35kV CU 133% TRXLPE LCT LLDPE

Single Conductor, 420 Mils Tree Retardant Cross Linked Polyethylene, 133% Insulation Level, Longitudinally Corrugated Tape Shield, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Moisture blocked class B compressed stranded soft drawn bare copper per ASTM B3 and ASTM B8 (Conductor moisture block optional and tinned copper per ASTM B33 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. **Tape Shield:** 10 mils Longitudinally Corrugated Tape Shield
6. **Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; 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 B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 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: -40ºC and MV 90ºC optional marking available upon request

SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] CU 35000 VOLTS TRXLPE INSULATION 420 MILS -- (NESC) -- SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET

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Table 1 – Weights and Measurements

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	inch	inch	mil	inch	mil	inch	lb /1000ft	inch	lb
4/0 (19)	0.512	1.390	420	1.470	110	1.790	1821	21.5	1692
250 (37)	0.558	1.444	420	1.524	110	1.844	1997	22.1	2000
350 (37)	0.661	1.547	420	1.627	110	1.947	2413	23.4	2800
500 (37)	0.789	1.675	420	1.755	110	2.075	3007	24.9	4000
750 (61)	0.968	1.864	420	1.944	110	2.264	3980	27.2	6000
1000 (61)	1.117	2.013	420	2.093	110	2.413	4907	29.0	8000

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

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)	0.051	0.065	0.067	0.050	0.171	3.5	0.119 + j0.729	0.065 + j0.051	4129	300	360
250 (37)	0.043	0.056	0.064	0.049	0.180	3.6	0.110 + j0.725	0.056 + j0.049	4278		
350 (37)	0.031	0.041	0.057	0.047	0.201	4.1	0.095 + j0.719	0.041 + j0.047	4564	400	470
500 (37)	0.022	0.030	0.051	0.044	0.227	4.6	0.084 + j0.712	0.030 + j0.044	4919	485	560
750 (61)	0.014	0.023	0.044	0.041	0.261	5.3	0.077 + j0.703	0.023 + j0.041	5442	595	670
1000 (61)	0.011	0.019	0.040	0.039	0.291	5.9	0.073 + j0.697	0.019 + j0.039	5855	675	745

*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.

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Table 3 – Weights and Measurements (Metric)

Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Insul. Thickness	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Approx. Weight	Min Bending Radius	Max Pull Tension
AWG/ Kcmil	mm	mm	mm	mm	mm	mm	kg/km	mm	newton
4/0 (19)	13.00	35.31	10.67	37.34	2.79	45.47	2710	546.10	7529
250 (37)	14.17	36.68	10.67	38.71	2.79	46.84	2972	561.34	8900
350 (37)	16.79	39.29	10.67	41.33	2.79	49.45	3591	594.36	12460
500 (37)	20.04	42.55	10.67	44.58	2.79	52.71	4475	632.46	17800
750 (61)	24.59	47.35	10.67	49.38	2.79	57.51	5923	690.88	26700
1000 (61)	28.37	51.13	10.67	53.16	2.79	61.29	7302	736.60	35600

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

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)	0.1673	0.21	0.0204	0.1640	0.561	11.4829	0.119 + j0.729	0.065 + j0.051	4129	300	360
250 (37)	0.1411	0.18	0.0195	0.1608	0.591	11.8110	0.110 + j0.725	0.056 + j0.049	4278		
350 (37)	0.1017	0.13	0.0174	0.1542	0.659	13.4514	0.095 + j0.719	0.041 + j0.047	4564	400	470
500 (37)	0.0722	0.10	0.0155	0.1444	0.745	15.0919	0.084 + j0.712	0.030 + j0.044	4919	485	560
750 (61)	0.0459	0.08	0.0134	0.1345	0.856	17.3885	0.077 + j0.703	0.023 + j0.041	5442	595	670
1000 (61)	0.0361	0.06	0.0122	0.1280	0.955	19.3570	0.073 + j0.697	0.019 + j0.039	5855	675	745

*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.