



Traction cable

RADOX EN 50306-3 300V MM S

Product description:

RADOX EN 50306-3 300V MM S	Single- and multicore cables, screened (overall screen)
Nominal voltage:	300 / 500 V AC
Type of installation:	Mechanically protected
Hazard level:	MM (extra low temperature resistant, extra oil and fuel resistant)

General features:

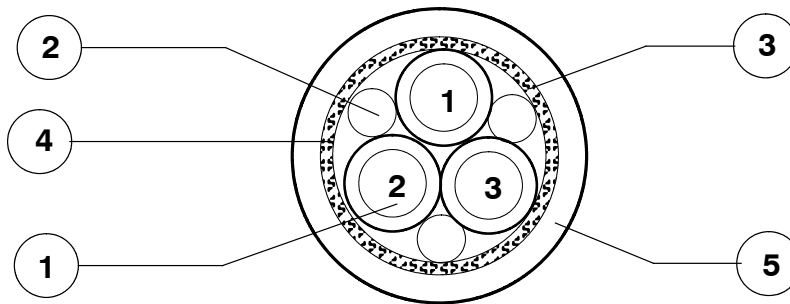
Halogen-free, electron-beam cross-linked cables with improved behaviour in case of fire, easy to strip, soldering resistant and flexible. Meets the requirements of the EN 50306-3 standard.

Application:

The cores are intended for fixed installation inside railway vehicles or for installation in applications where limited alternating bending stresses occur during operation.

Guidelines for selection and installation are described in the standards EN 50355 and EN 50343.

General composition of cable:



1.	EN 50306-2 300V cores	Conductor: tin plated copper wire, acc. to EN 50306-2 Insulation: RADOX EI 306 colour: white, black numbered colours optional
2.	Filler (optional)	RADOX 125 REC
3.	EMC-screen	Tin plated copper braid
4.	Separator (optional)	Tape
5.	Sheath	RADOX S2, colour: black, yellow marked

Marking:

[a] HUBER+SUHNER RADOX EN 50306-3 300V [b] MM S 105 [c]-[d] [e] [f]

		example:
[a]	Meter marking (in m)	= 1234 = m
[b]	Construction	3X1.5
[c]	Part number	12345678
[d]	Batch number	1234567
[e]	Production week and year	03-2017
[f]	Production place (only if China)	CN

Copyright 2018 HUBER+SUHNER AG. This document may not be amended and its content is confidential. It may not be passed on to third party which are not bound by confidentiality.

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.

HUBER+SUHNER
Wire+Cable Division

CH- 8330 Pfäffikon

+41 (0)44 952 22 11

+41 (0)44 952 26 40

FAX

www.hubersuhner.com



Traction cable

RADOX EN 50306-3 300V MM S

Technical data:

Voltage rating cond.- earth	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
		4800	V DC
Temperature range		- 50 ... + 120	°C
Min. bending radius			
fixed installation		3 x D	
sporadic movement		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 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 (fixed installation)

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
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)
Smoke density	$T \geq 70$ %	EN 61034-2
Toxicity	$ITC \leq 6$	EN 50305, 9.2

Fire protection on railway vehicles, hazard level	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 50266-2-5 (EN 50305, 9.1.1)
Vertical flame spread, bunched, $D \geq 12$ mm	$L \leq 2.5$ m	EN 50266-2-4
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 ≤ 0.5 %	EN 50267-2-1
Content of fluorine*	HF ≤ 0.1 %	EN 60684-2, 45.2
Toxicity, insulation	$ITC \leq 6$	EN 50305, 9.2
Toxicity, filler	$ITC \leq 3$	EN 50305, 9.2
Toxicity, sheath	$ITC \leq 3$	EN 50305, 9.2

* Insulation, filler, sheath

Fire protection on railway vehicles, category	A1, A2, B	NF F16-101
Fire protection on railway vehicles, class	C / F0	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

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, 24h, 100°C
Extra fuel resistance	IRM 903, 168h, 70°C

Applicable documents:

- 585 536 Datasheet of cores
- 586 557 Current rating for multicore cables



Traction cable

RADOX EN 50306-3 300V MM S

Construction n x mm ²	Conductor nom.		Core Dia. nom. mm	Screen nom.		Cable dia. mm	R ₂₀ max. Ω/km	Z _T max. mΩ/m	Fireload nom. kJ/m	Weight nom.		H + S Part No.
	Construction n x mm	Dia. mm		Dia. mm	Section mm ²					Copper	Cable	
1x0.5	19x0.18	0.88	1.42	1.9	0.52	2.65±0.2	40.1	320	130	0.96	1.48	84097978
1x0.75	19x0.23	1.09	1.62	2.1	0.52	2.70±0.2	26.7	320	125	1.22	1.71	84111017
1x1	19x0.26	1.23	1.77	2.25	0.52	2.85±0.2	20.0	280	130	1.42	1.95	84097980
1x1.5	19x0.31	1.49	2.17	2.65	0.65	3.30±0.2	13.7	260	175	1.95	2.67	84111019
1x2.5	19x0.40	1.94	2.75	3.2	0.78	3.90±0.2	8.21	200	235	2.97	3.92	84111020
2x0.5	19x0.18	0.88	1.42	3.3	0.78	4.00±0.2	40.1	200	190	1.68	2.49	84103799
2x0.75	19x0.23	1.09	1.62	3.7	0.78	4.45±0.2	26.7	200	240	2.19	3.18	84111022
2x1	19x0.26	1.23	1.77	4.0	0.92	4.70±0.2	20.0	160	235	2.64	3.63	84111023
2x1.5	19x0.31	1.49	2.17	4.8	1.05	5.50±0.2	13.7	110	330	3.68	5.04	84111024
2x2.5	19x0.40	1.94	2.75	6.1	1.77	6.80±0.2	8.21	80	365	6.00	7.52	84111025
3x0.5	19x0.18	0.88	1.42	3.5	0.78	4.15±0.2	40.1	180	215	2.11	3.08	84111026
3x0.75	19x0.23	1.09	1.62	4.0	0.92	4.70±0.2	26.7	160	290	3.02	4.22	84111027
3x1	19x0.26	1.23	1.77	4.3	1.05	5.00±0.2	20.0	150	295	3.72	4.96	84111028
3x1.5	19x0.31	1.49	2.17	5.3	1.57	6.00±0.2	13.7	110	415	5.52	7.25	84111029
3x2.5	19x0.40	1.94	2.75	6.5	2.06	7.25±0.2	8.21	80	560	8.56	10.9	84111031
4x0.5	19x0.18	0.88	1.42	4.0	0.92	4.75±0.2	40.1	150	300	2.7	4.05	84111034
4x0.75	19x0.23	1.09	1.62	4.4	1.05	5.15±0.2	26.7	130	355	3.89	5.37	84111032
4x1	19x0.26	1.23	1.77	4.9	1.57	5.70±0.2	20.0	120	400	5.16	6.85	84111035
4x1.5	19x0.31	1.49	2.17	5.9	1.77	6.70±0.2	13.7	80	540	7.02	9.31	84111037
4x2.5	19x0.40	1.94	2.75	7.3	2.36	8.10±0.2	8.21	60	740	11.0	14.1	84097977

Cables with coloured cores:

Construction n x mm ²	Conductor nom.		Core Dia. nom. mm	Core Colours	Screen Dia. mm	Cable dia. mm	R ₂₀ max. Ω/km	Z _T max. mΩ/m	Fireload nom. kJ/m	Weight nom.		H + S Part No.
	Construction n x mm	Dia. mm								Copper	Cable	
4V0.5	19x0.18	0.88	1.42	WH BU RD BK	4.0	4.75±0.2	40.1	150	300	2.7	4.05	85096746

V: various colours
 Cores: Tolerances of core diameter see H+S Datasheet 585536
 R₂₀: Conductor resistance according to EN 50306-2

Colour Legend

BK: black
 BU: blue
 RD: red
 WH: white