

3/C AL 15kV 220 NLEPR 133% PVC MV-105

Type MV-105 Three Conductor Aluminum, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA. Silicone Free



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:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
- Filler:** Wax paper filler
- Binder:** Poly glass tape
- 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, 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. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. 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
- CSA C22.2 No.230 Tray Cables - Rated TC-ER
- 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV



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SAMPLE PRINT LEGEND:

{SQFTG_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C XXX AWG COMPACT AL.--- {ALUMAFLEX}{R} AA8176 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS GW 1 X X AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
599300	2	0.268	0.745	0.805	1 x 4	110	2.012	1776	1194	14.2
TBA	1	0.299	0.776	0.836	1 x 6	110	2.097	1887	1506	14.7
TBA	1/0	0.336	0.813	0.873	1 x 6	110	2.177	2042	1901	15.2
TBA	2/0	0.376	0.853	0.913	1 x 4	110	2.263	2268	2396	15.8
599305	3/0	0.423	0.900	0.960	1 x 4	110	2.365	2488	3020	16.6
675662	4/0	0.475	0.952	1.012	1 x 4	110	2.477	2663	3809	17.3
TBA	250	0.520	1.006	1.066	1 x 4	110	2.594	3007	4500	18.2
TBA	350	0.616	1.102	1.162	1 x 3	110	2.801	3582	6300	19.6
TBA	500	0.736	1.222	1.282	1 x 2	135	3.110	4526	9000	21.8
TBA	750	0.908	1.425	1.485	1 x 1	135	3.549	5930	13500	24.8

All dimensions are nominal and subject to normal manufacturing tolerances
 ◇ Cable marked with this symbol is a standard stock item
 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	0.055	0.048	0.710 + j0.426	0.335 + j0.047	2651	115/125	125/145
1	0.211	0.265	0.051	0.046	0.640 + j0.411	0.266 + j0.046	2752	135/145	145/165
1/0	0.168	0.211	0.048	0.044	0.584 + j0.394	0.212 + j0.044	2873	150/165	170/185
2/0	0.133	0.167	0.044	0.043	0.538 + j0.377	0.168 + j0.043	3003	170/185	190/215
3/0	0.105	0.132	0.041	0.041	0.500 + j0.359	0.132 + j0.041	3156	195/210	220/245
4/0	0.084	0.105	0.038	0.040	0.470 + j0.339	0.106 + j0.039	3325	220/240	255/285
250	0.071	0.089	0.036	0.039	0.449 + j0.321	0.089 + j0.039	3501	245/265	280/315
350	0.051	0.064	0.031	0.037	0.415 + j0.292	0.064 + j0.037	3813	295/315	345/385
500	0.035	0.045	0.027	0.035	0.385 + j0.260	0.045 + j0.035	4203	355/385	425/475
750	0.024	0.030	0.024	0.033	0.350 + j0.217	0.031 + j0.033	4864	440/475	540/600

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

† Ampacities are based on TABLE 310.60(C)(80) Detail 1. of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(72) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

