

## 35kV CU 133% EPR One-Third Neutral LLDPE Primary UD

Single Conductor, 420 Mils Ethylene Propylene Rubber (EPR), 133% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

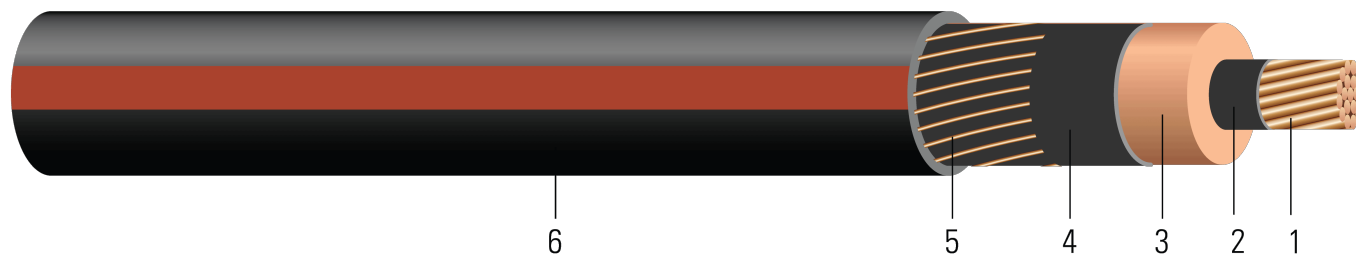


Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

- 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)
- 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
- Insulation:** 420 Mils Ethylene Propylene Rubber (EPR) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Neutral:** Helically applied soft drawn bare copper one-third concentric neutral
- 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, troughs, trays, 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 105°C for normal operation, 140°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 Standard Specification for 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
- UL 1072 Listed as MV 90 When Specified
- Optional CSA: CSA 68.5 and -40C optional marking available upon request

### SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] CU 35000 VOLTS EPR 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	1/0 (1)	0.325	1.202	420	1.302	9x14	0.292	50	1.530	1272	18.4	845
TBA	1/0 (19)	0.362	1.239	420	1.339	9x14	0.292	50	1.567	1327	18.8	845
TBA	2/0 (19)	0.405	1.282	420	1.382	11x14	0.239	50	1.610	1477	19.3	1065
TBA	3/0 (19)	0.456	1.333	420	1.433	14x14	0.188	50	1.661	1671	19.9	1342
TBA	4/0 (19)	0.512	1.389	420	1.489	18x14	0.146	80	1.777	1975	21.3	1693
TBA	250 (37)	0.558	1.444	420	1.544	21x14	0.125	80	1.832	2186	22.0	2000
TBA	350 (37)	0.661	1.547	420	1.647	18x12	0.092	80	1.967	2734	23.6	2800
TBA	500 (37)	0.789	1.675	420	1.805	17x10	0.061	80	2.169	3610	26.0	4000
TBA	750 (61)	0.968	1.863	420	1.993	20x9	0.041	80	2.382	4878	28.6	6000
TBA	1000 (61)	1.117	2.012	420	2.142	21x8	0.031	80	2.559	6111	30.7	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
1/0 (1)	0.102	0.128	0.067	0.055	0.301	121.741	0.376+j0.151	0.129+j0.055	3124.7	210	250
1/0 (19)	0.102	0.128	0.063	0.053	0.319	128.939	0.376+j0.150	0.129+j0.053	3124.7	210	250
2/0 (19)	0.081	0.101	0.060	0.051	0.339	137.201	0.316+j0.117	0.102+j0.051	3819.1	235	280
3/0 (19)	0.0642	0.080	0.056	0.050	0.363	146.883	0.258+j0.088	0.082+j0.049	4860.7	265	320
4/0 (19)	0.051	0.064	0.052	0.049	0.389	157.395	0.207+j0.067	0.066+j0.048	6249.4	300	360
250 (37)	0.0431	0.054	0.049	0.047	0.415	167.624	0.179+j0.057	0.057+j0.047	7291.0		
350 (37)	0.0308	0.039	0.044	0.045	0.462	186.581	0.134+j0.046	0.043+j0.044	9929.2	400	470
500 (37)	0.0216	0.028	0.039	0.044	0.519	209.874	0.091+j0.037	0.033+j0.041	14906.4	470	555
750 (61)	0.0144	0.019	0.034	0.041	0.603	243.726	0.062+j0.031	0.026+j0.037	22115.5	560	650
1000 (61)	0.0108	0.015	0.030	0.040	0.669	270.348	0.047+j0.028	0.022+j0.034	29288.2		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Figure 7 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)



**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	1/0 (1)	8.25	30.53	10.67	33.07	9x14	0.96	1.27	38.86	1893	467.36	3760
TBA	1/0 (19)	9.19	31.47	10.67	34.01	9x14	0.96	1.27	39.80	1975	477.52	3760
TBA	2/0 (19)	10.29	32.56	10.67	35.10	11x14	0.78	1.27	40.89	2198	490.22	4739
TBA	3/0 (19)	11.58	33.86	10.67	36.40	14x14	0.62	1.27	42.19	2487	505.46	5972
TBA	4/0 (19)	13.00	35.28	10.67	37.82	18x14	0.48	2.03	45.14	2939	541.02	7534
TBA	250 (37)	14.17	36.68	10.67	39.22	21x14	0.41	2.03	46.53	3253	558.80	8900
TBA	350 (37)	16.79	39.29	10.67	41.83	18x12	0.30	2.03	49.96	4069	599.44	12460
TBA	500 (37)	20.04	42.55	10.67	45.85	17x10	0.20	2.03	55.09	5372	660.40	17800
TBA	750 (61)	24.59	47.32	10.67	50.62	20x9	0.13	2.03	60.50	7259	726.44	26700
TBA	1000 (61)	28.37	51.10	10.67	54.41	21x8	0.10	2.03	65.00	9094	779.78	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
1/0 (1)	0.3346	0.42	0.0204	0.1804	0.988	399.4127	0.376+j0.151	0.129+j0.055	3124.7	210	250
1/0 (19)	0.3346	0.42	0.0192	0.1739	1.047	423.0282	0.376+j0.150	0.129+j0.053	3124.7	210	250
2/0 (19)	0.2657	0.33	0.0183	0.1673	1.112	450.1345	0.316+j0.117	0.102+j0.051	3819.1	235	280
3/0 (19)	0.2106	0.26	0.0171	0.1640	1.191	481.8996	0.258+j0.088	0.082+j0.049	4860.7	265	320
4/0 (19)	0.1673	0.21	0.0158	0.1608	1.276	516.3878	0.207+j0.067	0.066+j0.048	6249.4	300	360
250 (37)	0.1414	0.18	0.0149	0.1542	1.362	549.9475	0.179+j0.057	0.057+j0.047	7291.0		
350 (37)	0.1010	0.13	0.0134	0.1476	1.516	612.1424	0.134+j0.046	0.043+j0.044	9929.2	400	470
500 (37)	0.0709	0.09	0.0119	0.1444	1.703	688.5630	0.091+j0.037	0.033+j0.041	14906.4	470	555
750 (61)	0.0472	0.06	0.0104	0.1345	1.978	799.6260	0.062+j0.031	0.026+j0.037	22115.5	560	650
1000 (61)	0.0354	0.05	0.0091	0.1312	2.195	886.9685	0.047+j0.028	0.022+j0.034	29288.2		

\* Calculations are based on three cables triplexed / concentric shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on Figure 7 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

‡ Ampacities are based on Figure 1 of ICEA T-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

