

Traction cable

RADOX 3 GKW EN 50264-3-1 600V M

HUBER+SUHNER

Product description:

RADOX 3 GKW EN 50264-3-1 600V M

Nominal voltage:

Single core cables with reduced wall insulation dimensions

600 / 1000 V AC

Hazard level:

M (extra low temperature, extra oil and extra fuel resistant)

General features:

Halogen free electron-beam crosslinked cores with improved behaviour in case of fire, easy to strip, soldering iron resistant and flexible. Meet the requirements of EN 50264-3-1 standard. Customized cables RADOX 3 GKW-AX (EN 50264-3-1) 600V M are in accordance with EN 50264-3-1, but significantly thinner.

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. The cores are used as sub-components in cables according to EN 50264-3-2.

General composition of cable:



- | | |
|---------------------------|---|
| 1. Conductor: | Stranded tin plated copper, acc. to EN 60228 cl. 5 |
| 2. Separator (optional) | Tape |
| 3. Insulation inner layer | RADOX EI 110, colour: white |
| 4. Insulation outer layer | RADOX EI 109, colour: black, unless otherwise specified |

Marking:

[a] HUBER+SUHNER RADOX 3 GKW EN 50264-3-1 600V [b] M [c]-[d] [e] [f] [g]

	example:
[a] Meter marking (in m)	= 123456 = 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
		8400	V DC
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 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 ≤ 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	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.)

Requirement of hazard level code M	(according to EN 50264-1 or EN 50306-1)
Extra low temperature	- 40 °C
Extra oil resistance	IRM 902, 72h, 100 °C
Extra fuel resistance	IRM 903, 168h, 70 °C

Applicable documents:

- 586554 Current rating for single core cables

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RADOX 3 GKW EN 50264-3-1 600V M

Table 1: Standard Types RADOX 3 GKW EN 50264-3-1 600V M

Core Size [mm ²]	Conductor ¹⁾			Tape optional	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				
1X1	37 x 0.18	1.22	20	No	2.45±0.05	BK	85	0.56	1.43	85205528
						BN				85207975
						BU				85207976
						GN				85207977
						GNYE				85205529
						GY				85168797
						RD				85207978
						WH				85207979
						YE				85207980
1X1	32 x 0.19	1.26	20	No	2.51±0.1	BK	88	0.58	1.52	85096345
						GNYE				85096351
1X1.5	37 x 0.22	1.45	13.7	No	2.85±0.05	BK	116	0.74	1.98	85205532
						BN				85207981
						BU				85207988
						GNYE				85205533
						GY				85156555
						RD				85207989
						WH				85207990
						YE				85124745
1X1.5	27 x 0.25	1.49	13.7	No	3.0±0.2	BK	126	0.84	2.22	85096346
						GNYE				85096352
1X2.5	61 x 0.23	1.94	8.21	No	3.3±0.1	BK	134	0.9	3.1	85205625
						BU				85207991
						GNYE				85205626
						GY				85164787
						RD				85139053
						YE				85207992
1X2.5	45 x 0.25	1.92	8.21	No	3.4±0.2	BK	153	1	3.1	85096347
						GNYE				85096353
1X4	61 x 0.28	2.35	5.09	No	3.9±0.1	BK	186	1.19	4.6	85205628
						GNYE				85205629
						GY				85205630
1X4	52 x 0.30	2.44	5.09	No	4.0±0.2	BK	188	1.24	4.7	85096348
						GNYE				85096354
1X6	84 x 0.30	2.85	3.39	No	4.3±0.1	BK	198	1.3	6.4	85205631
						BN				85207993
						BU				85207994
						GNYE				85205632
						GY				85205666
						RD				85207995
1X6	78 x 0.30	2.98	3.39	No	4.6±0.2	BK	256	1.6	6.7	85096349
						GNYE				85096355
1X10	80 x 0.40	3.78	1.95	No	5.2±0.1	BK	248	1.6	10.2	85205633
						GNYE				85205635

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Core Size [mm ²]	Conductor ¹⁾			Tape optional	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				
						GY				85205636
1X10	74 x 0.40	4	1.95	No	5.5±0.2	BK	318	2	10.9	85096350
						GNYE				85096356
1X16	121 x 0.40	5.3	1.24	Yes	6.75±0.15	BK	418	2.5	15.5	85097024
						GNYE				85097025
						GY				85205637
1X25	189 x 0.40	6.55	0.795	Yes	8.3±0.15	BK	643	3.9	24.2	85205638
						BN				85207996
						BU				85207997
						GNYE				85205639
						GY				85205640
						RD				85207998
						WH				85207999
1X25	189 x 0.40	6.55	0.795	No	8.45±0.15	BK	686	4.2	24.5	85097026
						GNYE				85097027
1X35	266 x 0.40	7.7	0.565	Yes	9.5±0.15	BK	787	4.8	33.3	85205641
						GNYE				85205642
						GY				85205643
1X35	266 x 0.40	7.7	0.565	No	9.70±0.2	BK	858	5.16	33.7	85097028
						GNYE				85097029
1X50	378 x 0.40	9.2	0.393	Yes	11.2±0.15	BK	1084	6.3	46.9	85205644
						GNYE				85205645
						GY				85205646
1X50	378 x 0.40	9.2	0.393	No	11.4±0.2	BK	1153	6.9	47.5	85097030
						GNYE				85097031
1X70	348 x 0.50	11.4	0.273	Yes	13.6±0.15	BK	1401	8.2	67	85205647
						GNYE				85205648
						GY				85205649
1X70	348 x 0.50	11.4	0.273	No	13.8±0.25	BK	1485	8.8	67.7	85097032
						GNYE				85097033
1X95	456 x 0.50	12.9	0.207	Yes	15.2±0.2	BK	1650	9.7	86.8	85205650
						GNYE				85205651
						GY				85205652
1X95	456 x 0.50	12.9	0.207	No	15.3±0.25	BK	1676	10.1	87.2	85097034
						GNYE				85097036
1X120	570 x 0.50	14.5	0.164	Yes	17.1±0.2	BK	2022	11.8	109.7	85205653
						GNYE				85205654
						GY				85205655
1X120	570 x 0.50	14.5	0.164	No	17.2±0.3	BK	2028	12.3	110.2	85097037
						GNYE				85097038
1X150	722 x 0.50	16	0.132	Yes	19.0±0.3	BK	2567	14.9	136.9	85205656
						GY				85205657
1X150	722 x 0.50	16	0.132	No	19.2±0.3	BK	2633	15.9	137.9	85097039
1X185	874 x 0.50	17.8	0.108	Yes	21.3±0.3	BK	3294	19.2	169.3	85205658
						GNYE				85205659
1X185	874 x 0.50	17.8	0.108	No	21.4±0.3	BK	3330	19.8	169.9	85097048
1X240	1147 x 0.50	20.8	0.0817	Yes	24.5±0.3	BK	3893	22.8	218.7	85205660

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Core Size [mm ²]	Conductor ¹⁾			Tape optional	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				
						GY				85205661
1X240	1147 x 0.50	20.8	0.0817	No	24.6±0.3	BK	3968	23.4	219	85097050
1X300	1443 x 0.50	23	0.0654	Yes	26.9±0.3	BK	4512	26.5	270.7	85205662
						GY				85205663
1X400	1952 x 0.50	26.5	0.0495	Yes	31.0±0.4	BK	5630	33.8	363.7	85097718

¹⁾ Conductor according to EN 60228

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

Table 1.1: Standard Types RADOX 3 GKW EN 50264-3-1 600V M Packaging Coil CK4 (h x d = 400mm x 400mm)

Core Size [mm ²]	Conductor ¹⁾			Tape optional	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				
1X1	37 x 0.18	1.22	20	No	2.45±0.05	BK	85	0.56	1.43	85208079
						GY				85208012
1X1.5	37 x 0.22	1.45	13.7	No	2.85±0.05	BK	116	0.74	1.98	85208013
						BN				85208014
						BU				85208015
						GNYE				85208016
						GY				85208017
1X2.5	61 x 0.23	1.94	8.21	No	3.3±0.1	GY	134	0.9	3.1	85208018
1X4	61 x 0.28	2.35	5.09	No	3.9±0.1	GY	186	1.2	4.6	85208019

¹⁾ Conductor according to EN 60228

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

Traction cable

RADOX 3 GKW EN 50264-3-1 600V M

Table 1A: Customized Types RADOX 3 GKW (EN 50264-3-1) 600V M

Core Size [mm ²]	Conductor ¹⁾			Tape optional	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	0.84	40.1	No	1.95±0.05	BK	57	0.38	0.81	85208000
						BU				85208001
						GNYE				85208002
						GY				85205664
						RD				85208003
						WH				85208004
						YE				85208005
1X0.75	24 x 0.20	1.1	26.7	No	2.20±0.05	BK	68	0.45	1.16	85208006
						BU				85208007
						GNYE				85208008
						GY				85205665
						RD				85208009
						WH				85208010
						YE				85208011

¹⁾ Conductor according to EN 60228

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

Table 1.1A: Customized Types RADOX 3 GKW (EN 50264-3-1) 600V M Packaging Coil CK4 (h x d = 400mm x 400mm)

Core Size [mm ²]	Conductor ¹⁾			Tape optional	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	0.84	40.1	No	1.95±0.05	BK	57	0.4	0.8	85208020
						BN				85208021
						BU				85208080
						GN				85208081
						GY				85208022
						OG				85208023
						RD				85208024
						VT				85208025
						WH				85208026
						YE				85208082

¹⁾ Conductor according to EN 60228

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