

## 3/C AL 5kV 90 NLEPR 100% AIA PVC MV-105

Type MV-105 Three Conductor Aluminum, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Polyvinyl Chloride (PVC) Jacket. Silicone Free

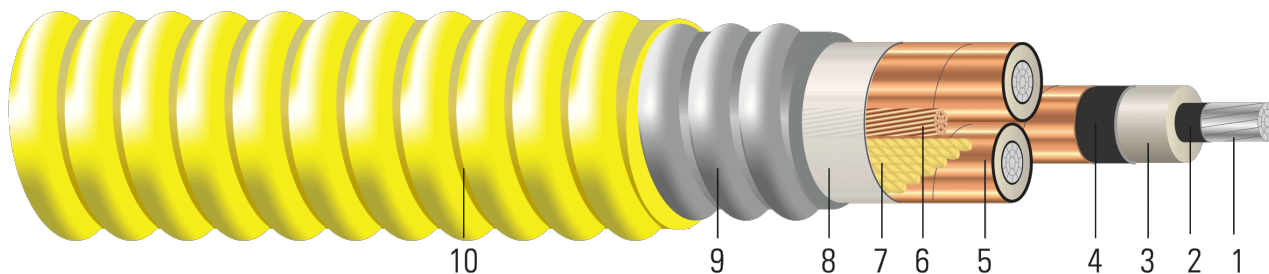


Image not to scale. See Table 1 for dimensions.

### 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:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% 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 B800 8000 Series Aluminum Alloy Wire
- 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

### SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL) 3/C [#AWG or #kcmil] AL 90 MILS NL-EPR AIA 5KV 100% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL YEAR (NESC) [SEQUENTIAL FEET MARKS]



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**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	0.485	0.545	1 x 6	50	1.542	1085	1194	10.8
TBA	1	0.299	0.516	0.576	1 x 6	60	1.629	1218	1506	11.4
TBA	1/0	0.336	0.553	0.613	1 x 6	60	1.709	1347	1901	12.0
TBA	2/0	0.376	0.593	0.653	1 x 4	60	1.796	1545	2396	12.6
TBA	3/0	0.423	0.640	0.700	1 x 4	60	1.897	1732	3020	13.3
TBA	4/0	0.475	0.692	0.752	1 x 4	60	2.110	2045	3809	14.8
TBA	250	0.520	0.746	0.806	1 x 4	60	2.226	2272	4500	15.6
TBA	350	0.616	0.842	0.902	1 x 3	75	2.464	2855	6300	17.2
TBA	500	0.736	0.962	1.022	1 x 2	75	2.723	3588	9000	19.1
TBA	750	0.908	1.165	1.225	1 x 1	85	3.181	4916	13500	22.3

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	0.032	0.039	0.698 + j0.550	0.335 + j0.039	1806	140/150	110/120
1	0.211	0.265	0.029	0.038	0.632 + j0.531	0.265 + j0.038	1906	155/170	125/140
1/0	0.168	0.211	0.027	0.036	0.582 + j0.509	0.211 + j0.036	2027	180/190	154/160
2/0	0.133	0.167	0.025	0.035	0.541 + j0.486	0.168 + j0.035	2157	205/220	170/185
3/0	0.105	0.132	0.022	0.034	0.507 + j0.461	0.132 + j0.034	2310	230/250	195/215
4/0	0.084	0.105	0.020	0.033	0.481 + j0.435	0.106 + j0.033	2479	260/280	225/250
250	0.071	0.089	0.019	0.032	0.464 + j0.410	0.089 + j0.032	2655	285/310	250/280
350	0.051	0.064	0.017	0.031	0.435 + j0.370	0.064 + j0.031	2967	345/375	310/345
500	0.035	0.045	0.014	0.030	0.409 + j0.326	0.045 + j0.030	3357	420/450	385/430
750	0.024	0.031	0.013	0.029	0.376 + j0.268	0.031 + j0.029	4018	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)

