CU Compact 15kV NLEPR Insulation 133% IL Black SIM-PVC Jacket. MV 105 - Tray Rated - Sunlight Resistant - For Direct Burial

Type MV-105 Single Conductor Compact Copper, 220 Mil No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, SIM*pull*® Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Compact round stranded soft drawn copper per ASTM B3 and B496 (tinned copper optional per ASTM B33)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 15kV, 133% insulation level, 220 mil No Lead Ethylene Propylene Rubber (NL-EPR)
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 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 when UL listed. Rated at -25°C for cold bend and cold impact and marked with "LTDD" when CSA listed or dual UL/CSA listed. 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 lb/ft maximum sidewall pressure.

SPECIFICATIONS:

- ASTM B3 Soft or Annealed Copper Wire
- 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 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 (Qualification Test Requirements)

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- 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 SIMpull® POWER CABLE {UL} XXX AWG CPT CU 220 MILS NL-EPR 15KV 133% INS LEVEL 25%TS MV-105 FOR CT USE SUN. RES. {NESC} PAT www.patentSW.com

Table 1 – Weights and Measurements

Stock Number	Cond. Size	Strand Count	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Jacket Thickness	Approx. OD	Copper Weight	Approx. Weight	Max Pull Tension	Min Bending Radius	Conduit Size
	AWG/ Kcmil	No. of Strands	inch	inch	inch	mil	inch	lb/1000ft	lb/1000ft	lb	inch	inch
669142	2	7	0.268	0.746	0.806	80	0.986	275	639	530	11.8	2.5
TBA	1	19	0.299	0.777	0.837	80	1.017	328	732	669	12.2	2.5
647203	1/0	19	0.336	0.814	0.874	80	1.054	401	804	844	12.6	2.5
TBA	2/0	19	0.376	0.854	0.914	80	1.094	486	937	1064	13.1	2.5
TBA	3/0	19	0.423	0.901	0.961	80	1.141	597	1077	1342	13.7	3
640921	4/0	19	0.475	0.953	1.013	80	1.193	739	1223	1692	14.3	3
TBA	250	37	0.52	1.006	1.066	80	1.246	860	1409	2000	15	3
647207	350	35	0.616	1.102	1.162	80	1.342	1178	1752	2800	16.1	3.5
553998	500	35	0.736	1.23	1.29	80	1.47	1653	2307	4000	17.6	4
TBA	600	61	0.813	1.309	1.369	80	1.549	1963	2709	4800	18.6	4
561603	750	61	0.908	1.404	1.495	80	1.735	2441	3337	6000	20.8	4.5
TBA	1000	61	1.06	1.556	1.616	110	1.856	3219	4218	8000	22.3	5

All dimensions are nominal and subject to normal manufacturing tolerances
◊ Cable marked with this symbol is a standard stock item
* Strand count meets minimum number per ASTM
TBA stock codes are estimations only and actual product may vary. Please wait until a stock code is assigned to purchase connectors and/or fittings.

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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	0.221	0.046	0.052	0.581+j0.468	0.222+j0.057	2528	150/160	165/185
1	0.128	0.175	0.044	0.05	0.535+j0.452	0.176+j0.054	2624	170/185	185/210
1/0	0.102	0.139	0.041	0.048	0.500+j0.436	0.140+j0.052	2739	195/210	215/240
2/0	0.082	0.112	0.038	0.046	0.473+j0.419	0.113+j0.050	2863	220/235	245/275
3/0	0.064	0.087	0.035	0.045	0.448+j0.401	0.088+j0.048	3009	250/270	285/315
4/0	0.051	0.07	0.032	0.043	0.429+j0.382	0.071+j0.047	3170	285/305	325/360
250	0.043	0.059	0.03	0.042	0.417+j0.364	0.060+j0.046	3334	310/335	360/400
350	0.031	0.043	0.027	0.04	0.396+j0.334	0.044+j0.043	3631	375/400	435/490
500	0.021	0.03	0.024	0.038	0.375+j0.299	0.031+j0.041	4028	450/485	535/600
600	0.018	0.026	0.021	0.037	0.365+j0.279	0.027+j0.040	4273	488/525	589/658
750	0.014	0.021	0.02	0.037	0.350+j0.253	0.022+j0.040	4663	545/585	670/745
1000	0.011	0.018	0.017	0.035	0.337+j0.230	0.019+j0.039	5038	615/660	770/860

* NEC ampacities are based on:
* For Duct: Table 310.60(C)(11) Detail 1.
* For Free Air: Table 310.60(C)(3).
* Inductive impedance is based on non-ferrous conduit with one diameter spacing center-to-center.
* Sequence Impedance values are based on Rho Earth Resistivity: 100 Ohm-Meter/1000ft, Spacing: one diameter spacing center-to-center..
* Capacitive Reactance is between Phase-to-Shield.

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