

1/C AL 5kV 90 NLEPR 100% SIMpull® PVC MV-105

Type MV-105 Single Conductor Aluminum, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

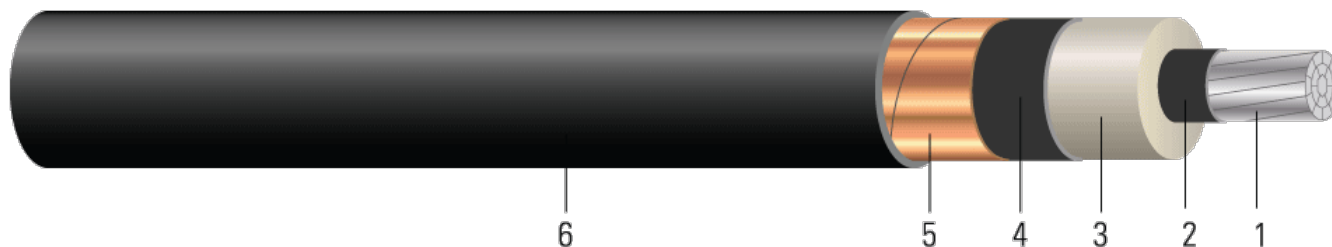


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B compact stranded 8000 Series aluminum per ASTM B800 and ASTM B836
- Conductor Shield:** Semi-conducting cross-linked copolymer; A conductor separator is used for cable size larger than or equal to 500 Kcmil
- Insulation:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Overall Jacket:** Polyvinyl Chloride (PVC)

APPLICATIONS AND FEATURES:

Southwire's 5KV 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. PVC jacket is made with SIM technology and has a coefficient of friction COF of 0.2. Cable can be installed in conduit without the aid of lubrication. 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
- UL 1685 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- ICEA S-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV



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



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SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] AL 90 MILS NL-EPR 5KV 100% 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]

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/Kcmil	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
TBA	2	0.268	0.485	0.545	65	0.695	268	398	8.3	2
TBA	1	0.299	0.516	0.576	65	0.726	297	502	8.7	2
TBA	1/0	0.336	0.553	0.613	65	0.763	332	634	9.2	2.5
TBA	2/0	0.376	0.593	0.653	65	0.803	375	799	9.6	2.5
TBA	3/0	0.423	0.640	0.700	65	0.850	427	1007	10.2	2.5
TBA	4/0	0.475	0.692	0.752	80	0.932	515	1270	11.2	3
TBA	250	0.520	0.746	0.806	80	0.986	578	1500	11.8	3
TBA	350	0.616	0.842	0.902	80	1.082	715	2100	13.0	3
TBA	500	0.736	0.962	1.022	80	1.202	910	3000	14.4	3.5
TBA	750	0.908	1.165	1.225	80	1.405	1250	4500	16.9	4
TBA	1000	1.060	1.317	1.377	80	1.557	1555	6000	18.7	5

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

* 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

Cond. Size	DC Resistance @ 25°C	AC Resistance @ 90°C	Capacitive Reactance @ 60Hz	Inductive Reactance @ 60Hz	Zero Sequence Impedance*	Positive Sequence Impedance*	Shield Short Circuit Current 6 Cycles	Allowable Ampacity In Duct 90/105°C [†]	Allowable Ampacity In Air 90/105°C [‡]
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.266	0.334	0.032	0.044	0.692 + j0.547	0.335 + j0.044	1806	115/125	150/165
1	0.211	0.265	0.029	0.042	0.627 + j0.528	0.266 + j0.042	1906	130/140	175/195
1/0	0.168	0.211	0.027	0.041	0.577 + j0.506	0.212 + j0.041	2027	150/160	200/225
2/0	0.133	0.167	0.025	0.039	0.536 + j0.484	0.168 + j0.039	2157	170/185	230/260
3/0	0.105	0.132	0.022	0.038	0.503 + j0.460	0.133 + j0.038	2310	195/210	270/300
4/0	0.084	0.105	0.020	0.037	0.476 + j0.434	0.106 + j0.037	2479	225/245	310/350
250	0.071	0.089	0.019	0.036	0.460 + j0.410	0.090 + j0.036	2655	250/270	345/385
350	0.051	0.064	0.017	0.035	0.432 + j0.370	0.064 + j0.035	2967	305/325	430/480
500	0.035	0.045	0.014	0.033	0.406 + j0.326	0.046 + j0.033	3357	370/400	545/605
750	0.024	0.030	0.013	0.032	0.374 + j0.268	0.031 + j0.032	4018	470/505	710/790
1000	0.018	0.023	0.012	0.031	0.352 + j0.233	0.024 + j0.030	4512	545/590	855/950

* Calculations are based on three cables triplexed / 5 mil 25% over lapping copper tape shield 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)



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