



## PowerGuard® Cu 15 kV 133% EPR CTS PVC UL Type MV-105 (COMPACT)



### APPLICATIONS

PowerGuard® cables are intended for use in wet or dry locations for distribution of single or three phase medium voltage power. These cables may be installed in ducts, exposed to sunlight or direct buried. Sizes 1/0 AWG and larger are approved for use in cable tray, marked "FOR CT USE".

### CONSTRUCTION

Single conductor cable true-triple extrusion, dry cured insulation system consisting of a thermosetting semiconducting conductor shield, high dielectric strength ethylene propylene rubber (EPR) insulation, thermosetting semiconducting insulation shield, flat copper tape, black polyvinyl chloride (PVC) jacket.

#### Conductor:

Compact concentric stranded copper.

#### Conductor Shield:

Extruded thermosetting semiconducting cross-linked polyethylene (XLPE) shield which is free stripping from the conductor and bonded to the insulation.

#### Insulation:

Extruded, Ethylene Propylene Rubber (EPR) – 15 kV 133% insulation level. Nominal Thickness 220 mils.

#### Insulation Shield:

Extruded thermosetting semiconducting cross-linked polyethylene (XLPE) shield with controlled adhesion to the insulation providing the required balance between electrical integrity and ease of stripping.

#### Metallic Shield:

Flat, uncoated 5 mil thick copper tape helically applied with a minimum 25% overlap.

#### Outer jacket:

A polyvinyl chloride (PVC) jacket is extruded over the copper tape shield, meeting the physical requirements of Table 1, when tested by the methods specified in ICEA S-93-639. The jacket shall be free-stripping and not interfere with the contact between the flat copper tape and the underlying extruded insulation shield. The jacket is sunlight resistant and marked. The jacket shall contain a print legend marking, and sequential length (meter or feet) marking.

### TEMPERATURE RATING

#### Insulated Conductor and Copper Tape Shield Temperature Ratings

Normal:	105 °C
Emergency*:	140 °C
Short-Circuit – Insulated Conductor:	250 °C
Short-Circuit – Copper Tape Shield:	200 °C

\*Operation at the emergency overload temperature shall not exceed 1500 hours cumulative during the lifetime of the cable.

### STANDARDS

These cables are manufactured and tested to meet or exceed the following standards:

- ASTM B496 – Compact Round Concentric-Lay-Stranded Copper Conductors
- ASTM B3 – Soft or Annealed Copper Wire
- ICEA S-93-639 – 5-46 kV Shielded Power Cable for Use in the Transmission and Distribution of Electric Energy
- UL 1072 – Medium-Voltage Power Cables

### LISTINGS AND CERTIFICATIONS

UL listed as Type MV-105 – File E546953

TABLE 1

#### Physical Properties of PVC Jacket

Unaged Tensile Strength:	minimum (PSI) 1500
Aged* Tensile Strength:	minimum retention (%) 85
Unaged Elongated:	minimum (%) 100
Aged* Elongated:	minimum retention (%) 60
Heat Distortion 1 hr at 121 °C:	maximum (%) 50

\*Aged for 120 hrs at 100 °C

Item Number	Conductor Size (AWG or kcmil)	Diameter					Weight	
		Conductor (in)	Insulation (in)	Insulation Shield (in)	Copper Tape (in)	Jacket (in)	Copper (lb / 1000 ft)	Net (lb / 1000 ft)
350-01MV15UECTSP	350	0.616	1.104	1.168	1.178	1.353	1170	1790
2-01MV15UECTSP	2	0.268	0.756	0.816	0.826	1.001	267	667
1-01MV15UECTSP	1	0.299	0.787	0.847	0.857	1.032	323	742
1/0-01MV15UECTSP	1/0	0.336	0.824	0.884	0.894	1.069	393	835



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		Conductor (in)	Insulation (in)	Insulation Shield (in)	Copper Tape (in)	Jacket (in)	Copper (lb / 1000 ft)	Net (lb / 1000 ft)
2/0-01MV15UECTSP	2/0	0.376	0.864	0.924	0.934	1.109	481	948
3/0-01MV15UECTSP	3/0	0.423	0.911	0.971	0.981	1.156	592	1088
4/0-01MV15UECTSP	4/0	0.475	0.963	1.023	1.033	1.208	731	1259
250-01MV15UECTSP	250	0.520	1.008	1.072	1.082	1.257	854	1414
500-01MV15UECTSP	500	0.736	1.224	1.288	1.298	1.473	1642	2337
750-01MV15UECTSP	750	0.908	1.404	1.468	1.478	1.653	2428	3240
1000-01MV15UECTSP	1000	1.060	1.556	1.620	1.630	1.880	3211	4255

### Notes:

- 1) Dimensions and weights are subject to standard manufacturing tolerances and are subject to change without notice.
- 2) Cables are manufactured, tested and marked to meet or exceed the requirements in ICEA S-93-639 for copper tape shielded cables rated 5-46 kV and the latest revision of UL 1072.
- 3) Utilizing a 105 °C normal operating conductor temperature will increase cable ampacity rating but will reduce the cable fault capability. If the user plans on operating these cables at 105 °C conductor temperature for normal operation and 140°C for emergency overload, please contact American Wire Group for the applicable cable ampacity and shield fault capability ratings.
- 4) Migration of soil moisture away from the cable is more likely at the higher operating conductor temperature and can result in an increase in soil thermal resistivity, resulting in an increase in conductor and soil temperature.