

## ÖLFLEX® TRAIN 320 TW-E 300V

Multi-core cable according to EN 50306-4 1E type MM for high requirements in railway applications

ÖLFLEX® TRAIN 320 TW-E 300V - control cable according to EN 50306-4 1E type MM, 300/500V for rail vehicles/trains, EN 45545: HL1-HL3, NF F 16-101: C/F0

### Info

Meets EN 50306-4 class E, type MM and  
EN 45545-2

High temperature resistance: -45°C up to +125°C

Highly oil- and fuel-resistant

LAPP KABEL STUTTGART ÖLFLEX® TRAIN 320 TW-E 300V EN 50306-4 1E MM



UV-resistant



Temperature-resistant



Space requirement



Oil-resistant



Mechanical resistance



Halogen-free



Good chemical resistance



Rail

Last Update (11.05.2018)

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Product Management [www.lappkabel.de](http://www.lappkabel.de)

You can find the current technical data in the corresponding data sheet.

PN 0456 / 02\_03.16

## ÖLFLEX® TRAIN 320 TW-E 300V



Flame-retardant



Cold-resistant

### Benefits

Reduced insulation wall thickness, thus space-saving installation

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

### Application range

For use in railway vehicles and buses, for fixed installations and applications where limited movement may occur

Suitable for control and monitoring circuits as well as locking circuits and internal wiring of equipment in trains and locomotives

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 60332-3-24 / EN 60332-3-25 / EN 50305

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 50306
- Fuel resistant acc. to EN 50306
- Acid resistant acc. to EN 50306
- Alkali resistant acc. to EN 50306
- Ozone resistant acc. to EN 50306

### Norm references / Approvals

EN 50306-4 class E, type MM

EN 45545-2 HL1, HL2, HL3

NF F 16-101 - Classification: C / F0  
(flame propagation / smoke)

# ÖLFLEX® TRAIN 320 TW-E 300V

## Product Make-up

Tinned-copper strand, 19 or 37 wires, SRC (Special Round Conductor)

Insulation: Electron beam cross-linked Polymer compound acc. to EN 50306

Colour of insulation: White with black numbers

Outer sheath: electron beam cross-linked polymer-compound S2 acc. to EN 50306

Outer sheath colour: Black

## Technical Data

|                           |                                                                                                                                                                                                                           |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Classification ETIM 5:    | ETIM 5.0 Class-ID: EC000104<br>ETIM 5.0 Class-Description: Control cable                                                                                                                                                  |
| Classification ETIM 6:    | ETIM 6.0 Class-ID: EC000104<br>ETIM 6.0 Class-Description: Control cable                                                                                                                                                  |
| Core identification code: | White with black numbers                                                                                                                                                                                                  |
| Conductor stranding:      | SRC (special round conductor) 19 or 37 wires acc. to EN 50306-1                                                                                                                                                           |
| Minimum bending radius:   | Fixed installation:<br>≤ 12 mm: 4 x OD / 3 x OD*<br>> 12 mm: 5 x OD / 4 x OD*<br>* for careful bending, once at connecting terminal<br>Occasional flexing:<br>≤ 12 mm: 5 x OD<br>> 12 mm: 6 x OD<br>(OD = outer diameter) |
| Nominal voltage:          | U <sub>0</sub> /U AC 300/500 V<br>U <sub>m</sub> AC 550 V<br>V <sub>0</sub> DC 410 V                                                                                                                                      |
| Test voltage:             | 2,0 kV AC; 4,8 kV DC                                                                                                                                                                                                      |
| Protective conductor:     | G = with GN-YE protective conductor<br>X = without protective conductor                                                                                                                                                   |
| Temperature range:        | Fixed installation:<br>-45°C to +125°C (20.000 h)<br>Occasional flexing:<br>-35°C to +105°C<br>Short circuit: +160°C (5s)                                                                                                 |

## Note

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 ≤ 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.

Prices are net prices without VAT and surcharges. Sale to business customers only.

# ÖLFLEX® TRAIN 320 TW-E 300V

| Article number | Number of cores and mm² per conductor | Outer diameter [mm] | Copper index (kg/km) | Weight (kg/km) |
|----------------|---------------------------------------|---------------------|----------------------|----------------|
| 15320000       | 4 X 0.5                               | 6.0                 | 19.2                 | 60.95          |
| 15320001       | 7 X 0.5                               | 6.8                 | 33.6                 | 84.17          |
| 15320002       | 13 X 0.5                              | 8.8                 | 62.4                 | 142.1          |
| 15320003       | 19 X 0.5                              | 9.6                 | 91.2                 | 180.85         |
| 15320004       | 37 X 0.5                              | 12.9                | 177.6                | 332.58         |
| 15320005       | 4 X 0.75                              | 6.5                 | 28.8                 | 76.4           |
| 15320006       | 7 X 0.75                              | 7.4                 | 50.4                 | 108.28         |
| 15320007       | 13 X 0.75                             | 9.7                 | 93.6                 | 185.94         |
| 15320008       | 19 X 0.75                             | 10.6                | 136.8                | 240.31         |
| 15320009       | 37 X 0.75                             | 13.8                | 266.4                | 427            |
| 15320011       | 4 X 1.0                               | 6.8                 | 38.4                 | 90.13          |
| 15320012       | 7 X 1.0                               | 7.8                 | 67.2                 | 130.21         |
| 15320013       | 13 X 1.0                              | 10.3                | 124.8                | 226.12         |
| 15320014       | 19 X 1.0                              | 11.3                | 182.4                | 295.72         |
| 15320015       | 37 X 1.0                              | 14.8                | 355.2                | 531.56         |
| 15320016       | 4 X 1.5                               | 7.9                 | 57.6                 | 124.75         |
| 15320017       | 7 X 1.5                               | 9.3                 | 100.8                | 189.27         |
| 15320018       | 13 X 1.5                              | 12.3                | 187.2                | 325.41         |
| 15320019       | 19 X 1.5                              | 13.6                | 273.6                | 433.31         |
| 15320020       | 37 X 1.5                              | 18.0                | 532.8                | 782.39         |
| 15320021       | 2 X 2.5                               | 8.2                 | 49.2                 | 126.39         |
| 15320022       | 3 X 2.5                               | 8.6                 | 73.79                | 151.93         |
| 15320023       | 4 X 2.5                               | 9.4                 | 98.39                | 188.61         |