

Automotive products

RADOX® cables and system solutions

Edition 2020/09



RADOX[®] automotive single core cables



Low voltage cable for road vehicles, class D and F according to ISO 6722 and ISO 19642, temperature rating -40 to +150 °C/200 °C

A growing demand of sensors, higher operating temperatures and restricted space are typical in today's motor compartments. These cables have been developed with these specific requirements in mind.

These cables are class D temperature range cables with reduced outer diameter. They have superb resistance to motor oils, fluids and hydrolysis. Thanks to their electron beam cross-linked RADOX insulation, these cables have excellent resistance to extremes of temperature and abrasion even with reduced outer diameter. Furthermore these RADOX cables have outstanding electrical characteristics.

The characteristics of these RADOX cables make them ideal for use in a wide range of applications, where space is at a premium and where cables are subjected to high temperatures. Even high humidity levels and motor vehicle fluids do not negatively affect the lifetime of the cables.

General features

- Operating temperature range -55 to +200 °C
- Reduced outer diameter
- Resistant to motor fluids, fuels
- Hydrolysis resistant
- Resistant to pressure at high temperatures
- High abrasion resistance
- Excellent electrical characteristics

RADOX 155S FLR	8
RADOX 155S RW	10
ETFE	12
RADOX anticapillary	14

RADOX[®] anticapillary (single insulation)



Number of conductors	1
Cross section	0.35 10 mm ²
Voltage rating	60/1500 V DC
Temperature range	-55 to +150 °C (3000 h)
Min. bending radius	3 × cable dia.

Composition of cable

1. Conductor stranded tinned or bare copper, special coating
2. Insulation RADOX 155S, extruded irradiation cross-linked polyolefin (FLR91X), various colours

Characteristics and specialities

- Barrier sealed, avoids penetration of fluids along conductor (fluids such as water and AdBlue)
- High and low temperature resistance
- Ozone and weathering resistance
- Resistant to pressure at high temperature
- Resistant to motor oils, fuels, hydrolysis and AdBlue
- Flame retardant
- High abrasion resistance
- Easy to strip and process

Application

Low voltage cable with anticapillary properties for use in road vehicle applications.

Standards

Conductor	General
ISO 6722, ISO 19642-3 and -5	ISO 6722, ISO 19642-3 and -5, class D, thin-wall
DIN EN 13602, Cu-ETPI-A (CW003A)	

Customer approvals

- Daimler DR 15863
- BMW 9 338 777.9 – 796.9
- JLR
- Bosch N34_AE011D_S014
- Ford ES-AU5T-1A348-AA

For further technical details please refer to our data sheets STD 582554D, STD 412701 (filled with fluorinated grease), STD 582272 (filled with silicon grease).

RADOX[®] anticapillary (single insulation)

Extract from our delivery programme

Dimensions according to ISO 6722-1/ISO 19642 structure A

Cross section	Conductor					Core	
	Nominal mm ²	Number of individual wires	Diameter of individual wires max. mm	Diameter max. mm	Resistance at 20 °C max. Ω/km		Wall thickness min. mm
tinned					bare		
0.35	7	0.26	0.8	54.5	52.0	0.20	1.25 ± 0.05
0.5	19	0.19	1.0	38.2	37.1	0.22	1.5 ± 0.1
0.75	19	0.23	1.2	25.4	24.7	0.24	1.8 ± 0.1
1.0	19	0.26	1.35	19.1	18.5	0.24	2.0 ± 0.1
1.5	19	0.32	1.7	13.0	12.7	0.24	2.3 ± 0.1

Datasheet STD 582554

Dimensions according to ISO 6722-1/ISO 19642

Cross section	Conductor					Core	
	Nominal mm ²	Number of individual wires	Diameter of individual wires max. mm	Diameter max. mm	Resistance at 20 °C max. Ω/km		Wall thickness min. mm
tinned					bare		
2	19	0.38	1.86	9.69	9.42	0.28	2.65 ± 0.15
2.5	19	0.42	2.2	7.82	7.60	0.28	2.85 ± 0.15
4	19	0.55	2.75	4.85	4.71	0.32	3.55 ± 0.15
6	19	0.67	3.3	3.23	3.14	0.32	4.15 ± 0.15
10	37	0.61	3.9	1.85	1.82	0.73	5.75 ± 0.20

Datasheet STD 412701

RADOX[®] anticapillary (double insulation)



Number of conductors	1
Cross section	0.35 to 6 mm ²
Voltage rating	60/1500 V DC
Temperature range	-55 to +150 °C (3000 h)
Min. bending radius	3 × cable dia.

Composition of cable

1. Conductor stranded tinned or bare copper, special coating
2. Insulation RADOX 155S, extruded irradiation cross-linked polyolefin
3. Insulation extruded irradiation crosslinked fluoropolymer (PVDF-X) for hot oil applications

Characteristics and specialities

- Barrier sealed, avoids penetration of fluids along conductor (fluids such as water, AdBlue and hot oils)
- High and low temperature resistance
- Ozone and weathering resistance
- Resistant to pressure at high temperature
- Resistant to motor oils, fuels and hydrolysis
- Flame retardant
- High abrasion resistance
- Easy to strip and process

Application

Low voltage cable with anticapillary properties for use in road vehicle applications.

Standards

Conductor	General
DIN 72551 part 6	ISO 6722 class D, thin-wall
ISO 6722	DIN 72551 part 5 (1993)
DIN EN 13602, Cu-ETPI-A (CW003A)	LV 112

Customer approvals

- Bosch N34A AEO11D_S015

For further technical details please refer to our data sheets STD 470829 (filled with fluorinated grease), STD 759203 (filled with silicon grease).

RADOX[®] anticapillary (double insulation)

Extract from our delivery programme

Dimensions according to ISO 6722/ISO 19642 structure B

Cross section	Conductor					Core	
	Nominal mm ²	Number of individual wires	Diameter of individual wires max. mm	Diameter max. mm	Resistance at 20 °C max. Ω/km		Wall thickness min. mm
tinned					bare		
0.5	19	0.19	1.0	38.2	37.1	0.22	1.5 ± 0.1
0.75	19	0.23	1.2	25.4	24.7	0.24	1.8 ± 0.1
1	19	0.26	1.3	19.1	18.5	0.24	2.0 ± 0.1
1.5	19	0.32	1.7	13.0	12.7	0.24	2.3 ± 0.1
2	19	0.38	1.8	9.69	9.42	0.28	2.65 ± 0.15
4	19	0.55	2.5	4.85	4.71	0.32	3.55 ± 0.15

Datasheet STD 470829

Dimensions according to ISO 6722/ISO 19642

Cross section	Conductor					Core	
	Nominal mm ²	Number of individual wires	Diameter of individual wires max. mm	Diameter max. mm	Resistance at 20 °C max. Ω/km		Wall thickness min. mm
tinned					bare		
0.5	19	0.19	1.0	38.2	37.1	0.22	1.5 ± 0.1
0.75	19	0.23	1.2	25.4	24.7	0.24	1.8 ± 0.1
1	19	0.26	1.35	19.1	18.5	0.24	2.0 ± 0.1
1.5	19	0.32	1.7	13.0	12.7	0.24	2.3 ± 0.1
2.5	19	0.42	2.2	7.82	7.60	0.28	2.85 ± 0.15

Datasheet STD 759203