

## 3/C CU 5kV 115 NLEPR 133% ARMOR-X MC HL PVC MV-105 VFD

Type MV-105 Three Conductor Copper, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Continuous Corrugated Welded Aluminum Armor (Armor-X), Polyvinyl Chloride (PVC) Jacket. Suitable for VFD Applications. Type MC HL. Silicone Free

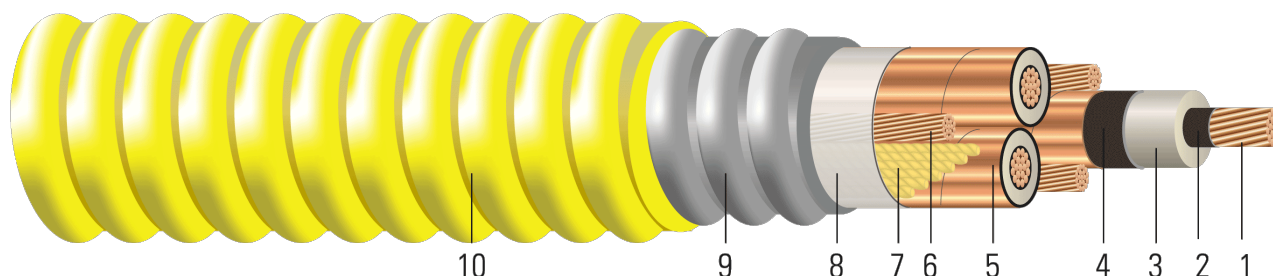


Image not to scale. See Table 1 for dimensions.

### 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:** 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:** 3 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:** Continuous Corrugated Welded Aluminum Armor (Armor-X)
10. **Overall Jacket:** Polyvinyl Chloride (PVC)

### APPLICATIONS AND FEATURES:

Southwire's 5KV ARMOR-X MC HL 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. Suitable for VFD application.

### SPECIFICATIONS:

- ASTM B3 Standard Specification for 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 1569 Metal-Clad Cables
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- UL 2225 Cables and Cable-Fittings For Use In Hazardous (Classified) Locations
- 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



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | [www.southwire.com](http://www.southwire.com)



Southwire

**CABLETECH  
SUPPORT™**

Services

- 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
- 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} MASTER-DESIGN ARMOR-X {UL} MV-105 OR MC-HL 3/C SHIELDED XX AWG CU 115 MILS NL-EPR 25%TS GW 3 X XX AWG CU 90{D}C JKT DIR. BUR. FOR CT USE FT4 -40{D}C SUN. RES. 5KV 133%/8KV 100% -- CWC/MC USA {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
890636◇	2	0.283	0.55	0.61	3 x 10	60	1.79	1808	1593	12.5
890637	1	0.322	0.589	0.649	3 x 8	60	1.965	2127	2009	13.8
890638◇	1/0	0.362	0.629	0.689	3 x 8	60	1.99	2393	2534	13.9
890639◇	2/0	0.405	0.672	0.732	3 x 8	60	2.16	2762	3194	15.1
890640◇	4/0	0.512	0.779	0.839	3 x 6	75	2.44	3892	5078	17.1
890641	250	0.558	0.834	0.894	3 x 6	75	2.58	4380	6000	18.1
890642◇	350	0.661	0.937	0.997	3 x 6	75	2.82	5561	8400	19.7
890643◇	500	0.789	1.065	1.125	3 x 4	75	3.15	7715	12000	22.1
890644◇	750	0.968	1.253	1.313	3 x 4	85	3.71	10724	18000	26
TBA	1000	1.117	1.395	1.459	3 x 3	85	4.020	13476	24000	28

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	0.162	0.203	0.036	0.04	0.573 + j0.514	0.203 + j0.040	2017	180/190	140/154
1	0.129	0.161	0.033	0.039	0.534 + j0.492	0.162 + j0.038	2144	200/215	160/180
1/0	0.102	0.128	0.03	0.037	0.503 + j0.470	0.128 + j0.037	2274	230/245	185/205
2/0	0.081	0.102	0.027	0.036	0.477 + j0.448	0.102 + j0.036	2414	260/280	215/240
4/0	0.051	0.064	0.023	0.034	0.438 + j0.398	0.065 + j0.034	2762	335/360	285/320
250	0.043	0.054	0.022	0.033	0.426 + j0.375	0.055 + j0.033	2941	365/395	320/355
350	0.031	0.039	0.019	0.032	0.405 + j0.337	0.040 + j0.032	3276	440/475	395/440
500	0.022	0.028	0.016	0.03	0.383 + j0.296	0.029 + j0.030	3693	530/570	485/545
750	0.014	0.02	0.014	0.029	0.357 + j0.247	0.020 + j0.029	4304	650/700	615/685
1000	0.011	0.017	0.012	0.028	0.338 + j0.216	0.017 + j0.028	4779	730/785	705/790

\* 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



**Southwire**



Services

† Ampacities are based on TABLE 310.60(C)(83) of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(71) of the 2020 National Electrical Code (40°C Ambient Air Temperature)

