



35kV AL 100% TRXLPE One-Half (Based on Short Circuit) HI-DRI-PLUS®. Renewable (Solar or Wind)

Moisture Blocked Aluminum Conductors. TRXLPE Insulation. One-Half Copper Concentric Neutrals. XLPE Jacket



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Moisture Blocked 1350 H16/H26 Aluminum, Class B Compressed or Compressed Unilay Stranded
2. **Strand Shield:** Semi-conducting Crosslinked Polyethylene
3. **Insulation:** Tree Retardant Crosslinked Polyethylene (TRXLPE)
4. **Insulation Shield:** Strippable Semi-conducting Crosslinked Polyethylene
5. **Concentric Neutral:** Annealed Copper Wires Helically Applied One-Half Concentric Neutral
6. **Overall Jacket & Water Block:** HI-DRI-PLUS® Water Swellable Powder Black Crosslinked Polyethylene (XLPE) with Red Extruded Stripes

APPLICATIONS AND FEATURES:

- Predominately used for renewable projects with wind or solar applications.
- Suitable for use in wet or dry locations, direct burial, underground ducts, and exposure to direct sunlight.
- To be used at conductor temperature not to exceed 105°C normal operation.
- UL listed MV-105
- The concentric neutral count and size listed in Table 1 are based on the ICEA P-45-482 short circuit calculation of an MV-90 design. The short circuit value in Table 1 is calculated using a higher thermal limit of a crosslinked XLPE jacket MV-105 design.

SPECIFICATIONS:

- ASTM B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- UL 1072 Medium-Voltage Power Cables
- ICEA S-94-649 Standard for Concentric Neutral Cables Rated 5 - 46kV
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV (Qualification Test Requirements)
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661



SAMPLE PRINT LEGEND:

SOUTHWIRE(R) HI-DRI(R) (UL) XXX AWG AL 345 MILS TRXLPE TYPE MV-105 35KV 100% INSUL LEVEL -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET

Table 1 – Weights and Measurements

| Stock Number | Cond. Size | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Concentric Neutral | Neutral DC Resistance 25°C | Jacket Thickness | Approx. OD | Approx. Weight | Min Bending Radius | Max Pull Tension |
|---------------|---------------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|----------------------------|------------------|------------|----------------|--------------------|------------------|
| | AWG/ Kcmil | inch | inch | mil | inch | No. x AWG | Ω /1000ft | mil | inch | lb / 1000ft | inch | lb |
| 662906 | 1/0 (19) | 0.361 | 1.072 | 345 | 1.182 | 6x14 | 0.438 | 50 | 1.410 | 783 | 11.3 | 633 |
| TBA | 2/0 (19) | 0.395 | 1.123 | 345 | 1.233 | 7x14 | 0.375 | 50 | 1.461 | 912 | 11.7 | 798 |
| 620651? A? | 4/0 (19) | 0.498 | 1.218 | 345 | 1.328 | 12x14 | 0.219 | 50 | 1.556 | 1061 | 12.4 | 1269 |
| 626306 | 4/0 (19) | 0.498 | 1.218 | 345 | 1.328 | 12x14 | 0.219 | 50 | 1.556 | 1062 | 12.4 | 1269 |
| TBA | 250 (37) | 0.558 | 1.294 | 345 | 1.404 | 14x14 | 0.187 | 75 | 1.682 | 1332 | 13.5 | 1500 |
| TBA | 350 (37) | 0.661 | 1.397 | 345 | 1.507 | 19x14 | 0.138 | 75 | 1.785 | 1579 | 14.3 | 2100 |
| TBA | 500 (37) | 0.789 | 1.525 | 345 | 1.665 | 27x14 | 0.097 | 75 | 1.943 | 1976 | 15.5 | 3000 |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

† Hi-Dri only (not HI-DRI-PLUS®). No water swellable powder.

Table 2 – Electrical and Engineering Data

| Cond. Size | DC Resistance @ 25°C | AC Resistance @ 90°C | Capacitive Reactance @ 60Hz | Inductive Reactance @ 60Hz | Charging Current | Dielectric Loss | Zero Sequence Impedance | Positive Sequence Impedance | Short Circuit Current @ 30 Cycle | Allowable Ampacity in Duct 90°C | Allowable Ampacity Directly Buried 90°C |
|---------------|----------------------|----------------------|-----------------------------|----------------------------|------------------|-----------------|-------------------------|-----------------------------|----------------------------------|---------------------------------|---|
| AWG/ Kcmil | Ω/1000ft | Ω/1000ft | MΩ*1000ft | Ω/1000ft | A/1000ft | W/1000ft | Ω/1000ft | Ω/1000ft | Amp | Amp | Amp |
| 1/0 (19) | 0.167 | 0.211 | 0.067 | 0.053 | 0.301 | 1.8 | 0.264 + j0.741 | 0.211 + j0.054 | 3103 | 160 | 195 |
| 2/0 (19) | 0.133 | 0.167 | 0.064 | 0.052 | 0.311 | 1.9 | 0.221 + j0.739 | 0.167 + j0.052 | 3621 | 185 | 220 |
| 4/0 (19) | 0.084 | 0.105 | 0.055 | 0.048 | 0.361 | 2.2 | 0.159 + j0.734 | 0.105 + j0.049 | 6207 | 235 | 280 |
| 4/0 (19) | 0.084 | 0.105 | 0.055 | 0.048 | 0.361 | 2.2 | 0.159 + j0.734 | 0.105 + j0.049 | 6207 | 235 | 280 |
| 250 (37) | 0.071 | 0.090 | 0.051 | 0.047 | 0.389 | 2.4 | 0.144 + j0.728 | 0.090 + j0.048 | 7242 | | |
| 350 (37) | 0.050 | 0.065 | 0.046 | 0.045 | 0.435 | 2.6 | 0.119 + j0.722 | 0.065 + j0.045 | 9828 | 315 | 370 |
| 500 (37) | 0.035 | 0.046 | 0.040 | 0.042 | 0.492 | 3.0 | 0.100 + j0.715 | 0.046 + j0.043 | 13967 | 380 | 435 |

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.



Table 3 – Weights and Measurements (Metric)

| Stock Number | Cond. Size | Diameter Over Conductor | Diameter Over Insulation | Insul. Thickness | Diameter Over Insulation Shield | Concentric Neutral | Neutral DC Resistance 25°C | Jacket Thickness | Approx. OD | Approx. Weight | Min Bending Radius | Max Pull Tension |
|--------------|------------|-------------------------|--------------------------|------------------|---------------------------------|--------------------|----------------------------|------------------|------------|----------------|--------------------|------------------|
| | AWG/Kcmil | mm | mm | mm | mm | No. x AWG | Ω/km | mm | mm | kg/km | mm | newton |
| 662906 | 1/0 (19) | 9.17 | 27.23 | 8.76 | 30.02 | 6x14 | 1.44 | 1.27 | 35.81 | 1165 | 287.02 | 2817 |
| TBA | 2/0 (19) | 10.03 | 28.52 | 8.76 | 31.32 | 7x14 | 1.23 | 1.27 | 37.11 | 1357 | 297.18 | 3551 |
| 620651? A? | 4/0 (19) | 12.65 | 30.94 | 8.76 | 33.73 | 12x14 | 0.72 | 1.27 | 39.52 | 1579 | 314.96 | 5647 |
| 626306 | 4/0 (19) | 12.65 | 30.94 | 8.76 | 33.73 | 12x14 | 0.72 | 1.27 | 39.52 | 1580 | 314.96 | 5647 |
| TBA | 250 (37) | 14.17 | 32.87 | 8.76 | 35.66 | 14x14 | 0.61 | 1.91 | 42.72 | 1982 | 342.90 | 6675 |
| TBA | 350 (37) | 16.79 | 35.48 | 8.76 | 38.28 | 19x14 | 0.45 | 1.91 | 45.34 | 2350 | 363.22 | 9345 |
| TBA | 500 (37) | 20.04 | 38.73 | 8.76 | 42.29 | 27x14 | 0.32 | 1.91 | 49.35 | 2941 | 393.70 | 13350 |

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

† Hi-Dri only (not HI-DRI-PLUS®). No water swellable powder.

Table 4 – Electrical and Engineering Data (Metric)

| Cond. Size | DC Resistance @ 25°C | AC Resistance @ 90°C | Capacitive Reactance @ 60Hz | Inductive Reactance @ 60Hz | Charging Current | Dielectric Loss | Zero Sequence Impedance* | Positive Sequence Impedance* | Short Circuit Current @ 30 Cycle | Allowable Ampacity in Duct 90°C | Allowable Ampacity Directly Buried 90°C |
|------------|----------------------|----------------------|-----------------------------|----------------------------|------------------|-----------------|--------------------------|------------------------------|----------------------------------|---------------------------------|---|
| AWG/Kcmil | Ω/km | Ω/km | MΩ*km | Ω/km | A/km | W/km | Ω/1000ft | Ω/1000ft | Amp | Amp | Amp |
| 1/0 (19) | 0.5479 | 0.69 | 0.0204 | 0.1739 | 0.988 | 5.9055 | 0.264 + j0.741 | 0.211 + j0.054 | 3103 | 160 | 195 |
| 2/0 (19) | 0.4364 | 0.55 | 0.0195 | 0.1706 | 1.020 | 6.2336 | 0.221 + j0.739 | 0.167 + j0.052 | 3621 | 185 | 220 |
| 4/0 (19) | 0.2756 | 0.34 | 0.0168 | 0.1575 | 1.184 | 7.2178 | 0.159 + j0.734 | 0.105 + j0.049 | 6207 | 235 | 280 |
| 4/0 (19) | 0.2756 | 0.34 | 0.0168 | 0.1575 | 1.184 | 7.2178 | 0.159 + j0.734 | 0.105 + j0.049 | 6207 | 235 | 280 |
| 250 (37) | 0.2329 | 0.30 | 0.0155 | 0.1542 | 1.276 | 7.8740 | 0.144 + j0.728 | 0.090 + j0.048 | 7242 | | |
| 350 (37) | 0.1640 | 0.21 | 0.0140 | 0.1476 | 1.427 | 8.5302 | 0.119 + j0.722 | 0.065 + j0.045 | 9828 | 315 | 370 |
| 500 (37) | 0.1148 | 0.15 | 0.0122 | 0.1378 | 1.614 | 9.8425 | 0.100 + j0.715 | 0.046 + j0.043 | 13967 | 380 | 435 |

*Ampacities for Direct Buried are based on ICEA P-117-734-2016 Single-Conductor Solid Dielectric 15-35kV. Single Circuit Flat Direct Buried Figure 3

*Ampacities for Duct are based on ICEA P-117-734-2016 for Single-Conductor Solid Dielectric 15-35kV. Single Circuit Trefoil Conduit Figure 7.

*Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.

CN
Calculator

