HUBER+SUHNER

Traction cable
RADOX EN 50306-2 300V M

General Properties:

Halogen free, electron-beam cross-linked cables with improved behaviour in case of fire, easy to strip and flexible.
Meet the requirements of standard EN 50306-2.

Single core signal and control cables with thin wall dimensions
Nominal voltage: 300 / 500 V AC
Hazard level: M (extra low temperature, extra oil and extra fuel resistant)

Application:

The single core cables are intended for fix 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 50306-2
2.	Insulation:	RADOX EI 306 Colors: white or green-yellow, black marked

Marking:

[a] **HUBER+SUHNER RADOX EN 50306-2 300V** [b] **M** [c]**-** [d] [e] [f] [g]

		example:
[a]	Meter marking (in m)	= 001234 = m
[b]	Construction (n x mm^2)	1X1.5
[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

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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	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.		2 000	V AC
		4 800	V DC
Temperature range		- 50 ... + 125	°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 and elongation tests according to EN 60811- 504/505, 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 ≤ 540 mm	EN 60332- 1- 2
Vertical flame spread, bunched, D ≤ 6 mm	L ≤ 1.5 m	EN 50305, 9.1.2
Smoke density	T ≥ 70 %	EN 61034- 2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 µS/mm	EN 60754- 2
Amount of halogen acid gas	HCl + HBr ≤ 0.5 %	EN 60754- 1
Content of fluorine	HF ≤ 0.1 %	EN 60684- 2, 45.2
Toxicity	ITC ≤ 6	EN 50305, 9.2
Fire safety, class	**O1.8.1.2.1 (single)** **P1b.8.1.2.1 (bundle)**	**GOST 31565**
Vertical flame spread	50 mm < L ≤ 540 mm	EN 60332- 1- 2
Vertical flame spread, bunched	L ≤ 2.5 m	EN 60332- 3- 22
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 µS/mm	EN 60754- 2
Amount of halogen acid gas	HCl + HBr ≤ 0.5 %	EN 60754- 1
Toxicity	40 < Tx ≤ 120 g/m^3	GOST 12.1.044- 89
Smoke density	T ≥ 60 %	EN 61034- 2
Fire protection on railway vehicles		**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	(acc. 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°	

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Table 1: Packaging Spool

Construction mm^2	Conductor nom. Construction n x mm	D mm	Cable diameter mm	R_{20} max. Ω / km	C_{H2O} nom. pF/m	Fire load nom. kJ / m	Combustible material nom. kg/100m	Cable weight nom. kg/100m	Colour	H+S Part No.
1 x 0.5	19x0.18	0.84	1.42±0.03	40.1	328	32	0.16	0.58	WH	12586000
1 x 0.75	19x0.22	1.04	1.62±0.03	26.7	389	38	0.18	0.82	WH	12586001
									GNYE	12586002
1 x 1.0	19x0.26	1.21	1.77±0.03	20.0	453	42	0.21	1.05	WH	12586003
									GNYE	84112450
1 x 1.5	19x0.30	1.44	2.17±0.03	13.7	420	66	0.32	1.54	WH	12586004
									GNYE	12586007
1 x 2.5	19x0.40	1.85	2.75±0.05	8.21	435	103	0.5	2.54	WH	12586005
									GNYE	12586006

R_{20}: Conductor resistance according to EN 50306-2
C_{H2O}: Capacity in water

Table 2: Packaging Coil CK4 (h x d = 400mm x 400mm)

Construction mm^2	Conductor nom. Construction n x mm	D mm	Cable diameter mm	R_{20} max. Ω / km	C_{H2O} nom. pF/m	Fire load nom. kJ / m	Combustible material nom. kg/100m	Cable weight nom. kg/100m	Colour	H+S Part No.
1 x 1.0	19x0.26	1.21	1.77±0.03	20.0	453	42	0.21	1.05	WH	85160786
1 x 1.5	19x0.30	1.44	2.17±0.03	13.7	420	66	0.32	1.54	WH	85160787

R_{20}: Conductor resistance according to EN 50306-2
C_{H2O}: Capacity in water