



Images not to scale. Follow table for dimensions

## APPLICATION

POLY CAB MV 12.7/22 KV XLPE insulated with Copper conductor Triplex cable is suitable to use for power supply to wide networks i.e. Commercial, Industrial and Urban / Residential.

## CHARACTERISTICS

### Voltage Rating

Nominal Voltage: 12.7/22 (24) 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: 12D (PVC) / 15D (HDPE)/20D (Nylon)

During Installation: 18D (PVC) / 25D (HDPE)/30D (Nylon)

D is overall diameter of each cable

## CONSTRUCTION

- Conductor: Stranded Compacted Circular Copper conductor as per AS/NZS 1125
- Conductor Screen: Extruded Semi-conductive compound
- Insulation: XLPE
- Insulation Screen: Extruded Strippable 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 (E/F current capacity – Based on requirement)
- Outer Sheath: Extruded Polyvinyl Chloride, Colour: Black
- Termite Protection: Polyamide (Nylon -12) (optional)
- (Alternative Sheath: PVC+HDPE Composite Sheath or PVC + Nylon + HDPE (composite sheath with anti-termite properties) or LSZH Outer sheath, and parameters will change accordingly)

Three Single Core Cables twisted and assembled to form triplex formation

## OUTSTANDING FEATURES

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

## STANDARD FOLLOWS

AS/NZS 1429.1

AS/NZS 1125

AS/NZS 3008

## COMPLIANCE

- |                         |               |
|-------------------------|---------------|
| • Conductor resistance  | AS/NZS 1125   |
| • Insulation resistance | AS/NZS 1429.1 |
| • Short Circuit Temp.   | IEC 60986     |

## 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 |                                |
| 42                        | 25                             | 19                    | 150                            |

**DIMENSIONAL CHARACTERISTICS :**

| Product Code              | No. of Single Cores | Core Cross sectional Area | Nominal Diameter |            |         |
|---------------------------|---------------------|---------------------------|------------------|------------|---------|
|                           |                     |                           | Over Screen      | Each Phase | Overall |
|                           | No.                 | mm <sup>2</sup>           | mm               | mm         | mm      |
| MVNZ12CXUAPH001T035SAXXXX | 3                   | 35                        | 23.0             | 27.0       | 58.0    |
| MVNZ12CXUAPH001T050SAXXXX | 3                   | 50                        | 24.1             | 28.0       | 60.0    |
| MVNZ12CXUAPH001T070SAXXXX | 3                   | 70                        | 25.8             | 30.0       | 64.0    |
| MVNZ12CXUAPH001T095SAXXXX | 3                   | 95                        | 27.3             | 31.0       | 67.0    |
| MVNZ12CXUAPH001T120SAXXXX | 3                   | 120                       | 28.9             | 33.0       | 71.0    |
| MVNZ12CXUAPH001T150SAXXXX | 3                   | 150                       | 30.3             | 35.0       | 74.0    |
| MVNZ12CXUAPH001T185SAXXXX | 3                   | 185                       | 32.0             | 37.0       | 78.0    |
| MVNZ12CXUAPH001T240SAXXXX | 3                   | 240                       | 34.3             | 39.0       | 83.0    |
| MVNZ12CXUAPH001T300SAXXXX | 3                   | 300                       | 36.3             | 41.0       | 88.0    |
| MVNZ12CXUAPH001T400SAXXXX | 3                   | 400                       | 39.1             | 44.0       | 94.0    |
| MVNZ12CXUAPH001T500SAXXXX | 3                   | 500                       | 42.5             | 48.0       | 102.0   |

• 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 <sup>2</sup>           | Ω/km                       | Ω/km                       | μF/km               | mH/km              | Ω/km              | Amps                      |                  |        |
| 3 x 1        | 35                        | 0.524                      | 0.668                      | 0.16                | 0.472              | 0.148             | 153                       | 133              | 170    |
| 3 x 1        | 50                        | 0.387                      | 0.494                      | 0.17                | 0.450              | 0.142             | 181                       | 158              | 204    |
| 3 x 1        | 70                        | 0.268                      | 0.342                      | 0.2                 | 0.416              | 0.131             | 221                       | 193              | 253    |
| 3 x 1        | 95                        | 0.193                      | 0.247                      | 0.22                | 0.397              | 0.125             | 262                       | 231              | 304    |
| 3 x 1        | 120                       | 0.153                      | 0.196                      | 0.24                | 0.379              | 0.119             | 298                       | 264              | 351    |
| 3 x 1        | 150                       | 0.124                      | 0.159                      | 0.26                | 0.367              | 0.115             | 334                       | 297              | 398    |
| 3 x 1        | 185                       | 0.0991                     | 0.128                      | 0.28                | 0.355              | 0.112             | 377                       | 336              | 455    |
| 3 x 1        | 240                       | 0.0754                     | 0.098                      | 0.31                | 0.340              | 0.107             | 434                       | 390              | 531    |
| 3 x 1        | 300                       | 0.0601                     | 0.079                      | 0.33                | 0.329              | 0.103             | 489                       | 441              | 606    |
| 3 x 1        | 400                       | 0.047                      | 0.063                      | 0.37                | 0.318              | 0.100             | 553                       | 501              | 696    |

| No.<br>of<br>Cores | Core<br>Cross<br>sectional<br>Area | Max. DC<br>Resistance<br>at 20°C | Max. AC<br>Resistance<br>at 90°C | Approx.<br>Capacitance | Approx.<br>Inductance | Approx.<br>Reactance | Continuous Current<br>Rating     |                        |           |
|--------------------|------------------------------------|----------------------------------|----------------------------------|------------------------|-----------------------|----------------------|----------------------------------|------------------------|-----------|
|                    |                                    |                                  |                                  |                        |                       |                      | Buried<br>direct<br>in<br>ground | In a<br>buried<br>duct | In<br>Air |
| No.                | mm <sup>2</sup>                    | Ω/km                             | Ω/km                             | μF/km                  | mH/km                 | Ω/km                 | Amps                             |                        |           |
| 3 x 1              | 500                                | 0.0366                           | 0.051                            | 0.41                   | 0.306                 | 0.096                | 632                              | 574                    | 800       |

\*: 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.<br>of<br>Cores | Core<br>Cross<br>sectional<br>Area | Max.<br>pulling<br>tension<br>on<br>conductor | Charging<br>Current<br>per phase | Zero<br>sequence<br>impedance | Electric<br>Stress at<br>Conductor<br>Screen | Short<br>circuit<br>rating<br>Phase<br>conductor | Mechanical Properties |                          |                       |
|--------------------|------------------------------------|---|----------------------------------|-------------------------------|--|--|-----------------------|--------------------------|-----------------------|
|                    |                                    |   |                                  |                               |  |  | Ampacity              | Conductor<br>Temperature | Screen<br>Temperature |
| No.                | mm <sup>2</sup>                    | kN  | Amps/Km                          | Ohms/Km                       | kV/mm  | kA, 1 sec  | °C                    | °C                       | °C                    |
| 3 x 1              | 35                                 | 2.5   | 0.64                             | 1.8                           | 3.7  | 5.0  | 100                   | 100                      | 100                   |
| 3 x 1              | 50                                 | 3.5   | 0.68                             | 1.7                           | 3.5  | 7.2  | 100                   | 100                      | 100                   |
| 3 x 1              | 70                                 | 4.9   | 0.8                              | 1.5                           | 3.4  | 10.0   | 100                   | 100                      | 100                   |
| 3 x 1              | 95                                 | 6.7   | 0.88                             | 1.4                           | 3.2  | 13.6   | 100                   | 100                      | 100                   |
| 3 x 1              | 120                                | 8.4   | 0.96                             | 1.4                           | 3.1  | 17.1   | 100                   | 100                      | 100                   |
| 3 x 1              | 150                                | 10.5  | 1.04                             | 1.3                           | 3.1  | 21.4   | 100                   | 100                      | 100                   |
| 3 x 1              | 185                                | 13.0  | 1.12                             | 1.3                           | 3.0  | 26.4   | 100                   | 100                      | 100                   |
| 3 x 1              | 240                                | 16.8  | 1.24                             | 1.3                           | 2.9  | 34.3   | 100                   | 100                      | 100                   |
| 3 x 1              | 300                                | 21.0  | 1.32                             | 1.2                           | 2.9  | 42.8   | 100                   | 100                      | 100                   |
| 3 x 1              | 400                                | 28.0  | 1.48                             | 1.2                           | 2.8  | 56.9   | 100                   | 100                      | 100                   |
| 3 x 1              | 500                                | 35.0  | 1.64                             | 1.2                           | 2.7  | 71.5   | 100                   | 100                      | 100                   |