

28kV CU 100% EPR One-Third Neutral LLDPE Primary UD

Single Conductor, 280 Mils Ethylene Propylene Rubber (EPR), 100% Insulation Level, One-third Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket. Silicone Free

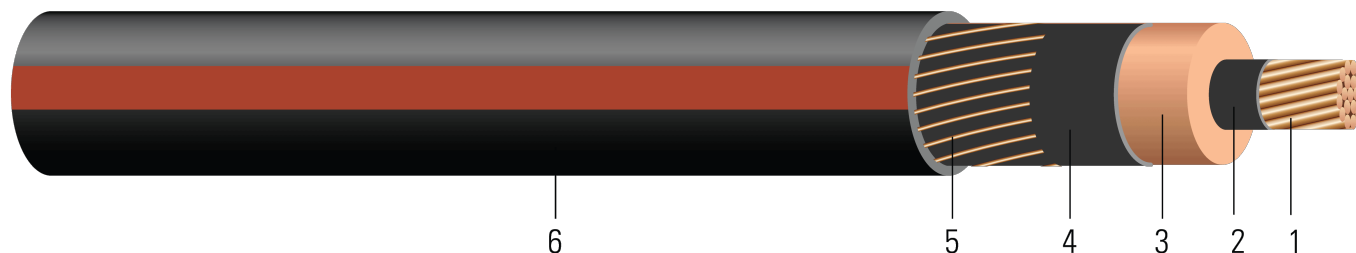


Image not to scale. See Table 1 for dimensions.

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:** 280 Mils Ethylene Propylene Rubber (EPR) 100% 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 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
- 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 28000 VOLTS EPR INSULATION 280 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 (1)	0.289	0.886	280	0.966	7x14	0.376	50	1.194	833	14.3	670
TBA	1 (19)	0.322	0.919	280	0.999	7x14	0.376	50	1.227	872	14.7	670
TBA	1/0 (1)	0.325	0.922	280	1.002	9x14	0.292	50	1.230	947	14.8	845
TBA	1/0 (19)	0.362	0.959	280	1.039	9x14	0.292	50	1.267	993	15.2	845
TBA	2/0 (19)	0.405	1.002	280	1.082	11x14	0.239	50	1.310	1132	15.7	1065
TBA	3/0 (19)	0.456	1.053	280	1.153	14x14	0.188	50	1.381	1335	16.6	1342
TBA	4/0 (19)	0.512	1.109	280	1.209	18x14	0.146	50	1.437	1560	17.2	1693
TBA	250 (37)	0.558	1.164	280	1.264	21x14	0.125	50	1.492	1756	17.9	2000
TBA	350 (37)	0.661	1.267	280	1.367	18x12	0.092	50	1.627	2269	19.5	2800
TBA	500 (37)	0.789	1.395	280	1.495	17x10	0.061	80	1.859	3121	22.3	4000
TBA	750 (61)	0.968	1.583	280	1.713	20x9	0.041	80	2.102	4385	25.2	6000
TBA	1000 (61)	1.117	1.732	280	1.862	21x8	0.031	80	2.279	5579	27.3	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 (1)	0.129	0.161	0.056	0.052	0.289	93.521	0.453+j0.197	0.162+j0.051	2430.3	180	220
1 (19)	0.129	0.161	0.053	0.050	0.308	99.477	0.453+j0.195	0.162+j0.050	2430.3	180	220
1/0 (1)	0.102	0.128	0.052	0.050	0.309	100.015	0.379+j0.144	0.129+j0.050	3124.7	200	250
1/0 (19)	0.102	0.128	0.049	0.048	0.330	106.627	0.378+j0.143	0.129+j0.048	3124.7	200	250
2/0 (19)	0.081	0.101	0.046	0.047	0.353	114.247	0.318+j0.111	0.103+j0.046	3819.1	230	285
3/0 (19)	0.0642	0.080	0.042	0.045	0.381	123.212	0.259+j0.083	0.082+j0.045	4860.7	260	325
4/0 (19)	0.051	0.064	0.039	0.044	0.411	132.986	0.208+j0.062	0.066+j0.043	6249.4	300	365
250 (37)	0.0431	0.054	0.037	0.042	0.441	142.528	0.179+j0.052	0.057+j0.042	7291.0		
350 (37)	0.0308	0.039	0.033	0.041	0.496	160.282	0.134+j0.041	0.043+j0.040	9929.2	390	475
500 (37)	0.0216	0.028	0.029	0.040	0.563	182.193	0.091+j0.033	0.034+j0.038	14906.4	455	555
750 (61)	0.0144	0.019	0.024	0.038	0.662	214.174	0.062+j0.027	0.026+j0.034	22115.5	545	650
1000 (61)	0.0108	0.015	0.022	0.037	0.740	239.408	0.047+j0.024	0.023+j0.031	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 ohm-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 (1)	7.34	22.50	7.11	24.54	7x14	1.23	1.27	30.33	1240	363.22	2982
TBA	1 (19)	8.18	23.34	7.11	25.37	7x14	1.23	1.27	31.17	1298	373.38	2982
TBA	1/0 (1)	8.25	23.42	7.11	25.45	9x14	0.96	1.27	31.24	1409	375.92	3760
TBA	1/0 (19)	9.19	24.36	7.11	26.39	9x14	0.96	1.27	32.18	1478	386.08	3760
TBA	2/0 (19)	10.29	25.45	7.11	27.48	11x14	0.78	1.27	33.27	1685	398.78	4739
TBA	3/0 (19)	11.58	26.75	7.11	29.29	14x14	0.62	1.27	35.08	1987	421.64	5972
TBA	4/0 (19)	13.00	28.17	7.11	30.71	18x14	0.48	1.27	36.50	2322	436.88	7534
TBA	250 (37)	14.17	29.57	7.11	32.11	21x14	0.41	1.27	37.90	2613	454.66	8900
TBA	350 (37)	16.79	32.18	7.11	34.72	18x12	0.30	1.27	41.33	3377	495.30	12460
TBA	500 (37)	20.04	35.43	7.11	37.97	17x10	0.20	2.03	47.22	4645	566.42	17800
TBA	750 (61)	24.59	40.21	7.11	43.51	20x9	0.13	2.03	53.39	6526	640.08	26700
TBA	1000 (61)	28.37	43.99	7.11	47.29	21x8	0.10	2.03	57.89	8302	693.42	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 (1)	0.4232	0.53	0.0171	0.1706	0.948	306.8274	0.453+j0.197	0.162+j0.051	2430.3	180	220
1 (19)	0.4232	0.53	0.0162	0.1640	1.010	326.3681	0.453+j0.195	0.162+j0.050	2430.3	180	220
1/0 (1)	0.3346	0.42	0.0158	0.1640	1.014	328.1332	0.379+j0.144	0.129+j0.050	3124.7	200	250
1/0 (19)	0.3346	0.42	0.0149	0.1575	1.083	349.8261	0.378+j0.143	0.129+j0.048	3124.7	200	250
2/0 (19)	0.2657	0.33	0.0140	0.1542	1.158	374.8261	0.318+j0.111	0.103+j0.046	3819.1	230	285
3/0 (19)	0.2106	0.26	0.0128	0.1476	1.250	404.2388	0.259+j0.083	0.082+j0.045	4860.7	260	325
4/0 (19)	0.1673	0.21	0.0119	0.1444	1.348	436.3058	0.208+j0.062	0.066+j0.043	6249.4	300	365
250 (37)	0.1414	0.18	0.0113	0.1378	1.447	467.6115	0.179+j0.052	0.057+j0.042	7291.0		
350 (37)	0.1010	0.13	0.0101	0.1345	1.627	525.8596	0.134+j0.041	0.043+j0.040	9929.2	390	475
500 (37)	0.0709	0.09	0.0088	0.1312	1.847	597.7461	0.091+j0.033	0.034+j0.038	14906.4	455	555
750 (61)	0.0472	0.06	0.0073	0.1247	2.172	702.6706	0.062+j0.027	0.026+j0.034	22115.5	545	650
1000 (61)	0.0354	0.05	0.0067	0.1214	2.428	785.4593	0.047+j0.024	0.023+j0.031	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 ohm-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)

