

3/C CU 15kV 175 NLEPR 100% PVC MV-105

Type MV-105 Three Conductor Copper, 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% Insulation Level, Tape Shield, 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
2. **Conductor Shield:** Semi-conducting cross-linked copolymer
3. **Insulation:** 175 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 100% 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Poly glass tape
9. **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, 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. For uses in Class I and II, Division 2 hazardous locations per NEC Article 501 and 502. 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
- UL 1072 Medium-Voltage Power Cables
- UL 1685 FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

SAMPLE PRINT LEGEND:

{SQFTG_DUAL} SOUTHWIRE{R} POWER CABLE MASTER-DESIGN {UL} 3/C XXX KCMIL CU 175 MILS NL-EPR 15KV 100%
INS LEVEL 25%TS GW 1 X X AWG CU MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL {NESC}



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Table 1 – Weights and Measurements

Stock Number	Cond. Size	Diameter Over Conductor	Diameter Over Insulation	Diameter Over Insulation Shield	Ground	Jacket Thickness ¹	Approx. OD	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG/ Kcmil	inch	inch	inch	No. x AWG	mil	inch	lb/1000ft	lb	inch
TBA	2	0.283	0.670	0.730	1 x 6	80	1.808	1873	1593	12.7
TBA	1	0.322	0.709	0.769	1 x 4	110	1.952	2264	2009	13.7
TBA	1/0	0.362	0.749	0.809	1 x 4	110	2.039	2560	2534	14.3
TBA	2/0	0.405	0.792	0.852	1 x 4	110	2.132	2917	3194	14.9
TBA	3/0	0.456	0.843	0.903	1 x 3	110	2.242	3397	4027	15.7
649373	4/0	0.512	0.899	0.959	1 x 3	110	2.363	3941	5078	16.5
TBA	250	0.558	0.954	1.014	1 x 3	110	2.481	4431	6000	17.4
649371	350	0.661	1.057	1.117	1 x 2	110	2.704	5665	8400	18.9
679439	500	0.789	1.185	1.245	1 x 1	135	3.030	7584	12000	21.2
TBA	750	0.968	1.373	1.433	1 x 0	135	3.436	10505	18000	24.1

All dimensions are nominal and subject to normal manufacturing tolerances
 ∅ Cable marked with this symbol is a standard stock item
 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	0.047	0.044	0.578 + j0.457	0.203 + j0.044	2407	150/160	165/185
1	0.129	0.161	0.043	0.042	0.537 + j0.437	0.162 + j0.042	2534	170/185	185/210
1/0	0.102	0.128	0.039	0.041	0.503 + j0.418	0.128 + j0.041	2664	195/210	215/240
2/0	0.081	0.101	0.036	0.039	0.475 + j0.398	0.102 + j0.039	2804	220/235	245/275
3/0	0.064	0.081	0.033	0.038	0.452 + j0.377	0.081 + j0.038	2970	250/270	285/315
4/0	0.051	0.064	0.030	0.037	0.432 + j0.355	0.065 + j0.037	3152	285/305	325/360
250	0.043	0.054	0.029	0.036	0.419 + j0.335	0.055 + j0.036	3331	310/335	360/400
350	0.031	0.039	0.025	0.034	0.395 + j0.302	0.040 + j0.034	3666	375/400	435/490
500	0.022	0.028	0.022	0.033	0.372 + j0.266	0.029 + j0.032	4083	450/485	535/600
750	0.014	0.020	0.019	0.031	0.344 + j0.224	0.020 + j0.031	4695	545/585	670/745

* Calculations are based on 5 mil 25 % overlapping copper tape shield / Conductor temperature of 90°C / Shield temperature of 45°C / Earth resistivity of 100 ohm-meter
 † Ampacities are based on TABLE 310.60(C)(79) Detail 1. of the 2014 National Electrical Code (20°C Ambient Earth Temperature, Thermal Resistance ROH of 90)
 ‡ Ampacities are based on TABLE 310.60(C)(71) of the 2014 National Electrical Code (40°C Ambient Air Temperature)

