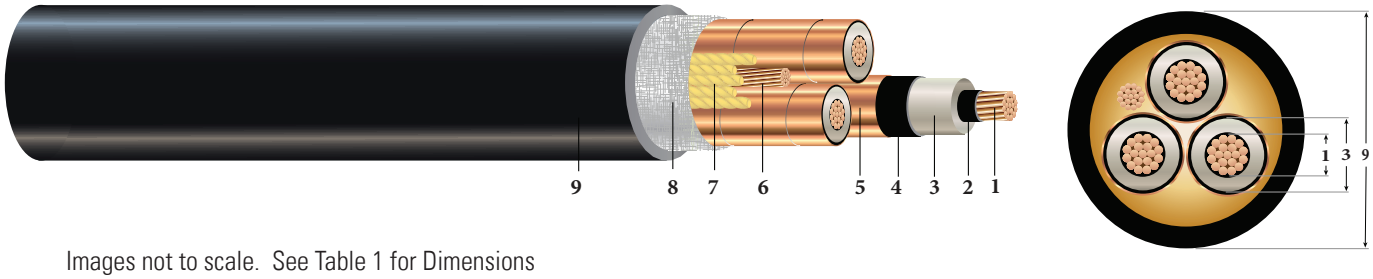
3/C CU 5KV 115 NL-EPR 133% TS CPE MV-105

Type MV-105 Three Conductor Copper, 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Chlorinated Polyethylene (CPE) 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**: 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**: Class B compressed stranded bare copper per ASTM B3 and ASTM B8
7. **Filler**: Wax paper filler
8. **Binder**: Poly glass tape
9. **Overall Jacket**: Thermoplastic Chlorinated Polyethylene (CPE)

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. 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 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
- 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
- CSA C22.2 No. 2556 / UL 2556 - Cable Test Methods

SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 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. TC-ER(CSA) For DIRECT BURIAL FT4 YEAR (NESC) [SEQUENTIAL FEET

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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	Jacket Thickness[1]	Approx. OD (9)	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG	inches	inches	inches	No. x AWG	mils	inches	lbs./MFT	lbs.	inches
552345	2	0.283	0.550	0.610	1 x 6	80	1.549	1580	1593	10.8
TBA	1	0.322	0.589	0.649	1 x 4	80	1.633	1851	2009	11.4
TBA	1/0	0.362	0.629	0.689	1 x 4	80	1.719	2130	2534	12.0
551848	2/0	0.405	0.672	0.732	1 x 4	110	1.872	2576	3194	13.1
TBA	3/0	0.456	0.723	0.783	1 x 3	110	1.982	3040	4027	13.9
561038	4/0	0.512	0.779	0.839	1 x 3	110	2.103	3566	5078	14.7
TBA	250	0.558	0.834	0.894	1 x 3	110	2.222	4038	6000	15.6
560450	350	0.661	0.937	0.997	1 x 2	110	2.445	5239	8400	17.1
561230	500	0.789	1.065	1.125	1 x 1	110	2.721	6979	12000	19.0
560449	750	0.968	1.253	1.313	1 x 0	135	3.177	9976	18000	22.2

All dimensions are nominal and subject to normal manufacturing tolerances

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

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 In Duct †	Allowable Ampacities 90°C/105°C In Air ‡
	AWG	Ω/MFT	Ω/MFT	MΩ*MFT	Ω/MFT	Ω/MFT	Ω/MFT	Amps	Amps	Amps
552345	2	0.162	0.203	0.036	0.040	0.203 + j0.040	0.573 + j0.514	2017	135 / 145	140 / 154
TBA	1	0.129	0.161	0.033	0.039	0.162 + j0.038	0.534 + j0.492	2144	155 / 165	160 / 180
TBA	1/0	0.102	0.128	0.030	0.037	0.128 + j0.037	0.503 + j0.470	2274	175 / 190	185 / 205
551848	2/0	0.081	0.102	0.027	0.036	0.102 + j0.036	0.477 + j0.448	2414	200 / 220	215 / 240
TBA	3/0	0.064	0.081	0.025	0.035	0.081 + j0.035	0.456 + j0.423	2580	230 / 250	250 / 280
561038	4/0	0.051	0.064	0.023	0.034	0.065 + j0.034	0.438 + j0.398	2762	265 / 285	285 / 320
TBA	250	0.043	0.054	0.022	0.033	0.055 + j0.033	0.426 + j0.375	2941	290 / 315	320 / 355
560450	350	0.031	0.039	0.019	0.032	0.040 + j0.032	0.405 + j0.337	3276	355 / 380	395 / 440
561230	500	0.022	0.028	0.016	0.030	0.029 + j0.030	0.383 + j0.296	3693	430 / 460	485 / 545
560449	750	0.014	0.020	0.014	0.029	0.020 + j0.029	0.357 + j0.247	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 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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