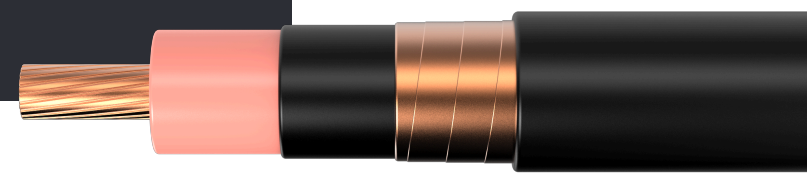
PowerGuard® Cu 35 kV 133% EPR CTS PVC UL Type MV-105 (COMPACT)



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) – 35 kV 133% insulation level. Nominal Thickness 420 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.

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	

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.

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)
1/0-01MV35UECTSP	1/0	0.336	1.224	1.288	1.298	1.473	424	1298
2/0-01MV35UECTSP	2/0	0.376	1.264	1.328	1.338	1.513	512	1424
3/0-01MV35UECTSP	3/0	0.423	1.311	1.375	1.385	1.560	622	1579
4/0-01MV35UECTSP	4/0	0.475	1.363	1.427	1.437	1.612	761	1768

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		Conductor (in)	Insulation (in)	Insulation Shield (in)	Copper Tape (in)	Jacket (in)	Copper (lb / 1000 ft)	Net (lb / 1000 ft)
250-01MV35UECTSP	250	0.520	1.408	1.472	1.482	1.657	884	1934
350-01MV35UECTSP	350	0.616	1.504	1.568	1.578	1.828	1200	2473
500-01MV35UECTSP	500	0.736	1.624	1.688	1.698	1.948	1672	3068
750-01MV35UECTSP	750	0.908	1.804	1.868	1.878	2.128	2458	4045
1000-01MV35UECTSP	1000	1.060	1.956	2.020	2.030	2.280	3241	4985

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.