

## 3/C CU 8kV 140 NLEPR 133% AIA CPE MV-105

Type MV-105 Three Conductor Copper, 140 Mills No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level, Tape Shield, Aluminum Interlocked Armor (AIA), Chlorinated Polyethylene (CPE) Jacket

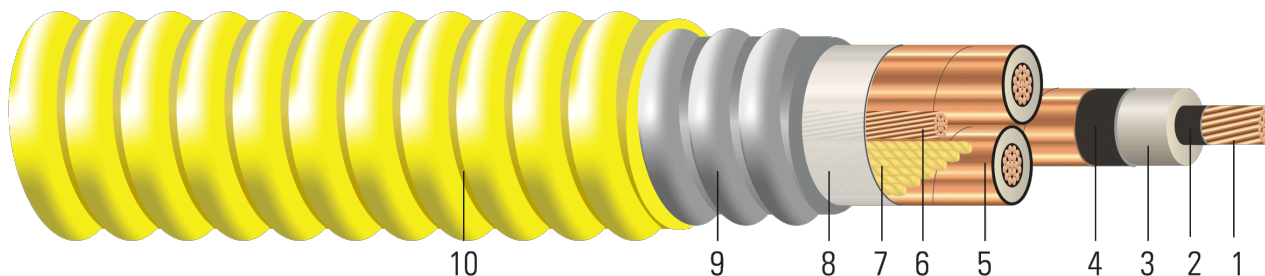


Image not to scale. See Table 1 for dimensions.

### 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:** 140 Mills 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. **Grounding Conductor:** Class B compressed stranded bare copper ground per ASTM B3 and ASTM B8
7. **Filler:** Wax paper filler
8. **Binder:** Polypropylene tape
9. **Armor:** Aluminum Interlocked Armor (AIA)
10. **Overall Jacket:** Thermoplastic Chlorinated Polyethylene (CPE)

### APPLICATIONS AND FEATURES:

Southwire's 8KV 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
- 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
- AEIC CS-8 Specification for extruded dielectric shielded power cables rated for 5 through 46KV

### SAMPLE PRINT LEGEND:

SOUTHWIRE [SYMBOL - LIGHTING BOLT] #P# (UL) 3/C [#AWG or #kcmil] CU 140 MILS NL-EPR AIA 8KV 133% INS LEVEL 25% TS MV-105 FOR CT USE SUN. RES. FOR DIRECT BURIAL FT4 YEAR (NESC) [SEQUENTIAL FEET MARKS]



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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 <sup>1</sup>	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	0.600	0.660	1 x 6	60	1.811	1858	1593	12.7
TBA	1	0.322	0.639	0.699	1 x 4	60	1.895	2142	2009	13.3
TBA	1/0	0.362	0.679	0.739	1 x 4	60	2.081	2525	2534	14.6
TBA	2/0	0.405	0.722	0.782	1 x 4	60	2.174	2879	3194	15.2
TBA	3/0	0.456	0.773	0.833	1 x 3	60	2.284	3357	4027	16.0
585662	4/0	0.512	0.829	0.889	1 x 3	75	2.435	3969	5078	17.0
TBA	250	0.558	0.884	0.944	1 x 3	75	2.554	4460	6000	17.9
TBA	350	0.661	0.987	1.047	1 x 2	75	2.777	5695	8400	19.4
TBA	500	0.789	1.115	1.175	1 x 1	75	3.053	7476	12000	21.4
TBA	750	0.968	1.303	1.363	1 x 0	85	3.479	10448	18000	24.4

All dimensions are nominal and subject to normal manufacturing tolerances  
 † Cable marked with this symbol is a standard stock item

**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 Directly Buried 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	0.042	0.576 + j0.489	0.203 + j0.042	2180	185/200	165/185
1	0.129	0.161	0.037	0.040	0.537 + j0.468	0.162 + j0.040	2307	210/225	185/210
1/0	0.102	0.128	0.034	0.039	0.503 + j0.447	0.128 + j0.039	2437	240/255	215/240
2/0	0.081	0.102	0.031	0.037	0.477 + j0.426	0.102 + j0.037	2577	270/290	245/275
3/0	0.064	0.081	0.028	0.036	0.455 + j0.403	0.081 + j0.036	2743	305/330	285/315
4/0	0.051	0.064	0.026	0.035	0.436 + j0.379	0.065 + j0.035	2925	350/375	325/360
250	0.043	0.054	0.025	0.034	0.423 + j0.358	0.055 + j0.034	3104	380/410	360/400
350	0.031	0.039	0.022	0.033	0.401 + j0.321	0.040 + j0.033	3439	460/495	435/490
500	0.022	0.028	0.019	0.031	0.378 + j0.283	0.029 + j0.031	3855	550/590	535/600
750	0.014	0.020	0.016	0.030	0.351 + j0.237	0.020 + j0.030	4467	665/720	670/745

\* Calculations are based on 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)(83) 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)

