



## **DESCRIPTION**

- Technical designation REF3Z1-K(S)-AL for multipolar cables and REFA3Z1-K(S)-AL for unipolar cables.
- Construction Standard: IEC 60502-1, UNE 21123-4, ET 03.354.019.6.
- Low Voltage Directive (LVD) compliant: 2014/35/UE
- Construction Products Regulation (CPR) - (EU) N° 305/2011:
  - ✓ **Reaction to fire Dca-s2-d2-a2** brown jacket.
- DoP Number: **D003-ENG-REF3Z1KALUMINUM**
- DoP Number: **D005-ENG-REFA3Z1KALUMINUM**
- RoHS compliant.
- **Power railway indoor infrastructures.**

Safety Cable (S), halogen-free, flame retardant, armoured with corrugated tinned steel tape, used for the power supply in railway facilities not susceptible to accumulation of smoke and toxic products in case of fire and that do not require special protection.

## **TECHNICAL CHARACTERISTICS**

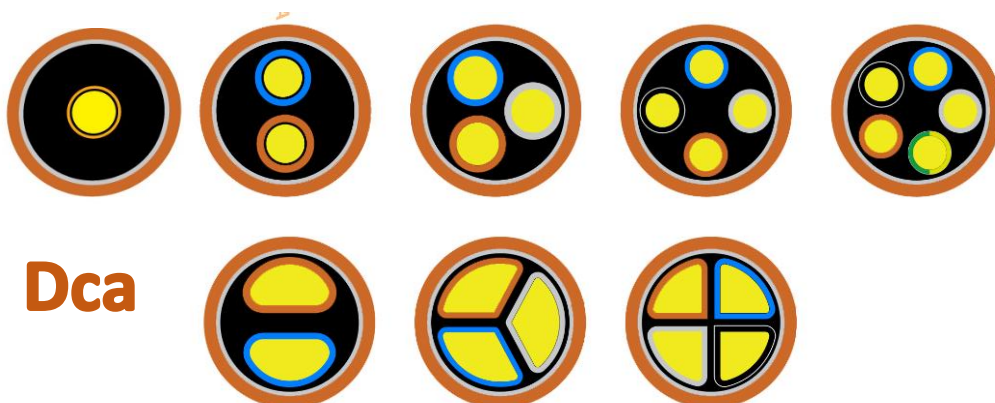
Conductor	Flexible aluminum conductor (Class V) according to UNE-EN 60288 and IEC 60228 Circular sections $\leq 35\text{mm}^2$ and sectorial for upper sections (except unipolar cables).
Insulation	Cross-linked Polyethylene (XLPE), type DIX 3 according to UNE 21123, UNE HD 603 and XLPE according to IEC 60502.
Inner sheath	Polyethylene
Armour	Corrugated tinned steel tape (F3 - multipolar) or aluminum (FA3 – unipolar).
Outer sheath	Thermoplastic polyolefin sheath DMZ2 type according to UNE-HD-620-1.
Nominal Voltage	0,6/1 kV C.A
Voltage Test	3.500 V C.A.
Maximum conductor temperatures	Normal operation 90°C Short circuit (5sec) 250°C

**OTHER CHARACTERISTICS**

- Non-flame propagation according to EN 60332-1-2, IEC 60332-1-2.
- Low halogen content according to EN 60754-2, EN 60754-1, IEC 60754-2, IEC 60754-1.
- Low corrosive gas emission according to EN 60754-2, IEC 60754-2.
- Low smoke emission according to EN 61034-2, IEC 61034-2.
- **Fire reaction (CPR) Dca-s2. d2, a2.**
- UV resistance (1 cycle) according to UNE 211605.
- Water absorption resistance.
- High cold resistance.
- Impact and rodent resistance.
- **Flexible cable (F3).**



INSULATION COLORS					
Conductors	Black	Brown	Grey	Blue	G/Y
1		●			
2		●		●	
3	●	●	●		
3G		●		●	●
4	●	●	●	●	
4G	●	●	●		●
5G	●	●	●	●	●



**SECTIONS**

Section (mm <sup>2</sup> )	Resistance at 20 °C (Ohm/km)	Nominal outer diameter (mm)	Weight (kg/m)	CPR
1x16	1,91	15,4	0,198	Dca-s2-d2-a2
1x25	1,2	17,2	0,251	Dca-s2-d2-a2
1x35	0,868	18,3	0,294	Dca-s2-d2-a2
1x50	0,641	20,2	0,364	Dca-s2-d2-a2
1x70	0,443	22,2	0,450	Dca-s2-d2-a2
1x95	0,320	24,7	0,561	Dca-s2-d2-a2
1x120	0,253	25,9	0,656	Dca-s2-d2-a2
1x150	0,206	28,5	0,795	Dca-s2-d2-a2
1x185	0,164	30,9	0,949	Dca-s2-d2-a2
1x240	0,125	33,8	1,159	Dca-s2-d2-a2
1x300	0,100	36,7	1,390	Dca-s2-d2-a2
2x16	1,91	22,4	0,482	Dca-s2-d2-a2
2x25	1,2	26	0,642	Dca-s2-d2-a2
2x35	0,868	28,4	0,772	Dca-s2-d2-a2
2x50	0,641	27,8	0,712	Dca-s2-d2-a2
2x70	0,443	31,8	0,924	Dca-s2-d2-a2
2x95	0,320	36,1	1,168	Dca-s2-d2-a2
2x120	0,253	38,3	1,378	Dca-s2-d2-a2
2x150	0,206	42,9	1,700	Dca-s2-d2-a2
2x185	0,164	47,3	2,059	Dca-s2-d2-a2
2x240	0,125	52	2,502	Dca-s2-d2-a2
2x300	0,100	57	3,030	Dca-s2-d2-a2
3x16	1,91	23,5	0,536	Dca-s2-d2-a2
3x25	1,2	27,3	0,730	Dca-s2-d2-a2
3x35	0,868	29,9	0,886	Dca-s2-d2-a2
3x50	0,641	31,9	0,955	Dca-s2-d2-a2
3x70	0,443	36,5	1,241	Dca-s2-d2-a2
3x95	0,320	42,3	1,620	Dca-s2-d2-a2
3x120	0,253	44,9	1,928	Dca-s2-d2-a2
3x150	0,206	50,1	2,364	Dca-s2-d2-a2
3x185	1,91	55,3	2,874	Dca-s2-d2-a2
4x16	1,2	25,3	0,617	Dca-s2-d2-a2
4x25	0,868	29,8	0,859	Dca-s2-d2-a2
4x35	0,641	32,6	1,054	Dca-s2-d2-a2
4x50	0,443	35,9	1,188	Dca-s2-d2-a2
4x70	0,320	41,6	1,587	Dca-s2-d2-a2
4x95	0,253	48	2,059	Dca-s2-d2-a2
4x120	0,206	51	2,458	Dca-s2-d2-a2
4x150	0,129	57,2	3,033	Dca-s2-d2-a2

Section (mm <sup>2</sup> )	Resistance at 20 °C (Ohm/km)	Nominal outer diameter (mm)	Weight (kg/m)	CPR
5x16	1,21	27,3	0,746	Dca-s2-d2-a2
5x25	0,78	32,5	1,071	Dca-s2-d2-a2
5x35	0,554	35,7	1,314	Dca-s2-d2-a2
5x50	0,386	41,4	1,765	Dca-s2-d2-a2
5x70	0,272	47,4	2,336	Dca-s2-d2-a2
5x95	0,206	54,8	3,097	Dca-s2-d2-a2
5x120	0,161	58,2	3,651	Dca-s2-d2-a2

*\*The values of the outer diameters are approximate, always within production tolerance. For more information, please contact us.*

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