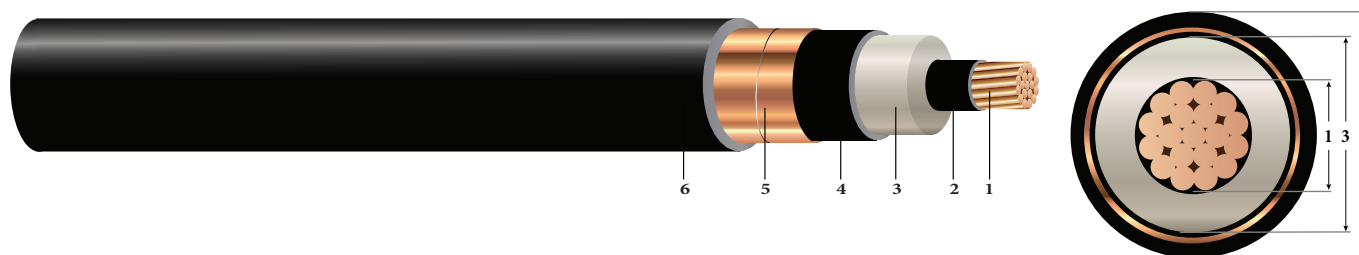


## 1/C CU 5KV 90 NL-EPR 100% TS PVC MV-105

Type MV-105 Single Conductor Copper, 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA



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:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level
4. **Insulation Shield:** Stripable semi-conducting cross-linked copolymer
5. **Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
6. **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. ST1 (low smoke) Rated for sizes 1/0 and larger. Rated for 1000 lbs./FT maximum sidewall pressure.

### SPECIFICATIONS:

- ASTM B3 Soft or annealed copper
- ASTM B8 Concentric-lay-standard copper
- UL 1072 - Medium Voltage Power Cables
- ICEA S-97-682 5-46 KV Utility & ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- UL 1685/FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 AWG and Larger)
- IEEE 1202 -Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 AWG and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV
- CSA C68.10 - Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- CSA C22.2 No.230 - Tray Cables - Rated TC-ER (1/0 AWG and Larger)
- CSA C22.2 No. 2556 / UL 2556 - Cable Test Methods

### SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] CU 90 MILS NL-EPR 5KV 100% INS LEVEL 25% TS MV-105 For CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS]



**Southwire**<sup>®</sup>

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

Copyright © 2016 Southwire Company, LLC. All Rights Reserved

SPEC 46101\_PSS DIVISION DATE: 04/13/2017 Rev:2.0.00C

## Table 1 – Weights & Measurements

Stock Code	Cond. Size AWG	Diameter over			Jacket Thickness <sup>1</sup> mils	Approx. OD (6) inches	Approx. Weight lbs./MFT	Max Pull Tension lbs.	Min Bending Radius inches	Conduit Size* inches
		Cond. (1) inches	Insul. (3) inches	Insul. Shield inches						
TBA	2	0.283	0.500	0.560	65	0.710	422	531	8.5	2
TBA	1	0.322	0.539	0.599	65	0.749	489	670	9.0	2.5
555656	1/0	0.362	0.579	0.639	65	0.789	573	845	9.5	2.5
555664	2/0	0.405	0.622	0.682	65	0.832	677	1065	10.0	2.5
TBA	3/0	0.456	0.673	0.733	65	0.883	806	1342	10.6	2.5
555680	4/0	0.512	0.729	0.789	80	0.969	992	1693	11.6	3
555698	250	0.558	0.784	0.844	80	1.024	1135	2000	12.3	3
555706	350	0.661	0.887	0.947	80	1.127	1492	2800	13.5	3.5
551533	500	0.789	1.015	1.075	80	1.255	2013	4000	15.1	3.5
610923	750	0.968	1.203	1.263	80	1.443	2872	6000	17.3	4
957563	1000	1.117	1.352	1.412	80	1.592	3711	8000	19.1	5

All dimensions are nominal and subject to normal manufacturing tolerances

\* Conduit size based on 3 phase 40% fill-factor without ground

<sup>1</sup> Comply with ICEA S-93-639 Appendix C for jacket thickness determination

## Table 2 – Electrical and Engineering Data

Stock Code	Cond. Size AWG	Resistance		Reactance		Positive Sequence Impedance*	Zero Sequence Impedance*	Shield Short Circuit Current 6 Cycles Amps	Allowable Ampacities 90°C/105°C	
		DC @ 25°C Ω/MFT	AC @ 90°C Ω/MFT	X <sub>C</sub> @ 60Hz MΩ*MFT	X <sub>L</sub> @ 60Hz Ω/MFT				In Duct † Amps	In Air ‡ Amps
TBA	2	0.162	0.203	0.031	0.043	0.203 + j0.043	0.562 + j0.537	1854	145 / 155	190 / 215
TBA	1	0.129	0.161	0.028	0.041	0.162 + j0.041	0.526 + j0.514	1981	170 / 180	225 / 250
555656	1/0	0.102	0.128	0.025	0.040	0.128 + j0.040	0.495 + j0.492	2111	195 / 210	260 / 290
555664	2/0	0.081	0.101	0.023	0.038	0.102 + j0.038	0.472 + j0.469	2251	220 / 235	300 / 330
TBA	3/0	0.064	0.081	0.021	0.037	0.081 + j0.037	0.452 + j0.443	2417	250 / 270	345 / 385
555680	4/0	0.051	0.064	0.019	0.036	0.065 + j0.036	0.435 + j0.417	2599	290 / 310	400 / 445
555698	250	0.043	0.054	0.018	0.036	0.055 + j0.036	0.425 + j0.393	2778	320 / 345	445 / 495
555706	350	0.031	0.039	0.016	0.034	0.040 + j0.034	0.405 + j0.353	3113	385 / 415	550 / 615
551533	500	0.022	0.028	0.014	0.032	0.029 + j0.032	0.385 + j0.309	3530	470 / 505	695 / 775
610923	750	0.014	0.020	0.012	0.031	0.020 + j0.031	0.360 + j0.258	4141	585 / 630	900 / 1000
957563	1000	0.011	0.016	0.010	0.030	0.016 + j0.030	0.341 + j0.225	4626	670 / 720	1075 / 1200

\* Calculations are based on three cables triplexed / 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)(77) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

‡ Ampacities are based on TABLE 310.60(C)(69) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

