

1/C CU 15kV 220 NLEPR 133% SIMpull® PVC MV-105 2x5 mils Tape Shield

Type MV-105 Single Conductor Copper, 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, 2x5 Mils Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

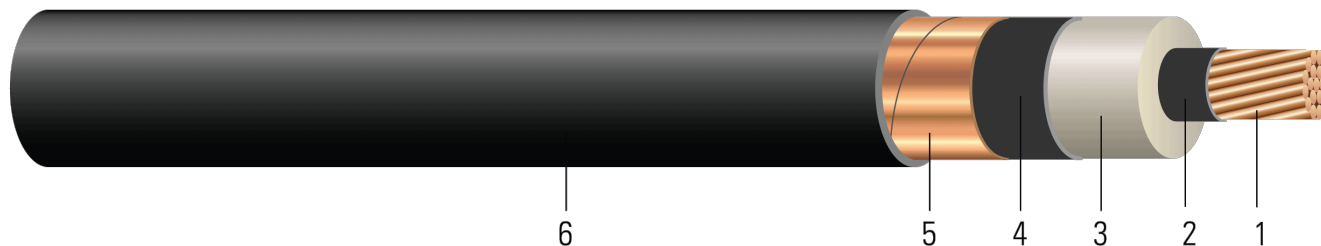


Image not to scale. See Table 1 for dimensions.

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:** 220 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
- Insulation Shield:** Strippable semi-conducting cross-linked copolymer
- Copper Tape Shield:** Helically wrapped 2x5 mil copper tape with 25% overlap
- Overall Jacket:** Polyvinyl Chloride (PVC)

APPLICATIONS AND FEATURES:

Southwire's 15KV 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 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 (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
- 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



Southwire Company, LLC | One Southwire Drive, Carrollton, GA 30119 | www.southwire.com

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SPEC 46325 DATE: 12/03/2022 15:59 UTC Rev: 3.0.00C

- 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:

{SQFTG_DUAL} SOUTHWIRE SIMpul{R} POWER CABLE MASTER-DESIGN {UL} XXX KCMIL CU 220 MILS NL-EPR 15KV 133% INS LEVEL 2X25%TS MV-105 FOR CT USE SUN. RES. {NESC} PAT www.patentSW.com

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness ¹	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	0.283	0.760	0.820	80	1.02	639	531	12.2	3
TBA	1	0.322	0.799	0.859	80	1.059	715	670	12.7	3
TBA	1/0	0.362	0.839	0.899	80	1.099	809	845	13.2	3
TBA	2/0	0.405	0.882	0.942	80	1.142	922	1065	13.7	3.5
TBA	3/0	0.456	0.933	0.993	80	1.193	1063	1342	14.3	3.5
TBA	4/0	0.512	0.989	1.049	80	1.249	1235	1693	15.0	3.5
TBA	250	0.558	1.044	1.104	80	1.304	1390	2000	15.6	4
596600	350	0.661	1.147	1.207	80	1.407	1868	2800	16.9	4
582378	500	0.789	1.275	1.335	80	1.535	2314	4000	18.4	5
TBA	600	0.866	1.361	1.421	80	1.621	2680	4800	19.5	5
582377	750	0.968	1.463	1.523	80	1.723	3210	6000	20.7	5
566145	1000	1.117	1.612	1.672	110	1.932	4183	8000	23.2	6

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

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	0.053	0.051	0.573 + j0.418	0.203 + j0.051	5400	155/165	195/215
1	0.129	0.161	0.049	0.049	0.531 + j0.400	0.162 + j0.049	5654	175/185	225/250
1/0	0.102	0.128	0.045	0.047	0.496 + j0.383	0.128 + j0.047	5914	200/215	260/290
2/0	0.081	0.101	0.042	0.045	0.467 + j0.366	0.102 + j0.045	6194	230/245	300/335
3/0	0.064	0.080	0.039	0.043	0.443 + j0.346	0.081 + j0.043	6526	260/275	345/385
4/0	0.051	0.064	0.036	0.042	0.423 + j0.327	0.065 + j0.042	6890	295/315	400/445
250	0.043	0.054	0.034	0.041	0.409 + j0.309	0.055 + j0.041	7248	325/345	445/495
350	0.031	0.039	0.030	0.039	0.384 + j0.279	0.040 + j0.039	7918	390/415	550/610
500	0.022	0.028	0.026	0.037	0.361 + j0.248	0.029 + j0.037	8752	465/500	685/765
600	0.018	0.024	0.024	0.036	0.348 + j0.229	0.024 + j0.036	9310	505/544	765/855
750	0.014	0.019	0.022	0.035	0.334 + j0.210	0.020 + j0.035	9974	565/610	885/990
1000	0.011	0.015	0.020	0.034	0.315 + j0.185	0.016 + j0.034	10944	640/690	1060/1185

* 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

† 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)

