

# 1/C CU 5kV/8KV 115 TRXLPE 133%/100% SIMpull® PVC MV-105

Type MV-105 Single Conductor Copper, 115 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 133% Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Rated UL



Image not to scale. See Table 1 for dimensions.

## CONSTRUCTION:

- Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
- Conductor Shield:** Semi-conducting cross-linked copolymer
- Insulation:** 115 Mils Tree Retardant Cross Linked Polyethylene (TRXLPE) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 5 mil copper tape with 25% overlap
- Overall Jacket:** Polyvinyl Chloride (PVC)

## APPLICATIONS AND FEATURES:

Southwire's 5KV cables are suited for use in wet and dry areas, conduits, ducts, troughs, 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. 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 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
- 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
- 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

## SAMPLE PRINT LEGEND:

SOUTHWIRE SIMpull{R} POWER CABLE MASTER-DESIGN {UL} XX AWG CU 115 MILS XLP 5KV 133% (8kv 100%)INS LEVEL 25%TS MV-105 SUN. RES. -40C {NESC} PAT www.patentSW.com



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**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
673734	2	0.282	0.551	0.611	55	0.761	445	530	9.1	2.5
673359	1	0.322	0.590	0.650	55	0.8	514	669	9.6	2.5
673356	1/0	0.361	0.630	0.690	80	0.87	623	844	10.4	2.5
673353	2/0	0.405	0.674	0.734	80	0.914	727	1064	10.9	3.0
674999	3/0	0.456	0.724	0.784	80	0.964	884	1342	11.5	3.0
673346	4/0	0.512	0.766	0.826	80	1.006	1011	1692	12	3.0
673342	250	0.558	0.818	0.878	80	1.058	1155	2000	12.6	3.0
674703	350	0.661	0.917	0.977	80	1.157	1509	2800	13.8	3.5
673339	500	0.789	1.042	1.102	80	1.282	2030	4000	15.3	4.0
TBA	750	0.968	1.254	1.314	80	1.494	2963	6000	17.9	4.5
TBA	1000	1.117	1.403	1.463	80	1.643	3813	8000	19.7	5.0

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	0.204	0.0357	0.0437	0.560 + j0.543	0.204 + j0.045	1749	145/155	190/215
1	0.128	0.162	0.0327	0.0420	0.522 + j0.52	0.162 + j0.042	1864	170/180	225/250
1/0	0.102	0.128	0.0300	0.0418	0.49 + j0.499	0.128 + j0.042	1976	195/210	260/290
2/0	0.081	0.102	0.0277	0.0403	0.467 + j0.477	0.102 + j0.041	2102	220/235	300/330
3/0	0.064	0.081	0.0254	0.0389	0.448 + j0.453	0.081 + j0.039	2248	250/270	345/385
4/0	0.051	0.065	0.0233	0.0375	0.433 + j0.428	0.065 + j0.038	2409	290/310	400/445
250	0.043	0.056	0.0223	0.0367	0.424 + j0.406	0.056 + j0.037	2564	320/345	445/495
350	0.031	0.041	0.0196	0.0349	0.406 + j0.367	0.041 + j0.035	2859	385/415	550/615
500	0.022	0.030	0.0171	0.0332	0.388 + j0.325	0.031 + j0.033	3227	470/505	695/775
750	0.014	0.023	0.0150	0.0316	0.366 + j0.274	0.024 + j0.032	3769	585/630	900/1000
1000	0.011	0.019	0.0135	0.0305	0.349 + j0.241	0.02 + j0.031	4196	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)

