

28kV CU 133% EPR Full Neutral LLDPE Primary UD

Single Conductor, 345 Mils Ethylene Propylene Rubber (EPR), 133% Insulation Level, Full Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

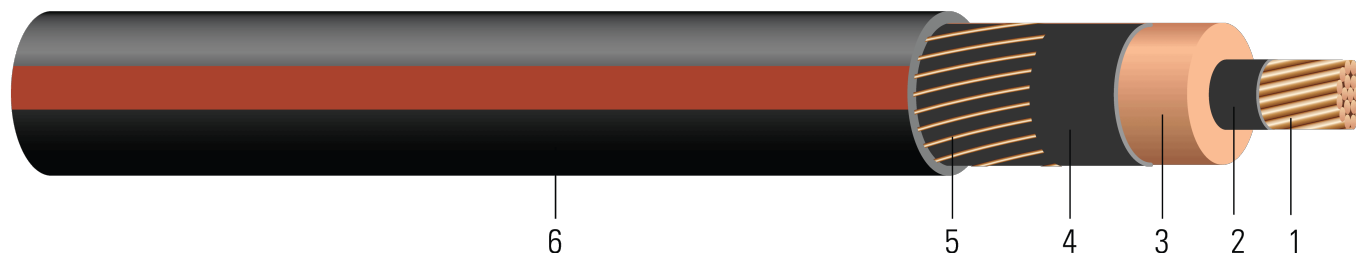


Image not to scale. See Table 1 for dimensions.

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:** 345 Mils Ethylene Propylene Rubber (EPR) 133% insulation level
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Concentric Neutral:** Helically applied soft drawn bare copper full concentric neutral
- Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

APPLICATIONS AND FEATURES:

Southwire's 28kV 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
- 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] CU 28000 VOLTS EPR INSULATION 345 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



Southwire

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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 (1)	0.289	1.016	345	1.096	13x12	0.128	50	1.356	1142	16.3	670
TBA	1 (19)	0.322	1.049	345	1.149	13x12	0.128	50	1.409	1206	16.9	670
TBA	1/0 (1)	0.325	1.052	345	1.152	16x12	0.104	50	1.412	1312	16.9	845
TBA	1/0 (19)	0.362	1.089	345	1.189	16x12	0.104	50	1.449	1363	17.4	845
TBA	2/0 (19)	0.405	1.132	345	1.232	13x10	0.080	50	1.536	1611	18.4	1065
TBA	3/0 (19)	0.456	1.183	345	1.283	16x10	0.065	50	1.587	1852	19.0	1342
TBA	4/0 (19)	0.512	1.239	345	1.339	16x9	0.052	80	1.728	2249	20.7	1693
TBA	250 (37)	0.558	1.294	345	1.394	25x10	0.042	80	1.758	2531	21.1	2000

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 (1)	0.129	0.161	0.064	0.054	0.254	82.257	0.289+j0.067	0.164+j0.054	7171.1	175	220
1 (19)	0.129	0.161	0.060	0.053	0.270	87.202	0.289+j0.066	0.164+j0.053	7171.1	175	220
1/0 (1)	0.102	0.128	0.060	0.053	0.271	87.649	0.234+j0.057	0.131+j0.052	8825.9	200	250
1/0 (19)	0.102	0.128	0.056	0.051	0.288	93.127	0.234+j0.055	0.131+j0.050	8825.9	200	250
2/0 (19)	0.081	0.101	0.053	0.050	0.308	99.427	0.182+j0.048	0.106+j0.049	11399.0	225	285
3/0 (19)	0.0642	0.080	0.049	0.049	0.330	106.826	0.147+j0.042	0.085+j0.046	14029.6	260	320
4/0 (19)	0.051	0.064	0.046	0.048	0.355	114.876	0.117+j0.038	0.071+j0.045	17692.4	295	360
250 (37)	0.0431	0.054	0.043	0.046	0.380	122.722	0.097+j0.033	0.061+j0.042	21921.2		

* 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 P-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 P-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 (1)	7.34	25.81	8.76	27.84	13x12	0.42	1.27	34.44	1699	414.02	2982
TBA	1 (19)	8.18	26.64	8.76	29.18	13x12	0.42	1.27	35.79	1795	429.26	2982
TBA	1/0 (1)	8.25	26.72	8.76	29.26	16x12	0.34	1.27	35.86	1952	429.26	3760
TBA	1/0 (19)	9.19	27.66	8.76	30.20	16x12	0.34	1.27	36.80	2028	441.96	3760
TBA	2/0 (19)	10.29	28.75	8.76	31.29	13x10	0.26	1.27	39.01	2397	467.36	4739
TBA	3/0 (19)	11.58	30.05	8.76	32.59	16x10	0.21	1.27	40.31	2756	482.60	5972
TBA	4/0 (19)	13.00	31.47	8.76	34.01	16x9	0.17	2.03	43.89	3347	525.78	7534
TBA	250 (37)	14.17	32.87	8.76	35.41	25x10	0.14	2.03	44.65	3767	535.94	8900

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 (1)	0.4232	0.53	0.0195	0.1772	0.833	269.8720	0.289+j0.067	0.164+j0.054	7171.1	175	220
1 (19)	0.4232	0.53	0.0183	0.1739	0.886	286.0958	0.289+j0.066	0.164+j0.053	7171.1	175	220
1/0 (1)	0.3346	0.42	0.0183	0.1739	0.889	287.5623	0.234+j0.057	0.131+j0.052	8825.9	200	250
1/0 (19)	0.3346	0.42	0.0171	0.1673	0.945	305.5348	0.234+j0.055	0.131+j0.050	8825.9	200	250
2/0 (19)	0.2657	0.33	0.0162	0.1640	1.010	326.2041	0.182+j0.048	0.106+j0.049	11399.0	225	285
3/0 (19)	0.2106	0.26	0.0149	0.1608	1.083	350.4790	0.147+j0.042	0.085+j0.046	14029.6	260	320
4/0 (19)	0.1673	0.21	0.0140	0.1575	1.165	376.8898	0.117+j0.038	0.071+j0.045	17692.4	295	360
250 (37)	0.1414	0.18	0.0131	0.1509	1.247	402.6312	0.097+j0.033	0.061+j0.042	21921.2		



* 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 P-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 P-117-734 (Single circuit trefoil, 100% load factor, 90°C conductor temperature, earth RHO 90, 36" burial depth)

