# CU Compressed 15kV NLEPR Insulation 133% IL Three Grounds, ARMOR-X® Red PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Three Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Three Grounds, Continuous Corrugated Welded Aluminum Armor. -ARMOR-X®, Polyvinyl Chloride (PVC) Jacket. Suitable For VFD Applications. Silicone Free

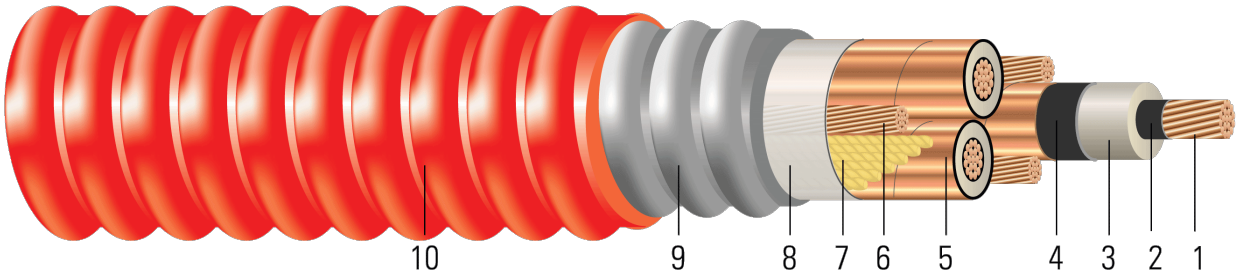


Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 220 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:** Three separate ground wires with a combined ciurcular mil of 50% of the phase conductor. Class B compressed stranded bare copper per ASTM B3 and B8 (Tinned Copper per ASTM B33 optional)
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** ARMOR-X® Continuous Corrugated Welded Aluminum Armor
10. **Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 15KV ARMOR-X® with 50% ground 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, and -50°C for cold bend. For uses in Class I, II, and III, Division 1 and 2 hazardous locations per NEC Article 501, 502, and 503. Cable is suitable for VFD applications

## 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
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-58-679 Cable Conductor Identification Method 3 (1-BLACK, 2-RED, 3-BLUE)


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- 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 (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 ARMOR-X® {UL} MV-105 OR MC-HL 3/C SHIELDED XXX AWG CU 220 MILS NL-EPR 25%TS GW 1 X XXX AWG CU 90°C JKT DIR. BUR. FOR CT USE FT4 -40°C SUN. RES. 15KV 133% -- USA {YYYY} {NESC} {SEQUENTIAL FOOTAGE MARKS} SEQ FEET

## 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 | Conduit Size |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG/ Kcmil | No. of Strands | inch | inch | inch | No. x AWG | inch | mil | inch | lb/ 1000ft | lb/ 1000ft | lb | inch | inch |
| TBA | 1/0 | 19 | 0.362 | 0.84 | 0.9 | 1x4 | 2.29 | 75 | 2.44 | 1342 | 2878 | 2534 | 17.1 | 3 |
| TBA | 2/0 | 19 | 0.405 | 0.883 | 0.943 | 1x4 | 2.549 | 75 | 2.699 | 1611 | 3391 | 3194 | 18.9 | 3.5 |
| TBA | 4/0 | 19 | 0.512 | 0.99 | 1.05 | 1x3 | 2.75 | 75 | 2.9 | 2404 | 4390 | 5078 | 20.3 | 3.5 |
| TBA | 250 | 37 | 0.558 | 1.044 | 1.104 | 1x2 | 2.88 | 75 | 3.03 | 2820 | 4951 | 6000 | 21.2 | 4 |
| 458347 | 350 | 37 | 0.661 | 1.127 | 1.187 | 3x6 | 3.22 | 90 | 3.398 | 3824 | 6353 | 8400 | 23.8 | 4.5 |
| 673465 | 500 | 37 | 0.789 | 1.275 | 1.335 | 3x1 | 3.54 | 90 | 3.718 | 5801 | 8641 | 12000 | 26 | 5 |
| TBA | 750 | 61 | 0.968 | 1.464 | 1.524 | 1x1/0 | 3.85 | 90 | 4.03 | 7724 | 11011 | 18000 | 28.2 | 5.5 |

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

## 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 | 0.102 | 0.139 | 0.039 | 0.027 | 0.510+j0.429 | 0.139+j0.043 | 2820 | 195/210 | 215/240 |
| 2/0 | 0.082 | 0.112 | 0.036 | 0.025 | 0.482+j0.412 | 0.112+j0.042 | 2953 | 220/235 | 245/275 |
| 4/0 | 0.051 | 0.07 | 0.031 | 0.022 | 0.436+j0.372 | 0.070+j0.039 | 3284 | 285/305 | 325/360 |
| 250 | 0.043 | 0.059 | 0.029 | 0.022 | 0.423+j0.354 | 0.059+j0.038 | 3452 | 310/335 | 360/400 |
| 350 | 0.031 | 0.043 | 0.024 | 0.019 | 0.402+j0.328 | 0.043+j0.036 | 3709 | 375/400 | 435/490 |
| 500 | 0.021 | 0.03 | 0.022 | 0.018 | 0.378+j0.289 | 0.030+j0.034 | 4167 | 450/485 | 535/600 |
| 750 | 0.014 | 0.021 | 0.019 | 0.016 | 0.353+j0.247 | 0.021+j0.032 | 4753 | 545/585 | 670/745 |

* NEC ampacities are based on:
* For Duct: Table 310.60(C)(13) Detail 1.
* For Free Air: Table 310.60(C)(5).
* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.


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* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft.
* Capacitive Reactance is between Phase-to-Shield.


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