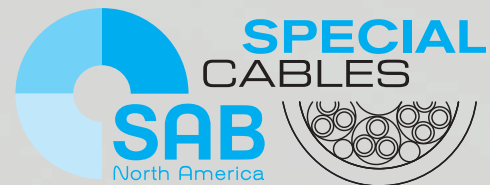


CABLES & ACCESSORIES FOR RAILWAY TECHNOLOGY



www.sabcable.com
866-722-2974 ■ info@sabcable.com



Cables for Railway

About Us



SAB North America is a focused supplier for the automation, aerospace, medical, high temperature, and robotics industries, providing cable solutions that meet, exceed, and set new standards in the flexible cable market. In addition to flexible cable products, we offer an extensive inventory of high-quality cable accessories, including cord grips, grounding glands and other accessories that complement our flexible control and automation cables.

Whatever the need may be, look to SAB North America for Special Cables that can, for example, help minimize maintenance costs and increase productivity, reduce downtime, and solve specific problems. Here is a small sample of some of the challenges that Special Cables from SAB North America can help address:

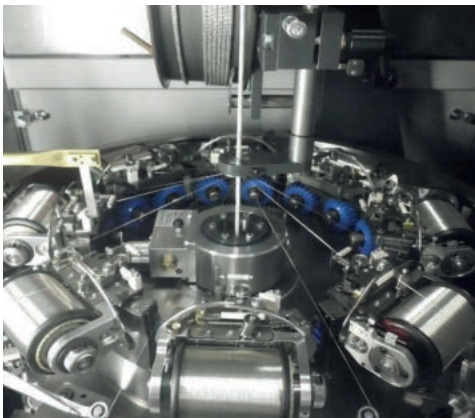
- Hybrid designs for multiple functions
- Harsh environments
- Difficult applications
- Industry-specific requirements



Safe train operation and passenger comfort would not be possible without various electronic systems supported by high-performance power, data and control cables. These cables must be halogen-free, flame retardant and self-extinguishing to meet strict European Union standards aimed at protecting train passengers and personnel from smoke and fumes that can spread during an onboard fire. We manufacture cables with the proper insulation and jacketing materials to meet these regulations.

Whether you're a valued distribution partner, an automation house, an integrator, or a contractor to the railway industry, rest assured that our cables are reliable to maximize production efficiencies. SAB brings world class performance & 75 years of ingenuity to the table.

SAB's level of speed and service as a supplier is unmatched.



SAB Advantage...We make it Easy

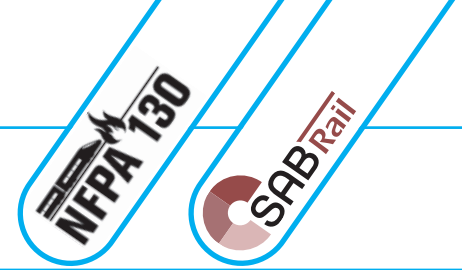
- Engineering & technical assistance
- Cut to length with no cut charges
- Prepaid freight within US for orders over \$2,500
- Specialty cable designs (1500 ft minimum)
- No minimum on orders from stock
- Free drop shipments (no surcharges)
- 24-hour shipments from stock
- Cord Grips for securing cables

Cables for Railway

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SABControl	
Control Cables	
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■ SABIX® A 156 FRNC 450/750 V wiring cable with improved fire performance tested acc. to EN 45545-2	8
■ SABIX® R 600 FRNC SABIX® Rail control cable with numbered conductors tested acc. to EN 45545-2	9
■ SABIX® R 638 FRNC SABIX® Rail control cable with numbered conductors and overall tinned copper shield, tested acc. to EN 45545-2.	10
■ SABIX® A 280 FRNC X Wiring cable / control cable with numbered conductors, cross linked, tested acc. to EN 45545-2.	11
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Cables for Railway

Applications NFPA 130 Approved Cables



NFPA 130 is an internationally recognized industry code that governs fixed guideway transit and passenger rail systems used by passengers and employees. It is intended to prevent, control and limit fires, smoke, their intensity and spread in infrastructure such as rail stations, vehicles and ventilation systems.

NFPA 130 establishes the following requirements for cables:

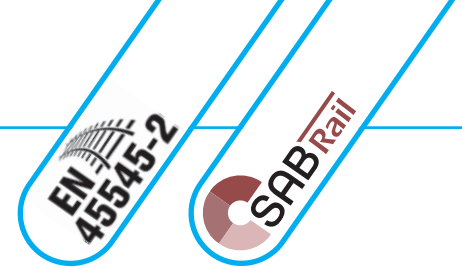
- Cables must be NFPA 70-recognized.
- Cables must be IEEE-1202/FT4 flame- and UL 1685 smoke-tested or NFPA 262 flame and smoke tested.
- Cables must be wet rated 90°C, and insulated conductors listed for wet locations.
- Fire-resistant cables used in both horizontal and vertical applications must meet the UL 2196 one-hour fire rating.

■ Application of halogen-free SABIX® data cables

Data cables are used for the transmission of signals, measuring values and control signals in electronic control appliances, data processing systems, railway technologies, weighing installations, office appliances or wherever smallest cross sections, bending radius, shielding or high flexibility is demanded. The excellent characteristics of these cables, in various versions are oil resistance, low temperature flexibility, heat resistance, weather resistance, flexibility, being halogen-free.

- Communication links
- Infotainment
- Seat wiring
- Driver's control panel wiring
- Train radar
- Coiled radio cables
- Drive systems
- Motor connection cable
- Train safety systems
- Switch cabinet and control panel wiring
- Brake systems
- Air conditioning, ventilation and heating systems
- Sensor and component connections
- Door and footboard controls
- Electric railcar jumper





Extract from EN 45545-2 table 5 requirement set R15 (EL1A) for the respective hazard classes						
Short name of requirement set (used for)	Test method reference	Parameter Unit	Maximum or Minimum	HL1	HL2	HL3
R15 (EL1A)	T09.01 EN 60332-1-2	Unbured length mm	Minimum	burned part \leq 540 and unburned part $>$ 50		
	T09.02 EN 60332-3-24 (for $d \geq 12$ mm)	m	Maximum	2.5	2.5	2.5
	T09.03 EN 50305 (for $6 \text{ mm} < d < 12$ mm)	m	Maximum	2.5	2.5	2.5
	T09.04 EN 50305 (for $d \leq 6$ mm)	m	Maximum	1.5	1.5	1.5
	T13 EN 61034-2	Transmission %	Minimum	25	50	70
T15 EN 50305	<i>ITC</i> dimensionless	Maximum	10	10	6	

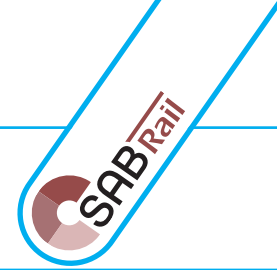
Hazard level classification (HL)				
Extract from EN 45545-2 table 5 requirement set R15 (EL1A) for the respective hazard classes				
Operation category	Design category			
	N: Standard vehicles	A: Vehicles forming part of an automatic train having no emergency trained staff on board	D: Double decked vehicles	S: Sleeping and couchette vehicles
1	HL1	HL1	HL1	HL2
2	HL2	HL2	HL2	HL2
3	HL2	HL2	HL2	HL3
4	HL3	HL3	HL3	HL3

Application of halogen-free SABIX® Control, Connection, and Ethernet CATLine cables

These halogen-free cables fulfill fire protection requirements R15 (EL1A) HL 1-3 flame protection — the highest level according to EN 45545-2. These cables are particularly suitable for control panels at tool working machines, assembly lines, transporting systems, production lines, rail technologies, etc. The excellent characteristics of SABIX® cables, in various versions are oil resistance, low temperature flexibility, heat resistance, hot-air resistance, weather resistance, and are also halogen-free.

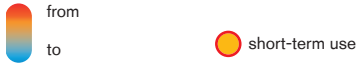
- Door Controls
- Pantograph
- 3rd rail current selectors
- Switchboard wiring





	Cable Type	Cable Type																																			
		7	8	9	10	11	12	13	14	17	19	21	22	24	26	27	28	29	31	32	33																
Applications	Single conductor	●	●																																		
	Multi-conductor cable	●	●																																		
	Shielded			●																																	
	Wiring cable	●	●																																		
	Data cable																																				
	Control cable	●	●	●	●	●	●	●	●	●	●	●	●	●	●																						
	Ethernet cable																																				
	USB cable																																				
Cross linked type												●																									
Standards	Halogen-free	Tested acc. to EN 45545-2	●	●	●	●	●	●	●	●																											
	Burning characteristics	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0,5% acc. to DIN EN 50267-2-1. pH-value is > 4,3 acc. to DIN EN 50267-2-2. Conductivity is < 10,0 µS/mm acc. to DIN EN 50267-2-2. Fluoric content < 0,1% acc. to DIN EN 60684-2	●	●	●	●	●	●	●	●																											
		No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2	●	●	●	●	●	●	●	●																											
		Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	●	●	●	●	●	●	●	●	●																										
		Flame retardant acc. to UL 1685 section 12, FT4/IEEE 1202. Fulfills fire protection requirements acc. to NFPA 130 section 8.6.7.1.1 and section 12.2.1 (1)		●	●	●	●	●	●	●	●																										
		Burning test acc. to ASTM E 162-09																																			
	Flame retardant acc. to ISO 6722 (UN/ECE R118)																																				
	Temperature range fixed installation*	Insulation integrity in case of fire acc. to EN 50200 PH 30, VDE 0482-200, IEC 60331-21 FE 180 + VDE 0482-331-21																																			
		Toxicity acc. to EN 50305 + VDE 0260-305	●	●	●	●	●	●	●	●																											
		Smoke density acc. to IEC 61034 + VDE 0482-1034	●	●	●	●	●	●	●	●	●																										
Smoke density acc. to ASTM E 662-09																																					
Oil and fuel resistance acc. to EN 50264-1 + VDE 0260-264-1						●																															
Voltage	Ozone resistance acc. to EN 50382-2 + VDE 0260-382-2																																				
	+250°C																																				
	+180°C																																				
	-125°C																																				
	+ 90°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	+ 85°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	+ 70°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	+ 30°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	- 40°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	- 50°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
	Peak operating voltage max. 30 V																																				
	Peak operating voltage max. 90 V																																				
	Peak operating voltage: < 0,25 mm² = max. 350 V; ≥ 0,25 mm² = max. 500 V																																				
	Nominal voltage Uo/U 300/500 V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Nominal voltage Uo/U 450/750 V		●																																			
Nominal voltage Uo/U 0,6/1 kV																																					
Nominal voltage Uo/U 1,8/3 kV																																					
Testing voltage 600 V																																					
Testing voltage 1500 V																																					
Testing voltage 2000 V	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		
Testing voltage 2500 V			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Testing voltage 3000 V				●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Testing voltage 4000 V																																					
Testing voltage 6000 V																																					
Testing voltage 6500 V																																					

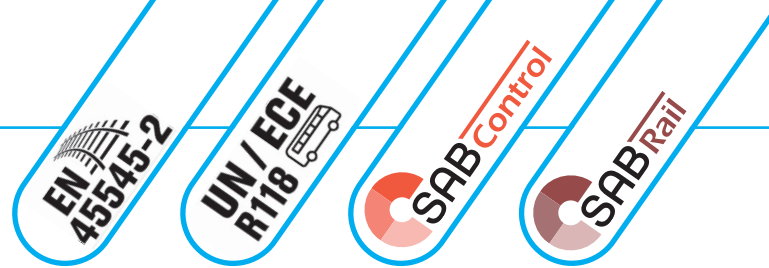
*The temperature range for flexible application is mentioned on the corresponding catalog page



Cables for Railway

SABIX® A 146 FRNC

Wiring cable with improved fire performance and extended temperature range, 300/500V



SCB BRÖCKSKES · D-VIERSEN · SABIX® A 146 FRNC 300/500 V 0.5 mm² CE

Marking for SABIX® A 146 FRNC 61460150:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 146 FRNC 300/500 V 0.5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	SABIX®
Color code:	colored, see table below

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- very good stripping
- flexible
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	2000 V
Min. bending radius:	7.5 x O.D.
For one single bend:	5 x O.D.
Temperature range:	
<i>static</i>	-40/+90°C
<i>flexible:</i>	-30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to EN 50305 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)
Corrosivity:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	mm ²	AWG	nominal outer-ø		cable weight
			inch ±5%	mm ±5%	≈lbs/mft
▶ 6146 .. 50	0.50	20 (≈ 16/32)	0.083	2.1	6
▶ 6146 .. 75	0.75	19 (≈ 23/32)	0.094	2.4	8
▶ 6146 .. 80	1.00	18 (≈ 30/32)	0.098	2.5	9

Other dimensions and colors are available on request

Color code for single conductors:

01 = black	07 = violet
02 = blue	08 = white
03 = brown	09 = orange
04 = gray	11 = red
05 = yellow	16 = gentian blue
06 = green	27 = green/yellow

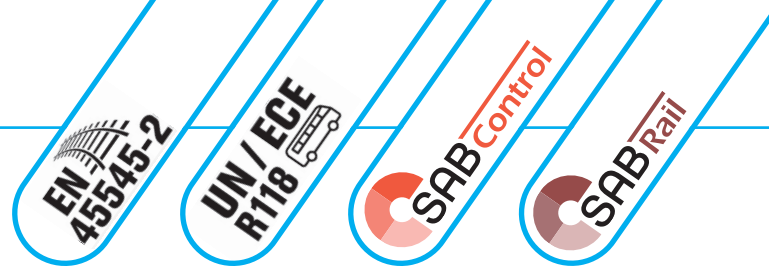


On request with
tinned copper strands

Cables for Railway

SABIX® A 156 FRNC

Wiring cable with improved fire performance and extended temperature range, 450/750V



BRÖCKSKES · D-VIERSEN · SABIX® A 156 FRNC 450/750 V 1.5 mm² CE

Marking for SABIX® A 156 FRNC 61560182:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 156 FRNC 450/750 V 1.5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	SABIX®
Color code:	colored, see table below

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- very good stripping
- flexible
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

Nominal voltage:	U ₀ /U 450/750 V
Testing voltage:	2500 V
Min. bending radius:	7.5 x O.D.
For one single bend:	5 x O.D.
Temperature range:	
<i>static:</i>	-40/+90°C
<i>flexible:</i>	-30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 μS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)
Corrosivity:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	mm ²	AWG MCM	nominal outer-ø		cable weight ≈lbs/mft
			inch ±5%	mm ±5%	
▶ 6156 .. 82	1.50	16 (≈ 27-29/30)	0.118	3.0	13
▶ 6156 .. 84	2.50	14 (≈ 46/30)	0.142	3.6	22
▶ 6156 .. 86	4.00	12 (≈ 52/28)	0.165	4.2	32
▶ 6156 .. 87	6.00	10 (≈ 78/28)	0.185	4.7	45
▶ 6156 .. 88	10.00	8 (≈ 77/26)	0.248	6.3	79
▶ 6156 .. 89	16.00	6 (≈ 122/26)	0.315	8.0	122
▶ 6156 .. 90	25.00	4 (≈ 190/26)	0.390	9.9	196
▶ 6156 .. 91	35.00	2 (≈ 272/26)	0.437	11.1	265
▶ 6156 .. 92	50.00	1 (≈ 400/26)	0.496	12.6	378
▶ 6156 .. 93	70.00	2/0 (≈ 543/26)	0.583	14.8	505
▶ 6156 .. 94	95.00	3/0 (≈ 484/24)	0.717	18.2	695
▶ 6156 .. 95	120.00	4/0 (≈ 589/24)	0.776	19.7	834
▶ 6156 .. 96	150.00	250 (≈ 740/24)	0.858	21.8	1037
▶ 6156 .. 97	185.00	350 (≈ 902/24)	0.913	23.2	1254
▶ 6156 .. 98	240.00	450 (≈ 1220/24)	1.059	26.9	1684
▶ 6156 .. 99	300.00	550 (≈ 1525/24)	1.181	30.0	2100

Other dimensions and colors are available on request

Color code for single conductors:

01 = black	07 = violet
02 = blue	08 = white
03 = brown	09 = orange
04 = gray	11 = red
05 = yellow	16 = gentian blue
06 = green	27 = green/yellow

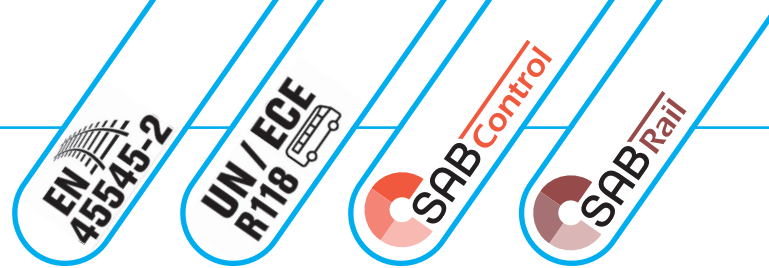


On request with
tinned copper strands

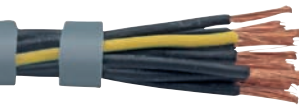
Cables for Railway

SABIX® R 600 FRNC

SABIX® Rail - Control cable with numbered conductors



D-VIERSEN · SABIX® R 600 FRNC 12 x 1.5 mm² CE



Marking for SABIX® R 600 FRNC 66001215:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 600 FRNC 12 x 1.5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers
Jacket material:	special SABIX®
Jacket color:	gray (RAL 7000)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 3000 V
Min. bending radius:	<i>fixed installation:</i> 4 x O.D. <i>free movement:</i> 6 x O.D.
Temperature range:	<i>static:</i> -40/+90°C <i>flexible:</i> -30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
66000205	2	0.189	4.8	22
66000305	3	0.201	5.1	26
66000405	4	0.217	5.5	31
66000505	5	0.244	6.2	38
66000705	7	0.264	6.7	46
66001005	10	0.339	8.6	65
66001205	12	0.358	9.1	74
66001805	18	0.421	10.7	114
66002505	25	0.508	12.9	148
66003205	32	0.551	14.0	193
66004205	42	0.618	15.7	245
66006105	61	0.728	18.5	343
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
66000207	2	0.213	5.4	30
66000307	3	0.224	5.7	34
66000407	4	0.252	6.4	42
66000507	5	0.276	7.0	52
66000707	7	0.307	7.8	65
66001007	10	0.394	10.0	97
66001207	12	0.413	10.5	110
66001807	18	0.488	12.4	155
66002507	25	0.594	15.1	212
66003207	32	0.646	16.4	261
66004207	42	0.724	18.4	346
66006107	61	0.850	21.6	484
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
66000210	2	0.220	5.6	34
66000310	3	0.240	6.1	42
66000410	4	0.260	6.6	51
66000510	5	0.295	7.5	63
66000710	7	0.319	8.1	79

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
66001010	10	0.417	10.6	116
66001210	12	0.429	10.9	132
66001810	18	0.508	12.9	188
66002510	25	0.618	15.7	256
66003210	32	0.673	17.1	327
66004210	42	0.764	19.4	414
66006110	61	0.894	22.7	587
▶ 16 AWG (≈ 27-29/30) • 1.50 mm²				
66000215	2	0.252	6.4	46
66000315	3	0.268	6.8	54
66000415	4	0.299	7.6	67
66000515	5	0.327	8.3	83
66000715	7	0.362	9.2	114
66001015	10	0.472	12.0	154
66001215	12	0.488	12.4	177
66001815	18	0.583	14.8	194
66002515	25	0.709	18.0	361
66003215	32	0.768	19.5	444
66004215	42	0.866	22.0	583
66006115	61	1.016	25.8	818
▶ 14 AWG (≈ 46/30) • 2.50 mm²				
66000225	2	0.307	7.8	71
66000325	3	0.350	8.9	85
66000425	4	0.362	9.2	104
66000525	5	0.398	10.1	134
66000725	7	0.441	11.2	169
66001025	10	0.583	14.8	243
66001225	12	0.602	15.3	280
66001825	18	0.717	18.2	413
66002525	25	0.878	22.3	562

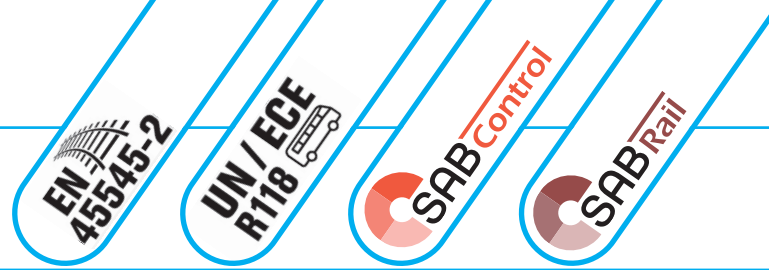
item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 12 AWG (≈ 52/28) • 4.00 mm²				
66000340	3	0.382	9.7	124
66000440	4	0.425	10.8	157
66000540	5	0.476	12.1	195
66000740	7	0.528	13.4	252
▶ 10 AWG (≈ 78/28) • 6.00 mm²				
66000360	3	0.449	11.4	181
66000460	4	0.500	12.7	226
66000560	5	0.559	14.2	279
66000760	7	0.618	15.7	366
▶ 8 AWG (≈ 77/26) • 10.00 mm²				
66000461	4	0.657	16.7	389
66000561	5	0.732	18.6	497
66000761	7	0.815	20.7	645
▶ 6 AWG (≈ 122/26) • 16.00 mm²				
66000462	4	0.811	20.6	596
66000562	5	0.906	23.0	742
66000762	7	1.004	25.5	971
▶ 4 AWG (≈ 190/26) • 25.00 mm²				
66000463	4	0.980	24.9	933
66000563	5	1.106	28.1	1176
▶ 2 AWG (≈ 272/26) • 35.00 mm²				
66000464	4	1.134	28.8	1295
66000564	5	1.280	32.5	1621

Other dimensions and colors are available on request

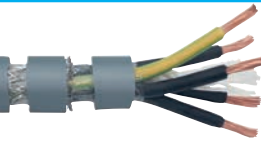
Cables for Railway

SABIX® R 638 FRNC

SABIX® Rail - Control cable with numbered conductors and overall tinned copper shield



KES · D-VIERSEN · SABIX® R 638 FRNC 5 x 1.5 mm² CE



Marking for SABIX® R 638 FRNC 66380515:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 638 FRNC 5 x 1.5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers
Wrapping:	foil
Shielding:	tinned copper braiding
Jacket material:	special SABIX®
Jacket color:	gray (RAL 7000)

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 3000 V conductor/shielding: 2000 V
Min. bending radius:	<i>fixed installation:</i> 5 x O.D. <i>free movement:</i> 10 x O.D.
Temperature range:	<i>static:</i> -40/+90°C <i>flexible:</i> -30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

Outstanding features:



- low smoke halogen-free (LSHF)
- good EMC characteristics*
- no flame propagation
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

*copper braiding should be connected circularly to optimize the EMC characteristics

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
66380205	2	0.209	5.3	26
66380305	3	0.220	5.6	30
66380405	4	0.244	6.2	41
66380505	5	0.264	6.7	47
66380705	7	0.283	7.2	54
66381205	12	0.378	9.6	101
66381805	18	0.449	11.4	138
66382505	25	0.543	13.8	183
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
66380207	2	0.240	6.1	34
66380307	3	0.252	6.4	41
66380407	4	0.272	6.9	49
66380507	5	0.303	7.7	65
66380707	7	0.327	8.3	81
66381207	12	0.441	11.2	130
66381807	18	0.524	13.3	188
66382507	25	0.638	16.2	265

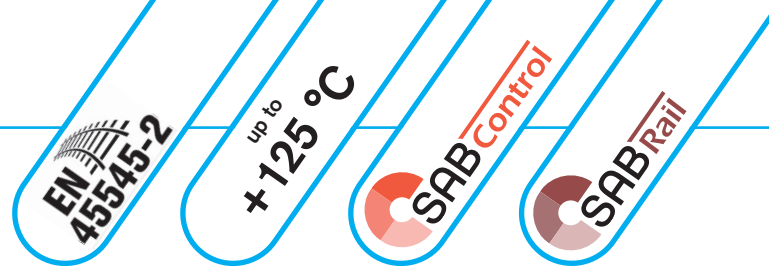
item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
66380210	2	0.248	6.3	38
66380310	3	0.260	6.6	46
66380410	4	0.280	7.1	63
66380510	5	0.315	8.0	74
66380710	7	0.339	8.6	93
66381210	12	0.465	11.8	152
66381810	18	0.543	13.8	212
66382510	25	0.661	16.8	305
▶ 16 AWG (≈ 27-29/30) • 1.50 mm²				
66380215	2	0.272	6.9	42
66380315	3	0.283	7.2	60
66380415	4	0.319	8.1	74
66380515	5	0.354	9.0	91
66380715	7	0.382	9.7	120
66381215	12	0.547	13.9	202
66381815	18	0.618	15.7	305
66382515	25	0.752	19.1	412

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 14 AWG (≈ 46/30) • 2.50 mm²				
66380225	2	0.327	8.3	67
66380325	3	0.354	9.0	86
66380425	4	0.382	9.7	110
66380525	5	0.433	11.0	144
66380725	7	0.476	12.1	185
66381225	12	0.646	16.4	313
66381825	18	0.760	19.3	447
66382525	25	0.921	23.4	626
▶ 12 AWG (≈ 52/28) • 4.00 mm²				
66380440	4	0.453	11.5	168
66380540	5	0.504	12.8	208
▶ 10 AWG (≈ 78/28) • 6.00 mm²				
66380460	4	0.535	13.6	237
66380560	5	0.594	15.1	282
▶ 8 AWG (≈ 77/26) • 10.00 mm²				
66380461	4	0.701	17.8	414
66380561	5	0.862	21.9	616

Other dimensions and colors are available on request

Cables for Railway

SABIX® A 280 FRNC X SABIX® Rail - Wiring cable / Control cable with numbered conductors, cross linked



BRÖCKSKES · D-VIERSEN · SABIX® A 280 FRNC X 1 x 1,0 mm² CE

Marking for SABIX® A 280 FRNC X 62800110:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 280 FRNC X 1 x 1,0 mm² CE

CKSKES · D-VIERSEN · SABIX® A 280 FRNC X 5 x 0,5 mm² CE

Marking for SABIX® A 280 FRNC X 62800505:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 280 FRNC X 5 x 0,5 mm² CE

Construction:

Conductor:	tinned copper strands fine wires acc. to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Single conductor Color code:	white (similar RAL 9010)
Multi-conductor Color code:	white conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334
Multi-conductor Stranding:	in layers
Multi-conductor Jacket material:	special SABIX®
Multi-conductor Jacket color:	black (RAL 9005)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- good ozone resistance
- good oil and chemical resistance
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	5 x O.D.
Temperature range: <i>in conduit:</i> <i>fixed installation:</i>	-40/+125°C (single conductor) -50/+125°C (multi-conductor cable)
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 μS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors	nominal outer- inch ±5%	mm ±5%	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km	heating value approx KWh/km
▶ 20 AWG (≈ 16/32) ▪ 0.50 mm²						
62800105	1	0.067	1.7	5	40.1	13
62800305	3	0.185	4.7	24	40.1	115
62800505	5	0.228	5.8	34	40.1	170
62800805	8	0.287	7.3	56	40.1	246
62801005	10	0.319	8.1	65	40.1	275
62801205	12	0.331	8.4	75	40.1	306
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²						
62800607	6	0.283	7.2	58	26.7	237
62800807	8	0.287	7.3	68	26.7	245
62801007	10	0.370	9.4	89	26.7	345

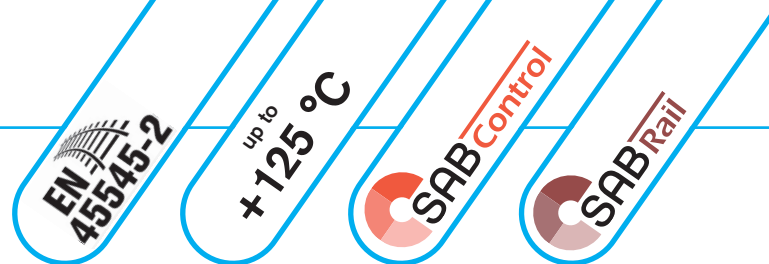
item no.	no. of conductors	nominal outer- inch ±5%	mm ±5%	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km	heating value approx KWh/km
▶ 18 AWG (≈ 30/32) ▪ 1.00 mm²						
62800110	1	0.083	2.1	8	20.0	16
62800310	3	0.217	5.5	37	20.0	162
62800410	4	0.244	6.2	48	20.0	186
62800610	6	0.295	7.5	68	20.0	252
62800810	8	0.354	9.0	91	20.0	338
62801010	10	0.398	10.1	110	20.0	402
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²						
62800115	1	0.098	2.5	11	13.7	22.5
62800315	3	0.260	6.6	46	13.7	210
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²						
62800125	1	0.122	3.1	18	8.21	34

Other dimensions and colors are available on request

Cables for Railway

SABIX® A 285 FRNC X

SABIX® Rail - Control cable with numbered conductors, overall tinned copper shield, cross linked



Marking for SABIX® A 285 FRNC X 62850505:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 285 FRNC X 5 x 0.5 mm² CE

Construction:

Conductor:	tinned copper strands fine wires acc. to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	white conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334
Stranding:	in layers
Wrapping:	foil
Shielding:	tinned copper braiding
Jacket material:	special SABIX®
Jacket color:	black (RAL 9005)

Outstanding features:

- low smoke halogen-free (LSHF)
- good EMC characteristics*
- no flame propagation
- flame retardant and self-extinguishing
- good ozone resistance
- good oil and chemical resistance
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3

*copper braiding should be connected circularly to optimize the EMC characteristics

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 2000 V conductor/shielding: 2000 V
Min. bending radius:	10 x O.D.
Temperature range: <i>in conduit,</i> <i>fixed installation:</i>	-50/+125°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Toxicity:	acc. to EN 50305+ VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors	nominal outer-ø inch ±5%	nominal outer-ø mm ±5%	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km	heating value approx. KWh/km
▶ 20 AWG (≈ 16/32) ▪ 0.50 mm²						
62850305	3	0.205	5.2	30	40.1	99
62850505	5	0.248	6.3	46	40.1	154
62850805	8	0.311	7.9	65	40.1	237
62851005	10	0.339	8.6	77	40.1	258
62851205	12	0.350	8.9	85	40.1	288
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²						
62850607	6	0.303	7.7	68	26.7	231
62850807	8	0.358	9.1	89	26.7	305
62851007	10	0.409	10.4	116	26.7	381

item no.	no. of conductors	nominal outer-ø inch ±5%	nominal outer-ø mm ±5%	cable weight ≈lbs/mft	ohmic resistance at 20°C max. Ω/km	heating value approx. KWh/km
▶ 18 AWG (≈ 30/32) ▪ 1.00 mm²						
62850310	3	0.244	6.2	44	20.0	155
62850610	6	0.323	8.2	84	20.0	285
62850810	8	0.386	9.8	108	20.0	366
62851010	10	0.425	10.8	134	20.0	401

Other dimensions and colors are available on request

Cables for Railway

SABIX® A 280 FRNC X (FR)

SABIX® Rail - Fire resistant control cable, cross linked

EN 45545-2

IEC 60331-21
EN 50200

SAB Control

SAB Rail



ES · D-VIERSEN · SABIX® A 280 FRNC X (FR) 5 x 0.5 mm² CE



Marking for SABIX® A 280 FRNC X (FR) 62809505:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 280 FRNC X (FR) 5 x 0.5 mm² CE

Construction:

Conductor:	tinned copper strands fine wires
Wrapping:	mica tape
Insulation:	special SABIX®
Color code:	white conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334
Stranding:	in layers
Jacket material:	special SABIX®
Jacket color:	black (RAL 9005)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- fire resistant
- flame retardant and self-extinguishing
- good ozone resistance
- good oil and chemical resistance
- fulfills fire protection requirements R15 (EL1A) acc. to EN 45545-2 for hazard levels HL1-3
- EN 50200 PH 30 + VDE 0482-200, IEC 60331-21 + VDE 0482-331-21

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	10 x O.D.
Temperature range: <i>during protected fixed installation:</i>	-50/+125°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Insulation integrity in case of fire:	EN 50200 PH 30, VDE 0482-200, IEC 60331-21 FE 180 + VDE 0482-331
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
62809502	2	0.228	5.8	32
62809503	3	0.240	6.1	39
62809504	4	0.264	6.7	44
62809505	5	0.291	7.4	53
62809507	7	0.327	8.3	69
62809510	10	0.429	10.9	101
62809512	12	0.441	11.2	116
62809518	18	0.520	13.2	158
62809525	25	0.638	16.2	224
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
62809602	2	0.256	6.5	38
62809603	3	0.260	6.6	47
62809604	4	0.283	7.2	54
62809605	5	0.323	8.2	68
62809607	7	0.350	8.9	85
62809608	8	0.421	10.7	115
62809610	10	0.461	11.7	125
62809612	12	0.476	12.1	143
62809618	18	0.575	14.6	209
62809625	25	0.638	16.2	279

item no.	no. of conductors	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
62809702	2	0.252	6.4	42
62809703	3	0.268	6.8	52
62809704	4	0.291	7.4	60
62809705	5	0.331	8.4	76
62809707	7	0.362	9.2	96
62809710	10	0.476	12.1	141
62809712	12	0.492	12.5	161
62809718	18	0.594	15.1	237
62809725	25	0.713	18.1	317
▶ 16 AWG (≈ 27-29/30) • 1.50 mm²				
62809802	2	0.283	7.2	56
62809803	3	0.303	7.7	72
62809804	4	0.339	8.6	86
62809805	5	0.386	9.8	110
62809807	7	0.421	10.7	139
62809808	8	0.492	12.5	177
62809810	10	0.539	13.7	196
62809812	12	0.575	14.6	236
62809818	18	0.673	17.1	333
62809825	25	0.827	21.0	461

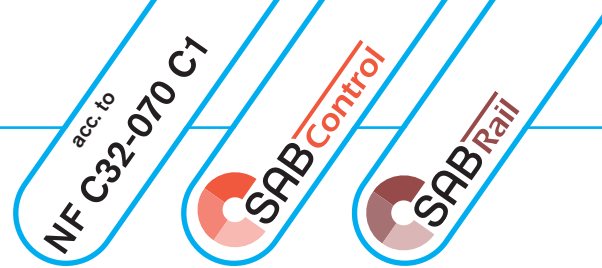
item no.	no. of conductors	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 14 AWG (≈ 46/30) • 2.50 mm²				
62809902	2	0.339	8.6	81
62809903	3	0.358	9.1	105
62809904	4	0.406	10.3	127
62809905	5	0.449	11.4	155
62809907	7	0.492	12.5	200
62809910	10	0.650	16.5	292
62809912	12	0.669	17.0	335
62809918	18	0.807	20.5	491
62809925	25	0.984	25.0	682

Other dimensions and colors are available on request

Cables for Railway

SABIX® A 224 FRNC C1

Control cable with numbered conductors,
improved fire performance and temperature range



Marking for SABIX® A 224 FRNC C1 62241405:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 224 FRNC C1 14 x 0.5 mm² CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334 green/yellow ground from 3 conductors
Stranding:	in layers
Jacket material:	SABIX®
Jacket color:	black (RAL 9005)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- NF C32-070 C1

Technical data:

Nominal voltage:	Uo/U 450/750 V
Testing voltage:	conductor/conductor: 3000 V
Min. bending radius:	<i>fixed installation:</i> 4 x O.D. <i>free movement:</i> 6 x O.D.
Radiation resistance:	1 x 10 ⁷ cJ/kg (100 kGy)
Temperature range:	<i>static:</i> -30/+90°C <i>flexible:</i> -20/+90°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D, acc. to RoHS directive of the European Union. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 + NF C32-070 C1
Corrosiveness of conflagration gases:	in compliance with IEC 60332-1-2 + VDE 0482-332-1-2 no development of corrosive conflagration gases
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG • 0.50 mm²				
62240205	2	0.228	5.8	24
62240305	3	0.248	6.3	33
62240405	4	0.268	6.8	40
62240505	5	0.303	7.7	51
62240705	7	0.327	8.3	63
62241205	12	0.437	11.1	107
62241805	18	0.516	13.1	153
62242505	25	0.626	15.9	212
62243005	30	0.654	16.6	248
62243405	34	0.713	18.1	285
62244005	40	0.772	19.6	334
62244205	42	0.772	19.6	345
62245005	50	0.843	21.4	404
62246105	61	0.902	22.9	482
▶ 19 AWG • 0.75 mm²				
62240207	2	0.252	6.4	30
62240307	3	0.276	7.0	41
62240407	4	0.307	7.8	53
62240507	5	0.335	8.5	64
62240707	7	0.370	9.4	84
62241207	12	0.496	12.6	140
62241807	18	0.591	15.0	207
62242507	25	0.717	18.2	285
62243007	30	0.740	18.8	327
62243407	34	0.803	20.4	374
62244007	40	0.874	22.2	444
62244207	42	0.874	22.2	460
62245007	50	0.961	24.4	540

item no.	no. of conductors incl. ground	outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG • 1.00 mm²				
62240210	2	0.268	6.8	36
62240310	3	0.283	7.2	46
62240410	4	0.315	8.0	60
62240510	5	0.346	8.8	73
62240710	7	0.382	9.7	95
62241210	12	0.512	13.0	161
62241810	18	0.610	15.5	237
62242110	21	0.677	17.2	279
62242510	25	0.740	18.8	326
62243010	30	0.772	19.6	382
62243410	34	0.839	21.3	436
62244010	40	0.906	23.0	510
62244210	42	0.906	23.0	529
▶ 16 AWG • 1.50 mm²				
62240215	2	0.291	7.4	44
62240315	3	0.315	8.0	60
62240415	4	0.343	8.7	75
62240515	5	0.386	9.8	94
62240715	7	0.425	10.8	124
62241215	12	0.567	14.4	208
62241815	18	0.677	17.2	306
62242515	25	0.827	21.0	432
▶ 14 AWG • 2.50 mm²				
62240225	2	0.346	8.8	65
62240325	3	0.374	9.5	89
62240425	4	0.417	10.6	114
62240525	5	0.457	11.6	140
62240725	7	0.504	12.8	185
62241225	12	0.681	17.3	315
62241825	18	0.819	20.8	470
62242525	25	0.996	25.3	652

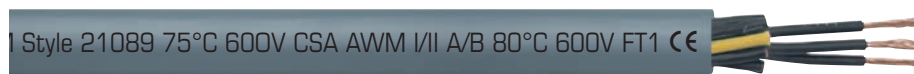
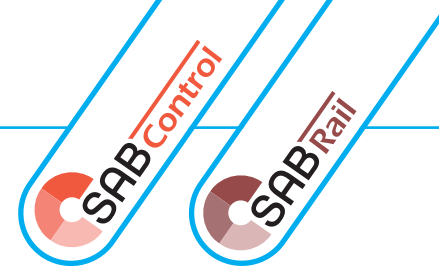
item no.	no. of conductors incl. ground	outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 12 AWG • 4.00 mm²				
62240340	3	0.433	11.0	126
62240440	4	0.480	12.2	163
62240540	5	0.535	13.6	204
62240740	7	0.591	15.0	271
▶ 10 AWG • 6.00 mm²				
62240360	3	0.500	12.7	177
62240460	4	0.555	14.1	229
62240560	5	0.618	15.7	286
62240760	7	0.681	17.3	382
▶ 8 AWG • 10.00 mm²				
62240461	4	0.709	18.0	380
62240561	5	0.988	25.1	661
62240761	7	0.988	25.1	753
▶ 6 AWG • 16.00 mm²				
62240462	4	0.992	25.2	689
62240562	5	0.996	25.3	730
62240762	7	1.067	27.1	943
▶ 4 AWG • 25.00 mm²				
62240463	4	0.961	24.4	855
62240563	5	1.071	27.2	1074
▶ 2 AWG • 35.00 mm²				
62240464	4	1.094	27.8	1176
▶ 1 AWG • 50.00 mm²				
62240465	4	1.362	34.6	1656

Other dimensions and colors are available on request

Cables for Railway

SABIX® CC 625 FRNC M

Control cable with numbered conductors



Marking for SABIX® CC 625 FRNC M 62521215:

SAB BRÖCKSKES · D-VIERSEN · 62521215 12 x 1.5 mm² SABIX® CC 625 FRNC M

16 AWG/12c 62521612 AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers
Jacket material:	SABIX®
Jacket color:	gray (RAL 7000)

Outstanding features:

- low smoke halogen-free (LSHF)
- UL recognized, CSA approved
- no flame propagation
- flame retardant and self-extinguishing
- flexible

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Voltage UL/CSA:	600 V
Testing voltage:	conductor/conductor: 3000 V
Min. bending radius:	<i>fixed installation:</i> 4 x O.D. <i>free movement:</i> 6 x O.D.
Temperature range:	UL: up to +75°C CSA: up to +80°C <i>static</i> DIN VDE: -40/+90°C <i>flexible:</i> -30/+90°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D acc. to RoHS directive of the European Union. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Corrosivity:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	UR AWM, CSA AWM, CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
62522002	2	0.205	5.2	27
62522003	3	0.217	5.5	32
62522004	4	0.232	5.9	38
62522005	5	0.252	6.4	44
62522007	7	0.276	7.0	56
62522008	8	0.323	8.2	70
62522009	9	0.350	8.9	79
62522010	10	0.358	9.1	81
62522012	12	0.366	9.3	91
62522014	14	0.386	9.8	103
62522016	16	0.413	10.5	119
62522018	18	0.437	11.1	132
62522025	25	0.531	13.5	181
62522030	30	0.547	13.9	208
62522034	34	0.598	15.2	239
62522040	40	0.650	16.5	283
62522041	41	0.650	16.5	288
62522061	61	0.760	19.3	409

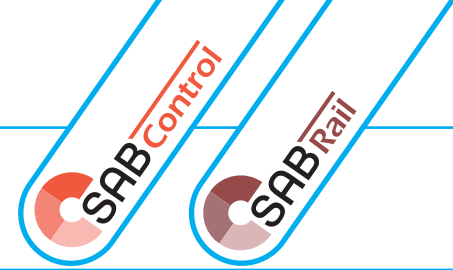
item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
62521902	2	0.224	5.7	32
62521903	3	0.236	6.0	38
62521904	4	0.256	6.5	46
62521905	5	0.280	7.1	54
62521907	7	0.311	7.9	71
62521908	8	0.366	9.3	89
62521909	9	0.390	9.9	97
62521910	10	0.398	10.1	100
62521912	12	0.417	10.6	118
62521914	14	0.437	11.1	132
62521916	16	0.469	11.9	152
62521918	18	0.492	12.5	168
62521925	25	0.598	15.2	231
62521930	30	0.618	15.7	267
62521934	34	0.673	17.1	304
62521940	40	0.732	18.6	359
62521941	41	0.732	18.6	366
62521961	61	0.866	22.0	528

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
62521802	2	0.232	5.9	36
62521803	3	0.248	6.3	44
62521804	4	0.268	6.8	54
62521805	5	0.295	7.5	65
62521807	7	0.323	8.2	83
62521808	8	0.378	9.6	102
62521809	9	0.413	10.5	116
62521810	10	0.421	10.7	120
62521812	12	0.433	11.0	137
62521814	14	0.453	11.5	155
62521818	18	0.512	13.0	198
62521825	25	0.622	15.8	271
62521830	30	0.654	16.6	320
62521834	34	0.709	18.0	365
62521840	40	0.768	19.5	429
62521841	41	0.768	19.5	454
62521861	61	0.902	22.9	626

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Cables for Railway

SABIX® CC 625 FRNC M Control cable with numbered conductors



Marking for SABIX® CC 625 FRNC M 62521215:

SAB BRÖCKSKES · D-VIERSEN · 62521215 12 x 1.5 mm² SABIX® CC 625 FRNC M

16 AWG/12c 62521612 AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²				
62521602	2	0.256	6.5	46
62521603	3	0.272	6.9	57
62521604	4	0.299	7.6	71
62521605	5	0.327	8.3	87
62521607	7	0.366	9.3	112
62521608	8	0.429	10.9	136
62521609	9	0.465	11.8	153
62521610	10	0.476	12.1	161
62521612	12	0.488	12.4	184
62521614	14	0.512	13.0	209
62521618	18	0.587	14.9	271
62521625	25	0.713	18.1	375
62521630	30	0.736	18.7	435
62521634	34	0.807	20.5	502
62521640	40	0.874	22.2	587
62521641	41	0.874	22.2	593
62521661	61	1.024	26.0	861

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²				
62521402	2	0.307	7.8	70
62521403	3	0.327	8.3	86
62521404	4	0.362	9.2	108
62521405	5	0.398	10.1	131
62521407	7	0.441	11.2	173
62521408	8	0.528	13.4	212
62521409	9	0.563	14.3	234
62521410	10	0.583	14.8	252
62521412	12	0.602	15.3	290
62521418	18	0.717	18.2	425
62521425	25	0.878	22.3	585
▶ 12 AWG (≈ 52/28) ▪ 4.00 mm²				
62521203	3	0.382	9.7	126
62521204	4	0.425	10.8	160
62521205	5	0.476	12.1	198
62521207	7	0.528	13.4	261

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 10 AWG (≈ 78/28) ▪ 6.00 mm²				
62521003	3	0.449	11.4	182
62521004	4	0.500	12.7	230
62521005	5	0.559	14.2	286
▶ 8 AWG (≈ 77/26) ▪ 10.00 mm²				
62520804	4	0.677	17.2	409
62520805	5	0.760	19.3	508
▶ 6 AWG (≈ 122/26) ▪ 16.00 mm²				
62520604	4	0.831	21.1	611
▶ 4 AWG (≈ 190/26) ▪ 25.00 mm²				
62520404	4	1.043	26.5	991
▶ 2 AWG (≈ 272/26) ▪ 35.00 mm²				
62520204	4	1.189	30.2	1346

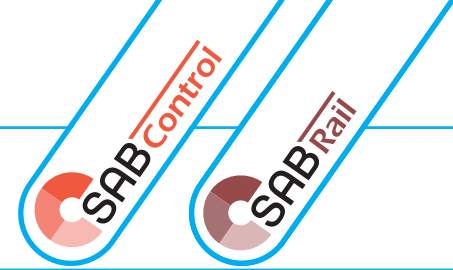
Other dimensions and colors are available on request



Cables for Railway

SABIX® CC 625 S FRNC M

Control cable with numbered conductors and overall tinned copper shield



Marking for SABIX® CC 625 S FRNC M 62341612:

SAB BRÖCKSKES · D-VIERSEN · 62341215 12 x 1.5 mm² SABIX® CC 625 S FRNC M

16 AWG/12c 62341612 AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 5
Insulation:	SABIX®
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers
Wrapping:	foil
Shielding:	tinned copper braiding
Jacket material:	SABIX®
Jacket color:	gray (RAL 7000)

Outstanding features:

- low smoke halogen-free (LSHF)
- UL recognized, CSA approved
- no flame propagation
- good EMC characteristics*
- flame retardant and self-extinguishing
- flexible

*copper braiding should be connected circularly to optimize the EMC characteristics

Technical data:

Nominal voltage:	Uo/U 300/500 V
Voltage UL/CSA:	600 V
Testing voltage:	conductor/conductor: 3000 V conductor/shielding: 2000 V
Min. bending radius: <i>fixed installation:</i> <i>free movement:</i>	5 x O.D. 10 x O.D.
Temperature range: <i>static:</i> <i>flexible:</i>	UL: up to +75°C CSA: up to +80°C DIN VDE: -40/+90°C -30/+90°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D acc. to RoHS directive of the European Union. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Corrosivity:	in compliance with IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	UR AWM, CSA AWM, CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
62342002	2	0.224	5.7	30
62342003	3	0.236	6.0	36
62342004	4	0.252	6.4	43
62342005	5	0.276	7.0	51
62342007	7	0.299	7.6	65
62342008	8	0.350	8.9	81
62342009	9	0.370	9.4	88
62342010	10	0.378	9.6	91
62342012	12	0.386	9.8	102
62342014	14	0.421	10.7	126
62342016	16	0.441	11.2	138
62342018	18	0.472	12.0	157
62342025	25	0.543	13.8	206
62342030	30	0.591	15.0	243
62342034	34	0.642	16.3	288
62342040	40	0.693	17.6	338
62342041	41	0.693	17.6	345
62342061	61	0.795	20.2	466

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
62341902	2	0.244	6.2	35
62341903	3	0.256	6.5	43
62341904	4	0.276	7.0	52
62341905	5	0.307	7.8	63
62341907	7	0.331	8.4	79
62341908	8	0.386	9.8	97
62341909	9	0.425	10.8	122
62341910	10	0.433	11.0	122
62341912	12	0.445	11.3	139
62341914	14	0.472	12.0	158
62341916	16	0.496	12.6	174
62341918	18	0.520	13.2	192
62341925	25	0.642	16.3	280
62341930	30	0.661	16.8	314
62341934	34	0.717	18.2	359
62341940	40	0.776	19.7	420
62341941	41	0.776	19.7	427
62341961	61	0.902	22.9	591

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
62341802	2	0.252	6.4	39
62341803	3	0.268	6.8	49
62341804	4	0.287	7.3	58
62341805	5	0.315	8.0	72
62341807	7	0.350	8.9	93
62341808	8	0.398	10.1	111
62341809	9	0.441	11.2	134
62341810	10	0.449	11.4	141
62341812	12	0.469	11.9	162
62341814	14	0.488	12.4	180
62341818	18	0.547	13.9	228
62341825	25	0.665	16.9	325
62341830	30	0.697	17.7	374
62341834	34	0.752	19.1	423
62341840	40	0.811	20.6	490
62341841	41	0.811	20.6	499
62341861	61	0.945	24.0	700

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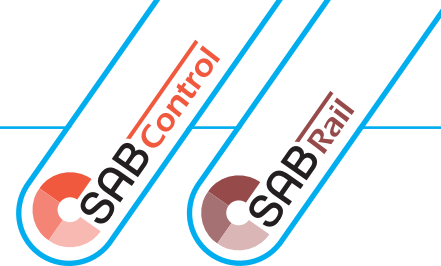


Also available with inner jacket

Cables for Railway

SABIX® CC 625 S FRNC M

Control cable with numbered conductor and overall tinned copper shield



Marking for SABIX® CC 625 S FRNC M 62341612:

SAB BRÖCKSKES · D-VIERSEN · 62341215 12 x 1.5 mm² SABIX® CC 625 S FRNC M

16 AWG/12c 62341612 AWM Style 21089 75°C 600V CSA AWM I/II A/B 80°C 600V FT1 CE

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²				
62341602	2	0.276	7.0	48
62341603	3	0.295	7.5	62
62341604	4	0.319	8.1	76
62341605	5	0.354	9.0	93
62341607	7	0.386	9.8	120
62341608	8	0.465	11.8	159
62341609	9	0.492	12.5	174
62341610	10	0.504	12.8	183
62341612	12	0.524	13.3	210
62341614	14	0.547	13.9	238
62341618	18	0.622	15.8	312
62341625	25	0.756	19.2	433
62341630	30	0.780	19.8	493
62341634	34	0.843	21.4	561
62341640	40	0.909	23.1	647
62341641	41	0.909	23.1	653
62341661	61	1.067	27.1	943

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²				
62341402	2	0.327	8.3	68
62341403	3	0.354	9.0	91
62341404	4	0.382	9.7	113
62341405	5	0.433	11.0	148
62341407	7	0.476	12.1	192
62341408	8	0.555	14.1	232
62341409	9	0.598	15.2	259
62341410	10	0.618	15.7	288
62341412	12	0.646	16.4	331
62341418	18	0.760	19.3	478
62341425	25	0.921	23.4	648
▶ 12 AWG (≈ 52/28) ▪ 4.00 mm²				
62341203	3	0.417	10.6	138
62341204	4	0.453	11.5	172
62341205	5	0.504	12.8	212
62341207	7	0.555	14.1	277

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 10 AWG (≈ 78/28) ▪ 6.00 mm²				
62341003	3	0.484	12.3	191
62341004	4	0.535	13.6	243
62341005	5	0.594	15.1	302
▶ 8 AWG (≈ 77/26) ▪ 10.00 mm²				
62340804	4	0.720	18.3	427
62340805	5	0.795	20.2	526
▶ 6 AWG (≈ 122/26) ▪ 16.00 mm²				
62340604	4	0.874	22.2	623
▶ 4 AWG (≈ 190/26) ▪ 25.00 mm²				
62340404	4	1.079	27.4	974
▶ 2 AWG (≈ 272/26) ▪ 35.00 mm²				
62340204	4	1.232	31.3	1316

Other dimensions and colors are available on request



Cables for Railway

SABIX® R flex

SABIX® Rail - Continuous flex cable with numbered conductors



BRÖCKSKES · D-VIERSEN · SABIX® R flex 5G0.75 mm² CE



Marking for SABIX® R flex 66701105:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R flex 5G0.75 mm² CE

Application: Suitable for flexible and protected installation in the interior for door control or in protecting tubes for outdoor laying at the bogie, railway machines or as connection cable between the waggons. Appropriate for light and medium mechanical stress.

Construction:

Conductor:	bare copper strands acc. to IEC 60228, VDE 0295, class 6
Insulation:	special polymer
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors Twisted pairs type without green/yellow ground
Stranding:	in layers resp. pairwise
Wrapping:	foil
Shielding:	tinned copper braiding (if existing)
Jacket material:	SABIX® Ultra
Jacket color:	black (RAL 9005)

Outstanding features:

- halogen-free
- continuous flex
- good EMC characteristics
- no flame propagation
- flame retardant and self-extinguishing
- good ozone, UV, and weather resistance
- good oil and fuel resistance
- good acid and alkalines resistance
- fulfills fire protection requirements R15 (EL1A) and R16 (EL1B)
acc. to EN 45545-2 for hazard levels HL1-2

Technical data:

Nominal voltage:	Uo/U 300/500 V	
Testing voltage:	conductor/conductor: 2000 V conductor/shielding: 2000 V	
Min. bending radius: <i>fixed installation:</i> <i>flexible application:</i> <i>continuously flex:</i>	unshielded:	shielded:
	4 x O.D.	5 x O.D.
	6 x O.D.	10 x O.D.
	12 x O.D.	15 x O.D.
Temperature range: <i>static:</i> <i>flexible:</i>	-50/+90°C	
	-40/+90°C	
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2	
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)	
Toxicity:	acc. to EN 50305+ VDE 0260-305	
Smoke density:	acc. to IEC 61034 + VDE 0482-1034	
Oil and fuel resistance:	acc. to EN 50264-1 + VDE 0260-264-1	
Flexibility:	very good	
Approvals:	CE, EAC, RoHS	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30	

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
multi-conductor cable unshielded				
▶ 20 AWG (≈ 28/34) ▪ 0.50 mm ²				
66700002	2	0.181	4.6	21
66700004	4	0.213	5.4	32
66700007	7	0.272	6.9	51
66700012	12	0.331	8.4	76
66700018	18	0.390	9.9	108
66700032	32	0.504	12.8	179
▶ 19 AWG (≈ 42/34) ▪ 0.75 mm ²				
66700103	3	0.220	5.6	34
66700105	5	0.264	6.7	50
66700125	25	0.543	13.8	204
▶ 18 AWG (≈ 56/34) ▪ 1.00 mm ²				
66700202	2	0.224	5.7	33
66700273	73	0.906	23.0	665
▶ 16 AWG (≈ 84/34) ▪ 1.50 mm ²				
66700303	3	0.260	6.6	54
66700307	7	0.370	9.4	112
66700318	18	0.539	13.7	253

item no.	no. of pairs	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
multi-pair cable shielded				
▶ 20 AWG (≈ 28/34) ▪ 0.50 mm ²				
66703002	2	0.276	7.0	46
66703003	3	0.315	8.0	60
66703004	4	0.394	10.0	81
66703006	6	0.409	10.4	108
66703008	8	0.492	12.5	154
66703012	12	0.563	14.3	187
▶ 19 AWG (≈ 42/34) ▪ 0.75 mm ²				
66703103	3	0.350	8.9	76
66703108	8	0.575	14.6	206
▶ 18 AWG (≈ 56/34) ▪ 1.00 mm ²				
66703202	2	0.350	8.9	75
66703203	3	0.374	9.5	91
66703206	6	0.496	12.6	167
66703208	8	0.594	15.1	240
▶ 16 AWG (≈ 84/34) ▪ 1.50 mm ²				
66703302	3	0.406	10.3	105
66703304	4	0.500	12.7	163
66703306	6	0.563	14.3	232

Continued on next page

Cables for Railway

SABIX® R flex

SABIX® Rail - Continuous flex cable with numbered conductors



BRÖCKSKES · D-VIERSEN · SABIX® R flex 560.75 mm² CE



Marking for SABIX® R flex 66701105:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R flex 560.75 mm² CE

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft	item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft	item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
multi-conductor cable shielded														
▶ 20 AWG (≈ 28/34) ▪ 0.50 mm²														
66701002	2	0.209	5.3	31	66701303	3	0.280	7.1	62	66701704	4	0.661	16.8	406
66701003	3	0.217	5.5	34	66701304	4	0.299	7.6	75	▶ 6 AWG (≈ 504/32) ▪ 16.00 mm²				
66701005	5	0.256	6.5	48	66701305	5	0.335	8.5	92	66701804	4	0.795	20.2	595
66701007	7	0.291	7.4	61	66701318	18	0.567	14.4	280	▶ 4 AWG (≈ 760/32) ▪ 25.00 mm²				
66701018	18	0.425	10.8	134	▶ 14 AWG (≈ 140/34) ▪ 2.50 mm²					66701904	4	0.949	24.1	869
66701032	32	0.539	13.7	213	66701404	4	0.382	9.7	117	Other dimensions and colors are available on request				
▶ 19 AWG (≈ 42/34) ▪ 0.75 mm²														
66701103	3	0.240	6.1	42	66701405	5	0.433	11.0	158					
66701104	4	0.264	6.7	51	66701407	7	0.520	13.2	218					
66701105	5	0.283	7.2	60	66701412	12	0.618	15.7	312					
66701125	25	0.571	14.5	236	▶ 12 AWG (≈ 224/34) ▪ 4.00 mm²									
▶ 18 AWG (≈ 56/34) ▪ 1.00 mm²														
66701204	4	0.272	6.9	58	66701504	4	0.449	11.4	175					
66701207	7	0.343	8.7	92	▶ 10 AWG (≈ 183/32) ▪ 6.00 mm²									
66701212	12	0.433	11.0	151	66701604	4	0.547	13.9	255					




Cables for Railway

SAB RailLine 560

SABIX® Rail - Continuous flex cable for outdoor use, cross linked



D-VIERSEN · SAB RailLine 560 5x0.75mm² C 6560-1105 CE 



Marking for SAB RailLine 560 65601105:

SAB BRÖCKSKES · D-VIERSEN · SAB RailLine 560 5x0.75mm² C 6560-1105 CE

Application: For flexible outdoor installation, e.g. bogies, railway machines. Also for flexible application inside rolling stock, e.g. door systems.

Construction:

Conductor:	tinned copper strands, extra fine wires
Insulation:	SABIX® X
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers resp. pairwise
Wrapping:	foil
Shielding:	tinned copper braiding (if existing)
Jacket material:	SABIX® X
Jacket color:	black (RAL 9005)

Outstanding features:



- weather resistant
- continuous flex
- good ozone, UV, and weather resistance
- good oil and fuel resistance
- good acid and alkalines resistance
- fulfills fire protection requirements R15 (EL1A) and R16 (EL1B) acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

Nominal voltage:	Uo/U 300/500 V resp. 0.6/1 kV	
Testing voltage:	300/500 V	0.6/1 kV
	conductor/conductor:	2000 V 4000 V
	conductor/shielding:	2000 V 4000 V
Min. bending radius:		
<i>fixed installation:</i>	4 x O.D.	
<i>flexible application:</i>	6 x O.D.	
<i>continuous flex:</i>	10 x O.D.	
Torsion angle:	± 15°/1m	
Temperature range:		
<i>static:</i>	-50/+90°C	
<i>flexible:</i>	-50/+90°C	
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2	
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24, IEC 60332-3-25 + EN 50305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2 Flame retardant acc. to ISO 6722 (UN/ECE R118)	
Toxicity:	acc. to EN 50305 + VDE 0260-305	
Smoke density:	acc. to IEC 61034 + VDE 0482-1034	
Weather resistance:	very good	
Oil and fuel resistance:	acc. to EN 50264-1 + VDE 0260-264-1	
Flexibility:	very good	
Approvals:	CE, EAC, RoHS	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30	

item no.	dimensions AWG	nominal outer-ø		cable weight ≈lbs/mft	nominal voltage
		inch ±5%	mm ±5%		
multi-conductor cable unshielded					
65600002	20 AWG/2c	0.193	4.9	25	300/500 V
65600105	19 AWG/5c	0.252	6.4	49	300/500 V
65600203	18 AWG/1c	0.209	5.3	37	300/500 V
65600205	18 AWG/5c	0.264	6.7	58	300/500 V
65600207	18 AWG/7c	0.311	7.9	85	300/500 V
65600225	18 AWG/25c	0.528	13.4	232	300/500 V
65600304	16 AWG/4c	0.272	6.9	68	300/500 V
65600307	16 AWG/7c	0.366	9.3	118	300/500 V
65609001	2 AWG/5c	1.307	33.2	1545	0.6/1 kV
multi-conductor cable shielded					
65601002	20 AWG/2c	0.193	4.9	28	300/500 V
65601003	20 AWG/3c	0.209	5.3	34	300/500 V
65601005	20 AWG/5c	0.240	6.1	45	300/500 V
65601012	20 AWG/12c	0.335	8.5	89	300/500 V
65601105	19 AWG/5c	0.268	6.8	58	300/500 V
65601204	18 AWG/4c	0.260	6.6	58	300/500 V
65601213	18 AWG/13c	0.425	10.8	158	300/500 V
65601303	16 AWG/3c	0.287	7.3	67	300/500 V
65601305	16 AWG/5c	0.327	8.3	102	300/500 V
65601307	16 AWG/7c	0.382	9.7	131	300/500 V
65609002	2 AWG/5c	1.343	34.1	1650	0.6/1 kV

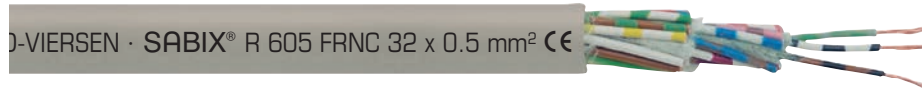
item no.	dimensions AWG	nominal outer-ø		cable weight ≈lbs/mft	nominal voltage
		inch ±5%	mm ±5%		
multi-pair cable shielded					
65609004	24 AWG/6pr	0.315	8.0	66	300/500 V
65609005	22 AWG/12pr	0.469	11.9	137	300/500 V
65603002	20 AWG/2pr	0.264	6.7	46	300/500 V
65603004	20 AWG/4pr	0.335	8.5	73	300/500 V
65603006	20 AWG/6pr	0.386	9.8	103	300/500 V
65603008	20 AWG/8pr	0.484	12.3	155	300/500 V
65603103	19 AWG/3pr	0.331	8.4	83	300/500 V

Other dimensions and colors are available on request



Cables for Railway

SABIX® R 605 FRNC SABIX® Rail - Data cable



UN / ECE
R118

CE EAC RoHS

Marking for SABIX® R 605 FRNC 66D53250:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 605 FRNC 32 x 0.5 mm² CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	DIN 47100, see next page
Stranding:	in layers
Jacket material:	special SABIX®
Jacket color:	grayish tan (RAL 7032)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3
- fulfills fire protection requirements acc. to NFPA 130 section 8.6.7.1.1 and section 12.2.1 (1) *
- flame retardant acc. to UN/ECE R118

Technical data:

Nominal voltage:	< 24 AWG = max. 350 V ≥ 24 AWG = max. 500 V
Testing voltage:	conductor/conductor: 1500 V
Min. bending radius:	
<i>fixed installation:</i>	5 x O.D.
<i>free movement:</i>	10 x O.D.
Temperature range:	
<i>static:</i>	-40/+90°C
<i>flexible:</i>	-30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to UL 1685 section 12, FT4/IEEE 1202.* Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 26 AWG (≈ 18/38) • 0.14 mm²				
66050214	2	0.122	3.1	9
66050314	3	0.130	3.3	10
66050414	4	0.138	3.5	12
66050514	5	0.150	3.8	14
66050714	7	0.161	4.1	17
66050814	8	0.197	5.0	22
66051214	12	0.209	5.3	26
66051414	14	0.217	5.5	28
66051614	16	0.236	6.0	34
66051814	18	0.248	6.3	38
66052114	21	0.272	6.9	44
66052414	24	0.287	7.3	47
66052714	27	0.303	7.7	54
66053014	30	0.311	7.9	58
66053214	32	0.323	8.2	62
66053614	36	0.335	8.5	68
66054014	40	0.358	9.1	75
66054414	44	0.374	9.5	80
66055014	50	0.406	10.3	95
66056114	61	0.429	10.9	111

item no.	no. of conductors incl. ground	nominal outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 24 AWG (≈ 14/34) • 0.25 mm²				
66050225	2	0.134	3.4	11
66050325	3	0.142	3.6	13
66050425	4	0.154	3.9	16
66050525	5	0.165	4.2	19
66050725	7	0.181	4.6	24
66050825	8	0.205	5.2	29
66051225	12	0.240	6.1	38
66051425	14	0.252	6.4	43
66051625	16	0.264	6.7	48
66051825	18	0.280	7.1	54
66052125	21	0.311	7.9	65
66052425	24	0.331	8.4	70
66052725	27	0.339	8.6	77
66053025	30	0.350	8.9	84
66053225	32	0.362	9.2	89
66053625	36	0.394	10.0	105
66054025	40	0.417	10.6	116
66054425	44	0.437	11.1	124
66055025	50	0.457	11.6	137
66056125	61	0.484	12.3	162

item no.	no. of conductors incl. ground	nominal outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 22 AWG (≈ 7/30) • 0.34 mm²				
66050234	2	0.157	4.0	16
66050334	3	0.165	4.2	18
66050434	4	0.181	4.6	22
66050534	5	0.197	5.0	27
66050734	7	0.217	5.5	33
66050834	8	0.256	6.5	42
66051234	12	0.287	7.3	54
66051434	14	0.311	7.9	63
66051634	16	0.327	8.3	71
66051834	18	0.346	8.8	79
66052134	21	0.394	10.0	98
66052434	24	0.417	10.6	105
66052734	27	0.425	10.8	116
66053034	30	0.441	11.2	126
66053234	32	0.457	11.6	134
66053634	36	0.476	12.1	148
66054034	40	0.508	12.9	164
66054434	44	0.531	13.5	175
66055034	50	0.571	14.5	204
66056134	61	0.606	15.4	241

* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

Continued on next page

Cables for Railway

SABIX® R 605 FRNC SABIX® Rail - Data cable



UN / ECE
R118

CE ENEC RoHS

Marking for SABIX® R 605 FRNC 66D53250:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 605 FRNC 32 x 0.5 mm² CE

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
66050250	2	0.169	4.3	19
66050350	3	0.177	4.5	22
66050450	4	0.193	4.9	27
66050550	5	0.213	5.4	33
66050750	7	0.240	6.1	42
66050850	8	0.280	7.1	53
66051250	12	0.319	8.1	69
66051450	14	0.335	8.5	77
66051650	16	0.354	9.0	88
66051850	18	0.374	9.5	97
66052150	21	0.429	10.9	121
66052450	24	0.453	11.5	131
66052750	27	0.461	11.7	143
66053050	30	0.476	12.1	156
66053250	32	0.496	12.6	167
66053650	36	0.516	13.1	184
66054450	44	0.594	15.1	229
66055050	50	0.618	15.7	276
66056150	61	0.657	16.7	301

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
66050275	2	0.193	4.9	26
66050375	3	0.205	5.2	30
66050475	4	0.232	5.9	39
66050575	5	0.252	6.4	47
66050775	7	0.276	7.0	58
66050875	8	0.327	8.3	75
66051275	12	0.370	9.4	95
66051475	14	0.406	10.3	114
66051675	16	0.425	10.8	129
66051875	18	0.449	11.4	143
66052175	21	0.492	12.5	167
66052475	24	0.524	13.3	181
66052775	27	0.535	13.6	200
66053075	30	0.571	14.5	228
66053275	32	0.591	15.0	242
66053675	36	0.614	15.6	268
66054075	40	0.657	16.7	298
66054475	44	0.689	17.5	319
66055075	50	0.720	18.3	356
66056175	61	0.780	19.8	435

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) • 1.00 mm²				
66050280	2	0.201	5.1	29
66050380	3	0.213	5.4	36
66050480	4	0.240	6.1	46
66050580	5	0.264	6.7	55
66050680	6	0.287	7.3	65
66050780	7	0.287	7.3	70
▶ 16 AWG (≈ 27-29/30) • 1.50 mm²				
66050285	2	0.220	5.6	37
66050385	3	0.240	6.1	48
66050485	4	0.264	6.7	58
66050585	5	0.303	7.7	76
66050685	6	0.331	8.4	90
66050785	7	0.331	8.4	97

Other dimensions and colors are available on request

* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

DIN 47100 color code:

#1- white, #2- brown, #3- green, #4- yellow, #5- gray, #6- pink, #7- blue, #8- red, #9- black, #10- violet, #11- gray-pink, #12- red-blue, #13- white-green, #14- brown-green, #15- white-yellow, #16- yellow-brown, #17- white-gray, #18- gray-brown, #19- white-pink, #20- pink-brown, #21- white-blue, #22- brown-blue, #23- white-red, #24- brown-red, #25- white-black, #26- brown-black, #27- gray-green, #28- yellow-gray, #29- pink-green, #30- yellow-pink, #31- green-blue, #32- yellow-blue, #33- green-red, #34- yellow-red, #35- green-black, #36- yellow-black, #37- gray-blue, #38- pink-blue, #39- gray-red, #40- pink-red, #41- gray-black, #42- pink-black, #43- blue-black, #44- red-black, #45- white-brown-black, #46- yellow-green-black, #47- gray-pink-black, #48- red-blue-black, #49- white-green-black, #50- brown-green-black, #51- white-yellow-black, #52- yellow-brown-black, #53- white-gray-black, #54- gray-brown-black, #55- white-pink-black, #56- pink-brown-black, #57- white-blue-black, #58- brown-blue-black, #59- white-red-black, #60- brown-red-black, #61- black-white



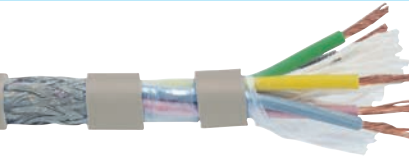
Cables for Railway

SABIX® R 615 FRNC

SABIX® Rail - Data cable with overall tinned copper shield



SEN · SABIX® R 615 FRNC 5 x 0.5 mm² CE



UN / ECE
R118

CE EAC RoHS

Marking for SABIX® R 615 FRNC 66150550:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 615 FRNC 5 x 0.5 mm² CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	DIN 47100, see next page
Stranding:	in layers
Wrapping:	foil
Shielding:	tinned copper braiding
Jacket material:	special SABIX®
Jacket color:	grayish tan (RAL 7032)

Outstanding features:

- low smoke halogen-free (LSHF)
- good EMC characteristics*
- no flame propagation
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3
- fulfills fire protection requirements
acc. to NFPA 130 section 8.6.7.1.1
and section 12.2.1 (1) *
- tested acc. to American ASTM standard
- flame retardant acc. to UN/ECE R118

*copper braiding should be connected circularly to optimize the EMC characteristics

Technical data:

Nominal voltage:	< 24 AWG = max. 350 V ≥ 24 AWG = max. 500 V
Testing voltage:	conductor/conductor: 1500 V conductor/shielding: 1200 V
Min. bending radius:	5 x O.D. <i>fixed installation:</i> 10 x O.D. <i>free movement:</i>
Temperature range:	<i>static:</i> -40/+90°C <i>flexible:</i> -30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 μS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to UL 1685 section 12, FT4/IEEE 1202. * Burning tests acc. to ASTM E 162-09. Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034 + ASTM E 662-09
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 26 AWG (≈ 18/38) ▪ 0.14 mm ²				
66150214	2	0.142	3.6	14
66150314	3	0.150	3.8	15
66150414	4	0.157	4.0	16
66150514	5	0.169	4.3	19
66150714	7	0.181	4.6	22
66150814	8	0.213	5.4	29
66151014	10	0.228	5.8	32
66151214	12	0.244	6.2	36
66151414	14	0.252	6.4	40
66151614	16	0.264	6.7	45
66151814	18	0.276	7.0	48
66152114	21	0.299	7.6	56
66152414	24	0.315	8.0	60
66152714	27	0.339	8.6	70
66153014	30	0.346	8.8	75
66153214	32	0.358	9.1	79
66153614	36	0.370	9.4	86
66154014	40	0.394	10.0	95
66154414	44	0.417	10.6	109
66155014	50	0.433	11.0	118
66155214	52	0.433	11.0	120
66156114	61	0.457	11.6	136

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 24 AWG (≈ 14/34) ▪ 0.25 mm ²				
66150225	2	0.154	3.9	16
66150325	3	0.161	4.1	17
66150425	4	0.173	4.4	21
66150525	5	0.193	4.9	26
66150725	7	0.209	5.3	31
66150825	8	0.240	6.1	39
66151025	10	0.260	6.6	43
66151225	12	0.268	6.8	48
66151425	14	0.280	7.1	54
66151625	16	0.291	7.4	60
66151825	18	0.307	7.8	66
66152125	21	0.346	8.8	82
66152425	24	0.366	9.3	87
66152725	27	0.374	9.5	95
66153025	30	0.386	9.8	102
66153225	32	0.398	10.1	108
66153625	36	0.421	10.7	127
66154025	40	0.445	11.3	140
66154425	44	0.465	11.8	148
66155025	50	0.500	12.7	171
66155225	52	0.500	12.7	175
66156125	61	0.528	13.4	198

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 22 AWG (≈ 7/30) ▪ 0.34 mm ²				
66150234	2	0.177	4.5	21
66150334	3	0.193	4.9	24
66150434	4	0.209	5.3	29
66150534	5	0.224	5.7	34
66150734	7	0.252	6.4	42
66150834	8	0.283	7.2	52
66151034	10	0.307	7.8	58
66151234	12	0.315	8.0	65
66151434	14	0.346	8.8	79
66151634	16	0.362	9.2	87
66151834	18	0.382	9.7	97
66152134	21	0.421	10.7	119
66152434	24	0.445	11.3	130
66152734	27	0.453	11.5	139
66153034	30	0.469	11.9	149
66153234	32	0.500	12.7	166
66153634	36	0.520	13.2	183
66154034	40	0.551	14.0	202
66154434	44	0.575	14.6	214
66155034	50	0.622	15.8	259
66155234	52	0.622	15.8	265
66156134	61	0.657	16.7	246

* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

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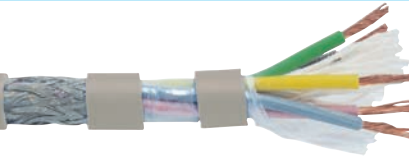
Cables for Railway

SABIX® R 615 FRNC

SABIX® Rail - Data cable with overall tinned copper shield



SEN · SABIX® R 615 FRNC 5 x 0.5 mm² CE



UN / ECE
R118

CE ENEC RoHS

Marking for SABIX® R 615 FRNC 66150550:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 615 FRNC 5 x 0.5 mm² CE

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) ▪ 0.50 mm²				
66150250	2	0.197	5.0	26
66150350	3	0.205	5.2	28
66150450	4	0.220	5.6	34
66150550	5	0.248	6.3	42
66150750	7	0.268	6.8	51
66150850	8	0.307	7.8	63
66151050	10	0.346	8.8	76
66151250	12	0.354	9.0	85
66151450	14	0.370	9.4	93
66151650	16	0.390	9.9	105
66151850	18	0.417	10.6	124
66152150	21	0.457	11.6	148
66152450	24	0.496	12.6	161
66152750	27	0.504	12.8	175
66153050	30	0.520	13.2	190
66153250	32	0.539	13.7	201
66153650	36	0.559	14.2	222
66154450	44	0.646	16.4	284
66155050	50	0.669	17.0	315
66156150	61	0.709	18.0	363

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²				
66150275	2	0.220	5.6	32
66150375	3	0.240	6.1	38
66150475	4	0.260	6.6	50
66150575	5	0.280	7.1	54
66150775	7	0.303	7.7	68
66150875	8	0.362	9.2	89
66151275	12	0.413	10.5	120
66151475	14	0.433	11.0	133
66151675	16	0.453	11.5	151
66151875	18	0.488	12.4	173
66152175	21	0.535	13.6	200
66152475	24	0.567	14.4	218
66152775	27	0.579	14.7	237
66153075	30	0.622	15.8	280
66153275	32	0.642	16.3	296
66153675	36	0.665	16.9	322

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 18 AWG (≈ 30/32) ▪ 1.00 mm²				
66150280	2	0.228	5.8	36
66150380	3	0.248	6.3	44
66150480	4	0.268	6.8	52
66150580	5	0.291	7.4	64
66150680	6	0.315	8.0	75
66150780	7	0.315	8.0	79
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²				
66150285	2	0.260	6.6	48
66150385	3	0.268	6.8	60
66150485	4	0.291	7.4	66
66150585	5	0.339	8.6	87
66150685	6	0.366	9.3	102
66150785	7	0.366	9.3	109

Other dimensions and colors are available on request

* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

DIN 47100 color code:

#1- white, #2- brown, #3- green, #4- yellow, #5- gray, #6- pink, #7- blue, #8- red, #9- black, #10- violet, #11- gray-pink, #12- red-blue, #13- white-green, #14- brown-green, #15- white-yellow, #16- yellow-brown, #17- white-gray, #18- gray-brown, #19- white-pink, #20- pink-brown, #21- white-blue, #22- brown-blue, #23- white-red, #24- brown-red, #25- white-black, #26- brown-black, #27- gray-green, #28- yellow-gray, #29- pink-green, #30- yellow-pink, #31- green-blue, #32- yellow-blue, #33- green-red, #34- yellow-red, #35- green-black, #36- yellow-black, #37- gray-blue, #38- pink-blue, #39- gray-red, #40- pink-red, #41- gray-black, #42- pink-black, #43- blue-black, #44- red-black, #45- white-brown-black, #46- yellow-green-black, #47- gray-pink-black, #48- red-blue-black, #49- white-green-black, #50- brown-green-black, #51- white-yellow-black, #52- yellow-brown-black, #53- white-gray-black, #54- gray-brown-black, #55- white-pink-black, #56- pink-brown-black, #57- white-blue-black, #58- brown-blue-black, #59- white-red-black, #60- brown-red-black, #61- black-white

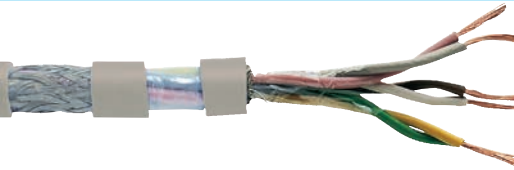


Cables for Railway

SABIX® R 645 FRNC TP SABIX® Rail - Data cable, paired with overall tinned copper shield



R 645 FRNC TP 3 x 2 x 0.25 mm² CE



UN / ECE
R118

CE EAC RoHS

Marking for SABIX® R 645 FRNC TP 66450325:

SAB BRÖCKSKES · D-VIERSEN · SABIX® R 645 FRNC TP 3 x 2 x 0.25 mm² CE

Construction:

Conductor:	bare copper strands with reference to IEC 60228, VDE 0295, class 5
Insulation:	special SABIX®
Color code:	DIN 47100, see bottom of page
Stranding:	pairwise, pairs in layers
Wrapping:	foil
Shielding:	tinned copper braiding
Jacket material:	special SABIX®
Jacket color:	grayish tan (RAL 7032)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- good EMC characteristics*
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A)
acc. to EN 45545-2 for hazard levels HL1-3
- fulfills fire protection requirements
acc. to NFPA 130 section 8.6.7.1.1
and section 12.2.1 (1) *
- flame retardant acc. to UN/ECE R118
- tested acc. to American ASTM standard
- good transmission rates and crosstalk attenuation

*copper braiding should be connected circularly to optimize the EMC characteristics

Technical data:

Nominal voltage:	< 24 AWG = max. 350 V ≥ 24 AWG = max. 500 V
Testing voltage:	conductor/conductor: 1500 V conductor/shielding: 1200 V
Min. bending radius:	5 x O.D. <i>fixed installation:</i> 10 x O.D. <i>free movement:</i>
Temperature range:	<i>static:</i> -40/+90°C <i>flexible:</i> -30/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 μS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2. Flame retardant acc. to UL 1685 section 12, FT4/IEEE 1202. * Burning tests acc. to ASTM E 162-09. Flame retardant acc. to ISO 6722 (UN/ECE R118)
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034 + ASTM E 662-09
Flexibility:	good
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of pairs	nominal outer-ø		cable weight ≈lbs/mft
		inch ±10%	mm ±10%	
▶ 26 AWG (≈ 18/38) • 0.14 mm²				
66450214	2	0.205	5.2	26
66450314	3	0.224	5.7	30
66450414	4	0.256	6.5	36
66450514	5	0.276	7.0	43
66450614	6	0.283	7.2	48
66450814	8	0.307	7.8	56
66451014	10	0.350	8.9	71
66451214	12	0.382	9.7	81
66451614	16	0.413	10.5	99
66451814	18	0.437	11.1	117
66452414	24	0.504	12.8	150
▶ 24 AWG (≈ 14/34) • 0.25 mm²				
66450225	2	0.224	5.7	31
66450325	3	0.252	6.4	41
66450425	4	0.283	7.2	48
66450525	5	0.303	7.7	56
66450625	6	0.311	7.9	62
66450825	8	0.354	9.0	80
66451025	10	0.386	9.8	93
66451225	12	0.429	10.9	116
66451625	16	0.469	11.9	143
66451825	18	0.500	12.7	165
66452425	24	0.559	14.2	199

item no.	no. of pairs	nominal outer-ø		cable weight ≈lbs/mft
		inch ±10%	mm ±10%	
▶ 22 AWG (≈ 7/30) • 0.34 mm²				
66450234	2	0.268	6.8	42
66450334	3	0.291	7.4	53
66450434	4	0.346	8.8	69
66450534	5	0.374	9.5	81
66450634	6	0.382	9.7	84
66450834	8	0.417	10.6	107
66451234	12	0.528	13.4	167
66451634	16	0.575	14.6	205
66451834	18	0.594	15.1	224
66452434	24	0.693	17.6	302
▶ 20 AWG (≈ 16/32) • 0.50 mm²				
66450250	2	0.283	7.2	48
66450350	3	0.311	7.9	62
66450450	4	0.370	9.4	80
66450550	5	0.402	10.2	95
66450650	6	0.409	10.4	104
66450850	8	0.449	11.4	120
66451050	10	0.520	13.2	169
66451250	12	0.567	14.4	198
66451650	16	0.642	16.3	255
66451850	18	0.665	16.9	293
66452450	24	0.748	19.0	341

item no.	no. of pairs	nominal outer-ø		cable weight ≈lbs/mft
		inch ±10%	mm ±10%	
▶ 19 AWG (≈ 23/32) • 0.75 mm²				
66450275	2	0.335	8.5	69
66450375	3	0.370	9.4	86
66450475	4	0.429	10.9	112
66450575	5	0.461	11.7	135
66450675	6	0.492	12.5	161
66450875	8	0.539	13.7	187
66451275	12	0.673	17.1	282
66451675	16	0.732	18.6	351
66451875	18	0.760	19.3	390
66452475	24	0.858	21.8	480

Other dimensions and colors are available on request

DIN 47100 color code:

#1- white/brown, #2- green/yellow, #3- gray/pink,
#4- blue/red, #5- black/purple, #6- gray-pink/red-blue,
#7- white-green/brown-green, #8- white-yellow/yellow-
brown, #9- white-gray/gray-brown, #10- white-pink/pink-
brown, #11- white-blue/brown-blue,
#12- white-red/brown-red, #13- white-black/brown-black,
#14- gray-green/yellow-gray, #15- pink-green/yellow-pink,
#16- green-blue/yellow-blue, #17- green-red/yellow-red,
#18- green-black/yellow-black, #19- gray-blue/pink-blue,
#20- gray-red/pink-red, #21- gray-black/pink-black,
#22- blue-black, red-black, #23- white/brown,
#24- green/yellow

* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

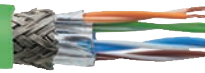
Cables for Railway

CATLine CAT 5e R
CATLine CAT 6A R
CATLine CAT 7A R

Halogen-free industrial
 Ethernet cables
 for railway



D-VIERSEN · **CATLine** Cat. 7A R 4x2x24AWG 1767-4621 **CE**



Marking for CATLine CAT 7A R 17674621:

SAB BRÖCKSKES · D-VIERSEN · **CATLine** Cat. 7A R 4x2x24AWG 1767-4621 **CE**

Construction:	CATLine CAT 5e R <i>flexible</i>		CATLine CAT 6A R <i>flexible</i>	CATLine CAT 7A R <i>flexible</i>
Item numbers:	15672625 15679002 15679004	15674421	16674621	17674621
Dimensions:	2 x 2 x 26 AWG 2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 22 AWG	4 x 2 x 26 AWG	4 x 2 x 26 AWG
Conductor:	bare copper strands, fine wires		bare copper strands, fine wires	bare copper strands, fine wires
Insulation:	PE	PE	PE	PE
Color code:	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Stranding:	star quad	conductors twisted to pairs, pairs together		twisted to pairs with alu foil, pairs together
Wrapping:	foil	foil	foil	—
Shielding:	alu foil + tinned copper braiding		alu foil + tinned copper braiding	tinned copper braiding
Jacket material:	special SABIX®	special SABIX®	special SABIX®	special SABIX®
Jacket color:	green (similar RAL 6018)		green (similar RAL 6018)	green (similar RAL 6018)

Technical data:	CATLine CAT 5e R <i>flexible</i>	CATLine CAT 6A R <i>flexible</i>	CATLine CAT 7A R <i>flexible</i>
Peak operating voltage:	max. 90 V	max. 90 V	max. 90 V
Testing voltage: conductor/conductor: conductor/shielding:	750 V 750 V	750 V 750 V	750 V 750 V
Min. bending radius: fixed installation: free movement:	5 x O.D. 12 x O.D.	5 x O.D. 12 x O.D.	5 x O.D. 12 x O.D.
Temperature range VDE: static: flexible:	-40/+70°C -30/+70°C	-40/+70°C -30/+70°C	-40/+70°C -30/+70°C
Low smoke halogen-free (LSHF):	acc. to EN 50306-1 + EN 50264-1; Development of HCl is ≤ 0.5% acc. to IEC 60754-1; pH-value is ≥ 4.3 acc. to IEC 60754-2; Conductivity is ≤ 10.0 μS/mm acc. to IEC 60754-2; Fluoric content ≤ 0.1% acc. to IEC 60684-2		
Burning characteristics:	no flame propagation acc. to IEC 60332-3-25 + VDE 0482-332-3-25 + EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2		
Smoke density:	acc. to IEC 61034 + VDE 0482-1034	acc. to IEC 61034 + VDE 0482-1034	acc. to IEC 61034 + VDE 0482-1034
Toxicity:	acc. to EN 50305 + VDE 0260-305	acc. to EN 50305 + VDE 0260-305	acc. to EN 50305 + VDE 0260-305
Characteristic impedance:	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω, accomplishes the electrical and transmission requirements with high frequency with reference to EN 50288-9-2 / CAT 7A
Flexibility:	good	good	good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see page O/30		

item no.	type	dimensions AWG	max. cond.-ø mm	nominal outer-ø		cable weight ≈lbs/mft
				inch ± 5%	mm ± 5%	
▶ 15672625	CATLine CAT 5e R	26 (≈ 18/38)/2pr	1.05	0.157	4.0	17
▶ 15679002	CATLine CAT 5e R	24 (≈ 14/34)/2pr	1.30	0.205	5.2	28
▶ 15679004	CATLine CAT 5e R	22 (≈ 7/30)/2pr	1.60	0.232	5.9	35
▶ 15674421	CATLine CAT 5e R	24 (≈ 14/34)/4pr	1.30	0.315	8.0	47
▶ 16674621	CATLine CAT 6A R	26 (≈ 18/38)/4pr	1.05	0.268	6.8	37
▶ 17674621	CATLine CAT 7A R	26 (≈ 18/38)/4pr	1.60	0.307	7.8	50

Other dimensions and colors are available on request

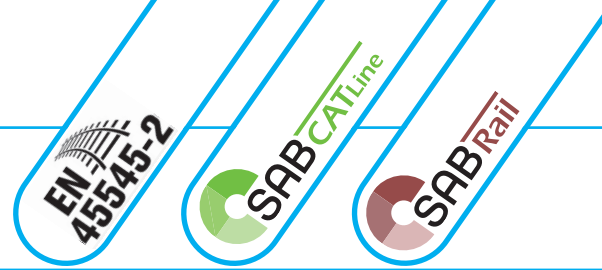
Also possible as a
 cable assembly with
 M12 or RJ 45 plug


CABLE
 ASSEMBLY
 POSSIBLE

Cables for Railway


CATLine CAT 5e R flex
CATLine CAT 6A R flex
CATLine CAT 7A R flex

Continuous flex
 halogen-free industrial
 Ethernet cables
 for railway



D-VIERSEN · CATLine Cat.7A R flex 4x2x24AWG 1769-4431  

Marking for CATLine CAT 7A R flex 17694431:

SAB BRÖCKSKES · D-VIERSEN · CATLine Cat.7A R flex 4x2x24AWG 1769-4431 

Construction:	CATLine CAT 5e R flex <i>continuous flex</i>		CATLine CAT 6A R flex <i>continuous flex</i>	CATLine CAT 7A R flex <i>continuous flex</i>
Item numbers:	15692435 15692235	15694431 15694631	16694431 16694631	17694431 17694631
Dimensions:	2 x 2 x 24 AWG 2 x 2 x 22 AWG	4 x 2 x 26 AWG 4 x 2 x 24 AWG	4 x 2 x 24 AWG 4 x 2 x 26 AWG	4 x 2 x 24 AWG 4 x 2 x 26 AWG
Conductor:	bare copper strands, fine wires		bare copper strands, fine wires	bare copper strands, fine wires
Insulation:	special SABIX®		special SABIX®	special SABIX®
Color code:	blue, yellow, white, orange	white-blue/blue, white-orange/orange, white-green/green, white-brown/brown		white-blue/blue, white-orange/orange, white-green/green, white-brown/brown
Stranding:	star quad	conductors twisted to pairs, pairs together		twisted to pairs with alu foil, pairs together
Wrapping:	foil		foil	—
Shielding:	alu foil + tinned copper braiding		alu foil + tinned copper braiding	tinned copper braiding
Jacket material:	special SABIX®		special SABIX®	special SABIX®
Jacket color:	green (similar RAL 6018)		green (similar RAL 6018)	green (similar RAL 6018)

Technical data:	CATLine CAT 5e R flex <i>continuous flex</i>		CATLine CAT 6A R flex <i>continuous flex</i>	CATLine CAT 7A R flex <i>continuous flex</i>
Peak operating voltage:	max. 90 V		max. 90 V	max. 90 V
Testing voltage: conductor/conductor: conductor/shielding:	750 V 750 V		750 V 750 V	750 V 750 V
Min. bending radius: fixed installation: free movement: continuous flex:	5 x O.D. 12 x O.D. 15 x O.D.		5 x O.D. 12 x O.D. 15 x O.D.	5 x O.D. 12 x O.D. 15 x O.D.
Temperature range VDE: static: flexible:	-50/+90°C -40/+90°C		-50/+90°C -40/+90°C	-50/+90°C -40/+90°C
Low smoke halogen-free (LSHF):	acc. to EN 50306-1 + EN 50264-1; Development of HCl is ≤ 0.5% acc. to IEC 60754-1; pH-value is ≥ 4.3 acc. to IEC 60754-2; Conductivity is ≤ 10.0 μS/mm acc. to IEC 60754-2; Fluoric content ≤ 0.1% acc. to IEC 60684-2			
Burning characteristics:	no flame propagation acc. to IEC 60332-3-25 / VDE 0482-332-3-25 EN 50305 + VDE 0260-305 section 9.1.1 + 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2			
Smoke density:	acc. to IEC 61034 + VDE 0482-1034		acc. to IEC 61034 + VDE 0482-1034	acc. to IEC 61034 + VDE 0482-1034
Toxicity:	acc. to EN 50305 + VDE 0260-305		acc. to EN 50305 + VDE 0260-305	acc. to EN 50305 + VDE 0260-305
Characteristic impedance:	100Ω ± 5Ω with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω with reference to EN 50288-2-2 / CAT 5	100Ω ± 10Ω with reference to EN 50288-10-2 / CAT 6A	100Ω ± 10Ω with reference to EN 50288-9-2 / CAT 7A
Flexibility:	good		good	good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see page O/30			

item no.	type	dimensions AWG	nominal outer-ø inch	mm	cable weight ≈lbs/mft
▶ 15692435	CATLine CAT 5e R flex	24 (≈ 14/34)/2pr	0.201	5.1	27
▶ 15692235	CATLine CAT 5e R flex	22 (≈ 7/30)/2pr	0.228	5.8	36
▶ 15694431	CATLine CAT 5e R flex	24 (≈ 14/34)/4pr	0.307	7.8	54
▶ 15694631	CATLine CAT 5e R flex	26 (≈ 18/38)/4pr	0.256	6.5	37
▶ 16694431	CATLine CAT 6A R flex	24 (≈ 14/34)/4pr	0.311	7.9	54
▶ 16694631	CATLine CAT 6A R flex	26 (≈ 18/38)/4pr	0.256	6.5	38
▶ 17694431	CATLine CAT 7A R flex	24 (≈ 14/34)/4pr	0.382	9.7	73
▶ 17694631	CATLine CAT 7A R flex	26 (≈ 18/38)/4pr	0.339	8.6	62

Other dimensions and colors are available on request

Application: Suitable for flexible and protected installation in the interior for door control or in protecting tubes for outdoor laying at the bogie. Appropriate for light and medium mechanical stress.

Also possible as a cable assembly with M12 or RJ 45 plug



Cables for Railway

SABIX® USB 2.0 R flex

Halogen-free continuous flex SABIX® USB 2.0 Rail cable



ES · D-VIERSEN · SABIX® USB 2.0 R flex 4x28AWG 0601-9013

Marking for SABIX® USB 2.0 R flex 6019013:

SAB BRÖCKSKES · D-VIERSEN · SABIX® USB 2.0 R flex 4x28AWG 6019013

Construction:

Conductor:	bare copper strands, fine wires
Insulation:	SABIX®
Color code:	white, green, red, black
Shielding:	alu. foil + tinned copper braiding Drain AWG 30 of tinned copper under the braid
Jacket material:	SABIX®
Jacket color:	black (RAL 9005)

Outstanding features:

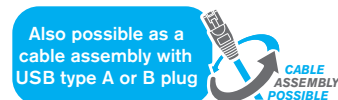
- low smoke halogen-free (LSHF)
- continuous flex
- no flame propagation
- flame retardant and self-extinguishing
- fulfills fire protection requirements R15 (EL1A) and R16 (EL1B) acc. to EN 45545-2 for hazard levels HL1-3

Technical data:

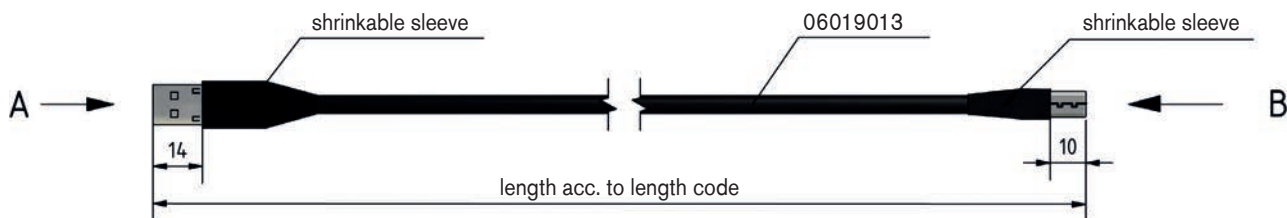
Peak operating voltage:	max. 30V
Testing voltage:	conductor/conductor: 600 V conductor/shielding: 600 V
Min. bending radius:	fixed installation: 5 x O.D. free movement: 10 x O.D.
Temperature range:	static: -50/+90°C flexible: -50/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 acc. to IEC 60754-2. Conductivity is < 10.0 µS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2.
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	type	dimensions AWG	nominal outer-ø inch	mm	cable weight ≈lbs/mft	ohmic resistance at 20°C max.Ω/km
▶ 6019013	SABIX® USB 2.0 R flex	28 (7 strand)/4c	0.205	5.2	28	223.8

Other dimensions and colors are available on request



USB 2.0 cable with USB type A and USB type B plug



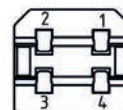
view A (2:1)



Pin configuration

USB A	color code	USB B
1	red	1
2	white	2
3	green	3
4	black	4
housing	screen	housing

view B (3:1)



view soldering side

Cables for Railway



CAN-Bus cable

Halogen-free combined cable with overall copper shield

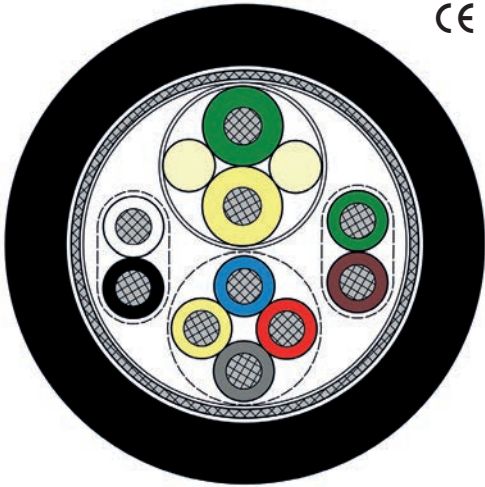
Coupling cable T 790

Torsional connecting cable

Halogen-free combined cable with overall copper shield

item no. 63359002

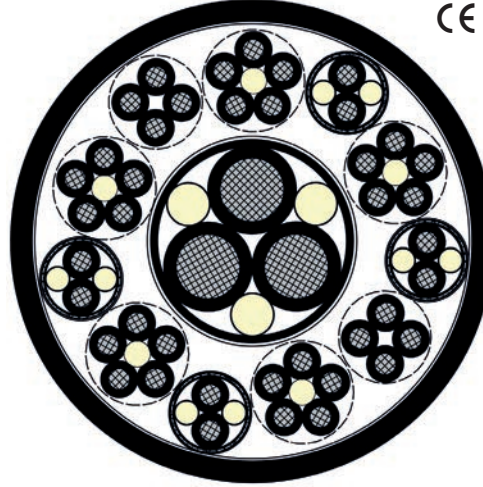
2 x 2 x 20 AWG + 4 x 20 AWG + 2 x 20 AWG



Torsional connecting cable

item no. 07909008

33 x 16 AWG + 3 x 8 AWG + 4 x (2 x 16 AWG)



Construction:

Conductor:	tinned copper strands, fine wires with reference to VDE 0812
Insulation:	SABIX® thermoplastic material and 02Y11 acc. to EN 50290-2-23 + VDE 0819-103 (for 2 x 0.50 mm ²)
Stranding:	pairs and quads twisted together in layers
Shielding:	tinned copper braiding, optical coverage ≥ 85%
Jacket material:	SABIX® thermoplastic material
Jacket color:	black (RAL 9005)

Technical data:

Peak operating voltage:	max. 450 V
Testing voltage:	conductor/conductor: 1000 V (DC) conductor/shielding: 1500 V (DC)
Min. bending radius free movement:	10 x O.D.
Temperature range:	<i>static:</i> -40/+70°C <i>flexible:</i> -30/+70°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	no flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 cat. C resp. D. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Character impedance:	acc. to EN 50289-1-11 nom. 120Ω (CAN-Bus)
Oil resistance:	acc. to EN 60811-507 section 10 + VDE 0473-811-507 section 10
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30 ^a

item no.	dimension	nominal outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 63359002	2 x 2 x 20 AWG + 4 x 20 AWG + 2 x 20 AWG	0.433	11.0	108

Construction:

Conductor:	special copper, fine wires
Insulation:	TPE
Shielding:	special copper braiding, optical coverage ≥ 85%
Jacket material:	special PUR
Jacket color:	black (RAL 9005)

Technical data:

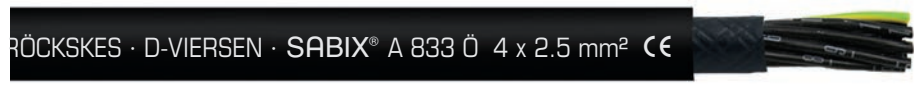
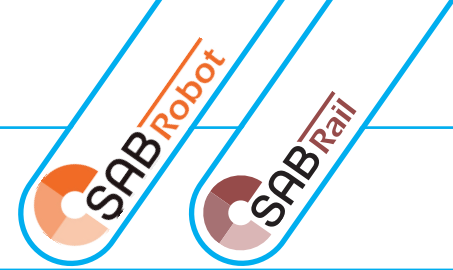
Nominal voltage:	16 AWG: U _o /U 0.6/1.0 kV 8 AWG: U _o /U 1.8/3.0 kV
Testing voltage:	conductor/conductor: 16 AWG: 4000 V conductor/shielding: 16 AWG: 2000 V 8 AWG: 12000 V 8 AWG: 6000 V
Min. bending radius free movement:	10 x O.D.
Temperature range:	<i>static:</i> -50/+90°C <i>flexible:</i> -40/+90°C
Approvals:	CE, EAC, RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30 ^a

item no.	dimension	nominal outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 62050715	33 x 16 AWG + 3 x 8 AWG + 4 x (2 x 16 AWG)	1.654	42	1390

Cables for Railway

SABIX® A 833 Ö

Twisting and torsional connection cable



Marking for SABIX® A 833 Ö 8830425:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 833 Ö 4 x 2.5 mm² CE

Application: For the use in rail vehicles, e. g. bogies and boxes.

Construction:

Conductor:	tinned copper strands, acc. to IEC 60228, VDE 0295, class 6
Insulation:	TPE
Color code:	black conductors with consecutive numbers acc. to EN 50334 + VDE 0293-334, green/yellow ground from 3 conductors
Stranding:	in layers
Inner jacket:	SABIX®
Jacket material:	PUR, TMPU acc. to EN 50363-10-2 + VDE 0207-363-10-2
Jacket color:	black (RAL 9005)

Outstanding features:

- weather resistant
- UV and ozone resistant
- Fire performance: flame retardant and self-extinguishing acc. to IEC 60332-1-2 + EN 60332-1-2
- oil resistant

Technical data:

Nominal voltage:	U ₀ /U 300/500 V
Testing voltage:	conductor/conductor: 2000 V
Min. bending radius:	
<i>fixed installation:</i>	4 x O.D.
<i>free movement:</i>	6 x O.D.
Temperature range:	
<i>static:</i>	-50/+85°C
<i>flexible:</i>	-40/+85°C
Torsion angle:	± 15°
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Oil resistance:	very good - PUR, TMPU acc. to EN 50363-10-2 + DIN VDE 0207-363-10-2
UV resistance:	good
Ozone resistance:	good
Weather resistance:	good
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	no. of conductors incl. ground	outer-ø		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 18 AWG • 1.0 mm²				
8830215	2	0.319	8.1	62
8830315	3	0.331	8.4	72
8830415	4	0.354	9.0	86
8830715	7	0.409	10.4	127
8831815	18	0.598	15.2	280
▶ 16 AWG • 1.5 mm²				
8830325	3	0.382	9.7	106
8830425	4	0.413	10.5	129
8830525	5	0.453	11.5	157
8830725	7	0.480	12.2	196
▶ 12 AWG • 4 mm²				
8830540	5	0.535	13.6	225

Other dimensions and colors are available on request

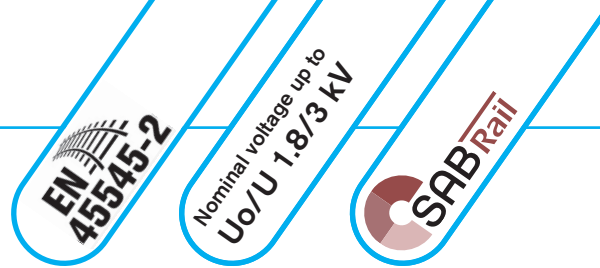


Also possible without green/yellow ground

Cables for Railway

R 107

Silicone insulated copper rope



SKES · D-VIERSEN · R 107 1.8/3 kV 25.0mm² 6107-0890



Marking for R 107 61070890:

SAB BRÖCKSKES · D-VIERSEN · R 107 1.8/3 kV 25.0mm² 6107-0890

Application: For the use in rail vehicles, e. g. bogies and boxes.

Construction:

Conductor:	bare copper strands, extremely fine wires
Insulation:	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
Color:	slate gray (RAL 7015)

Outstanding features:

- extremely flexible
- fulfills fire protection requirements
acc. to EN 45545-2 /
from 18 AWG to 8 AWG:
R15 (EL1A) HL 1 / R16 (EL1B) HL 1-2
from 6 AWG:
R15 (EL1A) HL 1-2 / R16 (EL1B) HL 1-3
- halogen-free
- heat resistant
- flexible at low temperatures
- flame retardant and self-extinguishing
- weather resistant

Technical data:

Nominal voltage:	U _o /U 1.8/3 kV
Testing voltage:	6500 V
Current carrying capacity:	acc. to VDE 0298-4, see page O20 & O21
Min. bending radius:	5 x O.D.
Temperature range:	
<i>static:</i>	-50/+180°C
<i>flexible:</i>	-25/+180°C
<i>short-term use:</i>	+250°C
Halogen-free	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development of HCl is < 0.5% acc. to IEC 60754-1. pH-value is > 4.3 IEC 60754-2. Conductivity is < 10.0 μS/mm acc. to IEC 60754-2. Fluoric content < 0.1% acc. to IEC 60684-2.
Burning characteristics:	No flame propagation acc. to IEC 60332-3-24 + VDE 0482-332-3-24 resp. IEC 60332-3-25 + VDE 0482-332-3-25 and EN 50305 + VDE 0260-305 section 9.1.2. Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Toxicity:	acc. to EN 50305 + VDE 0260-305
Smoke density:	acc. to IEC 61034 + VDE 0482-1034
Weather resistance:	very good
Ozone resistance:	acc. to EN 50382-2 + VDE 0260-382-2
Oil resistance:	good
Approvals:	RoHS
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30

item no.	mm ²	AWG	nominal outer-ø		cable weight ≈ lbs/mft	
			inch	mm		
▶ 61070882	1.50	16	(≈ 84/34)	0.272	6.9	42
▶ 61070884	2.50	14	(≈ 140/34)	0.291	7.4	51
▶ 61070886	4.00	12	(≈ 224/34)	0.319	8.1	65
▶ 61070887	6.00	10	(≈ 186/32)	0.335	8.5	80
▶ 61070888	10.00	8	(≈ 320/32)	0.394	10.0	116
▶ 61070889	16.00	6	(≈ 504/32)	0.406	10.3	149
▶ 61070890	25.00	4	(≈ 760/32)	0.476	12.1	220
▶ 61070891	35.00	2	(≈ 1083/32)	0.543	13.8	292
▶ 61070892	50.00	1	(≈ 703/28)	0.618	15.7	397
▶ 61070893	70.00	2/0	(≈ 988/28)	0.697	17.7	529
▶ 61070894	95.00	3/0	(≈ 1340/28)	0.756	19.2	699
▶ 61070895	120.00	4/0	(≈ 1680/28)	0.883	20.9	861
▶ 61070896	150.00	250 MCM	(≈ 2122/28)	0.949	24.1	1067
▶ 61070897	185.00	350 MCM	(≈ 1472/26)	0.996	25.3	1285
▶ 61070898	240.00	450 MCM		1.173	29.8	1664
▶ 61070899	300.00	550 MCM		1.248	31.7	2079

Other dimensions and colors are available on request



On request with
tinned copper strands.
Also available with
copper braiding

Besilen® is a specially developed Silicone rubber-based material with good electrical characteristics and it is a registered trademark of SAB BRÖCKSKES GmbH & Co. KG.

Cables for Railway

B 107 Silicone insulated specially stranded copper rope

B 108 Shielded silicone insulated specially stranded copper rope with copper braid



Marking for B 107 1071000:

SAB BRÖCKSKES · D-VIERSEN · B 107 Uo/U 1.8/3 kV 10.0mm²



Marking for B 108 1081000:

SAB BRÖCKSKES · D-VIERSEN · B 108 Uo/U 1.8/3 kV 10.0mm²

Application: Highly flexible single core for switchboard wiring and the use in energy storage systems, test benches or power wiring.

Construction:

Conductor:	bare copper strands, extra fine wires
Insulation:	Besilen® EI2 acc. to EN 50363-1 + VDE 0207-363-1
Shielding:	
B 108:	bare copper braiding
Color:	translucent

Outstanding features:

- halogen-free
- heat resistant
- flexible at low temperatures
- flame retardant and self-extinguishing
- weather resistant

Technical data:

Nominal voltage:		
B 107:	Uo/U 1.8/3 kV	
B 108:	12 - 10 AWG: from 8 AWG:	Uo/U 1.5/1.5 kV Uo/U 1.8/3 kV
Testing voltage:		
B 107:	6500 V	
B 108:	12 - 10 AWG: from 8 AWG:	4000 V 6500 V
Current carrying capacity:	acc. to VDE 0298-4, see page O20 & O21	
Min. bending radius:	5 x O.D.	
Temperature range:		
<i>static:</i>	-40/+180°C	
<i>flexible:</i>	-25/+180°C	
<i>short-term use:</i>	+250°C	
Halogen-free	acc. to IEC 60754-1 + VDE 0482-754-1	
Burning characteristics:	flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2	
Corrosivity:	IEC 60754-2 + VDE 0482-754-2 - no development of corrosive conflagration gases	
Weather resistance:	very good	
Approvals:	RoHS	
Absence of harmful substances:	acc. to RoHS directive of the European Union see page O/30	

B 107

item no.	mm²	AWG	nominal outer- inch	nominal outer- mm	cable weight ≈lbs/mft
▶ 1070100	1.00	18	0.169	4.3	17
▶ 1070150	1.50	16	0.185	4.7	22
▶ 1070250	2.50	14	0.205	5.2	29
▶ 1070400	4.00	12	0.209	5.3	36
▶ 1070600	6.00	10	0.224	5.7	50
▶ 1071000	10.00	8	0.354	9.0	98
▶ 1071600	16.00	6	0.366	9.3	132
▶ 1072500	25.00	4	0.472	12.0	211
▶ 1073500	35.00	2	0.543	13.8	286
▶ 1075000	50.00	1	0.618	15.7	390
▶ 1077000	70.00	2/0	0.697	17.7	522
▶ 1079500	95.00	3/0	0.740	18.8	680
▶ 1071200	120.00	4/0	0.807	20.5	836
▶ 1071500	150.00	250 MCM	0.933	23.7	1042
▶ 1071850	185.00	350 MCM	0.996	25.3	1272
▶ 1072400	240.00	450 MCM	1.098	27.9	1685
▶ 1073000	300.00	550 MCM	1.213	30.8	2018

Other dimensions and colors are available on request

B 108

▶ 1080400	4.00	12	0.224	5.7	44
▶ 1080600	6.00	10	0.240	6.1	58
▶ 1081000	10.00	8	0.370	9.4	110
▶ 1081600	16.00	6	0.382	9.7	143
▶ 1082500	25.00	4	0.496	12.6	236
▶ 1083500	35.00	2	0.567	14.4	314
▶ 1085000	50.00	1	0.642	16.3	419
▶ 1087000	70.00	2/0	0.728	18.5	572
▶ 1089500	95.00	3/0	0.772	19.6	734
▶ 1081200	120.00	4/0	0.839	21.3	897
▶ 1081500	150.00	250 MCM	0.965	24.5	1120



On request with tinned copper stranding

Besilen® is a specially developed Silicone rubber-based material with good electrical characteristics and it is a registered trademark of SAB BRÖCKSKES GmbH & Co. KG.

Accessories for Railway

CORD GRIP & ACCESSORIES

Secure & Protect your Cable

Liquid tight seal, fast and easy installation, wide clamping range, multi-purpose applications, easy handling.



Technical data:

Protection type:	IP 68 - 5 Bar NEMA 4X
Temperature range:	-20°C to +100°C intermittent: -30°C to +150°C
Flammability:	V2 (according to UL 94)

CG 100 POLYAMIDE CORD GRIPS

Dome cap, black or gray available in NPT, PG, or metric thread

Liquid tight seal, fast and easy installation, wide clamping range, multi-purpose applications, easy handling.



CG 200 POLYAMIDE CORD GRIPS

Flex cap, black or gray available in NPT, PG, or metric thread

Strain relief gland offers maximum protection against conductor fatigue caused by flexing cables



CG 300 NICKEL PLATED BRASS CORD GRIPS

Available in NPT, PG, or metric thread

Impact resistant, suitable for industrial applications, water tight, corrosion resistant.



CG 350 STAINLESS STEEL CORD GRIPS

Available in NPT, PG, or metric thread and SS 303 or SS 316

Impact resistant, suitable for industrial applications, water tight, corrosion resistant.



EMC-2 GROUNDING CORD GRIPS

Nickel plated brass EMC cable gland available in NPT, PG, or metric thread

Optimal grounding of shielded cable with integral grounding springs, easy installation, water tight, and impact resistant



Features:

- One Direction Installation
- Affordable
- Nickel Plated Brass with Tinned Copper Springs

EMC-4 GROUNDING CORD GRIPS

Nickel plated brass, EMC cable gland, vibration proof, available in NPT, PG, or metric thread

EMC-4 is a nickel plated brass strain relief with integral grounding springs in the gland that will allow the cable to move without damage to the shield.



Features:

- Bi-directional Installation
- Great Anti-Vibration Mechanisms
- Nickel Plated Brass with Tinned Copper Springs

Accessories & Fittings

Enlargers	Reducers	Hole Plugs	Multi-Hole Bushing	Vent Gland & Plugs	Locknuts

Cables & Accessories for Railway

Production possibilities

Flexible cables and wires “Made in Germany”

As a leading manufacturer we develop and produce cables for industrial purposes. Our wide range of materials offers a lot of possibilities for your individual product requirement. The following survey shows an extract of our production possibilities:

Conductor Materials:

- ✓ bare copper
- ✓ tinned copper
- ✓ silver plated copper
- ✓ nickel plated copper
- ✓ nickel
- ✓ nickel pure
- ✓ compensating cable alloys

Insulation and Jacketing Materials:

- ✓ PVC
- ✓ Polyethylene
- ✓ Polypropylene
- ✓ Polyurethane
- ✓ TPE
- ✓ SABIX® (zero halogen)
- ✓ Besilen® - Silicone
- ✓ FEP, ETFE, PFA, PTFE
- ✓ PI foil
- ✓ Fiberglass

Temperature Ranges:

- Thermoplastic Elastomers
- ✓ -50°C up to +145°C
- SABIX®
- ✓ -50°C up to +220°C
- Besilen® - Silicone
- ✓ -40°C up to +220°C
- FEP, ETFE, PFA
- ✓ -90°C up to +260°C
- Fiberglass
- ✓ up to +600°C

Conductors:

- ✓ cross sections 0.055 - 300 mm²
- ✓ unshielded and shielded over 100 conductors

Cable assemblies directly from the manufacturer SAB:

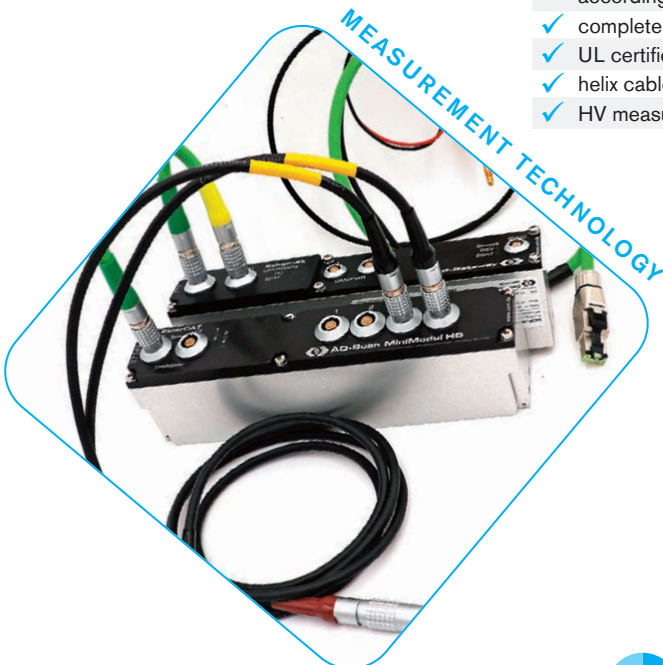
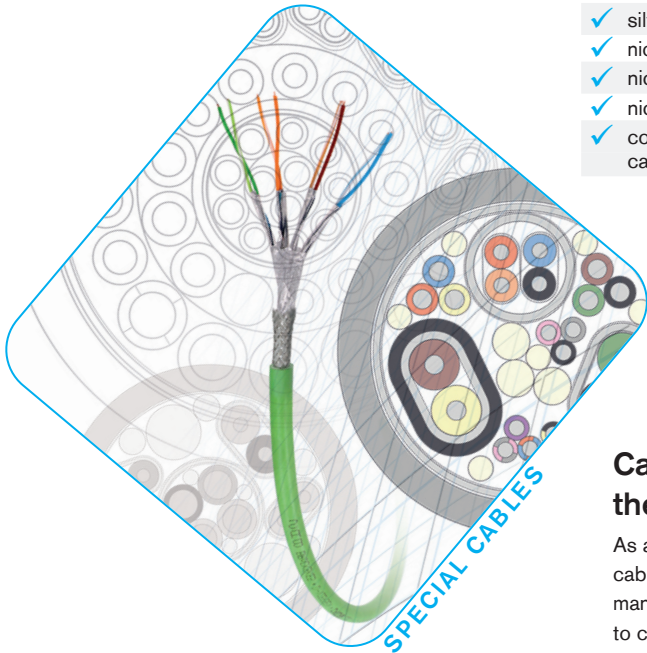
As a full service partner, we are able to offer cable design and production as well as the manufacturing of cable assemblies according to customer's request. Please trust on our experience for decades in the treatment of cables and connectors.

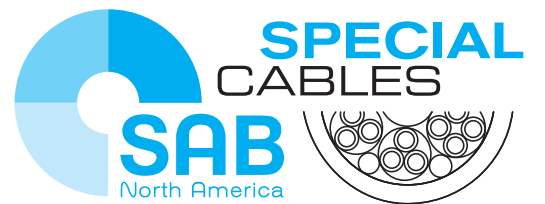
- ✓ cable assemblies according to customer's demands
- ✓ complete cable assemblies
- ✓ UL certified assemblies
- ✓ helix cables
- ✓ HV measuring assemblies

Measuring technology for industrial applications

Manufacturer of temperature sensors for industrial applications with 75 years of experience!

- ✓ mineral insulated thermocouples
- ✓ mineral insulated resistance thermometers
- ✓ temperature sensors
- ✓ mobile high voltage measuring technology
- ✓ temperature sensors for vehicle testing





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