

Traction cable

RADOX 3 GKW 600V

HUBER+SUHNER

Product description:

RADOX 3 GKW 600V

Nominal voltage:

Single core cables with reduced wall insulation dimensions
600 / 1000 V AC

General features:

Halogen free, electron-beam crosslinked cores with improved behaviour in case of fire, easy to strip, soldering iron 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. Conductor
2. Insulation

Stranded tin plated copper, acc. to EN 60228 cl. 5
RADOX EI 201, colour: grey, unless otherwise specified

Marking:

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

	example:
[a] Meter marking (in m)	= 001234 = m
[b] Cross section (in mm ²)	1X150
[c] Part number	12345678
[d] Batch number	1234567
[e] Production week and year	03-2017
[f] Production place (only if China)	CN
[g] CRCC certification (only if available)	CRCC10218P11529R1M-2

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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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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		- 50 ... + 125	°C

Min. bending radius

fixed installation	cable diameter ≤ 12 mm	3 x D
	cable diameter > 12 mm	4 x D
sporadic movements	cable diameter ≤ 12 mm	4 x D
	cable diameter > 12 mm	5 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 60811-504/505, respectively low temperature behaviour tests for static conditions, e.g. for fixed installation 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:**Fire protection on railway vehicles, hazard level** **HL1 - HL3** **EN 45545-2**

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
Toxicity	$ITC \leq 6$	EN 50305, 9.2

Fire protection on railway vehicles **Fulfilled** **NFPA 130**

Vertical flame spread, bunched	$L \leq 1.5$ m	UL 1685, 12 (FT4 exp.)
Smoke density	$TSR \leq 150$ m ² , $PSRR \leq 0.40$ m ² /s	UL 1685, 12 (FT4 exp.)

Applicable documents:

- 560392 Current rating for single core cables

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Table 1: Standard Types RADOX 3 GKW 600V

Core Size [mm ²]	Conductor ¹⁾			Core ²⁾		Fire Load nom. [kJ/m]	Combustible Material nom. [kg/100m]	Cable Weight nom. [kg/100m]	H+S Part No.
	Type nom. [n x mm]	Ø nom. [mm]	R ₂₀ max. [Ω/km]	Ø [mm]	Colours				
1X0.5	19 x 0.18	0.9	40.1	2.0 ± 0.1	GY	65	0.4	0.82	12548125
					BK				85149493
					BU				12584285
					GNYE				12553865
					RD				12561562
					WH				12585331
1X0.75	24 x 0.20	1.1	26.7	2.2 ± 0.1	GY	70	0.4	1.1	12548126
					BK				12582701
					BU				12584171
					GNYE				12553867
					RD				12563587
					WH				84101701
1X1	37 x 0.18	1.2	20.0	2.45 ± 0.1	GY	85	0.52	1.4	12551402
					BK				12566002
					BN				12583113
					BU				12568697
					GN				12583114
					GNYE				12553869
1X1.5	37 x 0.22	1.5	13.7	2.7 ± 0.1	RD	100	0.7	1.9	12583112
					WH				12582310
					YE				12568448
					GY				12545286
					BK				12561390
					BN				12583116
1X2.5	61 x 0.23	1.9	8.21	3.3 ± 0.1	BU	140	0.9	3.1	12583117
					GN				85021685
					GNYE				12553871
					RD				12583118
					WH				12583115
					YE				12568449
1X4	61 x 0.28	2.4	5.09	3.95 ± 0.1	GY	195	1.2	4.6	12545288
					BK				12566004
					BU				12583121
					GNYE				12553873
					RD				12583122
					YE				12568450
1X4	61 x 0.28	2.4	5.09	3.95 ± 0.1	GY	195	1.2	4.6	12545290
					BK				12566006
					GNYE				12553875

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Core Size [mm ²]	Conductor ¹⁾			Core ²⁾		Fire	Combustible	Cable	H+S
	Type nom. [n x mm]	Ø nom. [mm]	R ₂₀ max. [Ω/km]	Ø [mm]	Colours	Load nom. [kJ/m]	Material nom. [kg/100m]	Weight nom. [kg/100m]	Part No.
1X6	84 x 0.30	2.9	3.39	4.7 ± 0.15	GY	265	1.7	6.8	12548127
					BK				12566861
					BN				12583125
					BU				12583126
					GNYE				12553877
					RD				12583123
1X10	80 x 0.40	3.8	1.95	5.85 ± 0.15	GY	390	2.4	11	12545153
					BK				12547688
					GNYE				12547689
1X16	121 x 0.40	5.3	1.24	7.25 ± 0.15	GY	545	3	16	12545292
					BK				12566864
					GNYE				12553879
1X25	189 x 0.40	6.6	0.795	8.9 ± 0.2	GY	820	5	25	12543216
					BK				12561393
					BN				85179009
					BU				85161185
					GNYE				12553881
					RD				85126816
					WH				85161186
1X35	266 x 0.40	7.7	0.565	10.2 ± 0.2	GY	1030	6	35	12548128
					BK				12563646
					GNYE				12553883
1X50	378 x 0.40	9.2	0.393	11.9 ± 0.2	GY	1345	7	49	12545155
					GNYE				12553885
1X70	348 x 0.50	11.4	0.277	14.3 ± 0.3	GY	1705	10	69	12543214
					GNYE				12553887
1X95	456 x 0.50	12.9	0.21	15.9 ± 0.3	GY	1995	12	89	12548671
					BK				12566865
					GNYE				12553889
1X120	570 x 0.50	14.5	0.164	17.9 ± 0.4	GY	2455	15	113	12542936
					GNYE				12553891
1X150	722 x 0.50	16.0	0.132	20.3 ± 0.4	GY	3400	21	143	12548673
1X185	874 x 0.50	17.8	0.108	22.0 ± 0.4	GY	3700	23	173	12551404
1X240	1147 x 0.50	20.8	0.0817	25.2 ± 0.5	GY	4375	27	223	12551406
1X300	1443 x 0.50	23.0	0.0654	28.0 ± 0.5	GY	5460	34	278	12555741

¹⁾ Conductor according to EN 60228

²⁾ Core colour in bold is the H+S standard core colour

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Table 1A: Customized Types RADOX 3 GKW 600V

Core Size [mm ²]	Conductor ¹⁾			Core		Fire	Combustible	Cable	H+S
	Type	Ø	R ₂₀	Ø	Colours	Load	Material	Weight	Part No.
	nom. [n x mm]	nom. [mm]	max. [Ω/km]	.[mm]		nom. [kJ/m]	nom. [kg/100m]	nom. [kg/100m]	
1X1	37 x 0.18	1.2	20.0	2.45 ± 0.1	GY	88	0.55	1.43	12582425 ²⁾
1X1.5	37 x 0.22	1.5	13.7	2.7 ± 0.1	GY	102	0.63	1.88	12561727 ²⁾
1X2	37 x 0.25	1.7	10.5	3.0 ± 0.1	GY	120	0.75	2.39	12559586 ³⁾

¹⁾ Conductor according to EN 60228

²⁾ No printing on cable sheet

³⁾ Special cross section

Table 1B: Customized Types RADOX 3 GKW 600V Packaging Coil CK4 (h x d = 400mm x 400mm)

Core Size [mm ²]	Conductor ¹⁾			Core ²⁾		Fire	Combustible	Cable	H+S
	Type	Ø	R ₂₀	Ø	Colours	Load	Material	Weight	Part No.
	nom. [n x mm]	nom. [mm]	max. [Ω/km]	.[mm]		nom. [kJ/m]	nom. [kg/100m]	nom. [kg/100m]	
1X0.5	19 x 0.18	0.9	40.1	2.0 ± 0.1	GY	65	0.4	0.82	85113413
					BK				85112997
					BN				85112946
					BU				85112999
					GN				85112994
					PN GY				85082912
					OG				85112995
					RD				85113408
					VT				85112998
					WH				85113411
					YE				85112983
1X1	37 x 0.18	1.2	20.0	2.45 ± 0.1	GY	85	0.52	1.4	84110448
1X1.5	37 x 0.22	1.5	13.70	2.7 ± 0.1	GY	100	0.7	1.9	12551429
					BK				85113526
					BN				85113538
					BU				85113510
					GNYE				85113520
1X2.5	61 x 0.23	1.9	8.21	3.3 ± 0.1	GY	140	0.9	3.1	12551428
1X4	61 x 0.28	2.4	5.09	3.95 ± 0.1	GY	190	1.2	4.6	85138812

¹⁾ Conductor according to EN 60228

²⁾ Core colour in bold is the H+S standard core colour