

# 1/C AL 8kV 140 NLEPR 133% SIMpull® PVC MV-105

Type MV-105 Single Conductor Aluminum, 140 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

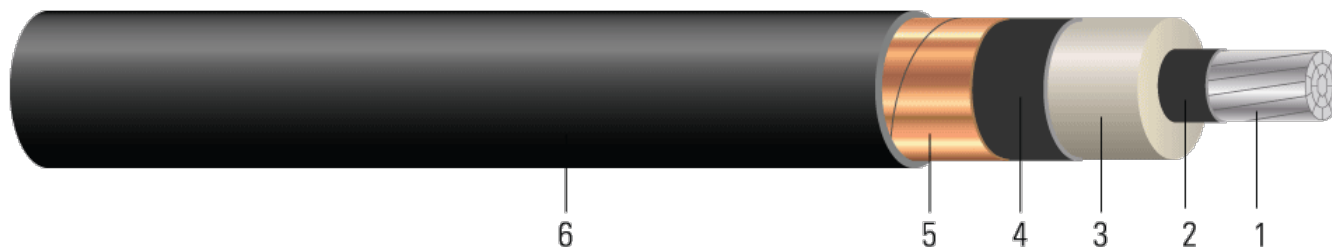


Image not to scale. See Table 1 for dimensions.

## 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:** 140 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
4. **Insulation Shield:** Strippable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 8KV 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 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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
- 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](http://www.southwire.com)



**SAMPLE PRINT LEGEND:**

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] AL 140 MILS NL-EPR 8KV 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]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness <sup>1</sup>	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	0.585	0.645	65	0.795	333	398	9.5	2.5
TBA	1	0.299	0.616	0.676	65	0.826	365	502	9.9	2.5
TBA	1/0	0.336	0.653	0.713	65	0.863	404	634	10.4	2.5
TBA	2/0	0.376	0.693	0.753	80	0.933	474	799	11.2	3
TBA	3/0	0.423	0.740	0.800	80	0.980	531	1007	11.8	3
TBA	4/0	0.475	0.792	0.852	80	1.032	599	1270	12.4	3
TBA	250	0.520	0.846	0.906	80	1.086	667	1500	13.0	3
TBA	350	0.616	0.942	1.002	80	1.182	811	2100	14.2	3.5
TBA	500	0.736	1.062	1.122	80	1.302	1016	3000	15.6	4
TBA	600	0.813	1.120	1.180	80	1.360	1121	3600	16.3	4
TBA	750	0.908	1.265	1.325	80	1.505	1372	4500	18.1	5
TBA	1000	1.060	1.417	1.477	80	1.657	1689	6000	19.9	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

<sup>1</sup> 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 <sup>†</sup>	Allowable Ampacity In Air 90/105°C <sup>‡</sup>
AWG/ Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.266	0.334	0.042	0.047	0.702 + j0.496	0.335 + j0.047	2131	120/130	150/170
1	0.211	0.265	0.039	0.045	0.635 + j0.479	0.266 + j0.045	2232	135/145	175/195
1/0	0.168	0.211	0.036	0.043	0.583 + j0.459	0.212 + j0.043	2352	155/165	200/225
2/0	0.133	0.167	0.033	0.043	0.538 + j0.439	0.168 + j0.043	2482	175/190	235/260
3/0	0.105	0.132	0.030	0.041	0.503 + j0.417	0.133 + j0.041	2635	200/215	270/300
4/0	0.084	0.105	0.028	0.040	0.475 + j0.394	0.106 + j0.039	2804	230/245	310/350
250	0.071	0.089	0.026	0.039	0.457 + j0.372	0.090 + j0.039	2980	250/270	345/385
350	0.051	0.064	0.023	0.037	0.426 + j0.337	0.064 + j0.037	3292	305/330	430/480
500	0.035	0.045	0.020	0.035	0.398 + j0.298	0.046 + j0.035	3683	370/400	535/600
600	0.030	0.038	0.017	0.034	0.385 + j0.281	0.038 + j0.033	3871	/	/
750	0.024	0.030	0.018	0.033	0.364 + j0.246	0.031 + j0.033	4343	455/490	700/780
1000	0.018	0.023	0.016	0.032	0.342 + j0.215	0.024 + j0.032	4838	525/565	840/940



\* 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)

