35kV CU 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:** 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. **Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
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-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: -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

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
TBA	4/0 (19)	0.512	1.39	420	1.51	18x14	0.18	75	1.788	2009	12.5	1692
TBA	250 (37)	0.558	1.444	420	1.564	21x14	0.154	75	1.842	2226	12.9	2000
TBA	350 (37)	0.661	1.547	420	1.697	29x14	0.112	75	1.975	2793	13.8	2800
628291	500 (37)	0.789	1.669	420	1.809	17x10	0.075	75	2.167	3421	15.2	4000
TBA	750 (61)	0.968	1.864	420	2.014	25x10	0.051	75	2.368	4803	16.6	6000
TBA	1000 (61)	1.117	2.013	420	2.173	21x8	0.038	75	2.581	6031	18.1	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	0.07	0.063	0.05	0.32	6.5	0.235+j0.075	0.073+j0.056	6284	300	360
250 (37)	0.043	0.059	0.059	0.049	0.34	6.9	0.204+j0.063	0.063+j0.054	7331	328	
350 (37)	0.031	0.043	0.053	0.047	0.38	7.7	0.151+j0.046	0.048+j0.051	10123	400	460
500 (37)	0.021	0.03	0.047	0.045	0.43	8.7	0.104+j0.035	0.037+j0.048	14973	470	525
750 (61)	0.014	0.021	0.041	0.042	0.5	10	0.072+j0.027	0.03+j0.043	22019	560	590
1000 (61)	0.011	0.018	0.037	0.041	0.55	11.1	0.056+j0.025	0.029+j0.039	29419		

*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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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
TBA	4/0 (19)	13.00	35.31	10.67	38.35	18x14	0.59	1.91	45.42	2990	317.50	7529
TBA	250 (37)	14.17	36.68	10.67	39.73	21x14	0.51	1.91	46.79	3313	327.66	8900
TBA	350 (37)	16.79	39.29	10.67	43.10	29x14	0.37	1.91	50.17	4156	350.52	12460
628291	500 (37)	20.04	42.39	10.67	45.95	17x10	0.25	1.91	55.04	5091	386.08	17800
TBA	750 (61)	24.59	47.35	10.67	51.16	25x10	0.17	1.91	60.15	7148	421.64	26700
TBA	1000 (61)	28.37	51.13	10.67	55.19	21x8	0.12	1.91	65.56	8975	459.74	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	0.23	0.0192	0.1640	1.050	21.3255	0.235+j0.075	0.073+j0.056	6284	300	360
250 (37)	0.1411	0.19	0.0180	0.1608	1.115	22.6378	0.204+j0.063	0.063+j0.054	7331	328	
350 (37)	0.1017	0.14	0.0162	0.1542	1.247	25.2625	0.151+j0.046	0.048+j0.051	10123	400	460
500 (37)	0.0689	0.10	0.0143	0.1476	1.411	28.5433	0.104+j0.035	0.037+j0.048	14973	470	525
750 (61)	0.0459	0.07	0.0125	0.1378	1.640	32.8084	0.072+j0.027	0.03+j0.043	22019	560	590
1000 (61)	0.0361	0.06	0.0113	0.1345	1.804	36.4173	0.056+j0.025	0.029+j0.039	29419		

*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.

Concentric Neutral Calculator

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