25kV AL 133% EPR Full Neutral LLDPE Primary UD

Single Conductor, 320 Mils Ethylene Propylene Rubber (EPR), 133% Insulation Level, Full Concentric Neutral, Linear Low Density Polyethylene (LLDPE) Jacket

Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Moisture blocked class B compressed Aluminum ASTM B231 1350 ¾ hard H16/H26 (Non Moisture Blocked 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:** 320 Mils Ethylene Propylene Rubber (EPR) 133% insulation level
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Concentric Neutral:** Helically applied soft drawn bare copper full concentric neutral
6. **Overall Jacket:** Linear Low Density Polyethylene (LLDPE) Jacket, black with red extruded stripes; PowerGlide® LLDPE jacket optional

APPLICATIONS AND FEATURES:

Southwire's 25kV 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 B231 Standard Specification for Concentric-Lay-Stranded Aluminum 1350 Conductors
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- 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 Listed as MV 90 When Specified

SAMPLE PRINT LEGEND:

SOUTHWIRE HI-DRI(R) [CONDUCTOR SIZE] [AWG or KCMIL] AL 25000 VOLTS EPR INSULATION 320 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
TBA	1 (1)	0.289	0.966	320	1.046	13x14	0.202	50	1.274	801	15.3	502
TBA	1 (19)	0.322	0.999	320	1.079	13x14	0.202	50	1.307	838	15.7	502
TBA	1/0 (1)	0.325	1.002	320	1.082	16x14	0.164	50	1.310	881	15.7	634
TBA	1/0 (19)	0.352	1.029	320	1.109	16x14	0.164	50	1.337	912	16.0	634
TBA	2/0 (19)	0.395	1.072	320	1.172	13x12	0.128	50	1.432	1076	17.2	799
TBA	3/0 (19)	0.443	1.120	320	1.220	16x12	0.104	50	1.480	1203	17.8	1007
616139	4/0 (19)	0.498	1.175	320	1.275	13x10	0.080	50	1.579	1417	18.9	1270
TBA	250 (37)	0.558	1.244	320	1.344	16x10	0.065	50	1.648	1610	19.8	1500
TBA	350 (37)	0.661	1.347	320	1.447	16x9	0.052	80	1.836	2015	22.0	2100

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)	0.211	0.265	0.061	0.053	0.238	68.622	0.455+j0.097	0.267+j0.053	4513.5	140	175
1 (19)	0.211	0.265	0.057	0.051	0.252	72.835	0.455+j0.095	0.267+j0.051	4513.5	140	175
1/0 (1)	0.168	0.211	0.057	0.051	0.254	73.215	0.371+j0.077	0.213+j0.051	5555.1	155	195
1/0 (19)	0.168	0.211	0.054	0.050	0.265	76.628	0.371+j0.076	0.213+j0.050	5555.1	155	195
2/0 (19)	0.133	0.167	0.051	0.049	0.284	82.017	0.295+j0.062	0.170+j0.049	7171.1	180	225
3/0 (19)	0.105	0.132	0.047	0.048	0.305	87.975	0.238+j0.052	0.135+j0.047	8825.9	205	250
4/0 (19)	0.0836	0.105	0.044	0.047	0.328	94.745	0.186+j0.044	0.109+j0.045	11399.0	235	285
250 (37)	0.0707	0.089	0.040	0.045	0.357	103.169	0.156+j0.038	0.094+j0.043	14029.6		
350 (37)	0.0505	0.064	0.036	0.044	0.401	115.639	0.117+j0.034	0.070+j0.040	17692.4	305	370

* 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 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	24.54	8.13	26.57	13x14	0.66	1.27	32.36	1192	388.62	2234
TBA	1 (19)	8.18	25.37	8.13	27.41	13x14	0.66	1.27	33.20	1247	398.78	2234
TBA	1/0 (1)	8.25	25.45	8.13	27.48	16x14	0.54	1.27	33.27	1311	398.78	2821
TBA	1/0 (19)	8.94	26.14	8.13	28.17	16x14	0.54	1.27	33.96	1357	406.40	2821
TBA	2/0 (19)	10.03	27.23	8.13	29.77	13x12	0.42	1.27	36.37	1601	436.88	3556
TBA	3/0 (19)	11.25	28.45	8.13	30.99	16x12	0.34	1.27	37.59	1790	452.12	4481
616139	4/0 (19)	12.65	29.85	8.13	32.39	13x10	0.26	1.27	40.11	2109	480.06	5652
TBA	250 (37)	14.17	31.60	8.13	34.14	16x10	0.21	1.27	41.86	2396	502.92	6675
TBA	350 (37)	16.79	34.21	8.13	36.75	16x9	0.17	2.03	46.63	2999	558.80	9345

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)	0.6923	0.87	0.0186	0.1739	0.781	225.1378	0.455+j0.097	0.267+j0.053	4513.5	140	175
1 (19)	0.6923	0.87	0.0174	0.1673	0.827	238.9600	0.455+j0.095	0.267+j0.051	4513.5	140	175
1/0 (1)	0.5512	0.69	0.0174	0.1673	0.833	240.2067	0.371+j0.077	0.213+j0.051	5555.1	155	195
1/0 (19)	0.5512	0.69	0.0165	0.1640	0.869	251.4042	0.371+j0.076	0.213+j0.050	5555.1	155	195
2/0 (19)	0.4364	0.55	0.0155	0.1608	0.932	269.0846	0.295+j0.062	0.170+j0.049	7171.1	180	225
3/0 (19)	0.3445	0.43	0.0143	0.1575	1.001	288.6319	0.238+j0.052	0.135+j0.047	8825.9	205	250
4/0 (19)	0.2743	0.34	0.0134	0.1542	1.076	310.8432	0.186+j0.044	0.109+j0.045	11399.0	235	285
250 (37)	0.2320	0.29	0.0122	0.1476	1.171	338.4810	0.156+j0.038	0.094+j0.043	14029.6		
350 (37)	0.1657	0.21	0.0110	0.1444	1.316	379.3930	0.117+j0.034	0.070+j0.040	17692.4	305	370

* 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 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)