

3/C UL AIRGUARD™ UL Type MV-105 (Replacement for CCWMA Type Cables*)

Medium Voltage Commercial & Industrial Cables



Description

Three conductor cable with stranded copper conductors, extruded insulation system consisting of a thermosetting semiconducting conductor shield, high dielectric strength EPROTENAX™ EPR insulation, thermosetting semiconducting insulation shield, helically applied bare copper tape shield, cabled with fillers and grounding conductors, overall binder tape, foamed polymeric layer for superior mechanical protection, longitudinally applied aluminum tape, extruded oil and hydrocarbon resistant polymeric layer, and overall sunlight resistant PVC jacket. Suitable for Class I Division 2 locations.

Specifications

ICEA- ICEA S-93-639/NEMA WC74

UL- UL 1072

IEEE

CSA

MSHA

For 105°C continuous, 140°C emergency,
250°C short-circuit operation.

Options

- Mine Power Type MP-GC
- Low Smoke Zero Halogen Jacket
- 100% Insulation Level
- Colored Jackets
- Manufactured to CSA

Applications and Benefits

Prysmian's patented AIRGUARD™ cable is a direct replacement for continuously corrugated and welded aluminum armored cables (*in Class 1 Div 2 locations) with 5X the impact performance and 2X-3X the sidewall bearing pressure limit (@ 3000 lbs per rad-ft). This enables longer pulls than with Continuously Corrugated and Welded Metallic Armored (CCWMA) type cables. Please call in regards to the product literature and performance testing and videos.

Prysmian Group

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137 Commerce Drive | Johnstown, Ontario K0E 1T1 | website: na.prysmiangroup.com

Design Parameters

CONDUCTOR: Class B Compact concentric strand aluminum alloy 1350 or soft drawn annealed copper per ASTM.

CONDUCTOR SHIELD: Extruded thermosetting semiconducting shield which is free stripping from the conductor and bonded to the insulation.

INSULATION: Natural high dielectric strength EPROTENAX™ EPR-based insulation, combined with other materials and agents that enhance the electrical and mechanical characteristics assuring extended cable life.

INSULATION SHIELD: Extruded thermosetting semiconducting shield with controlled adhesion to the insulation providing the required balance between electrical integrity and ease of stripping.

METALLIC SHIELD: Helically applied non-magnetic copper tape(s) over the insulation shield with a nominal overlap of 25%. A Mylar ribbon is longitudinally applied under the copper tape shield for phase identification - 1C w/ Red, 1C w/ Blue, and 1C w/ Black.

GROUNDING CONDUCTORS: Bare stranded copper conductor per UL, ICEA, and ASTM.

ASSEMBLY: Phase identified conductors cabled with fillers and grounding conductors, forming a firm and cylindrical cable core. A binder tape is applied to maintain core symmetry and mechanical stability.

MECHANICAL PROTECTION: High strength and high crush resistant Air Bag™ layer extruded over the core assembly.

CHEMICAL PROTECTION: A layer of Drylam™ which consists of aluminum tape and a chemical resistant extruded polymer layer is applied.

JACKET: Sunlight and moisture resistant polyvinyl chloride (PVC) jacket.

Installation



In Cable Tray



Direct Buried



Isolated in Air



Dry Locations



With Messenger



Conduit in Air



Underground Duct



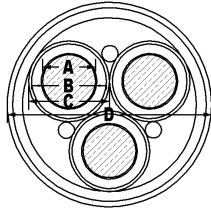
Wet Locations



Industrial

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Product Number	Conductor	Insulation Thickness (mils)		Ground Wires		Conductor Diameter (in)		Insulation Diameter (in)		Insulation Shield Diameter (in)		Overall Jacket Diameter (in)		Cable Weight (lbs/kft)		Minimum Bending Radius (in)		† Ampacity (Amps)		†† Impedance (micro-ohms / foot)	
		No.	Size	(A)	(B)	(C)	(D)			±105°C In Duct	±105°C In Air/Tray	Pos/Neg Seq	Zero Seq.								
5kV 100%/ 5kV 133% Copper Three Conductor																					
QJ4580A	2 AWG CU	90	3	10 AWG	0.266	0.49	0.55	1.64	1855	12	145	154	212 + j40	1223 + j24							
QJ6580A	1 AWG CU	90	3	8 AWG	0.299	0.53	0.58	1.71	2107	12	165	180	169 + j38	1125 + j22							
QJ8580A	1/0 AWG CU	90	3	8 AWG	0.341	0.57	0.62	1.89	2565	14	190	205	134 + j37	1028 + j20							
QJ9580A	2/0 AWG CU	90	3	8 AWG	0.376	0.60	0.66	1.97	2942	14	220	240	106 + j36	949 + j20							
QJB580A	4/0 AWG CU	90	3	7 AWG	0.479	0.71	0.76	2.22	4068	16	285	320	67 + j33	799 + j17							
QJC580A	250 MCM CU	90	3	6 AWG	0.522	0.76	0.82	2.31	4562	17	315	355	57 + j33	744 + j17							
QJD580A	350 MCM CU	90	3	6 AWG	0.622	0.86	0.92	2.52	5899	18	380	440	41 + j31	654 + j15							
QJE580A	500 MCM CU	90	3	5 AWG	0.742	0.98	1.03	2.78	7754	20	460	545	29 + j30	573 + j14							

PRODUCT NOTES:

The above dimensions are approximate and subject to normal manufacturing tolerances.

† Ampacities are based on the following:

Three Phase Operation

In Duct: Cable in underground electrical ducts; one cable per duct; based on ambient temperature of 20°C; 2014 NEC Table 310.60(C)(79)

Air: Cable isolated in air and an ambient temperature of 40°C; per 2014 NEC Table 310.60(C)(71)

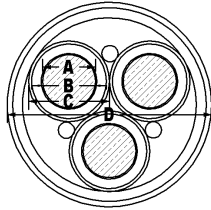
In Cable Tray: Per 2014 NEC Article 392.80(B)(1)(b), where multi-conductor cables installed in a single layer in an uncovered cable tray, with maintained spacing of not less than one cable diameter between cables, the ampacities shall not exceed the allowable ampacities stated in Table 310.60(C)(71) (Copper).

‡ EPROTENAX: EPR-insulated cables are capable of operating at 105°C. However, the maximum operating temperature of the cable should be based on the maximum operating temperature of the cable accessories to be used.

†† Impedance based on 105°C operating temperature, shields short-circuited with no return in earth. At 90°C, the resistive portion of the impedances can be estimated at 96% of the values at 105°C, the reactive portions remain unchanged.

3/C UL AIRGUARD™ UL Type MV-105 (Replacement for CCWMA Type Cables*)

Medium Voltage Commercial & Industrial Cables



Product Number	Conductor	Insulation Thickness (mils)		Ground Wires	Conductor Diameter (in)		Insulation Diameter (in)	Insulation Shield Diameter (in)	Overall Jacket Diameter (in)	Cable Weight (lbs/1000ft)	Minimum Bending Radius (in)	† Ampacity (Amps)	†† Impedance (micro-ohms/foot)	
		No.	Size		(A)	(B)								(C)
8kV 100% Copper Three Conductor														
QK0580A	8 AWG CU	115	3	12 AWG	0.135	0.41	0.47	1.42	1274	10	-	-	853 + j53	2023 + j36
QK1580A	6 AWG CU	115	3	10 AWG	0.170	0.45	0.50	1.43	1485	11	95	105	538 + j49	1631 + j33
QK2580A	4 AWG CU	115	3	10 AWG	0.215	0.49	0.55	1.53	1679	11	125	135	338 + j45	1325 + j28
QK4580A	2 AWG CU	115	3	10 AWG	0.266	0.54	0.60	1.75	2089	12	160	185	212 + j42	1134 + j26
QK6580A	1 AWG CU	115	3	8 AWG	0.299	0.58	0.63	1.78	2588	13	185	210	169 + j40	1045 + j24
QK8580A	1/0 AWG CU	115	3	8 AWG	0.341	0.62	0.68	1.89	2916	14	210	240	134 + j39	954 + j22
QK9580A	2/0 AWG CU	115	3	8 AWG	0.376	0.65	0.71	1.97	3226	14	235	275	106 + j37	888 + j21
QKB580A	4/0 AWG CU	115	3	7 AWG	0.479	0.76	0.82	2.19	4292	16	305	360	67 + j35	752 + j19
QKC580A	250 AWG CU	115	3	6 AWG	0.522	0.81	0.86	2.30	4974	17	335	400	57 + j34	704 + j18
QKD580A	350 AWG CU	115	3	6 AWG	0.622	0.91	0.96	2.52	6156	18	400	490	41 + j32	622 + j16
QKE580A	500 AWG CU	115	3	5 AWG	0.742	1.03	1.08	2.77	8229	20	485	600	29 + j31	548 + j15
QKF580A	750 AWG CU	115	3	4 AWG	0.917	1.21	1.27	3.25	11544	23	585	745	20 + j30	465 + j13
QKG580A	1000 MCM CU	115	3	3 AWG	1.071	1.37	1.42	3.61	14988	26	660	860	16 + j29	413 + j13
15kV 133% Copper Three Conductor														
QN4580A	2 AWG CU	220	3	10 AWG	0.266	0.74	0.80	2.27	3003	16	160	185	212 + j49	898 + j33
QN6580A	1 AWG CU	220	3	8 AWG	0.299	0.78	0.83	2.28	3539	16	185	210	169 + j46	827 + j30
QN8580A	1/0 AWG CU	220	3	8 AWG	0.341	0.82	0.88	2.43	3712	17	210	240	134 + j44	763 + j28
QN9580A	2/0 AWG CU	220	3	8 AWG	0.376	0.85	0.91	2.51	4127	17	235	275	107 + j43	710 + j27
QNB580A	4/0 AWG CU	220	3	7 AWG	0.479	0.96	1.02	2.74	5313	19	305	360	67 + j40	612 + j24
QNC580A	250 MCM CU	220	3	6 AWG	0.522	1.01	1.06	2.84	5932	20	335	400	57 + j39	577 + j23
QND580A	350 MCM CU	220	3	6 AWG	0.622	1.11	1.16	3.16	7547	22	400	490	41 + j37	518 + j21
QNE580A	500 MCM CU	220	3	5 AWG	0.742	1.23	1.28	3.42	9568	24	485	600	29 + j34	463 + j19
QNF580A	750 MCM CU	220	3	4 AWG	0.917	1.41	1.47	3.81	12953	26	585	745	20 + j33	401 + j17

PRODUCT NOTES:

The above dimensions are approximate and subject to normal manufacturing tolerances.

† Ampacities are based on the following:

Three Phase Operation

In Duct: Cable in underground electrical ducts; one cable per duct; based on ambient temperature of 20°C; 2014 NEC Table 310.60(C)(79)

Air: Cable isolated in air and an ambient temperature of 40°C; per 2014 NEC Table 310.60(C)(71)

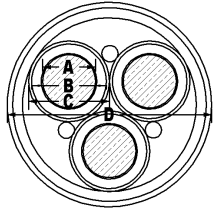
In Cable Tray: Per 2014 NEC Article 392.80(B)(1)(b), where multi-conductor cables installed in a single layer in an uncovered cable tray, with maintained spacing of not less than one cable diameter between cables, the ampacities shall not exceed the allowable ampacities stated in Table 310.60(C)(71) (Copper).

‡ EPROTENAX® EPR-insulated cables are capable of operating at 105°C. However, the maximum operating temperature of the cable should be based on the maximum operating temperature of the cable accessories to be used.

†† Impedance based on 105°C operating temperature, shields short-circuited with no return in earth. At 90°C, the resistive portion of the impedances can be estimated at 96% of the values at 105°C, the reactive portions remain unchanged.

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Medium Voltage Commercial & Industrial Cables



Product Number	Conductor	Insulation Thickness (mils)		Ground Wires	Conductor Diameter (in)				Insulation Diameter (in)	Insulation Shield Diameter (in)	Overall Jacket Diameter (in)	Cable Weight (lbs/1000ft)	Minimum Bending Radius (in)	† Ampacity (Amps)	†† Impedance (micro-ohms/foot)
		No.	Size		(A)	(B)	(C)	(D)							
25kV 133% Copper Three Conductor															
QQ6580A	1 AWG CU	320	3	8 AWG	0.299	0.98	1.04	2.79	4440	20	185	210	169 + j51	690 + j35	
QQ8580A	1/0 AWG CU	320	3	8 AWG	0.341	1.03	1.08	2.88	4855	21	210	240	134 + j49	636 + j33	
QQ9580A	2/0 AWG CU	320	3	8 AWG	0.376	1.06	1.12	3.01	5410	22	235	275	107 + j48	594 + j32	
QQB580A	4/0 AWG CU	320	3	7 AWG	0.479	1.16	1.22	3.28	6811	23	305	360	68 + j44	516 + j28	
QQC580A	250 MCM CU	320	3	6 AWG	0.522	1.24	1.30	3.45	7667	25	335	400	57 + j43	489 + j27	
QQD580A	350 MCM CU	320	3	6 AWG	0.622	1.31	1.37	3.60	8962	26	400	490	41 + j40	443 + j24	
QQE580A	500 MCM CU	320	3	5 AWG	0.742	1.43	1.49	3.86	11097	28	485	600	29 + j38	400 + j22	
QQF580A	750 MCM CU	320	3	4 AWG	0.917	1.62	1.67	4.28	14730	30	585	745	20 + j36	352 + j20	
QQG580A	1000 MCM CU	320	3	3 AWG	1.071	1.77	1.83	4.65	18141	33	660	860	16 + j34	321 + j18	
35kV 133% Copper Three Conductor															
QR8580A	1/0 AWG CU	420	3	8 AWG	0.341	1.22	1.27	3.39	6291	24	210	240	134 + j53	561 + j37	
QR9580A	2/0 AWG CU	420	3	8 AWG	0.376	1.24	1.31	3.50	7326	25	235	275	107 + j51	520 + j35	
QRB580A	4/0 AWG CU	420	3	7 AWG	0.479	1.35	1.41	3.69	8130	26	305	360	68 + j47	454 + j31	
QRC580A	250 MCM CU	420	3	6 AWG	0.522	1.40	1.46	3.78	9472	27	335	400	57 + j46	432 + j30	
QRD580A	350 MCM CU	420	3	6 AWG	0.622	1.50	1.56	4.02	11116	29	400	490	41 + j43	392 + j27	
QRE580A	500 MCM CU	420	3	5 AWG	0.742	1.62	1.68	4.30	12697	31	485	600	30 + j41	356 + j25	
QRF580A	750 MCM CU	420	3	4 AWG	0.917	1.81	1.86	4.73	16566	34	585	745	10 + j38	316 + j22	
QRG580A	1000 MCM CU	420	3	3 AWG	1.071	1.96	2.05	5.00	20786	35	660	860	16 + j37	290 + j21	

†Ampacities are based on the following:

Three Phase Operation

PRODUCT NOTES:

The above dimensions are approximate and subject to normal manufacturing tolerances.

In Duct: Cable in underground electrical ducts; one cable per duct; based on ambient temperature of 20°C; 2014 NEC Table 310.60(C)(79)

Air: Cable isolated in air and an ambient temperature of 40°C; per 2014 NEC Table 310.60(C)(71)

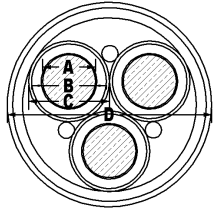
In Cable Tray: Per 2014 NEC Article 392.80(B)(1)(b), where multi-conductor cables installed in a single layer in an uncovered cable tray, with maintained spacing of not less than one cable diameter between cables, the ampacities shall not exceed the allowable ampacities stated in Table 310.60(C)(71) (Copper).

‡EPROTENAX: EPR-insulated cables are capable of operating at 105°C. However, the maximum operating temperature of the cable should be based on the maximum operating temperature of the cable accessories to be used.

††Impedance based on 105°C operating temperature, shields short-circuited with no return in earth. At 90°C, the resistive portion of the impedances can be estimated at 96% of the values at 105°C, the reactive portions remain unchanged.

3/C UL AIRGUARD™ UL Type MV-105 (Replacement for CCWMA Type Cables*)

Medium Voltage Commercial & Industrial Cables



Product Number	Conductor	Insulation Thickness (mils)		Ground Wires		Conductor Diameter (in)		Insulation Diameter (in)		Insulation Shield Diameter (in)		Overall Jacket Diameter (in)		Cable Weight (lbs/1000ft)		Minimum Bending Radius (in)		† Ampacity (Amps)		†† Impedance (micro-ohms/foot)	
		No.	Size	(A)	(B)	(C)	(D)			‡105°C In Duct	‡105°C In Air/Tray	Pos/Neg Seq	Zero Seq.								
15kV 133% Aluminum Three Conductor																					
QNM58CA	2 AWG AL	220	3	10 AWG	0.266	0.74	0.80	2.27	2583	16	125	145	350 + j49	1035 + j33							
QXV516A	1 AWG AL	220	3	10 AWG	0.299	0.78	0.83	2.34	2761	17	145	165	278 + j46	937 + j30							
QXU018A	1/0 AWG AL	220	3	10 AWG	0.336	0.81	0.87	2.42	2976	17	165	185	221 + j44	854 + j28							
QXV750A	2/0 AWG AL	220	3	8 AWG	0.379	0.86	0.92	2.52	3297	18	185	215	176 + j43	777 + j27							
QXZ865A	3/0 AWG AL	220	3	8 AWG	0.423	0.90	0.96	2.62	3584	19	210	245	139 + j41	714 + j25							
QXZ537A	4/0 AWG AL	220	3	8 AWG	0.479	0.96	1.02	2.74	3946	20	240	285	111 + j40	655 + j24							
QXU234A	250 MCM AL	220	3	7 AWG	0.515	1.00	1.06	2.83	4271	20	265	315	94 + j39	617 + j23							
QXU110A	350 MCM AL	220	3	7 AWG	0.622	1.11	1.17	3.16	5301	23	315	385	67 + j37	543 + j21							
QXU235A	500 MCM AL	220	3	6 AWG	0.742	1.23	1.28	3.42	6349	24	385	475	48 + j35	481 + j19							
QXU181A	750 MCM AL	220	3	5 AWG	0.917	1.41	1.47	3.81	8082	27	475	600	32 + j33	413 + j17							
QXZ739A	1000 MCM AL	220	3	4 AWG	1.071	1.57	1.62	4.17	9786	30	545	705	25 + j32	370 + j16							

PRODUCT NOTES:

The above dimensions are approximate and subject to normal manufacturing tolerances.

† Ampacities are based on the following:

Three Phase Operation

In Duct: Cable in underground electrical ducts; one cable per duct; based on ambient temperature of 20°C; 2014 NEC Table 310.60(C)(80)

Air: Cable isolated in air and an ambient temperature of 40°C; per 2014 NEC Table 310.60(C)(72)

In Cable Tray: Per 2014 NEC Article 392.80(B)(1)(b), where multi-conductor cables installed in a single layer in an uncovered cable tray, with maintained spacing of not less than one cable diameter between cables, the ampacities shall not exceed the allowable ampacities stated in Table 310.60(C)(72) (Aluminum).

‡ EPROTENAX® EPR-insulated cables are capable of operating at 105°C. However, the maximum operating temperature of the cable should be based on the maximum operating temperature of the cable accessories to be used.

†† Impedance based on 105°C operating temperature, shields short-circuited with no return in earth. At 90°C, the resistive portion of the impedances can be estimated at 96% of the values at 105°C, the reactive portions remain unchanged. Return ONLY in copper tape shields.