



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:

- 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

| 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 |
| 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 |
| 500 (37) | 0.035 | 0.046 | 0.042 | 0.042 | 0.47 | 2.86 | 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)

| 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 |
| 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 |
| 500 (37) | 0.1148 | 0.15 | 0.0128 | 0.1378 | 1.542 | 9.3832 | 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.

