

# 1/C Compact CU 5kV 115 NLEPR 133% SIMpull® PVC MV-105

Type MV-105 Single Conductor Compact Copper, 5kV/8kV 115 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133%/100% Insulation Level, Tape Shield, SIMpull® Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

1. **Conductor:** Class B compact stranded per ASTM B496
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. **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. PVC jacket is made with SIM technology and has a coefficient of friction COF of 0.2. Cable can be installed in conduit without the aid of lubrication. Rated for 1000 lbs./FT maximum sidewall pressure.

## SPECIFICATIONS:

- 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)
- 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
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661



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## SAMPLE PRINT LEGEND:

{SQFTG\_DUAL} SOUTHWIRE SIMpull{R} POWER CABLE MASTER-DESIGN {UL} XXX KCMIL CPT CU 115 MILS NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS MV-105 FOR CT USE ST1 SUN RES (NESC) -- {CSA} XXX KCMIL CPT CU 2.92mm (115 mils) NL-EPR 5KV 133%/8KV 100% INS LEVEL 25%TS SR TC-ER 105{D}C FT4 -25{D}C LTDD -- PAT www.patentSW.com -- RoHS

### 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	0.268	0.535	0.595	65	0.745	454	531	8.9	2.5
TBA	1	0.299	0.566	0.626	65	0.776	522	670	9.3	2.5
TBA	1/0	0.336	0.603	0.663	65	0.813	609	845	9.8	2.5
TBA	2/0	0.376	0.643	0.703	65	0.853	714	1065	10.2	2.5
TBA	3/0	0.423	0.690	0.750	80	0.930	871	1342	11.2	3
TBA	4/0	0.475	0.742	0.802	80	0.982	1034	1693	11.8	3
TBA	250	0.520	0.796	0.856	80	1.036	1180	2000	12.4	3
TBA	350	0.616	0.892	0.952	80	1.132	1540	2800	13.6	3.5
TBA	500	0.736	1.012	1.072	80	1.252	2067	4000	15.0	3.5
679723	750	0.908	1.215	1.275	80	1.455	2932	6000	17.5	4
TBA	1000	1.060	1.367	1.427	80	1.607	3777	8000	19.3	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	0.036	0.045	0.568 + j0.512	0.203 + j0.044	2017	145/155	190/215
1	0.129	0.161	0.033	0.044	0.530 + j0.490	0.162 + j0.043	2144	170/180	225/250
1/0	0.102	0.128	0.030	0.042	0.498 + j0.468	0.128 + j0.041	2274	195/210	260/290
2/0	0.081	0.101	0.027	0.041	0.473 + j0.446	0.102 + j0.040	2414	220/235	300/330
3/0	0.064	0.081	0.025	0.040	0.452 + j0.422	0.081 + j0.039	2580	250/270	345/385
4/0	0.051	0.064	0.023	0.038	0.434 + j0.397	0.065 + j0.037	2762	290/310	400/445
250	0.043	0.054	0.022	0.038	0.423 + j0.375	0.055 + j0.037	2941	320/345	445/495
350	0.031	0.039	0.019	0.036	0.402 + j0.336	0.040 + j0.035	3276	385/415	550/615
500	0.022	0.028	0.016	0.034	0.381 + j0.296	0.029 + j0.033	3693	470/505	695/775
750	0.014	0.020	0.014	0.033	0.355 + j0.247	0.020 + j0.032	4304	585/630	900/1000
1000	0.011	0.016	0.012	0.031	0.336 + j0.216	0.016 + j0.030	4789	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



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† 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)

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

