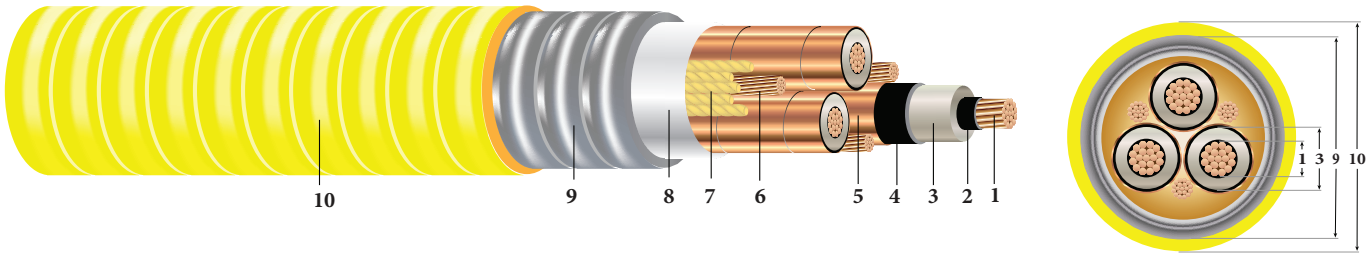
# 3/C CU 5KV 115 NL-EPR 133% TS ARMOR-X PVC MV-105

Type MV-105 Three Conductor Copper, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Continuous Corrugated Welded Armor (Armor-X), Polyvinyl Chloride (PVC) Jacket




Images not to scale. See Table 1 for Dimensions

## CONSTRUCTION:

1. **Conductor**: Class B compressed stranded bare copper per ASTM B3 and ASTM B8
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
7. **Filler**: Wax paper filler
8. **Binder**: Polypropylene tape
9. **Armor**: Continuous Corrugated Welded Armor (Armor-X)
10. **Overall Jacket**: Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 5KV ARMOR-X 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 Soft or annealed copper
- ASTM B8 Concentric-lay-standard copper
- UL 1072 - Medium Voltage Power Cables
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable & ICEA S-97-682 5-46 KV Utility
- UL 1685/FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- IEEE 1202 -Flame Test (70,000) BTU/hr Vertical Tray Test
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

## SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# ARMOR-X (UL) 3/C [#AWG or #kcmil] CU 115 MILS NL-EPR 5KV 133%/ 8KV 100% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL FT4 [-50°C] YEAR (NESC) [SEQUENTIAL FEET MARKS]



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## Table 1 – Weights & Measurements

| Stock Code | Cond. Size | Diameter over Cond. (1) | Diameter over Insul. (3) | Diameter over Insul. Shield | Ground | Dia. Over Armor (9) | Jacket Thickness | Approx. OD (10) | Approx. Weight | Max Pull Tension | Min Bending Radius |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | AWG | inches | inches | inches | No. x AWG | inches | mils | inches | lbs./MFT | lbs. | inches |
| 890636 ◊ | 2 | 0.283 | 0.550 | 0.610 | 3 x 10 | 1.670 | 60 | 1.790 | 1808 | 1593 | 12.5 |
| 890637 | 1 | 0.322 | 0.589 | 0.649 | 3 x 8 | 1.845 | 60 | 1.965 | 2127 | 2009 | 13.8 |
| 890638 ◊ | 1/0 | 0.362 | 0.629 | 0.689 | 3 x 8 | 1.870 | 60 | 1.990 | 2393 | 2534 | 13.9 |
| 890639 ◊ | 2/0 | 0.405 | 0.672 | 0.732 | 3 x 8 | 2.040 | 60 | 2.160 | 2762 | 3194 | 15.1 |
| TBA | 3/0 | 0.456 | 0.723 | 0.783 | 3 x 6 | 2.200 | 60 | 2.320 | 3302 | 4027 | 16.2 |
| 890640 ◊ | 4/0 | 0.512 | 0.779 | 0.839 | 3 x 6 | 2.290 | 75 | 2.440 | 3892 | 5078 | 17.1 |
| 890641 | 250 | 0.558 | 0.834 | 0.894 | 3 x 6 | 2.430 | 75 | 2.580 | 4380 | 6000 | 18.1 |
| 890642 ◊ | 350 | 0.661 | 0.937 | 0.997 | 3 x 6 | 2.670 | 75 | 2.820 | 5561 | 8400 | 19.7 |
| 890643 ◊ | 500 | 0.789 | 1.065 | 1.125 | 3 x 4 | 3.000 | 75 | 3.150 | 7715 | 12000 | 22.1 |
| 890644 ◊ | 750 | 0.968 | 1.253 | 1.313 | 3 x 4 | 3.540 | 85 | 3.710 | 10724 | 18000 | 26.0 |

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Standard stock item

## Table 2 – Electrical and Engineering Data

| Stock Code | Cond. Size | Resistance DC @ 25°C | Resistance AC @ 90°C | Reactance $X_C$ @ 60Hz | Reactance $X_L$ @ 60Hz | Positive Sequence Impedance* | Zero Sequence Impedance* | Shield Short Circuit Current 6 Cycles | Allowable Ampacities 90°C/105°C Directly Buried † | Allowable Ampacities 90°C/105°C In Air ‡ |
|---|---|---|---|---|---|---|---|---|---|---|
| | AWG | Ω/MFT | Ω/MFT | MΩ*MFT | Ω/MFT | Ω/MFT | Ω/MFT | Amps | Amps | Amps |
| 890636 ◊ | 2 | 0.162 | 0.203 | 0.036 | 0.040 | 0.203 + j0.040 | 0.573 + j0.514 | 2017 | 180 / 190 | 140 / 154 |
| 890637 | 1 | 0.129 | 0.161 | 0.033 | 0.039 | 0.162 + j0.038 | 0.534 + j0.492 | 2144 | 200 / 215 | 160 / 180 |
| 890638 ◊ | 1/0 | 0.102 | 0.128 | 0.030 | 0.037 | 0.128 + j0.037 | 0.503 + j0.470 | 2274 | 230 / 245 | 185 / 205 |
| 890639 ◊ | 2/0 | 0.081 | 0.102 | 0.027 | 0.036 | 0.102 + j0.036 | 0.477 + j0.448 | 2414 | 260 / 280 | 215 / 240 |
| TBA | 3/0 | 0.064 | 0.081 | 0.025 | 0.035 | 0.081 + j0.035 | 0.456 + j0.423 | 2580 | 295 / 320 | 250 / 280 |
| 890640 ◊ | 4/0 | 0.051 | 0.064 | 0.023 | 0.034 | 0.065 + j0.034 | 0.438 + j0.398 | 2762 | 335 / 360 | 285 / 320 |
| 890641 | 250 | 0.043 | 0.054 | 0.022 | 0.033 | 0.055 + j0.033 | 0.426 + j0.375 | 2941 | 365 / 395 | 320 / 355 |
| 890642 ◊ | 350 | 0.031 | 0.039 | 0.019 | 0.032 | 0.040 + j0.032 | 0.405 + j0.337 | 3276 | 440 / 475 | 395 / 440 |
| 890643 ◊ | 500 | 0.022 | 0.028 | 0.016 | 0.030 | 0.029 + j0.030 | 0.383 + j0.296 | 3693 | 530 / 570 | 485 / 545 |
| 890644 ◊ | 750 | 0.014 | 0.020 | 0.014 | 0.029 | 0.020 + j0.029 | 0.357 + j0.247 | 4304 | 650 / 700 | 615 / 685 |

* 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)(83) of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)
‡ Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)


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