

1/C CU 5kV 90 NLEPR 100% 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



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 90 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- 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 Standard Specification for Soft or Annealed Copper Wire
- ASTM B8 Concentric-Lay-Stranded Copper Conductors
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- 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
- CSA C68.10 Shielded Power Cables for Commercial and Industrial Applications - 5 to 46 KV
- 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
- IEEE 1202 FT4 Flame Test (70,000) BTU/hr Vertical Tray Test (1/0 and Larger)
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTNING 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]



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Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size*
	AWG/Kcmil	inch	inch	inch	mil	inch	lb/1000ft	lb	inch	inch
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

◊ Cable marked with this symbol is a standard stock item

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

¹ Comply with ICEA S-93-639 Appendix C for jacket thickness determination

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
2	0.162	0.203	0.031	0.043	0.562 + j0.537	0.203 + j0.043	1854	145/155	190/215
1	0.129	0.161	0.028	0.041	0.526 + j0.514	0.162 + j0.041	1981	170/180	225/250
1/0	0.102	0.128	0.025	0.040	0.495 + j0.492	0.128 + j0.040	2111	195/210	260/290
2/0	0.081	0.101	0.023	0.038	0.472 + j0.469	0.102 + j0.038	2251	220/235	300/330
3/0	0.064	0.081	0.021	0.037	0.452 + j0.443	0.081 + j0.037	2417	250/270	345/385
4/0	0.051	0.064	0.019	0.036	0.435 + j0.417	0.065 + j0.036	2599	290/310	400/445
250	0.043	0.054	0.018	0.036	0.425 + j0.393	0.055 + j0.036	2778	320/345	445/495
350	0.031	0.039	0.016	0.034	0.405 + j0.353	0.040 + j0.034	3113	385/415	550/615
500	0.022	0.028	0.014	0.032	0.385 + j0.309	0.029 + j0.032	3530	470/505	695/775
750	0.014	0.020	0.012	0.031	0.360 + j0.258	0.020 + j0.031	4141	585/630	900/1000
1000	0.011	0.016	0.010	0.030	0.341 + j0.225	0.016 + j0.030	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)

