

Traction cable

RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S

Product description:

RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S	Single core cables with reduced wall insulation dimensions, screened
Nominal voltage:	1800 / 3000 V AC
Hazard level:	M (extra low temperature, extra oil and extra fuel resistant)

General features:

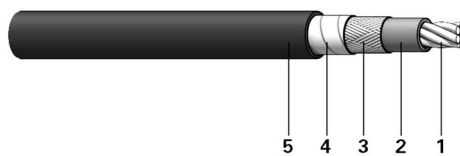
Halogen free, electron-beam crosslinked cables with improved behaviour in case of fire, easy to strip and flexible.

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	Stranded tin plated copper, acc. to EN 60228 cl. 5
Separator	Tape (by definition, not used in every cable design)
2. Insulation inner layer	RADOX EI 110, colour: white
Insulation outer layer	RADOX EI 109, colour: black
3. EMC-Screen	Tin plated copper braid
4. Separator	Tape
5. Sheath	RADOX EM 104, colour: black, unless otherwise specified

Marking:

[a] HUBER+SUHNER RADOX 4 GKW-AX (EN 50264-3-1) 1800V [b] MM S [c]-[d] [e] [f] [g]

	example:
[a] Meter marking (in m)	= 001234 = 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
[g] CRCC certification (only if available)	DC-CRCC-FZ-113-2024

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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	1800	V AC
Voltage rating cond.-cond.	U	3000	V AC
maximum permissible Voltage rating AC cond.-earth		2100	V AC
maximum permissible Voltage rating AC cond.-cond	U_m	3600	V AC
maximum permissible Voltage rating DC cond.-earth	V_0	2700	V DC
maximum permissible Voltage rating DC cond.-cond.		4500	V DC
Test voltage.		6500	V AC
Temperature range		- 50 ... + 125	°C

Min. bending radius

fixed installation	cable diameter \leq 12 mm	3 x D
	cable diameter > 12 mm	4 x D
sporadic movement	cable diameter \leq 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 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	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.)

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:

- 586556 Current rating for multi core cables

Traction cable

RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S

Table 1A: Customized Types RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S

Cable ¹⁾ Type [n x mm ²]	Conductor ²⁾		Separator Tape	Core ³⁾		Screen ⁴⁾		Cable ⁵⁾		Fire Load nom. [kJ/m]	Combustible Material nom. [kg/100m]	Cable Weight nom. [kg/100m]	H+S Part No.
	∅ nom. [mm]	R ₂₀ max. [Ω/km]		∅ nom. [mm]	Colour	∅ nom. [mm]	nom. [mm ²]	∅ [mm]	Colour				
1X1.5	1.50	13.7	no	3.2	BK	3.8	1.2	5.2±0.15	BK	340	2.5	5	85226541
1X2.5	1.90	8.21	no	3.65	BK	4.2	1.4	5.65±0.15	BK	385	3	6	85226542
1X4	2.40	5.09	no	4.5	BK	5.1	1.6	6.5±0.15	BK	520	4	9	85226543
1X6	2.90	3.39	no	5.1	BK	5.7	1.8	7.1±0.15	BK	615	5	11	85226545
1X10	3.90	1.95	no	6.25	BK	7.0	2.8	8.45±0.2	BK	820	6	17	85226546
1X16	5.30	1.24	yes	8.25	BK	8.8	2.8	10.3±0.2	BK	1230	9	24	85226547
1X25	6.55	0.795	yes	10.1	BK	10.8	4.5	12.7±0.25	BK	1875	13	38	85226548
1X35	7.70	0.565	yes	11.7	BK	12.6	6.7	14.5±0.25	BK	2370	16	51	85150127
1X50	9.20	0.393	yes	13.3	BK	14.2	7.5	16.2±0.3	BK	2855	20	67	85226549
1X50	9.20	0.393	yes	13.3	BK	14.2	7.5	16.2±0.3	OG	2855	20	67	85175404
1X70	11.4	0.273	yes	15.5	BK	16.6	10.8	18.6±0.3	BK	3360	23	92	85150128
1X95	12.9	0.207	yes	16.9	BK	18.0	12.0	20.3±0.3	BK	3850	27	115	85150133
1X95	12.9	0.207	yes	16.9	BK	18.0	12.0	20.3±0.3	RD	3850	27	115	85166228
1X120	14.5	0.164	yes	19.1	BK	20.0	11.9	22.3±0.3	BK	4460	31	140	85226550
1X150	16.0	0.132	yes	20.6	BK	21.5	11.9	24.1±0.3	BK	5300	37	170	85226551
1X185	17.8	0.108	yes	22.8	BK	23.9	16.2	26.5±0.3	BK	6225	43	208	85226552
1X185	17.8	0.108	yes	22.8	BK	23.9	16.2	26.5±0.3	RD	6225	43	208	85166202
1X240	20.8	0.0817	yes	25.9	BK	27.0	18.0	29.7±0.3	BK	7180	50	263	85146007
1X300	23.0	0.0654	yes	28.1	BK	29.2	18.0	32.0±0.4	BK	7960	55	317	85226553
1X400	26.5	0.0495	yes	32.1	BK	33.9	33.8	37.1±0.5	BK	9400	68	430	85226554

¹⁾ X: one colour

G: one green-yellow core, others one colour

²⁾ Conductor according to EN 60228

³⁾ Construction details of the core is according Technical Datasheet 586851

⁴⁾ Metallic screen coverage according EN 50264-1

⁵⁾ Sheath colour black is the H+S standard sheath colour

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RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S

Table 1B: Customized Types RADOX 4 GKW-AX (EN 50264-3-1) 1800V MM S

Cable ¹⁾ Type [nxmm ²]	Conductor ²⁾		Separator Tape	Core		Screen ³⁾		Cable		Fire Load nom. [kJ/m]	Combustible Material nom. [kg/100m]	Cable Weight nom. [kg/100m]	H+S Part No.
	∅ nom. [mm]	Tape		∅ nom. [mm]	Colour	∅ nom. [mm]	nom. [mm ²]	∅ [mm]	Colour				
1X1.5	1.5	13.7	no	3.35	BK	3.8	0.9	5.4±0.15	BK	375	2.9	5.1	12556535
1X2.5	1.9	8.21	no	3.75	BK	5.6	1.5	6.1±0.15	BK	450	3.4	7	12556536
1X4	2.4	5.09	no	4.5	BK	5	1.4	6.8±0.15	BK	590	4.4	9.3	12556537
1X6	2.9	3.39	no	5.2	BK	5.7	1.6	7.7±0.15	BK	755	5.3	12	12556538
1X10	3.9	1.95	no	6.4	BK	7	2.1	9.2±0.2	BK	1015	8	19	12556539
1X16	5.3	1.24	no	8.4	BK	9.1	3.5	11.3±0.2	BK	1550	11	28	12556540
1X25	6.6	0.795	no	10.2	BK	10.9	4.2	13.7±0.3	BK	2150	16	41	12556541
1X35	7.8	0.565	no	11.7	BK	12.4	5.1	15.1±0.25	BK	2560	19	54	12556542
1X50	9.3	0.393	no	13.5	BK	14.2	5.8	17.0±0.3	BK	3030	18	71	12556543
1X70	11.4	0.277	no	15.8	BK	16.7	8.3	19.5±0.3	BK	3680	27	97	12556544
1X95	12.9	0.21	no	17.5	BK	18.6	12	21.2±0.3	BK	4500	32	120	12556545
1X95	12.9	0.210	yes	17.4	BK	18.5	12.0	20.5±0.3	OG	4015	28	116	85150153
1X120	14.5	0.164	no	19.8	BK	20.9	13.7	23.6±0.3	BK	5040	38	152	12556546
1X150	16	0.132	no	22.1	BK	23.2	16	26.2±0.3	BK	6590	45	188	12556547
1X185	17.8	0.108	no	24	BK	25.1	16	28.2±0.3	BK	7290	50	220	12556548
1X240	20.8	0.0817	no	27	BK	28.3	20.8	31.4±0.3	BK	8215	58	279	12556549
1X300	23	0.0654	no	29.9	BK	31.2	22.2	34.6±0.4	BK	9700	69	345	12558471
1X400	26.5	0.0495	no	34.1	BK	35.9	35.7	39.5±0.5	BK	15320	100	480	84134935

¹⁾ X: one colour

G: one green-yellow core, others one colour

²⁾ Conductor according to EN 60228

³⁾ Metallic screen coverage according EN 50264-1