

## 1/C CU 5kV 90 TRXLPE 100% PVC MV-105

Type MV-105 Single Conductor Copper, 90 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 100% Insulation Level, Tape Shield, Polyvinyl Chloride (PVC) Jacket, Rated UL. Silicone Free

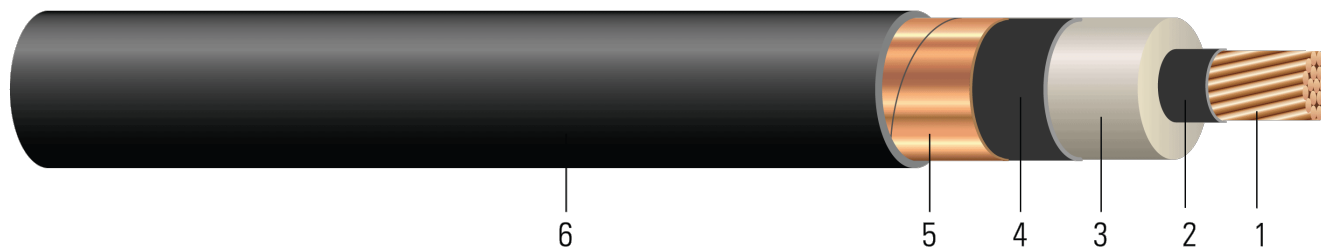


Image not to scale. See Table 1 for dimensions.

### 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:** 90 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 100% 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. **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 when installed with a grounding conductor in close proximity that conforms to NEC section 311.36 and 250.4(A)(5), 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
- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ASTM B496 Compact Round Concentric-lay-standard copper
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4-ST1 Vertical-Tray Fire Propagation and Smoke Release Test (1/0 and Larger)
- UL 1685 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- 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



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**SAMPLE PRINT LEGEND:**

SOUTHWIRE (UL) 1/C [#AWG or #kcmil] CU 90 TR-XLPE 5KV 100% INS LEVEL 25%TS MV-105 SUN RES -40{D}C  
[SEQUENTIAL FEET MARKS]

**Table 1 – Weights and Measurements**

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness <sup>1</sup>	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	410	531	8.5	2
TBA	1	0.322	0.539	0.599	65	0.749	476	670	9.0	2.5
TBA	1/0	0.362	0.579	0.639	65	0.789	560	845	9.5	2.5
TBA	2/0	0.405	0.622	0.682	65	0.832	662	1065	10.0	2.5
TBA	3/0	0.456	0.673	0.733	65	0.883	790	1342	10.6	2.5
TBA	4/0	0.512	0.729	0.789	80	0.969	974	1693	11.6	3
TBA	250	0.558	0.784	0.844	80	1.024	1116	2000	12.3	3
TBA	350	0.661	0.887	0.947	80	1.127	1470	2800	13.5	3.5
TBA	500	0.789	1.015	1.075	80	1.255	1988	4000	15.1	3.5
958926	750	0.968	1.203	1.263	80	1.443	2841	6000	17.3	4
890128	1000	1.117	1.352	1.412	80	1.592	3676	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

<sup>1</sup> 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 <sup>†</sup>	Allowable Ampacity In Air 90/105°C <sup>‡</sup>
AWG/Kcmil	Ω/1000ft	Ω/1000ft	MΩ*1000ft	Ω/1000ft	Ω/1000ft	Ω/1000ft	Amp	Amp	Amp
2	0.162	0.203	0.039	0.043	0.562 + j0.537	0.203 + j0.043	1854	145/155	190/215
1	0.129	0.161	0.035	0.041	0.526 + j0.514	0.162 + j0.041	1981	170/180	225/250
1/0	0.102	0.128	0.032	0.040	0.495 + j0.492	0.128 + j0.040	2111	195/210	260/290
2/0	0.081	0.101	0.029	0.038	0.472 + j0.469	0.102 + j0.038	2251	220/235	300/330
3/0	0.064	0.081	0.026	0.037	0.452 + j0.443	0.081 + j0.037	2417	250/270	345/385
4/0	0.051	0.064	0.024	0.036	0.435 + j0.417	0.065 + j0.036	2599	290/310	400/445
250	0.043	0.054	0.023	0.036	0.425 + j0.393	0.055 + j0.036	2778	320/345	445/495
350	0.031	0.039	0.020	0.034	0.405 + j0.353	0.040 + j0.034	3113	385/415	550/615
500	0.022	0.028	0.017	0.032	0.385 + j0.309	0.029 + j0.032	3530	470/505	695/775
750	0.014	0.020	0.015	0.031	0.360 + j0.258	0.020 + j0.031	4141	585/630	900/1000
1000	0.011	0.016	0.013	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

<sup>†</sup> Ampacities are based on TABLE 310.60(C)(77) Detail 1. of the 2020 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)

<sup>‡</sup> Ampacities are based on TABLE 310.60(C)(69) of the 2020 National Electrical Code (40°C Ambient Air Temperature)



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