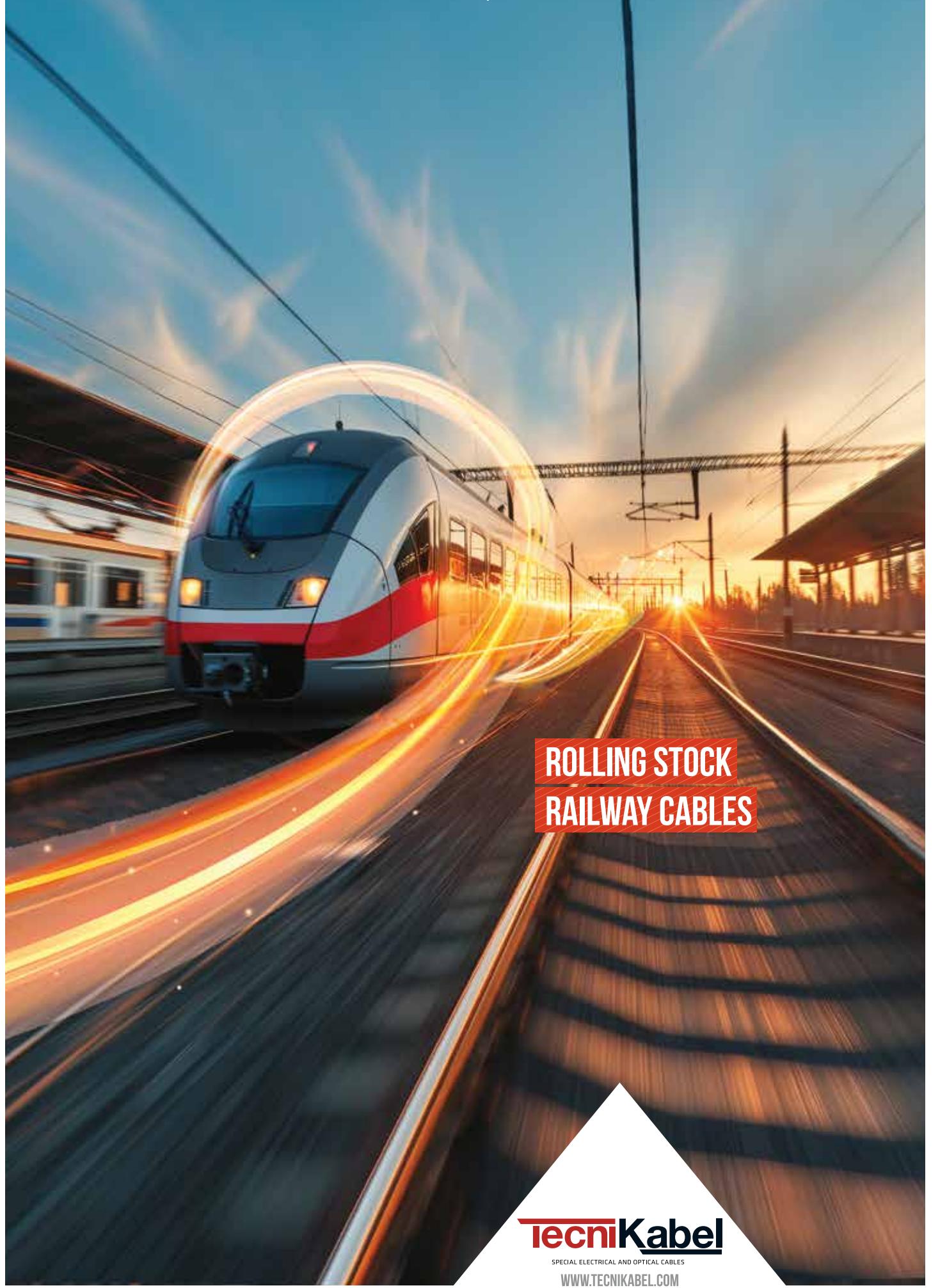




TRANSPORTATION



**ROLLING STOCK
RAILWAY CABLES**

tecniKabel

SPECIAL ELECTRICAL AND OPTICAL CABLES

WWW.TECNIKABEL.COM



SPECIAL ELECTRICAL AND OPTICAL CABLES



Techni Kabel

INTRODUCTION

The railway sector - train and underground - represents worldwide a strategic element able to balance the transport system, promoting fast and safe travels for increasingly demanding passengers and goods.

The main goal of the constant technological change is to enhance the quality of railway transport. The improvement led to the project of High Speed/High Capability network, combined with European transport network.

To respond to the constant development, Tecnikabel offers a wide range of rolling stock products. This category of cables, is employed on last generation trains and metros, to ensure the operation of safety system, with its provided numerous devices communicating with ground's equipment.

In order to fulfill several passengers comfort requests, the reliability of transportation on which millions of people travel, submitted to extreme stresses, the company designs and manufactures innovative cables, according to national and international requirements (e.g. con EN 11170, DIN 5510, NFPA 130, EN 45545-2:2013 and NF C32-070:2001 standard) and special cables according to customer's needs.

PRODUCT LINES

TRANSPORTATION

	OIL / GAS & PETROCHEMICALS
	TELECOMMUNICATION
	OPTICAL
	AUTOMATION
	SUBSEA
	HEALTHCARE
	AUDIOVIDEO
	NAVAL
	DEFENSE
	HYBRID
	BUILDING TECHNOLOGY
	GREEN ENERGY
	AUTOMOTIVE

TECNIKABEL

is focused on constant product innovation to get competitive advantages with endless commitment to research and development.

PRODUCTION

Updated production Systems, stringent process procedures and expert operators reached the goal to carry out our production efficient and flexible.

FINAL INSPECTIONS

At the end of every production process each cable is checked in its electrical and physical performances for a complete compliance to customer specifications.

LABORATORY TESTS

We submit our cables to the most severe tests, simulating critical applications. In addition to the tests required by current norms, we invest on new special equipment for additional mechanical and electrical testing, heading to a steady increase of standard performance of our cables.

MATERIALS RESEARCH AND DEVELOPMENT

Our thirty year experience took us to carry on research of new materials in order to improve performances, costs and fulfill the standards required by our customers.

QUALITY SYSTEM AND PRODUCT CERTIFICATION

Since 1978, constant commitment to Quality has awarded Tecnikabel approval from American and European Authorities, complying with the most demanding international manufacturing and quality standards.



Sito certificato:
Volpiano



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SYMBOLS

ENVIRONMENTAL PROPERTIES



FLAME RETARDANT SINGLE WIRE
(EN/IEC 60332-1-2, EN 50265-2-1)



DIRECT BURIAL



FLAME RETARDANT BUNCHED WIRES
(IEC 60332-3, EN 50305 9.1.2, EN 50305 9-1,
EN 50266-2-5, EN 50266-2)



ANTIBALLISTIC
PROTECTION



FIRE RESISTANCE
(IEC 60331, EN50200, EN 50362,
BS6387 CWZ)

CHEMICAL PROPERTIES



REDUCED EMISSION OF FUMES AND
TOXIC GASES (IEC 60754-1; EN 50267-2-
1/2, EN 50305 9.2)



MUD RESISTANCE



SMOKE DENSITY (EN/IEC 61034-1/2)
(EN 50268-2; EN 50268-1/2)



MINERAL OIL RESISTANCE



LOW ACIDITY AND CORROSION OF
EVOLVED GASES (IEC 60754-2,
EN 50267-2-2)



HYDROCARBONS RESISTANCE



WEATHERING TEST RESISTANCE
(OUTDOOR)



MECHANICAL PROPERTIES



INDOOR



MECHANICAL RESISTANCE



WATER RESISTANCE



REDUCED BENDING RADIUS



RODENT RESISTANCE



WORK AT LOW TEMPERATURE



HAZARDOUS AREA



FLEXIBLE INSTALLATION



FULLY DIELECTRIC





FIRE PERFORMANCES

IEC 60332-1-2 / EN 50265:

Fire propagation on a vertical single cable.

The single cable is mounted vertically and flamed with a Bunsen burner.

The flame must extinguish itself, at least 50 mm below the upper fixing clamp.

Temperature of burner, duration and angle of flame application, are described in the reference standards.



IEC 60332-3 / EN 50266 / EN 50305 9.1 :

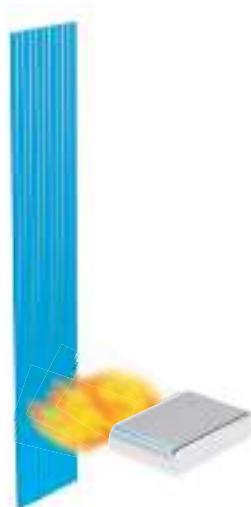
Fire propagation on a vertical cables bundle.

A certain number of cable samples are fixed on a 3.5m long ladder, and flamed with an appropriate burner.

The samples number, the duration of flame application, and the power/temperature of burner are described in the reference standards. After flame application, the visible area of fire damage must not exceed 2.5 m in height from the bottom of the burner.

The volume of tested material define a differentiation in categories:

- A/FR Part 3-21 7 l/m
- A Part 3-22 7 l/m
- B Part 3-23 3.5 l/m
- C Part 3-24 1.5 l/m
- D Part 3-25 0.5 l/m



IEC 60331 / EN 50200 / EN 50362 : Fire test resistance.

A sample of cable is horizontally applied supported by metal rings, or in U shape fixed on a fireproof wall.

Through using a gas burner the cable It's maintained in flame contact for a certain time.

The test and the temperature of burner are described in the reference standards. In U shape test, the fireproof wall is hit every five minutes by a mechanical shock, to simulate a potential collapse during the fire.

The time of fire application, and the temperature of flame are described in the reference standards (typical 750°C or 830°C). During the test a current for continuity checking is passed through all conductors of the cable and the voltage must be maintained during the test duration.



IEC 61034-1/2 / EN 50268-1/2: Measurement of smoke density of cables burning under defined conditions.

A few samples of cable are burnt in a cubic (3x3x3m) chamber using a flammable liquid.

The light transmittance of the resulting smoke is measured using an optical light detector. The test duration is about 40 minutes, depending by the quantity and composition of the liquid fuel. At the end of the test the light transmittance of the smoke must be 60% minimum.

IEC 60754-1 / EN 50267-2-1/2: Test on gases evolved during combustion of materials from cables - Determination of the halogen acid gas content.

This standard covers the general aspects of potential hazard caused from corrosiveness of smoke and combustion gases. A small quantity of non-metallic material is heated in a tube, the resulting gases are tested for their halogen content. The flame temperature is $800\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$, with a test duration of 40 ± 5 min in total.

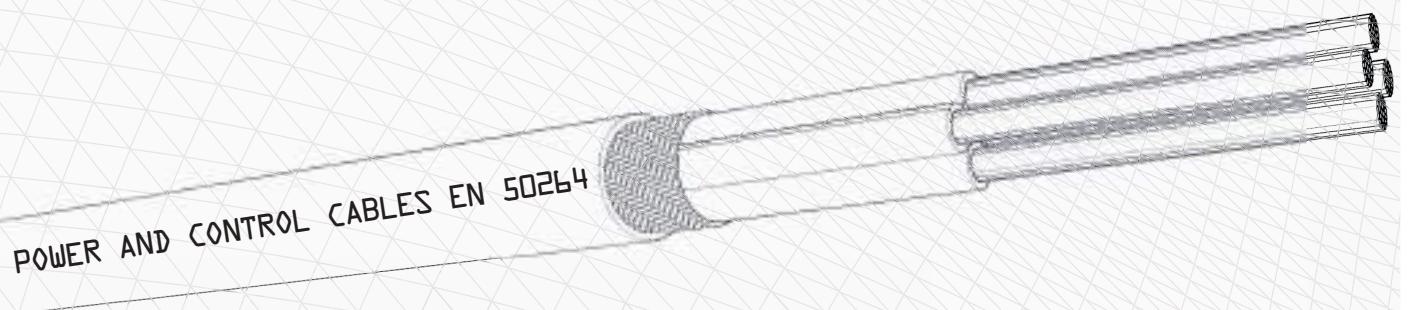
The halogen content of non-metallic materials must be less than 0.5% or 5 mg/g.

IEC 60754-2 / EN 50267-2-2: Test on gases evolved during combustion of materials from cables - Determination of acidity (by pH measurement) and conductivity.

A small quantity of non-metallic material is burnt in a furnace, the pH and conductivity combustion gases dissolved in water are measured.

The minimum pH value of the washing water must 4.3, and the maximum conductivity must be $10\text{ }\mu\text{S/mm}$.

> POWER AND CONTROL CABLES



POWER AND CONTROL CABLES

HAVING SPECIAL FIRE PERFORMANCE

Standard Reference

EN 50264; EN 50305; EN 50355; EN 50343; EN 45545-2 HL3; UNI CEI 11170-3 LR4; DIN 5510-2; BS 6853; NFPA 130

CODE DESIGNATIONS

Insulation System (EN 50264-2-1 and 2-2)

EI 101 Low Temperature Resistant, Oil Resistant	Code Designation C
EI 102 Extra Low Temperature Resistant, Oil Resistant	Code Designation F
EI 103 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EI 104 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation M
EI 105 Extra Low Temperature Resistant, Non Oil Resistant	Code Designation O

Insulation System (EN 50264-3-1 and 3-2)

EI 106 Low Temperature Resistant, Oil Resistant	Code Designation C
EI 107 Extra Low Temperature Resistant, Oil Resistant	Code Designation F
EI 108 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EI 109 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation M
EI 110 Extra Low Temperature Resistant, Non Oil Resistant	Code Designation O

Sheath Type (EN 50264-2-1, EN 50264-2-2, EN 50264-3-1 and EN 50264-3-2)

EM 101 Low Temperature Resistant, Oil Resistant	Code Designation C
EM 102 Extra Low Temperature Resistant, Oil Resistant	Code Designation F
EM 103 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EM 104 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation M

SINGLE CORE CABLES UNSHEATHED 0.6/1 kV - EN 50264-2-1



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228



Separator

Eventual polyester colored tape

Insulation

Type crosslinked LSZH see table 1

Core identification

Black if not elsewhere specified



TECHNICAL DATA



Operating voltage

0.6/1 kV

Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE



Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 1

SINGLE CORE CABLES UNSHEATHED 0.6/1 KV - EN 50264-2-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Overall diameter Ø		Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]		
			min.	max.				
			[mm]	[mm]	[Ω/km]	[MΩxkm]		
1.0	1.25	0.8	2.8	3.2	20.0	65		
1.5	1.5	0.8	3.0	3.5	13.7	55		
2.5	1.95	0.8	3.4	3.9	8.21	50		
4	2.5	0.8	3.9	4.6	5.09	40		
6	3.0	0.9	4.6	5.4	3.39	35		
10	3.9	1.1	5.8	6.8	1.95	30		
16	5.0	1.1	7.2	8.5	1.24	30		
25	6.4	1.3	8.6	10.0	0.795	30		
35	7.7	1.3	10.2	11.5	0.565	25		
50	9.2	1.5	11.6	13.5	0.393	25		
70	11.0	1.5	13.3	15.5	0.277	20		
95	12.5	1.6	14.9	17.4	0.210	20		
120	14.2	1.6	16.5	19.3	0.164	20		
150	15.8	1.9	18.5	21.7	0.132	15		
185	17.5	1.9	20.1	23.6	0.108	15		
240	20.1	2.1	22.9	26.8	0.0817	15		
300	22.5	2.2	25.4	29.7	0.0654	10		
400	25.8	2.3	28.7	33.6	0.0495	10		



SINGLE CORE CABLES UNSHEATHED 1.8/3 kV - EN 50264-2-1



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper class 5 according to EN 60228



Separator Insulation

Eventual polyester colored tape
Type crosslinked LSZH see table 1



Core identification

Black if not elsewhere specified



TECHNICAL DATA

Operating voltage

1.8/3 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4

(*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Overall diameter Ø min. [mm]	max. [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
1.5	1.5	2.5	6.2	7.3	13.7	120
2.5	1.95	2.5	6.6	7.8	8.21	100
4	2.5	2.5	7.1	8.4	5.09	90
6	3.0	2.5	7.6	8.9	3.39	80
10	3.9	2.5	8.4	9.9	1.95	65
16	5.0	2.5	9.5	11.1	1.24	55
25	6.4	2.5	10.8	12.7	0.795	45
35	7.7	2.5	12.0	14.1	0.565	40
50	9.2	2.5	13.4	15.7	0.393	35
70	11.0	2.5	15.1	17.7	0.277	30
95	12.5	2.7	16.9	19.8	0.210	30
120	14.2	2.7	18.5	21.7	0.164	25
150	15.8	2.7	20.0	23.4	0.132	20
185	17.5	2.7	21.6	25.3	0.108	20
240	20.1	2.7	24.1	28.2	0.0817	20
300	22.5	2.7	26.3	30.8	0.0654	15
400	25.8	2.9	29.8	34.9	0.0495	15



SINGLE CORE CABLES SHEATHED 1.8/3 kV - EN 50264-2-1



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Eventual polyester colored tape Type crosslinked LSZH see table 1

Insulation

Black if not elsewhere specified Type crosslinked LSZH See table 1 Black if not elsewhere specified

Core identification

Sheath



TECHNICAL DATA

Operating voltage

1.8/3 kV

Operating temperature

-40°C ÷ +90°C see table 1

Minimum bending radius

5xØ



(*)



(*)

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

EN 61034-1/2

Smoke density

EN 50267-2-1/2

Halogen-free

No corrosive and toxic fumes

Fumes

(*)see table 1

SINGLE CORE CABLES SHEATHED 1.8/3 kV - EN 50264-2-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Mean thickness of sheath [mm]	Overall diameter Ø		Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
				min.	max.		
1.5	1.5	1.3	1.4	6.7	7.8	13.7	960
2.5	1.95	1.3	1.4	7.1	8.3	8.21	850
4	2.5	1.3	1.4	7.6	8.9	5.09	750
6	3.0	1.3	1.4	8.1	9.5	3.39	670
10	3.9	2.2	1.4	10.6	12.4	1.95	550
16	5.0	2.2	1.4	11.7	13.6	1.24	450
25	6.4	2.2	1.4	13.0	15.2	0.795	390
35	7.7	2.2	1.4	14.2	16.6	0.565	350
50	9.2	2.2	1.4	15.6	18.3	0.393	300
70	11.0	2.2	1.5	17.5	20.5	0.277	260
95	12.5	2.4	1.6	19.6	22.3	0.210	250
120	14.2	2.4	1.6	21.1	24.6	0.164	220
150	15.8	2.4	1.7	22.7	26.6	0.132	210
185	17.5	2.4	1.7	24.0	28.1	0.1080	200
240	20.1	2.4	1.8	27.0	31.6	0.0817	180
300	22.5	2.4	1.9	29.4	34.4	0.0654	170
400	25.8	2.6	2.0	32.7	38.3	0.0495	150



SINGLE CORE CABLES SHEATHED 3.6/6 kV - EN 50264-2-1



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Semiconductor black tape

Insulation

Type crosslinked LSZH see table 1

Core identification

Sheath

Black if not elsewhere specified

Type crosslinked LSZH see table 1

Black if not elsewhere specified



TECHNICAL DATA



Operating voltage

3.6/6 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE



(*)



(*)

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 1

SINGLE CORE CABLES SHEATHED 3.6/6 kV - EN 50264-2-1

MAIN FEATURES

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Mean thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
[mm²]	[mm]	[mm]	[mm]	min.	max.	max.	min.
2.5	1.95	3.0	1.4	10.5	12.3	8.21	1300
4	2.5	3.0	1.4	11.0	12.9	5.09	1150
6	3.0	3.0	1.4	11.5	13.4	3.39	1050
10	3.9	3.0	1.4	12.3	14.4	1.95	850
16	5.0	3.0	1.4	13.3	15.6	1.24	710
25	6.4	3.0	1.4	14.7	17.2	0.795	630
35	7.7	3.0	1.4	15.9	18.6	0.565	550
50	9.2	3.0	1.5	17.5	20.5	0.393	500
70	11.0	3.0	1.5	19.2	22.4	0.277	430
95	12.5	3.0	1.6	20.8	24.3	0.210	400
120	14.2	3.1	1.7	22.7	26.6	0.164	360
150	15.8	3.1	1.7	24.2	28.4	0.132	340
185	17.5	3.2	1.8	26.2	30.7	0.1080	330
240	20.1	3.4	1.9	29.2	34.2	0.0817	300
300	22.5	3.4	1.9	31.5	36.9	0.0654	250
400	25.8	3.4	2.0	34.8	40.7	0.0495	230



MULTICORE UNSCREENED CABLES 300/500 V - EN 50264-2-2



CABLE SPECIFICATIONS



TECHNICAL DATA



(*)

FIRE PERFORMANCE



(*)

Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Eventual polyester colored tape Type crosslinked LSZH see table 1

Insulation

Black numbered if not elsewhere specified

Core identification

N° conductors + eventual filler and tape are assembled together

Assembling

Type crosslinked LSZH see table 1 Black if not elsewhere specified

Sheath

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C see table 1

-25°C ÷ +90°C see table 1

Minimum bending radius

5xØ

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

EN 61034-1/2

EN 50267-2-1/2

Smoke density

No corrosive and toxic fumes

Halogen-free

Fumes

(*)see table 1



MULTICORE UNSCRENEED CABLES 300/500 V - EN 50264-2-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]	
		min.	max.		min.	max.	max.	min.
2x1	1.25	0.6	2.4	2.8	1.4	7.2	8.5	20.0
4x1	1.25	0.6	2.4	2.8	1.4	8.2	9.6	20.0
7x1	1.25	0.6	2.4	2.8	1.4	9.6	11.2	20.0
9x1	1.25	0.6	2.4	2.8	1.4	11.5	13.4	20.0
12x1	1.25	0.6	2.4	2.8	1.4	12.3	14.4	20.0
19x1	1.25	0.6	2.4	2.8	1.4	14.5	16.6	20.0
24x1	1.25	0.6	2.4	2.8	1.5	16.7	19.6	20.0
32x1	1.25	0.6	2.4	2.8	1.6	18.5	21.7	20.0
37x1	1.25	0.6	2.4	2.8	1.6	19.2	22.4	20.0
40x1	1.25	0.6	2.4	2.8	1.6	19.9	23.3	20.0
4x1.5	1.5	0.7	2.8	3.3	1.4	9.2	10.8	13.7
7x1.5	1.5	0.7	2.8	3.3	1.4	10.9	12.8	13.7
9x1.5	1.5	0.7	2.8	3.3	1.4	13.1	15.3	13.7
12x1.5	1.5	0.7	2.8	3.3	1.4	14.0	16.4	13.7
19x1.5	1.5	0.7	2.8	3.3	1.4	16.5	19.4	13.7
24x1.5	1.5	0.7	2.8	3.3	1.5	19.5	22.8	13.7
32x1.5	1.5	0.7	2.8	3.3	1.6	21.5	25.2	13.7
37x1.5	1.5	0.7	2.8	3.3	1.7	22.4	26.2	13.7
4x2.5	1.95	0.8	3.4	4.0	1.4	10.7	12.5	8.21
7x2.5	1.95	0.8	3.4	4.0	1.4	12.7	14.9	8.21
9x2.5	1.95	0.8	3.4	4.0	1.5	15.6	18.3	8.21
12x2.5	1.95	0.8	3.4	4.0	1.5	16.7	19.6	8.21
19x2.5	1.95	0.8	3.4	4.0	1.6	19.7	23.1	8.21
24x2.5	1.95	0.8	3.4	4.0	1.8	23.5	27.5	8.21



CABLE SPECIFICATIONS

Conductor	Stranded tinned copper class 5 according to EN 60228
Separator	Eventual polyester colored tape
Insulation	Type crosslinked LSZH see table 1
Core identification	Black numbered if not elsewhere specified
Assembling	N° conductors + eventual filler and tape are assembled together
Screen	Tinned copper braid
Sheath	Type crosslinked LSZH see table 1 Black if not elsewhere specified



TECHNICAL DATA

Operating voltage	300/500 V
Operating temperature	-40°C ÷ +90°C see table 1 -25°C ÷ +90°C see table 1
Minimum bending radius	10xØ



(*)

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50305 9.1.2 EN 50266-2-5 EN 50266-2-4
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



(*)

(*)see table 1



MULTICORE SCRENEED CABLES 300/500 V - EN 50264-2-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Wire diameter of screen [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]		
			min.	max.	max.	min.	max.	max.	min.	
2x1	1.25	0.6	2.4	2.8	0.16	1.4	8.1	9.5	20.0	140
4x1	1.25	0.6	2.4	2.8	0.16	1.4	9.0	10.6	20.0	140
7x1	1.25	0.6	2.4	2.8	0.16	1.4	10.4	12.2	20.0	140
9x1	1.25	0.6	2.4	2.8	0.21	1.4	12.5	14.6	20.0	140
12x1	1.25	0.6	2.4	2.8	0.21	1.4	13.3	15.6	20.0	140
19x1	1.25	0.6	2.4	2.8	0.26	1.4	15.7	18.4	20.0	140
24x1	1.25	0.6	2.4	2.8	0.26	1.5	18.1	21.2	20.0	140
32x1	1.25	0.6	2.4	2.8	0.26	1.6	19.7	23.1	20.0	140
37x1	1.25	0.6	2.4	2.8	0.26	1.7	20.7	24.2	20.0	140
40x1	1.25	0.6	2.4	2.8	0.26	1.7	21.4	25.1	20.0	140
4x1.5	1.5	0.7	2.8	3.3	0.16	1.4	10.1	11.8	13.7	120
7x1.5	1.5	0.7	2.8	3.3	0.21	1.4	11.9	14.0	13.7	120
9x1.5	1.5	0.7	2.8	3.3	0.21	1.4	14.1	16.5	13.7	120
12x1.5	1.5	0.7	2.8	3.3	0.21	1.8	15.8	18.5	13.7	120
19x1.5	1.5	0.7	2.8	3.3	0.26	1.5	17.8	20.8	13.7	120
24x1.5	1.5	0.7	2.8	3.3	0.26	1.6	20.7	24.2	13.7	120
32x1.5	1.5	0.7	2.8	3.3	0.26	1.7	22.7	26.6	13.7	120
37x1.5	1.5	0.7	2.8	3.3	0.26	1.7	23.6	27.6	13.7	120
4x2.5	1.95	0.8	3.4	4.0	0.21	1.4	11.8	13.0	8.21	90
7x2.5	1.95	0.8	3.4	4.0	0.21	1.4	13.7	16.1	8.21	90
9x2.5	1.95	0.8	3.4	4.0	0.26	1.5	16.8	19.7	8.21	90
12x2.5	1.95	0.8	3.4	4.0	0.26	1.5	18.0	21.1	8.21	90
19x2.5	1.95	0.8	3.4	4.0	0.26	1.6	21.1	24.6	8.21	90
24x2.5	1.95	0.8	3.4	4.0	0.26	1.8	24.7	28.9	8.21	90

MULTICORE UNSCREENED CABLES 0.6/1 KV - EN 50264-2-2



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper class 5 according to EN 60228



Separator

Eventual polyester colored tape



Insulation

Type crosslinked LSZH see table 1



Core identification

Black numbered if not elsewhere specified



Assembling

N° conductors + eventual filler and tape are assembled together



Sheath

Type crosslinked LSZH see table 1

Black if not elsewhere specified



TECHNICAL DATA

Operating voltage

0,6/1 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



(*)

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5

(*)

Smoke density

EN 50266-2-4

Halogen-free

EN 61034-1/2

Fumes

EN 50267-2-1/2

No corrosive and toxic fumes

(*)see table 1



MULTICORE UNSCREENED CABLES 0.6/1 KV - EN 50264-2-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]		
		min.	max.		min.	max.	max.	min.	
2x1.5	1.5	0.8	3.0	3.5	1.4	8.5	9.9	13.7	150
3x1.5	1.5	0.8	3.0	3.5	1.4	8.9	10.5	13.7	150
4x1.5	1.5	0.8	3.0	3.5	1.4	9.7	11.3	13.7	150
2x2.5	1.95	0.8	3.4	3.9	1.4	9.3	10.9	8.21	130
3x2.5	1.95	0.8	3.4	3.9	1.4	9.9	11.6	8.21	130
4x2.5	1.95	0.8	3.4	3.9	1.4	10.7	12.5	8.21	130
2x4	2.5	0.8	3.9	4.6	1.4	10.3	12.1	5.09	110
3x4	2.5	0.8	3.9	4.6	1.4	11.0	12.9	5.09	110
3x4	2.5	0.8	3.9	4.6	1.4	11.9	14.0	5.09	110
2x6	3.0	0.9	4.6	5.4	1.4	11.8	13.9	3.99	90
3x6	3.0	0.9	4.6	5.4	1.4	12.5	14.6	3.99	90
4x6	3.0	0.9	4.6	5.4	1.4	13.7	16.1	3.99	90
2x10	3.9	1.1	5.8	6.8	1.4	14.3	16.7	1.95	85
3x10	3.9	1.1	5.8	6.8	1.5	15.3	17.9	1.95	85
4x10	3.9	1.1	5.8	6.8	1.5	16.9	19.8	1.95	85
2x16	5.0	1.1	7.2	8.5	1.5	16.5	19.4	1.24	70
3x16	5.0	1.1	7.2	8.5	1.6	17.8	20.8	1.24	70
4x16	5.0	1.1	7.2	8.5	1.6	19.6	22.9	1.24	70
2x25	6.4	1.3	8.6	10.0	1.6	20.1	23.5	0.795	65
3x25	6.4	1.3	8.6	10.0	1.7	21.6	25.3	0.795	65
4x25	6.4	1.3	8.6	10.0	1.8	24.1	28.2	0.795	65
2x35	7.7	1.3	10.2	11.5	1.7	22.7	26.6	0.565	60
3x35	7.7	1.3	10.2	11.5	1.8	24.4	28.6	0.565	60
3x35+1x25	7.7	1.3	10.2	11.5	1.9	28.5	34.2	0.565	60
2x50	9.2	1.5	11.6	13.5	1.9	26.7	31.2	0.393	55
3x50	9.2	1.5	11.6	13.5	1.9	28.2	33.3	0.393	55
3x50+1x25	9.2	1.5	11.6	13.5	2.0	33.4	40.0	0.393	55

MULTICORE SCRENEED CABLES 0.6/1 KV - EN 50264-2-2



CABLE SPECIFICATIONS



TECHNICAL DATA



FIRE PERFORMANCE

Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Eventual polyester colored tape Type crosslinked LSZH see table 1

Insulation

Black numbered if not elsewhere specified

Core identification

N° conductors + eventual filler and tape are assembled together

Assembling

Tinned copper braid

Screen

Type crosslinked LSZH see table 1 Black if not elsewhere specified

Sheath

Operating voltage

0.6/1 kV

-40°C ÷ +90°C see table 1

-25°C ÷ +90°C see table 1

Operating temperature

Minimum bending radius

5xØ

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 1



MULTICORE SCRENEED CABLES 0.6/1 KV - EN 50264-2-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Wire diameter of screen [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
		min.	max.	max.		min.	max.	min.
2x1.5	1.5	0.8	3.0	3.5	0.16	1.4	9.3	10.9
3x1.5	1.5	0.8	3.0	3.5	0.16	1.4	9.8	11.4
4x1.5	1.5	0.8	3.0	3.5	0.16	1.4	10.5	12.3
2x2.5	1.95	0.8	3.4	3.9	0.16	1.4	10.2	11.9
3x2.5	1.95	0.8	3.4	3.9	0.16	1.4	10.7	12.5
4x2.5	1.95	0.8	3.4	3.9	0.21	1.4	11.8	13.9
2x4	2.5	0.8	3.9	4.6	0.21	1.4	11.5	13.4
3x4	2.5	0.8	3.9	4.6	0.21	1.4	12.0	14.1
3x4	2.5	0.8	3.9	4.6	0.21	1.4	13.1	15.3
2x6	3.0	0.9	4.6	5.4	0.21	1.4	12.9	15.1
3x6	3.0	0.9	4.6	5.4	0.21	1.4	13.6	16.0
4x6	3.0	0.9	4.6	5.4	0.21	1.4	14.9	17.4
2x10	3.9	1.1	5.8	6.8	0.21	1.5	15.5	18.2
3x10	3.9	1.1	5.8	6.8	0.26	1.5	16.7	19.6
4x10	3.9	1.1	5.8	6.8	0.26	1.6	18.4	21.6
2x16	5.0	1.1	7.2	8.5	0.26	1.5	17.9	20.9
3x16	5.0	1.1	7.2	8.5	0.26	1.6	19.1	22.3
4x16	5.0	1.1	7.2	8.5	0.26	1.7	21.1	24.6
2x25	6.4	1.3	8.6	10.0	0.26	1.7	21.6	25.3
3x25	6.4	1.3	8.6	10.0	0.26	1.7	22.9	26.8
4x25	6.4	1.3	8.6	10.0	0.31	1.8	25.6	29.9
2x35	7.7	1.3	10.2	11.5	0.31	1.8	24.4	28.6
3x35	7.7	1.3	10.2	11.5	0.31	1.8	26.0	30.5
3x35+1x25	7.7	1.3	10.2	11.5	0.31	1.9	30.0	35.1
2x50	9.2	1.5	11.6	13.5	0.31	1.9	28.2	33.0
3x50	9.2	1.5	11.6	13.5	0.31	2.0	30.3	35.4
3x50+1x25	9.2	1.5	11.6	13.5	0.31	2.1	34.9	40.8

SINGLE CORE CABLES UNSHEATHED 0.6/1 kV - EN 50264-3-1



CABLE SPECIFICATIONS



Conductor	Stranded tinned copper class 5 according to EN 60228
Separator	Eventual polyester colored tape
Insulation	Type crosslinked LSZH see table 1
Core identification	Black if not elsewhere specified

TECHNICAL DATA

Operating voltage	0.6/1 kV
Operating temperature	-40°C ÷ +90°C see table 1 -25°C ÷ +90°C see table 1
Minimum bending radius	5xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50305 9.1.2 EN 50266-2-5 EN 50266-2-4
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes

(*)

(*)

(*)see table 1



SINGLE CORE CABLES UNSHEATHED 0.6/1 KV - EN 50264-3-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Overall diameter Ø min.	Overall diameter Ø max.	Resistance of conductor @ 20°C [Ω/km]	Insulation resistance @ 20°C [MΩxkm]
1.0	1.25	0.6	2.4	2.8	20	11.4
1.5	1.5	0.7	2.8	3.3	13.7	11.0
2.5	1.95	0.7	3.2	3.8	8.21	9.1
4	2.5	0.7	3.8	4.4	5.09	7.5
6	3.0	0.7	4.2	5.0	3.39	6.5
10	3.9	0.7	5.1	5.9	1.95	5.2
16	5.0	0.7	6.1	7.2	1.24	4.2
25	6.4	0.9	7.8	9.1	0.795	4.1
35	7.7	0.9	9.0	10.6	0.565	3.5
50	9.2	1.0	10.6	12.4	0.393	3.3
70	11.0	1.1	12.5	14.6	0.277	3.0
95	12.5	1.1	13.9	16.3	0.210	2.7
120	14.2	1.2	15.7	18.4	0.164	2.7
150	15.8	1.4	17.6	20.6	0.132	2.7
185	17.5	1.6	19.6	22.9	0.108	2.6
240	20.1	1.7	22.2	26.0	0.0817	2.6
300	22.5	1.8	24.6	28.8	0.0654	2.4
400	25.8	2.0	28.1	32.9	0.0495	2.4

SINGLE CORE CABLES UNSHEATHED 1.8/3 kV - EN 50264-3-1



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper class 5 according to EN 60228



Separator

Eventual polyester colored tape



Insulation

Type crosslinked LSZH see table 1

Core identification

Black if not elsewhere specified



TECHNICAL DATA

Operating voltage

1.8/3 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4



EN 61034-1/2

(*)

Smoke density

EN 50267-2-1/2

Halogen-free

No corrosive and toxic fumes

Fumes

(*)see table 1



SINGLE CORE CABLES UNSHEATHED 1.8/3 KV - EN 50264-3-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Overall diameter Ø min.	Overall diameter Ø max.	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
1.5	1.5	2.0	5.3	6.2	13.7	21.0
2.5	1.95	2.0	5.7	6.7	8.21	18.0
4	2.5	2.0	6.2	7.3	5.09	15.5
6	3.0	2.0	6.7	7.8	3.39	13.7
10	3.9	2.0	7.5	8.8	1.95	11.5
16	5.0	2.0	8.6	10.0	1.24	9.5
25	6.4	2.0	9.9	11.6	0.795	7.9
35	7.7	2.0	11.1	13.0	0.565	6.8
50	9.2	2.0	12.5	14.6	0.393	5.9
70	11.0	2.0	14.2	16.6	0.277	5.0
95	12.5	2.2	16.0	18.7	0.210	4.5
120	14.2	2.2	17.6	20.6	0.164	4.0
150	15.8	2.2	19.1	22.3	0.132	3.7
185	17.5	2.4	20.9	24.4	0.108	3.4
240	20.1	2.4	23.7	27.5	0.0817	3.0
300	22.5	2.4	25.6	30.1	0.0654	2.7
400	25.8	2.6	29.2	34.2	0.0495	2.4



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper class 5 according to EN 60228



Separator

Eventual polyester colored tape



Insulation

Type crosslinked LSZH see table 1



Core identification

Black if not elsewhere specified



Sheath

Type crosslinked LSZH see table 1

Black if not elsewhere specified



TECHNICAL DATA

Operating voltage

1.8/3 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4



EN 61034-1/2



EN 50267-2-1/2



Smoke density

No corrosive and toxic fumes

Halogen-free

Fumes

(*)see table 1



SINGLE CORE CABLES SHEATHED 1.8/3 kV - EN 50264-3-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
				min.	max.	max.
1.5	1.5	1.3	0.8	5.7	6.7	13.7
2.5	1.95	1.3	0.8	6.0	7.0	8.21
4	2.5	1.3	0.8	6.5	7.6	5.09
6	3.0	1.3	0.8	7.0	8.1	3.39
10	3.9	1.5	0.8	8.2	9.6	1.95
16	5.0	1.5	0.8	9.2	10.8	1.24
25	6.4	1.8	1.0	11.5	13.4	0.795
35	7.7	1.8	1.0	12.7	14.9	0.565
50	9.2	1.8	1.0	14.1	16.5	0.393
70	11.0	1.8	1.0	15.8	18.5	0.277
95	12.5	2.2	1.0	18.0	21.0	0.210
120	14.2	2.2	1.0	19.6	22.9	0.164
150	15.8	2.2	1.2	21.4	25.1	0.132
185	17.5	2.4	1.2	23.4	27.4	0.108
240	20.1	2.4	1.2	25.9	30.3	0.0817
300	22.5	2.4	1.2	28.1	32.9	0.0654
400	25.8	2.6	1.4	32.0	37.4	0.0495

► SINGLE CORE CABLES SHEATHED 3.6/6 kV - EN 50264-3-1



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228



Separator

Semiconductor black tape



Insulation

Type crosslinked LSZH see table 1



Core identification

Black if not elsewhere specified



Sheath

Type crosslinked LSZH see table 1



Black if not elsewhere specified

TECHNICAL DATA



Operating voltage

3.6/6 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE



Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4



EN 61034-1/2



EN 50267-2-1/2



Fumes

No corrosive and toxic fumes

(*)see table 1



SINGLE CORE CABLES SHEATHED 3.6/6 kV - EN 50264-3-1

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
2.5	1.95	2.6	0.8	8.6	10.1	8.21
4	2.5	2.6	0.8	9.1	10.7	5.09
6	3.0	2.6	0.8	9.6	11.2	3.39
10	3.9	2.6	0.8	10.4	12.2	1.95
16	5.0	2.6	0.8	11.5	13.4	1.24
25	6.4	2.9	1.0	13.7	16.4	0.795
35	7.7	2.9	1.0	14.9	17.5	0.565
50	9.2	2.9	1.0	16.4	19.1	0.393
70	11.0	2.9	1.0	18.0	21.1	0.277
95	12.5	2.9	1.0	19.5	22.8	0.210
120	14.2	2.9	1.0	21.4	25.1	0.164
150	15.8	2.9	1.2	22.9	26.8	0.132
185	17.5	3.2	1.2	25.1	29.4	0.108
240	20.1	3.4	1.2	28.3	33.1	0.0817
300	22.5	3.4	1.2	30.6	35.8	0.0654
400	25.8	3.4	1.4	33.7	39.4	0.0495

MULTICORE UNSCREENED CABLES 300/500 V - EN 50264-3-2



CABLE SPECIFICATIONS



Conductor



Separator



Insulation



Core identification



Assembling



Sheath

Stranded tinned copper class 5 according to EN 60228

Eventual polyester color tape

Type crosslinked LSZH see table 1

Black numbered if not elsewhere specified

N° conductors + eventual filler and tape are assembled together

Type crosslinked LSZH see table 1

Black if not elsewhere specified



TECHNICAL DATA



Operating voltage



Operating temperature



Minimum bending radius

300/500 V

-40°C ÷ +90°C see table 1

-25°C ÷ +90°C see table 1

5xØ



FIRE PERFORMANCE



(*)

Fire propagation



(*)

Smoke density

Halogen-free

Fumes

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

EN 61034-1/2

EN 50267-2-1/2

No corrosive and toxic fumes

(*)see table 1



MULTICORE UNSCRENEED CABLES 300/500 V - EN 50264-3-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
		min.	max.		min.	max.	min.
2x1	1.25	0.4	2.0	2.4	0.6	5.3	6.2
4x1	1.25	0.4	2.0	2.4	0.6	6.1	7.2
7x1	1.25	0.4	2.0	2.4	0.7	7.5	8.7
9x1	1.25	0.4	2.0	2.4	0.7	9.1	10.6
12x1	1.25	0.4	2.0	2.4	0.7	9.8	11.5
19x1	1.25	0.4	2.0	2.4	0.8	11.7	13.7
24x1	1.25	0.4	2.0	2.4	1.0	14.1	16.5
32x1	1.25	0.4	2.0	2.4	1.0	15.5	18.2
37x1	1.25	0.4	2.0	2.4	1.0	16.1	18.9
40x1	1.25	0.4	2.0	2.4	1.0	16.7	19.6
4x1.5	1.5	0.5	2.4	2.9	0.7	7.3	8.6
7x1.5	1.5	0.5	2.4	2.9	0.7	8.7	10.2
9x1.5	1.5	0.5	2.4	2.9	0.8	10.9	12.7
12x1.5	1.5	0.5	2.4	2.9	0.8	11.8	13.8
19x1.5	1.5	0.5	2.4	2.9	1.0	14.2	16.6
24x1.5	1.5	0.5	2.4	2.9	1.0	16.6	19.5
32x1.5	1.5	0.5	2.4	2.9	1.2	18.7	21.9
37x1.5	1.5	0.5	2.4	2.9	1.2	19.5	22.8
4x2.5	1.95	0.5	2.9	3.4	0.7	8.3	9.8
7x2.5	1.95	0.5	2.9	3.4	0.8	10.2	11.9
9x2.5	1.95	0.5	2.9	3.4	1.0	12.9	15.1
12x2.5	1.95	0.5	2.9	3.4	1.0	13.9	16.3
19x2.5	1.95	0.5	2.9	3.4	1.0	16.3	19.1
24x2.5	1.95	0.5	2.9	3.4	1.2	19.6	22.9

MULTICORE SCRENEED CABLES 300/500 V - EN 50264-3-2



CABLE SPECIFICATIONS



Conductor

Separator

Insulation

Core identification

Assembling

Screen

Sheath

Stranded tinned copper class 5 according to EN 60228

Eventual Polyester

Type crosslinked LSZH see table 1

Black numbered if not elsewhere specified

N° conductors + eventual filler and tape are assembled together

Tinned copper braid

Type crosslinked LSZH see table 1

Black if not elsewhere specified



TECHNICAL DATA



Operating voltage

Operating temperature

300/500 V

-40°C ÷ +90°C see table 1

-25°C ÷ +90°C see table 1

Minimum bending radius

10xØ



FIRE PERFORMANCE



(*)

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

EN 61034-1/2

EN 50267-2-1/2



(*)

Smoke density

Halogen-free

Fumes

No corrosive and toxic fumes

(*)see table 1



MULTICORE SCRENEED CABLES 300/500 V - EN 50264-3-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Wire diameter of screen [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩ.km]
			min.	max.	max.	min.	max.	max.
2x1	1.25	0.4	2.0	2.4	0.16	0.6	6.0	7.1
4x1	1.25	0.4	2.0	2.4	0.16	0.7	7.0	8.2
7x1	1.25	0.4	2.0	2.4	0.16	0.7	8.2	9.6
9x1	1.25	0.4	2.0	2.4	0.21	0.8	10.2	11.9
12x1	1.25	0.4	2.0	2.4	0.21	0.8	10.9	12.7
19x1	1.25	0.4	2.0	2.4	0.26	1.0	13.2	15.4
24x1	1.25	0.4	2.0	2.4	0.26	1.0	15.2	17.8
32x1	1.25	0.4	2.0	2.4	0.26	1.0	16.6	19.4
37x1	1.25	0.4	2.0	2.4	0.26	1.0	17.2	20.1
40x1	1.25	0.4	2.0	2.4	0.26	1.2	18.2	21.3
4x1.5	1.5	0.5	2.4	2.9	0.16	0.7	8.0	9.4
7x1.5	1.5	0.5	2.4	2.9	0.21	0.7	9.6	11.3
9x1.5	1.5	0.5	2.4	2.9	0.21	1.0	12.1	14.2
12x1.5	1.5	0.5	2.4	2.9	0.21	1.0	13.0	15.2
19x1.5	1.5	0.5	2.4	2.9	0.26	1.0	15.3	17.9
24x1.5	1.5	0.5	2.4	2.9	0.26	1.2	18.1	21.2
32x1.5	1.5	0.5	2.4	2.9	0.26	1.2	19.8	23.2
37x1.5	1.5	0.5	2.4	2.9	0.26	1.2	20.5	24.0
4x2.5	1.95	0.5	2.9	3.4	0.21	0.7	9.2	10.8
7x2.5	1.95	0.5	2.9	3.4	0.21	0.8	11.1	13.0
9x2.5	1.95	0.5	2.9	3.4	0.26	1.0	13.9	16.3
12x2.5	1.95	0.5	2.9	3.4	0.26	1.0	15.0	17.5
19x2.5	1.95	0.5	2.9	3.4	0.26	1.2	17.8	20.8
24x2.5	1.95	0.5	2.9	3.4	0.26	1.2	20.6	24.1

MULTICORE UNSCREENED CABLES 0.6/1 KV - EN 50264-3-2



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Eventual polyester colored tape

Insulation

Type crosslinked LSZH see table 1

Core identification

Black numbered if not elsewhere specified

Assembling

N° conductors + eventual filler and tape are assembled together

Sheath

Type crosslinked LSZH see table 1 Black if not elsewhere specified



TECHNICAL DATA



Operating voltage

0.6/1 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

5xØ



FIRE PERFORMANCE

(*)



Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 1



MULTICORE UNSCRENEED CABLES 0.6/1 KV - EN 50264-3-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]		Mean thickness of sheath [mm]	Overall diameter Ø [mm]		Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
			min.	max.		min.	max.	max.	min.
2x1.5	1.5	0.7	2.8	3.3	0.7	7.2	9.0	13.7	21.0
3x1.5	1.5	0.7	2.8	3.3	0.7	7.7	9.5	13.7	21.0
4x1.5	1.5	0.7	2.8	3.3	0.7	8.5	10.5	13.7	21.0
2x2.5	1.95	0.7	3.2	3.8	0.7	8.0	10.0	8.21	17.2
3x2.5	1.95	0.7	3.2	3.8	0.7	8.5	10.5	8.21	17.2
4x2.5	1.95	0.7	3.2	3.8	0.7	9.4	11.6	8.21	17.2
2x4	2.5	0.7	3.8	4.4	0.7	9.1	11.3	5.09	14.2
3x4	2.5	0.7	3.8	4.4	0.7	9.7	12.0	5.09	14.2
4x4	2.5	0.7	3.8	4.4	0.8	10.9	13.4	5.09	14.2
2x6	3.0	0.7	4.2	5.0	0.8	10.1	12.4	3.39	12.2
3x6	3.0	0.7	4.2	5.0	0.8	10.7	13.2	3.39	12.2
4x6	3.0	0.7	4.2	5.0	1.0	12.2	14.9	3.39	12.2
2x10	3.9	0.7	5.1	5.9	1.0	12.5	15.4	1.95	9.8
3x10	3.9	0.7	5.1	5.9	1.0	13.3	16.5	1.95	9.8
4x10	3.9	0.7	5.1	5.9	1.0	14.7	18.2	1.95	9.8
2x16	5.0	0.7	6.1	7.2	1.0	14.9	18.4	1.24	7.9
3x16	5.0	0.7	6.1	7.2	1.0	16.0	19.6	1.24	7.9
4x16	5.0	0.7	6.1	7.2	1.2	18.0	22.1	1.24	7.9
2x25	6.4	0.9	7.8	9.1	1.2	18.7	23.0	0.795	7.3
3x25	6.4	0.9	7.8	9.1	1.2	20.0	24.7	0.795	7.3
4x25	6.4	0.9	7.8	9.1	1.4	22.6	27.6	0.795	7.3
2x35	7.7	0.9	9.0	10.6	1.2	21.2	25.9	0.565	6.7
3x35	7.7	0.9	9.0	10.6	1.2	23.0	28.2	0.565	6.7
3x35 + 1x25	7.7	0.9	9.0	10.6	1.4	25.7	31.2	0.565	6.7
2x50	9.2	1.0	10.6	12.4	1.4	25.1	30.7	0.393	6.3
3x50	9.2	1.0	10.6	12.4	1.4	26.3	32.2	0.393	6.3
3x50 + 1x25	9.2	1.0	10.6	12.4	1.6	30.0	36.5	0.393	6.3

MULTICORE SCRENEED CABLES 0.6/1 KV - EN 50264-3-2



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228

Separator

Eventual polyester colored tape

Insulation

Type crosslinked LSZH see table 1

Core identification

Black numbered if not elsewhere specified

Assembling

N° conductors + eventual filler and tape are assembled together

Screen

Tinned copper braid

Sheath

Type crosslinked LSZH see table 1
Black if not elsewhere specified

TECHNICAL DATA



Operating voltage

0.6/1 kV



Operating temperature

-40°C ÷ +90°C see table 1



Minimum bending radius

10xØ

FIRE PERFORMANCE



(*)

Fire propagation

EN 60332-1-2



Smoke density

EN 50305 9.1.2



Halogen-free

EN 50266-2-5

(*)

Fumes

EN 50266-2-4

EN 61034-1/2

EN 50267-2-1/2

No corrosive and toxic fumes

(*)see table 1

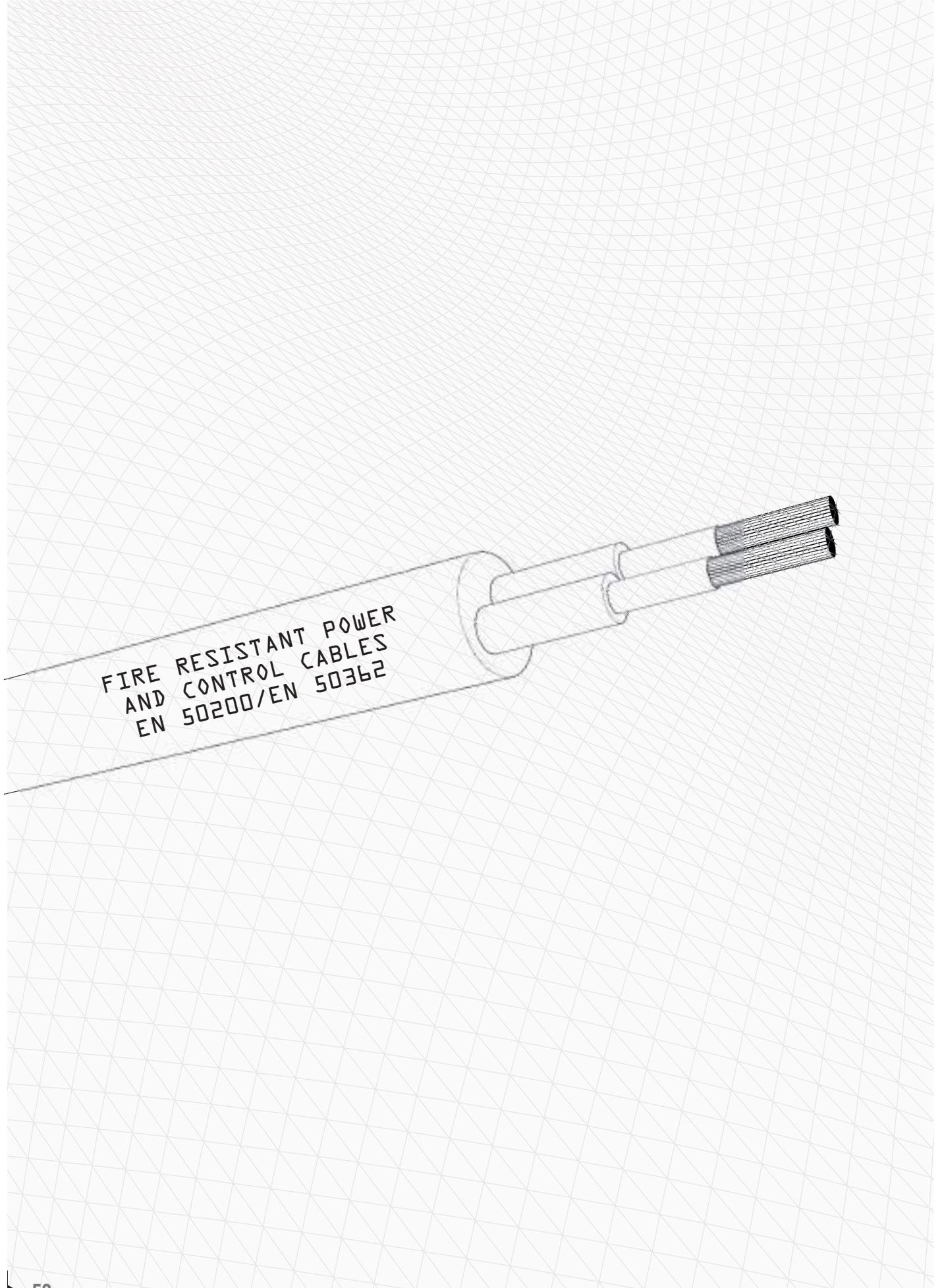


MULTICORE SCRENEED CABLES 0.6/1 KV - EN 50264-3-2

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Wire diameter of screen [mm]	Mean thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
2x1.5	1.5	0.7	2.8	3.3	0.16	0.7	7.9	9.9
3x1.5	1.5	0.7	2.8	3.3	0.16	0.7	8.4	10.4
4x1.5	1.5	0.7	2.8	3.3	0.16	0.7	9.1	11.3
2x2.5	1.95	0.7	3.2	3.8	0.16	0.7	8.7	10.7
3x2.5	1.95	0.7	3.2	3.8	0.16	0.7	9.2	11.4
4x2.5	1.95	0.7	3.2	3.8	0.21	0.8	10.4	12.9
2x4	2.5	0.7	3.8	4.4	0.21	0.8	10.2	12.7
3x4	2.5	0.7	3.8	4.4	0.21	0.8	10.8	13.3
4x4	2.5	0.7	3.8	4.4	0.21	0.8	11.8	14.5
2x6	3.0	0.7	4.2	5.0	0.21	0.8	10.9	13.6
3x6	3.0	0.7	4.2	5.0	0.21	0.8	11.6	14.3
4x6	3.0	0.7	4.2	5.0	0.21	1.0	13.1	16.1
2x10	3.9	0.7	5.1	5.9	0.21	1.0	13.4	16.6
3x10	3.9	0.7	5.1	5.9	0.26	1.0	14.4	18.0
4x10	3.9	0.7	5.1	5.9	0.26	1.0	15.9	19.5
2x16	5.0	0.7	6.1	7.2	0.26	1.0	16.0	19.8
3x16	5.0	0.7	6.1	7.2	0.26	1.2	17.4	21.3
4x16	5.0	0.7	6.1	7.2	0.26	1.2	19.3	23.6
2x25	6.4	0.9	7.8	9.1	0.26	1.2	19.8	24.6
3x25	6.4	0.9	7.8	9.1	0.26	1.2	21.3	26.1
4x25	6.4	0.9	7.8	9.1	0.31	1.4	24.0	29.3
2x35	7.7	0.9	9.0	10.6	0.31	1.4	22.8	27.9
3x35	7.7	0.9	9.0	10.6	0.31	1.4	24.5	29.8
4x35	7.7	0.9	9.0	10.6	0.31	1.4	26.9	32.9
2x50	9.2	1.0	10.6	12.4	0.31	1.4	26.4	32.3
3x50	9.2	1.0	10.6	12.4	0.31	1.6	28.3	34.6
3x50 + 1x25	9.2	1.0	10.6	12.4	0.31	1.6	31.5	38.2

> FIRE RESISTANT POWER AND CONTROL CABLES



FIRE RESISTANT POWER
AND CONTROL CABLES
EN 50200/EN 50362

FIRE RESISTANT POWER AND CONTROL CABLES

HAVING SPECIAL FIRE PERFORMANCE

Standard Reference

EN 50200; EN 50362; EN 50264; EN 50305; EN 50355; EN 50343; EN 45545-2 HL3; UNI CEI 11170-3 LR4;
DIN 5510-2; BS 6853; NFPA 130

CODE DESIGNATIONS

Insulation System (EN 50264-2-1 and 2-2)

EI 101 Low Temperature Resistant, Oil Resistant.....	Code Designation C
EI 102 Extra Low Temperature Resistant, Oil Resistant.....	Code Designation F
EI 103 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EI 104 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant.....	Code Designation M
EI 105 Extra Low Temperature Resistant, Non Oil Resistant	Code Designation O

Insulation System (EN 50264-3-1 and 3-2)

EI 106 Low Temperature Resistant, Oil Resistant	Code Designation C
EI 107 Extra Low Temperature Resistant, Oil Resistant	Code Designation F
EI 108 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EI 109 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant.....	Code Designation M
EI 110 Extra Low Temperature Resistant, Non Oil Resistant	Code Designation O

Sheath Type (EN 50264-2-1, EN 50264-2-2, EN 50264-3-1 and EN 50264-3-2)

EM 101 Low Temperature Resistant, Oil Resistant.....	Code Designation C
EM 102 Extra Low Temperature Resistant, Oil Resistant.....	Code Designation F
EM 103 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EM 104 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant.....	Code Designation M

SINGLE CORE CABLES UNSHEATHED 0.6/1 KV - EN 50200/EN 50362



CABLE SPECIFICATIONS



Conductor



Stranded tinned copper class 5 according to EN 60228



Glass-mica tape



Type crosslinked LSZH see table 2



Fire protection



Insulation



Core identification



Red if not elsewhere specified

TECHNICAL DATA



Operating Voltage

0.6/1 kV



Operating temperature

-40°C ÷ +90°C see table 2



Minimum bending radius

-25°C ÷ +90°C see table 2



FIRE PERFORMANCE



Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4



EN 50200 / EN 50362 PH 90

EN 61034-1/2

EN 50267-2-1/2

No corrosive and toxic fumes

(*)see table 2



SINGLE CORE CABLES UNSHEATHED 0.6/1 KV - EN 50200/EN 50362

MAIN FEATURES

Nominal cross-sectional area [mm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	External diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
			max.	max.	min.
[mm ²]	[mm]	[mm]	[mm]	[Ω/km]	[MΩxkm]
1.0	1.25	0.8	3.5	20.0	65
1.5	1.5	0.8	3.8	13.7	55
2.5	1.95	0.8	4.2	8.21	50
4	2.5	0.8	4.9	5.09	40
6	3.0	0.9	5.7	3.39	35
10	3.9	1.1	7.1	1.95	30
16	5.0	1.1	8.8	1.24	30
25	6.4	1.3	10.3	0.795	30
35	7.7	1.3	11.8	0.565	25
50	9.2	1.5	13.8	0.393	25
70	11.0	1.5	15.8	0.277	20
95	12.5	1.6	17.7	0.210	20
120	14.2	1.6	19.6	0.164	20
150	15.8	1.9	22.0	0.132	15
185	17.5	1.9	24.0	0.108	15

MULTICORE UNSCREENED CABLES 300/500 V - EN 50200 / EN 50362



CABLE SPECIFICATIONS



Conductor



Stranded tinned copper class 5 according to EN 60228



Glass-mica tape



Core identification



Type crosslinked LSZH see table 2



Assembling



Black numbered if not elsewhere specified



Sheath

N° conductors + eventual filler and tape are assembled together

Type crosslinked LSZH see table 2

Red if not elsewhere specified

TECHNICAL DATA



Operating Voltage

300/500 V



Operating temperature

-40°C ÷ +90°C see table 2



Minimum bending radius

-25°C ÷ +90°C see table 2



Fire propagation

EN 60332-1-2



EN 50305 9.1.2



EN 50266-2-5



EN 50266-2-4



EN 50200 / EN 50362 PH 90



EN 61034-1/2



EN 50267-2-1/2



Fumes

No corrosive and toxic fumes

(*)see table 2



MULTICORE UNSCREENED CABLES 300/500 V - EN 50200 / EN 50362

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Mean thickness of sheath [mm]	External diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
2x1	1.25	0.6	1.4	9.5	20.0	140
2x1.5	1.5	0.7	1.4	10.3	13.7	120
2x2.5	1.95	0.8	1.4	11.7	8.21	90
2x4	2.5	0.8	1.4	12.7	5.09	80
				max.	max.	min.
3x1	1.25	0.6	1.4	9.9	20.0	140
3x1.5	1.5	0.7	1.4	10.8	13.7	120
3x2.5	1.95	0.8	1.4	12.4	8.21	90
3x4	2.5	0.8	1.4	13.6	5.09	80
4x1	1.25	0.6	1.4	10.7	20.0	140
4x1.5	1.5	0.7	1.4	11.9	13.7	120
4x2.5	1.95	0.8	1.4	13.6	8.21	90
4x4	2.5	0.8	1.4	15.0	5.09	80

SINGLE AND MULTICORE SCREENED CABLES WITH SHEATH 300/500 V - EN 50200 / EN 50362



CABLE SPECIFICATIONS



Conductor

Stranded tinned copper class 5 according to EN 60228



Fire protection

Glass-mica tape



Insulation

Type crosslinked LSZH see table 2



Core identification

Black numbered if not elsewhere specified



Assembling

N° conductors + eventual filler and tape are assembled together



Screen

Tinned copper braid



Sheath

Type crosslinked LSZH see table 2 Red if not elsewhere specified



TECHNICAL DATA



Operating Voltage

300/500 V



Operating temperature

-40°C ÷ +90°C see table 2



Minimum bending radius

10xØ



FIRE PERFORMANCE



(*)

Fire propagation

EN 60332-1-2



(*)

Fire resistant

EN 50305 9.1.2



Smoke density

EN 50266-2-5



Halogen-free

EN 50266-2-4



Fumes

EN 50200 / EN 50362 PH 90



EN 61034-1/2



EN 50267-2-1/2



No corrosive and toxic fumes

(*)see table 2

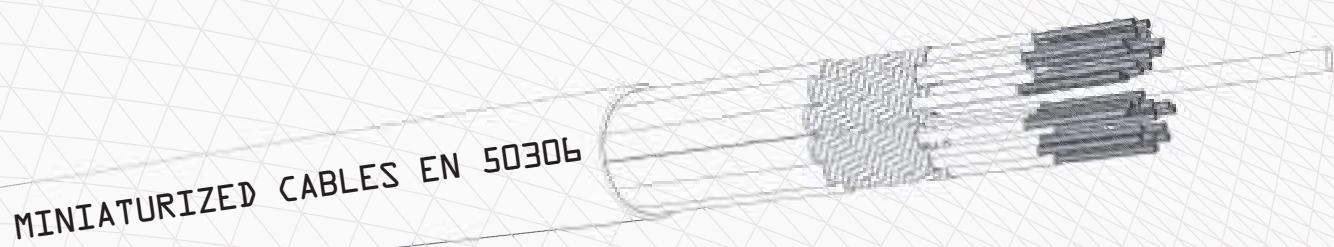


SINGLE AND MULTICORE SCREENED CABLES WITH SHEATH 300/500 V - EN 50200 / EN 50362

MAIN FEATURES

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Wire diameter of screen	Mean thickness of sheath	External diameter Ø	Resistance of conductor @20°C	Insulation resistance @20°C
		max.		max.		max.	min.
[nxmm ²]	[mm]	[mm]	[mm]	[mm]	[mm]	[Ω/km]	[MΩxkm]
1x1	1.25	0.6	0.16	1.4	7.0	20.0	140
1x1.5	1.5	0.7	0.16	1.4	7.6	13.7	120
1x2.5	1.95	0.8	0.21	1.4	8.4	8.21	90
1x4	2.5	0.8	0.21	1.4	9.0	5.09	80
2x0.75	1.15	0.6	0.16	1.4	8.9	26.7	150
2x1	1.25	0.6	0.16	1.4	10.5	20.0	140
2x1.5	1.5	0.7	0.16	1.4	11.3	13.7	120
2x2.5	1.95	0.8	0.21	1.4	12.9	8.21	90
2x4	2.5	0.8	0.21	1.4	14.0	5.09	80
3x1	1.25	0.6	0.16	1.4	10.9	20.0	140
3x1.5	1.5	0.7	0.16	1.4	11.8	13.7	120
3x2.5	1.95	0.8	0.21	1.4	13.7	8.21	90
3x4	2.5	0.8	0.21	1.4	15.0	5.09	80
4x1	1.25	0.6	0.16	1.4	11.7	20.0	140
4x1.5	1.5	0.7	0.16	1.4	12.9	13.7	120
4x2.5	1.95	0.8	0.21	1.4	15.0	8.21	90
4x4	2.5	0.8	0.21	1.4	16.5	5.09	80
6x1	1.25	0.6	0.16	1.4	13.3	20.0	140
6x1.5	1.5	0.7	0.16	1.4	14.6	13.7	120
6x2.5	1.95	0.8	0.21	1.4	17.0	8.21	90
6x4	2.5	0.8	0.21	1.5	18.6	5.09	80

► MINIATURIZED CABLES



MINIATURIZED CABLES

HAVING SPECIAL FIRE PERFORMANCE

THIN WALL

Standard Reference

EN 50306; EN 50264; EN 50305; EN 50355; EN 50343; EN 45545-2 HL3; UNI CEI 11170-3 LR4; DIN 5510-2; BS 6853; NFPA 130

CODE DESIGNATIONS

Insulation System (EN 50306-1, EN 50306-2)

Low Temperature Resistant, Oil Resistant.....	Code Designation C
Extra Low Temperature Resistant, Oil Resistant	Code Designation F
Low Temperature Resistant, Extra Oil and Fuel Resistant.....	Code Designation J
Extra Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation M

Sheath Type (EN 50264-1, EN 50306-3, EN 50306-4)

EM 101 Low Temperature Resistant, Oil Resistant.....	Code Designation C
EM 102 Extra Low Temperature Resistant, Oil Resistant.....	Code Designation F
EM 103 Low Temperature Resistant, Extra Oil and Fuel Resistant	Code Designation J
EM 104 Extra Low Temperature Resistant, Extra Oil and Fuel Resistant.....	Code Designation M

SINGLE CORE CABLES UNSHEATHED 300/500 V - EN 50306-2



CABLE SPECIFICATIONS



Conductor



Insulation



Core identification

Stranded tinned copper according to EN 60228 configuration according to table A

Double layer of olefinic thermoplastic mixture

White if not elsewhere specified



TECHNICAL DATA



Operating voltage



Operating temperature

300/500 V

-40°C ÷ +105°C see table 3

-25°C ÷ +105°C see table 3



Minimum bending radius

4xØ



FIRE PERFORMANCE



Fire propagation



Smoke density



Halogen-free

Fumes

EN 60332-1-2

EN 50305 9.1.2

EN 61034-1/2

EN 50267-2-1/2

No corrosive and toxic fumes

(*)

(*)see table 3



SINGLE CORE CABLES UNSHEATHED 300/500 V - EN 50306-2

MAIN FEATURES

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø	Number and diameter of strands	Overall diameter Ø	Resistance of conductor @20°C	Insulation resistance @20°C
			min. max.		min. max.	max.	min.
[mm²]	[mm]	[mm]	[mm] [mm]	[mm]	[mm] [mm]	[Ω/km]	[MΩxkm]
0.5	0.85	0.18	0.8 0.95	19x0.18	1.15 1.45	40.1	600
0.75	1.05	0.18	1.0 1.15	37x0.16 (a)	1.35 1.65	26.7	500
1.0	1.2	0.18	1.1 1.3	37x0.18 (a)	1.45 1.8	20.0	500
1.5	1.55	0.22	1.45 1.65	37x0.23 (a)	1.95 2.3	13.7	400
2.5	2.0	0.28	1.85 2.15	37x0.30 (a)	2.5 2.85	8.21	400

(a) Also formation with 19 strands is possible

SINGLE AND MULTICORE SCREENED CABLES 300/500 V - EN 50306-3



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper according to EN 60228 configuration according to single core unsheathed

Insulation

Double layer of olefinic thermoplastic mixture

Core identification

White if not elsewhere specified

Assembling

N° conductors + eventual filler and tape are assembled together

Screen

Tinned copper braid

Sheath

Type crosslinked LSZH see table 3
Black if not elsewhere specified
Thickness and outer diameter according to cable class, E exposed, P protected:
See table E



TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-25°C ÷ +105°C see table 3 (single core)

-40°C ÷ +105°C see table 3 (single core)

-25°C ÷ +90°C see table 3 (multicore)

-40°C ÷ +90°C see table 3 (multicore)

Minimum bending radius

5xØ



(*)

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 3



SINGLE AND MULTICORE SCREENED CABLES 300/500 V - EN 50306-3

MAIN FEATURES

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]		Minimum thickness of sheath [mm]	Overall diameter Ø [mm]		Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]
			min.	max.		min.	max.	max.	min.
1x0.5	0.85	0.18	1.15	1.45	0.2	2.3	2.8	40.1	600
2x0.5	0.85	0.18	1.15	1.45	0.2	3.5	4.3	40.1	600
3x0.5	0.85	0.18	1.15	1.45	0.2	3.7	4.5	40.1	600
4x0.5	0.85	0.18	1.15	1.45	0.2	4.0	5.0	40.1	600
1x0.75	1.05	0.18	1.35	1.65	0.2	2.5	3.0	26.7	500
2x0.75	1.05	0.18	1.35	1.65	0.2	3.9	4.7	26.7	500
3x0.75	1.05	0.18	1.35	1.65	0.2	4.0	5.0	26.7	500
4x0.75	1.05	0.18	1.35	1.65	0.2	4.5	5.5	26.7	500
1x1.0	1.2	0.18	1.45	1.8	0.2	2.7	3.2	20.0	500
2x1.0	1.2	0.18	1.45	1.8	0.2	4.2	5.2	20.0	500
3x1.0	1.2	0.18	1.45	1.8	0.2	4.5	5.5	20.0	500
4x1.0	1.2	0.18	1.45	1.8	0.2	5.0	6.0	20.0	500
1x1.5	1.55	0.22	1.95	2.3	0.2	3.1	3.6	13.7	400
2x1.5	1.55	0.22	1.95	2.3	0.2	5.1	6.1	13.7	400
3x1.5	1.55	0.22	1.95	2.3	0.2	5.4	6.4	13.7	400
4x1.5	1.55	0.22	1.95	2.3	0.2	6.0	7.0	13.7	400
1x2.5	2.0	0.28	2.5	2.85	0.2	3.6	4.4	13.7	400
2x2.5	2.0	0.28	2.5	2.85	0.2	6.4	7.4	13.7	400
3x2.5	2.0	0.28	2.5	2.85	0.2	6.8	7.8	13.7	400
4x2.5	2.0	0.28	2.5	2.85	0.2	7.5	8.5	13.7	400

MULTICORE UNSCREENED CABLES 300/500 V - EN 50306-4



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper according to EN 60228 configuration according to single core unsheathed

Insulation

Double layer of olefinic thermoplastic mixture Thickness and outer diameter: according to single core unsheathed

Core identification

White numbered if not elsewhere specified

Assembling

N° conductors + eventual filler and tape are assembled together

Sheath

Type crosslinked LSZH see table 3
Black if not elsewhere specified
Thickness and outer diameter according to cable class, E exposed, P protected:



TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C see table 3

Minimum bending radius

4xØ



(*)

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 91.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 3



MULTICORE UNSCREENED CABLES 300/500 V - EN 50306-4

MAIN FEATURES CLASS E

Nominal cross-sectional area [nxmm ²]	Conductor diameter Ø [mm]	Mean thickness of insulation [mm]	Core diameter Ø [mm]	Minimum thickness of sheath [mm]	Overall diameter Ø [mm]	Resistance of conductor @20°C [Ω/km]	Insulation resistance @20°C [MΩxkm]	
min. max.					min. max.		max.	min.
4x0.5	0.85	0.18	1.15	1.45	1.0	5.5	6.5	40.1
5x0.5	0.85	0.18	1.15	1.45	1.0	5.8	6.9	40.1
7x0.5	0.85	0.18	1.15	1.45	1.0	6.3	7.3	40.1
9x0.5	0.85	0.18	1.15	1.45	1.0	6.3	7.3	40.1
13x0.5	0.85	0.18	1.15	1.45	1.0	8.3	9.3	40.1
19x0.5	0.85	0.18	1.15	1.45	1.0	9.0	10.2	40.1
37x0.5	0.85	0.18	1.15	1.45	1.0	12.3	13.5	40.1
<hr/>								
4x0.75	1.05	0.18	1.35	1.65	1.0	6.0	7.0	26.7
7x0.75	1.05	0.18	1.35	1.65	1.0	6.9	7.9	26.7
13x0.75	1.05	0.18	1.35	1.65	1.0	9.1	10.3	26.7
19x0.75	1.05	0.18	1.35	1.65	1.0	10.0	11.2	26.7
37x0.75	1.05	0.18	1.35	1.65	1.0	13.2	14.4	26.7
48x0.75	1.05	0.18	1.35	1.65	1.0	14.8	16.4	26.7
<hr/>								
4x1.0	1.2	0.18	1.45	1.8	1.0	6.3	7.3	20.0
7x1.0	1.2	0.18	1.45	1.8	1.0	7.3	8.3	20.0
13x1.0	1.2	0.18	1.45	1.8	1.0	9.7	10.9	20.0
19x1.0	1.2	0.18	1.45	1.8	1.0	10.7	11.9	20.0
37x1.0	1.2	0.18	1.45	1.8	1.0	14.0	15.6	20.0
<hr/>								
4x1.5	1.55	0.22	1.95	2.3	1.0	7.4	8.4	13.7
7x1.5	1.55	0.22	1.95	2.3	1.0	8.6	9.8	13.7
13x1.5	1.55	0.22	1.95	2.3	1.0	11.7	12.9	13.7
19x1.5	1.55	0.22	1.95	2.3	1.0	13.0	14.2	13.7
37x1.5	1.55	0.22	1.95	2.3	1.0	17.2	18.8	13.7
<hr/>								
2x2.5	2.0	0.28	2.5	2.85	1.0	7.7	8.7	8.21
3x2.5	2.0	0.28	2.5	2.85	1.0	8.1	9.1	8.21
4x2.5	2.0	0.28	2.5	2.85	1.0	8.8	10.0	8.21

MULTICORE UNSCREENED CABLES 300/500 V - EN 50306-4

MAIN FEATURES CLASS P

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø		Minimum thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
			min.	max.		min.	max.	max.	min.
[nxmm ²]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Ω/km]	[MΩ.km]
4x0.5	0.85	0.18	1.15	1.45	0.42	4.1	5.1	40.1	600
5x0.5	0.85	0.18	1.15	1.45	0.42	4.4	5.5	40.1	600
7x0.5	0.85	0.18	1.15	1.45	0.42	4.9	5.9	40.1	600
9x0.5	0.85	0.18	1.15	1.45	0.42	4.9	5.9	40.1	600
13x0.5	0.85	0.18	1.15	1.45	0.56	7.3	8.3	40.1	600
19x0.5	0.85	0.18	1.15	1.45	0.56	8.1	9.1	40.1	600
37x0.5	0.85	0.18	1.15	1.45	0.56	10.8	12.0	40.1	600
4x0.75	1.05	0.18	1.35	1.65	0.42	4.6	5.6	26.7	500
7x0.75	1.05	0.18	1.35	1.65	0.42	5.5	6.5	26.7	500
13x0.75	1.05	0.18	1.35	1.65	0.56	8.2	9.2	26.7	500
19x0.75	1.05	0.18	1.35	1.65	0.56	9.0	10.2	26.7	500
37x0.75	1.05	0.18	1.35	1.65	0.56	12.2	13.4	26.7	500
48x0.75	1.05	0.18	1.35	1.65	0.56	13.9	15.5	26.7	500
4x1.0	1.2	0.18	1.45	1.8	0.42	4.9	5.9	20.0	500
7x1.0	1.2	0.18	1.45	1.8	0.42	6.0	7.0	20.0	500
13x1.0	1.2	0.18	1.45	1.8	0.56	8.7	9.9	20.0	500
19x1.0	1.2	0.18	1.45	1.8	0.56	9.8	11.0	20.0	500
37x1.0	1.2	0.18	1.45	1.8	0.56	13.3	14.5	20.0	500
4x1.5	1.55	0.22	1.95	2.3	0.42	6.0	7.0	13.7	400
7x1.5	1.55	0.22	1.95	2.3	0.56	7.7	8.7	13.7	400
13x1.5	1.55	0.22	1.95	2.3	0.56	10.7	11.9	13.7	400
19x1.5	1.55	0.22	1.95	2.3	0.56	12.0	13.2	13.7	400
37x1.5	1.55	0.22	1.95	2.3	0.56	16.2	17.8	13.7	400
2x2.5	2.0	0.28	2.5	2.85	0.56	6.7	7.7	8.21	400
3x2.5	2.0	0.28	2.5	2.85	0.56	7.7	8.1	8.21	400
4x2.5	2.0	0.28	2.5	2.85	0.56	7.9	8.9	8.21	400

SINGLE AND MULTICORE SCRENEED CABLES 300/500 V - EN 50306-4



CABLE SPECIFICATIONS



(*)

TECHNICAL DATA



(*)

Conductor

Stranded tinned copper according to EN 60228 configuration according to single core

Insulation

Double layer of olefinic thermoplastic mixture Thickness and outer diameter: see single core

Core identification

White numbered if not elsewhere specified

Assembling

N° conductors + eventual filler and tape are assembled together

Screen

Tinned copper braid

Sheath

Type crosslinked LSZH see table 3
Black if not elsewhere specified
Thickness and outer diameter according to cable class, E exposed, P protected:

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C see table 3

-25°C ÷ +90°C see table 3

Minimum bending radius

5xØ

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 3



SINGLE AND MULTICORE SCRENEED CABLES 300/500 V - EN 50306-4

MAIN FEATURES CLASS E

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø		Minimum thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
			min.	max.		min.	max.	max.	min.
[nxmm ²]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Ω/km]	[MΩxkm]
1x0.5	0.85	0.18	1.15	1.45	1.0	3.6	4.6	40.1	600
2x0.5	0.85	0.18	1.15	1.45	1.0	5.5	6.5	40.1	600
3x0.5	0.85	0.18	1.15	1.45	1.0	5.7	6.7	40.1	600
4x0.5	0.85	0.18	1.15	1.45	1.0	6.1	7.1	40.1	600
6x0.5	0.85	0.18	1.15	1.45	1.0	6.9	7.9	40.1	600
8x0.5	0.85	0.18	1.15	1.45	1.0	7.5	8.5	40.1	600
1x0.75	1.05	0.18	1.35	1.65	1.0	3.8	4.8	26.7	500
2x0.75	1.05	0.18	1.35	1.65	1.0	5.9	6.9	26.7	500
3x0.75	1.05	0.18	1.35	1.65	1.0	6.2	7.2	26.7	500
4x0.75	1.05	0.18	1.35	1.65	1.0	6.5	7.5	26.7	500
6x0.75	1.05	0.18	1.35	1.65	1.0	7.5	8.5	26.7	500
8x0.75	1.05	0.18	1.35	1.65	1.0	8.2	9.2	26.7	500
1x1.0	1.2	0.18	1.45	1.8	1.0	3.8	4.8	20.0	500
2x1.0	1.2	0.18	1.45	1.8	1.0	6.2	7.2	20.0	500
3x1.0	1.2	0.18	1.45	1.8	1.0	6.5	7.5	20.0	500
4x1.0	1.2	0.18	1.45	1.8	1.0	6.9	7.9	20.0	500
6x1.0	1.2	0.18	1.45	1.8	1.0	8.0	9.0	20.0	500
8x1.0	1.2	0.18	1.45	1.8	1.0	8.6	9.8	20.0	500
1x1.5	1.55	0.22	1.95	2.3	1.0	4.4	5.4	13.7	400
2x1.5	1.55	0.22	1.95	2.3	1.0	7.1	8.1	13.7	400
3x1.5	1.55	0.22	1.95	2.3	1.0	7.4	8.4	13.7	400
4x1.5	1.55	0.22	1.95	2.3	1.0	8.0	9.0	13.7	400
6x1.5	1.55	0.22	1.95	2.3	1.0	9.2	10.4	13.7	400
8x1.5	1.55	0.22	1.95	2.3	1.0	10.2	11.4	13.7	400
1x2.5	2.0	0.28	2.5	2.85	1.0	5.0	6.0	8.21	400
2x2.5	2.0	0.28	2.5	2.85	1.0	8.3	9.3	8.21	400
3x2.5	2.0	0.28	2.5	2.85	1.0	8.6	9.8	8.21	400
4x2.5	2.0	0.28	2.5	2.85	1.0	9.4	10.6	8.21	400

SINGLE AND MULTICORE SCRENEED CABLES 300/500 V - EN 50306-4

MAIN FEATURES CLASS P

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø		Minimum thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
			min.	max.		min.	max.	max.	min.
[nxmm ²]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[Ω/km]	[MΩxkm]
1x0.5	0.85	0.18	1.15	1.45	0.28	2.2	2.6	40.1	600
2x0.5	0.85	0.18	1.15	1.45	0.42	4.1	5.1	40.1	600
3x0.5	0.85	0.18	1.15	1.45	0.42	4.3	5.3	40.1	600
4x0.5	0.85	0.18	1.15	1.45	0.42	4.7	5.7	40.1	600
6x0.5	0.85	0.18	1.15	1.45	0.42	5.5	6.5	40.1	600
8x0.5	0.85	0.18	1.15	1.45	0.42	6.0	7.0	40.1	600
1x0.75	1.05	0.18	1.35	1.65	0.28	2.5	3.1	26.7	500
2x0.75	1.05	0.18	1.35	1.65	0.42	4.5	5.5	26.7	500
3x0.75	1.05	0.18	1.35	1.65	0.42	4.7	5.7	26.7	500
4x0.75	1.05	0.18	1.35	1.65	0.42	5.2	6.2	26.7	500
6x0.75	1.05	0.18	1.35	1.65	0.42	6.1	7.1	26.7	500
8x0.75	1.05	0.18	1.35	1.65	0.42	6.6	7.6	26.7	500
1x1.0	1.2	0.18	1.45	1.8	0.28	2.8	3.3	20.0	500
2x1.0	1.2	0.18	1.45	1.8	0.42	4.7	5.7	20.0	500
3x1.0	1.2	0.18	1.45	1.8	0.42	5.1	6.0	20.0	500
4x1.0	1.2	0.18	1.45	1.8	0.42	5.5	6.5	20.0	500
6x1.0	1.2	0.18	1.45	1.8	0.42	6.6	7.6	20.0	500
8x1.0	1.2	0.18	1.45	1.8	0.56	7.7	8.7	20.0	500
1x1.5	1.55	0.22	1.95	2.3	0.28	3.1	3.7	13.7	400
2x1.5	1.55	0.22	1.95	2.3	0.42	5.7	6.7	13.7	400
3x1.5	1.55	0.22	1.95	2.3	0.42	6.0	7.0	13.7	400
4x1.5	1.55	0.22	1.95	2.3	0.42	6.6	7.6	13.7	400
6x1.5	1.55	0.22	1.95	2.3	0.56	8.3	9.3	13.7	400
8x1.5	1.55	0.22	1.95	2.3	0.56	8.9	10.1	13.7	400
1x2.5	2.0	0.28	2.5	2.85	0.56	4	4.4	8.21	400
2x2.5	2.0	0.28	2.5	2.85	0.56	7.3	8.3	8.21	400
3x2.5	2.0	0.28	2.5	2.85	0.56	7.7	8.7	8.21	400
4x2.5	2.0	0.28	2.5	2.85	0.56	8.4	9.6	8.21	400

MUTPAIRS CABLES INDIVIDUALLY SCREENED AND SHEATHED WITH AN OVERALL SHEATH 300/500 V - EN 50306-4



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper according to EN 60228 configuration according to single core

Insulation

Double layer of olefinic thermoplastic mixture Thickness and outer diameter: see single core

Core identification

White numbered if not elsewhere specified

Assembling

2 conductors + eventual filler and tape are twisted together

Pair

Each pair screened and sheathed

Assembling

N° pairs + eventual filler and tape are assembled together

Sheath

Type crosslinked LSZH see table 3
Black if not elsewhere specified
Thickness and outer diameter according to cable class, E exposed, P protected

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C see table 3

Minimum bending radius

5xØ

(*)

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

EN 50266-2-5

EN 50266-2-4

EN 61034-1/2

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)see table 3



**MUTIPAIRS CABLES INDIVIDUALLY SCREENED AND SHEATHED
WITH AN OVERALL SHEATH 300/500 V - EN 50306-4**

MAIN FEATURES CLASS E

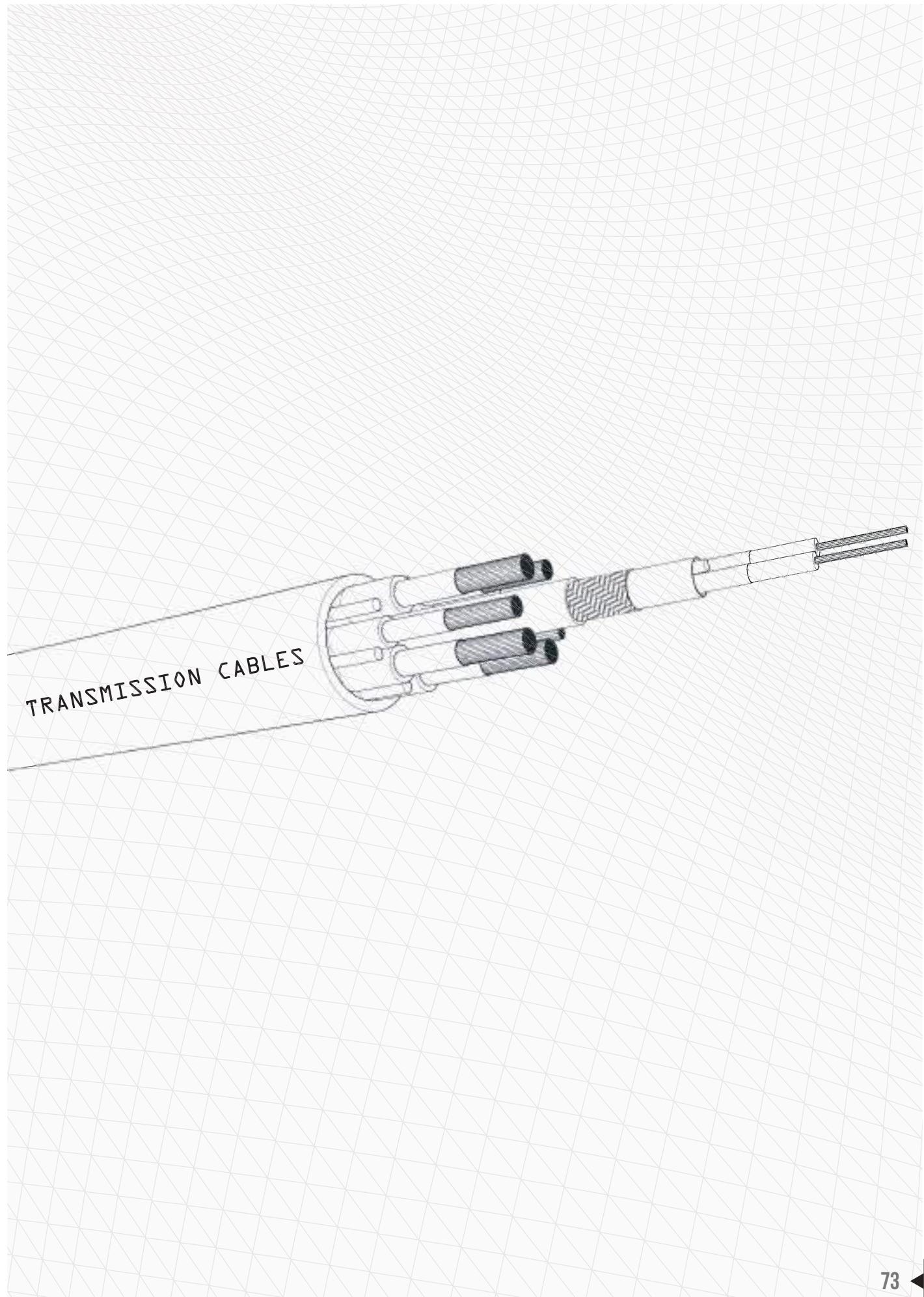
Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø		Minimum thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
[nxmm ²]	[mm]	[mm]	min.	max.	[mm]	min.	max.	max.	min.
2x2x0.5	0.85	0.18	1.15	1.45	1.0	10.1	11.3	40.1	600
3x2x0.5	0.85	0.18	1.15	1.45	1.0	10.8	12.0	40.1	600
4x2x0.5	0.85	0.18	1.15	1.45	1.0	11.8	13.0	40.1	600
7x2x0.5	0.85	0.18	1.15	1.45	1.0	13.9	15.5	40.1	600
2x2x0.75	1.05	0.18	1.35	1.65	1.0	10.9	12.1	26.7	500
3x2x0.75	1.05	0.18	1.35	1.65	1.0	11.6	12.8	26.7	500
4x2x0.75	1.05	0.18	1.35	1.65	1.0	12.8	14.0	26.7	500
7x2x0.75	1.05	0.18	1.35	1.65	1.0	15.1	16.7	26.7	500
2x2x1.0	1.2	0.18	1.45	1.8	1.0	11.3	12.5	20.0	500
3x2x1.0	1.2	0.18	1.45	1.8	1.0	12.0	13.2	20.0	500
4x2x1.0	1.2	0.18	1.45	1.8	1.0	13.2	14.4	20.0	500
7x2x1.0	1.2	0.18	1.45	1.8	1.0	15.7	17.3	20.0	500
2x2x1.5	1.55	0.22	1.95	2.3	1.0	13.3	14.5	13.7	400
3x2x1.5	1.55	0.22	1.95	2.3	1.0	14.0	15.6	13.7	400
4x2x1.5	1.55	0.22	1.95	2.3	1.0	15.5	17.1	13.7	400
7x2x1.5	1.55	0.22	1.95	2.3	1.0	18.7	20.3	13.7	400

**MULTI-PAIRS CABLES INDIVIDUALLY SCREENED AND SHEATHED
WITH AN OVERALL SHEATH 300/500 V - EN 50306-4**

MAIN FEATURES CLASS P

Nominal cross-sectional area	Conductor diameter Ø	Mean thickness of insulation	Core diameter Ø		Minimum thickness of sheath	Overall diameter Ø		Resistance of conductor @20°C	Insulation resistance @20°C
			min.	max.		min.	max.	max.	min.
[nxmm ²]	[mm]	[mm]	[mm]	mm]	[mm]	[mm]	[mm]	[Ω/km]	[MΩ.km]
2x2x0.5	0.85	0.18	1.15	1.45	0.56	9.0	10.2	40.1	600
3x2x0.5	0.85	0.18	1.15	1.45	0.56	9.6	10.8	40.1	600
4x2x0.5	0.85	0.18	1.15	1.45	0.56	10.7	11.9	40.1	600
7x2x0.5	0.85	0.18	1.15	1.45	0.56	13.0	14.2	40.1	600
2x2x0.75	1.05	0.18	1.35	1.65	0.56	9.8	11.0	26.7	500
3x2x0.75	1.05	0.18	1.35	1.65	0.56	10.5	11.7	26.7	500
4x2x0.75	1.05	0.18	1.35	1.65	0.56	11.6	12.8	26.7	500
7x2x0.75	1.05	0.18	1.35	1.65	0.56	14.0	15.6	26.7	500
2x2x1.0	1.2	0.18	1.45	1.8	0.56	10.2	11.6	20.0	500
3x2x1.0	1.2	0.18	1.45	1.8	0.56	10.9	12.1	20.0	500
4x2x1.0	1.2	0.18	1.45	1.8	0.56	12.1	13.3	20.0	500
7x2x1.0	1.2	0.18	1.45	1.8	0.56	14.6	16.2	20.0	500
2x2x1.5	1.55	0.22	1.95	2.3	0.56	12.2	13.4	13.7	400
3x2x1.5	1.55	0.22	1.95	2.3	0.56	13.1	14.3	13.7	400
4x2x1.5	1.55	0.22	1.95	2.3	0.56	14.3	15.9	13.7	400
7x2x1.5	1.55	0.22	1.95	2.3	0.56	17.6	19.2	13.7	400

► TK-TRANSMISSION CABLES



► TK-MVB 2x0.50 OR 4x0.50 / 2x0.50 FR OR 4x0.50 FR (MULTIFUNCTION VEHICLE BUS)



CABLE SPECIFICATIONS



(*)

Conductor

Stranded tinned copper 0.50 mm²

Special thermoplastic polymer

Insulation

White-Red-Black-Blue for 4x0.50

White - Black for 2x0.50

Flame barrier tape (*)

Core identification

White-Red-Black-Blue for 4x0.50

White - Black for 2x0.50

Protection

Assembling

2 or 4 conductors + eventual filler and tape are assembled together

Screen

Aluminium/Mylar tape + tinned copper braid

Sheath

Crosslinked material type EM 104, flame retardant, halogen free black or green



TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

Fire resistant

EN 50200 PH 15(*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*)Only for FR version



► TK-MVB 2x0.50 OR 4x0.50 / 2x0.50 FR OR 4x0.50 FR (MULTIFUNCTION VEHICLE BUS)

MAIN FEATURES

	TK-MVB 2x0.50	TK-MVB 4x0.50	TK-MVB 2x0.50 FR	TK-MVB 4x0.50 FR
Conductor resistance	≤ 40.1 Ω/km	≤ 40.1 Ω/km	≤ 40.1 Ω/km	≤ 40.1 Ω/km
Insulation resistance	≥ 500 MΩxkm	≥ 500 MΩxkm	≥ 500 MΩxkm	≥ 500 MΩxkm
Test voltage	2000 V	2000 V	2000 V	2000 V
Characteristic Impedance	@ 0.5 ÷ 3 MHz	120 ± 12 Ω	120 ± 12 Ω	120 ± 12 Ω
	@ 1.5 MHz	120 ± 6 Ω	120 ± 6 Ω	120 ± 6 Ω
Transfer Impedance	≤ 20 MHz	≤ 1 mΩ/m	≤ 1 mΩ/m	≤ 1 mΩ/m
Mutual capacitance		≤ 46 pF/m	≤ 46 pF/m	≤ 46 pF/m
Nominal Velocity of Propagation		78%	78%	78%
Next	@ 0.75 - 3 MHz	≥ 55 dB	≥ 55 dB	≥ 55 dB
Attenuation	@ 1.5 MHz	≤ 15 dB/km	≤ 15 dB/km	≤ 15 dB/km
	@ 3 MHz	≤ 20 dB/km	≤ 20 dB/km	≤ 20 dB/km
Nominal weight		65 kg/km	90 kg/km	85 kg/km
Nominal diameter		6.8 mm	7.4 mm	7.5 mm
				8.0 mm

► TK-MVB 4x0.50+4x0.25 (MULTIFUNCTION VEHICLE BUS)

ON REQUEST



CABLE SPECIFICATIONS



TECHNICAL DATA

Conductor

Stranded tinned copper 0.50 mm²

Insulation

Special thermoplastic polymer

Core identification

White-Red-Black-Blue

Conductor

Stranded tinned copper 0.25 mm²

Insulation

Tecnopolymer compounds (double layer) compliant to EN 50306-1

White numbered

Core identification

Total assembling

4x0.50 mm² + 4x0.25 mm² with eventual filler and synthetic tape

Total Screen

Tinned Copper Braid

Total Sheath

Crosslinked material type EM 104, flame retardant, halogen free

Black or Green

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

6xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

Smoke density

EN 50266-2-5

Halogen-free

EN 61034-1/2

Fumes

EN 50267-2-1/2

No corrosive and toxic fumes



► TK-MVB 4x0.50+4x0.25 (MULTIFUNCTION VEHICLE BUS)

MAIN FEATURES

TK-MVB 4x0.50+4x0.25		
Conductor resistance	≤ 40.1 Ω/km (0.50mm ²)	≤ 90.1 Ω/km (0.25mm ²)
Insulation resistance	≥ 250 MΩxkm	
Test voltage	2000 V	
Characteristic	@ 0.5 ÷ 3 MHz	120 ± 12 Ω
Impedance	@ 1.5 MHz	120 ± 6 Ω
Mutual capacitance	≤ 46 pF/m	
Nominal Velocity of Propagation	78%	
Attenuation	@ 1.5 MHz	≤ 17 dB/km
	@ 3 MHz	≤ 25 dB/km
Nominal weight	95 kg/km	
Nominal diameter	7.4 mm	

► TK-RS485 2x2x0.50 OR 4x2x0.50

ON REQUEST



CABLE SPECIFICATIONS

Conductors

Insulation

Core identification

Stranded tinned copper 0.50 mm²

Special thermoplastic polymer

White/Red - Black/Blue for 2 pairs
White/Blue - White/ Orange
White/Green - White/ Brown
for 4 pairs

Pair

Assembling

Screen

Sheath

Two conductors twisted together

2 or 4 pairs + eventual filler
and tape are assembled together

Aluminium/Mylar tape + tinned
copper braid

Crosslinked material type EM 104,
flame retardant, halogen free black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

EN 61034-1/2

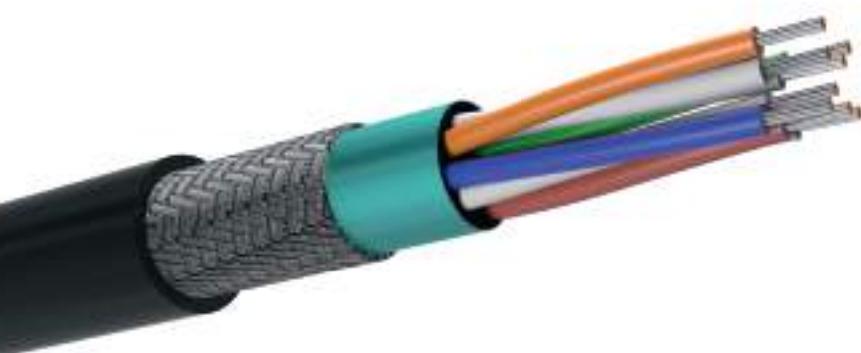
Smoke density

EN 50267-2-1/2

Halogen-free

No corrosive and toxic fumes

Fumes



► TK-RS485 2x2x0.50 OR 4x2x0.50

MAIN FEATURES

	TK-RS485 2x2x0.50	TK-RS485 4x2x0.50
Conductor resistance	$\leq 40.1 \Omega/\text{km}$	$\leq 40.1 \Omega/\text{km}$
Insulation resistance	$\geq 500 \text{ M}\Omega\text{xkm}$	$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage	2000 V	2000 V
Characteristic Impedance @ 0.75 ÷ 3 MHz	$120 \pm 12 \Omega$	$120 \pm 12 \Omega$
Transfer Impedance @ ≤ 30 MHz	$\leq 30 \text{ m}\Omega/\text{m}$	$\leq 30 \text{ m}\Omega/\text{m}$
Mutual capacitance	$\leq 46 \text{ pF/m}$	$\leq 46 \text{ pF/m}$
Nominal Velocity of Propagation	78%	78%
@ 1 MHz	$\leq 12.5 \text{ dB/km}$	$\leq 12.5 \text{ dB/km}$
Attenuation @ 2 MHz	$\leq 18 \text{ dB/km}$	$\leq 18 \text{ dB/km}$
@ 3 MHz	$\leq 22.5 \text{ dB/km}$	$\leq 22.5 \text{ dB/km}$
Nominal weight	165 kg/km	180 kg/km
Nominal diameter	10.2 mm	11.0 mm



CABLE SPECIFICATIONS

Conductors

Stranded tinned copper 0.50 mm²

Insulation

Special thermoplastic polymer

Pair colour

White-Red

Conductors

Stranded tinned copper 0.50 mm²

Insulation

Special double layers of olefinic

Core identification

Black

Total assembling

1 pair and single core + eventual filler and tape are assembled together

Total Screen

Aluminium/Mylar tape + tinned copper braid

Total Sheath

Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

EN 61034-1/2

Smoke density

EN 50267-2-1/2

Halogen-free

No corrosive and toxic fumes

Fumes



MAIN FEATURES

TK-RS485 2x0.50+1x0.50		
Conductor resistance		$\leq 40.1 \Omega/\text{km}$
Insulation resistance		$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage		2000 V
Characteristic Impedance	@ 0.75 ÷ 3 MHz	$120 \pm 12 \Omega$
	@ 1 MHz	$120 \pm 6 \Omega$
Transfer Impedance	@ ≤ 30 MHz	$\leq 30 \text{ m}\Omega/\text{m}$
Mutual capacitance		$\leq 46 \text{ pF/m}$
Nominal Velocity of Propagation		78%
Attenuation	@ 1 MHz	$\leq 12.5 \text{ dB/km}$
	@ 2 MHz	$\leq 18 \text{ dB/km}$
	@ 3 MHz	$\leq 22.5 \text{ dB/km}$
Nominal weight		70 kg/km
Nominal diameter		6.8 mm



CABLE SPECIFICATIONS

Conductors

Stranded tinned copper 0.60 mm²



Insulation

Special thermoplastic polymer



Pair colour

White-Red



First screen

Tinned copper braid



Inner sheath

Crosslinked material type EM 104,
flame retardant, halogen free Black



Second screen

Tinned copper braid



Outer Sheath

Crosslinked material type EM 104,
flame retardant, halogen free Black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

5xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes



MAIN FEATURES

TK-RS485 2x0.60	
Conductor resistance	$\leq 32.2 \Omega/\text{km}$
Insulation resistance	$\geq 3000 \text{ M}\Omega\text{km}$
Test voltage	2000 V
Characteristic Impedance @ 1 MHz	$120 \pm 6 \Omega$
Transfer Impedance @ ≤ 30 MHz	$\leq 10 \text{ m}\Omega/\text{m}$
Mutual capacitance	$\leq 50 \text{ pF/m}$
Nominal Velocity of Propagation	78%
Attenuation @ 200 KHz	$\leq 6 \text{ dB/km}$
Nominal weight	125 kg/km
Nominal diameter	8.8 mm



CABLE SPECIFICATIONS

Conductors	Stranded tinned copper AWG22
Insulation	Special thermoplastic polymer
Pair colour	White-Blue White Orange
First screen	Alu/Poliester or Alu/Poliester Alu
Second screen	Tinned copper braid
Sheath	Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating voltage	300 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50266-2-5
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



► TK-RS485 2x2xAWG22

MAIN FEATURES

TK-RS485 2x2xAWG22

Conductor resistance	$\leq 55.0 \Omega/\text{km}$
Insulation resistance	$\geq 250 \text{ M}\Omega\text{km}$
Test voltage	1000 V
Characteristic Impedance @ 1÷100 MHz	$120 \pm 15 \Omega$
Mutual capacitance	$\leq 45 \text{ pF/m}$
Nominal Velocity of Propagation	78%
Attenuation @ 1 MHz	$\leq 1.8 \text{ dB/100m}$
Nominal weight	125 kg/km
Nominal diameter	8.5 mm

► TK-CAN BUS 2x(2x0.25) OR 2x(2x0.50)



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper 0.25 mm² or 0.50 mm²

Insulation Colours

Special thermoplastic polymer
White-Red-Black-Blue

Pair screen

Aluminium/Mylar tape + tinned copper braid

Pair sheath

Crosslinked material type EM 104, flame retardant, halogen free
Black

Overall screen

Tinned copper braid

Overall sheath

Crosslinked material type EM 104, flame retardant, halogen free
Black

TECHNICAL DATA

Operating Voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-4

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes



► TK-CAN BUS 2x(2x0.25) OR 2x(2x0.50)

MAIN FEATURES

	TK-CAN BUS 2x2x0.25	TK-CAN BUS 2x2x0.50
Conductor resistance	≤ 40.1 Ω/km	≤ 40.1 Ω/km
Insulation resistance	≥ 500 MΩxkm	≥ 500 MΩxkm
Test voltage	2000 V	2000 V
Characteristic Impedance @ 0.75 ÷ 3 MHz	120 ± 12 Ω	120 ± 12 Ω
Transfer Impedance @ ≤ 30 MHz	≤ 30 mΩ/m	≤ 30 mΩ/m
Mutual capacitance	≤ 46 pF/m	≤ 46 pF/m
Nominal Velocity of Propagation	78%	78%
	@ 1 MHz	≤ 22.8 dB/km
Attenuation	@ 2 MHz	≤ 33.7 dB/km
	@ 3 MHz	≤ 43.5 dB/km
Nominal weight	180 kg/km	365 kg/km
Nominal diameter	11.8 mm	16.5 mm

► TK-UIC WTB 2x0.50 OR 2x0.75 / 2x0.50 FR OR 2x0.75 FR (WIRED TRAIN BUS)



CABLE SPECIFICATIONS



(*)



Conductors

Stranded tinned copper 0.50 mm² or 0.75 mm²

Insulation

Special thermoplastic polymer

Pair Colour

White - Black

Protection

Flame barrier tape (*)

Screen

Tinned copper braid Aluminium/ Mylar tape + tinned copper braid

Sheath

Crosslinked material type EM 104, flame retardant, halogen free
Black or Blue



TECHNICAL DATA



Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

Fire resistant

EN 50200 PH 15 (*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

(*) only for FR version



► TK-UIC WTB 2x0.50 OR 2x0.75 / 2x0.50 FR OR 2x0.75 FR (WIRED TRAIN BUS)

MAIN FEATURES

	TK-WTB 2x0.50	TK-WTB 2x0.75	TK-WTB 2x0.50 FR	TK-WTB 2x0.75 FR
Conductor resistance	≤ 40.1 Ω/Km	≤ 26.0 Ω/Km	≤ 40.1 Ω/Km	≤ 26.0 Ω/Km
Insulation resistance	≥ 500 MΩxkm	≥ 500 MΩxkm	≥ 500 MΩxkm	≥ 500 MΩxkm
Test voltage	1500 V	1500 V	1500 V	1500 V
Characteristic Impedance	@ 0.5 ÷ 2 MHz	120 ± 12 Ω	120 ± 12 Ω	120 ± 12 Ω
Impedance	@ 1 MHz	120 ± 6 Ω	120 ± 6 Ω	120 ± 6 Ω
Transfer Impedance	@ ≤ 20 MHz	≤ 20 mΩ/m	≤ 20 mΩ/m	≤ 20 mΩ/m
Mutual capacitance		≤ 65 pF/m	≤ 65 pF/m	≤ 65 pF/m
Attenuation	@ 1 MHz	≤ 11 dB/km	≤ 10 dB/km	≤ 13 dB/km
	@ 2 MHz	≤ 17 dB/km	≤ 12 dB/km	≤ 19 dB/km
Nominal weight		90 kg/km	100 kg/km	95 kg/km
Nominal diameter		8.0 mm	8.0 mm	8.5 mm



CABLE SPECIFICATIONS

(*)

Conductors

Stranded tinned copper 0.75 mm²

Special thermoplastic polymer

White - Black

Flame barrier tape (*)

Aluminium/Mylar tape
+ tinned copper braid

Crosslinked material type EM 104,
flame retardant, halogen free Black

Conductors

Stranded tinned copper 10 mm²

Flame barrier tape (*)

Cross-linked Material type EI105

White numbered

Conductors

Stranded tinned copper 6 mm²

Flame barrier tape (*)

Cross-linked Polymer type EI105

White numbered

Conductors

Stranded tinned copper 2.5 mm²

Flame barrier tape (*)

Cross-linked Material type EI105

White numbered

Total assembling

1 Pair with controlled impedance +
4x10mm² + 2x6mm² + 1x2.5mm²
+ eventually filler and tape are
assembled together

Total Sheath

Crosslinked material type EM 104,
flame retardant, halogen free
Black

(*) only for FR version

TECHNICAL DATA

Operating voltage

300 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50264-2-4

Fire resistant

EN 50362 PH 15 (*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

► TK-UIC 9 CORE / 9 CORE FR

MAIN FEATURES

	TK-UIC 9 CORE	TK-UIC 9 CORE FR
Conductor resistance	$\leq 26.0 \Omega/\text{Km}$ (0.75mm^2) $\leq 1.95 \Omega/\text{Km}$ (10mm^2) $\leq 3.39 \Omega/\text{Km}$ (6mm^2) $\leq 8.21 \Omega/\text{Km}$ (2.5mm^2)	$\leq 26.0 \Omega/\text{Km}$ (0.75mm^2) $\leq 1.95 \Omega/\text{Km}$ (10mm^2) $\leq 3.39 \Omega/\text{Km}$ (6mm^2) $\leq 8.21 \Omega/\text{Km}$ (2.5mm^2)
Insulation resistance	$\geq 500 \text{ M}\Omega\text{xkm}$	$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage	1500 V	1500 V
Characteristic Impedance	@ 0.5 ÷ 2 MHz @ 1 MHz	$120 \pm 12 \Omega^*$ $120 \pm 6 \Omega^*$
Transfer Impedance	@ ≤ 30 MHz	$\leq 30 \text{ m}\Omega/\text{m}^*$
Mutual capacitance		$\leq 65 \text{ pF/m}^*$
Attenuation	@ 1 MHz @ 2 MHz	$\leq 10 \text{ dB/km}^*$ $\leq 12 \text{ dB/km}^*$
Nominal weight	1050 kg/km	1150 kg/km
Nominal diameter	26.5 mm	28.0 mm

*Only for pair 0.75mm^2



CABLE SPECIFICATIONS	
	Conductors
	Insulation
	Quad colour
	Protection
	Assembling
	Screen
	Sheath
(*)	
TECHNICAL DATA	
	Operating voltage
	Operating temperature
	Minimum bending radius
	300 V
	-40°C ÷ +90°C
	6xØ
FIRE PERFORMANCE	
	Fire propagation
	Fire resistant
	Smoke density
	Halogen-free
	Fumes
	EN 60332-1-2
	EN 50266-2-4
	EN 50200 PH 15 (*)
	EN 61034-1/2
	EN 50267-2-1/2
	No corrosive and toxic fumes

(*) only for FR version

► TK-UIC 12 CORE / 12 CORE FR

MAIN FEATURES

	TK-UIC 12 CORE	TK-UIC 12 CORE FR
Conductor resistance	$\leq 40.1 \Omega/\text{Km}$	$\leq 40.1 \Omega/\text{Km}$
Insulation resistance	$\geq 400 \text{ M}\Omega\text{xkm}$	$\geq 400 \text{ M}\Omega\text{xkm}$
Test voltage	1500 V	1500 V
Transfer Impedance @ $\leq 30 \text{ MHz}$	$\leq 20 \text{ m}\Omega/\text{m}$	$\leq 20 \text{ m}\Omega/\text{m}$
Mutual capacitance	$\leq 65 \text{ pF/m}$	$\leq 65 \text{ pF/m}$
Nominal weight	180 kg/km	200 kg/km
Nominal diameter	11.2 mm	12.0 mm





(*)



CABLE SPECIFICATIONS

Conductors

QUAD 4X1 WITH CONTROLLED IMPEDANCE

Stranded tinned copper 1 mm²

Insulation

Special thermoplastic polymer

Colours

White numbered

Protection

Flame barrier tape (*)

Conductors

Stranded tinned copper 1 mm²

Insulation

Double layers of olefinic insulation according to EN50306

Colours

White numbered

Protection

Flame barrier tape (*)

Total assembling

1 quad with controlled impedance + 3 signal quads + eventually filler and tape are assembled together

Total Screen

Tinned copper braid

Total Sheath

Cross-linked Material, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

(*) only for FR version

Fire propagation

EN 60332-1-2

EN 50266-2-4

Fire resistant

EN 50200 PH 15(*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

► TK-UIC 16 CORE / 16 CORE FR

MAIN FEATURES

	TK-UIC 16 CORE	TK-UIC 16 CORE FR
Conductor resistance	$\leq 20.0 \Omega/\text{Km}$	$\leq 20.0 \Omega/\text{Km}$
Insulation resistance	$\geq 400 \text{ M}\Omega\text{xkm}$	$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage	1500 V	1500 V
Characteristic Impedance @ 0.5 MHz	$120 \pm 6 \Omega^*$	$120 \pm 6 \Omega^*$
Transfer Impedance @ ≤ 20 MHz	$\leq 50 \text{ m}\Omega/\text{m}$	$\leq 50 \text{ m}\Omega/\text{m}$
Mutual capacitance	$\leq 65 \text{ pF/m}^*$	$\leq 65 \text{ pF/m}^*$
Nominal weight	360 kg/km	430 kg/km
Nominal diameter	16.0 mm	18.0 mm

*Only for quad 1mm² with controlled impedance



CABLE SPECIFICATIONS



(*)

(*) only for FR version

Conductors

**PAIR 2X0.75
WITH CONTROLLED IMPEDANCE**

Stranded tinned copper 0.75 mm²

Insulation

Special thermoplastic polymer

Pair Colours

White-Black

Protection

Flame barrier tape (*)

Pair Screen

Tinned copper braid

Sheath

Cross-linked Material,
Flame Retardant, Halogen Free Black

Conductors

**QUAD 4X1
WITH CONTROLLED IMPEDANCE**

Stranded tinned copper 1mm²

Insulation

Special thermoplastic polymer

Pair Colours

White-numbered

Protection

Flame barrier tape (*)

Conductors

SIGNAL QUAD 4X1

Stranded tinned copper 1 mm²

Insulation

Double layers of olefinic insulation
according to EN50306

Pair Colours

White-numbered

Protection

Flame barrier tape (*)

Total assembling

1 quad with controlled impedance
+ 3 signal quads + 1 pair with controlled
impedance + eventually filler and tape
are assembled together

Total Screen

Tinned copper braid

Total Sheath

Cross-linked Material,
Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2
EN 50266-2-4

Fire resistant

EN 50200 / EN 50362 PH 15(*)

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

► TK-UIC 18 CORE / 18 CORE FR

MAIN FEATURES

	TK-UIC 18 CORE	TK-UIC 18 CORE FR
Conductor resistance	$\leq 26.7 \Omega/\text{Km}$ (0.75mm^2) $\leq 20.0 \Omega/\text{Km}$ (1mm^2)	$\leq 26.7 \Omega/\text{Km}$ (0.75mm^2) $\leq 20.0 \Omega/\text{Km}$ (1mm^2)
Insulation resistance	$\geq 500 \text{ M}\Omega\text{xkm}$	$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage	1500 V	1500 V
	@ 0.5 ÷ 2 MHz	$120 \pm 12 \Omega^*$
Characteristic Impedance	@ 1 MHz @ 0.5 MHz	$120 \pm 6 \Omega^*$ $120 \pm 6 \Omega^{**}$
Transfer Impedance	@ ≤ 20 MHz	$\leq 50 \text{ m}\Omega/\text{m}$
Mutual capacitance	$\leq 65 \text{ pF/m}^{* **}$	
Attenuation	@ 1 MHz @ 2 MHz	$\leq 10 \text{ dB/Km}^*$ $\leq 12 \text{ dB/Km}^*$ $\leq 14 \text{ dB/Km}^*$
Nominal weight	515 kg/km	600 kg/km
Nominal diameter	18.0 mm	20.5 mm

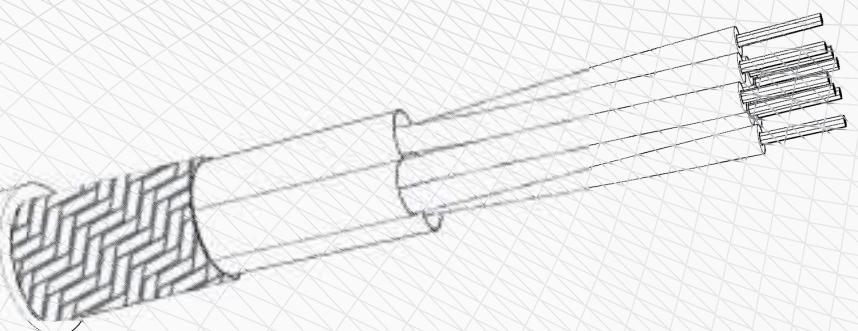
*only for pair 0.75 mm^2

**Only for quad 1mm^2 with controlled impedance.



► ETHERNET CABLES

ETHERNET CABLES



► TK-SF/UTP 2x2xAWG22 CAT.5E OR 4x2xAWG22 CAT.5E



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper AWG22

Special thermoplastic polymer

Insulation

White/Blue;

Yellow/Orange for 2 pair

White/Blue; White/Orange;

White/Green; White/Brown

for 4 pair

Pair Colours

Assembling

2 or 4 pairs + eventual filler and tape are assembled together

Screen

Aluminium/Mylar tape
+ tinned copper braid

Sheath

Crosslinked material type EM 104,
flame retardant, halogen free
green

TECHNICAL DATA

Operating Voltage

300 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10 xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

Smoke density

EN 50266-2-5

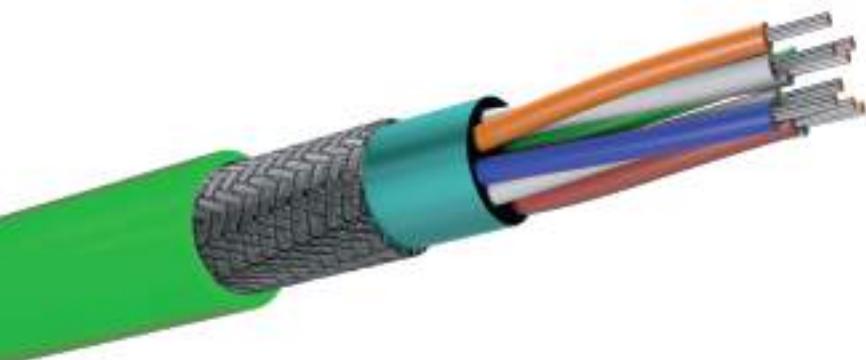
Halogen-free

EN 61034-1/2

Fumes

EN 50267-2-1/2

No corrosive and toxic fumes



► TK-SF/UTP 2x2xAWG22 CAT.5E OR 4x2xAWG22 CAT.5E

MAIN FEATURES

	TK-SF/UTP 2x2xAWG22 CAT.5E	TK-SF/UTP 4x2xAWG22 CAT.5E
Conductor resistance	$\leq 60.0 \Omega/\text{km}$	$\leq 60.0 \Omega/\text{km}$
Insulation resistance	$\geq 500 \text{ M}\Omega\text{xkm}$	$\geq 500 \text{ M}\Omega\text{xkm}$
Test voltage	700 V	700 V
Characteristic Impedance	@ 1÷ 100 MHz	$100 \pm 15 \Omega$
	@ $\leq 1 \text{ MHz}$	$\leq 50 \text{ m}\Omega/\text{m}$
Transfer Impedance	@ $\leq 10 \text{ MHz}$	$\leq 100 \text{ m}\Omega/\text{m}$
	@ $\leq 30 \text{ MHz}$	$\leq 200 \text{ m}\Omega/\text{m}$
Mutual capacitance		$\leq 46 \text{ pF/m}$
Nominal Velocity of Propagation		78%
Nominal weight	65 kg/km	115 kg/km
Nominal diameter	8.0 mm	8.5 mm

► TK-SF/UTP 2x2xAWG22 CAT.5E OR 4x2xAWG22 CAT.5E

MAIN FEATURES

	TK-SF/UTP 2x2xAWG22 CAT.5E	TK-SF/UTP 4x2xAWG22 CAT.5E
Attenuation	1 MHz ≤ 3.2 dB/100m	≤ 3.2 dB/100m
	4 MHz ≤ 6.0 dB/100m	≤ 6.0 dB/100m
	10 MHz ≤ 9.5 dB/100m	≤ 9.5 dB/100m
	16 MHz ≤ 12.1 dB/100m	≤ 12.1 dB/100m
	20 MHz ≤ 13.6 dB/100m	≤ 13.6 dB/100m
	31.25 MHz ≤ 17.1 dB/100m	≤ 17.1 dB/100m
	62.5 MHz ≤ 24.1 dB/100m	≤ 24.1 dB/100m
	100 MHz ≤ 32.0 dB/100m	≤ 32.0 dB/100m
Next	1 MHz ≥ 65.3 dB	≥ 65.3 dB
	4 MHz ≥ 56.3 dB	≥ 56.3 dB
	10 MHz ≥ 50.3 dB	≥ 50.3 dB
	16 MHz ≥ 47.2 dB	≥ 47.2 dB
	20 MHz ≥ 45.8 dB	≥ 45.8 dB
	31.25 MHz ≥ 42.9 dB	≥ 42.9 dB
	62.5 MHz ≥ 38.4 dB	≥ 38.4 dB
	100 MHz ≥ 35.3 dB	≥ 35.3 dB
PSNext	1 MHz ≥ 63.8 dB	≥ 63.8 dB
	4 MHz ≥ 51.8 dB	≥ 51.8 dB
	10 MHz ≥ 43.8 dB	≥ 43.8 dB
	16 MHz ≥ 39.7 dB	≥ 39.7 dB
	20 MHz ≥ 37.8 dB	≥ 37.8 dB
	31.25 MHz ≥ 33.9 dB	≥ 33.9 dB
	62.5 MHz ≥ 27.9 dB	≥ 27.9 dB
	100 MHz ≥ 23.8 dB	≥ 23.8 dB
Return Loss	1 MHz ≥ 23.0 dB	≥ 23.0 dB
	4 MHz ≥ 24.1 dB	≥ 24.1 dB
	10 MHz ≥ 25.0 dB	≥ 25.0 dB
	16 MHz ≥ 25.0 dB	≥ 25.0 dB
	20 MHz ≥ 25.0 dB	≥ 25.0 dB
	31.25 MHz ≥ 23.6 dB	≥ 23.6 dB
	62.5 MHz ≥ 21.5 dB	≥ 21.5 dB
	100 MHz ≥ 20.1 dB	≥ 20.1 dB



CABLE SPECIFICATIONS

Conductor	Stranded tinned copper AWG22
Insulation	Special thermoplastic polymer
Pair Colours	White-Blue; Yellow-Orange
Protection	Flame barrier tape (*)
Assembling	4 conductors + eventual filler and tape are assembled together
Inner Sheath	Halogen free material
Screen	Aluminium/Mylar tape + tinned copper braid
Outer Sheath	Crosslinked material type EM 104, flame retardant, halogen free green

TECHNICAL DATA

Operating Voltage	300 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10 xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2
Smoke density	EN 50266-2-5
Halogen-free	EN 61034-1/2
Fumes	EN 50267-2-1/2
	No corrosive and toxic fumes

(*) only for FR version



► TK-SF/UTP 4xAWG22 CAT.5E / 4xAWG22 FR CAT.5E

MAIN FEATURES

	TK-SF/UTP 4xAWG22 CAT.5E	TK-SF/UTP 4xAWG22 FR CAT.5E
Conductor resistance	≤ 60.0 Ω/km	≤ 60.0 Ω/km
Insulation resistance	≥ 500 MΩxkm	≥ 500 MΩxkm
Test voltage	1000 V	1000 V
Characteristic Impedance	@ 1÷ 100 MHz	100 ± 15 Ω
	@ ≤ 1 MHz	≤ 50 mΩ/m
Transfer Impedance	@ ≤ 10 MHz	≤ 100 mΩ/m
	@ ≤ 30 MHz	≤ 200 mΩ/m
Mutual capacitance	≤ 46 pF/m	≤ 46 pF/m
Nominal Velocity of Propagation	78%	78%
Nominal weight	65 kg/km	70 kg/km
Nominal diameter	6.5 mm	7.0 mm

► TK-SF/UTP 4xAWG22 CAT.5E / 4xAWG22 FR CAT.5E

MAIN FEATURES

	TK-SF/UTP 4xAWG22 CAT.5E	TK-SF/UTP 4xAWG22 FR CAT.5E
Attenuation	1 MHz	≤ 3.2 dB/100m
	4 MHz	≤ 6.0 dB/100m
	10 MHz	≤ 9.5 dB/100m
	16 MHz	≤ 12.1 dB/100m
	20 MHz	≤ 13.6 dB/100m
	31.25 MHz	≤ 17.1 dB/100m
	62.5 MHz	≤ 24.1 dB/100m
	100 MHz	≤ 32.0 dB/100m
Next	1 MHz	≥ 65.3 dB
	4 MHz	≥ 56.3 dB
	10 MHz	≥ 50.3 dB
	16 MHz	≥ 47.2 dB
	20 MHz	≥ 45.8 dB
	31.25 MHz	≥ 42.9 dB
	62.5 MHz	≥ 38.4 dB
	100 MHz	≥ 35.3 dB
PSNext	1 MHz	≥ 63.8 dB
	4 MHz	≥ 51.8 dB
	10 MHz	≥ 43.8 dB
	16 MHz	≥ 39.7 dB
	20 MHz	≥ 37.8 dB
	31.25 MHz	≥ 33.9 dB
	62.5 MHz	≥ 27.9 dB
	100 MHz	≥ 23.8 dB
Return Loss	1 MHz	≥ 23.0 dB
	4 MHz	≥ 24.1 dB
	10 MHz	≥ 25.0 dB
	16 MHz	≥ 25.0 dB
	20 MHz	≥ 25.0 dB
	31.25 MHz	≥ 23.6 dB
	62.5 MHz	≥ 21.5 dB
	100 MHz	≥ 20.1 dB



CABLE SPECIFICATIONS

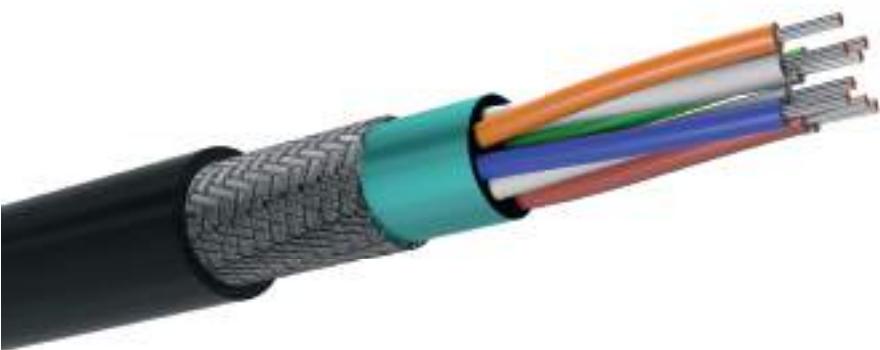
Conductor	Stranded tinned copper AWG26
Insulation	Polyethylene
Pair Colours	White/Blue-Blue; White/Orange-Orange; White/Green-Green; White/Brown-Brown
Assembling	4 pairs + eventual filler and tape are assembled together
Screen	Aluminium/Mylar tape + tinned copper braid
Sheath	Crosslinked material type EM 104, flame retardant, halogen free black

TECHNICAL DATA

Operating Voltage	230 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10 xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2
Smoke density	EN 50266-2-5
Halogen-free	EN 61034-1/2
Fumes	EN 50267-2-1/2
	No corrosive and toxic fumes



► TK-SF/UTP 4x2xAWG26 CAT.5E

MAIN FEATURES

TK-SF/UTP 4x2xAWG26 CAT.5E

Conductor resistance	$\leq 170.0 \Omega/\text{km}$	
Insulation resistance	$\geq 500 \text{ M}\Omega\text{xkm}$	
Test voltage	700V	
Characteristic Impedance	@ 1÷ 100 MHz	$100 \pm 12 \Omega$
Mutual capacitance	$\leq 55 \text{ pF/m}$	
Nominal Velocity of Propagation	66%	
Nominal weight	65 kg/km	
Nominal diameter	6.2 mm	

TK-SF/UTP 4x2xAWG26 CAT.5E

Attenuation	1 MHz	$\leq 3.2 \text{ dB}/100\text{m}$
	4 MHz	$\leq 6.0 \text{ dB}/100\text{m}$
	10 MHz	$\leq 9.5 \text{ dB}/100\text{m}$
	16 MHz	$\leq 12.1 \text{ dB}/100\text{m}$
	20 MHz	$\leq 13.6 \text{ dB}/100\text{m}$
	31.25 MHz	$\leq 17.1 \text{ dB}/100\text{m}$
	62.5 MHz	$\leq 24.1 \text{ dB}/100\text{m}$
	100 MHz	$\leq 32.0 \text{ dB}/100\text{m}$
	1 MHz	$\geq 65.3 \text{ dB}$
	4 MHz	$\geq 56.3 \text{ dB}$
Next	10 MHz	$\geq 50.3 \text{ dB}$
	16 MHz	$\geq 47.2 \text{ dB}$
	20 MHz	$\geq 45.8 \text{ dB}$
	31.25 MHz	$\geq 42.9 \text{ dB}$
	62.5 MHz	$\geq 38.4 \text{ dB}$
	100 MHz	$\geq 35.3 \text{ dB}$
	1 MHz	$\geq 63.8 \text{ dB}$
	4 MHz	$\geq 51.8 \text{ dB}$
	10 MHz	$\geq 43.8 \text{ dB}$
	16 MHz	$\geq 39.7 \text{ dB}$
PSNext	20 MHz	$\geq 37.8 \text{ dB}$
	31.25 MHz	$\geq 33.9 \text{ dB}$
	62.5 MHz	$\geq 27.9 \text{ dB}$
	100 MHz	$\geq 23.8 \text{ dB}$
	1 MHz	$\geq 23.0 \text{ dB}$
	4 MHz	$\geq 24.1 \text{ dB}$
	10 MHz	$\geq 25.0 \text{ dB}$
	16 MHz	$\geq 25.0 \text{ dB}$
	20 MHz	$\geq 25.0 \text{ dB}$
	31.25 MHz	$\geq 23.6 \text{ dB}$
Return Loss	62.5 MHz	$\geq 21.5 \text{ dB}$
	100 MHz	$\geq 20.1 \text{ dB}$



CABLE SPECIFICATIONS

Conductor

Stranded bare copper AWG24

Insulation

Polyethylene

Pair Colours

White/Blue; White/Orange;

White/Green; White/Brown

Assembling

2 or 4 pairs + eventual filler and tape are assembled together

Screen

Aluminium/Mylar tape
+ tinned copper braid

Sheath

Crosslinked material type EM 104,
flame retardant, halogen free black

TECHNICAL DATA

Operating Voltage

230 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10 xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

Smoke density

EN 50266-2-5

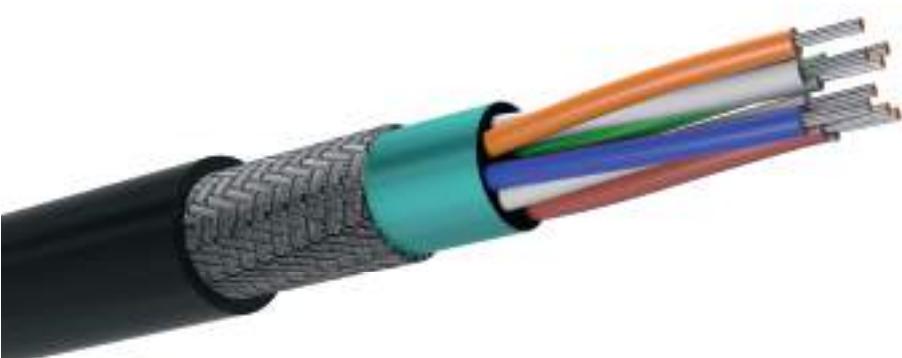
Halogen-free

EN 61034-1/2

Fumes

EN 50267-2-1/2

No corrosive and toxic fumes



► TK-SF/UTP 4x2x AWG24 CAT.5E

MAIN FEATURES

TK-SF/UTP 4x2xAWG24 CAT.5E			TK-SF/UTP 4x2xAWG24 CAT.5E		
Conductor resistance		$\leq 88.0 \Omega/\text{km}$	Attenuation	1 MHz	$\leq 3.2 \text{ dB}/100\text{m}$
Insulation resistance		$\geq 500 \text{ M}\Omega\text{xkm}$		4 MHz	$\leq 6.0 \text{ dB}/100\text{m}$
Test voltage		700 V		10 MHz	$\leq 9.5 \text{ dB}/100\text{m}$
Characteristic Impedance	@ 1÷ 100 MHz	$100 \pm 15 \Omega$		16 MHz	$\leq 12.1 \text{ dB}/100\text{m}$
Transfer Impedance	@ $\leq 1 \text{ MHz}$	$\leq 100 \text{ m}\Omega/\text{m}$		20 MHz	$\leq 13.6 \text{ dB}/100\text{m}$
	@ $\leq 10 \text{ MHz}$	$\leq 100 \text{ m}\Omega/\text{m}$		31.25 MHz	$\leq 17.1 \text{ dB}/100\text{m}$
Mutual capacitance		$\leq 52 \text{ pF/m}$		62.5 MHz	$\leq 24.1 \text{ dB}/100\text{m}$
Nominal Velocity of Propagation		66%		100 MHz	$\leq 32.0 \text{ dB}/100\text{m}$
Nominal weight		70 kg/km	Next	1 MHz	$\geq 65.3 \text{ dB}$
Nominal diameter		7.0 mm		4 MHz	$\geq 56.3 \text{ dB}$
				10 MHz	$\geq 50.3 \text{ dB}$
				16 MHz	$\geq 47.2 \text{ dB}$
				20 MHz	$\geq 45.8 \text{ dB}$
				31.25 MHz	$\geq 42.9 \text{ dB}$
				62.5 MHz	$\geq 38.4 \text{ dB}$
				100 MHz	$\geq 35.3 \text{ dB}$
			PSNext	1 MHz	$\geq 63.8 \text{ dB}$
				4 MHz	$\geq 51.8 \text{ dB}$
				10 MHz	$\geq 43.8 \text{ dB}$
				16 MHz	$\geq 39.7 \text{ dB}$
				20 MHz	$\geq 37.8 \text{ dB}$
				31.25 MHz	$\geq 33.9 \text{ dB}$
				62.5 MHz	$\geq 27.9 \text{ dB}$
				100 MHz	$\geq 23.8 \text{ dB}$
			Return Loss	1 MHz	$\geq 23.0 \text{ dB}$
				4 MHz	$\geq 24.1 \text{ dB}$
				10 MHz	$\geq 25.0 \text{ dB}$
				16 MHz	$\geq 25.0 \text{ dB}$
				20 MHz	$\geq 25.0 \text{ dB}$
				31.25 MHz	$\geq 23.6 \text{ dB}$
				62.5 MHz	$\geq 21.5 \text{ dB}$
				100 MHz	$\geq 20.1 \text{ dB}$



CABLE SPECIFICATIONS

Conductor

Stranded bare copper AWG24

Foam Polyolefin

Insulation

Pair Colours

Pair Screen

Aluminium/Mylar tape

Assembling

4 pairs + eventual filler and tape are assembled together

Overall Screen

Tinned copper braid

Sheath

Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating Voltage

125 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10 xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes



► TK-S/FTP 4x2xAWG24 CAT.7

MAIN FEATURES

TK-S/FTP 4X2XAWG24 CAT.7

Conductor resistance	≤ 88.0 Ω/km
Insulation resistance	≥ 500 MΩxkm
Test voltage	700 V
Characteristic Impedance	@ 1 ÷ 100 MHz 100 ± 15 Ω
Transfer Impedance	@ ≤ 1 MHz ≤ 10 mΩ/m @ ≤ 30 MHz ≤ 30 mΩ/m
Mutual capacitance	≤ 43 pF/m
Nominal Velocity of Propagation	78%
Nominal weight	97 kg/km
Nominal diameter	8.8 mm

TK-S/FTP 4X2XAWG24 CAT.7

Attenuation	1 MHz	≤ 2.9 dB/100m
	4 MHz	≤ 5.5 dB/100m
	10 MHz	≤ 8.5 dB/100m
	16 MHz	≤ 10.8 dB/100m
	20 MHz	≤ 12.1 dB/100m
	31.25 MHz	≤ 15.2 dB/100m
	62.5 MHz	≤ 21.7 dB/100m
	100 MHz	≤ 27.8 dB/100m
	155 MHz	≤ 35 dB/100m
	200 MHz	≤ 40.1 dB/100m
Next	300 MHz	≤ 50 dB/100m
	600 MHz	≤ 73.3 dB/100m
	1 MHz	≥ 80 dB
	4 MHz	≥ 80 dB
	10 MHz	≥ 80 dB
	16 MHz	≥ 80 dB
	20 MHz	≥ 80 dB
	31.25 MHz	≥ 80 dB
	62.5 MHz	≥ 75.1 dB
	100 MHz	≥ 72.4 dB
PSNext	155 MHz	≥ 69.6 dB
	200 MHz	≥ 67.9 dB
	300 MHz	≥ 65.3 dB
	600 MHz	≥ 60.8 dB
	1 MHz	≥ 80 dB
	4 MHz	≥ 80 dB
	10 MHz	≥ 74 dB
	16 MHz	≥ 69.6 dB
	20 MHz	≥ 68 dB
	31.25 MHz	≥ 64.1 dB
Return Loss	62.5 MHz	≥ 58.1 dB
	100 MHz	≥ 54 dB
	155 MHz	≥ 50.2 dB
	200 MHz	≥ 48 dB
	300 MHz	≥ 44.5 dB
	600 MHz	≥ 38.4 dB
	1 MHz	≤ 20 dB/100m
	4 MHz	≤ 23.1 dB/100m
	10 MHz	≤ 25.0 dB/100m
	16 MHz	≤ 25.0 dB/100m
	20 MHz	≤ 25.0 dB/100m
	31.25 MHz	≤ 23.6 dB/100m
	62.5 MHz	≤ 21.5 dB/100m
	100 MHz	≤ 20.1 dB/100m
	155 MHz	≤ 18.8 dB/100m
	200 MHz	≤ 17.3 dB/100m
	300 MHz	≤ 17.3 dB/100m
	600 MHz	≤ 17.3 dB/100m



CABLE SPECIFICATIONS

Conductor	Stranded bare copper AWG23
Insulation	Foam Polyolefin
Pair Colours	White-Blue; White-Orange; White-Green; White-Brown
Pair Screen	Aluminium/Mylar tape
Assembling	4 pairs + eventual filler and tape are assembled together
Overall Screen	Tinned copper braid
Sheath	Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating Voltage	125 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10 xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50266-2-5
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



MAIN FEATURES

TK-S/FTP 4X2XAWG23 CAT.7		TK-S/FTP 4X2XAWG23 CAT.7	
Conductor resistance	≤ 69.5 Ω/km	1 MHz	≤ 2.9 dB/100m
Insulation resistance	≥ 500 MΩxkm	4 MHz	≤ 5.5 dB/100m
Test voltage	700 V	10 MHz	≤ 8.5 dB/100m
Characteristic Impedance"	@ 1 ÷ 100 MHz	16 MHz	≤ 10.8 dB/100m
	100 ± 15 Ω	20 MHz	≤ 12.1 dB/100m
		31.25 MHz	≤ 15.2 dB/100m
Transfer Impedance	@ ≤ 1 MHz	62.5 MHz	≤ 21.7 dB/100m
	≤ 10 mΩ/m	100 MHz	≤ 27.8 dB/100m
	@ ≤ 10 MHz	155 MHz	≤ 35 dB/100m
	≤ 15 mΩ/m	200 MHz	≤ 40.1 dB/100m
	@ ≤ 30 MHz	300 MHz	≤ 50 dB/100m
	≤ 30 mΩ/m	600 MHz	≤ 73.3 dB/100m
Mutual capacitance	≤ 43 pF/m	1 MHz	≥ 80 dB
Nominal Velocity of Propagation	78%	4 MHz	≥ 80 dB
Nominal weight	91 kg/km	10 MHz	≥ 80 dB
Nominal diameter	8.8 mm	16 MHz	≥ 80 dB
		20 MHz	≥ 80 dB
		31.25 MHz	≥ 80 dB
		62.5 MHz	≥ 75.1 dB
		100 MHz	≥ 72.4 dB
		155 MHz	≥ 69.6 dB
		200 MHz	≥ 67.9 dB
		300 MHz	≥ 65.3 dB
		600 MHz	≥ 60.8 dB
		1 MHz	≥ 80 dB
		4 MHz	≥ 80 dB
		10 MHz	≥ 74 dB
		16 MHz	≥ 69.6 dB
		20 MHz	≥ 68 dB
		31.25 MHz	≥ 64.1 dB
		62.5 MHz	≥ 58.1 dB
		100 MHz	≥ 54 dB
		155 MHz	≥ 50.2 dB
		200 MHz	≥ 48 dB
		300 MHz	≥ 44.5 dB
		600 MHz	≥ 38.4 dB
		1 MHz	≤ 20 dB/100m
		4 MHz	≤ 23.1 dB/100m
		10 MHz	≤ 25.0 dB/100m
		16 MHz	≤ 25.0 dB/100m
		20 MHz	≤ 25.0 dB/100m
		31.25 MHz	≤ 23.6 dB/100m
		62.5 MHz	≤ 21.5 dB/100m
		100 MHz	≤ 20.1 dB/100m
		155 MHz	≤ 18.8 dB/100m
		200 MHz	≤ 17.3 dB/100m
		300 MHz	≤ 17.3 dB/100m
		600 MHz	≤ 17.3 dB/100m



CABLE SPECIFICATIONS

Conductor

Stranded bare copper AWG23

Foam Polyolefin

Insulation

White-Blue;

White-Orange;

White-Green;

White-Brown

Pair Colours

Assembling

Overall Screen

Sheath

Aluminium/Mylar tape

4 pairs + eventual filler

and tape are assembled together

Tinned copper braid

Crosslinked material type EM 104,

flame retardant, halogen free

black



TECHNICAL DATA

Operating Voltage

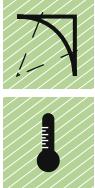
125 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

7xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

Smoke density

EN 50266-2-5

Halogen-free

EN 61034-1/2

Fumes

EN 50267-2-1/2

No corrosive and toxic fumes

Also available for jumper version



MAIN FEATURES

TK-S/FTP 4X2XAWG23 CAT.7A		TK-S/FTP 4X2XAWG23 CAT.7A		
Conductor resistance [Ω/km]	≤ 69.5 Ω/km	Attenuation	1 MHz ≤ 3.01 dB/100m	
Insulation resistance [MΩxkm]	≥ 500 MΩxkm		4 MHz ≤ 5.38 dB/100m	
Test voltage [V]	700 V		10 MHz ≤ 8.71 dB/100m	
Characteristic Impedance"	@ 1÷ 100 MHz 100 ± 10 Ω		16 MHz ≤ 11.0 dB/100m	
Transfer Impedance	@ ≤ 1 MHz ≤ 10 mΩ/m		20 MHz ≤ 12.29 dB/100m	
	@ ≤ 10 MHz ≤ 10 mΩ/m		62.5 MHz ≤ 21.785dB/100m	
	@ ≤ 30 MHz ≤ 30 mΩ/m		100 MHz ≤ 27.78 dB/100m	
	@ ≤ 100 MHz ≤ 100 mΩ/m		200 MHz ≤ 39.70 dB/100m	
Mutual capacitance [pF/m]	≤ 43 pF/m		300 MHz ≤ 49.03 dB/100m	
Nominal Velocity of Propagation	78%		600 MHz ≤ 70.65 dB/100m	
Nominal weight [kg/km]	105 kg/km		800 MHz ≤ 82.38 dB/100m	
Nominal diameter [mm]	9.2 mm		1000 MHz ≤ 92.89 dB/100m	
		Next	1 MHz ≥ 78 dB	
			4 MHz ≥ 78 dB	
			10 MHz ≥ 78 dB	
			16 MHz ≥ 78 dB	
			20 MHz ≥ 78 dB	
			62.5 MHz ≥ 78 dB	
			100 MHz ≥ 78 dB	
			200 MHz ≥ 73.88 dB	
			300 MHz ≥ 71.24 dB	
			600 MHz ≥ 66.73 dB	
		PSNext	800 MHz ≥ 64.85 dB	
			1000 MHz ≥ 63.40 dB	
			1 MHz ≥ 75 dB	
			4 MHz ≥ 75 dB	
			10 MHz ≥ 75 dB	
			16 MHz ≥ 75 dB	
			20 MHz ≥ 75 dB	
			62.5 MHz ≥ 75 dB	
			100 MHz ≥ 75 dB	
			200 MHz ≥ 70.88 dB	
		Return Loss	300 MHz ≥ 68.24 dB	
			600 MHz ≥ 63.73 dB	
			800 MHz ≥ 61.85 dB	
			1000 MHz ≥ 60.40 dB	
			1 MHz ≤ 20 dB/100m	
			4 MHz ≤ 23.1 dB/100m	
			10 MHz ≤ 25.0 dB/100m	
			16 MHz ≤ 25.0 dB/100m	
			20 MHz ≤ 25.0 dB/100m	
			62.5 MHz ≤ 20.74 dB/100m	
		100 MHz ≤ 18.99 dB/100m	100 MHz ≤ 18.99 dB/100m	
			200 MHz ≤ 16.4 dB/100m	
			300 MHz ≤ 15.6 dB/100m	
			600 MHz ≤ 15.6 dB/100m	
			800 MHz ≤ 15.6 dB/100m	
			1000 MHz ≤ 15.6 dB/100m	

► COAXIAL CABLES

COAXIAL CABLES



CABLE SPECIFICATIONS

Conductor	Stranded bare copper 7x0.75 mm
Insulation	Polyethylene
Screen	Copper braid (with eventual tape)
Sheath	Cross-linked Material type EM104, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating Voltage	3700 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2
Smoke density	EN 50266-2-5
Halogen-free	EN 61034-1/2
Fumes	EN 50267-2-1/2
	No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance	$\leq 5.77 \Omega/\text{km}$	
Test voltage	10000 V	
Characteristic Impedance	$50 \pm 2 \Omega$	
Mutual capacitance	$\leq 105 \text{ pF/m}$	
Nominal Velocity of Propagation	66%	
Attenuation	@ 10 MHz	$\leq 1.80 \text{ dB}/100\text{m}$
	@ 200 MHz	$\leq 8.86 \text{ dB}/100\text{m}$
	@ 400 MHz	$\leq 13.5 \text{ dB}/100\text{m}$
	@ 3000 MHz	$\leq 52.5 \text{ dB}/100\text{m}$
Nominal weight	160 kg/km	
Nominal diameter	10.30 mm	





CABLE SPECIFICATIONS

Conductor	Silver copper 0.9 mm
Insulation	Polyethylene
First Screen	Silver Copper braid
Second Screen	Silver Copper braid (with eventual tape)
Sheath	Cross-linked Material type EM104, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating Voltage	1900 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50305 9.1.2
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance ≤ 29.43 Ω/km

Test voltage 5000 V

Characteristic Impedance 50 ± 2 Ω

Mutual capacitance ≤ 105 pF/m

Nominal Velocity of Propagation 66%

Attenuation @ 10 MHz ≤ 7 dB/100m

@ 50 MHz ≤ 15.7 dB/100m

@ 100 MHz ≤ 27 dB/100m

@ 400 MHz ≤ 39 dB/100m

@ 1000 MHz ≤ 68.9 dB/100m

Nominal weight 55 kg/km

Nominal diameter 5.4 mm





CABLE SPECIFICATIONS

Conductor	Stranded Silver copperweld 7x0.16 mm
Insulation	Special thermoplastic polymer
Screen	Silver Copper braid (with eventual tape)
Sheath	Cross-linked Material type EM104, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating Voltage	500 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50305 9.1.2
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance ≤ 276.0 Ω/km

Test voltage 2000 V

Characteristic Impedance 50 ± 2 Ω

Mutual capacitance ≤ 95 pF/m

Nominal Velocity of Propagation 70%

Attenuation @ 10 MHz ≤ 19.7 dB/100m

@ 50 MHz ≤ 24.6 dB/100m

@ 100 MHz ≤ 36 dB/100m

@ 400 MHz ≤ 68.9 dB/100m

@ 1000 MHz ≤ 102 dB/100m

@ 3000 MHz ≤ 205 dB/100m

Nominal weight 15 kg/km

Nominal diameter 3.1 mm





CABLE SPECIFICATIONS

Conductor

Stranded Silver copper 19x0.20 mm

Insulation

Special thermoplastic polymer

First Screen

Tinned Copper braid

Second Screen

Tinned Copper braid
(with eventual tape)

Sheath

Cross-linked Material type EM104, Flame Retardant, Halogen Free Black



TECHNICAL DATA

Operating Voltage

750 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance

$\leq 30.0 \Omega/\text{km}$

Test voltage

2000 V

Characteristic Impedance

$50 \pm 2 \Omega$

Mutual capacitance

$\leq 100 \text{ pF/m}$

Nominal Velocity of Propagation

71%

Attenuation

@ 400 MHz $\leq 31.3 \text{ dB/100m}$

@ 3000 MHz $\leq 100.7 \text{ dB/100m}$

Nominal weight

50 kg/km

Nominal diameter

4.95 mm





CABLE SPECIFICATIONS

Conductor

Stranded tinned copper 19x0.18 mm

Insulation

Polyethylene

Screen

Tinned Copper braid
(with eventual tape)

Sheath

Cross-linked Material type EM104,
Flame Retardant, Halogen Free
Black



TECHNICAL DATA

Operating Voltage

2000 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2
EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes



MAIN FEATURES

Conductor resistance	≤ 48.0 Ω/km
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Test voltage	5000 V
Characteristic Impedance	50 ± 2 Ω
Mutual capacitance	≤ 100 pF/m
Nominal Velocity of Propagation	66%
Attenuation @ 50 MHz	≤ 11.5 dB/100m
Attenuation @ 100 MHz	≤ 20 dB/100m
Attenuation @ 200 MHz	≤ 24.3 dB/100m
Attenuation @ 400 MHz	≤ 62 dB/100m
Attenuation @ 1000 MHz	≤ 39.4 dB/100m
Nominal weight	40 kg/km
Nominal diameter	4.95 mm




CABLE SPECIFICATIONS

Conductor	Stranded Silver copper 7x0.75 mm
Insulation	XLPE
First Screen	Silver Copper braid
Second Screen	Silver Copper braid (with eventual tape)
Sheath	Cross-linked Material type EM104, Flame Retardant, Halogen Free Black



TECHNICAL DATA

Operating Voltage	1400 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ



FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50266-2-5
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



MAIN FEATURES

Conductor resistance	$\leq 6.0 \Omega/\text{km}$	
Test voltage	10000 V	
Characteristic Impedance	$50 \pm 2 \Omega$	
Mutual capacitance	$\leq 100 \text{ pF/m}$	
Nominal Velocity of Propagation	66%	
Attenuation	@ 50 MHz	$\leq 4.7 \text{ dB}/100\text{m}$
	@ 100 MHz	$\leq 7.1 \text{ dB}/100\text{m}$
	@ 200 MHz	$\leq 10.4 \text{ dB}/100\text{m}$
	@ 500 MHz	$\leq 17.4 \text{ dB}/100\text{m}$
	@ 1000 MHz	$\leq 26.2 \text{ dB}/100\text{m}$
	@ 3000 MHz	$\leq 55 \text{ dB}/100\text{m}$
Nominal weight	205 kg/km	
Nominal diameter	10.8 mm	





CABLE SPECIFICATIONS

Conductor	Silver copperweld 0.95 mm
Insulation	Special thermoplastic polymer
First Screen	Silver Copper braid
Second Screen	Silver Copper braid (with eventual tape)
Sheath	Cross-linked Material type EM104, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating Voltage	2500 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50305 91.2
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance	≤ 63.97 Ω/km
Test voltage	5000 V
Characteristic Impedance	50 ± 2 Ω
Mutual capacitance	≤ 100 pF/m
Nominal Velocity of Propagation	72%
Attenuation	@ 300 MHz ≤ 27 dB/100m
	@ 600 MHz ≤ 40 dB/100m
	@ 900 MHz ≤ 51 dB/100m
	@ 1200 MHz ≤ 61 dB/100m
	@ 1500 MHz ≤ 69 dB/100m
	@ 3000 MHz ≤ 107 dB/100m
Nominal weight	60 kg/km
Nominal diameter	5.0 mm





CABLE SPECIFICATIONS

Conductor

Stranded copperweld 7x0.16 mm

Insulation

Polyethylene

Screen

Tinned Copper braid
(with eventual tape)

Sheath

Cross-linked Material type EM104, Flame Retardant, Halogen Free Black



TECHNICAL DATA

Operating Voltage

750 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ



FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes



MAIN FEATURES

Conductor resistance	$\leq 290.0 \Omega/\text{km}$
----------------------	-------------------------------

Test voltage	2000 V
Characteristic Impedance	$50 \pm 2 \Omega$
Mutual capacitance	$\leq 100 \text{ pF/m}$
Nominal Velocity of Propagation	66%
@ 50 MHz	$\leq 17.5 \text{ dB/100m}$
@ 100 MHz	$\leq 25.8 \text{ dB/100m}$
@ 200 MHz	$\leq 38.2 \text{ dB/100m}$
Attenuation @ 400 MHz	$\leq 54.9 \text{ dB/100m}$
@ 600 MHz	$\leq 68.6 \text{ dB/100m}$
@ 860 MHz	$\leq 81.2 \text{ dB/100m}$
@ 1000 MHz	$\leq 87.5 \text{ dB/100m}$
Nominal weight	12.5 kg/km
Nominal diameter	2.80 mm




CABLE SPECIFICATIONS



Conductor
Insulation
Screen

Second Screen

Sheath

Stranded tinned copper 19x0.30 mm
Special thermoplastic polymer
Aluminium/ Mylar / Aluminium tape

Tinned Copper braid
(with eventual tape)
Cross-linked Material type EM104,
Flame Retardant, Halogen Free
Black

TECHNICAL DATA

Operating Voltage

750 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2
EN 50305 91.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance	$\leq 30.0 \Omega/\text{km}$
-----------------------------	------------------------------

Test voltage	2000 V
---------------------	--------

Characteristic Impedance	$50 \pm 2 \Omega$
---------------------------------	-------------------

Mutual capacitance	$\leq 82 \text{ pF/m}$
---------------------------	------------------------

Nominal Velocity of Propagation	81%
--	-----

Attenuation	@ 50 MHz	$\leq 6.5 \text{ dB}/100\text{m}$
	@ 100 MHz	$\leq 9.3 \text{ dB}/100\text{m}$
	@ 300 MHz	$\leq 16.3 \text{ dB}/100\text{m}$
	@ 400 MHz	$\leq 19.0 \text{ dB}/100\text{m}$
	@ 860 MHz	$\leq 28.5 \text{ dB}/100\text{m}$
	@ 1000 MHz	$\leq 30.9 \text{ dB}/100\text{m}$

Nominal weight	50 kg/km
-----------------------	----------

Nominal diameter	5.4 mm
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CABLE SPECIFICATIONS



Conductor

Stranded tinned copper 19x0.20 mm

Insulation

Foam Polyolefin

Screen

Tinned Copper braid
(with eventual tape)

Sheath

Cross-linked Material type EM104, Flame Retardant, Halogen Free Black

TECHNICAL DATA

Operating Voltage

500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50266-2-5

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

Conductor resistance	$\leq 33.2 \Omega/\text{km}$
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Test voltage	2000 V
--------------	--------

Characteristic Impedance	$75 \pm 3 \Omega$
--------------------------	-------------------

Mutual capacitance	$\leq 56 \text{ pF/m}$
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Nominal Velocity of Propagation	78%
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@ 5 MHz	$\leq 2.20 \text{ dB/100m}$
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@ 10 MHz	$\leq 3.20 \text{ dB/100m}$
----------	-----------------------------

@ 50 MHz	$\leq 7.90 \text{ dB/100m}$
----------	-----------------------------

Attenuation @ 100 MHz	$\leq 11.20 \text{ dB/100m}$
-----------------------	------------------------------

@ 200 MHz	$\leq 16.10 \text{ dB/100m}$
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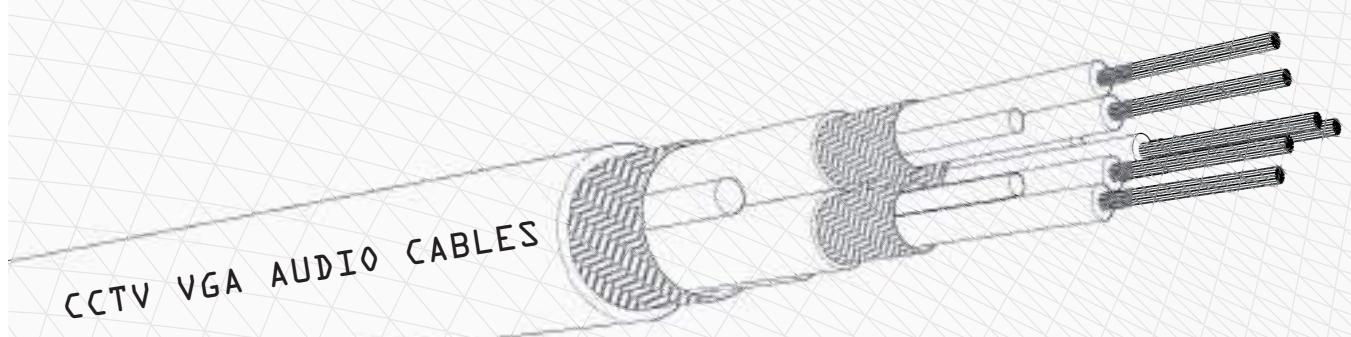
@ 400 MHz	$\leq 23.30 \text{ dB/100m}$
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@ 1000 MHz	$\leq 39.40 \text{ dB/100m}$
------------	------------------------------

Nominal weight	65 kg/km
----------------	----------

Nominal diameter	6.15 mm
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CCTV VGA AUDIO CABLES



CABLE SPECIFICATIONS

Conductors	Stranded tinned copper AWG28 (7x0.127) mm
Insulation	Special thermoplastic polymer
Screen	Tinner copper braid
Sheath	Crosslinked material type EM 104, flame retardant, halogen free Red-Green-Blue
AWG26	
Conductors	Stranded tinned copper AWG26 (7x0.16) mm
Insulation	Cross-linked Material type EI105
Colours	White-Orange-Brown
Total assembling	3 coax + 3 x A26WG + eventual filler and tape are assembled together
Total Screen	Tinner copper braid
Total Sheath	Crosslinked material type EM 104, flame retardant, halogen free Grey

TECHNICAL DATA

Operating Voltage	30 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50266-2-5
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



► TK-CCTV / VGA 3 COAX 75 Ω+3xAWG26

MAIN FEATURES

TK-CCTV / VGA 3 COAX 75 Ω+3xAWG26

Conductor resistance $\leq 230.0 \Omega/\text{km}$ (AWG28)
 $\leq 140.0 \Omega/\text{km}$ (AWG26)

Insulation resistance $\geq 500 \text{ M}\Omega\text{xkm}$

Test voltage 1000 V

Characteristic Impedance @ 1 MHz $75 \pm 10 \Omega^*$

Mutual capacitance $\leq 56 \text{ pF/m}$

Nominal Velocity of Propagation 80%

Nominal weight 115 kg/km

Nominal diameter 8.8 mm

*Only for Coax



CABLE SPECIFICATIONS

Conductor	Stranded tinned copper 0.60 mm ²
Insulation	Special thermoplastic polymer
Colours	White-Blue; White-Orange; White-Green
Pair screen	Tinned copper braid
Pair sheath	Crosslinked material type EM 104, flame retardant, halogen free Black
Assembling	3 elements + eventual filler and tape are assembled together
Screen	Tinner copper braid
Sheath	Crosslinked material type EM 104, flame retardant, halogen free Black



TECHNICAL DATA

Operating Voltage	300/500 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2 EN 50266-2-4
Smoke density	EN 61034-1/2
Halogen-free	EN 50267-2-1/2
Fumes	No corrosive and toxic fumes



► TK-AUDIO 3x(2x0.60)

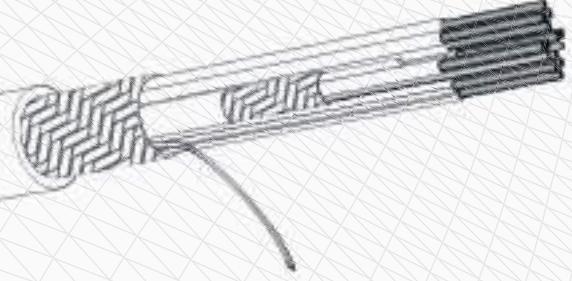
MAIN FEATURES

TK-AUDIO 3x(2x0.60)

Conductor resistance	$\leq 37.0 \Omega/\text{km}$
Insulation resistance	$\geq 2500 \text{ M}\Omega\text{km}$
Test voltage	2000 V
Characteristic Impedance @ 1 MHz	$110 \pm 10 \Omega$
Mutual capacitance	$\leq 50 \text{ pF/m}$
Nominal Velocity of Propagation	78%
Nominal weight	335 kg/km
Nominal diameter	15.5 mm

► RF VALIDATION TICKET CABLES

RF VALIDATION TICKET CABLES





CABLE SPECIFICATIONS

**Conductor
Insulation**

Stranded tinned copper AWG22
Special double layer of oleolefinic
insulation according to EN50306

Colors

White-Red

Assembling

2 conductors + eventual filler and tape
are assembled together

Screen

Tinner copper braid + drain wire

Sheath

Crosslinked material type EM 104,
flame retardant, halogen free
Black

TECHNICAL DATA

Operating voltage

300/500 V

Operating temperature

-40°C ÷ +90°C

Minimum bending radius

10xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

TK-RF VALIDATION TICKET 2xAWG22

Conductor resistance ≤ 55.0 Ω/km

Insulation resistance ≥ 250.0 MΩxkm

Test voltage 2000 V

Nominal weight 40 kg/km

Nominal diameter 5.0 mm





CABLE SPECIFICATIONS

Conductors	Stranded tinned copper AWG22
Insulation	Special double layer of oleolefinic insulation according to EN50306
Pair Colors	White-Red
Pair Screen	Tinned copper braid + drain wire
Pair Protection	Syntetic tape
Conductors	Stranded tinned copper AWG22
Insulation	Special double layer of oleolefinic insulation according to EN50306
Colours	Black-Orange-Blue-Brown
Total assembling	1 pair and 4 conductors + eventually filler and tape are assembled together
Total Screen	Tinner copper braid + drain wire
Total Sheath	Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating voltage	300/500 V
Operating temperature	-40°C ÷ +90°C
Minimum bending radius	10xØ

FIRE PERFORMANCE

Fire propagation	EN 60332-1-2
Smoke density	EN 50266-2-5
Halogen-free	EN 61034-1/2
Fumes	EN 50267-2-1/2

MAIN FEATURES

TK-RF VALIDATION TICKET 4xAWG22+2xAWG22	
Conductor resistance	≤ 55.0 Ω/km
Insulation resistance	≥ 250.0 MΩxkm
Test voltage	2000 V
Nominal weight	90 kg/km
Nominal diameter	7.0 mm





CABLE SPECIFICATIONS

Conductors	SINGLE PAIR SCREENED
Insulation	Stranded tinned copper AWG22
Pair Colors	Special double layer of oleolefinic insulation according to EN50306
Pair Screen	White-Red; Black-Orange
Pair Protection	Tinned copper braid + drain wire
	Syntetic tape
Conductor	OTHER ELEMENTS
Insulation	Stranded tinned copper AWG22
Quad Colours	Special double layer of oleolefinic insulation according to EN50306
Total assembling	(Blue-Brown-Green-Pink)-(Violet-White/Red-White/Black-White/Orange)
Total Screen	2 pair and 2 quad + eventually filler and tape are assembled together
Total Sheath	Tinned copper braid + drain wire
	Crosslinked material type EM 104, flame retardant, halogen free Black

TECHNICAL DATA

Operating Voltage	300/500 V
Operating temperature	-40°C ÷ +90°C see table 2
Minimum bending radius	10xØ

FIRE PERFORMANCE

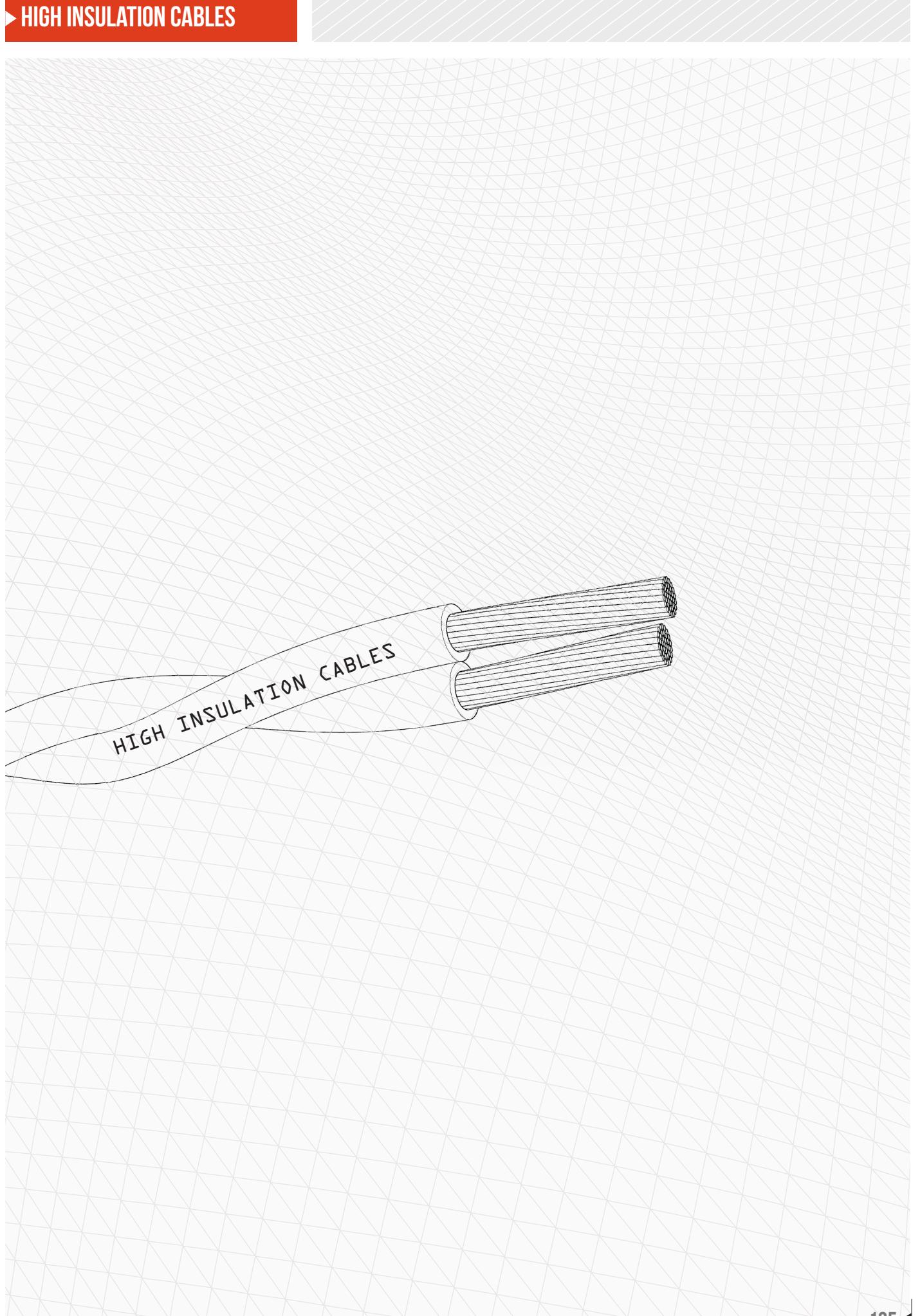
Fire propagation	EN 60332-1-2
Smoke density	EN 50266-2-5
Halogen-free	EN 61034-1/2
Fumes	EN 50267-2-1/2
	No corrosive and toxic fumes



MAIN FEATURES

TK-RF VALIDATION TICKET 8xAWG22+2x(2xAWG22)	
Conductor resistance	≤ 55.0 Ω/km
Insulation resistance	≥ 250.0 MΩxkm
Test voltage	2000 V
Nominal weight	170 kg/km
Nominal diameter	10.4 mm

> HIGH INSULATION CABLES



HIGH INSULATION CABLES



CABLE SPECIFICATIONS



TECHNICAL DATA

Conductor

Stranded tinned copper 19x0.25 mm (1x1 mm²)

Stranded tinned copper 37x0.23 mm (1x1.5 mm²)

Stranded tinned copper 37x0.30 mm (1x2.5 mm²)

Insulation

Special oleolefinic insulation according to EN50306

Operating voltage

1.8/3 kV

Operating temperature

-40°C ÷ +105°C

Minimum bending radius

4xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

TK-HIGH INSULATION

	1x1 mm ²	1x1.5 mm ²	1x2.5 mm ²
Voltage rating	1.8/3 kV	1.8/3 kV	1.8/3 kV
Test voltage	6500 V	6500 V	6500 V
Nominal weight	12 kg/km	17 kg/km	28 kg/km
Nominal diameter	2.1 mm	2.45 mm	2.95 mm
Minimum bending radius	4xØ	4xØ	4xØ



TK-MULTICORE HIGH INSULATION



CABLE SPECIFICATIONS

Conductor

Stranded tinned copper 19x0.20mm (2xAWG20)
Stranded tinned copper 19x0.127mm (2xAWG24)
Stranded tinned copper 19x0.20mm (3xAWG20)
Stranded tinned copper 19x0.127mm (3xAWG24)

Insulation

Special oleolefinic insulation according to EN50306

Assembling

Twisted conductors

TECHNICAL DATA

Operating voltage

1.8/3 kV

Operating temperature

-40°C ÷ +105°C

Minimum bending radius

4xØ

FIRE PERFORMANCE

Fire propagation

EN 60332-1-2

EN 50305 9.1.2

Smoke density

EN 61034-1/2

Halogen-free

EN 50267-2-1/2

Fumes

No corrosive and toxic fumes

MAIN FEATURES

TK-MULTICORE HIGH INSULATION

	2xAWG20	2xAWG24	3xAWG20	3xAWG24
Voltage rating	1.8/3 kV	1.8/3 kV	1.8/3 kV	1.8/3 kV
Test voltage	6500 V	6500 V	6500 V	6500 V
Nominal weight	15 kg/km	8 kg/km	23 kg/km	11 kg/km
Nominal diameter	3.8 mm	2.4 mm	4.1 mm	2.7 mm
Minimum bending radius	4xØ	4xØ	4xØ	4xØ





SPECIAL ELECTRICAL AND OPTICAL CABLES

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