



## 35kV AL 133% TRXLPE One-Third Neutral LLDPE

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

1. **Conductor:** Class B compressed Aluminum ASTM 1350 ¾ hard H16/H26; Conductor moisture block (optional)
2. **Conductor Shield:** Conventional Semi-conducting cross-linked copolymer; Supersmooth conductor shield optional; A conductor tape is used for cable size larger than or equal to 1500 Kcmil
3. **Insulation:** 420 Mils Tree Retardant Cross Linked Polyethylene 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
6. **Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, Black (red extruded stripes optional); PowerGlide® LLDPE jacket optional

### APPLICATIONS AND FEATURES:

Southwire's 35kV cables are suited for use in wet and dry areas, conduits, ducts, direct burial, sunlight, and where superior electrical properties are desired. These cables are capable of operating continuously at the conductor temperature not in excess of 90°C for normal operation, 130°C for emergency overload, and 250°C for short circuit conditions. Jacket types available that can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

### 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
- 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)
- Rural Utility Standard RUS 1728F-U1 or 1728.204 (Electric standards and specifications for materials and construction)
- UL 1072 Listed as MV 90 When Specified
- Optional CSA 68.5: -40°C and MV 90°C optional marking available upon request

### SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 35000 VOLTS TRXLPE INSULATION 420 MILS -- (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
618589	4/0 (19)	0.498	1.368	420	1.478	11x14	0.239	75	1.760	1269	14.1	1269
TBA	250 (37)	0.558	1.444	420	1.554	13x14	0.202	75	1.832	1524	14.7	1500
618590	350 (37)	0.661	1.541	420	1.651	18x14	0.146	75	1.933	1643	15.5	2100
618591	500 (37)	0.789	1.669	420	1.809	16x12	0.103	75	2.124	2079	17.0	3000
628573#	750 (61)	0.968	1.858	420	1.998	24x12	0.069	75	2.313	2659	18.5	4500
616939	750 (61)	0.968	1.858	420	1.998	24x12	0.069	75	2.313	2660	18.5	4500
618592	750 (61)	0.968	1.858	420	1.998	15x10	0.069	75	2.355	2718	18.8	4500
618593	1000 (61)	1.117	2.007	420	2.147	20x10	0.052	75	2.504	3257	20.0	6000

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor

# HiDri-Plus® - Water Blocking Powder

§ HiDri-Plus® - Water Blocking Powder. CSA Listed

**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
4/0 (19)	0.084	0.105	0.063	0.051	0.316	1.9	0.159 + j0.952	0.105 + j0.279	3836	235	285
250 (37)	0.071	0.090	0.059	0.049	0.340	2.1	0.144 + j0.916	0.090 + j0.244	4533	257	
350 (37)	0.050	0.065	0.053	0.046	0.381	2.3	0.119 + j0.868	0.065 + j0.200	6277	315	370
500 (37)	0.035	0.046	0.047	0.044	0.428	2.6	0.100 + j0.824	0.046 + j0.162	8865	380	445
750 (61)	0.024	0.033	0.040	0.042	0.498	3.0	0.087 + j0.782	0.033 + j0.126	13298	470	530
750 (61)	0.024	0.033	0.040	0.042	0.498	3.0	0.087 + j0.782	0.033 + j0.126	13298	470	530
750 (61)	0.024	0.033	0.040	0.042	0.498	3.0	0.087 + j0.781	0.033 + j0.126	13211	470	530
1000 (61)	0.018	0.026	0.036	0.040	0.552	3.3	0.080 + j0.756	0.026 + j0.105	17615	530	585



\*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, Spacing: one diameter spacing center-to-center.

**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
618589	4/0 (19)	12.65	34.75	10.67	37.54	11x14	0.78	1.91	44.70	1888	358.14	5647
TBA	250 (37)	14.17	36.68	10.67	39.47	13x14	0.66	1.91	46.53	2268	373.38	6675
618590	350 (37)	16.79	39.14	10.67	41.94	18x14	0.48	1.91	49.10	2445	393.70	9345
618591	500 (37)	20.04	42.39	10.67	45.95	16x12	0.34	1.91	53.95	3094	431.80	13350
628573#	750 (61)	24.59	47.19	10.67	50.75	24x12	0.23	1.91	58.75	3957	469.90	20025
616939	750 (61)	24.59	47.19	10.67	50.75	24x12	0.23	1.91	58.75	3959	469.90	20025
618592	750 (61)	24.59	47.19	10.67	50.75	15x10	0.23	1.91	59.82	4045	477.52	20025
618593	1000 (61)	28.37	50.98	10.67	54.53	20x10	0.17	1.91	63.60	4847	508.00	26700

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

\* Pulling tension based on pulling eye directly connected to conductor

# HiDri-Plus® - Water Blocking Powder

§ HiDri-Plus® - Water Blocking Powder. CSA Listed



**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
4/0 (19)	0.2756	0.34	0.0192	0.1673	1.037	6.2336	0.159 + j0.952	0.105 + j0.279	3836	235	285
250 (37)	0.2329	0.30	0.0180	0.1608	1.115	6.8898	0.144 + j0.916	0.090 + j0.244	4533	257	
350 (37)	0.1640	0.21	0.0162	0.1509	1.250	7.5459	0.119 + j0.868	0.065 + j0.200	6277	315	370
500 (37)	0.1148	0.15	0.0143	0.1444	1.404	8.5302	0.100 + j0.824	0.046 + j0.162	8865	380	445
750 (61)	0.0787	0.11	0.0122	0.1378	1.634	9.8425	0.087 + j0.782	0.033 + j0.126	13298	470	530
750 (61)	0.0787	0.11	0.0122	0.1378	1.634	9.8425	0.087 + j0.782	0.033 + j0.126	13298	470	530
750 (61)	0.0787	0.11	0.0122	0.1378	1.634	9.8425	0.087 + j0.781	0.033 + j0.126	13211	470	530
1000 (61)	0.0591	0.09	0.0110	0.1312	1.811	10.8268	0.080 + j0.756	0.026 + j0.105	17615	530	585

\*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, Spacing: one diameter spacing center-to-center.

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Calculator

