

15350000	DATA SHEET	
Valid from: 14.09.2018	ÖLFLEX® TRAIN 350 300V	

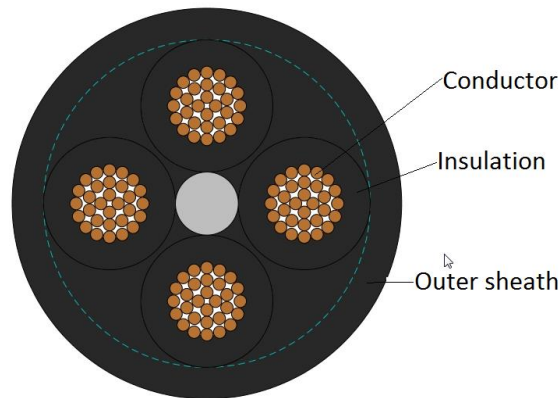
Application

ÖLFLEX® TRAIN 350 are halogen-free, highly flame retardant cables for use in railway vehicles and buses. They are designed for fixed installation and for applications, where limited movement may occur. They are particularly used in areas, where human and animal life as well as valuable property are exposed to high risk of fire hazards. ÖLFLEX® TRAIN 350 are oil-, fuel-, acid- and alkali resistant acc. to EN 50264-3-2.

Application range:

railway vehicles and buses: connecting lamps, heating equipment, switchgear, terminal boxes and power supply

Design



Design	according to EN 50264-3-2, 300 V, MM
Approvals / Norm references	EN 50264-3-2 (VDE 0260-264-3-2). Code designation MM MM = extra low temperature, extra oil and fuel resistant
Classification	EN 45545-2: Hazard Level HL1, HL2, HL3 NF F 16-101: Internal Category A1, A2, B External Category A1, A2, B Category C for flame propagation Category F0 for smoke
Conductor	fine wire strands of tinned copper acc. to IEC/EN 60228 resp. VDE 0295, Class 5
Core isolation	electron beam cross-linked polymer compound EI 109 acc. to EN 50264-1
Core identification	black cores with white numbers acc. to DIN EN 50334 resp. VDE 0293-334
Outer sheath	electron beam cross-linked polymer compound, halogen free and flame retardant, EM 104 acc. to EN 50264-1 colour: Black, similar RAL 9005

Electrical properties

Nominal voltage	U_0 / U : 300/500 V AC
Max. permissible operating voltage:	U_m : 600 V AC V_0 : 450 V DC
Test voltage	core / core: 2 kV AC; 4.8 kV DC

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Mechanical and thermal properties

Min. bending radius	fixed installation ≤ 12 mm: 3 x cable diameter fixed installation > 12 mm: 4 x cable diameter occasional flexing ≤ 12 mm: 4 x cable diameter occasional flexing > 12 mm ≤ 20 mm: 5 x cable diameter occasional flexing > 20 mm: 6 x cable diameter
Temperature range	fixed installation: -45 °C up to +120 °C max. conductor temp. (20.000h) occasional flexing: -35 °C up to +120 °C max. conductor temp. (20.000h) - 50° according to GOST 33326-2015 and GOST 20.57.406-81 (method 203-1 und 205-1)
Short circuit temperature	max. +200°C (5s)

Fire protection according to EN 50264-1 / EN 45545:

Classification	EN 45545-2: Hazard Level HL1, HL2, HL3
Flammability No flame propagation acc. to	acc. to EN 60332-1-2 resp. VDE 0482-332-1-2 ≥ 12 mm: EN 60332-3-24 resp. VDE 0482-332-3-24 > 6 mm und < 12mm: EN 60332-3-25 resp. VDE 0482-332-3-25 ≤ 6 mm: EN 50305
Smoke density	acc. to EN 50306-1, light transmission: min. 70% acc. to IEC 61034-2; EN 61034-2
Halogen-free	acc. to IEC 60754-1; EN 60754-1; EN 50267-2-1 (chlorine and bromine) acc. to EN 60684-2 (fluorine)
Corrosivity	acc. to EN 50264-1, pH ≥ 4.3 and conductivity ≤ 10µS/mm acc. to IEC 60754-2; EN 60754-2; EN 50267-2-2
Toxicity	acc. to EN 50264-1 (≤ 3) acc. to EN 50305

Fire protection according to NF:

Classification	NF F 16-101: Internal Category A1, A2, B External Category A1, A2, B Category C for flame propagation Category F0 for smoke
Flammability	acc. to NF C 32-070, Category C1 and C2
Smoke density	acc. to NF X 10-702
Toxicity	acc. to NF X 70-100

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Material properties

Ozone resistance	acc. to EN 50264-3-2, method B acc. to EN 50305
Mineral oil resistance	acc. to EN 50264-3-2
Fuel resistance	acc. to EN 50264-3-2
Acid and alkali resistance	acc. to EN 50264-3-2
UV resistance	acc. to EN 50525-1 (VDE 0285-525-1) are cables with black sheath suitable for a permanent outdoor use.
Tests	acc. to EN 50264-3-2
EU Directives	These cables are conform to the EU-Directives 2014/35/EC (Low Voltage Directive)

Art. No.	Number of cores x cross section [mm ²]	Max. wire ø [mm]	Max. conductor resistance (20°C) [Ohm/km]	Conductor ø reference value [mm]	Core ø reference value [mm]	Outer ø [mm]	Fire load reference value [kWh/m]	Weight [kg/km]
15350000	2X1	0.21	20.0	1.3	2.1	5.4 -0.1+0.6	0.16	54
15350001	4X1	0.21	20.0	1.3	2.1	6.2 -0.1+0.6	0.19	81
15350002	7X1	0.21	20.0	1.3	2.1	7.7 -0.2+0.5	0.27	128
15350003	9X1	0.21	20.0	1.3	2.1	9.6 -0.3+0.4	0.42	179
15350004	12X1	0.21	20.0	1.3	2.1	10.1 -0.3+0.6	0.40	204
15350005	19X1	0.21	20.0	1.3	2.1	12.1 -0.4+0.5	0.57	309
15350006	24X1	0.21	20.0	1.3	2.1	14.4 -0.3+0.6	0.75	396
15350007	32X1	0.21	20.0	1.3	2.1	15.9 -0.4+0.7	0.96	520
15350008	37X1	0.21	20.0	1.3	2.1	16.7 -0.5+0.6	1.01	580
15350009	40X1	0.21	20.0	1.3	2.1	17.8 -0.5+0.7	1.17	644
15350010	4X1.5	0.26	13.7	1.6	2.6	7.6 -0.3+0.4	0.26	116
15350011	7X1.5	0.26	13.7	1.6	2.6	9.2 -0.3+0.4	0.37	184
15350012	9X1.5	0.26	13.7	1.6	2.6	11.7 -0.4+0.5	0.65	273
15350013	12X1.5	0.26	13.7	1.6	2.6	12.4 -0.4+0.5	0.58	302
15350014	19X1.5	0.26	13.7	1.6	2.6	15.0 -0.4+0.5	0.90	473
15350015	24X1.5	0.26	13.7	1.6	2.6	17.3 -0.5+0.6	1.04	577
15350016	32X1.5	0.26	13.7	1.6	2.6	19.6 -0.5+0.6	1.43	778
15350017	37X1.5	0.26	13.7	1.6	2.6	20.6 -0.6+0.7	1.56	879
15350018	4X2.5	0.26	8.21	2.0	3.0	8.6 -0.3+0.5	0.33	169
15350019	7X2.5	0.26	8.21	2.0	3.0	10.6 -0.4+0.6	0.46	270
15350020	9X2.5	0.26	8.21	2.0	3.0	13.7 -0.4+0.6	0.84	402
15350021	12X2.5	0.26	8.21	2.0	3.0	14.5 -0.4+0.6	0.77	461
15350022	19X2.5	0.26	8.21	2.0	3.0	17.0 -0.5+0.7	1,01	680
15350023	24X2.5	0.26	8.21	2.0	3.0	20.1 -0.5+1.1	1.36	879

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