

## 28kV CU 100% EPR Full Neutral LLDPE Primary UD

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

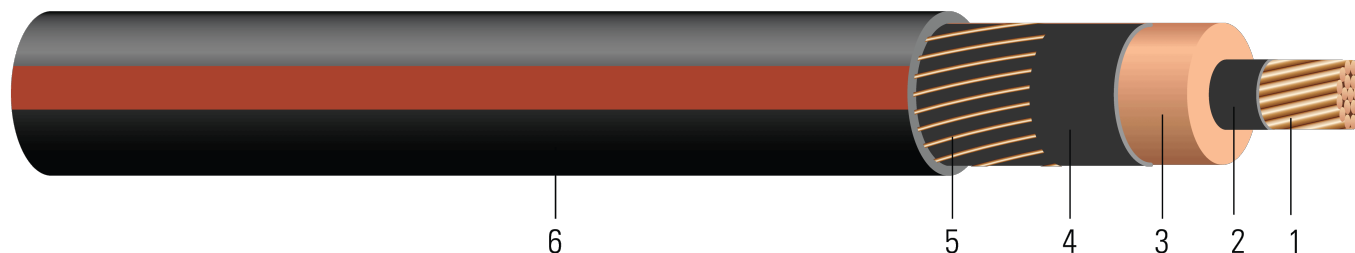


Image not to scale. See Table 1 for dimensions.

### 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:** 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 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 280 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	0.886	280	0.966	13x12	0.128	50	1.226	1011	14.7	670
TBA	1 (19)	0.322	0.919	280	0.999	13x12	0.128	50	1.259	1050	15.1	670
TBA	1/0 (1)	0.325	0.922	280	1.002	16x12	0.104	50	1.262	1156	15.1	845
TBA	1/0 (19)	0.362	0.959	280	1.039	16x12	0.104	50	1.299	1202	15.6	845
TBA	2/0 (19)	0.405	1.002	280	1.082	13x10	0.080	50	1.386	1441	16.6	1065
TBA	3/0 (19)	0.456	1.053	280	1.153	16x10	0.065	50	1.457	1698	17.5	1342
TBA	4/0 (19)	0.512	1.109	280	1.209	16x9	0.052	50	1.538	2022	18.5	1693
TBA	250 (37)	0.558	1.164	280	1.264	25x10	0.042	50	1.568	2300	18.8	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	0.056	0.052	0.289	93.521	0.290+j0.064	0.164+j0.051	7171.1	175	220
1 (19)	0.129	0.161	0.053	0.051	0.308	99.477	0.290+j0.062	0.164+j0.050	7171.1	175	220
1/0 (1)	0.102	0.128	0.052	0.050	0.309	100.015	0.234+j0.053	0.132+j0.049	8825.9	200	250
1/0 (19)	0.102	0.128	0.049	0.049	0.330	106.627	0.234+j0.052	0.132+j0.048	8825.9	200	250
2/0 (19)	0.081	0.101	0.046	0.048	0.353	114.247	0.182+j0.045	0.106+j0.046	11399.0	225	285
3/0 (19)	0.0642	0.080	0.042	0.047	0.381	123.212	0.147+j0.039	0.085+j0.044	14029.6	260	320
4/0 (19)	0.051	0.064	0.039	0.045	0.411	132.986	0.117+j0.036	0.070+j0.042	17692.4	295	360
250 (37)	0.0431	0.054	0.037	0.044	0.441	142.528	0.097+j0.031	0.061+j0.039	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	22.50	7.11	24.54	13x12	0.42	1.27	31.14	1505	373.38	2982
TBA	1 (19)	8.18	23.34	7.11	25.37	13x12	0.42	1.27	31.98	1563	383.54	2982
TBA	1/0 (1)	8.25	23.42	7.11	25.45	16x12	0.34	1.27	32.05	1720	383.54	3760
TBA	1/0 (19)	9.19	24.36	7.11	26.39	16x12	0.34	1.27	32.99	1789	396.24	3760
TBA	2/0 (19)	10.29	25.45	7.11	27.48	13x10	0.26	1.27	35.20	2144	421.64	4739
TBA	3/0 (19)	11.58	26.75	7.11	29.29	16x10	0.21	1.27	37.01	2527	444.50	5972
TBA	4/0 (19)	13.00	28.17	7.11	30.71	16x9	0.17	1.27	39.07	3009	469.90	7534
TBA	250 (37)	14.17	29.57	7.11	32.11	25x10	0.14	1.27	39.83	3423	477.52	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	0.0171	0.1706	0.948	306.8274	0.290+j0.064	0.164+j0.051	7171.1	175	220
1 (19)	0.4232	0.53	0.0162	0.1673	1.010	326.3681	0.290+j0.062	0.164+j0.050	7171.1	175	220
1/0 (1)	0.3346	0.42	0.0158	0.1640	1.014	328.1332	0.234+j0.053	0.132+j0.049	8825.9	200	250
1/0 (19)	0.3346	0.42	0.0149	0.1608	1.083	349.8261	0.234+j0.052	0.132+j0.048	8825.9	200	250
2/0 (19)	0.2657	0.33	0.0140	0.1575	1.158	374.8261	0.182+j0.045	0.106+j0.046	11399.0	225	285
3/0 (19)	0.2106	0.26	0.0128	0.1542	1.250	404.2388	0.147+j0.039	0.085+j0.044	14029.6	260	320
4/0 (19)	0.1673	0.21	0.0119	0.1476	1.348	436.3058	0.117+j0.036	0.070+j0.042	17692.4	295	360
250 (37)	0.1414	0.18	0.0113	0.1444	1.447	467.6115	0.097+j0.031	0.061+j0.039	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)

