

MV-105 3C, EPR Insulated, PVC Jacketed

5 kV – 35 kV, Copper Tape-Shielded

CME[®]
wire and cable

A Viakable Company

Features

UL Listed as MV-105.
Rated as Sunlight Resistance for CT use for all cable sizes.
Oil Resistance I jacket.
True Triple extrusion system and closed handling raw materials system, to eliminate any contact with ambient, until extrusion process ends.

Application

Primary power and distribution circuits in industrial and commercial installations, power circuits in generating plants where line to ground fault current are within shield capabilities.
May be used in wet or dry locations, installed in raceways, duct, and open air, aerially or directly buried where permitted by NEC.

Standards

UL 1072
Medium Voltage Power Cables.
ICEA S-93-639/NEMA WC74
5 – 46 kV Shielded Power Cables.
ICEA S-97-682
Standard for Utility Shielded Power Cables Rated 5 – 46 kV.
AEIC CS8

Specification for Extruded Dielectric, Shielded Power Cables Rated 5 – 46 kV.

Specifications

Maximum operating voltage:
5 kV to 35 kV 100% and 133% IL.
Maximum conductor operation temperatures:
Wet and dry locations

- Normal: 105 °C
- Emergency: 140 °C
- Short Circuit: 250 °C

Engineering Information

1. Conductor: Soft annealed uncoated copper compacted Class B per ASTM B496 or hard drawn Aluminum-1350 compacted Class B per ASTM B400.

On request, compressed strand or strand filled.

Sizes: 8 AWG (6 AWG Aluminum) up to 1000 kcmil.

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2. Conductor Shield: Semi conducting cross-linked polyethylene (XLPE).

3. Insulation: Thermoset ethylene propylene rubber (EPR).

On request, Amorphous EPR.

4. Insulation Shield: Semi conducting cross-linked polyethylene (XLPE).

5. Phase ID: Colored strings (black, red and white yarns.)

6. Metallic Shield: Soft annealed uncoated copper tape for copper ground conductors or Soft annealed tinned copper tape for aluminum ground conductors, 5 mil thick, 25% minimum overlap.

7. Grounding (Optional): One or three soft annealed bare copper or aluminum conductors cabled with phase conductors.

On request, covered ground conductors.

8. Assembly: Conductors cabled with non hygroscopic fillers, as required and binder tape.

9. Jacket: Black sunlight resistance and flame retardant polyvinyl chloride (PVC) compound.



ALUMINUM
CONDUCTOR

Medium Voltage Cable – Multiconductors

Technical Data

5 kV EPR Insulated

Size AWG or kcmil	Number of Strands	Conductor Diameter	100% and 133% Insulation Levels (90 mil)					
			Ground Conductor*		Jacket Thickness	Approximate Outside Diameter	Approximate Net Weight	
			Cu	Al			Cu	Al
			in		AWG		mil	in
8	7	0.13	8	N/A	80	1.15	766	N/A
6	7	0.17	6	6	80	1.23	943	769
4	7	0.21	6	4	80	1.32	1166	889
2	7	0.27	6	4	80	1.44	1497	1057
1	19	0.30	4	4	80	1.51	1754	1199
1/0	19	0.34	4	4	80	1.59	2029	1327
2/0	19	0.38	4	2	110	1.74	2472	1589
3/0	19	0.42	3	2	110	1.84	2926	1811
4/0	19	0.48	3	2	110	1.95	3449	2045
250	37	0.52	2	1	110	2.07	3966	2305
300	37	0.57	2	1	110	2.18	4543	2551
350	37	0.62	2	1	110	2.28	5121	2796
400	37	0.66	1	1/0	110	2.37	5734	3078
500	37	0.74	1	1/0	110	2.59	6946	3626
600	61	0.81	1/0	2/0	140	2.84	8281	4294
750	61	0.91	1/0	2/0	140	3.05	9931	4954
1000	61	1.06	2/0	3/0	140	3.37	12754	6120

8 kV EPR Insulated

Size AWG or kcmil	Number of Strands	Conductor Diameter	100% Insulation Levels (115 mil)						133% Insulation Levels (140 mil)					
			Ground Conductor*		Jacket Thickness	Approximate Outside Diameter	Approximate Net Weight		Ground Conductor*		Jacket Thickness	Approximate Outside Diameter	Approximate Net Weight	
			Cu	Al			Cu	Al	Cu	Al			Cu	Al
			in		AWG		mil	in	lb/kft		AWG		mil	in
6	7	0.17	6	6	80	1.34	1055	881	6	6	80	1.45	1176	1001
4	7	0.21	6	4	80	1.43	1285	1008	6	4	80	1.55	1413	1136
2	7	0.27	6	4	80	1.55	1625	1185	6	4	80	1.67	1762	1321
1	19	0.30	4	4	80	1.62	1887	1332	4	4	110	1.80	2140	1585
1/0	19	0.34	4	4	110	1.76	2277	1576	4	4	110	1.88	2432	1730
2/0	19	0.38	4	2	110	1.85	2625	1741	4	2	110	1.96	2786	1902
3/0	19	0.42	3	2	110	1.95	3086	1971	3	2	110	2.06	3255	2139
4/0	19	0.48	3	2	110	2.06	3618	2213	3	2	110	2.18	3794	2390
250	37	0.52	2	1	110	2.19	4143	2482	2	1	110	2.30	4329	2668
300	37	0.57	2	1	110	2.29	4728	2737	2	1	110	2.40	4922	2931
350	37	0.62	2	1	110	2.39	5314	2989	2	1	110	2.50	5516	3190
400	37	0.66	1	1/0	110	2.48	5933	3278	1	1/0	110	2.65	6234	3578
500	37	0.74	1	1/0	140	2.76	7334	4014	1	1/0	140	2.88	7566	4246
600	61	0.81	1/0	2/0	140	2.95	8518	4531	1/0	2/0	140	3.07	8763	4777
750	61	0.91	1/0	2/0	140	3.16	10184	5207	1/0	2/0	140	3.27	10445	5467
1000	61	1.06	2/0	3/0	140	3.49	13031	6397	2/0	3/0	140	3.60	13316	6682

The above data are approximate and subject to normal manufacturing tolerances. Where required, the compatibility with glands, connectors and accessories should be verified using actual dimensions of the product. Other sizes available upon request.

Ampacities: Refer to tables at beginning of section.

* At the option of manufacturer, Ground Conductor can be divided in three, one in each interstice.

Cables that comply with 8 kV 100% can also be marked 5 kV 133%.

Technical Data *continued*

15 kV EPR Insulated

Size AWG or kcmil	Number of Strands	Conductor Diameter in	100% Insulation Levels (175 mil)						133% Insulation Levels (220 mil)					
			Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight		Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight	
			Cu	Al			Cu	Al	Cu	Al			Cu	Al
			AWG		lb/kft		AWG		lb/kft					
2	7	0.27	6	4	110	1.89	2084	1643	6	4	110	2.09	2385	1944
1	19	0.30	4	4	110	1.95	2362	1807	4	4	110	2.16	2672	2116
1/0	19	0.34	4	4	110	2.03	2662	1961	4	4	110	2.24	2982	2281
2/0	19	0.38	4	2	110	2.12	3025	2142	4	2	110	2.32	3357	2473
3/0	19	0.42	3	2	110	2.22	3504	2389	3	2	110	2.42	3850	2735
4/0	19	0.48	3	2	110	2.33	4056	2652	3	2	110	2.53	4433	3021
250	37	0.52	2	1	110	2.45	4604	2942	2	1	110	2.70	5090	3434
300	37	0.57	2	1	110	2.61	5299	3307	2	1	110	2.88	5911	3910
350	37	0.62	2	1	140	2.77	6079	3753	2	1	140	2.98	6535	4193
400	37	0.66	1	1/0	140	2.87	6723	4067	1	1/0	140	3.07	7204	4528
500	37	0.74	1	1/0	140	3.03	7904	4583	1	1/0	140	3.24	8420	5062
600	61	0.81	1/0	2/0	140	3.22	9121	5134	1/0	2/0	140	3.43	9668	5641
750	61	0.91	1/0	2/0	140	3.43	10824	5847	1/0	2/0	140	3.63	11422	6457
1000	61	1.06	2/0	3/0	140	3.82	13907	7273	2/0	3/0	140	4.02	14584	7885

25 kV EPR Insulated

Size AWG or kcmil	Number of Strands	Conductor Diameter in	100% Insulation Levels (260 mil)						133% Insulation Levels (320 mil)					
			Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight		Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight	
			Cu	Al			Cu	Al	Cu	Al			Cu	Al
			AWG		lb/kft		AWG		lb/kft					
1	19	0.30	4	4	110	2.33	2970	2414	-	-	-	-	-	-
1/0	19	0.34	4	4	110	2.41	3290	2588	4	4	110	2.73	3886	3184
2/0	19	0.38	4	2	110	2.50	3675	2791	4	2	140	2.88	4469	3585
3/0	19	0.42	3	2	110	2.65	4272	3157	3	2	140	2.98	5002	3887
4/0	19	0.48	3	2	140	2.83	5032	3628	3	2	140	3.10	5613	4209
250	37	0.52	2	1	140	2.95	5622	3961	2	1	140	3.22	6224	4563
300	37	0.57	2	1	140	3.06	6264	4272	2	1	140	3.33	6885	4894
350	37	0.62	2	1	140	3.16	6902	4576	2	1	140	3.42	7541	5216
400	37	0.66	1	1/0	140	3.25	7570	4914	1	1/0	140	3.52	8226	5570
500	37	0.74	1	1/0	140	3.41	8793	5472	1	1/0	140	3.68	9479	6158
600	61	0.81	1/0	2/0	140	3.60	10059	6072	1/0	2/0	140	3.94	10961	6974
750	61	0.91	1/0	2/0	140	3.88	11993	7016	1/0	2/0	140	4.15	12761	7784

The above data are approximate and subject to normal manufacturing tolerances. Where required, the compatibility with glands, connectors and accessories should be verified using actual dimensions of the product. Other sizes available upon request.

Ampacities: Refer to tables at beginning of section.

* At the option of manufacturer, Ground Conductor can be divided in three, one in each interstice.

Technical Data *continued*

35 kV EPR Insulated

Size AWG or kcmil	Number of Strands	Conductor Diameter in	100% Insulation Levels (345 mil)						133% Insulation Levels (420 mil)					
			Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight		Ground Conductor*		Jacket Thickness mil	Approximate Outside Diameter in	Approximate Net Weight	
			Cu	Al			Cu	Al	Cu	Al			Cu	Al
			AWG		lb/kft		AWG		lb/kft					
1/0	19	0.34	4	4	140	2.91	4294	3593	4	4	140	3.25	5046	4344
2/0	19	0.38	4	2	140	3.00	4709	3826	4	2	140	3.33	5480	4596
3/0	19	0.42	3	2	140	3.10	5250	4135	3	2	140	3.43	6043	4928
4/0	19	0.48	3	2	140	3.21	5869	4465	3	2	140	3.55	6688	5283
250	37	0.52	2	1	140	3.33	6489	4828	2	1	140	3.67	7335	5674
300	37	0.57	2	1	140	3.44	7159	5167	2	1	140	3.77	8029	6037
350	37	0.62	2	1	140	3.54	7822	5497	2	1	140	3.94	8897	6571
400	37	0.66	1	1/0	140	3.63	8514	5858	1	1/0	140	4.03	9614	6958
500	37	0.74	1	1/0	140	3.86	9958	6638	1	1/0	140	4.20	10923	7602
600	61	0.81	1/0	2/0	140	4.05	11280	7293	1/0	2/0	140	4.39	12288	8301
750	61	0.91	1/0	2/0	140	4.26	13096	8119	1/0	2/0	140	4.59	14149	9172

The above data are approximate and subject to normal manufacturing tolerances. Where required, the compatibility with glands, connectors and accessories should be verified using actual dimensions of the product. Other sizes available upon request.

Ampacities: Refer to tables at beginning of section.

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