



Traction cable

RADOX DATABUS 120 OHM XM S EN

Product description:

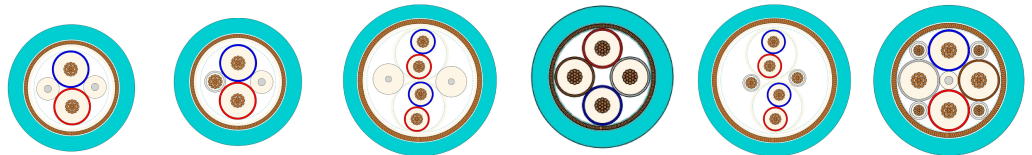
RADOX DATABUS 120 OHM XM S Cables with 0.5 mm² - cores, overall screen
 Impedance: 120 Ohm
 Hazard level: XM (extra low temperature resistant, extra oil and fuel resistant)
 Fire safety: fulfil EN 45545-2

General features:

Halogen-free, electron-beam cross-linked cables with improved behaviour in case of fire, easy to strip, soldering resistant and flexible. Cable for symmetrical data transmission with impedance of 120 Ω with very good transmission properties at high frequencies.

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 standard EN 50343.



Construction [mm ²]	2x0.5	2x0.5+0.5	2x2x0.5	4x0.5	2x2x0.5+2x0.5	4x0.5+4x0.25
Part-No.	85 004 176	84 138 531	85 003 600	85 001 338	85 004 177	85 004 187
Cores of Databus cable						
Conductor	stranded tin plated copper, acc. to EN 60228 cl. 5, 19x018mm					
Insulation	RADOX FOAM					
Core Diameter nom. [mm]	2.3	2.3	1.85	2.3	1.85	2.3
Colours of Pairs	BU-RD	BU-RD	BU-RD, no 1 BU-RD, no 2	BU-RD BN-GY	BU-RD, no 1 BU-RD, no 2	BU-RD BN-GY
Additional Core [mm²]		0.5			2x0.5	4x0.25
Conductor	-	Tin plated copper wire D _{nom.} = 0.9 mm	-	-	Tin plated copper wire D _{nom.} = 0.9 mm	Tin plated copper wire D _{nom.} = 0.60 mm
Insulation	-	RADOX EI 303	-	-	RADOX EI 303	RADOX EI 303
Core Diameter nom. [mm]	-	1.45	-	-	1.45	1.17
Colours of Insulation		WH			WH, num.1+2	WH, num. 1-4
Construction of Cable						
Twists of Cores	pairs	pairs	pairs	quad	pairs	quad
Fillers	PE-LD	PE-LD	PE-LD	none	none	PE-LD
Wrapping				Tape		
EMC - Screen				Tin plated copper braid		
Braiding-Diameter nom. [mm]	5.8	5.8	8.9	6.2	9.4	6.6
Wrapping				Tape		
Sheath				RADOX EM 104 Colour: turquoise		
Diameter [mm]	7.8 ± 0.3	7.8 ± 0.3	11.5 ± 0.4	8.2 ± 0.3	11.5 ± 0.4	8.2 ± 0.3
Fireload [kJ/m]	971	954	2005	950	1903	1036
Cable weight [kg/100 m]	7.6	8.0	17.5	9.0	19.0	10.2
Applications:						
MVB	X	X	X	X	X	X
CAN	X	X				
RS 485	X	X	X	X		

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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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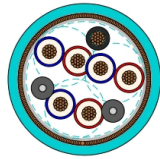


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Construction [mm²]	3x2x0.5+0.5	
Part-No.	85 090 813	
Cores of Databus cable		
Conductor	stranded tin plated copper, acc. to EN 60228 cl. 5, 19x018mm	
Insulation	RADOX FOAM	
Core Diameter <small>nom.</small> [mm]	1.85	
Colours of Pairs	BU-RD, no 1 BU-RD, no 2 BU-RD, no 3	
Additional Core [mm²]	0.5	
Conductor	Tin plated copper wire $D_{nom.} = 0.9 \text{ mm}$	
Insulation	RADOX EI 303	
Core Diameter <small>nom.</small> [mm]	1.45	
Colours of Insulation	BK	
Construction of Cable		
Twists of Cores	pairs	
Fillers	RADOX 125 REC	
Wrapping	Tape	
EMC - Screen	Tin plated copper braid	
Braiding-Diameter <small>nom.</small> [mm]	8.2	
Wrapping	Tape	
Sheath	RADOX EM 104 Colour: turquoise	
Diameter [mm]	10.1 ± 0.3	
Fireload [kJ/m]	1420	
Cable weight [kg/100 m]	14.6	
Applications:		
MVB	X	
CAN		
RS 485		

Marking:

[a] HUBER+SUHNER RADOX DATABUS 120 OHM [b] XM S EN [c]-[d] [e] [f]

	example:
[a] Meter marking (in m)	= 1234 = m
[b] Construction	2X0.5
[c] Part number	12345678
[d] Batch number	1234567
[e] Production week and year	03-2017
[f] Production place (only if China)	CN



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Technical data:

Conductor resistance at 20°C	0.5 mm ²	≤ 40.1	Ω / km
	0.25 mm ²	≤ 90.1	Ω / km
Insulation resistance at 20°C		> 100	MΩ · km
Mutual capacitance	wire / wire	≤ 46	pF / m
Capacitive unbalance to shield	f = 1.5 MHz	≤ 1.5	pF / m
Impedance _{nom.}	f = 0.75 ... 3 MHz	120	Ω
Attenuation _{nom.}	f = 1.5 MHz	15	dB / km
	f = 3.0 MHz	20	dB / km
NEXT	f = 0.75 ... 3 MHz	≥ 45	dB
85 001 338	f = 0.75 ... 3 MHz	≥ 55	dB
Transferimpedance	f ≤ 20 MHz	≤ 20	mΩ / m
Signal propagation		75	%
Voltage rating		300	VAC
Test voltage		2000	VAC
Temperature range	fixed installation	- 50 ... + 90	°C
Min. bending radius	fixed installation	3 x D	
	sporadic movement	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 60811-1-4 Par. 8, 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
Vertical flame spread	50 < L ≤ 540 mm	EN 60332-1-2
Vertical flame spread, bunched, 6 < D < 12 mm	L ≤ 2.5 m	EN 50305, 9.1.1 (EN 60332-3-25)
Smoke density	T ≥ 70 %	EN 61034-2
Toxicity	ITC ≤ 6	EN 50305, 9.2
Fire protection on railway vehicles, hazard level	1 - 4	DIN 5510
Vertical flame spread	50 < L ≤ 540 mm	EN 60332-1-2
Vertical flame spread, bunched, 6 < D < 12 mm	L ≤ 2.5 m	EN 50332-3-25
Smoke density	T ≥ 60 %	EN 61034-2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 mS/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	ITC ≤ 3	EN 50305, 9.2
Fire protection on railway vehicles, hazard level	LR1 - LR4	UNI CEI 11170
Vertical flame spread	50 < L ≤ 540 mm	EN 60332-1-2
Vertical flame spread, bunched, 6 < D < 12 mm	L ≤ 2.5 m	EN 60332-3-25
Smoke density	T ≥ 70 %	EN 61034-2
Corrosivity of combustion gases	pH ≥ 4.3, C ≤ 10 mS/mm	EN 50267-2-2
Amount of halogen acid gas	HCl + HBr ≤ 0.5 %	EN 50267-2-1
Toxicity	ITC ≤ 3	EN 50305, 9.2

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