

46kV CU 100% EPR (EAM) One-Third Neutral LLDPE

Single Conductor, 445 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM), 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:

1. **Conductor:** Class B compressed stranded soft drawn bare copper per ASTM B3 and ASTM B8; Conductor moisture block (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:** 445 Mils Ethylene Propylene Rubber (EPR) / Ethylene Alkene Copolymer (EAM) 100% 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 (red extruded stripes optional); PowerGlide® LLDPE jacket optional

APPLICATIONS AND FEATURES:

Southwire's 46kV 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 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 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)
- 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 46000 VOLTS EPR INSULATION 445 MILS -- (NESC) --
SOUTHWIRE {MMM} {YYYY} NON-CONDUCTING JACKET



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
628122	350 (37)	0.661	1.591	445	1.731	18x12	0.092	75	2.046	2867	16.4	2800
628126	500 (37)	0.789	1.719	445	1.859	17x10	0.061	75	2.216	3709	17.7	4000
628129	750 (61)	0.968	1.908	445	2.048	25x10	0.041	75	2.405	4958	19.2	6000
TBA	750 (61)	0.968	1.914	445	2.054	25x10	0.041	75	2.408	4829	19.3	6000
628118	1000 (61)	1.117	2.057	445	2.197	21x8	0.031	75	2.608	6254	20.9	8000
628114	1250 (61)	1.250	2.200	445	2.340	26x8	0.025	75	2.751	7460	22.0	10000

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
AWG/Kcmil	Ω /1000ft	Ω /1000ft	M Ω *1000ft	Ω /1000ft	A/1000ft	W/1000ft	Ω /1000ft	Ω /1000ft	Amp	Amp
350 (37)	0.031	0.041	0.046	0.048	0.333	33.61	$0.095 + j0.717$	$0.041 + j0.048$	9973	400
500 (37)	0.022	0.030	0.040	0.045	0.376	37.95	$0.084 + j0.709$	$0.030 + j0.046$	14973	470
750 (61)	0.014	0.023	0.035	0.043	0.431	43.50	$0.077 + j0.700$	$0.023 + j0.043$	22019	560
750 (61)	0.014	0.023	0.035	0.043	0.431	43.50	$0.077 + j0.700$	$0.023 + j0.043$	22019	560
1000 (61)	0.011	0.019	0.032	0.041	0.479	48.34	$0.073 + j0.693$	$0.019 + j0.041$	29419	
1250 (61)	0.009	0.018	0.029	0.040	0.520	52.48	$0.072 + j0.432$	$0.018 - j0.216$	36423	

*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.



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
628122	350 (37)	16.79	40.41	11.30	43.97	18x12	0.30	1.91	51.97	4267	416.56	12460
628126	500 (37)	20.04	43.66	11.30	47.22	17x10	0.20	1.91	56.29	5520	449.58	17800
628129	750 (61)	24.59	48.46	11.30	52.02	25x10	0.13	1.91	61.09	7378	487.68	26700
TBA	750 (61)	24.59	48.62	11.30	52.17	25x10	0.13	1.91	61.16	7186	490.22	26700
628118	1000 (61)	28.37	52.25	11.30	55.80	21x8	0.10	1.91	66.24	9307	530.86	35600
628114	1250 (61)	31.75	55.88	11.30	59.44	26x8	0.08	1.91	69.88	11102	558.80	44500

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
AWG/Kcmil	Ω/km	Ω/km	MΩ*km	Ω/km	A/km	W/km	Ω/1000ft	Ω/1000ft	Amp	Amp
350 (37)	0.1017	0.13	0.0140	0.1575	1.093	110.2690	0.095 + j0.717	0.041 + j0.048	9973	400
500 (37)	0.0722	0.10	0.0122	0.1476	1.234	124.5079	0.084 + j0.709	0.030 + j0.046	14973	470
750 (61)	0.0459	0.08	0.0107	0.1411	1.414	142.7165	0.077 + j0.700	0.023 + j0.043	22019	560
750 (61)	0.0459	0.08	0.0107	0.1411	1.414	142.7165	0.077 + j0.700	0.023 + j0.043	22019	560
1000 (61)	0.0361	0.06	0.0098	0.1345	1.572	158.5958	0.073 + j0.693	0.019 + j0.041	29419	
1250 (61)	0.0295	0.06	0.0088	0.1312	1.706	172.1785	0.072 + j0.432	0.018 - j0.216	36423	

*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.

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Calculator



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