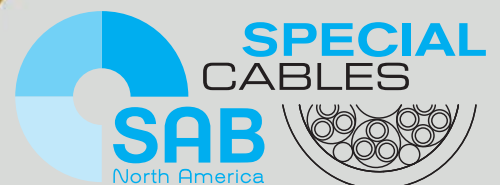


CABLES FOR E-TICKETING SYSTEMS



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



SAB North America

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.



Cables for e-ticketing systems need to be flexible and fit into tight spaces. SAB has a variety of control, data, Bus, and Ethernet cables which have UN/ECE R118 and EN 45545-2 approvals for Bus and Rail. If a standard cable does not suit your application, a custom solution can be designed to meet your requirements.

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



SAB Service 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 and grounding cables

Cables for E-Ticketing Systems

Applications

Problem solution

- Highly flexible cables are required for E-Ticketing areas. As a pioneer in the field of halogen free, flame retardant cables, let SAB be your choice for partners.

Service

- Deliveries of small quantities are possible

Flexibility

- Several cables can be combined in a space saving hybrid cable
- Production length of 100 m possible
- Cable development customized to your request

Speed

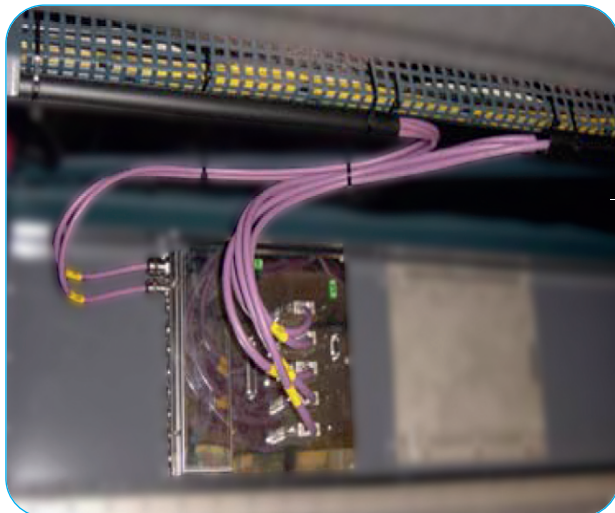
- From development to distribution in maximum speed

High quality

- Highest quality by DIN EN ISO 9001
- Country specific standards on demand





References

- RET Rotterdam
- GVB Amsterdam
- VDL
- HTM The Hague
- EVO Bus
- Veolia
- Arriva
- MAN
- Volvo
- Vialis
- further projects for Croatia



Cables for E-Ticketing Systems

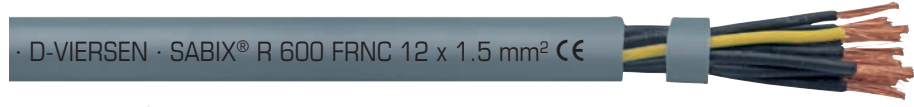
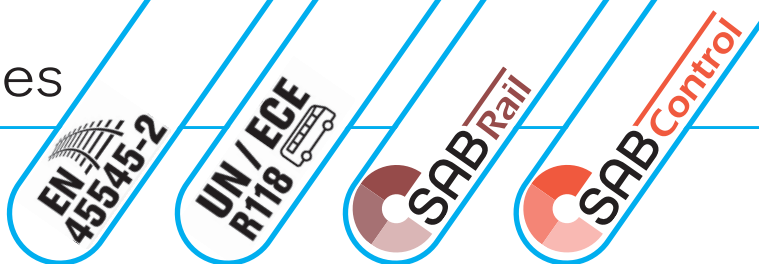
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Halogen-free Control Cables

SABIX® R 600 FRNC

SABIX® Rail - Control cable with numbered conductors



Marking for SABIX® R 600 FRNC 66001215:
SAB BRÜCKSKES · 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)

Technical data:

Nominal voltage:	U _o /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

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

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



Halogen-free Control Cables

SABIX® R 638 FRNC

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

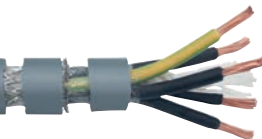


GES · D-VIERSEN · SABIX® R 638 FRNC 5 x 1.5 mm² CE



Marking for SABIX® R 638 FRNC 66380515:

SAB BRÜCKSKES · 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)

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

Technical data:

Nominal voltage:	Uo/U 300/500 V
Testing voltage:	conductor/conductor: 3000 V conductor/shielding: 2000 V
Min. bending radius:	5 x O.D. 10 x O.D.
Temperature range:	static: -40/+90°C flexible: -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				
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

Halogen-free Control Cables

SABIX® A 200 FRNC

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



Marking for SABIX® A 200 FRNC 62001215:

SAB BRÖCKSKES · D-VIERSEN · SABIX® A 200 FRNC 12 x 1.5 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:	gray (RAL 7000)

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- flame retardant and self-extinguishing
- very flexible
- very good stripping

Technical data:

Nominal voltage:	U ₀ /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/+85°C <i>flexible:</i> -30/+85°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
Corrosiveness of conflagration gases:	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.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 20 AWG (≈ 16/32) ▪ 0.50 mm²				
62000205	2	0.197	5.0	25
62000305	3	0.209	5.3	29
62000405	4	0.224	5.7	34
62000505	5	0.252	6.4	42
62000705	7	0.272	6.9	52
62001005	10	0.346	8.8	73
62001205	12	0.366	9.3	85
62001805	18	0.429	10.9	121
62002505	25	0.516	13.1	161
62003205	32	0.559	14.2	200
62004205	42	0.626	15.9	255
62006105	61	0.736	18.7	356
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²				
62000207	2	0.220	5.6	32
62000307	3	0.232	5.9	38
62000407	4	0.260	6.6	47
62000507	5	0.283	7.2	56
62000707	7	0.315	8.0	71
62001007	10	0.402	10.2	101
62001207	12	0.421	10.7	117
62001807	18	0.496	12.6	167
62002507	25	0.602	15.3	228
62003207	32	0.654	16.6	282
62004207	42	0.732	18.6	359
62006107	61	0.858	21.8	504
▶ 18 AWG (≈ 30/32) ▪ 1.00 mm²				
62000210	2	0.228	5.8	36
62000310	3	0.248	6.3	45
62000410	4	0.268	6.8	54

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				
62000510	5	0.303	7.7	67
62000710	7	0.327	8.3	83
62001010	10	0.425	10.8	120
62001210	12	0.437	11.1	136
62001810	18	0.516	13.1	196
62002510	25	0.626	15.9	267
62003210	32	0.681	17.3	331
62004210	42	0.772	19.6	420
62006110	61	0.902	22.9	595
▶ 16 AWG (≈ 27-29/30) ▪ 1.50 mm²				
62000215	2	0.260	6.6	48
62000315	3	0.276	7.0	58
62000415	4	0.307	7.8	73
62000515	5	0.335	8.5	87
62000715	7	0.370	9.4	112
62001015	10	0.480	12.2	161
62001215	12	0.496	12.6	183
62001815	18	0.591	15.0	267
62002515	25	0.717	18.2	369
62003215	32	0.776	19.7	458
62004215	42	0.874	22.2	593
62006115	61	1.024	26.0	833
▶ 14 AWG (≈ 46/30) ▪ 2.50 mm²				
62000225	2	0.315	8.0	73
62000325	3	0.335	8.5	88
62000425	4	0.370	9.4	110
62000525	5	0.406	10.3	132
62000725	7	0.449	11.4	171
62001025	10	0.591	15.0	251
62001225	12	0.610	15.5	287
62001825	18	0.724	18.4	416
62002525	25	0.886	22.5	568

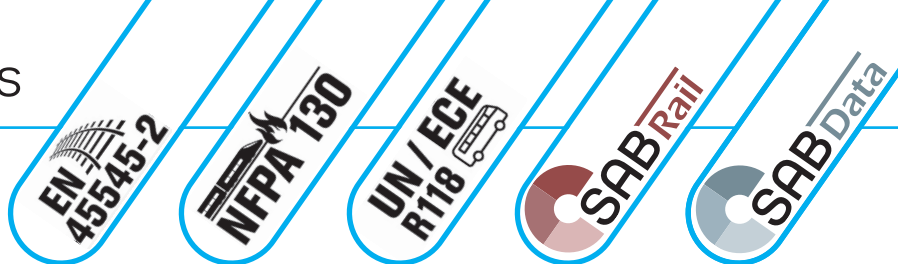
item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 12 AWG (≈ 52/28) ▪ 4.00 mm²				
62000340	3	0.390	9.9	129
62000440	4	0.433	11.0	161
62000540	5	0.484	12.3	199
62000740	7	0.535	13.6	259
▶ 10 AWG (≈ 78/28) ▪ 6.00 mm²				
62000360	3	0.457	11.6	183
62000460	4	0.508	12.9	230
62000560	5	0.567	14.4	284
62000760	7	0.606	15.4	370
▶ 8 AWG (≈ 77/26) ▪ 10.00 mm²				
62000461	4	0.665	16.9	394
62000561	5	0.740	18.8	480
62000761	7	0.823	20.9	638
▶ 6 AWG (≈ 122/26) ▪ 16.00 mm²				
62000462	4	0.819	20.8	601
62000562	5	0.913	23.2	751
62000762	7	1.012	25.7	974
▶ 4 AWG (≈ 190/26) ▪ 25.00 mm²				
62000463	4	0.980	24.9	933
62000563	5	1.106	28.1	1176
▶ 2 AWG (≈ 272/26) ▪ 35.00 mm²				
62000464	4	1.134	28.8	1295
62000564	5	1.280	32.5	1621

Other dimensions and colors are available on request

Halogen-free Cables

SABIX® R 605 FRNC

SABIX® Rail - Data cable



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



Marking for SABIX® R 605 FRNC 66053250:

SAB BRÜCKSKES · 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 page 9
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 inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 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 inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 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

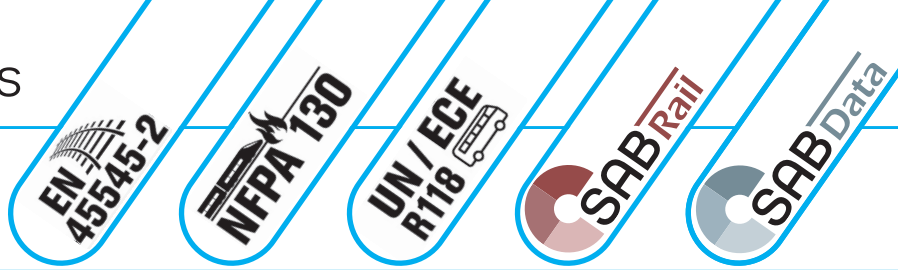
item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	mm ±5%	cable weight ≈lbs/mft
▶ 22 AWG (≈ 7/30) ▪ 0.34 mm²				
66050234	2	0.157	4.0	16
66050334	3	0.165	4.2	18
66050434	4	0.181	4.6	22
66050534	5	0.197	5.0	27
66050734	7	0.217	5.5	33
66050834	8	0.256	6.5	42
66051234	12	0.287	7.3	54
66051434	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

Halogen-free Cables

SABIX® R 605 FRNC SABIX® Rail - Data cable



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



Marking for SABIX® R 605 FRNC 66053250:

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

item no.	no. of conductors incl. ground	nominal outer-ø inch ±5%	nominal outer-ø 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%	nominal outer-ø 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%	nominal outer-ø 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:

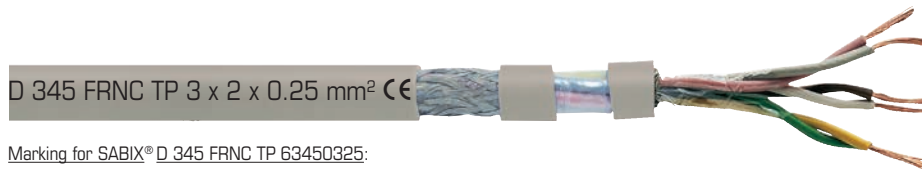
#1- white, #2- brown, #3- green, #4- yellow, #5- gray, #6- pink, #7- blue, #8- red, #9- black, #10- violet, #11- gray-pink, #12- red-blue, #13- white-green, #14- brown-green, #15- white-yellow, #16- yellow-brown, #17- white-gray, #18- gray-brown, #19- white-pink, #20- pink-brown, #21- white-blue, #22-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



Halogen-free Cables

SABIX® D 345 FRNC TP

Paired data cable with improved fire performance, overall tinned copper shield, and extended temperature range



D 345 FRNC TP 3 x 2 x 0.25 mm² CE

Marking for SABIX® D 345 FRNC TP 63450325:

SAB BRÖCKSKES · D-VIERSEN · SABIX® D 345 FRNC TP 3 x 2 x 0.25 mm² CE

Construction:

Conductor:	bare copper strands with reference to VDE 0812
Insulation:	SABIX®
Color code:	DIN 47100, see below
Stranding:	pairwise, pairs in layers
Wrapping:	PETP foil
Shielding:	tinned copper braiding
Jacket material:	SABIX®
Jacket color:	grayish tan (RAL 7032)

Technical data:

Peak operating voltage:	< 24 AWG = max. 350 V ≥ 24 AWG = max. 500 V
Testing voltage:	conductor/conductor: 1500 V conductor/shielding: 1200 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>	-40/+85°C -30/+85°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
Corrosiveness of conflagration gases:	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

Outstanding features:

- low smoke halogen-free (LSHF)
- no flame propagation
- good EMC characteristics*
- flame retardant and self-extinguishing
- good transmission rates
and crosstalk attenuation

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

item no.	no. of pairs	nominal outer-ø inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 26 AWG (≈ 18/38) ▪ 0.14 mm²				
63450214	2	0.213	5.4	27
63450314	3	0.232	5.9	32
63450414	4	0.272	6.9	42
63450514	5	0.291	7.4	47
63450614	6	0.299	7.6	50
63450814	8	0.323	8.2	55
63451014	10	0.35	8.9	69
63451214	12	0.382	9.7	75
63451614	16	0.413	10.5	89
63451814	18	0.437	11.1	105
63452414	24	0.504	12.8	137
▶ 24 AWG (≈ 14/34) ▪ 0.25 mm²				
63450225	2	0.232	5.9	30
63450325	3	0.268	6.8	42
63450425	4	0.283	7.2	48
63450525	5	0.319	8.1	56
63450625	6	0.327	8.3	63
63450825	8	0.354	9	70
63451025	10	0.386	9.8	91
63451225	12	0.429	10.9	104
63451625	16	0.469	11.9	130
63451825	18	0.5	12.7	148
63452425	24	0.567	14.4	192

item no.	no. of pairs	nominal outer-ø inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 22 AWG (≈ 7/30) ▪ 0.34 mm²				
63450234	2	0.283	7.2	44
63450334	3	0.307	7.8	55
63450434	4	0.346	8.8	66
63450534	5	0.374	9.5	76
63450634	6	0.382	9.7	84
63450834	8	0.425	10.8	104
63451234	12	0.528	13.4	151
63451634	16	0.583	14.8	193
63451834	18	0.602	15.3	213
63452434	24	0.693	17.6	271
▶ 20 AWG (≈ 16/32) ▪ 0.50 mm²				
63450250	2	0.299	7.6	50
63450350	3	0.327	8.3	63
63450450	4	0.37	9.4	78
63450550	5	0.402	10.2	87
63450650	6	0.409	10.4	102
63450850	8	0.457	11.6	124
63451050	10	0.52	13.2	156
63451250	12	0.567	14.4	183
63451650	16	0.642	16.3	244
63451850	18	0.665	16.9	263
63452450	24	0.748	19	328

item no.	no. of pairs	nominal outer-ø inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 19 AWG (≈ 23/32) ▪ 0.75 mm²				
63450275	2	0.335	8.5	66
63450375	3	0.37	9.4	79
63450475	4	0.429	10.9	107
63450575	5	0.461	11.7	122
63450675	6	0.492	12.5	144
63450875	8	0.594	15.1	202
63451275	12	0.673	17.1	262
63451675	16	0.732	18.6	318
63451875	18	0.76	19.3	349
63452475	24	0.858	21.8	433

Other dimensions and colors are available on request

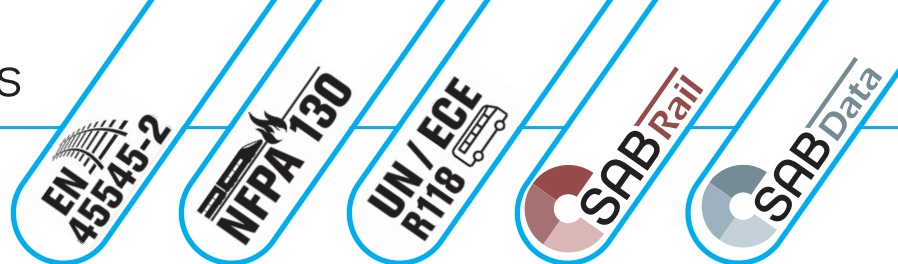
DIN 47100 color code:

#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

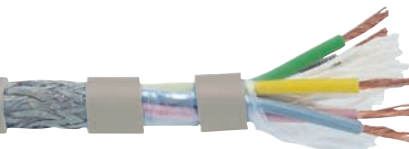
Halogen-free Cables

SABIX® R 615 FRNC

SABIX® Rail - Data cable with overall tinned copper shield



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



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 page 12
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: <i>fixed installation:</i> <i>free movement:</i>	5 x O.D. 10 x O.D.
Temperature range: <i>static:</i> <i>flexible:</i>	-40/+90°C -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 mm²				
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 mm²				
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 mm²				
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

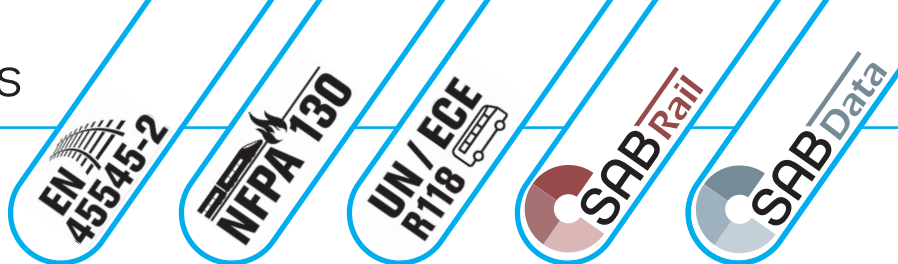
* NFPA 130 / FT4 only up to outer-ø < 13 mm (0.512").

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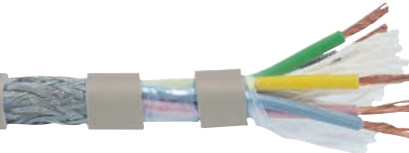
Halogen-free Cables

SABIX® R 615 FRNC

SABIX® Rail - Data cable with overall tinned copper shield



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



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		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 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		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 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		cable weight ≈lbs/mft
		inch ±5%	mm ±5%	
▶ 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:

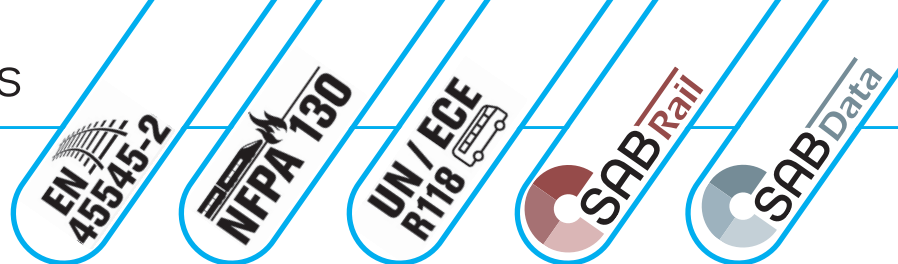
#1- white, #2- brown, #3- green, #4- yellow, #5- gray, #6- pink, #7- blue, #8- red, #9- black, #10- violet, #11- gray-pink, #12- red-blue, #13- white-green, #14- brown-green, #15- white-yellow, #16- yellow-brown, #17- white-gray, #18- gray-brown, #19- white-pink, #20- pink-brown, #21- white-blue, #22-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



Halogen-free Cables

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



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 below
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 8.6.7.1.1.1 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: <i>fixed installation:</i> <i>free movement:</i>	5 x O.D. 10 x O.D.
Temperature range: <i>static:</i> <i>flexible:</i>	-40/+90°C -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 inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 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 inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 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 inch ±10%	mm ±10%	cable weight ≈lbs/mft
▶ 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-black, #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

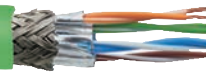
Ethernet Cables

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

Industrial ethernet cables
for railway technology



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



Marking for CATLine CAT 7A R 17674621:

SAB BRÜCKSKES · D-VIERSEN · **CATLine** Cat. 7A R 4x2x24AWG 17674621 **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 60332-3-24 + 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)		
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		nominal outer-ø		cable weight ≈lbs/mft
			mm	inch	mm	inch	
▶ 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

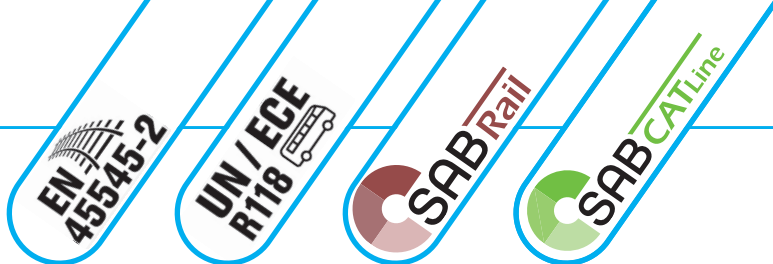
Also possible as a
cable assembly with
M12 or RJ 45 plug



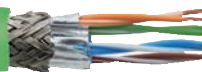
Ethernet Cables

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

Continuous flex industrial ethernet cables for railway technology



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



Marking for CATLine CAT 7A R flex 17694431:

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

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	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.	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	-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 60332-3-24 + 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)			
Smoke density:	acc. to IEC 61034 + VDE 0482-1034	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	acc. to EN 50305 + VDE 0260-305
Oil and fuel resistance:	acc. to EN 50264-1 + VDE 0260-264-1		acc. to EN 50264-1 + VDE 0260-264-1	acc. to EN 50264-1 + VDE 0260-264-1
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

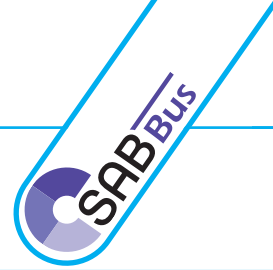
Other dimensions and colors are available on request

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



866-722-2974 • www.sabcable.com

Remote Bus Cables & Installation

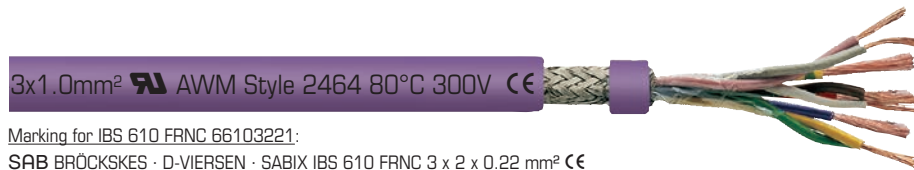


SABIX® IBS 610

Halogen-free, Interbus-S cable

SABIX® IBS 610 FRNC

Halogen-free and flame retardant Interbus-S cable



Marking for IBS 610 FRNC 66103221:

SAB BRÖCKSKES · D-VIERSEN · SABIX IBS 610 FRNC 3 x 2 x 0.22 mm² CE

Construction:	SABIX® IBS 610* <i>installation remote bus cable</i>	SABIX® IBS 610 FRNC* <i>installation remote bus cable</i>
Item numbers:	56106221	66106221
Dimensions:	3 x 2 x 0.22 mm ² + 3 x 2 x 1.00 mm ²	
Conductor: 3 x 2 x 0.22 mm ² resp. 3 x 2 x 0.25 mm ²	bare copper strands with reference to VDE 0812	bare copper strands with reference to VDE 0812
Conductor: 3 x 1.00 mm ² :	bare copper strands acc. to IEC 60228, VDE 0295, class 6	
Insulation:	SABIX®	SABIX®
Color code:	acc. to DIN 47100 (pairs), see below 1.0 mm ² : red, blue and green/yellow ground	
Stranding:	twisted to pairs (≤ 0.25 mm ²) pairs and conductors together	
Wrapping:	PETP foil	PETP foil
Shielding:	tinned copper braiding	tinned copper braiding
Jacket material:	SABIX	SABIX
Jacket color:	red lilac (RAL 4001)	red lilac (RAL 4001)

Technical data:	SABIX® IBS 610 <i>installation remote bus cable</i>	SABIX® IBS 610 FRNC <i>installation remote bus cable</i>
Peak operating voltage:	max. 350 V	max. 350 V
Testing voltage: conductor/conductor: conductor/shielding:	1500 V 1500 V	1500 V 1500 V
Min. bending radius:	7.5 x O.D.	7.5 x O.D.
Radiation resistance:	5 x 10 ⁸ cJ/kg	—
Temperature range: static: flexible:	-50/+90°C -40/+90°C	-40/+85°C -30/+85°C
Halogen-free:	acc. to IEC 60754-1 + VDE 0482-754-1	acc. to IEC 60754-1 + VDE 0482-754-1
Burning characteristics:	—	no flame propagation acc. to IEC 60332-3-24 + IEC 60332-3-25 Cat. C resp. D; Flame retardant and self-extinguishing acc. to IEC 60332-1-2 + VDE 0482-332-1-2
Oil resistance:	very good acc. to EN50363-4-1	—
Corrosiveness of conflagration gases:	in compliance with IEC 60754-2 + VDE 0482-754-1 - no development of corrosive conflagration gases	
Smoke density		acc. to IEC 61034 + VDE 0482-1034
Characteristic impedance at 0.064 MHz:	120Ω ± 20%	120Ω ± 20%
Characteristic impedance at > 1 MHz:	100Ω ± 15Ω	100Ω ± 15Ω
Flexibility:	very good	good
Weather resistance:	good	good
Absence of harmful substances:	acc. to RoHS directive of the European Union, see page O/30	

item no.	type	no. of pairs	no. of power conductors	nominal outer-ø inch	mm	cable weight ≈lbs/mft
▶ 56106221*	SABIX® IBS 610	24 (≈ 14/34)/3pr	18 AWG (≈ 30/32)/3c	0.311	7.9	56
▶ 66106221*	SABIX® IBS 610 FRNC	24 (≈ 14/34)/3pr	18 AWG (≈ 30/32)/3c	0.311	7.9	63

Other dimensions and colors are available on request

* Interbus-S installation remote bus cables 3 x 2 x 0.22 mm² + 3 x 1.0 mm² or 3 x 2 x 0.25 mm² + 3 x 1.0 mm² are used for the sensor/actuator level of industrial communication

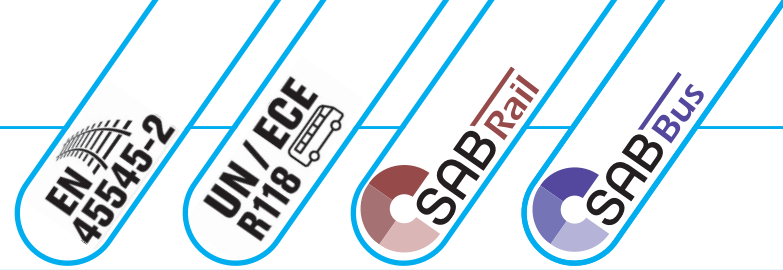
DIN 47100 color code:

#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

USB 2.0 Cables

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 6019013 

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
- good oil and fuel resistance
- fulfills fire protection requirements R15 (EL1A) and R16 (EL1B) acc. to EN 45545-2 for hazard levels HL1-3
- flame retardant acc. to UN/ECE R118

Technical data:

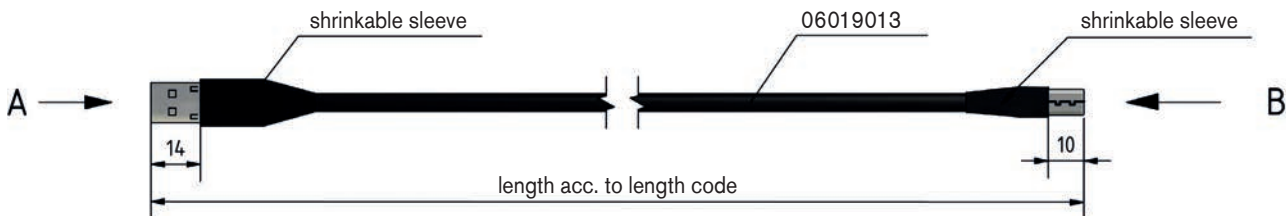
Peak operating voltage:	max. 30V
Testing voltage:	conductor/conductor: 600 V conductor/shielding: 600 V
Min. bending radius:	fixed installation: 5 x O.D. free movement: 10 x O.D.
Temperature range:	static: -50/+90°C flexible: -50/+90°C
Halogen-free:	acc. to EN 50306-1 + EN 50264-1 are fulfilled. Development 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 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
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	nominal outer-ø mm	cable weight ≈lbs/mt	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



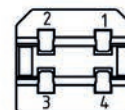
view A (2:1)



Pin configuration

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

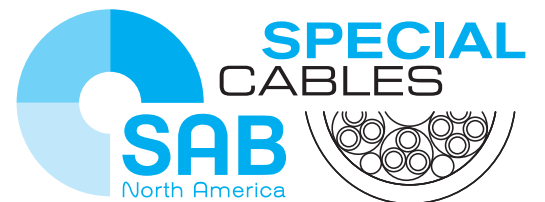
view B (3:1)



view soldering side



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