

1/C CU 8kV 140 NLEPR 133% SIMpull® PVC MV-105

Type MV-105 Single Conductor Copper, 140 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, SIMpull Polyvinyl Chloride (PVC) Jacket, Dual Rated UL/CSA

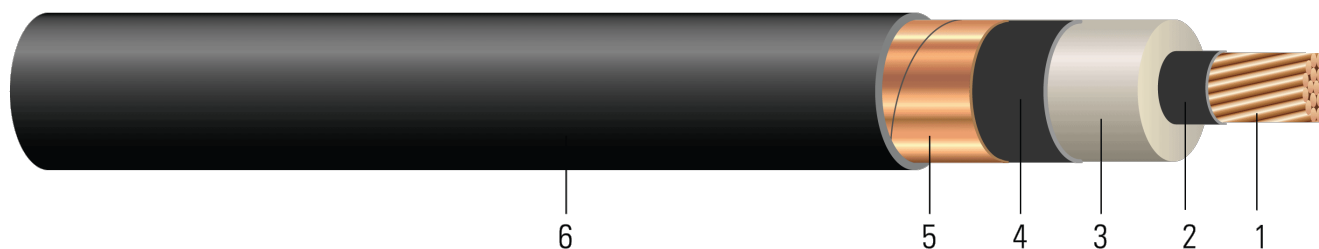


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Conductor:** Class B compressed stranded bare copper per ASTM B3 and ASTM B8 (Tinned Copper per ASTM B33 optional)
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 140 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 8KV 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
- 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



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SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL/CSA) 1/C [#AWG or #kcmil] CU 140 MILS NL-EPR 8KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. TC-ER(CSA 1/0 LARGER) FOR DIRECT BURIAL FT4 -ST1 YEAR (NESC) [SEQUENTIAL FEET MARKS] {SQFTG_DUAL} SOUTHWIRE SIMpull{R} POWER CABLE MASTER-DESIGN {UL} XX KCMIL CU 140 MILS NL-EPR 8KV 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	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	0.600	0.660	65	0.810	489	531	9.7	2.5
TBA	1	0.322	0.639	0.699	65	0.849	558	670	10.2	2.5
TBA	1/0	0.362	0.679	0.739	80	0.919	671	845	11.0	3
TBA	2/0	0.405	0.722	0.782	80	0.962	779	1065	11.5	3
TBA	3/0	0.456	0.773	0.833	80	1.013	914	1342	12.2	3
646573	4/0	0.512	0.829	0.889	80	1.069	1079	1693	12.8	3
646576	250	0.558	0.884	0.944	80	1.124	1226	2000	13.5	3.5
567142	350	0.661	0.987	1.047	80	1.227	1591	2800	14.7	3.5
646579	500	0.789	1.115	1.175	80	1.355	2122	4000	16.3	4
646580	750	0.968	1.303	1.363	80	1.543	2995	6000	18.5	5
TBA	1000	1.117	1.452	1.512	80	1.692	3846	8000	20.3	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

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	0.041	0.046	0.572 + j0.487	0.203 + j0.046	2180	155/165	195/215
1	0.129	0.161	0.037	0.044	0.532 + j0.466	0.162 + j0.044	2307	175/185	225/250
1/0	0.102	0.128	0.034	0.043	0.499 + j0.446	0.128 + j0.043	2437	200/215	260/290
2/0	0.081	0.101	0.031	0.042	0.473 + j0.425	0.102 + j0.042	2577	230/245	300/335
3/0	0.064	0.081	0.028	0.040	0.451 + j0.402	0.081 + j0.040	2743	260/275	345/385
4/0	0.051	0.064	0.026	0.039	0.433 + j0.379	0.065 + j0.039	2925	295/315	400/445
250	0.043	0.054	0.025	0.038	0.420 + j0.357	0.055 + j0.038	3104	325/345	445/495
350	0.031	0.039	0.022	0.036	0.398 + j0.321	0.040 + j0.036	3439	390/415	550/610
500	0.022	0.028	0.019	0.034	0.376 + j0.283	0.029 + j0.034	3855	465/500	685/765
750	0.014	0.020	0.016	0.032	0.350 + j0.237	0.020 + j0.032	4467	565/610	885/990
1000	0.011	0.016	0.014	0.031	0.331 + j0.208	0.016 + j0.031	4952	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



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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)

