

CU Compressed 25kV NLEPR Insulation 133% IL AIA Orange PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Three Conductor Copper, 320 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Polyvinyl Chloride (PVC) Jacket. Silicone Free

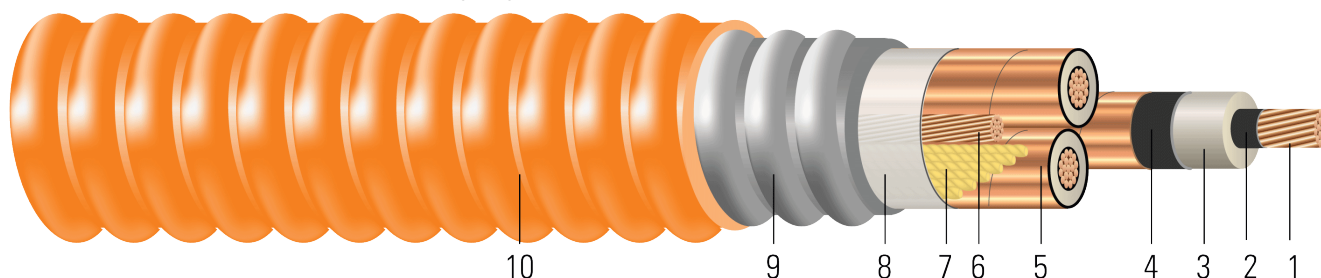


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 320 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 (Tinned Copper per ASTM B33 optional)
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 25KV AIA cables are armored cables 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, 250°C for short circuit conditions. For uses in Class I, II, and III, Division 2 hazardous locations per NEC Article 501, 502, and 503.

SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ASTM B496 Compact Round Concentric-lay-standard copper
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- 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-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com

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- 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# AIA (UL) 3/C [#AWG or #kcmil] CU 320 MILS NL-EPR 25KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. 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 | Ground | Diameter Over armor | Jacket Thickness | Approx. OD | Copper Weight | Approx. Weight | Max Pull Tension | Min Bending Radius |
|--------------|------------|----------------|-------------------------|--------------------------|---------------------------------|-----------|---------------------|------------------|------------|---------------|----------------|------------------|--------------------|
| | AWG/Kcmil | No. of Strands | inch | inch | inch | No. x AWG | inch | mil | inch | lb/1000ft | lb/1000ft | lb | inch |
| TBA | 1 | 19 | 0.322 | 1.000 | 1.060 | 1x4 | 2.654 | 75 | 2.804 | 974 | 3482 | 2008 | 19.6 |
| 671717 | 1/0 | 19 | 0.361 | 1.040 | 1.100 | 1x4 | 2.747 | 80 | 2.907 | 1386 | 3949 | 2534 | 20.3 |
| TBA | 2/0 | 19 | 0.405 | 1.083 | 1.143 | 1x4 | 2.834 | 75 | 2.984 | 1440 | 4214 | 3194 | 20.8 |
| TBA | 3/0 | 19 | 0.456 | 1.134 | 1.194 | 1x3 | 2.944 | 75 | 3.094 | 1802 | 4741 | 4027 | 21.6 |
| TBA | 4/0 | 19 | 0.512 | 1.190 | 1.250 | 1x3 | 3.065 | 90 | 3.245 | 2214 | 5431 | 5078 | 22.7 |
| TBA | 250 | 37 | 0.558 | 1.244 | 1.304 | 1x3 | 3.181 | 90 | 3.361 | 2577 | 5985 | 6000 | 23.5 |
| 139099 | 350 | 37 | 0.661 | 1.327 | 1.387 | 1x2 | 3.368 | 85 | 3.538 | 3814 | 7378 | 8400 | 24.8 |
| 668544 | 500 | 37 | 0.789 | 1.452 | 1.512 | 1x2/0 | 3.637 | 85 | 3.807 | 5453 | 9330 | 12000 | 26.6 |
| TBA | 750 | 61 | 0.968 | 1.664 | 1.724 | 1x1/0 | 4.089 | 90 | 4.269 | 7439 | 12333 | 18000 | 29.8 |

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 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 |
| 1 | 0.128 | 0.162 | 0.059 | 0.050 | 0.523 + j0.335 | 0.162 + j0.05 | 3315 | 170/185 | 185/210 |
| 1/0 | 0.102 | 0.128 | 0.055 | 0.048 | 0.485 + j0.322 | 0.128 + j0.048 | 3435 | 195/210 | 215/240 |
| 2/0 | 0.081 | 0.102 | 0.051 | 0.046 | 0.455 + j0.307 | 0.102 + j0.046 | 3572 | 220/235 | 245/275 |
| 3/0 | 0.064 | 0.081 | 0.047 | 0.044 | 0.43 + j0.292 | 0.081 + j0.044 | 3730 | 250/270 | 285/315 |
| 4/0 | 0.051 | 0.065 | 0.044 | 0.043 | 0.408 + j0.276 | 0.065 + j0.043 | 3903 | 285/305 | 325/360 |
| 250 | 0.043 | 0.056 | 0.041 | 0.042 | 0.394 + j0.263 | 0.056 + j0.042 | 4071 | 310/335 | 360/400 |
| 350 | 0.031 | 0.041 | 0.037 | 0.039 | 0.368 + j0.239 | 0.042 + j0.039 | 4390 | 375/400 | 435/490 |
| 500 | 0.022 | 0.030 | 0.032 | 0.037 | 0.345 + j0.213 | 0.031 + j0.037 | 4786 | 450/485 | 535/600 |
| 750 | 0.014 | 0.023 | 0.028 | 0.035 | 0.319 + j0.182 | 0.024 + j0.035 | 5372 | 545/585 | 670/745 |

* Ampacities are based on:

* For Duct: Table 310.60(C)(79) Detail 1.

* For Free Air: Table 310.60(C)(71).

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



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com

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* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.

* Capacitive Reactance is between Phase-to-Shield.

