

3/C CU 5kV 115 NLEPR 133% AIA CPE MV-105

Type MV-105 Three Conductor Copper, 115 Mills No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Chlorinated Polyethylene (CPE) Jacket

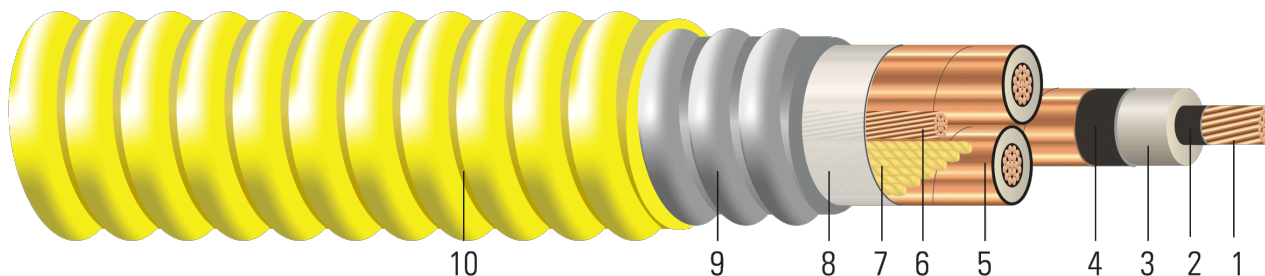


Image not to scale. See Table 1 for dimensions.

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 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
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Aluminum Interlocked Armor (AIA)
10. **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 -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
- UL 1072 Medium-Voltage Power Cables
- 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-97-682 Standard for Shielded Utility Cable Rated for 5 - 46kV
- 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 XX AWG CU 115 MILS NL-EPR 5KV 133%/8KV
100% INS LEVEL 25%TS GW 1 X XX AWG CU MV-105 OR MC FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}



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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
583246	2	0.283	0.550	0.610	1 x 6	60	1.703	1728	1593	11.9
TBA	1	0.322	0.589	0.649	1 x 4	60	1.787	2007	2009	12.5
TBA	1/0	0.362	0.629	0.689	1 x 4	60	1.873	2292	2534	13.1
TBA	2/0	0.405	0.672	0.732	1 x 4	60	2.066	2729	3194	14.5
TBA	3/0	0.456	0.723	0.783	1 x 3	60	2.176	3199	4027	15.2
576651	4/0	0.512	0.779	0.839	1 x 3	60	2.297	3731	5078	16.1
577531	250	0.558	0.834	0.894	1 x 3	75	2.446	4284	6000	17.1
TBA	350	0.661	0.937	0.997	1 x 2	75	2.669	5505	8400	18.7
677577	500	0.789	1.065	1.125	1 x 1	75	2.945	7269	12000	20.6
TBA	750	0.968	1.253	1.313	1 x 0	85	3.371	10213	18000	23.6

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

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 Directly Buried 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	180/190	140/154
1	0.129	0.161	0.033	0.039	0.534 + j0.492	0.162 + j0.038	2144	200/215	160/180
1/0	0.102	0.128	0.030	0.037	0.503 + j0.470	0.128 + j0.037	2274	230/245	185/205
2/0	0.081	0.102	0.027	0.036	0.477 + j0.448	0.102 + j0.036	2414	260/280	215/240
3/0	0.064	0.081	0.025	0.035	0.456 + j0.423	0.081 + j0.035	2580	295/320	250/280
4/0	0.051	0.064	0.023	0.034	0.438 + j0.398	0.065 + j0.034	2762	335/360	285/320
250	0.043	0.054	0.022	0.033	0.426 + j0.375	0.055 + j0.033	2941	365/395	320/355
350	0.031	0.039	0.019	0.032	0.405 + j0.337	0.040 + j0.032	3276	440/475	395/440
500	0.022	0.028	0.016	0.030	0.383 + j0.296	0.029 + j0.030	3693	530/570	485/545
750	0.014	0.020	0.014	0.029	0.357 + j0.247	0.020 + j0.029	4304	650/700	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)(83) 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)

