

H07ZZ-F BS EN 50525-3-21 LSZH Rubber Flexible Cable



Eland Product Group: **A6Z**

APPLICATION

For installation where fire, smoke emission and toxic fumes create a potential threat to life and equipment. Examples of use include supplying mobile power units, UPS installations, stage lighting and audio visual equipment. This cable will withstand medium mechanical stresses and is suitable for both installation indoors and outdoors.

CONSTRUCTION

Conductor

Class 5 flexible copper conductor according to BS EN 60228 (previously BS 6360)

Insulation

LSZH (Low Smoke Zero Halogen) cross-linked compound
Type EI8 according to EN 50363

Sheath

LSZH (Low Smoke Zero Halogen) cross-linked compound
Type EM8 according to EN 50363

CABLE STANDARDS

BS EN 50525-3-21, CENELEC HD22-13, CEI 20-19 Part 13,
BS EN/IEC 60332-3



The electrical and dimensional properties of this product are measured by the Technical and Quality Assurance department at the Eland Cables laboratory. Cable performance in respect of conductor resistance, construction quality (workmanship), dimensional consistency, and other parameters are verified to published standards and approved product drawings. Conformance to RoHS (Restriction of the use of Hazardous Substances) is determined and confirmed.

CHARACTERISTICS

Voltage Rating (U₀/U)

450/750V

Temperature Rating

Fixed: -20°C to +90°C

Flexed: -5°C to +50°C

Minimum Bending Radius

Fixed: 4 x overall diameter

Flexed: 6 x overall diameter

Core Identification

Single core: ● Black

2 core: ● Blue ● Brown

3 core: ● Green/Yellow ● Blue ● Brown

4 core: ● Green/Yellow ● Brown ● Black ● Grey

5 core: ● Green/Yellow ● Blue ● Brown ● Black ● Grey

6 core and above: ● Black with ○ White numbers

● Green/Yellow

Sheath Colour

● Black

DIMENSIONS

| ELAND PART NO. | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA mm ² | NOMINAL OVERALL DIAMETER mm | NOMINAL WEIGHT kg/km | A2 GLAND Brass | A2PL GLAND Plastic |
|----------------|--------------|---|--------------------------------|-------------------------|-------------------|-----------------------|
| A6Z10015 | 1 | 1.5 | 6.4 | 63 | - | - |
| A6Z10025 | 1 | 2.5 | 7.1 | 76 | - | - |
| A6Z1004 | 1 | 4 | 8.1 | 107 | 20S | 20 |
| A6Z1006 | 1 | 6 | 8.85 | 140 | 20S | 20 |
| A6Z1010 | 1 | 10 | 10.7 | 213 | 20S | 20 |
| A6Z1016 | 1 | 16 | 12.1 | 291 | 20 | 25 |
| A6Z1025 | 1 | 25 | 14.25 | 415 | 25 | 25 |
| A6Z1035 | 1 | 35 | 16.1 | 539 | 25 | 25 |
| A6Z1050 | 1 | 50 | 18.55 | 740 | 25 | 32 |
| A6Z1070 | 1 | 70 | 20.95 | 989 | 32 | 32 |
| A6Z1095 | 1 | 95 | 23.4 | 1290 | 32 | 40 |
| A6Z1120 | 1 | 120 | 25.7 | 1592 | 40 | 40 |
| A6Z1150 | 1 | 150 | 28.3 | 1957 | 40 | 40 |
| A6Z1185 | 1 | 185 | 31 | 2350 | 50S | 50 |
| A6Z1240 | 1 | 240 | 34.45 | 3099 | 50 | 63 |
| A6Z1300 | 1 | 300 | 37.7 | 3687 | 50 | - |
| A6Z1400 | 1 | 400 | 42.1 | 4850 | 63S | - |
| A6Z1500 | 1 | 500 | 46.65 | 5998 | 63 | - |
| A6Z02010 | 2 | 1 | 8.85 | 112 | - | - |
| A6Z02015 | 2 | 1.5 | 9.75 | 135 | 20S | 20 |
| A6Z02025 | 2 | 2.5 | 11.65 | 190 | 20 | 25 |
| A6Z02004 | 2 | 4 | 13.45 | 255 | 25 | - |
| A6Z02060 | 2 | 6 | 14.95 | 335 | 25 | - |
| A6Z0210 | 2 | 10 | 20.15 | 590 | 32 | - |
| A6Z0216 | 2 | 16 | 22.95 | 821 | 32 | - |
| A6Z0225 | 2 | 25 | 27.5 | 1172 | 40 | - |
| A6Z03010 | 3 | 1 | 9.5 | 125 | - | - |
| A6Z03015 | 3 | 1.5 | 10.55 | 129 | 20 | 20 |
| A6Z03025 | 3 | 2.5 | 12.45 | 250 | 25 | 25 |
| A6Z03040 | 3 | 4 | 14.45 | 330 | 25 | - |
| A6Z03060 | 3 | 6 | 16.05 | 440 | 25 | - |
| A6Z0310 | 3 | 10 | 21.65 | 800 | 32 | - |
| A6Z0316 | 3 | 16 | 24.7 | 1150 | 40 | - |
| A6Z0325 | 3 | 25 | 29.55 | 1680 | 50S | - |
| A6Z0335 | 3 | 35 | 33.2 | 2170 | 50S | - |
| A6Z04010 | 4 | 1 | 10.55 | 170 | 20S | - |
| A6Z04015 | 4 | 1.5 | 11.65 | 196 | 20 | 25 |
| A6Z04025 | 4 | 2.5 | 13.8 | 275 | 25 | 25 |
| A6Z04040 | 4 | 4 | 15.95 | 388 | 25 | 25 |
| A6Z04060 | 4 | 6 | 17.85 | 515 | 32 | 32 |
| A6Z0410 | 4 | 10 | 23.7 | 882 | 40 | 40 |
| A6Z0416 | 4 | 16 | 26.95 | 1234 | 40 | 40 |
| A6Z0425 | 4 | 25 | 32.75 | 1811 | 50S | 50 |
| A6Z0435 | 4 | 35 | 36.8 | 2365 | 50 | 63 |
| A6Z0450 | 4 | 50 | 42.6 | 3212 | 63S | - |
| A6Z0470 | 4 | 70 | 48.35 | 4320 | 63 | - |
| A6Z0495 | 4 | 95 | 54.7 | 5572 | 73S | - |

| ELAND PART NO. | NO. OF CORES | NOMINAL CROSS SECTIONAL AREA mm ² | NOMINAL OVERALL DIAMETER mm | NOMINAL WEIGHT kg/km | A2 GLAND Brass | A2PL GLAND Plastic |
|----------------|--------------|---|--------------------------------|-------------------------|-------------------|-----------------------|
| A6Z04120 | 4 | 120 | 59.5 | 6930 | 75 | - |
| A6Z04150 | 4 | 150 | 65.5 | 8419 | - | - |
| A6Z04185 | 4 | 185 | 72 | 10165 | - | - |
| A6Z04240 | 4 | 240 | 81.5 | 13420 | - | - |
| A6Z05010 | 5 | 1 | 11.65 | 205 | 20 | - |
| A6Z05015 | 5 | 1.5 | 12.8 | 242 | 25 | 25 |
| A6Z05025 | 5 | 2.5 | 15.15 | 341 | 25 | 25 |
| A6Z05040 | 5 | 4 | 17.75 | 495 | 32 | 32 |
| A6Z05060 | 5 | 6 | 19.85 | 642 | 32 | 32 |
| A6Z0510 | 5 | 10 | 26 | 1090 | 40 | 40 |
| A6Z0516 | 5 | 16 | 29.85 | 1534 | 50S | 50 |
| A6Z0525 | 5 | 25 | 36.2 | 2291 | 50 | 63 |
| A6Z0550 | 5 | 50 | 53 | 3950 | 63S | - |
| A6Z07015 | 7 | 1.5 | 16.7 | 355 | 25 | 32 |
| A6Z12015 | 12 | 1.5 | 20 | 660 | 32 | 32 |
| A6Z19015 | 19 | 1.5 | 27.5 | 788 | 40 | 40 |
| A6Z27015 | 27 | 1.5 | 31.5 | 1077 | 40 | 40 |
| A6Z37015 | 37 | 1.5 | 36.5 | 1358 | 50S | 50 |

CONDUCTORS

Class 5 Flexible Copper Conductors for Single Core and Multi-Core Cables

| NOMINAL CROSS SECTIONAL AREA mm ² | MAXIMUM DIAMETER OF WIRES IN CONDUCTOR mm | MAXIMUM RESISTANCE OF CONDUCTOR AT 20°C |
|---|--|--|
| | | Plain Wires ohms/km |
| 1 | 0.21 | 19.5 |
| 1.5 | 0.26 | 13.3 |
| 2.5 | 0.26 | 7.98 |
| 4 | 0.31 | 4.95 |
| 6 | 0.31 | 3.3 |
| 10 | 0.41 | 1.91 |
| 16 | 0.41 | 1.21 |
| 25 | 0.41 | 0.78 |
| 35 | 0.41 | 0.554 |
| 50 | 0.41 | 0.386 |
| 70 | 0.51 | 0.272 |
| 95 | 0.51 | 0.206 |
| 120 | 0.51 | 0.161 |
| 150 | 0.51 | 0.129 |
| 185 | 0.51 | 0.106 |
| 240 | 0.51 | 0.0801 |
| 300 | 0.51 | 0.0641 |
| 400 | 0.51 | 0.0486 |
| 500 | 0.61 | 0.0384 |

The above table is in accordance with BS EN 60228 (previously BS 6360)

ELECTRICAL CHARACTERISTICS (1mm² - 2.5mm²)

Current Carrying Capacity and Mass Supportable

| NOMINAL CROSS SECTIONAL AREA mm ² | CURRENT CARRYING CAPACITY | | MAXIMUM MASS SUPPORTABLE BY TWIN FLEXIBLE CABLE (See Regulations 522.7.2 and 559.6.1.5 of the 17th Edition of IEE Wiring Regulations) kg |
|---|---------------------------|----------------|--|
| | Single-Phase AC | Three-Phase AC | |
| 1 | 10 | 10 | 5 |
| 1.5 | 16 | 16 | 5 |
| 2.5 | 25 | 20 | 5 |

The above table is in accordance with Table 4F3A of the 17th Edition of IEE Wiring Regulations.

Voltage Drop

| NOMINAL CROSS SECTIONAL AREA mm ² | DC OR SINGLE-PHASE AC mV/A/m | THREE-PHASE AC mV/A/m |
|---|---------------------------------|--------------------------|
| 1 | 46 | 40 |
| 1.5 | 32 | 27 |
| 2.5 | 19 | 16 |

The above table is in accordance with Table 4F3B of the 17th Edition of IEE Wiring Regulations.

Conductor operating temperature: 60°C*

Note

*The tabulated values above are for 60°C thermoplastic or thermosetting insulated flexible cables and for other types of flexible cable they are to be multiplied by the following factors:

| | |
|---|------|
| For 90°C thermoplastic or thermosetting insulated | 1.09 |
| 150°C | 1.31 |
| 185°C glass fibre | 1.43 |

ELECTRICAL CHARACTERISTICS (4mm² and above)

Current Carrying Capacity

| NOMINAL CROSS SECTIONAL AREA mm ² | DC OR SINGLE-PHASE AC (1 TWO CORE CABLE WITH OR WITHOUT PROTECTIVE CONDUCTOR) Amps | THREE-PHASE AC (1 THREE CORE, FOUR CORE OR FIVE CORE CABLE) Amps | SINGLE-PHASE AC OR DC (2 SINGLE CORE CABLES TOUCHING) Amps |
|---|--|--|--|
| 4 | 42 | 37 | - |
| 6 | 55 | 49 | - |
| 10 | 76 | 66 | - |
| 16 | 103 | 89 | - |
| 25 | 136 | 119 | - |
| 35 | - | 146 | 200 |
| 50 | - | 177 | 250 |
| 70 | - | 225 | 310 |
| 95 | - | 273 | 369 |
| 120 | - | 316 | 432 |
| 150 | - | 363 | 497 |
| 185 | - | 414 | 564 |
| 240 | - | 487 | 673 |
| 300 | - | 560 | 773 |
| 400 | - | - | 924 |
| 500 | - | - | 1062 |

The above table is in accordance with Table 4F2A of the 17th Edition of IEE Wiring Regulations.

Ambient temperature: 30°C

Conductor operating temperature: 90°C

Voltage Drop

| NOMINAL CROSS SECTIONAL AREA mm ² | 1 TWO CORE OR 2 SINGLE CORE CABLES DC mV/A/m | TWO CORE CABLE SINGLE-PHASE AC mV/A/m | | | 1 THREE CORE, FOUR CORE OR FIVE CORE CABLE | | | 2 SINGLE CORE CABLES, TOUCHING | | |
|---|--|---|-------|------|--|-------|-------|-----------------------------------|-------|-------|
| | | r | x | z | r | x | z | r | x | z |
| 4 | 13.2 | 13.2 | | | 11.1 | | | - | | |
| 6 | 8.5 | 8.5 | | | 7.4 | | | - | | |
| 10 | 5.1 | 5.1 | | | 4.4 | | | - | | |
| 16 | 3.2 | 3.2 | | | 2.7 | | | - | | |
| 25 | 2.03 | 2.03 | 0.175 | 2.04 | 1.73 | 0.150 | 1.73 | - | - | - |
| 35 | 1.42 | - | - | - | 1.22 | 0.150 | 1.23 | 1.44 | 0.210 | 1.46 |
| 50 | 1 | - | - | - | 0.91 | 0.145 | 0.93 | 1.00 | 0.210 | 1.02 |
| 70 | 0.71 | - | - | - | 0.62 | 0.140 | 0.64 | 0.71 | 0.200 | 0.73 |
| 95 | 0.54 | - | - | - | 0.47 | 0.135 | 0.49 | 0.54 | 0.195 | 0.57 |
| 120 | 0.42 | - | - | - | 0.37 | 0.135 | 0.390 | 0.42 | 0.190 | 0.460 |
| 150 | 0.34 | - | - | - | 0.290 | 0.130 | 0.320 | 0.34 | 0.190 | 0.39 |
| 185 | 0.27 | - | - | - | 0.240 | 0.130 | 0.270 | 0.270 | 0.190 | 0.330 |
| 240 | 0.21 | - | - | - | 0.188 | 0.130 | 0.23 | 0.210 | 0.185 | 0.280 |
| 300 | 0.167 | - | - | - | 0.147 | 0.125 | 0.195 | 0.173 | 0.180 | 0.250 |
| 400 | 0.127 | - | - | - | - | - | - | 0.132 | 0.175 | 0.220 |
| 500 | 0.1 | - | - | - | - | - | - | 0.107 | 0.170 | 0.200 |

The above table is in accordance with Table 4F2B of the 17th Edition of IEE Wiring Regulations.

r = Resistive Component

x = Reactive Component

z = Impedance Value

DE-RATING FACTORS

90°C Thermosetting (Rubber) Insulated Cables

| AMBIENT TEMPERATURE | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C | 65°C | 70°C | 75°C | 80°C | 85°C |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|
| DE-RATING FACTOR | 0.95 | 0.91 | 0.86 | 0.82 | 0.76 | 0.7 | 0.64 | 0.57 | 0.5 | 0.4 | 0.28 |