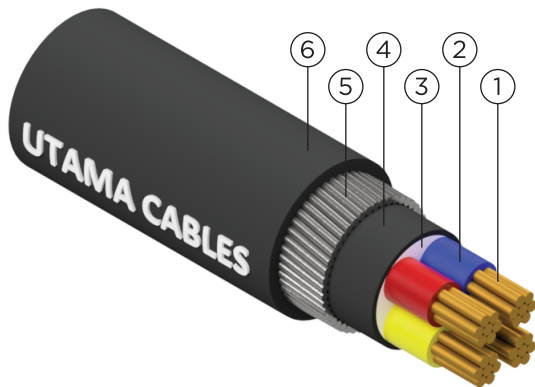


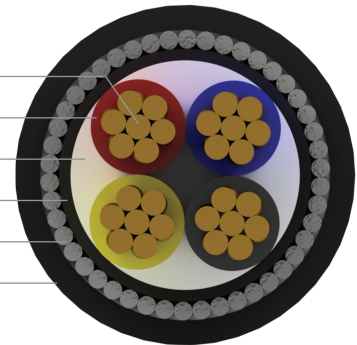


UTAMA CABLES
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PVC INSULATED, PVC SHEATHED ARMoured CABLE – CU/PVC/SWA/PVC



1. Cu Conductor
2. PVC Insulation
3. Filler
4. Bedding
5. Steel Wire Armoured
6. PVC Outer Sheath



APPLICATION

PVC insulated cable with steel wire armour (SWA) suitable for use in power networks, underground, indoor and outdoor applications and also in cable ducting.

STANDARDS

| | |
|----------------------|------------------|
| Design Specification | MS 2103, BS 6346 |
| Conductor | IEC 60228 |

CABLE CONSTRUCTION

| | | |
|---------------------|--|--|
| Conductor | Plain Annealed Copper, Class 2, Stranded Circular or Compacted | |
| Insulation | Polyvinyl Chloride (PVC) compound, PVC/A | |
| Core Identification | Two Cores | Red and Black |
| | Three Cores | Red, Yellow and Blue |
| | Four Cores | Red, Yellow, Blue and Black |
| | Five Cores | Red, Yellow, Blue, Black and Green/Yellow |
| Assembly | 2, 3, 4 or 5 Cores | Stranded together and the interstices may be filled with the sheathing compound or textile. A non-hygroscopic binder tape may be applied over the laid-up cores. |
| Bedding | Polyvinyl Chloride (PVC) compound, PVC/ST-1 | |
| Bedding Colour | Black | |
| Armour | Galvanised Steel Wire Armoured (SWA) | |
| Outer Sheath | Polyvinyl Chloride (PVC) compound, PVC/ST-1 | |
| Outer Sheath Colour | Black | |



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PVC INSULATED, PVC SHEATHED ARMoured CABLE – CU/PVC/SWA/PVC

ELECTRICAL CHARACTERISTICS

| | | | |
|--------------------------------------|---------------|---------------------------|---------------------|
| Operating Voltage, U ₀ /U | 600/1000 V | Test Voltage | 3.5kV for 5 minutes |
| Operating Temperature | -15°C to 70°C | Max Conductor Temperature | 70°C |

CU/PVC/SWA/PVC - 2 CORE

| Nominal Area (mm ²) | Number / Wire Diameter (No./mm) | Thickness of Insulation (mm) | Armour Wire Diameter (mm) | Thickness of Sheath (mm) | Approx. Overall Diameter (mm) | Approx. Cable Weight (kg/km) |
|---------------------------------|---------------------------------|------------------------------|---------------------------|--------------------------|-------------------------------|------------------------------|
| 1.5 | 7/0.53 | 0.80 | 0.90 | 1.80 | 13.80 | 370 |
| 2.5 | 7/0.67 | 0.80 | 0.90 | 1.80 | 14.60 | 420 |
| 4 | 7/0.85 | 1.00 | 0.90 | 1.80 | 16.60 | 530 |
| 6 | 7/1.04 | 1.00 | 1.25 | 1.80 | 18.30 | 700 |
| 10 | 7/1.35 | 1.00 | 1.25 | 1.80 | 20.10 | 860 |
| 16 | 7/1.70 | 1.00 | 1.60 | 1.80 | 22.30 | 1150 |
| 25 | 7/2.14 | 1.20 | 1.60 | 1.80 | 26.20 | 1620 |

CU/PVC/SWA/PVC - 3 CORE

| Nominal Area (mm ²) | Number / Wire Diameter (No./mm) | Thickness of Insulation (mm) | Armour Wire Diameter (mm) | Thickness of Sheath (mm) | Approx. Overall Diameter (mm) | Approx. Cable Weight (kg/km) |
|---------------------------------|---------------------------------|------------------------------|---------------------------|--------------------------|-------------------------------|------------------------------|
| 1.5 | 7/0.53 | 0.80 | 0.90 | 1.80 | 14.30 | 395 |
| 2.5 | 7/0.67 | 0.80 | 0.90 | 1.80 | 15.10 | 445 |
| 4 | 7/0.85 | 1.00 | 1.25 | 1.80 | 18.00 | 670 |
| 6 | 7/1.04 | 1.00 | 1.25 | 1.80 | 19.00 | 770 |
| 10 | 7/1.35 | 1.00 | 1.25 | 1.80 | 20.70 | 970 |
| 16 | 7/1.70 | 1.00 | 1.60 | 1.80 | 23.00 | 1310 |
| 25 | 7/2.14 | 1.20 | 1.60 | 1.80 | 26.80 | 1850 |



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PVC INSULATED, PVC SHEATHED ARMoured CABLE – CU/PVC/SWA/PVC

CU/PVC/SWA/PVC - 4 CORE

| Nominal Area (mm ²) | Number / Wire Diameter (No./mm) | Thickness of Insulation (mm) | Armour Wire Diameter (mm) | Thickness of Sheath (mm) | Approx. Overall Diameter (mm) | Approx. Cable Weight (kg/km) |
|---------------------------------|---------------------------------|------------------------------|---------------------------|--------------------------|-------------------------------|------------------------------|
| 1.5 | 7/0.53 | 0.80 | 0.90 | 1.80 | 15.10 | 440 |
| 2.5 | 7/0.67 | 0.80 | 0.90 | 1.80 | 16.10 | 515 |
| 4 | 7/0.85 | 1.00 | 1.25 | 1.80 | 19.20 | 770 |
| 6 | 7/1.04 | 1.00 | 1.25 | 1.80 | 20.40 | 900 |
| 10 | 7/1.35 | 1.00 | 1.25 | 1.80 | 22.30 | 1140 |
| 16 | 7/1.70 | 1.00 | 1.60 | 1.80 | 25.40 | 1680 |
| 25 | 7/2.14 | 1.20 | 1.60 | 1.80 | 29.20 | 2250 |

CU/PVC/SWA/PVC - 5 CORE

| Nominal Area (mm ²) | Number / Wire Diameter (No./mm) | Thickness of Insulation (mm) | Armour Wire Diameter (mm) | Thickness of Sheath (mm) | Approx. Overall Diameter (mm) | Approx. Cable Weight (kg/km) |
|---------------------------------|---------------------------------|------------------------------|---------------------------|--------------------------|-------------------------------|------------------------------|
| 1.5 | 7/0.53 | 0.80 | 0.90 | 1.80 | 16.60 | 560 |
| 2.5 | 7/0.67 | 0.80 | 0.90 | 1.80 | 17.10 | 580 |
| 4 | 7/0.85 | 1.00 | 1.25 | 1.80 | 20.50 | 920 |
| 6 | 7/1.04 | 1.00 | 1.25 | 1.80 | 21.90 | 1160 |
| 10 | 7/1.35 | 1.00 | 1.60 | 1.80 | 25.50 | 1585 |
| 16 | 7/1.70 | 1.00 | 1.60 | 1.80 | 27.80 | 1960 |
| 25 | 7/2.14 | 1.20 | 1.60 | 1.90 | 32.70 | 2790 |



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PVC INSULATED, PVC SHEATHED ARMoured CABLE – CU/PVC/SWA/PVC

Electrical Characteristic – PVC/SWA/PVC Steel Wire Armoured Cables

Table A3.1: Current Carrying Capacity

| Conductor Cross-Sectional Area (mm ²) | Reference Method C (Clipped Direct) | | Reference Method E (In Free Air or On A Perforated Cable Tray, Horizontal or Vertical) | | Reference Method D (Direct In Ground or In Ducting In Ground, In or Around Buildings) | |
|---|---|---|--|---|---|---|
| | One 2-Core Cable, Single-Phase AC or DC (Amp) | One 3 or 4-Core Cable, Three-Phase AC (Amp) | One 2-Core Cable, Single-Phase AC or DC (Amp) | One 3 or 4-Core Cable, Three-Phase AC (Amp) | One 2-Core Cable, Single-Phase AC or DC (Amp) | One 3 or 4-Core Cable, Three-Phase AC (Amp) |
| 1.5 | 21 | 18 | 22 | 19 | 22 | 18 |
| 2.5 | 28 | 25 | 31 | 26 | 29 | 24 |
| 4 | 38 | 33 | 41 | 35 | 37 | 30 |
| 6 | 49 | 42 | 53 | 45 | 46 | 38 |
| 10 | 67 | 58 | 72 | 62 | 60 | 50 |
| 16 | 89 | 77 | 97 | 83 | 78 | 64 |
| 25 | 118 | 102 | 128 | 110 | 99 | 82 |
| 35 | 145 | 125 | 157 | 135 | 119 | 98 |
| 50 | 175 | 151 | 190 | 163 | 140 | 116 |
| 70 | 222 | 192 | 241 | 207 | 173 | 143 |
| 95 | 269 | 231 | 291 | 251 | 204 | 169 |
| 120 | 310 | 267 | 336 | 290 | 231 | 192 |
| 150 | 356 | 306 | 386 | 332 | 261 | 217 |
| 185 | 405 | 348 | 439 | 378 | 292 | 243 |
| 240 | 476 | 409 | 516 | 445 | 336 | 280 |
| 300 | 547 | 469 | 592 | 510 | 379 | 316 |
| 400 | 621 | 540 | 683 | 590 | - | - |

Ambient Air Temp 30°C

Ambient Ground Temp 20°C

Conductor Operating Temp 70°C

Soil Thermal Resistivity (cable buried in ground): 2.5 K.m/W

Note: The above table is in accordance with 18th Edition of IEE Wiring Regulations.



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PVC INSULATED, PVC SHEATHED ARMoured CABLE — CU/PVC/SWA/PVC

Electrical Characteristic – PVC/SWA/PVC Steel Wire Armoured Cables

Table A3.2: Voltage Drop

| Conductor Cross-Sectional Area (mm ²) | 2-Core Cable, DC (mV/A/m) | 2-Core Cable, Single-Phase AC (mV/A/m) | | | 3, 4-Core Cable, Three-Phase AC (mV/A/m) | | |
|---|---------------------------|--|-------|-------|--|-------|-------|
| | | r | x | z | r | x | z |
| 1.5 | 29 | | | 29 | | | 25 |
| 2.5 | 18 | | | 18 | | | 15 |
| 4 | 11 | | | 11 | | | 9.5 |
| 6 | 7.3 | | | 7.3 | | | 6.4 |
| 10 | 4.4 | | | 4.4 | | | 3.8 |
| 16 | 2.8 | | | 2.8 | | | 2.4 |
| 25 | 1.750 | 1.750 | 0.170 | 1.75 | 1.500 | 0.145 | 1.500 |
| 35 | 1.250 | 1.250 | 0.165 | 1.25 | 1.100 | 0.145 | 1.100 |
| 50 | 0.930 | 0.930 | 0.165 | 0.94 | 0.800 | 0.140 | 0.810 |
| 70 | 0.630 | 0.630 | 0.160 | 0.65 | 0.550 | 0.140 | 0.570 |
| 95 | 0.460 | 0.470 | 0.155 | 0.50 | 0.410 | 0.135 | 0.430 |
| 120 | 0.360 | 0.380 | 0.155 | 0.41 | 0.330 | 0.135 | 0.350 |
| 150 | 0.290 | 0.300 | 0.155 | 0.34 | 0.260 | 0.130 | 0.290 |
| 185 | 0.230 | 0.250 | 0.150 | 0.29 | 0.210 | 0.130 | 0.250 |
| 240 | 0.180 | 0.190 | 0.150 | 0.240 | 0.165 | 0.130 | 0.210 |
| 300 | 0.145 | 0.155 | 0.145 | 0.210 | 0.135 | 0.130 | 0.185 |
| 400 | 0.105 | 0.115 | 0.145 | 0.185 | 0.100 | 0.125 | 0.160 |

Ambient Air Temp 30°C

Ambient Ground Temp 20°C

Conductor Operating Temp 70°C

Soil Thermal Resistivity (cable buried in ground): 2.5 K.m/W

Note:

1. Correction factors for ambient temperature and group installation, please refer Derating Factor section.
2. r = Resistive Component, x = Reactive Component, z = Impedance Value The above table is in accordance with the 18th Edition of IEE Wiring Regulations.
3. For cables having conductors of 16mm² or less cross - sectional area their inductances can be ignored and (mV/A/m)_r values only are tabulated. For cables having conductors greater than 16mm², cross - sectional area the impedance values are given as (mV/A/m)_z, together with the resistive component (mV/A/m)_r and the reactive component (mV/A/m)_x. The above paragraph is extracted from Appendix 4 of the 18th Edition of IEE Wiring Regulations.

The information contained within this datasheet is for guidance only and is subject to change without notice or liability. All the information is provided in good faith and is believed to be correct at the time of publication. When selecting cable accessories, please note that actual cable dimensions may vary due to manufacturing tolerances.