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

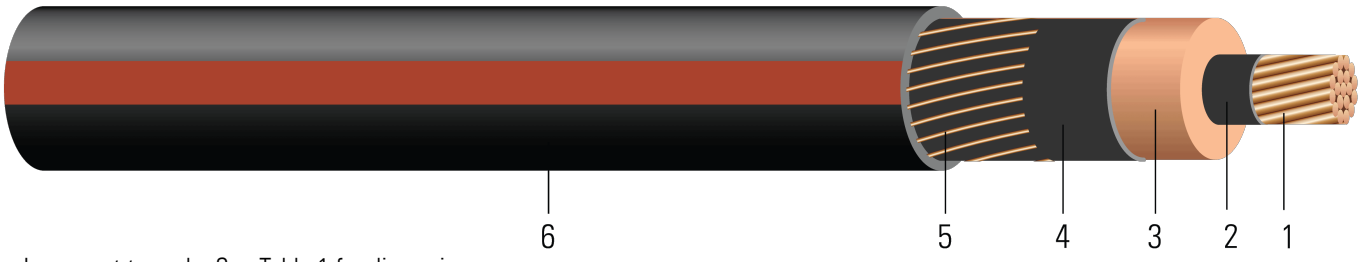

Image not to scale. See Table 1 for dimensions.

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; 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: -40ºC and MV 90ºC 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	4831	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	MΩ*1000ft	Ω/1000ft	A/1000ft	W/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp
350 (37)	0.031	0.041	0.042	0.048	0.627	143.2	0.095 + j0.866	0.041 + j0.201	9973	400
500 (37)	0.022	0.030	0.037	0.045	0.704	160.8	0.084 + j0.822	0.030 + j0.163	14973	470
750 (61)	0.014	0.023	0.032	0.043	0.817	186.6	0.077 + j0.781	0.023 + j0.127	22019	560
750 (61)	0.014	0.023	0.032	0.043	0.813	185.7	0.077 + j0.781	0.023 + j0.127	22019	560
1000 (61)	0.011	0.019	0.029	0.041	0.906	206.9	0.073 + j0.754	0.019 + j0.106	29419	
1250 (61)	0.009	0.018	0.027	0.040	0.981	224.1	0.072 + j0.736	0.018 + j0.092	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, Spacing: one diameter spacing center-to-center.

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	7189	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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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	0.0128	0.1575	2.057	469.8163	0.095 + j0.866	0.041 + j0.201	9973	400
500 (37)	0.0722	0.10	0.0113	0.1476	2.310	527.5591	0.084 + j0.822	0.030 + j0.163	14973	470
750 (61)	0.0459	0.08	0.0098	0.1411	2.680	612.2047	0.077 + j0.781	0.023 + j0.127	22019	560
750 (61)	0.0459	0.08	0.0098	0.1411	2.667	609.2520	0.077 + j0.781	0.023 + j0.127	22019	560
1000 (61)	0.0361	0.06	0.0088	0.1345	2.972	678.8058	0.073 + j0.754	0.019 + j0.106	29419	
1250 (61)	0.0295	0.06	0.0082	0.1312	3.219	735.2362	0.072 + j0.736	0.018 + j0.092	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, Spacing: one diameter spacing center-to-center.

Concentric Neutral Calculator