Traction Cable
RADOX 3 GKW 600V FR

Product description:

RADOX 3 GKW 600V FR: Single core cables with reduced wall thickness with flame barrier
Nominal voltage: 600 / 1000 V AC

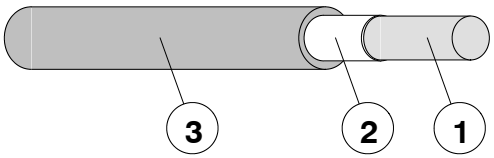
General Properties:

Halogen free, electron-beam cross-linked cores with improved behaviour in case of fire and maintains circuit integrity , easy to strip, soldering resistant and flexible.

Application:

The cables are intended for permanent installation in rail vehicles.
Guidelines for selection and installation are described in the standards EN 50355 and EN 50343.

General composition of cable:



1.	Conductor :		stranded tin plated copper, acc. to EN 60228 cl. 5
2.	Flame barrier:		MICA-tape
3.	Insulation:	< 6mm^2	RADOX EI 109
		≥ 6mm^2	RADOX EI 201
			Colour : grey, marking black

Marking:

[a] **HUBER+SUHNER RADOX 3 GKW 600V** [b] **FR** [c]-[d] [e] [f]

		example:
[a]	Meter marking (in m)	= 1234 = m
[b]	Construction	1X150
[c]	Part number	12345678
[d]	Batch number	1234567
[e]	Production week and year	03-2017
[f]	Production place (only if China)	CN

HUBER+SUHNER
Wire+Cable Division
CH-8330 Pfäffikon
☎ +41 (0)44 952 22 11
FAX +41 (0)44 952 26 40
www.hubersuhner.com

Traction Cable
RADOX 3 GKW 600V FR

Technical Data :

Voltage rating cond.-earth	U_0	600	V AC
Voltage rating cond.-cond.	U	1000	V AC
maximum permissible Voltage rating AC cond.-earth		720	V AC
maximum permissible Voltage rating AC cond.-cond.	U_m	1200	V AC
maximum permissible Voltage rating DC cond.-earth	V_0	900	V DC
maximum permissible Voltage rating DC cond.-cond.		1500	V DC
Test voltage		3500	V AC
Temperature range			
fixed installation		- 50 ... + 120	°C
Min. bending radius			
fixed installation		D ≤ 12 mm	3 x D
		D > 12 mm	4 x D

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 for 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.

Traction Cable
RADOX 3 GKW 600V FR

The cables are in conformity with:

Circuit integrity	**Fulfilled**	**EN 50200**
Resistance to fire with mechanical shock, D ≤ 20 mm	t ≥ 30 min	EN 50200
Resistance to fire with mechanical shock, D > 20 mm	t ≥ 30 min	EN 50362

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)
Vertical flame spread, bunched, D ≥ 12 mm	L ≤ 2.5 m	EN 60332-3-24
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 60332-3-25
Vertical flame spread, bunched, D ≥ 12 mm	L ≤ 2.5 m	EN 60332-3-24
Smoke density	T ≥ 60 %	EN 61034-2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 µS/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

Fire protection on railway vehicles, hazard level	**LR1 - LR4**	**UNI CEI 11170**
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 60332-3-25
Vertical flame spread, bunched, D ≥ 12 mm	L ≤ 2.5 m	EN 60332-3-24
Smoke density	T ≥ 70 %	EN 61034-2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 µS/mm	EN 50267-2-2
Amount of halogen acid gas	HCl + HBr ≤ 0.5 %	EN 50267-2-1
Toxicity	ITC ≤ 3	EN 50305, 9.2
Fire protection on railway vehicles	**Fulfilled**	**NFPA 130**
Vertical flame spread, bunched	L ≤ 1.5 m	UL 1685, 12 (FT4 exp.)
Smoke density	TSR ≤ 150 m^2, PSRR ≤ 0.40 m^2/s	UL 1685, 12 (FT4 exp.)

Applicable documents:

H+S: 560392 (e): Current rating for single core cables
EN 50355: Guide to use

Traction Cable
RADOX 3 GKW 600V FR

Table :

Cross section nom mm²	Conductor construction n x mm	Conductor D_{nom} mm	Cable-D D_{nom} mm	R_{20} [1] max Ω / km	C_{H2O} [2] nom pF/m	Fire load kJ / m	Weight copper kg / 100m	Weight cable kg / 100m	H + S Art. Nr.
1	37 x 0.18	1.2	3.15 ± 0.10	20.0	315	200	0.9	2.0	12 566 936
1.5	30x 0.25	1.5	3.65 ± 0.15	13.7	341	225	1.3	2.4	12 566 937
2.5	50x 0.25	1.9	4.05 ± 0.15	8.21	406	258	2.2	3.7	12 566 914
4	56 x 0.30	2.5	4.60 ± 0.15	5.09	478	308	3.4	5.2	12 560 764
6	84 x 0.30	2.9	5.30 ± 0.15	3.39	457	316	5.2	7.4	12 566 938
10	80 x 0.40	3.9	6.65 ± 0.15	1.95	552	468	9.1	12.4	12 566 939
16	119 x 0.40	5.3	8.15 ± 0.15	1.24	627	624	13.5	17.9	12 566 940
25	182 x 0.40	6.6	9.65 ± 0.20	0.795	710	813	20.7	26.3	12 566 941
35	266 x 0.40	7.8	10.8 ± 0.20	0.565	828	940	30	36.7	12 565 134
50	378 x 0.40	9.3	12.8 ± 0.25	0.393	843	1327	43	52	12 567 265
70	348 x 0.5	11.4	15.0 ± 0.25	0.277	970	2010	61.2	74.6	85 014 837
95	444 x 0.5	12.9	16.8 ± 0.3	0.210	1000	2460	78.1	94.4	85 014 869
150	722 x 0.5	16.8	21.3 ± 0.3	0.132	1125	3530	127	151	12 567 264

1) (typical value x single wire diameter, conductor resistance at 20 °C according to IEC 60228)
2) (capacity in water typical value)