



# AL Compact 15kV NLEPR Insulation 133% IL Black SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Aluminum, 220 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:** 220 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 15KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, trays, direct burial when installed with a grounding conductor in close proximity that conforms to NEC section 311.36 and 250.4(A)(5), 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 when UL listed. Rated at -25°C for cold bend and cold impact and marked with "LTDD" when CSA listed or dual UL/CSA listed. 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 B801 Concentric-Lay-Stranded Conductors of 8000 Series Aluminum Alloy
- 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)
- 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 (Qualification Test Requirements)





- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661

**SAMPLE PRINT LEGEND:**

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] AL 220 MILS NL-EPR 15KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 - YEAR (NESC) [SEQUENTIAL FEET MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Copper Weight	Aluminum Weight	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size
	AWG/ Kcmil	No. of Strands	inch	inch	inch	mil	inch	lb/ 1000ft	lb/1000ft	lb/ 1000ft	lb	inch	inch
560195	2	6	0.268	0.746	0.806	80	0.986	66	62	493	398	11.8	3.0
560200	1	8	0.298	0.777	0.837	80	1.017	68	78	528	502	12.2	3.0
560214	1/0	10	0.336	0.814	0.874	80	1.054	71	99	573	633	12.6	3.0
560215	2/0	12	0.376	0.854	0.914	80	1.094	75	125	636	798	13.1	3.0
560217	3/0	15	0.422	0.901	0.961	80	1.141	78	158	690	1006	13.6	3.5
6726190	3/0	15	0.422	0.901	0.961	80	1.141	78	158	694	1006	13.6	3.5
560246	4/0	19	0.474	0.953	1.013	80	1.193	82	199	766	1269	14.3	3.5
560247	250	22	0.520	1.006	1.066	80	1.246	86	235	839	1500	14.9	3.5
560248	350	35	0.615	1.102	1.162	80	1.342	93	329	997	2100	16.1	4.0
560117	500	34	0.735	1.244	1.304	80	1.484	103	471	1233	3000	17.8	4.5
TBA	600	58	0.812	1.308	1.368	80	1.548	27	565	1315	3600	18.5	4.5
560118	750	58	0.908	1.416	1.476	80	1.726	117	706	1702	4500	20.7	5.0
560124	1000	61	1.060	1.568	1.628	110	1.868	127	942	2027	6000	22.4	5.5
TBA	1250	91	1.250	1.754	1.814	110	2.054	145	1173	2442	7500	24.6	6
TBA	1500	91	1.370	1.874	1.934	110	2.174	155	1408	2768	9000	26.0	8.0
581832	2000	127	1.583	2.083	2.143	110	2.383	170	1877	3261	12000	28.5	

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

\* Strand count meets minimum number per ASTM





**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	0.267	0.336	0.053	0.052	0.370 + j0.289	0.024 + j0.032	2528	120/130	150/170
1	0.211	0.266	0.049	0.050	0.370 + j0.289	0.024 + j0.032	2621	135/145	175/195
1/0	0.168	0.211	0.046	0.048	0.372 + j0.287	0.027 + j0.035	2738	155/165	200/225
2/0	0.133	0.167	0.042	0.046	0.372 + j0.287	0.027 + j0.035	2862	175/190	235/260
3/0	0.105	0.133	0.039	0.044	0.528 + j0.379	0.162 + j0.05	3005	200/215	270/300
3/0	0.105	0.133	0.039	0.044	0.372 + j0.288	0.023 + j0.030	3005	200/215	270/300
4/0	0.084	0.105	0.036	0.043	0.372 + j0.288	0.023 + j0.030	3166	230/245	310/350
250	0.071	0.090	0.034	0.042	0.372 + j0.288	0.023 + j0.030	3333	250/270	345/385
350	0.050	0.065	0.030	0.040	0.372 + j0.288	0.023 + j0.030	3628	305/330	430/480
500	0.035	0.046	0.026	0.037	0.372 + j0.288	0.023 + j0.030	3999	370/400	535/600
600	0.029	0.039	0.024	0.037	0.372 + j0.288	0.023 + j0.030	4269	404/436	601/672
750	0.024	0.033	0.022	0.035	0.372 + j0.288	0.023 + j0.030	4566	455/490	700/780
1000	0.018	0.026	0.020	0.035	0.372 + j0.288	0.023 + j0.030	5037	525/565	840/940
1250	0.014	0.023	0.019	0.033	0.624 + j0.546	0.266 + j0.040	5651	595/640	970/1080
1500	0.012	0.021	0.018	0.032	0.632 + j0.456	0.266 + j0.05	6023	665/715	1085/1215
2000	0.009	0.019	0.014	0.031	0.528 + j0.379	0.162 + j0.05	6670	805/865	1295/1445

\* NEC ampacities are based on:

\* For Duct: Table 310.60(C)(12) Detail 1.

\* For Free Air: Table 310.60(C)(4).

\* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.

\* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center.

\* Capacitive Reactance is between Phase-to-Shield.

