AL Compact 5/8kV NLEPR Insulation 133/100% IL SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Aluminum, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, SIM*pull* Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

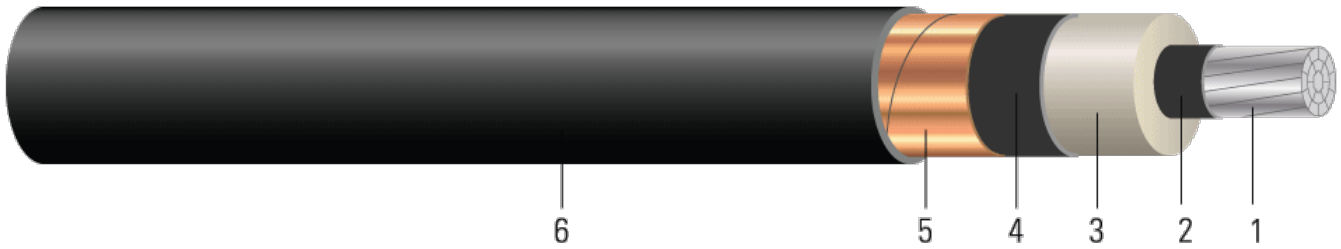


Image not to scale. See Table 1 for dimensions.

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:** 115 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 5KV 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)

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- 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:

{SQFTG_DUAL} SOUTHWIRE SIMpull{R} POWER CABLE {UL} XX AWG COMPACT AL.--- {ALUMAFLEX}{R} AA8176 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV-105 FOR CT USE SUN RES {NESC} -- {CSA} XX AWG COMPACT AL.--- {ALUMAFLEX}{R} AA8176 2.92mm (115 mils) NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV68.10 SR 105{D}C FT4 -25{D}C LTDD -- PAT www.patentSW.com -- RoHS

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
560182	2	7	0.268	0.536	0.64	55	0.79	60	63	346	398	9.5	2
TBA	1	19	0.299	0.567	0.627	55	0.757	52	79	334	502	9.1	2
559953	1/0	10	0.336	0.604	0.664	55	0.814	60	99	381	633	9.8	2
560116	2/0	12	0.376	0.644	0.704	80	0.884	62	125	450	798	10.6	2
560133	3/0	18	0.423	0.691	0.751	80	0.931	66	158	506	1006	11.2	2.5
560134	4/0	19	0.475	0.743	0.803	80	0.983	70	199	573	1269	11.8	2.5
560137	250	22	0.52	0.796	0.856	80	1.036	76	236	639	1500	12.4	2.5
560135	350	35	0.616	0.892	0.952	80	1.132	83	330	782	2100	13.6	3
560147	500	35	0.736	1.036	1.096	80	1.276	94	471	996	3000	15.3	3
577321	600	41	0.813	1.103	1.163	80	1.343	93	565	1121	3600	16.1	3.5
560179	750	58	0.908	1.206	1.266	80	1.446	107	707	1321	4500	17.4	3.5
560180	1000	58	1.117	1.358	1.418	80	1.598	119	942	1633	6000	19.2	4

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
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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	0.365	0.029	0.047	0.713+j0.536	0.366+j0.052	2014	105/110	110/120
1	0.211	0.289	0.027	0.043	0.636+j0.539	0.290+j0.047	1974	120/130	125/140
1/0	0.167	0.229	0.025	0.042	0.580+j0.519	0.230+j0.046	2088	140/150	145/160
2/0	0.133	0.182	0.023	0.041	0.536+j0.499	0.183+j0.045	2212	160/170	170/185
3/0	0.105	0.144	0.021	0.04	0.501+j0.477	0.145+j0.044	2358	180/195	195/215
4/0	0.084	0.115	0.019	0.038	0.475+j0.454	0.116+j0.042	2519	205/220	225/250
250	0.07	0.096	0.018	0.038	0.457+j0.432	0.097+j0.041	2683	230/245	250/280
350	0.051	0.07	0.016	0.036	0.431+j0.395	0.071+j0.039	2981	280/310	310/345
500	0.036	0.05	0.015	0.034	0.406+j0.348	0.051+j0.038	3427	340/365	385/430
600	0.03	0.042	0.012	0.033	0.395+j0.327	0.043+j0.037	3634	374/403	429/478
750	0.023	0.033	0.012	0.032	0.379+j0.300	0.034+j0.036	3954	425/460	495/550
1000	0.017	0.025	0.008	0.03	0.360+j0.264	0.026+j0.035	4424	495/535	585/650

* 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.

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