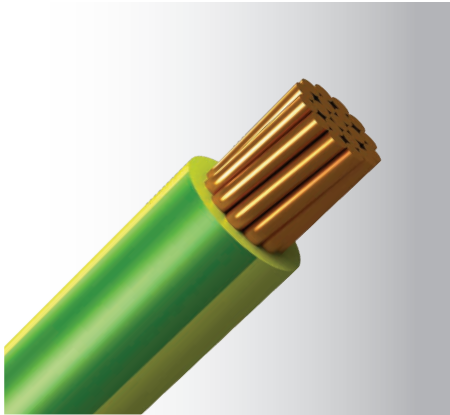


## PVC Insulated Cables

450/750V Single-Core  
PVC Insulated, Non-Sheathed Cable  
Description: CU/PVC  
Model Code: PVC



|                         |                                                                                                                                                  |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| Application :           | This cable is used in light fitting, and in switching and control equipment. It can be installed on cable trays, in conduit, and cable trunking. |
| Voltage rating :        | 450/750V                                                                                                                                         |
| Construction :          | Plain annealed copper (IEC 60228 Class 2), PVC insulated cable                                                                                   |
| Insulation colour :     | Brown, Black, Grey, Blue, Green/Yellow (Other colour upon request)                                                                               |
| Specification :         | SS 358-3, IEC 60227-3, IEC 60332-1-2                                                                                                             |
| Operating temperature : | 70°C                                                                                                                                             |

| Conductor          |                     |               | Insulation | Part No.        | Approx. Overall Diam. | Approx. Weight |
|--------------------|---------------------|---------------|------------|-----------------|-----------------------|----------------|
| Nominal Area       | No./Diam. of Strand | Approx. Diam. | Thickness  |                 |                       |                |
| (mm <sup>2</sup> ) | (no./mm)            | (mm)          | (mm)       |                 | (mm)                  | (kg/km)        |
| 1.5                | 7/0.53              | 1.59          | 0.7        | <b>0701**30</b> | 3.1                   | 22             |
| 2.5                | 7/0.67              | 2.01          | 0.8        | <b>0801**30</b> | 3.7                   | 34             |
| 4                  | 7/0.85              | 2.55          | 0.8        | <b>0901**30</b> | 4.3                   | 50             |
| 6                  | 7/1.04              | 3.12          | 0.8        | <b>1001**30</b> | 4.8                   | 70             |
| 10                 | 7/1.35              | 4.05          | 1.0        | <b>1101**30</b> | 6.2                   | 124            |
| 16                 | 7/1.70              | 5.10          | 1.0        | <b>1201**30</b> | 7.2                   | 183            |
| 25 (cs)            | 7/2.14              | 6.20          | 1.2        | <b>1301**30</b> | 9.0                   | 280            |
| 35 (cs)            | 19/1.53             | 7.30          | 1.2        | <b>1401**30</b> | 10.0                  | 380            |
| 50 (cs)            | 19/1.78             | 8.20          | 1.4        | <b>1501**30</b> | 11.2                  | 500            |
| 70 (cs)            | 19/2.14             | 10.00         | 1.4        | <b>1601**30</b> | 13.0                  | 715            |
| 95 (cs)            | 19/2.52             | 11.80         | 1.6        | <b>1701**30</b> | 15.2                  | 990            |
| 120 (cs)           | 37/2.03             | 13.00         | 1.6        | <b>1801**30</b> | 16.4                  | 1220           |
| 150 (cs)           | 37/2.25             | 14.40         | 1.8        | <b>1901**30</b> | 18.3                  | 1500           |
| 185 (cs)           | 37/2.52             | 16.20         | 2.0        | <b>2001**30</b> | 20.4                  | 1890           |
| 240 (cs)           | 61/2.25             | 18.80         | 2.2        | <b>2101**30</b> | 23.4                  | 2460           |
| 300 (cs)           | 61/2.52             | 21.20         | 2.4        | <b>2201**30</b> | 26.4                  | 3080           |
| 400 (cs)           | 61/2.85             | 24.30         | 2.6        | <b>2301**30</b> | 30.0                  | 3920           |
| 500 (cs)           | 61/3.20             | 27.40         | 2.8        | <b>2401**30</b> | 33.5                  | 4920           |
| 630                | 127/2.52            | 32.76         | 2.8        | <b>2501**30</b> | 38.7                  | 6260           |

\*\*Stands for colour code: ■ Brown (01) ■ Black (02) ■ Grey (03) ■ Blue (04) ■ Green/Yellow (05)

**Current rating and voltage drop**  
Please refer to Table 2 & 3 (Page 54)

(cs) : Circular Compact Stranded Conductor

# Current Rating and Voltage Drop

PVC Insulated Cables  
Single-Core, Unarmoured



tel (65) 6367 0107 fax (65) 6365 2963  
www.keystone-cable.com

Single-Core Cables with PVC Insulation, Unarmoured, with or without Sheath 450/750V or 0.6/1kV

**Table 2 : Current-Carrying Capacities (Amp)**  
**[CU/PVC or CU/PVC/PVC Cables]**

Conductor Operating Temperature : 70°C  
Ambient Temperature : 30°C

BS EN 50525-2-31 (BS 6004)  
IEC 60502-1 (BS 6346)  
SS 358-3

| Conductor Cross-sectional Area | Reference Method 4<br>(enclosed in conduit in thermally insulating wall etc.) |                             | Reference Method 3<br>(enclosed in conduit on a wall or in trunking etc.) |                             | Reference Method 1<br>(clipped direct)           |                                                          | Reference Method 11<br>(on a perforated cable tray horizontal or vertical) |                                                          | Reference Method 12<br>(in free air)                    |                                                         |                                |
|--------------------------------|-------------------------------------------------------------------------------|-----------------------------|---------------------------------------------------------------------------|-----------------------------|--------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------|---------------------------------------------------------|--------------------------------|
|                                |                                                                               |                             |                                                                           |                             |                                                  |                                                          |                                                                            |                                                          | Horizontal flat spaced                                  | Vertical flat spaced                                    | Trefoil                        |
|                                | 2 cables, 1-phase a.c. or d.c.                                                | 3 or 4 cables, 3-phase a.c. | 2 cables, 1-phase a.c. or d.c.                                            | 3 or 4 cables, 3-phase a.c. | 2 cables, 1-phase a.c. or d.c. flat and touching | 3 or 4 cables, 3-phase a.c. flat and touching or trefoil | 2 cables, 1-phase a.c. or d.c. flat and touching                           | 3 or 4 cables, 3-phase a.c. flat and touching or trefoil | 2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c. | 2 cables, 1-phase a.c. or d.c. or 3 cables 3-phase a.c. | 3 cables trefoil, 3-phase a.c. |
| 1                              | 2                                                                             | 3                           | 4                                                                         | 5                           | 6                                                | 7                                                        | 8                                                                          | 9                                                        | 10                                                      | 11                                                      | 12                             |
| mm <sup>2</sup>                | A                                                                             | A                           | A                                                                         | A                           | A                                                | A                                                        | A                                                                          | A                                                        | A                                                       | A                                                       | A                              |
| 1                              | 11                                                                            | 10.5                        | 13.5                                                                      | 12                          | 15.5                                             | 14                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 1.5                            | 14.5                                                                          | 13.5                        | 17.5                                                                      | 15.5                        | 20                                               | 18                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 2.5                            | 19.5                                                                          | 18                          | 24                                                                        | 21                          | 27                                               | 25                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 4                              | 26                                                                            | 24                          | 32                                                                        | 28                          | 37                                               | 33                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 6                              | 34                                                                            | 31                          | 41                                                                        | 36                          | 47                                               | 43                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 10                             | 46                                                                            | 42                          | 57                                                                        | 50                          | 65                                               | 59                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 16                             | 61                                                                            | 56                          | 76                                                                        | 68                          | 87                                               | 79                                                       | -                                                                          | -                                                        | -                                                       | -                                                       | -                              |
| 25                             | 80                                                                            | 73                          | 101                                                                       | 89                          | 114                                              | 104                                                      | 126                                                                        | 112                                                      | 146                                                     | 130                                                     | 110                            |
| 35                             | 99                                                                            | 89                          | 125                                                                       | 110                         | 141                                              | 129                                                      | 156                                                                        | 141                                                      | 181                                                     | 162                                                     | 137                            |
| 50                             | 119                                                                           | 108                         | 151                                                                       | 134                         | 182                                              | 167                                                      | 191                                                                        | 172                                                      | 219                                                     | 197                                                     | 167                            |
| 70                             | 151                                                                           | 136                         | 192                                                                       | 171                         | 234                                              | 214                                                      | 246                                                                        | 223                                                      | 281                                                     | 254                                                     | 216                            |
| 95                             | 182                                                                           | 164                         | 232                                                                       | 207                         | 284                                              | 261                                                      | 300                                                                        | 273                                                      | 341                                                     | 311                                                     | 264                            |
| 120                            | 210                                                                           | 188                         | 269                                                                       | 239                         | 330                                              | 303                                                      | 349                                                                        | 318                                                      | 396                                                     | 362                                                     | 308                            |
| 150                            | 240                                                                           | 216                         | 300                                                                       | 262                         | 381                                              | 349                                                      | 404                                                                        | 369                                                      | 456                                                     | 419                                                     | 356                            |
| 185                            | 273                                                                           | 245                         | 341                                                                       | 296                         | 436                                              | 400                                                      | 463                                                                        | 424                                                      | 521                                                     | 480                                                     | 409                            |
| 240                            | 320                                                                           | 286                         | 400                                                                       | 346                         | 515                                              | 472                                                      | 549                                                                        | 504                                                      | 615                                                     | 569                                                     | 485                            |
| 300                            | 367                                                                           | 328                         | 458                                                                       | 394                         | 594                                              | 545                                                      | 635                                                                        | 584                                                      | 709                                                     | 659                                                     | 561                            |
| 400                            | -                                                                             | -                           | 546                                                                       | 467                         | 694                                              | 634                                                      | 732                                                                        | 679                                                      | 852                                                     | 795                                                     | 656                            |
| 500                            | -                                                                             | -                           | 626                                                                       | 533                         | 792                                              | 723                                                      | 835                                                                        | 778                                                      | 982                                                     | 920                                                     | 749                            |
| 630                            | -                                                                             | -                           | 720                                                                       | 611                         | 904                                              | 826                                                      | 953                                                                        | 892                                                      | 1138                                                    | 1070                                                    | 855                            |
| 800                            | -                                                                             | -                           | -                                                                         | -                           | 1030                                             | 943                                                      | 1086                                                                       | 1020                                                     | 1265                                                    | 1188                                                    | 971                            |
| 1000                           | -                                                                             | -                           | -                                                                         | -                           | 1154                                             | 1058                                                     | 1216                                                                       | 1149                                                     | 1420                                                    | 1337                                                    | 1079                           |

Note : For rating factors of ambient temperature other than 30°C, please refer to Table 25 (Page 66)

**Table 3 : Voltage Drop (Per Amp, Per Meter)**  
**[CU/PVC or CU/PVC/PVC Cables]**

Conductor Operating Temperature : 70°C

BS EN 50525-2-31 (BS 6004)  
IEC 60502-1 (BS 6346)  
SS 358-3

| Conductor Cross-sectional Area | 2 cables, d.c. | 2 cables, 1-phase a.c.                                             |      |      |                                                                 |       |       |                              |      |      | 3 or 4 cables, 3-phase a.c.                                        |      |      |                                        |       |       |                                          |      |      |                                   |      |      |
|--------------------------------|----------------|--------------------------------------------------------------------|------|------|-----------------------------------------------------------------|-------|-------|------------------------------|------|------|--------------------------------------------------------------------|------|------|----------------------------------------|-------|-------|------------------------------------------|------|------|-----------------------------------|------|------|
|                                |                | Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall) |      |      | Reference Methods 1 & 11 (clipped direct or on trays, touching) |       |       | Reference Method 12 (spaced) |      |      | Reference Methods 3 & 4 (enclosed in conduit etc, in or on a wall) |      |      | Reference Methods 1, 11 & 12 (trefoil) |       |       | Reference Methods 1 & 11 (flat touching) |      |      | Reference Method 12 (flat spaced) |      |      |
|                                |                | 1                                                                  | 2    | 3    | 4                                                               | 5     | 6     | 7                            | 8    | 9    | 10                                                                 | 11   | 12   | 13                                     | 14    | 15    | 16                                       | 17   | 18   | 19                                | 20   | 21   |
| mm²                            | mV/A/m         | mV/A/m                                                             |      |      | mV/A/m                                                          |       |       | mV/A/m                       |      |      | mV/A/m                                                             |      |      | mV/A/m                                 |       |       | mV/A/m                                   |      |      | mV/A/m                            |      |      |
| 1                              | 44             | 44                                                                 |      |      | 44                                                              |       |       | 44                           |      |      | 38                                                                 |      |      | 38                                     |       |       | 38                                       |      |      | 38                                |      |      |
| 1.5                            | 29             | 29                                                                 |      |      | 29                                                              |       |       | 29                           |      |      | 25                                                                 |      |      | 25                                     |       |       | 25                                       |      |      | 25                                |      |      |
| 2.5                            | 18             | 18                                                                 |      |      | 18                                                              |       |       | 18                           |      |      | 15                                                                 |      |      | 15                                     |       |       | 15                                       |      |      | 15                                |      |      |
| 4                              | 11             | 11                                                                 |      |      | 11                                                              |       |       | 11                           |      |      | 9.5                                                                |      |      | 9.5                                    |       |       | 9.5                                      |      |      | 9.5                               |      |      |
| 6                              | 7.3            | 7.3                                                                |      |      | 7.3                                                             |       |       | 7.3                          |      |      | 6.4                                                                |      |      | 6.4                                    |       |       | 6.4                                      |      |      | 6.4                               |      |      |
| 10                             | 4.4            | 4.4                                                                |      |      | 4.4                                                             |       |       | 4.4                          |      |      | 3.8                                                                |      |      | 3.8                                    |       |       | 3.8                                      |      |      | 3.8                               |      |      |
| 16                             | 2.8            | 2.8                                                                |      |      | 2.8                                                             |       |       | 2.8                          |      |      | 2.4                                                                |      |      | 2.4                                    |       |       | 2.4                                      |      |      | 2.4                               |      |      |
|                                |                | r                                                                  | x    | z    | r                                                               | x     | z     | r                            | x    | z    | r                                                                  | x    | z    | r                                      | x     | z     | r                                        | x    | z    | r                                 | x    | z    |
| 25                             | 1.75           | 1.80                                                               | 0.33 | 1.80 | 1.75                                                            | 0.20  | 1.75  | 1.75                         | 0.29 | 1.80 | 1.50                                                               | 0.29 | 1.55 | 1.50                                   | 0.175 | 1.50  | 1.50                                     | 0.25 | 1.55 | 1.50                              | 0.32 | 1.55 |
| 35                             | 1.25           | 1.30                                                               | 0.31 | 1.30 | 1.25                                                            | 0.195 | 1.25  | 1.25                         | 0.28 | 1.30 | 1.10                                                               | 0.27 | 1.10 | 1.10                                   | 0.170 | 1.10  | 1.10                                     | 0.24 | 1.10 | 1.10                              | 0.32 | 1.15 |
| 50                             | 0.93           | 0.95                                                               | 0.30 | 1.00 | 0.93                                                            | 0.190 | 0.95  | 0.93                         | 0.28 | 0.97 | 0.81                                                               | 0.26 | 0.85 | 0.80                                   | 0.165 | 0.82  | 0.80                                     | 0.24 | 0.84 | 0.80                              | 0.32 | 0.86 |
| 70                             | 0.63           | 0.65                                                               | 0.29 | 0.72 | 0.63                                                            | 0.185 | 0.66  | 0.63                         | 0.27 | 0.69 | 0.56                                                               | 0.25 | 0.61 | 0.55                                   | 0.160 | 0.57  | 0.55                                     | 0.24 | 0.60 | 0.55                              | 0.31 | 0.63 |
| 95                             | 0.46           | 0.49                                                               | 0.28 | 0.56 | 0.47                                                            | 0.180 | 0.50  | 0.47                         | 0.27 | 0.54 | 0.42                                                               | 0.24 | 0.48 | 0.41                                   | 0.155 | 0.43  | 0.41                                     | 0.23 | 0.47 | 0.40                              | 0.31 | 0.51 |
| 120                            | 0.36           | 0.39                                                               | 0.27 | 0.47 | 0.37                                                            | 0.175 | 0.41  | 0.37                         | 0.26 | 0.45 | 0.33                                                               | 0.23 | 0.41 | 0.32                                   | 0.150 | 0.36  | 0.32                                     | 0.23 | 0.40 | 0.32                              | 0.30 | 0.44 |
| 150                            | 0.29           | 0.31                                                               | 0.27 | 0.41 | 0.30                                                            | 0.175 | 0.34  | 0.29                         | 0.26 | 0.39 | 0.27                                                               | 0.23 | 0.36 | 0.26                                   | 0.150 | 0.30  | 0.26                                     | 0.23 | 0.34 | 0.26                              | 0.30 | 0.40 |
| 185                            | 0.23           | 0.25                                                               | 0.27 | 0.37 | 0.24                                                            | 0.170 | 0.29  | 0.24                         | 0.26 | 0.35 | 0.22                                                               | 0.23 | 0.32 | 0.21                                   | 0.145 | 0.26  | 0.21                                     | 0.22 | 0.31 | 0.21                              | 0.30 | 0.36 |
| 240                            | 0.180          | 0.195                                                              | 0.26 | 0.33 | 0.185                                                           | 0.165 | 0.25  | 0.185                        | 0.25 | 0.31 | 0.17                                                               | 0.23 | 0.29 | 0.160                                  | 0.145 | 0.22  | 0.160                                    | 0.22 | 0.27 | 0.160                             | 0.29 | 0.34 |
| 300                            | 0.145          | 0.160                                                              | 0.26 | 0.31 | 0.150                                                           | 0.165 | 0.22  | 0.150                        | 0.25 | 0.29 | 0.14                                                               | 0.23 | 0.27 | 0.130                                  | 0.140 | 0.190 | 0.130                                    | 0.22 | 0.25 | 0.130                             | 0.29 | 0.32 |
| 400                            | 0.105          | 0.130                                                              | 0.26 | 0.29 | 0.120                                                           | 0.160 | 0.20  | 0.115                        | 0.25 | 0.27 | 0.12                                                               | 0.22 | 0.25 | 0.105                                  | 0.140 | 0.175 | 0.105                                    | 0.21 | 0.24 | 0.100                             | 0.29 | 0.31 |
| 500                            | 0.086          | 0.110                                                              | 0.26 | 0.28 | 0.098                                                           | 0.155 | 0.185 | 0.093                        | 0.24 | 0.26 | 0.10                                                               | 0.22 | 0.25 | 0.086                                  | 0.135 | 0.160 | 0.086                                    | 0.21 | 0.23 | 0.081                             | 0.29 | 0.30 |
| 630                            | 0.068          | 0.094                                                              | 0.25 | 0.27 | 0.081                                                           | 0.155 | 0.175 | 0.076                        | 0.24 | 0.25 | 0.08                                                               | 0.22 | 0.24 | 0.072                                  | 0.135 | 0.150 | 0.072                                    | 0.21 | 0.22 | 0.066                             | 0.28 | 0.29 |
| 800                            | 0.053          | -                                                                  | -    | -    | 0.068                                                           | 0.150 | 0.165 | 0.061                        | 0.24 | 0.25 | -                                                                  | -    | -    | 0.060                                  | 0.130 | 0.145 | 0.060                                    | 0.21 | 0.22 | 0.053                             | 0.28 | 0.29 |
| 1000                           | 0.042          | -                                                                  | -    | -    | 0.059                                                           | 0.150 | 0.160 | 0.050                        | 0.24 | 0.24 | -                                                                  | -    | -    | 0.052                                  | 0.130 | 0.140 | 0.052                                    | 0.20 | 0.21 | 0.044                             | 0.28 | 0.28 |

**Table 25 : Correction Factor for Ambient Air Temperature Other Than 30°C to be Applied to the Current-Carrying Capacities for Cables in Free Air**

| Ambient Temperature<br>(°C) | Insulation    |                |                  |                  |                  |
|-----------------------------|---------------|----------------|------------------|------------------|------------------|
|                             | PVC<br>(70°C) | XLPE<br>(90°C) | HT-PVC<br>(90°C) | Rubber<br>(85°C) | Rubber<br>(60°C) |
| 10                          | 1.22          | 1.15           | -                | -                | -                |
| 15                          | 1.17          | 1.12           | -                | -                | -                |
| 20                          | 1.12          | 1.08           | -                | -                | -                |
| 25                          | 1.06          | 1.04           | 1.03             | 1.02             | -                |
| 30                          | 1.00          | 1.00           | 1.00             | 1.00             | 1.00             |
| 35                          | 0.94          | 0.96           | 0.97             | 0.95             | 0.91             |
| 40                          | 0.87          | 0.91           | 0.94             | 0.90             | 0.82             |
| 45                          | 0.79          | 0.87           | 0.91             | 0.85             | 0.71             |
| 50                          | 0.71          | 0.82           | 0.87             | 0.80             | 0.58             |
| 55                          | 0.61          | 0.76           | 0.84             | 0.74             | 0.41             |
| 60                          | 0.50          | 0.71           | 0.80             | 0.67             | -                |
| 65                          | 0.35          | 0.65           | 0.76             | 0.60             | -                |
| 70                          | -             | 0.58           | 0.71             | 0.52             | -                |
| 75                          | -             | 0.50           | 0.61             | 0.43             | -                |
| 80                          | -             | 0.41           | 0.50             | 0.30             | -                |
| 85                          | -             | 0.29           | 0.35             | -                | -                |

**Table 26 : Correction Factor for Ambient Ground Temperature Other Than 15°C to be Applied to the Current-Carrying Capacities for Cables in Ducts or in Ground**

| Ground Temperature<br>(°C) | Insulation    |                |
|----------------------------|---------------|----------------|
|                            | PVC<br>(70°C) | XLPE<br>(90°C) |
| 10                         | 1.04          | 1.03           |
| 15                         | 1.00          | 1.00           |
| 20                         | 0.95          | 0.97           |
| 25                         | 0.90          | 0.93           |
| 30                         | 0.85          | 0.89           |
| 35                         | 0.80          | 0.86           |
| 40                         | 0.74          | 0.82           |
| 45                         | 0.67          | 0.77           |
| 50                         | 0.60          | 0.73           |
| 55                         | -             | 0.68           |
| 60                         | -             | 0.63           |
| 65                         | -             | 0.58           |