

2xHSYRaY / A2xHSYRaY | Single Core (Cu or Al/XLPE/CTS or CWS/PVC/AWA/PVC)

APPLICATION

Power plant Switch Gear Generator Industrial Substation Distribution network
Residential network

CONSTRUCTION

Conductor: Stranded Circular Compacted, Plain annealed copper or Aluminium, Class-2 to BDS IEC 60228, IS 8130

Conductor screen: Semi-conducting XLPE to BDS IEC 60502-2, IS 7098-2

Insulation: XLPE to BDS IEC 60502-2, IS 7098-2

Insulation screen: Semi-conductive XLPE to BDS IEC 60502-2, IS 7098-2

Metallic screen: Copper Tape or Copper wire to BDS IEC 60502-2, IS 7098-2

Inner covering: PVC, ST-2 to BDS IEC 60502-2, IS 5831

Armour: Round Aluminium wire to BDS IEC 60502-2, IS 3975

Sheath: PVC, ST-2 to BDS IEC 60502-2, IS 5831

Option: FR Type/ FRLS Type

VOLTAGE GRADE

Uo/U (Um) : 12/20 (24) kV , Test Voltage: 42 kv

Permissible Service Voltage: 12.7/22 kV

OPERATING TEMP.

-20°C to +90°C

Max Short Circuit 250°C

MIN. BENDING RADIUS

For Single Core

Approx. 20x Cable Diameter

For Multicore

Approx. 15x Cable Diameter

BDS IEC 60502-2

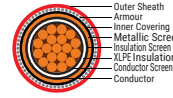
IS 7098-2

COLOR

Insulated Core: ● (Natural)

Sheath: ● (Red or other colors available on request)

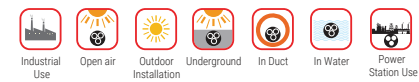
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CHARACTERISTICS



INSTALLATION CONDITION



CABLE DESIGN PARAMETER

PHYSICAL DATA

| Nominal cross sectional area of conductor | Shape of conductor | Conductor diameter | | Nominal thickness of insulation | Nominal diameter of Al wire armour | Nominal thickness of sheath | Metallic screen | | Approx. overall diameter of cable | Approx. weight of cable | |
|-------------------------------------------|--------------------|--------------------|---------|---------------------------------|------------------------------------|-----------------------------|--------------------------|---------------------|-----------------------------------|-------------------------|-------|
| | | Minimum | Maximum | | | | thickness of copper tape | area of copper wire | | Cu | Al |
| Core x mm ² | - | mm | mm | mm | mm | mm | mm | mm ² | mm | kg/km | kg/km |
| 1 x 35 | rmc | 6.6 | 7.5 | 5.5 | 1.6 | 1.9 | 0.06 | 16 | 32.0 | 1400 | 1180 |
| 1 x 50 | rmc | 7.7 | 8.6 | 5.5 | 1.6 | 2.0 | 0.06 | 16 | 33.2 | 1600 | 1290 |
| 1 x 70 | rmc | 9.3 | 10.2 | 5.5 | 2.0 | 2.0 | 0.06 | 16 | 35.7 | 1960 | 1500 |
| 1 x 95 | rmc | 11.0 | 12.0 | 5.5 | 2.0 | 2.1 | 0.06 | 16 | 38.2 | 2340 | 1740 |
| 1 x 120 | rmc | 12.3 | 13.5 | 5.5 | 2.0 | 2.1 | 0.06 | 16 | 39.6 | 2650 | 1880 |
| 1 x 150 | rmc | 13.7 | 15.0 | 5.5 | 2.0 | 2.2 | 0.06 | 25 | 41.3 | 3000 | 2050 |
| 1 x 185 | rmc | 15.3 | 16.8 | 5.5 | 2.0 | 2.2 | 0.06 | 25 | 43.0 | 3430 | 2240 |
| 1 x 240 | rmc | 17.6 | 19.2 | 5.5 | 2.0 | 2.3 | 0.06 | 25 | 45.6 | 4100 | 2560 |
| 1 x 300 | rmc | 19.7 | 21.6 | 5.5 | 2.5 | 2.4 | 0.06 | 25 | 49.1 | 4930 | 3030 |
| 1 x 400 | rmc | 22.3 | 24.6 | 5.5 | 2.5 | 2.5 | 0.06 | 35 | 52.6 | 6050 | 3570 |
| 1 x 500 | rmc | 25.3 | 27.6 | 5.5 | 2.5 | 2.6 | 0.06 | 35 | 55.8 | 7180 | 4050 |
| 1 x 630 | rmc | 28.7 | 32.5 | 5.5 | 2.5 | 2.8 | 0.06 | 35 | 60.0 | 8720 | 4730 |
| 1 x 800 | rmc | 32.6 | 36.7 | 5.5 | 2.5 | 2.9 | 0.06 | 50 | 64.5 | 10600 | 5550 |
| 1 x 1000 | rmc | 36.3 | 40.5 | 5.5 | 2.5 | 3.0 | 0.06 | 50 | 69.0 | 12850 | 6470 |

ELECTRICAL DATA

| Nominal Cross sectional area | Maximum D.C resistance of conductor at 20 °C | | Maximum A.C resistance of conductor at 90 °C | | Short circuit rating of conductor in one second | | Short circuit rating of metallic screen in one second | | Approx. Capacitance of cable | Approx. Inductance of cable | Current rating in ground at 20 °C | | | | Current rating in air at 30 °C | |
|------------------------------|----------------------------------------------|--------|----------------------------------------------|-------|-------------------------------------------------|------|-------------------------------------------------------|---------|------------------------------|-----------------------------|-----------------------------------|-----|-----------------------------------|-----|--------------------------------|------|
| | | | | | | | | | | | Laid direct in flat spaced | | Laid in single duct flat touching | | Laid direct in flat touching | |
| | Cu | Al | Cu | Al | Cu | Al | Cu tape | Cu wire | | | Cu | Al | Cu | Al | Cu | Al |
| mm ² | Ω/km | Ω/km | Ω/km | Ω/km | kA | kA | kA | kA | μF/km | mH/km | Amp | Amp | Amp | Amp | Amp | Amp |
| 35 | 0.524 | 0.868 | 0.668 | 1.11 | 5.0 | 3.3 | 0.39 | 2.40 | 0.162 | 0.509 | 172 | 134 | 159 | 123 | 203 | 157 |
| 50 | 0.387 | 0.641 | 0.494 | 0.822 | 7.2 | 4.7 | 0.39 | 2.40 | 0.177 | 0.477 | 203 | 157 | 188 | 146 | 243 | 189 |
| 70 | 0.268 | 0.443 | 0.342 | 0.568 | 10.0 | 6.6 | 0.39 | 2.40 | 0.200 | 0.455 | 246 | 192 | 229 | 178 | 303 | 236 |
| 95 | 0.193 | 0.320 | 0.247 | 0.411 | 13.6 | 8.9 | 0.39 | 2.40 | 0.222 | 0.432 | 293 | 229 | 274 | 213 | 369 | 287 |
| 120 | 0.153 | 0.253 | 0.196 | 0.325 | 17.2 | 11.3 | 0.39 | 2.40 | 0.241 | 0.414 | 332 | 260 | 311 | 242 | 426 | 332 |
| 150 | 0.124 | 0.206 | 0.159 | 0.265 | 21.5 | 14.1 | 0.39 | 3.75 | 0.257 | 0.401 | 366 | 288 | 347 | 271 | 481 | 376 |
| 185 | 0.0991 | 0.164 | 0.127 | 0.211 | 26.5 | 17.4 | 0.39 | 3.75 | 0.280 | 0.386 | 410 | 324 | 391 | 307 | 550 | 432 |
| 240 | 0.0754 | 0.125 | 0.098 | 0.162 | 34.3 | 22.6 | 0.62 | 3.75 | 0.307 | 0.371 | 470 | 373 | 453 | 356 | 647 | 511 |
| 300 | 0.0601 | 0.100 | 0.079 | 0.130 | 42.9 | 28.2 | 0.62 | 3.75 | 0.336 | 0.363 | 524 | 419 | 510 | 402 | 739 | 586 |
| 400 | 0.0470 | 0.0778 | 0.063 | 0.102 | 57.2 | 37.6 | 0.62 | 5.25 | 0.370 | 0.347 | 572 | 466 | 571 | 457 | 837 | 676 |
| 500 | 0.0366 | 0.0605 | 0.050 | 0.080 | 71.5 | 47.0 | 0.62 | 5.25 | 0.406 | 0.338 | 672 | 546 | 661 | 537 | 938 | 776 |
| 630 | 0.0283 | 0.0469 | 0.041 | 0.064 | 90.1 | 59.2 | 0.62 | 5.25 | 0.449 | 0.325 | 882 | 646 | 771 | 617 | 1048 | 886 |
| 800 | 0.0221 | 0.0367 | 0.039 | 0.051 | 115.0 | 75.2 | 0.62 | 7.50 | 0.490 | 0.316 | 1002 | 756 | 871 | 717 | 1148 | 986 |
| 1000 | 0.0176 | 0.0291 | 0.029 | 0.043 | 143.0 | 94.0 | 0.62 | 7.50 | 0.540 | 0.307 | 1112 | 856 | 971 | 807 | 1238 | 1086 |

MEDIUM VOLTAGE