

(3C)MC-HL POWER CABLE, 5000/8000 VOLTS

UL TYPE MC-HL, EPR 105°C, VFD

APPLICATION:

As armored Type MV-105 cable for installation aerially, rack, tray, trough, cable trays, or direct buried; for power circuits not exceeding 5000 volts 133% insulation level or 8000 volts 100% insulation level volts in manufacturing and processing plants, substations and generating stations. Three conductor armored cables with three (3) symmetrical grounding wires can be used as a VFD cable for use with AC motors controlled by pulse-width modulated inverters. May be used in Class I, II, and III, Divisions 1 and 2; and Class I, Zones 1 and 2 per NEC.

STANDARDS:

1. Listed by UL as Type MV-105 per Standard 1072.
2. Also listed for use as Type MC per Standard 1569.
3. Overall jacket UL listed as Sunlight Resistant.
4. Cables pass UL and IEEE-383 ribbon burner flame tests and are UL listed For CT Use.
5. Cables pass IEEE-1 202/CSA FT4(70,000 BTU/hr) cable tray flame test.
6. Cables pass ICEA 210,000 BTU/hr Ribbon Burner Flame Test.
7. Cables UL listed for Direct Burial.
8. Conforms to ICEA S-93-639, NEMA WC74 for 5-46 kV Shielded Power Cable.
9. Meets ASTM D746 brittleness temperature at or below -40°C
10. UL Marine Shipboard Cable
11. ABS Listed for CWCMC

CONSTRUCTION: Three conductors of stranded copper, extruded conductor shield, EPR (ethylene propylene rubber) insulation, extruded thermoset insulation shield, uncoated copper shielding tape. Three conductors twisted together with three uncoated copper grounding conductor, binder tape, continuously welded and corrugated aluminum alloy sheath, yellow PVC jacket overall.

OPTIONAL Compliances: CSA and ABS



USAWC Part #	Size AWG or kcmil	No. of Strands	Insul. Thick. Mils	Nom. Diam. Over Armor Inches	PVC Jkt Thick Mils	Nom. Diam. Over PVC Jkt. Inches	COPPER PHASE CONDUCTORS				
							Copper Grounding Conductor AWG	Weight lbs/1000 ft		Ampacity	
								Net	Copper	IN AIR	DIRECT BURIAL
5000 VOLTS - 133% INSULATION LEVEL or 8000 VOLTS - 100% INSULATION LEVEL											
6-035KVMCHL	6	7	115	1.37	50	1.48	3 X #10	1121	460	88	115
4-035KVMCHL	4	7	115	1.51	60	1.65	3 X #10	1418	616	115	150
2-035KVMCHL	2	7	115	1.64	60	1.78	3 X #10	1731	860	154	190
1-035KVMCHL	1	19	115	1.69	60	1.82	3 X #8	1978	1074	180	215
1/0-035KVMCHL	1/0	19	115	1.78	60	1.91	3 X #8	2259	1290	205	245
2/0-035KVMCHL	2/0	19	115	1.92	60	2.05	3 X #8	2626	1556	240	280
4/0-035KVMCHL	4/0	19	115	2.15	60	2.28	3 X #7	3650	2344	320	360
250-035KVMCHL	250	37	115	2.23	60	2.36	3 X #7	4060	2759	355	395
350-035KVMCHL	350	37	115	2.45	75	2.61	3 X #6	5045	3713	440	475
500-035KVMCHL	500	37	115	2.75	75	2.92	3 X #5	7137	5191	545	570
750-035KVMCHL	750	61	115	3.32	85	3.50	3 X #4	10268	7629	685	700
1000-035KVMCHL	1000	61	115	3.76	85	3.94	3 X #4	13051	10070	790	785

MC-HL 3/C EPR POWER CABLE, 5000/8000 VOLTS

Three Conductor, Shielded, 5000 Volts - 133% or 8000 Volts - 100% insulation Level

AEIC CS8, MV-105, Sunlight Resistant, CT Use, VFD

1. SCOPE

- 1.1 This specification describes three conductor, EPR (Ethylene-propylene-rubber) insulated, shielded power cables for use in circuits not exceeding 5000 volts 133% or 8000 volts 100% insulation level at conductor temperatures of 105°C for continuous normal operation, 140°C for emergency overload conditions and 250°C for short-circuit conditions. Cables are intended for use on feeders and branch circuits in industrial power distributions systems in wet or dry locations including cable tray, raceways, direct burial and embedded in concrete. Three conductor armored cables with three (3) symmetrical grounding wires can be used as a VFD cable for use with AC motors controlled by pulse-width modulated inverters.
- 1.2 For use in Class I, II and III, Divisions 1 and 2; and Class I, Zones 1 and 2 hazardous locations per NEC Articles 501, 502, 503 and 505.

2. STANDARDS

- 2.1 The following standards shall form a part of this specification to the extent specified herein:
 - 2.1.1 ICEA Pub. No. S-93-639, Nema Pub. No. WC74 for 5-46 kV Shielded Power Cable.
 - 2.1.2 AEIC CS8 for Extruded Dielectric, Shielded Power Cables Rated 5 Through 46 kV.
 - 2.1.3 UL Standard 1072 for Type MV-105
 - 2.1.4 UL 1569 Metal Clad Cables
 - 2.1.5 UL 2225 Cables and Cable Fittings for Use in Hazardous Locations

3. CONDUCTORS

- 3.1 Class B stranded bare annealed uncoated copper per ASTM B3. Compact stranding per ASTM B496. Grounding conductor is three (3) split Class B stranded annealed uncoated copper sized in accordance with UL 1072 and NEC Article 250

4. CONDUCTOR SHIELDING

- 4.1 Conductors shall be covered with a layer of extruded semi-conductor thermosetting compound with thickness in accordance with ICEA S-93-639 and UL 1072

5. INSULATION

- 5.1 Directly over the conductor shielding shall be applied a homogeneous wall of EPR insulation. The insulation thickness shall be 115 mils and the thickness at any point shall be not less than 90% of the specified thickness. Physical and electrical properties of the insulation shall be in accordance per ICEA S-93-639 and UL 1072

6. SHIELDING

- 6.1 Over the insulation shall be applied a semi-conducting thermosetting insulation shield. It shall be intimate contact with the outer surface of the insulation and shall be free-stripping, leaving no conducting particles or other residue on the insulation surface. The thickness of this layer shall be per ICEA S-93-639 and UL 1072
- 6.2 Directly over the insulation shield shall be a helically applied 5 mil uncoated copper shielding tape with a minimum lap of 25%.

7. CIRCUIT IDENTIFICATION

- 7.1 A color coded tape (black, red, blue) applied under the shielding tape shall provide circuit identification on each power conductor.

8. ASSEMBLY

- 8.1 The insulated conductors and ground wire(s) shall be cabled together with non-hygroscopic fillers, when necessary to make round.

9. CABLE TAPE

- 9.1 A suitable cable tape shall be applied over the assembly to hold the core together and provide bedding for the armor

10. ARMOR

- 10.1 Continuously welded and corrugated aluminum alloy sheath per UL 1569 and UL 1072.

11. JACKET

- 11.1 A flame-retardant, moisture and sunlight resistant Polyvinyl Chloride (yellow) shall be applied overall. The jacket shall meet the requirements of UL 1702

12. IDENTIFICATION

- 12.1 All cable shall be identified by means of surface ink printing indicating manufacturer, size, insulation type, insulation thickness, voltage rating, insulation level, year of manufacture and UL designations.

13. TESTS

- 13.1 Cable shall be tested in accordance with ICEA S-93-639, AEIC CS8 and UL 1072