

19/33 (36) KV

MV Cable AL Conductor, XLPE Insulation, Cu Screen and UA



Images not to scale. Follow table for dimensions

APPLICATION

POLY CAB MV 19/33 KV XLPE insulated with Aluminium conductor Three core cable is suitable to use for power supply to wide networks i.e. Commercial, Industrial and Urban / Residential.

CHARACTERISTICS

Voltage Rating

Nominal Voltage: 19/33 (36) kV

Operation Temperature

Min. installation temperature: 0°C

Operating temperature: -25°C to +90°C

Emergency operating temperature: 105°C

(max. operation of 36hrs, at 3 periods for 12 consecutive months use)

Max. Short Circuit Temperature: 250°C

Bending Radius:

Fixed Installation: 20D

During Installation: 30D

D is diameter over nylon

CONSTRUCTION

- Conductor: Stranded Compacted Circular aluminium conductor as per AS/NZS 1125
- Conductor Screen: Extruded Semi-conductive compound
- Insulation: XLPE
- Insulation Screen: Extruded Semi-conductive compound
- Longitudinal Water blocking : Water blocking tape above and below copper screen (Optional)
- Metallic Insulation Screen: Copper Wire Screen + helically applied copper tape
- binder tape / sheath over assembled cores

Composite sheath

- Inner layer : Extruded Polyvinyl Chloride, Colour: Orange
- Termite Protection: Polyamide (Nylon -12)
- Outer layer: HDPE (Black)

OUTSTANDING FEATURES

- Long life
- UV resistant
- Resistant to chemical exposure
- Resistant to weather exposure
- Resistant to water (AD7/AD8)
- Termite resistant

STANDARD FOLLOWS

AS/NZS 1429.1

AS/NZS 1125

AS/NZS 3808

COMPLIANCE

- | | |
|-------------------------|---------------|
| • Conductor resistance | AS/NZS 1125 |
| • Insulation resistance | AS/NZS 1429.1 |
| • Voltage test | AS/NZS 1429.1 |

OUR ACCREDITATIONS



APPROVAL



NOTES

| High Voltage Test (kV AC) | Partial discharge test (kV AC) | | Impulse test Voltage (kV peak) |
|---------------------------|--------------------------------|-----------------------|--------------------------------|
| | 200% to rated voltage | 150% to rated voltage | |
| 63 | 38 | 29 | 200 |

DIMENSIONAL CHARACTERISTICS:

| Product Code | No. of Cores | Core Cross sectional Area | Nominal Diameter | | |
|---------------------------|-----------------|---------------------------|-----------------------|----------------------|---------|
| | | | Under metallic screen | Over metallic screen | Overall |
| No. | mm ² | mm | mm | mm | mm |
| MVNZ13AXUAPH003C050SAXXXX | 3 | 50 | 27.2 | 28.7 | 68.0 |
| MVNZ13AXUAPH003C070SAXXXX | 3 | 70 | 28.8 | 30.3 | 72.0 |
| MVNZ13AXUAPH003C095SAXXXX | 3 | 95 | 30.4 | 31.9 | 76.0 |
| MVNZ13AXUAPH003C120SAXXXX | 3 | 120 | 32 | 33.5 | 80.0 |
| MVNZ13AXUAPH003C150SAXXXX | 3 | 150 | 33.3 | 34.8 | 82.0 |
| MVNZ13AXUAPH003C185SAXXXX | 3 | 185 | 35 | 36.5 | 86.0 |
| MVNZ13AXUAPH003C240SAXXXX | 3 | 240 | 37.3 | 38.8 | 92.0 |
| MVNZ13AXUAPH003C300SAXXXX | 3 | 300 | 39.5 | 41.0 | 96.0 |
| MVNZ13AXUAPH003C400SAXXXX | 3 | 400 | 42.2 | 43.7 | 103.0 |
| MVNZ13AXUAPH003C500SAXXXX | 3 | 500 | 45.6 | 47.1 | 110.0 |

• Above mentioned parameters are based on 3kA/sec earth fault current capacity of copper screen

ELECTRICAL CHARACTERISTICS:

| No. of Cores | Core Cross sectional Area | Max. DC Resistance at 20°C | Max. AC Resistance at 90°C | Approx. Capacitance | Approx. Inductance | Approx. Reactance | Continuous Current Rating | | |
|--------------|---------------------------|----------------------------|----------------------------|---------------------|--------------------|-------------------|---------------------------|------------------|--------|
| | | | | | | | Buried direct in ground | In a buried duct | In Air |
| No. | mm ² | Ω/km | Ω/km | μF/km | mH/km | Ω/km | Amps | | |
| 3 | 50 | 0.641 | 0.822 | 0.14 | 0.643 | 0.202 | 140 | 122 | 158 |
| 3 | 70 | 0.443 | 0.568 | 0.15 | 0.608 | 0.191 | 171 | 150 | 196 |
| 3 | 95 | 0.32 | 0.410 | 0.17 | 0.586 | 0.184 | 203 | 179 | 236 |
| 3 | 120 | 0.253 | 0.325 | 0.18 | 0.567 | 0.178 | 232 | 205 | 273 |
| 3 | 150 | 0.206 | 0.264 | 0.19 | 0.554 | 0.174 | 260 | 231 | 309 |
| 3 | 185 | 0.164 | 0.211 | 0.21 | 0.541 | 0.170 | 294 | 262 | 355 |
| 3 | 240 | 0.125 | 0.161 | 0.23 | 0.525 | 0.165 | 340 | 305 | 415 |
| 3 | 300 | 0.1 | 0.129 | 0.25 | 0.511 | 0.160 | 384 | 346 | 475 |
| 3 | 400 | 0.0778 | 0.101 | 0.27 | 0.498 | 0.156 | 438 | 398 | 552 |
| 3 | 500 | 0.0605 | 0.079 | 0.3 | 0.485 | 0.152 | 505 | 460 | 646 |

Current ratings are in accordance with IEC 60502-2*: Current Ratings are based on IEC 60502-2 & IEC 60287, Max. Conductor Temperature at 90°C, Ambient temperature at 30°C in Air / at 20°C in Ground, Thermal resistivity of Soil 1.5 k.m/W & for earthenware ducts 1.2k.m/W and Depth of Laying 0.8m.

Current rating de-rating factors for other than 30°C ambient air temperature.

| 20 | 25 | 35 | 40 | 45 | 50 | 55 | 60 |
|------|------|------|------|------|------|------|------|
| 1.08 | 1.04 | 0.96 | 0.91 | 0.87 | 0.82 | 0.76 | 0.71 |

Current rating de-rating factors for other than 20°C ground temperature.

| 10 | 15 | 25 | 30 | 35 | 40 | 45 | 50 |
|------|------|------|------|------|------|------|------|
| 1.07 | 1.04 | 0.96 | 0.93 | 0.89 | 0.85 | 0.80 | 0.76 |

| No. of Cores | Core Cross sectional Area | Max. pulling tension on conductor | Charging Current per phase | Zero sequence impedance | Electric Stress at Conductor Screen | Short circuit rating of Phase conductor |
|--------------|---------------------------|-----------------------------------|----------------------------|-------------------------|-------------------------------------|---|
| No. | mm ² | kN | Amps/Km | Ohms/Km | kV/mm | kA, 1 sec |
| 3 | 50 | 2.5 | 0.84 | 1.98 | 4.1 | 4.5 |
| 3 | 70 | 3.5 | 0.9 | 1.73 | 3.9 | 6.2 |
| 3 | 95 | 4.75 | 1.01 | 1.57 | 3.7 | 8.5 |
| 3 | 120 | 6 | 1.07 | 1.49 | 3.6 | 10.7 |
| 3 | 150 | 7.5 | 1.13 | 1.43 | 3.5 | 13.4 |
| 3 | 185 | 9.25 | 1.25 | 1.37 | 3.4 | 16.5 |
| 3 | 240 | 12 | 1.37 | 1.32 | 3.3 | 21.4 |
| 3 | 300 | 15 | 1.49 | 1.29 | 3.2 | 26.8 |
| 3 | 400 | 20 | 1.61 | 1.26 | 3.1 | 35.5 |
| 3 | 500 | 25 | 1.79 | 1.24 | 3.0 | 44.7 |