



Traction cable

RADOX 3 GWK 300V MM FR RW

Product description:

RADOX 3 GWK 300V MM FR RW : multi core cables with flame barrier
 Nominal voltage: 300 / 500 V AC
 Hazard level: M (extra low temperature, extra oil and extra fuel resistant)

General Properties :

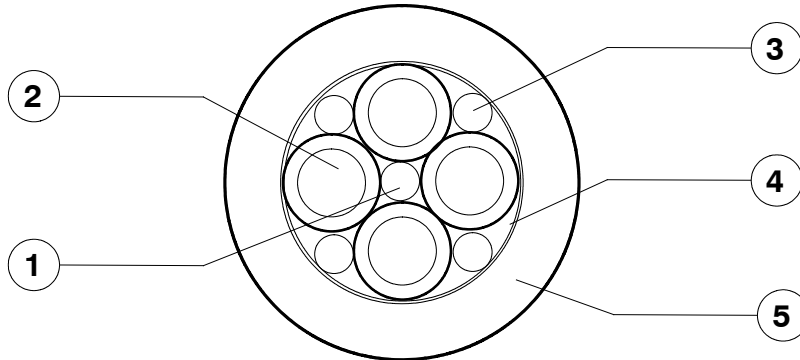
Halogen free, electron-beam cross-linked cables with improved behaviour in case of fire and maintains circuit integrity , easy to strip, soldering resistant and flexible.

Application :

The cables are intended for permanent installation in rail vehicles 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.

General composition of cable:



- | | |
|---------------------------------|--|
| 1. Center | RADOX 125 REC |
| 2. RADOX 3 GWK 300V FR RW Cores | Conductor: stranded tin plated copper according EN 60228 cl. 5
Flame barrier: MICA - tape
Insulation: RADOX EI 201
Colour: grey
green- yellow, optional
black, numbered |
| 3. Filler | RADOX 125 REC |
| 4. Separator | Tape |
| 5. Sheath | RADOX EM 104
Colour: black
yellow, marked |

Cable marking : HUBER+SUHNER RADOX 3 GWK 300V nX[*cross section*] MM FR RW [part No. + batch No.]

Technical data:

Voltage rating	..... U_0	300	..... V AC
Voltage rating cond.- cond.	..... U	500	..... V AC
maximum permissible Voltage rating AC cond.- earth	.....	360	..... V AC
maximum permissible Voltage rating AC cond.- cond.	..... U_m	600	..... V AC
maximum permissible Voltage rating DC cond.- earth	..... V_0	450	..... V DC
maximum permissible Voltage rating DC cond.- cond.	750 V DC
Test voltage	2000 V AC

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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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Temperature range

fixed installation	- 50 ... + 120 °C
sporadic movement	- 40 ... + 120 °C

Min. bending radius *)

fixed installation	cable diameter \leq 10 mm	3 x D
	cable diameter $>$ 10 mm	4 x D
sporadic movement	cable diameter \leq 10 mm	5 x D
	cable diameter $>$ 10 mm	6 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 according to GOST 20.57.406-81, method 204-1 and GOST 17491-80.

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

The cables are in conformity with:

Isolation receipt in the case of fire

Resistance to fire with mechanical shock, $D \leq 20$ mm	30 Min. / 1030 VAC	EN 50200
Resistance to fire with mechanical shock, $D \geq 20$ mm	30 Min. / 1030 VAC	EN 50362

Fire protection on railway vehicles, hazard level

	HL1 - HL3	EN 45545
Vertical flame spread	$50 < L \leq 540$ mm	EN 60332-1-2
Vertical flame spread, bunched, $D \leq 6$ mm	$L \leq 1.5$ m	EN 50305, 9.1.2
Vertical flame spread, bunched, $6 < D < 12$ mm	$L \leq 2.5$ m	EN 50305, 9.1.1 (EN 60332-3-25)
Vertical flame spread, bunched, $D \geq 12$ mm	$L \leq 2.5$ m	EN 60332-3-24
Smoke density	$T \geq 70$ %	EN 61034-2
Toxicity	$ITC \leq 6$	EN 50305, 9.2

Fire protection on railway vehicles, level of protection

	1 - 4	DIN 5510
Vertical flame spread	$50 < L \leq 540$ mm	EN 60332-1-2
Vertical flame spread, bunched, $D \leq 6$ mm	$L \leq 1.5$ m	EN 50305, 9.1.2
Vertical flame spread, bunched, $6 < D < 12$ mm	$L \leq 2.5$ m	EN 60332-3-25
Vertical flame spread, bunched, $D \geq 12$ mm	$L \leq 2.5$ m	EN 60332-3-24
Smoke density	$T \geq 60$ %	EN 61034-2
Corrosivity of combustion gases	$pH \geq 4.3$, $C \leq 10$ μ S/mm	EN 50267-2-2
Amount of halogen acid gas	$HCl + HBr \leq 0.5$ %	EN 50267-2-1
Content of fluorine	$HF \leq 0.1$ %	EN 60684-2, 45.2
Toxicity, insulation	$ITC \leq 6$	EN 50305, 9.2
Toxicity, filler and sheath	$ITC \leq 3$	EN 50305, 9.2

Fire protection on railway vehicles, hazard level

	LR1 - LR4	UNI CEI 11170
Vertical flame spread	$50 < L \leq 540$ mm	EN 60332-1-2
Vertical flame spread, bunched, $D \leq 6$ mm	$L \leq 1.5$ m	EN 50305, 9.1.2
Vertical flame spread, bunched, $6 < D < 12$ mm	$L \leq 2.5$ m	EN 60332-3-25
Vertical flame spread, bunched, $D \geq 12$ mm	$L \leq 2.5$ m	EN 60332-3-24
Smoke density	$T \geq 70$ %	EN 61034-2
Corrosivity of combustion gases	$pH \geq 4.3$, $C \leq 10$ μ S/mm	EN 50267-2-2
Amount of halogen acid gas	$HCl + HBr \leq 0.5$ %	EN 50267-2-1
Toxicity, insulation	$ITC \leq 6$	EN 50305, 9.2
Toxicity, filler and sheath	$ITC \leq 3$	EN 50305, 9.2

Fire protection on railway vehicles, category

	A1, A2, B	NF F16-101
Fire protection on railway vehicles, class	C / F1	NF F16-101
Vertical flame spread	$50 < L \leq 540$ mm	NF C32-070, 2.1
Vertical flame spread, bunched	$L \leq 300$ mm	NF C32-070, 2.2
Smoke index	$I.F. \leq 5$	X10-702-2, NF X70-100-1

Applicable documents :

EN 50355	Guide to use
EN 50343	Installation rules
H+S 564 900	technical datasheet RADOX 3 GWK 300V FR RW



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Cable type n x mm ²	Conductor nom. Dia. mm	Core dia. nom. mm	Cable dia. mm	R ₂₀ max. Ω/km	C' nom. pF/m	Fireload nom. kJ/m	Weight nom.		H+S Part No.
							Copper kg/100m	Cable kg/100m	
3x0.5	0.88	2.00	5.8±0.3	40.1	130	345	1.4	4.9	12 567 511
26x0.5	0.88	2.00	14.7±0.5	40.1	130	2020	12	30	12 564 979
2x0.75	1.10	2.25	5.9±0.3	26.7	140	345	1.3	4.0	12 565 262
4x0.75	1.10	2.25	7.05±0.3	26.7	140	485	2.6	7.5	12 564 977
7x0.75	1.10	2.25	8.45±0.3	26.7	140	795	5.0	11	84 116 808
8x0.75	1.10	2.25	9.3±0.3	26.7	140	980	5.2	13	12 565 263
2x1	1.22	2.50	6.5±0.3	20.0	150	385	1.7	6.1	12 566 547
2x1.5	1.49	2.80	7.1±0.3	13.7	160	420	2.8	8.1	12 564 629
3x1.5	1.49	2.80	7.7±0.3	13.7	160	520	4.1	9.9	12 566 342
4x1.5	1.49	2.80	8.65±0.3	13.7	160	903	5.4	12.7	85 083 809
5G1.5	1.49	2.80	9.5±0.3	13.7	160	940	6.7	15	12 568 269
6x1.5	1.49	2.80	10.5±0.4	13.7	160	1360	8.1	17	12 566 341
7x1.5	1.49	2.80	10.3±0.4	13.7	160	1235	9.5	19.6	85 083 798
7G1.5	1.49	2.80	10.3±0.4	13.7	160	1235	9.5	19.6	12 564 630
8x1.5	1.49	2.80	12.8±0.4	13.7	160	2215	10.8	27.2	85 083 821
12G1.5	1.49	2.80	13.8±0.4	13.7	160	1960	16	32	12 568 270
25G1.5	1.49	2.80	19.6±0.5	13.7	160	3270	35	63	12 564 631
3G2.5	1.94	3.20	8.5±0.3	8.21	190	840	6.4	14	12 568 271
5G2.5	1.94	3.20	10.9±0.3	8.21	190	1325	11	22	12 584 558
12G2.5	1.94	3.20	15.9±0.5	8.21	190	2080	26	46	12 568 407
16x2.5	1.94	3.20	17.9±0.5	8.21	190	3015	36	60	84 102 805
25G2.5	1.94	3.20	22.2±0.5	8.21	190	3865	59	90	12 564 632

Cores: Tolerances of core diameter see H+S Datasheet 564 900

R₂₀: Conductor resistance according to EN 60228

C': Capacity per unit length, core/core