

# Single Core Power Cable 3.8/6.6kV

STANDARD: AS/NZS 1429.1

RATED VOLTAGE: 3.8/6.6 (7.2) kV

FAULT LEVEL: Up to 10kA for 1sec or to customer requirements

IMPULSE VOLTAGE: 95kV

TEMPERATURE RANGE:

In continuous operation Max. conductor temp 90°C.

Lowest cable temperature during installation: -10°C and below 0°C special precaution must be taken.

BENDING RADIUS:

During installation: 18 x D. When installed: 12 x D (PVC sheathed cables)

D = Overall diameter of cable



## DESIGN

### CONDUCTOR:

Stranded, round and compacted aluminium complying with AS/NZS 1125

### SEMI-CONDUCTIVE CONDUCTOR SCREEN:

Extruded cross-linked compound

### INSULATION:

XLPE complying with AS/NZS 3808

### SEMI-CONDUCTIVE INSULATION SCREEN:

Extruded hand strippable cross-linked compound

### METALLIC SCREEN:

Circular copper wires

### OUTER SHEATH:

Black PVC. PE, halogen free, flame retardant, termite protection in the form of nylon, double brass tape and chemical additive also available.

Other colours available on request

## 3.8/6.6kV Single Core Aluminium Conductor

| Product code | Conductor size  | Nominal thickness of insulation | Diameter over insulation | Number & Nominal Diameter of Screen Wires | Overall diameter (approx.) | Mass (approx.) | Maximum pulling tension | Minimum bending radius |           |
|--------------|-----------------|---------------------------------|--------------------------|---|----------------------------|----------------|-------------------------|------------------------|-----------|
|              |                 |                                 |                          |   |                            |                |                         | During installation    | Installed |
|              | mm <sup>2</sup> | mm                              | mm                       | no./mm                                    | mm                         | kg/km          | kN                      | mm                     | mm        |
| 1MV050A06HP  | 50              | 2.5                             | 14.3                     | 23/1.35                                   | 22.1                       | 735.5          | 2.5                     | 400                    | 270       |
| 1MV070A06HP  | 70              | 2.5                             | 16.1                     | 32/1.35                                   | 24.0                       | 957.7          | 3.5                     | 430                    | 290       |
| 1MV095A06HP  | 95              | 2.5                             | 17.7                     | 43/1.35                                   | 26.2                       | 1216           | 4.8                     | 470                    | 310       |
| 1MV120A06HP  | 120             | 2.5                             | 19.2                     | 48/1.35                                   | 27.8                       | 1385           | 6.0                     | 500                    | 330       |
| 1MV150A06HP  | 150             | 2.5                             | 20.7                     | 48/1.35                                   | 29.4                       | 1493           | 7.5                     | 530                    | 350       |
| 1MV185A06HP  | 185             | 2.5                             | 22.5                     | 48/1.35                                   | 31.3                       | 1637           | 9.3                     | 560                    | 380       |
| 1MV240A06HP  | 240             | 2.6                             | 24.9                     | 48/1.35                                   | 33.4                       | 1844           | 12                      | 600                    | 400       |
| 1MV300A06HP  | 300             | 2.8                             | 27.4                     | 48/1.35                                   | 36.1                       | 2080           | 15                      | 650                    | 430       |
| 1MV400A06HP  | 400             | 3.0                             | 30.7                     | 48/1.35                                   | 39.6                       | 2410           | 20                      | 710                    | 480       |

## Electrical Data

| Conductor size  | Maximum conductor DC resistance at 20°C | Conductor AC resistance at 50Hz and 90°C | Inductive reactance at 50Hz and 90°C | Insulation resistance at 20°C | Charging current per phase | Dielectric loss per phase | Zero sequence resistance at 20°C | Zero sequence reactance at 50Hz |
|-----------------|---|--|--------------------------------------|-------------------------------|----------------------------|---------------------------|----------------------------------|---------------------------------|
| mm <sup>2</sup> | Ω/km                                    | Ω/km                                     | Ω/km                                 | MΩ.km                         | A/km                       | W/km                      | Ω/km                             | Ω/km                            |
| 50              | 0.641                                   | 0.822                                    | 0.127                                | 7500                          | 0.385                      | 5.86                      | 1.19                             | 0.0669                          |
| 70              | 0.443                                   | 0.568                                    | 0.117                                | 6500                          | 0.446                      | 6.78                      | 0.837                            | 0.0579                          |
| 95              | 0.320                                   | 0.411                                    | 0.113                                | 5800                          | 0.499                      | 7.59                      | 0.614                            | 0.0542                          |
| 120             | 0.253                                   | 0.325                                    | 0.109                                | 5200                          | 0.550                      | 8.35                      | 0.516                            | 0.0509                          |
| 150             | 0.206                                   | 0.265                                    | 0.105                                | 4800                          | 0.600                      | 9.12                      | 0.469                            | 0.0482                          |
| 185             | 0.164                                   | 0.211                                    | 0.102                                | 4400                          | 0.660                      | 10.0                      | 0.428                            | 0.0454                          |
| 240             | 0.125                                   | 0.161                                    | 0.0981                               | 4100                          | 0.708                      | 10.8                      | 0.390                            | 0.0427                          |
| 300             | 0.100                                   | 0.130                                    | 0.0962                               | 4000                          | 0.725                      | 11.0                      | 0.365                            | 0.0414                          |
| 400             | 0.0778                                  | 0.102                                    | 0.0929                               | 3800                          | 0.762                      | 11.6                      | 0.343                            | 0.0388                          |

## Current Ratings

| Conductor size  | Current rating at core temp. 90°C in ground | Current rating at core temp. 90°C in air | Current rating at core temp. 90°C in underground ducts | Max. short-circuit current on the conductor during 1sec at initial temp. 90°C | Short circuit current rating of the screen 1sec |
|-----------------|---|--|--|---|---|
| mm <sup>2</sup> | A   | A  | A  | kA  | kA  |
| 50              | 162   | 167                                      | 148  | 4.7   | 4.8   |
| 70              | 198   | 208                                      | 178  | 6.6   | 6.8   |
| 95              | 234   | 252                                      | 209  | 9.0   | 9.1   |
| 120             | 263   | 290                                      | 234  | 11.3  | 10.2  |
| 150             | 293   | 328                                      | 258  | 14.2  | 10.2  |
| 185             | 329   | 375                                      | 291  | 17.5  | 10.2  |
| 240             | 375   | 437                                      | 329  | 22.7  | 10.2  |
| 300             | 418   | 497                                      | 364  | 28.4  | 10.2  |
| 400             | 470   | 574                                      | 408  | 37.8  | 10.2  |