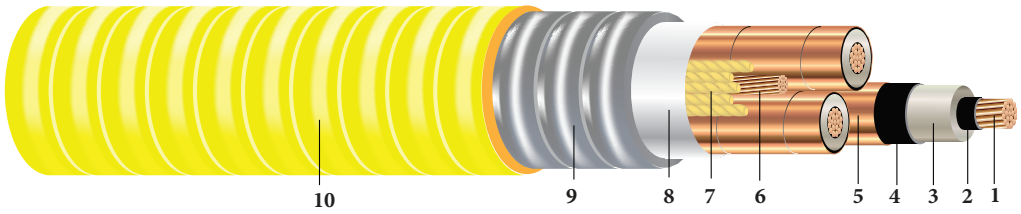
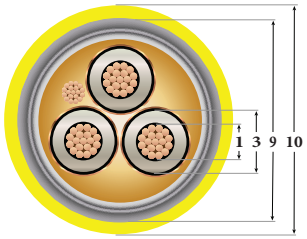
3/C CU 8KV 140 NL-EPR 133% TS AIA CPE MV-105

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





Images 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 Mils No Lead Ethylene Propylene Rubber (NL-EPR) 133% Insulation Level,
4. **Insulation Shield**: Stripable semi-conducting cross-linked copolymer
5. **Copper Tape Shield**: Helically wrapped 5 mil copper tape with 25% overlap
6. **Grounding Conductor**: 1 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) yellowjacket

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 Soft or annealed copper
- ASTM B8 Concentric-lay-standard copper
- UL 1072 - Medium Voltage Power Cables
- ICEA S-93-639 (NEMA WC 74) 5-46 KV Shielded Power Cable & ICEA S-97-682 5-46 KV Utility
- UL 1685/FT4 Vertical-Tray Fire Propagation and Smoke Release Test
- IEEE 1202 -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 & Measurements

Stock Code	Cond. Size	Diameter over Cond. (1)	Diameter over Insul. (3)	Diameter over Insul. Shield	Ground	Dia. Over Armor (9)	Jacket Thickness	Approx. OD (10)	Approx. Weight	Max Pull Tension	Min Bending Radius
	AWG	inches	inches	inches	No. x AWG	inches	mils	inches	lbs./MFT	lbs.	inches
TBA	2	0.283	0.600	0.660	1 x 6	1.691	60	1.811	1858	1593	12.7
TBA	1	0.322	0.639	0.699	1 x 4	1.775	60	1.895	2142	2009	13.3
TBA	1/0	0.362	0.679	0.739	1 x 4	1.961	60	2.081	2525	2534	14.6
TBA	2/0	0.405	0.722	0.782	1 x 4	2.054	60	2.174	2879	3194	15.2
TBA	3/0	0.456	0.773	0.833	1 x 3	2.164	60	2.284	3357	4027	16.0
585662	4/0	0.512	0.829	0.889	1 x 3	2.285	75	2.435	3969	5078	17.0
TBA	250	0.558	0.884	0.944	1 x 3	2.404	75	2.554	4460	6000	17.9
TBA	350	0.661	0.987	1.047	1 x 2	2.627	75	2.777	5695	8400	19.4
TBA	500	0.789	1.115	1.175	1 x 1	2.903	75	3.053	7476	12000	21.4
TBA	750	0.968	1.303	1.363	1 x 0	3.309	85	3.479	10448	18000	24.4

All dimensions are nominal and subject to normal manufacturing tolerances

Table 2 – Electrical and Engineering Data

Stock Code	Cond. Size	Resistance DC @ 25ºC	Resistance AC @ 90ºC	Reactance X_C @ 60Hz	Reactance X_L @ 60Hz	Positive Sequence Impedance*	Zero Sequence Impedance*	Shield Short Circuit Current 6 Cycles	Allowable Ampacities 90ºC/105ºC Directly Buried †	Allowable Ampacities 90ºC/105ºC In Air ‡
	AWG	Ω/MFT	Ω/MFT	MΩ*MFT	Ω/MFT	Ω/MFT	Ω/MFT	Amps	Amps	Amps
TBA	2	0.162	0.203	0.041	0.042	0.203 + j0.042	0.576 + j0.489	2180	185 / 200	165 / 185
TBA	1	0.129	0.161	0.037	0.040	0.162 + j0.040	0.537 + j0.468	2307	210 / 225	185 / 210
TBA	1/0	0.102	0.128	0.034	0.039	0.128 + j0.039	0.503 + j0.447	2437	240 / 255	215 / 240
TBA	2/0	0.081	0.102	0.031	0.037	0.102 + j0.037	0.477 + j0.426	2577	270 / 290	245 / 275
TBA	3/0	0.064	0.081	0.028	0.036	0.081 + j0.036	0.455 + j0.403	2743	305 / 330	285 / 315
585662	4/0	0.051	0.064	0.026	0.035	0.065 + j0.035	0.436 + j0.379	2925	350 / 375	325 / 360
TBA	250	0.043	0.054	0.025	0.034	0.055 + j0.034	0.423 + j0.358	3104	380 / 410	360 / 400
TBA	350	0.031	0.039	0.022	0.033	0.040 + j0.033	0.401 + j0.321	3439	460 / 495	435 / 490
TBA	500	0.022	0.028	0.019	0.031	0.029 + j0.031	0.378 + j0.283	3855	550 / 590	535 / 600
TBA	750	0.014	0.020	0.016	0.030	0.020 + j0.030	0.351 + j0.237	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)

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