35kV AL 133% EPR One-Third Neutral LLDPE Primary UD

Single Conductor, 420 Mils Ethylene Propylene Rubber (EPR), 133% Insulation Level, One-third 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:** 420 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 one-third 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 35kV 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 35000 VOLTS EPR INSULATION 420 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	1/0 (1)	0.325	1.202	420	1.302	6x14	0.438	50	1.530	1016	18.4	634
TBA	1/0 (19)	0.352	1.229	420	1.329	6x14	0.438	50	1.557	1052	18.7	634
TBA	2/0 (19)	0.395	1.272	420	1.372	7x14	0.376	50	1.600	1131	19.2	799
TBA	3/0 (19)	0.443	1.320	420	1.420	9x14	0.292	50	1.648	1234	19.8	1007
TBA	4/0 (19)	0.498	1.375	420	1.475	11x14	0.239	80	1.763	1419	21.2	1270
TBA	250 (37)	0.558	1.444	420	1.544	13x14	0.202	80	1.832	1560	22.0	1500
TBA	350 (37)	0.661	1.547	420	1.647	18x14	0.146	80	1.935	1823	23.2	2100
TBA	500 (37)	0.789	1.675	420	1.805	16x12	0.104	80	2.125	2283	25.5	3000
TBA	750 (61)	0.968	1.863	420	1.993	24x12	0.069	80	2.313	2882	27.8	4500
TBA	1000 (61)	1.117	2.012	420	2.142	20x10	0.052	80	2.506	3502	30.1	6000

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
1/0 (1)	0.168	0.211	0.067	0.055	0.301	121.741	0.520+j0.241	0.212+j0.055	2083.1	160	195
1/0 (19)	0.168	0.211	0.064	0.054	0.314	127.003	0.520+j0.240	0.212+j0.054	2083.1	160	195
2/0 (19)	0.133	0.167	0.060	0.052	0.335	135.289	0.454+j0.200	0.168+j0.052	2430.3	185	220
3/0 (19)	0.105	0.132	0.057	0.050	0.357	144.425	0.379+j0.147	0.133+j0.050	3124.7	210	250
4/0 (19)	0.0836	0.105	0.053	0.049	0.383	154.777	0.320+j0.115	0.107+j0.049	3819.1	235	285
250 (37)	0.0707	0.089	0.049	0.047	0.415	167.624	0.277+j0.093	0.091+j0.047	4513.5		
350 (37)	0.0505	0.064	0.044	0.045	0.462	186.581	0.207+j0.064	0.066+j0.044	6249.4	315	370
500 (37)	0.0354	0.045	0.039	0.043	0.519	209.874	0.151+j0.049	0.048+j0.042	8825.9	380	450
750 (61)	0.0236	0.030	0.034	0.040	0.603	243.726	0.102+j0.035	0.034+j0.039	13238.9	470	545
1000 (61)	0.0177	0.023	0.030	0.039	0.669	270.348	0.077+j0.031	0.029+j0.036	17537.0	530	620

* 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	1/0 (1)	8.25	30.53	10.67	33.07	6x14	1.44	1.27	38.86	1512	467.36	2821
TBA	1/0 (19)	8.94	31.22	10.67	33.76	6x14	1.44	1.27	39.55	1566	474.98	2821
TBA	2/0 (19)	10.03	32.31	10.67	34.85	7x14	1.23	1.27	40.64	1683	487.68	3556
TBA	3/0 (19)	11.25	33.53	10.67	36.07	9x14	0.96	1.27	41.86	1836	502.92	4481
TBA	4/0 (19)	12.65	34.93	10.67	37.47	11x14	0.78	2.03	44.78	2112	538.48	5652
TBA	250 (37)	14.17	36.68	10.67	39.22	13x14	0.66	2.03	46.53	2322	558.80	6675
TBA	350 (37)	16.79	39.29	10.67	41.83	18x14	0.48	2.03	49.15	2713	589.28	9345
TBA	500 (37)	20.04	42.55	10.67	45.85	16x12	0.34	2.03	53.97	3397	647.70	13350
TBA	750 (61)	24.59	47.32	10.67	50.62	24x12	0.23	2.03	58.75	4289	706.12	20025
TBA	1000 (61)	28.37	51.10	10.67	54.41	20x10	0.17	2.03	63.65	5212	764.54	26700

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
1/0 (1)	0.5512	0.69	0.0204	0.1804	0.988	399.4127	0.520+j0.241	0.212+j0.055	2083.1	160	195
1/0 (19)	0.5512	0.69	0.0195	0.1772	1.030	416.6765	0.520+j0.240	0.212+j0.054	2083.1	160	195
2/0 (19)	0.4364	0.55	0.0183	0.1706	1.099	443.8615	0.454+j0.200	0.168+j0.052	2430.3	185	220
3/0 (19)	0.3445	0.43	0.0174	0.1640	1.171	473.8353	0.379+j0.147	0.133+j0.050	3124.7	210	250
4/0 (19)	0.2743	0.34	0.0162	0.1608	1.257	507.7986	0.320+j0.115	0.107+j0.049	3819.1	235	285
250 (37)	0.2320	0.29	0.0149	0.1542	1.362	549.9475	0.277+j0.093	0.091+j0.047	4513.5		
350 (37)	0.1657	0.21	0.0134	0.1476	1.516	612.1424	0.207+j0.064	0.066+j0.044	6249.4	315	370
500 (37)	0.1161	0.15	0.0119	0.1411	1.703	688.5630	0.151+j0.049	0.048+j0.042	8825.9	380	450
750 (61)	0.0774	0.10	0.0104	0.1312	1.978	799.6260	0.102+j0.035	0.034+j0.039	13238.9	470	545
1000 (61)	0.0581	0.08	0.0091	0.1280	2.195	886.9685	0.077+j0.031	0.029+j0.036	17537.0	530	620

* 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)