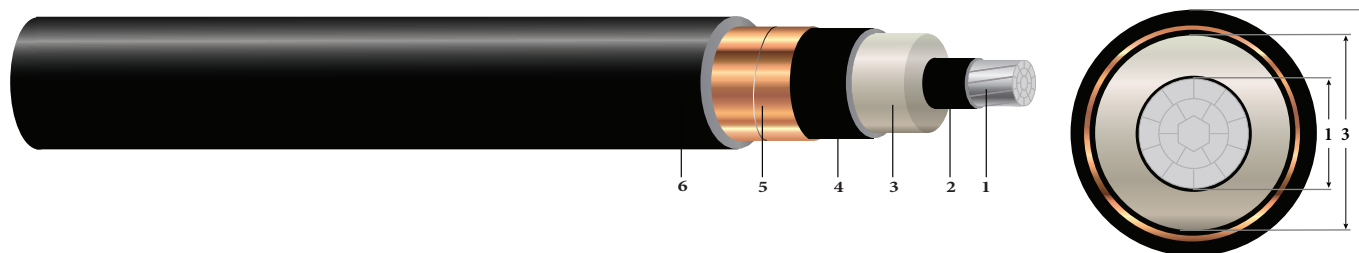


1/C AL 35KV 420 NL-EPR 133% TS CPE MV-105

Type MV-105 Single Conductor Aluminum, 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Chlorinated Polyethylene (CPE) Jacket, Dual Rated UL/CSA



Images not to scale. See Table 1 for Dimensions

CONSTRUCTION:

1. **Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
2. **Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
3. **Insulation:** 420 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
4. **Insulation Shield:** Stripable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Overall Jacket:** Thermoplastic Chlorinated Polyethylene (CPE)

APPLICATIONS AND FEATURES:

Southwire's 35KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial, 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. Rated at -35°C for cold bend. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure.

SPECIFICATIONS:

- ASTM B800 8000 Series Aluminum Alloy Wire
- ASTM B836 Compact Rounded Stranded Aluminum Conductors
- UL 1072 - Medium Voltage Power Cables
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable & ICEA S-97-682 5-46 KV Utility
- UL 1685/FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 AWG and Larger)
- IEEE 1202 -Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 AWG and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C22.2 No.230 - Tray Cables - Rated TC-ER (1/0 AWG and Larger)
- CSA C22.2 No. 2556 / UL 2556 - Cable Test Methods

SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTNING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] AL 420 MILS NL-EPR 35KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS]



Southwire[®]

Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com

Table 1 – Weights & Measurements

Stock Code	Cond. Size AWG	Diameter over			Jacket Thickness ¹ mils	Approx. OD (6) inches	Approx. Weight lbs./MFT	Max Pull Tension lbs.	Min Bending Radius inches	Conduit Size* inches
		Cond. (1)	Insul. (3)	Insul. Shield						
		inches	inches	inches						
TBA	1/0	0.336	1.213	1.273	80	1.453	1001	634	17.4	4
TBA	2/0	0.376	1.253	1.313	80	1.493	1065	799	17.9	5
TBA	3/0	0.423	1.300	1.360	80	1.540	1144	1007	18.5	5
TBA	4/0	0.475	1.352	1.412	80	1.592	1235	1270	19.1	5
TBA	250	0.520	1.406	1.466	80	1.646	1327	1500	19.8	5
TBA	350	0.616	1.502	1.562	80	1.742	1514	2100	20.9	5
TBA	500	0.736	1.622	1.682	110	1.922	1885	3000	23.1	6
TBA	750	0.908	1.825	1.885	110	2.125	2343	4500	25.5	6
TBA	1000	1.060	1.977	2.037	110	2.277	2737	6000	27.3	

All dimensions are nominal and subject to normal manufacturing tolerances

* Conduit size based on 3 phase 40% fill-factor without ground

¹ Comply with ICEA S-93-639 Appendix C for jacket thickness determination

Table 2 – Electrical and Engineering Data

Stock Code	Cond. Size AWG	Resistance		Reactance		Positive Sequence Impedance*	Zero Sequence Impedance*	Shield Short Circuit Current 6 Cycles Amps	Allowable Ampacities 90°C/105°C	
		DC @ 25°C	AC @ 90°C	X _C @ 60Hz	X _L @ 60Hz				In Duct †	In Air ‡
		Ω/MFT	Ω/MFT	MΩ*MFT	Ω/MFT				Amps	Amps
TBA	1/0	0.168	0.211	0.069	0.055	0.212 + j0.055	0.550 + j0.280	4174	155 / 165	200 / 225
TBA	2/0	0.133	0.167	0.065	0.053	0.168 + j0.053	0.502 + j0.269	4304	175 / 190	230 / 260
TBA	3/0	0.105	0.132	0.061	0.051	0.133 + j0.051	0.462 + j0.257	4457	200 / 215	270 / 300
TBA	4/0	0.084	0.105	0.056	0.050	0.106 + j0.049	0.430 + j0.245	4626	230 / 245	310 / 345
TBA	250	0.071	0.089	0.054	0.048	0.090 + j0.048	0.409 + j0.233	4802	250 / 270	345 / 380
TBA	350	0.051	0.064	0.048	0.046	0.064 + j0.046	0.374 + j0.214	5114	305 / 330	430 / 475
TBA	500	0.035	0.045	0.043	0.044	0.046 + j0.044	0.343 + j0.194	5505	370 / 400	530 / 590
TBA	750	0.024	0.030	0.038	0.041	0.031 + j0.041	0.310 + j0.166	6165	455 / 490	685 / 765
TBA	1000	0.018	0.023	0.034	0.039	0.024 + j0.039	0.290 + j0.149	6660	525 / 565	825 / 920

* Calculations are based on three cables triplexed / 5 mil 25 % over lapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohms-meter

† Ampacities are based on TABLE 310.60(C)(78) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(70) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

