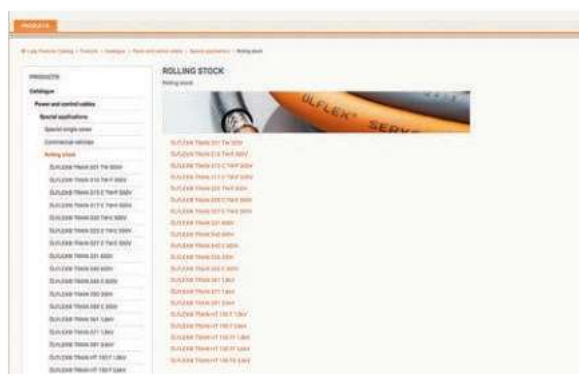
Selection from the LAPP product range for rail vehicles

Based on decades of experience as a full-service provider for electrical cables, cable connections and accessories, LAPP has rounded out its portfolio with products for the railway industry and can now offer its customers high-quality solutions in this sector as well.

The table below provides an excerpt of our power and control cables for rail vehicles. You can find the right cable glands, connector inserts, protective conduit systems, crimping accessories and automation products in our special catalogue or this main catalogue.

ÖLFLEX® TRAIN – Product overview

Product	Type standard	Nominal voltage	Type	Number of cores	Cross-section mm²	Temperature	Shielding	Fire behaviour EN 45545-2
EN 50306 - Thin-wall cables								
ÖLFLEX® TRAIN 301 TW 300V	EN 50306-2	300/500 V	M	1	0.5 - 2.5	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 310 TW-P 300V	EN 50306-4 1P	300/500 V	MM	4 - 48	0.5 - 2.5	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 315 C TW-P 300V	EN 50306-4 3P	300/500 V	MM S	2 - 8	0.5 - 2.5	-45°C - +120°C	x	HL1 - HL3
ÖLFLEX® TRAIN 317 C TW-P 300V	EN 50306-4 5P	300/500 V	MM S	2x2 - 7x2	0.5 - 1.5	-45°C - +120°C	x	HL1 - HL3
ÖLFLEX® TRAIN 320 TW-E 300V	EN 50306-4 1E	300/500 V	MM	4 - 48	0.5 - 2.5	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 325 C TW-E 300V	EN 50306-4 3E	300/500 V	MM S	2 - 8	0.5 - 2.5	-45°C - +120°C	x	HL1 - HL3
ÖLFLEX® TRAIN 327 C TW-E 300V	EN 50306-4 5E	300/500 V	MM S	2x2 - 7x2	0.5 - 1.5	-45°C - +120°C	x	HL1 - HL3
EN 50264 - Reduced wall thicknesses								
ÖLFLEX® TRAIN 331 600V	EN 50264-3-1	0.6/1 kV	M	1	1 - 300	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 340 600V	EN 50264-3-2	0.6/1 kV	MM	2 - 4	1.5 - 50	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 345 C 600V	EN 50264-3-2	0.6/1 kV	MM S	2 - 4	1.5 - 50	-45°C - +120°C	x	HL1 - HL3
ÖLFLEX® TRAIN 350 300V	EN 50264-3-2	300/500 V	MM	2 - 40	1 - 2.5	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 355 C 300V	EN 50264-3-2	300/500 V	MM S	2 - 40	1 - 2.5	-45°C - +120°C	x	HL1 - HL3
ÖLFLEX® TRAIN 361 1,8kV	EN 50264-3-1	1.8/3.6 kV	M	1	1.5 - 300	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 371 1,8kV	EN 50264-3-1	1.8/3.6 kV	MM	1	1.5 - 300	-45°C - +120°C		HL1 - HL3
ÖLFLEX® TRAIN 381 3,6kV	EN 50264-3-1	3.6/6 kV	MM	1	2.5 - 300	-45°C - +120°C		HL1 - HL3
EN 50382 - Silicone high temperature cables								
ÖLFLEX® TRAIN HT 150 F 1,8kV	EN 50382-2	1.8 kV	F	1	1.5 - 240	-40°C - +150°C		HL1 - HL3
ÖLFLEX® TRAIN HT 150 F 3,6kV	EN 50382-2	3.6 kV	F	1	2.5 - 240	-40°C - +150°C		HL1 - HL3
ÖLFLEX® TRAIN HT 150 FF 1,8kV	EN 50382-2	1.8 kV	FF	1	1.5 - 240	-40°C - +150°C		HL1 - HL3
ÖLFLEX® TRAIN HT 150 FF 3,6kV	EN 50382-2	3.6 kV	FF	1	2.5 - 240	-40°C - +150°C		HL1 - HL3
ÖLFLEX® TRAIN HT 150 FX 3,6kV	EN 50382-2	3.6 kV	FX	1	50 - 185	-40°C - +150°C		HL1 - HL3



Online catalogue

Our online catalogue contains more detailed information about our ÖLFLEX® TRAIN products.
products.lappgroup.com/online-catalogue/power-and-control-cables/special-applications/rolling-stock





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 increases 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 fl ame 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 ohm ($\pm 10\%$)

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	7.6	29
2173001	UNITRONIC® TRAIN MVB 1x2x0,5+1x0,5	1x2x0,5+1x0,5	7.6	34
2173002	UNITRONIC® TRAIN MVB 2x2x0,5	2x2x0,5	8.3	40
2173003	UNITRONIC® TRAIN MVB 2x2x0,5+4x0,25	2x2x0,5+4x0,25	8.3	50
Cables for WTB				
2173004	UNITRONIC® TRAIN WTB 1x2x0.75	1x2x0.75	8.4	41

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