



Traction cable

RADOX EN 50264-3-1 3600V MM

Product description:

RADOX EN 50264-3-1 3600V MM Single core cables with reduced insulation wall dimensions, sheathed
 Nominal voltage: 3600 / 6000 V AC
 Hazard level: MM (extra low temperature, extra oil and extra fuel resistant)

General features:

Halogen free, electron-beam cross-linked cables with improved behaviour in case of fire, easy to strip, soldering iron resistant and flexible. Meet the requirements of EN 50264-3-1.

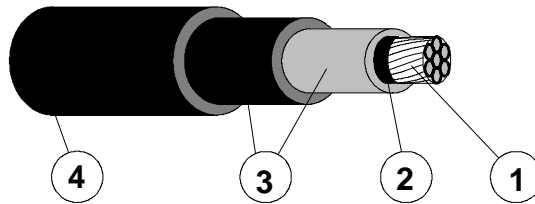
Application:

The cables are intended for permanent installation in rail vehicles or for applications in which a limited alternating bending stress occur during service.

Guidelines for selection and installation are described in the standards EN 50355 and EN 50343.

For unscreened cables the guidelines of EN 50153 shall be followed.

General composition of cable:



1. Conductor : stranded tin plated copper, acc. to EN 60228 cl. 5
2. Conductor screening : Semiconducting layer, colour: black
3. Insulation : inner layer RADOX EI 110, colour: white
outer layer RADOX EI 109, colour: black
4. Sheath : RADOX EM 104, colour: black

Marking: HUBER+SUHNER RADOX EN 50264-3-1 3600V 1X[cross section] MM [part. No. + batch. No.] [date of manufacture]

Technical Data :

Voltage rating cond.-earth	U ₀	3600	V AC
Voltage rating cond.-cond.	U	6000	V AC
maximum permissible Voltage rating AC cond.-earth		4300	V AC
maximum permissible Voltage rating AC cond.-cond.	U _m	7200	V AC
maximum permissible Voltage rating DC cond.-earth	V ₀	5400	V DC
maximum permissible Voltage rating DC cond.-cond.		9000	V DC

Test voltage 50 Hz, 15 min. 11000 V AC

Temperature range - 50 ... + 120 °C

Min. bending radius

fixed installation	cable diameter ≤ 12 mm	3 x D
	cable diameter > 12 mm	4 x D
sporadic movement	cable diameter ≤ 12 mm	4 x D
	cable diameter > 12 mm	5 x D

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The product fulfils the test and specification requirements described in this document for the stated areas of application and operating conditions. HUBER+SUHNER AG does not expressly or implicitly guarantee performance under additional or changed conditions. Deviations are to be agreed upon in writing.

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NB:

The upper temperature limit is determined by long term ageing according to EN 50305 Par. 7 and extrapolation to 20,000 hours.

The lower temperature limit is determined by bending and elongation tests according to EN 60811-1-4 Par. 8, respectively low temperature behaviour tests according to GOST 20.57.406-81, method 204-1 and GOST 17491-80 (fixed installation)

The specified bending radii require a careful and proper handling using proven fastening technologies.

The cables are in conformity with:

Fire protection on railway vehicles, hazard level	HL1 - HL3	EN 45545
Vertical flame spread	50 < L ≤ 540 mm	EN 60332-1-2
Vertical flame spread, bunched, D ≤ 6 mm	L ≤ 1.5 m	EN 50305, 9.1.2
Vertical flame spread, bunched, 6 < D < 12 mm	L ≤ 2.5 m	EN 50305, 9.1.1 (EN 60332-3-25)
Smoke density	T ≥ 70 %	EN 61034-2
Toxicity	ITC ≤ 6	EN 50305, 9.2

Fire protection on railway vehicles, level of protection	1 - 4	DIN 5510
Vertical flame spread	50 < L ≤ 540 mm	EN 60332-1-2
Vertical flame spread, bunched, D ≤ 6 mm	L ≤ 1.5 m	EN 50305, 9.1.2
Vertical flame spread, bunched, 6 < D < 12 mm	L ≤ 2.5 m	EN 50266-2-5 (EN 50305, 9.1.1)
Vertical flame spread, bunched, D ≥ 12 mm	L ≤ 2.5 m	EN 50266-2-4
Smoke density	T ≥ 60 %	EN 61034-2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 mS/mm	EN 50267-2-2
Amount of halogen acid gas	HCl + HBr ≤ 0.5 %	EN 50267-2-1
Content of fluorine	HF ≤ 0.1 %	EN 60684-2, 45.2
Toxicity	ITC ≤ 3	EN 50305, 9.2

Requirement of hazard level code M

Extra low temperature	- 40°C
Extra oil resistance	IRM 902, 72h, 100°C
Extra fuel resistance	IRM 903, 168h, 70°C

Applicable documents:

- 586 554 Current rating for single core cables



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Cable type mm ²	Conductor Construction n x mm	Conductor nom. Dia. mm	Core dia. nom. mm	Cable dia. mm	R ₂₀ max. Ω/km	C _{H2O} nom. pF/m	Fireload nom. kJ/m	Weight nom. Copper kg/100m	Weight nom. Cable kg/100m	Colour	H+S Part No.
2.5	61x0.23	1.94	8.00	9.7±0.2	8.21	155	2092	2.22	13	BK GNYE	12 586 151 12 586 152
4	61x0.29	2.40	8.60	10.4±0.2	5.09	170	2378	3.45	15.7	BK GNYE	12 586 153 12 586 154
6	84x0.30	2.93	9.10	10.9±0.2	3.39	190	2554	5.21	18.6	BK GNYE	12 586 155 12 586 156
10	80x0.40	3.89	10.2	12.0±0.2	1.95	220	3011	9.04	24.4	BK GNYE	12 586 157 12 586 158
16	119x0.40	5.30	11.3	13.1±0.2	1.24	265	3344	13.5	31.2	BK GNYE	12 586 159 12 586 160
25	182x0.40	6.60	13.3	15.6±0.25	0.795	271	3692	20.7	45	BK GNYE	12 586 161 12 586 162
35	266x0.40	7.80	14.5	16.8±0.3	0.565	305	4129	30.3	57.4	BK GNYE	12 586 163 12 586 164
50	378x0.40	9.30	16.0	18.3±0.3	0.393	348	4695	43	73.5	BK GNYE	12 586 165 12 586 166
70	348x0.50	11.4	18.3	20.7±0.3	0.273	398	5618	58.8	95.3	BK	12 586 167
95	456x0.50	12.9	19.7	22.1±0.3	0.207	444	6120	77	117	BK GNYE	12 586 168 85 017 993
120	570x0.50	14.5	21.8	24.4±0.3	0.164	460	7229	98	145	BK	12 586 169
150	722x0.50	16.0	23.7	26.3±0.3	0.132	480	8290	122	175	BK	12 586 170
185	874x0.50	17.8	25.7	28.6±0.4	0.108	500	9503	150	212	BK	12 586 171
240	1147x0.50	20.8	28.9	32.2±0.4	0.0817	550	11159	196	268	BK	12 586 172
300	1443x0.50	23.0	31.3	34.7±0.4	0.0654	600	12322	244	326	BK	12 586 173
400	1952x0.50	26.5	35.1	38.5±0.4	0.0495	660	14137	330	423	BK	85 102 809

R₂₀: Conductor resistance according to EN 60228

C_{H2O}: Capacity in water