

3/C CU 5kV 115 NLEPR 133% Thermoplastic LSZH-TP MV-105

Type MV-105 Three Conductor Copper, 115 Mills No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Thermoplastic SOLONON® Low Smoke Zero Halogen (LSZH-TP) Jacket, Dual Rated UL/CSA. 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 Mills 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:** 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:** Poly glass tape
9. **Overall Jacket:** Thermoplastic SOLONON® Low Smoke Zero Halogen (LSZH-TP)

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 -25°C for cold bend. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. 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
- 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
- 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



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Southwire

**CABLETECH
SUPPORT™**

Services

- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

SAMPLE PRINT LEGEND:

{SQFTG_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C XXX KCMIL CU 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS GW 1 X XX AWG CU MV-105 FOR CT USE ST-1 SUN. RES. FOR DIRECT BURIAL {NESC}

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
TBA	2	0.283	0.550	0.610	1 x 6	80	1.549	1585	1593	10.8
TBA	1	0.322	0.589	0.649	1 x 4	80	1.633	1856	2009	11.4
TBA	1/0	0.362	0.629	0.689	1 x 4	80	1.719	2135	2534	12.0
TBA	2/0	0.405	0.672	0.732	1 x 4	110	1.872	2584	3194	13.1
TBA	3/0	0.456	0.723	0.783	1 x 3	110	1.982	3049	4027	13.9
TBA	4/0	0.512	0.779	0.839	1 x 3	110	2.103	3575	5078	14.7
TBA	250	0.558	0.834	0.894	1 x 3	110	2.222	4048	6000	15.6
TBA	350	0.661	0.937	0.997	1 x 2	110	2.445	5250	8400	17.1
574675	500	0.789	1.065	1.125	1 x 1	110	2.721	6991	12000	19.0
TBA	750	0.968	1.253	1.313	1 x 0	135	3.177	9993	18000	22.2

All dimensions are nominal and subject to normal manufacturing tolerances

◇ Cable marked with this symbol is a standard stock item

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	0.036	0.040	0.573 + j0.514	0.203 + j0.040	2017	135/145	140/154
1	0.129	0.161	0.033	0.039	0.534 + j0.492	0.162 + j0.038	2144	155/165	160/180
1/0	0.102	0.128	0.030	0.037	0.503 + j0.470	0.128 + j0.037	2274	175/190	185/205
2/0	0.081	0.102	0.027	0.036	0.477 + j0.448	0.102 + j0.036	2414	200/220	215/240
3/0	0.064	0.081	0.025	0.035	0.456 + j0.423	0.081 + j0.035	2580	230/250	250/280
4/0	0.051	0.064	0.023	0.034	0.438 + j0.398	0.065 + j0.034	2762	265/285	285/320
250	0.043	0.054	0.022	0.033	0.426 + j0.375	0.055 + j0.033	2941	290/315	320/355
350	0.031	0.039	0.019	0.032	0.405 + j0.337	0.040 + j0.032	3276	355/380	395/440
500	0.022	0.028	0.016	0.030	0.383 + j0.296	0.029 + j0.030	3693	430/460	485/545
750	0.014	0.020	0.014	0.029	0.357 + j0.247	0.020 + j0.029	4304	530/570	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)(79) Detail 1. 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)

