

## 3/C AL 5kV 115 NLEPR 133% AIA PVC MV-105

Type MV-105 Three Conductor Aluminum, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Polyvinyl Chloride (PVC) Jacket. Silicone Free

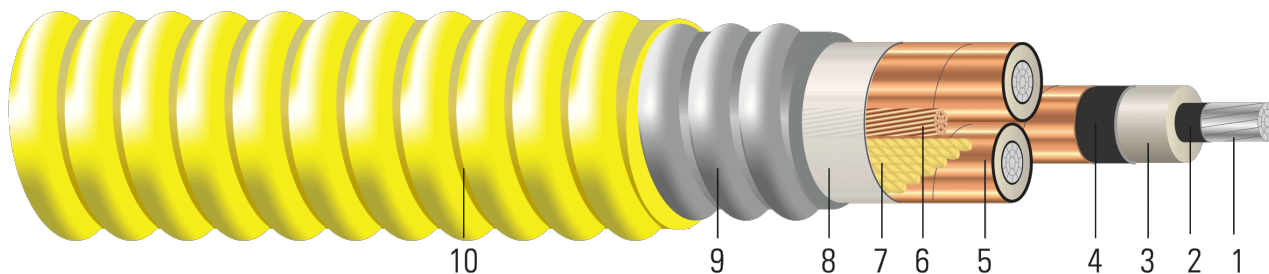


Image not to scale. See Table 1 for dimensions.

### 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Aluminum Interlocked Armor (AIA)
10. **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. 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 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 Vertical-Tray Fire Propagation and Smoke Release Test
- 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- 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{R} POWER CABLE MASTER-DESIGN {UL} 3/C XX AWG COMPACT AL.--- {ALUMAFLEX}{R}  
 AA8176 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS GW 1 X XX AWG CU MV-105 OR MC 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 <sup>1</sup>	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
TBA	2	0.268	0.535	0.595	1 x 6	60	1.670	1237	1194	11.7
TBA	1	0.299	0.566	0.626	1 x 6	60	1.737	1346	1506	12.2
TBA	1/0	0.336	0.603	0.663	1 x 6	60	1.817	1480	1901	12.7
TBA	2/0	0.376	0.643	0.703	1 x 4	60	1.904	1684	2396	13.3
TBA	3/0	0.423	0.690	0.750	1 x 4	60	2.105	1970	3020	14.7
597780	4/0	0.475	0.742	0.802	1 x 4	60	2.218	2203	3809	15.5
TBA	250	0.520	0.796	0.856	1 x 4	60	2.334	2438	4500	16.3
TBA	350	0.616	0.892	0.952	1 x 3	75	2.572	3038	6300	18.0
TBA	500	0.736	1.012	1.072	1 x 2	75	2.831	3789	9000	19.8
TBA	750	0.908	1.215	1.275	1 x 1	85	3.289	5149	13500	23.0

All dimensions are nominal and subject to normal manufacturing tolerances  
 ◊ Cable marked with this symbol is a standard stock item

**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 Directly Buried 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	0.037	0.041	0.703 + j0.523	0.335 + j0.041	1968	140/150	110/120
1	0.211	0.265	0.034	0.039	0.637 + j0.505	0.265 + j0.039	2069	155/170	125/140
1/0	0.168	0.211	0.032	0.038	0.585 + j0.484	0.211 + j0.038	2189	180/190	154/160
2/0	0.133	0.167	0.029	0.037	0.543 + j0.462	0.168 + j0.037	2320	205/220	170/185
3/0	0.105	0.132	0.026	0.035	0.508 + j0.439	0.132 + j0.035	2473	230/250	195/215
4/0	0.084	0.105	0.024	0.034	0.481 + j0.414	0.106 + j0.034	2642	260/280	225/250
250	0.071	0.089	0.023	0.034	0.463 + j0.391	0.089 + j0.034	2817	285/310	250/280
350	0.051	0.064	0.020	0.032	0.432 + j0.353	0.064 + j0.032	3130	345/375	310/345
500	0.035	0.045	0.017	0.031	0.405 + j0.312	0.045 + j0.031	3520	420/450	385/430
750	0.024	0.031	0.016	0.030	0.371 + j0.256	0.031 + j0.030	4180	520/560	495/550

\* 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 ohms-meter

† Ampacities are based on TABLE 310.60(C)(84) 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)

