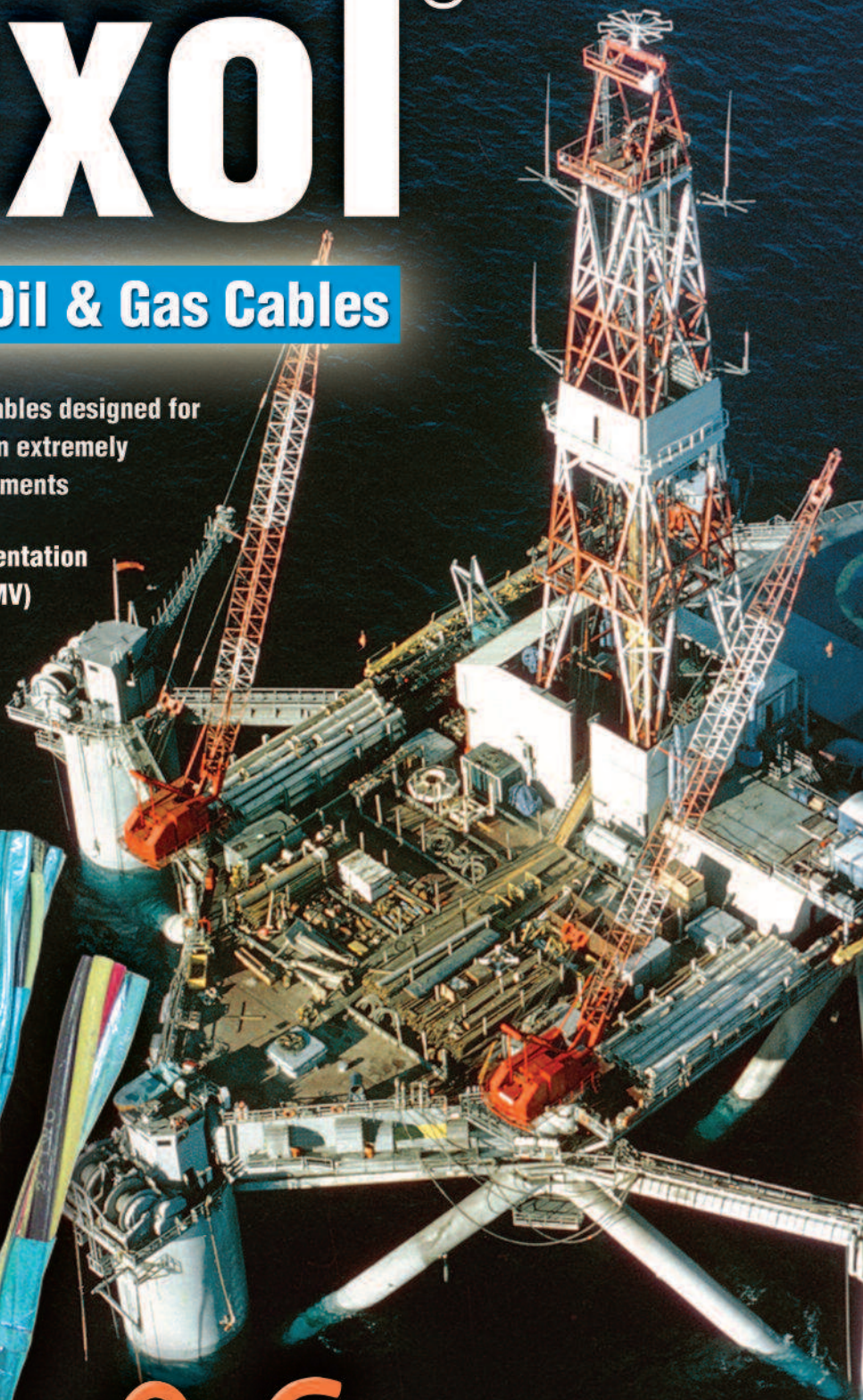


# Gexol<sup>®</sup>

## World Class Oil & Gas Cables

Mission-critical Oil & Gas cables designed for safe, reliable performance in extremely hazardous operating environments

- Power • Control • Instrumentation
- VFD • Medium Voltage (MMV)
- Assembly Solutions



exans

 AmerCable



# Gexol®

**World Class Oil & Gas Cables**

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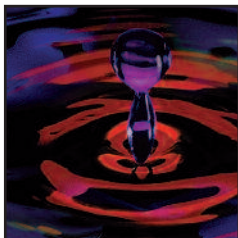
**Severe Cold Durability**  
Exceeds CSA Cold Bend /  
Cold Impact (-40°C/-35°C)



**Flame Retardant**  
Certified to IEC 92-3 (332-3A)  
and IEEE 1580



**Drilling Mud Resistant**



**Oil Resistant**

## ■ Fastest Lead Times

- Standard 6 - 8 weeks
- Emergency 2 - 4 weeks

## ■ Best On-Time Delivery Rate\*

## ■ Highest Ampacity Ratings

- DNV: 95°C
- ABS: 100°C
- Lloyd's: 95°C

## ■ Extremely Flexible

\*Visit [www.nexansamericable.com](http://www.nexansamericable.com) for our most current on-time delivery rate

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Nexans AmerCable believes the information presented throughout this catalog to be reliable and current. All information is subject to change without notice. The information listed is approximate, and is presented only as a guide for product selection. We make no claims or warranties for the suitability of any product for any particular application.

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**Gexol® Insulated Oil & Gas Cables** are the industry’s standard for premium power, control and instrumentation performance. Gexol cables prove their value daily in the punishing operating environments of offshore drilling and petroleum facilities around the world.

Offshore applications challenge cable construction with relentless heat, vibration, salt corrosion, drilling mud and mechanical stress. And reliability is a huge issue – because it’s a long, long way to the nearest cable warehouse. You can depend on Gexol Insulated Oil & Gas cables for safe, reliable performance in the harshest operating conditions.



Ampacity Ratings	
<b>110°C (Free Air) Ratings</b>	Based on IEEE Std. 835-1994 for isolated cables in free air with full sun, 2 ft/s air movement, and a 45°C ambient.
<b>110°C Ratings</b>	Based on IEEE Std. 45 with a 45°C ambient and arranged in a single bank per hanger. For those instances where cable must be double banked, the 110°C ampacities should be multiplied by 0.8.
<b>100°C Ratings</b>	Based on IEEE Std. 45 with a 45°C ambient and arranged in a single bank per hanger. For those instances where cable must be double banked, the 100°C ampacities should be multiplied by 0.8.
<b>95°C Ratings</b>	Based on Table 4/3C.10 of the 1997 ABS MODU rules and a 45°C ambient.
<ul style="list-style-type: none"> <li>• Ampacities for four conductor cables are based on one conductor not acting as a normal current-carrying conductor (e.g., grounded neutral or grounding conductor).</li> <li>• For free air ratings, the IEEE Std. 45 numbers can be divided by 0.85</li> </ul>	

Bend Radius			
	Unarmored	Armored	Armored & Sheathed
IEEE 45	6X Diameter	8X Diameter	8X Diameter
IEC 92	<1" (25mm) 4 x Diameter >1" (25mm) 6X Diameter	6X Diameter	8X Diameter
Transport Canada	<1" (25mm) 4X Diameter >1" (25mm) 6X Diameter	6X Diameter	6X Diameter

**Diameter Conversion** → (inches to millimeters): Multiply by 25.4

## Hawke Gland Types

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Single Conductor Power Cable Gexol® Insulated

Extremely Flexible • 600V or 2kV • Rated 110°C

**Conductor**

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

**Insulation/Jacket**

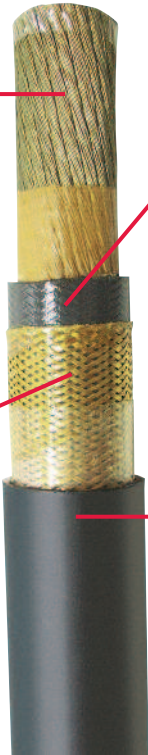
GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 2000V/IEC 1000V.

**Armor (Optional)**

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

**Sheath (Optional)**

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.



**Application**

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

**Features**

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

**Ratings & Approvals** *(Other certifications pending)*

- 110°C Temperature Rating
- NVE 95/1696, FAL
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping
- American Bureau of Shipping (ABS)
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

**600V  
Unarmored**

(2kV on next page)

Size AWG/ kcmil	Part No. 37-102	Unarmored Diameter (inches)	Weight (lbs/Mft.)	Inductive Reactance (Ohms/k ft.)	Voltage Drop at 110°C (Volts/Amp/kft.)	DC Resistance at 25°C (Volts/Amp/kft.)	AC Resistance at 110°C, 60 Hz (Ohms/k ft.)	Ampacity			
								Free Air 110°C	110°C	100°C	95°C
18	-151	0.115	11	0.046	13.560	7.210	9.763	30	17	16	20
16	-153	0.125	14	0.044	8.516	4.520	6.121	35	25	23	23
14	-154	0.164	20	0.041	5.383	2.850	3.859	41	40	37	32
12	-156	0.187	28	0.038	3.394	1.790	2.424	64	48	45	38
10	-158	0.208	41	0.036	2.155	1.130	1.530	85	62	58	51
8	-159	0.260	63	0.036	1.338	0.694	0.940	112	77	72	68
6	-160	0.290	104	0.034	0.852	0.436	0.590	148	103	96	91
4	-162	0.390	169	0.030	0.583	0.286	0.399	196	137	128	121
2	-164	0.450	247	0.029	0.368	0.175	0.244	259	181	169	162
1	-165	0.505	329	0.029	0.301	0.140	0.195	298	208	194	187
1/0	-166	0.554	412	0.029	0.246	0.111	0.156	344	243	227	217
2/0	-167	0.609	524	0.028	0.202	0.089	0.125	396	281	262	250
3/0	-168	0.659	631	0.028	0.167	0.070	0.100	457	321	300	289

# Gexol® Flexible Power Cable – Single Conductor

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		Inductive Reactance (Ohms/ 1000 ft.)	Voltage Drop 110°C (Volts/Amp/ 1000 ft.)	DC Resistance at 25°C, (Ohms / 1000 ft.)	AC Resistance at 110°C, 60 Hz (Ohms/ 1000 ft.)	Ampacity			
			Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)					Free Air 110°C	110°C	100°C	95°C
			18	1.0	-101	0.232*	32	0.188					60	0.322	88	0.065
16	1.3	-102	0.248*	34	0.200	68	0.335	98	0.062	8.535	4.520	6.121	35	25	23	23
14	2.1	-105	0.259*	44	0.215	79	0.349	111	0.057	5.401	2.850	3.859	41	40	37	32
12	3.3	-106	0.281*	53	0.237	95	0.372	129	0.053	3.410	1.790	2.424	64	48	45	38
10	5.2	-108	0.302*	68	0.258	116	0.393	153	0.050	2.170	1.130	1.530	85	62	58	51
8	7.6	-109	0.354*	96	0.310	157	0.476	212	0.048	1.351	0.694	0.940	112	77	72	68
6	12.5	-110	0.384*	130	0.346	202	0.482	249	0.045	0.864	0.436	0.590	148	103	96	91
4	21	-112	0.484*	210	0.440	234	0.606	307	0.039	0.593	0.286	0.399	196	137	128	121
2	34	-114	0.576*	314	0.501	327	0.667	409	0.037	0.376	0.175	0.244	259	181	169	162
1	43	-115	0.629*	393	0.555	409	0.721	498	0.036	0.307	0.140	0.195	298	208	194	187
1/0	54	-116	0.687*	485	0.604	486	0.770	582	0.035	0.253	0.111	0.156	344	243	227	217
2/0	70	-117	0.737*	596	0.659	597	0.825	700	0.034	0.208	0.089	0.125	396	281	262	250
3/0	86	-118	0.788*	709	0.710	711	0.918	853	0.034	0.174	0.070	0.100	457	321	300	289
4/0	109	-119	0.812	836	0.867	1087	1.040	1119	0.033	0.145	0.056	0.080	528	376	351	335
262	132	-120	0.885	1015	0.935	1101	1.131	1344	0.034	0.127	0.046	0.067	599	436	407	382
313	159	-121	0.937	1178	0.987	1302	1.175	1495	0.033	0.112	0.038	0.056	604	487	455	427
373	189	-122	1.000	1400	1.050	1514	1.245	1774	0.032	0.099	0.032	0.047	674	553	516	476
444	227	-123	1.077	1654	1.127	1815	1.325	2025	0.031	0.089	0.027	0.041	750	630	588	531
535	273	-124	1.179	2005	1.230	2200	1.430	2438	0.031	0.081	0.022	0.035	839	709	630	597
646	326	-126	1.272	2348	1.328	2586	1.530	2841	0.031	0.073	0.019	0.030	937	783	731	671
777	394	-127	1.400	2709	1.455	3050	1.629	3336	0.030	0.067	0.015	0.026	1048	881	822	753
1111	562	-129	1.687	3965	1.750	4225	2.050	4638	0.030	0.056	0.011	0.018	1303	1098	1025	937

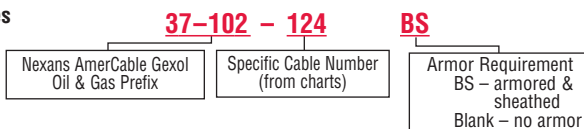
\*Unarmored 3/0 and smaller has a jacket per UL1309 & IEEE1580  
Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

GEXOL® is a registered trademark of AmerCable Incorporated.

### Ordering Gexol Oil & Gas Cables

Example:

- Single conductor power cable
- 2KV 100%
- 535 kcmil
- bronze armored & sheathed



See page 2 for Stranding Profile

# Two Conductor Power Cable Gexol® Insulated

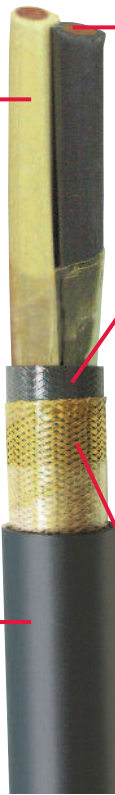
Extremely Flexible • 0.6/1kV • Rated 110°C

### Insulation

GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

**Color code:**  
Black-White

*1/0 and larger use insulation with printed phase I.D.*



### Conductor

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

### Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

### Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

### Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Gexol® Flexible Power Cable – Two Conductor

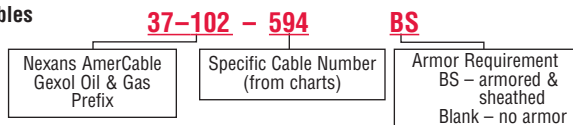
Size AWG/ kcmil	mm2	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		DC Resistance at 25°C (Ohms/ 1000 ft.)	AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.)	Inductive Reactance (Ohms / 1000 ft.)	Voltage Drop 110°C (Volts/Amp/ 1000 ft.)	Ampacity		
			Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)					110°C	100°C	95°C
16	1.3	-501	0.349	89	0.399	122	0.540	227	4.610	6.121	0.039	8.511	20	19	20
14	2.1	-507	0.380	84	0.430	145	0.561	204	2.907	3.859	0.036	5.379	33	31	27
12	3.3	-515	0.450	111	0.500	178	0.630	241	1.826	2.424	0.034	3.390	43	40	32
10	5.2	-553	0.460	146	0.510	254	0.671	287	1.153	1.530	0.032	2.151	53	49	43
8	7.6	-209	0.610	262	0.660	263	0.785	463	0.708	0.940	0.034	1.336	69	64	58
6	12.5	-210	0.680	361	0.730	439	0.895	629	0.445	0.590	0.032	0.850	91	85	77
4	21	-594	0.885	603	0.935	697	1.120	927	0.300	0.399	0.029	0.582	118	110	103
1/0	54	-216	1.243	1199	1.293	1397	1.475	1714	0.117	0.156	0.028	0.245	213	199	184
4/0	109	-219	1.560	2379	1.645	2377	1.877	3065	0.059	0.080	0.026	0.138	329	307	285

Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

### Ordering Gexol Oil & Gas Cables

Example:

- 2 conductor power cable
- 0.6/1kV
- #4 AWG
- bronze armored & sheathed



See page 29 for Stranding Profile



# Three Conductor Power Cable Gexol® Insulated

Extremely Flexible • 0.6/1kV • Rated 110°C

## Conductor

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

## Insulation

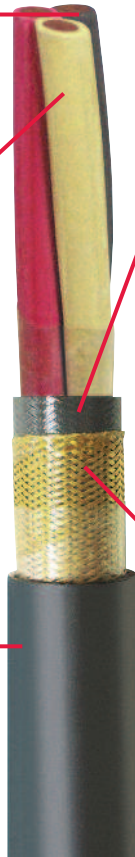
GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

### Color code:

Black-White-Red  
1/0 and larger use insulation with printed phase I.D.

## Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.



## Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

## Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

An uninsulated ground conductor may be incorporated on a make-to-order basis.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Gexol® Flexible Power Cable – Three Conductor

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		DC Resistance at 25°C (Ohms/ 1000 ft.)	AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.)	Inductive Reactance (Ohms / 1000 ft.)	Voltage Drop 110°C (Volts/Amp/ 1000 ft.)	Opt. Uninsulated Grounding Cond. Size AWG	Ampacity		
			Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)						110°C	100°C	95°C
			16	1.3	-502	0.369	80	0.419						138	0.572	246
14	2.1	-508	0.401	103	0.451	167	0.599	228	2.907	3.859	0.036	5.379	–	27	25	22
12	3.3	-516	0.445	138	0.495	209	0.648	275	1.826	2.424	0.034	3.390	–	33	31	27
10	5.2	-308	0.488	185	0.538	262	0.690	334	1.153	1.530	0.032	2.151	–	44	41	36
8	7.6	-309	0.640	316	0.690	397	0.820	533	0.708	0.940	0.034	1.336	–	56	52	48
6	12.5	-310	0.735	449	0.785	546	0.960	734	0.445	0.590	0.032	0.850	8	75	70	64
4	21	-312	0.950	754	1.000	862	1.185	1108	0.300	0.399	0.029	0.582	6	99	92	85
2	34	-314	1.100	1079	1.150	1209	1.345	1489	0.184	0.244	0.028	0.366	6	131	122	113
1	43	-315	1.230	1375	1.280	1516	1.455	1810	0.147	0.195	0.028	0.299	6	153	143	131
1/0	54	-316	1.335	1667	1.385	1814	1.571	2160	0.117	0.156	0.028	0.245	6	176	164	152
2/0	70	-317	1.485	2062	1.535	2278	1.685	2532	0.093	0.125	0.027	0.200	4	201	188	175
3/0	86	-318	1.560	2458	1.610	2869	1.825	2909	0.074	0.100	0.027	0.166	4	234	218	202
4/0	109	-319	1.764	3197	1.814	3194	2.068	4034	0.058	0.080	0.026	0.138	3	270	252	235
262	132	-320	2.005	3896	2.055	4233	2.260	4824	0.048	0.067	0.026	0.119	3	315	294	267
313	159	-321	2.100	4269	2.150	4481	2.373	5061	0.040	0.056	0.026	0.105	3	344	321	299
373	189	-322	2.250	4903	2.300	5265	2.550	6327	0.034	0.047	0.025	0.092	2	387	361	334
444	227	-323	2.378	6219	2.428	6089	2.682	7344	0.028	0.041	0.025	0.083	1	440	411	372
535	273	-324	2.700	7279	2.750	7717	3.045	8299	0.024	0.035	0.026	0.075	1	498	443	418
646	326	-326	2.880	8101	2.938	8873	3.295	9838	0.020	0.030	0.026	0.068	1/0	553	516	470
777	394	-327	3.175	10077	3.225	10590	3.554	11549	0.016	0.026	0.026	0.063	1/0	602	562	529

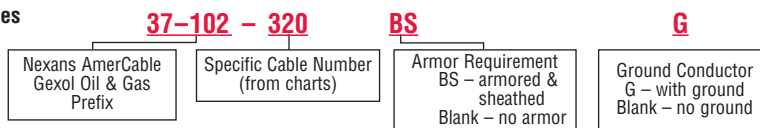
Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

*See page 29 for Stranding Profile*

### Ordering Gexol Oil & Gas Cables

Example:

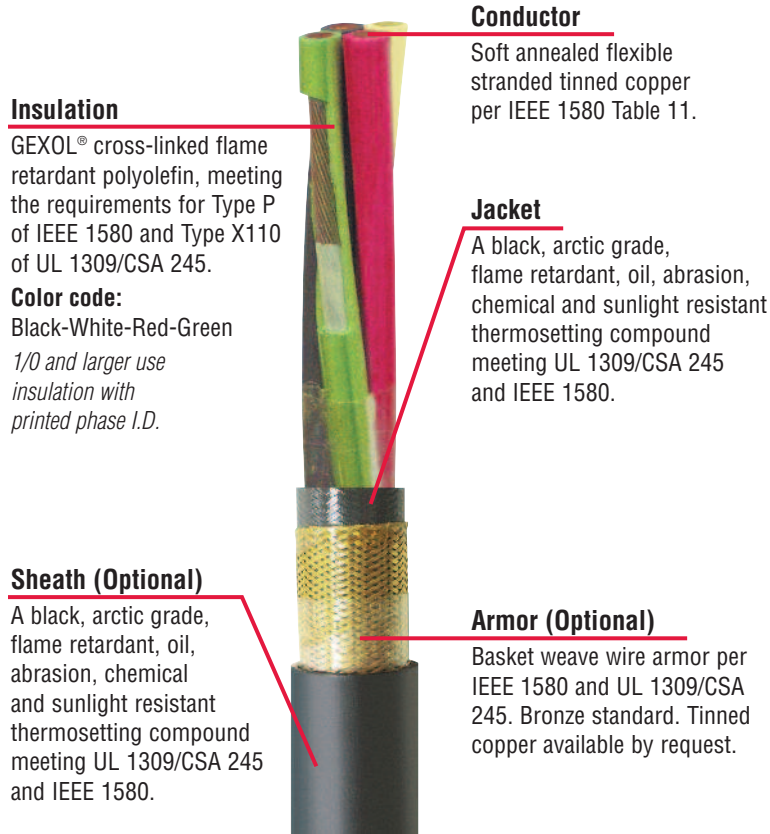
- 3 conductor power cable
- 0.6/1kV
- bronze armored & sheathed
- with ground



GEXOL® is a registered trademark of AmerCable Incorporated.

# Four Conductor Power Cable Gexol® Insulated

Extremely Flexible • 0.6/1kV • Rated 110°C



An uninsulated ground conductor may be incorporated on a make-to-order basis.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd’s Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol’s lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol’s excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol’s nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety “EExe”	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof “EExd”	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Gexol® Flexible Power Cable – Four Conductor

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		DC Resistance at 25°C (Ohms/ 1000 ft.)	AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.)	Inductive Reactance (Ohms / 1000 ft.)	Voltage Drop 110°C (Volts/Amp/ 1000 ft.)	Opt. Uninsulated Grounding Cond. Size AWG	Ampacity		
			Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)						110°C	100°C	95°C
			16	1.3	-529	0.402	97	0.452						160	0.620	222
14	2.1	-509	0.438	126	0.488	196	0.650	262	2.907	3.859	0.039	5.382	–	27	25	22
12	3.3	-517	0.486	170	0.536	247	0.668	319	1.826	2.424	0.037	3.393	–	33	31	27
10	5.2	-408	0.585	267	0.635	361	0.788	458	1.153	1.530	0.035	2.154	–	44	41	36
8	7.6	-409	0.710	375	0.760	489	0.930	668	0.708	0.940	0.037	1.339	–	56	52	48
6	12.5	-410	0.795	563	0.845	661	1.040	872	0.445	0.590	0.035	0.853	8	75	70	64
4	21	-412	1.040	898	1.100	1066	1.295	1272	0.300	0.399	0.032	0.585	6	99	92	85
2	34	-414	1.191	1358	1.241	1476	1.472	1734	0.184	0.244	0.030	0.369	6	131	122	113
1	43	-415	1.370	1732	1.420	1817	1.610	2222	0.147	0.195	0.031	0.302	6	153	143	131
1/0	54	-416	1.470	2042	1.520	2278	1.775	2642	0.117	0.156	0.030	0.248	6	176	164	152
2/0	70	-417	1.610	2715	1.660	2807	1.914	3441	0.093	0.125	0.030	0.203	4	201	188	175
3/0	86	-418	1.786	3234	1.836	3333	2.103	3781	0.074	0.100	0.029	0.168	4	234	218	202
4/0	109	-419	1.985	4043	2.035	4376	2.304	4957	0.058	0.080	0.029	0.140	3	270	252	235
262	132	-420	2.203	4699	2.253	5051	2.500	5595	0.048	0.067	0.029	0.122	3	315	294	267
313	159	-421	2.325	5506	2.375	5879	2.587	6358	0.040	0.056	0.028	0.107	3	344	321	299
373	189	-422	2.475	6417	2.525	6813	2.840	8270	0.034	0.047	0.028	0.095	2	387	361	334
444	227	-423	2.675	7532	2.726	8068	3.054	8886	0.028	0.041	0.028	0.086	1	440	411	372
535	273	-424	3.025	9634	3.075	9849	3.417	10770	0.024	0.035	0.028	0.077	1	463	443	418
646	326	-426	3.215	11600	3.265	11840	3.590	12895	0.020	0.030	0.029	0.071	1/0	553	516	470

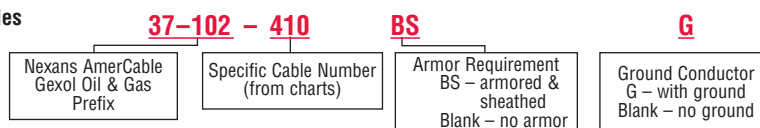
Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

See page 29 for Stranding Profile

## Ordering Gexol Oil & Gas Cables

Example:

- 4 conductor power cable
- 0.6/1kV
- #6 AWG
- bronze armored & sheathed
- with ground



# Five Conductor Power Cable Gexol® Insulated

Extremely Flexible • 0.6/1kV • Rated 110°C

## Conductors

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

## Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

## Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.



## Insulation

GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

**Color code:**  
Black-White-Red-Green-Orange  
*1/0 and larger use insulation with printed phase I.D.*

## Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

GEXOL® is a registered trademark of AmerCable Incorporated.

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Gexol<sup>®</sup> Flexible Power Cable – Five Conductor

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		DC Resistance at 25°C (Ohms/ 1000 ft.)	AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.)	Inductive Reactance (Ohms / 1000 ft.)	Voltage Drop 110°C (Volts/Amp/ 1000 ft.)	Ampacity		
			Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)	Nominal Diameter (inches)	Weight (lbs/ Mft.)					110°C	100°C	95°C
			18	1.0	-558	0.445	111	0.495					181	0.635	248
16	1.3	-559	0.437	117	0.487	186	0.640	252	4.610	6.121	0.042	8.514	14	13	13
14	2.1	-510	0.479	153	0.528	229	0.690	306	2.907	3.859	0.039	5.382	21	20	18
12	3.3	-560	0.561	237	0.612	315	0.743	421	1.826	2.424	0.037	3.393	27	25	22
10	5.2	-561	0.620	317	0.670	402	0.805	528	1.153	1.530	0.035	2.154	35	33	29
8	7.6	-562	0.770	447	0.820	575	1.015	760	0.708	0.940	0.037	1.339	45	42	38
6	12.5	-563	0.915	715	0.965	829	1.140	1065	0.445	0.590	0.035	0.853	60	56	51
4	21	-565	1.140	1152	1.190	1469	1.365	1553	0.300	0.399	0.032	0.585	79	74	68
2	34	-566	1.350	1580	1.400	1833	1.608	2097	0.184	0.244	0.030	0.369	105	98	90
1	43	-567	1.510	2000	1.560	2477	1.800	2592	0.147	0.195	0.031	0.302	122	114	105
1/0	54	-568	1.618	2312	1.668	2580	1.935	2991	0.117	0.156	0.030	0.248	140	131	122
2/0	70	-569	1.821	3213	1.872	3505	2.139	3962	0.093	0.125	0.030	0.203	161	150	140
4/0	109	-746	2.151	4404	2.202	4752	2.455	5263	0.058	0.080	0.029	0.140	216	202	188

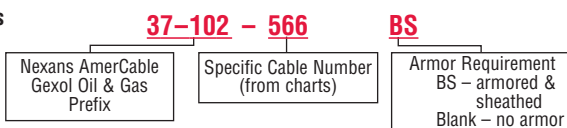
Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

*See page 29 for  
Stranding Profile*

### Ordering Gexol Oil & Gas Cables

Example:

- 5 conductor power cable
- 0.6/1kV
- #2 AWG
- bronze armored & sheathed



# Multi-Conductor Control Cable Gexol® Insulated

Extremely Flexible • 0.6/1kV • Rated 110°C

### Conductors

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

### Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

**Color code:**  
IEEE 1580 Table 22

### Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

**Color code:**  
IEEE 1580 Table 22



### Insulation

GEXOL® cross-linked, flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

*Colored singles through 37/C.*

*Black ink printed singles above 37/C.*

### Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

### Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

### Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1, and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

### Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Gexol® Flexible Control Cable – Multi-Conductor

Size AWG	Number of Conductors*	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)		Ampacity		
			Nominal Diameter (inches)	Weight (lbs/MFt.)	Nominal Diameter (inches)	Weight (lbs/MFt.)	Nominal Diameter (inches)	Weight (lbs/MFt.)	110°C	100°C	95°C
			16	4	-529	0.433	97	0.483	160	0.620	222
16	5	-559	0.469	117	0.519	186	0.640	252	14	13	13
16	7	-505	0.515	147	0.565	306	0.678	376	12	11	11
16	8	-503	0.581	202	0.631	289	0.763	372	12	11	11
16	10	-504	0.635	251	0.685	322	0.880	465	9	8	11
16	16	-546	0.720	333	0.770	441	0.960	620	9	8	11
16	20	-687	0.786	382	0.836	514	1.010	682	9	8	11
16	24	-525	0.900	549	0.950	646	1.155	900	8	7	11
16	37	-526	1.048	731	1.105	869	1.280	1125	6	6	8
16	44	-577	1.175	947	1.225	1133	1.400	1177	6	6	8
16	60	-527	1.262	1117	1.312	1315	1.485	1575	6	6	8
16	91	-581	1.550	1612	1.600	1876	1.830	2302	6	6	8
14	4	-509	0.438	126	0.488	196	0.650	262	27	25	22
14	5	-510	0.479	153	0.529	229	0.690	306	21	20	18
14	6	-511	0.561	200	0.611	287	0.730	434	21	20	18
14	7	-521	0.551	223	0.601	296	0.735	414	19	18	15
14	10	-512	0.690	327	0.740	403	0.900	599	14	13	15
14	12	-585	0.714	356	0.764	449	0.960	637	14	13	15
14	14	-523	0.760	417	0.810	549	0.980	709	14	13	15
14	20	-513	0.935	598	0.985	708	1.160	958	14	13	15
14	24	-571	1.025	721	1.075	829	1.245	1026	12	11	15
14	30	-573	1.075	779	1.125	955	1.310	1179	12	11	13
14	37	-514	1.153	969	1.203	1120	1.398	1405	11	10	13
14	44	-574	1.271	1089	1.321	1293	1.500	1502	10	9	11
14	91	-582	1.772	2424	1.822	2723	2.089	3168	10	9	11
12	4	-517	0.516	201	0.566	247	0.668	319	33	31	27
12	5	-560	0.561	226	0.611	315	0.743	421	27	25	22
12	6	-547	0.611	282	0.661	397	0.814	491	27	25	22
12	10	-518	0.770	434	0.820	509	1.016	732	17	16	19
12	20	-519	1.020	805	1.070	942	1.259	1194	17	16	19
12	24	-572	1.135	1033	1.185	1162	1.360	1352	15	14	19
12	37	-520	1.293	1270	1.343	1481	1.550	1809	13	12	16

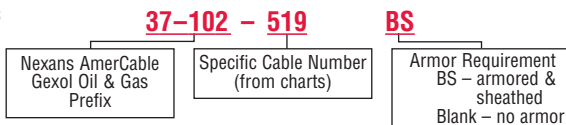
\* Colored singles through 37/C. Black ink printed singles above 37/C.

Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

### Ordering Gexol Oil & Gas Cables

Example:

- Multi-Conductor control cable
- 0.6/1kV
- #12 AWG
- bronze armored & sheathed

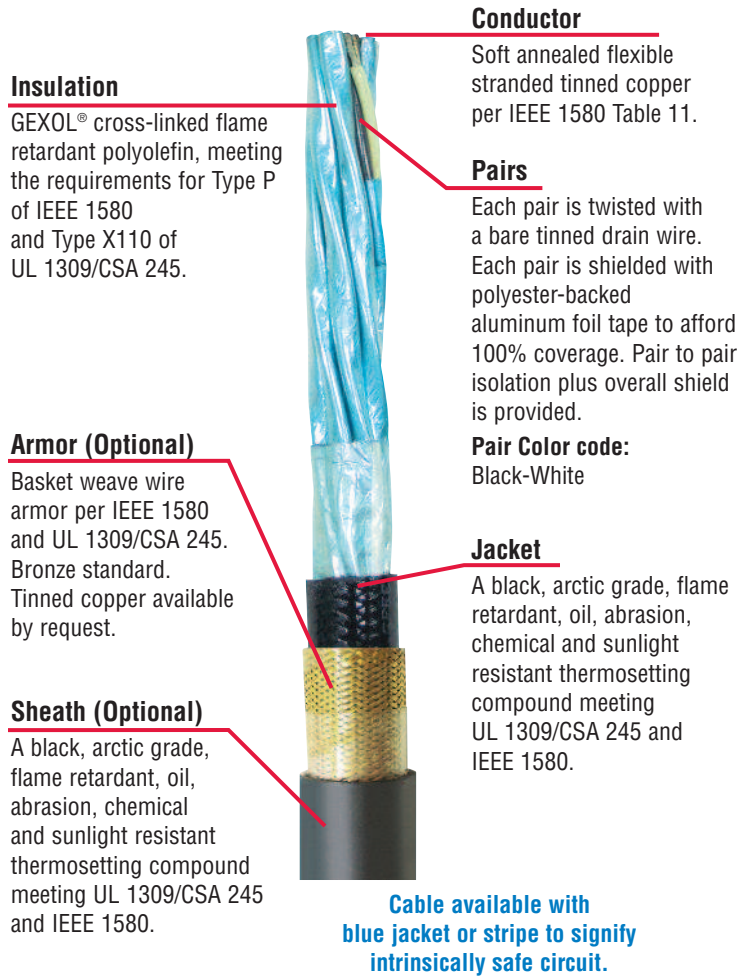


See page 29 for Stranding Profile

GEXOL® is a registered trademark of AmerCable Incorporated.

# Shielded Pairs Instrumentation Cable – Gexol® Insulated

Extremely Flexible • Individually Shielded Pairs • 0.6/1kV • Rated 110°C



**Insulation**  
GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

**Armor (Optional)**  
Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

**Sheath (Optional)**  
A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

**Conductor**  
Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

**Pairs**  
Each pair is twisted with a bare tinned drain wire. Each pair is shielded with polyester-backed aluminum foil tape to afford 100% coverage. Pair to pair isolation plus overall shield is provided.

**Pair Color code:**  
Black-White

**Jacket**  
A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

Cable available with blue jacket or stripe to signify intrinsically safe circuit.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd’s Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol’s lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol’s excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol’s nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety “EExe”	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof “EExd”	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2

GEXOL® is a registered trademark of AmerCable Incorporated.

# Flexible Instrumentation Cable – Individually Shielded Pairs

Size AWG	Number of Pairs	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)	
			Nominal Diameter (inches)	Weight (lbs/Mft.)	Nominal Diameter (inches)	Weight (lbs/Mft.)	Nominal Diameter (inches)	Weight (lbs/Mft.)
18	1	-601	0.336	57	0.386	149	0.535	151
18	2	-602	0.518	140	0.568	223	0.720	294
18	3	-603	0.581	177	0.631	270	0.780	497
18	4	-604	0.625	212	0.675	405	0.820	558
18	5	-605	0.665	257	0.715	359	0.889	505
18	7	-606	0.760	306	0.810	431	1.017	592
18	8	-607	0.782	342	0.832	468	1.027	607
18	10	-608	0.965	468	1.015	625	1.215	1020
18	12	-609	0.990	533	1.040	692	1.261	1089
18	16	-645	1.093	661	1.143	843	1.338	1325
18	18	-641	1.230	776	1.280	973	1.488	1216
18	24	-646	1.442	958	1.492	1194	1.758	1564
16	1	-610	0.356	68	0.406	165	0.560	166
16	2	-611	0.584	190	0.634	282	0.787	501
16	3	-612	0.630	220	0.680	320	0.875	558
16	4	-613	0.648	248	0.698	346	0.893	671
16	5	-614	0.715	299	0.765	420	0.932	541
16	7	-615	0.810	365	0.860	494	1.034	638
16	8	-616	0.885	448	0.935	589	1.114	724
16	10	-617	1.030	763	1.080	736	1.289	1222
16	12	-618	1.065	631	1.115	808	1.310	1014
16	16	-619	1.175	806	1.225	1049	1.396	1237
16	18	-626	1.259	901	1.309	1112	1.504	1317
16	20	-688	1.315	1011	1.365	1222	1.582	1461
16	24	-699	1.472	1120	1.522	1361	1.755	1685
14	1	-620	0.386	87	0.436	149	0.589	193
14	2	-621	0.634	264	0.684	365	0.879	543
14	3	-622	0.670	348	0.720	375	0.811	448
14	4	-623	0.736	324	0.786	440	0.991	799
14	5	-624	0.772	392	0.822	515	1.031	678
14	7	-625	0.929	528	0.979	676	1.187	866
14	8	-630	0.956	548	1.006	736	1.180	911
14	10	-627	1.117	706	1.167	886	1.350	1077
14	12	-628	1.205	851	1.255	1037	1.450	1275

Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

## VALUES:

### #18 Pairs

Capacitance (nF/1000 feet) = 28  
 Inductance (mH/1000) = 0.22  
 Resistance (Ohms/1000 feet) = 7.21 (@ 20°C)

### #16 Pairs

Capacitance (nF/1000 feet) = 32  
 Inductance (mH/1000) = 0.20  
 Resistance (Ohms/1000 feet) = 4.52 (@ 20°C)

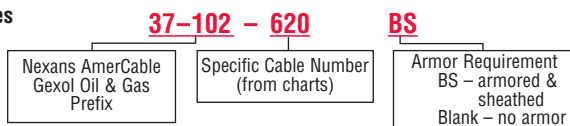
### #14 Pairs

Capacitance (nF/1000 feet) = 37  
 Inductance (mH/1000) = 0.19  
 Resistance (Ohms/1000 feet) = 2.85 (@ 20°C)

### Ordering Gexol Oil & Gas Cables

Example:

- Instrumentation cable
- 0.6/1kV
- #14 AWG
- bronze armored & sheathed



See page 29 for Stranding Profile



# Shielded Triads Instrumentation Cable – Gexol® Insulated

Extremely Flexible • Individually Shielded Triads • 0.6/1kV • Rated 110°C

### Insulation

GEXOL® cross-linked, flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.

### Conductor

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

### Triads

Each triad is twisted with a bare tinned drain wire. Each triad is shielded with polyester-backed aluminum foil tape to afford 100% coverage. Triad to triad isolation plus overall shielding is provided.

**Triad Color code:**  
Black-White-Red

### Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

### Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

### Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.



Cable available with blue jacket or stripe to signify intrinsically safe circuit.

## Application

Designed and constructed for the demanding environments of offshore drilling and petroleum facilities located throughout the world.

## Features

- High strand count conductors make this product much more flexible, easier to install and more resistant to vibration than Type MC, IEC spec or commercial cables.
- Gexol's lower dielectric constant and higher insulation resistance reduces electrical losses.
- Gexol's excellent resistance to moisture produces stable electrical properties throughout the life of the cable.
- In a fire condition, Gexol's nonchlorinated flame retardant system produces less toxic and less corrosive gases.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1, and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze or tinned copper.

## Ratings & Approvals (Other certifications pending)

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE 95/1696, FAL
- UL Listed as Marine Shipboard Cable (E111461)
- United States Coast Guard November 2, 1987 / 9304
- CSA listed as Marine Shipboard Cable

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2

# Flexible Instrumentation Cable – Individually Shielded Triads

Size AWG	Number of Triads	Part No. 37-102	Unarmored		Armored (B)		Armored and Sheath (BS)	
			Nominal Diameter (inches)	Weight (lbs/MFt.)	Nominal Diameter (inches)	Weight (lbs/MFt.)	Nominal Diameter (inches)	Weight (lbs/MFt.)
18	1	-647	0.354	69	0.404	160	0.557	167
18	2	-681	0.649	204	0.702	303	0.876	430
18	3	-648	0.703	236	0.753	345	0.927	477
18	4	-682	0.775	316	0.825	398	0.975	594
18	5	-649	0.889	353	0.939	497	1.113	658
18	7	-650	0.957	461	1.007	614	1.202	785
18	8	-683	1.025	589	1.075	735	1.140	900
18	12	-640	1.221	792	1.271	990	1.642	1195
16	1	-668	0.376	81	0.426	206	0.579	265
16	3	-669	0.760	366	0.810	411	1.018	571
16	4	-698	0.820	410	0.870	457	1.001	646
16	6	-676	0.950	628	1.000	791	1.198	1024
16	7	-670	1.029	524	1.079	688	1.248	1026
16	8	-677	1.108	684	1.158	793	1.312	1101

See page 29 for Stranding Profile

Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

**VALUES:**

**#18 Triads**

Capacitance – (nF/1000 feet) = 28

Inductance – (mH/1000) = 0.22

Resistance – (Ohms/1000 feet) = 7.21 (@ 20°C)

**#16 Triads**

Capacitance – (nF/1000 feet) = 32

Inductance – (mH/1000) = 0.20

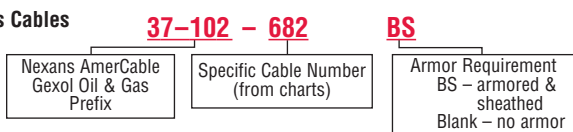
Resistance – (Ohms/1000 feet) = 4.52 (@ 20°C)



### Ordering Gexol Oil & Gas Cables

Example:

- Instrumentation cable
- 0.6/1kV
- #18 AWG
- bronze armored & sheathed



GEXOL® is a registered trademark of AmerCable Incorporated.

# Standard VFD Power Cable

## Gexol® Insulated

Three Conductor • 2kV • Rated 110°C

### Power Conductors (x3)

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

### Insulation (2kV)

Gexol® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245.  
Color: Gray with printed phase I.D. (Black-White-Red)

### Jacket

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

### Armor (Optional)

Tinned copper basket weave wire armor per IEEE 1580 and UL 1309/CSA 245.

### Ground Conductors (x3)

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.  
Gexol® insulated and sized per UL 1277.  
Color: Green

### Shield

Overall tinned copper braid plus aluminum/polyester tape providing 100% coverage.

### Sheath (Optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.



**Note:** For armored versions the braid is placed between the inner jacket and outer sheath where it serves as both the EMI shield and armor.

## Ratings & Approvals

- 110°C Temperature Rating
- American Bureau of Shipping (ABS)
- Transport Canada
- Det Norske Veritas (DNV)
- Lloyd's Register of Shipping (LRS)
- NVE: 95/1696, FAL
- UL Listed as Marine Shipboard Cable: (E111461)
- Unarmored Cable is UL Listed as Type TC (E123629)
- United States Coast Guard: November 2, 1987 / 9304

*Other certifications pending*

## Application

A flexible, braid and foil shielded, 2kV power cable specifically engineered for use in variable frequency AC motor drive (VFD) applications.

## Features

- Specially engineered cable design produces a longer cable life in VFD applications.
- Overall braid plus foil shield is engineered with 100% coverage and a surface transfer impedance <50 milliohms at 10MHz to contain EMI.
- Symmetrical insulated ground conductors reduce induced voltage imbalances and carry common mode noise back to the drive.
- High strand count conductors and braid shield design is much more flexible, easier to install and more resistant to vibration than Type MC cable.
- Gexol's lower dielectric constant (standard XLPEs, EPRs and other Type P insulation materials have higher dielectric constants) reduces reflected wave peak voltage magnitudes. This allows for longer output cable distances and minimizes the effect of high frequency noise induced into the plant ground system.
- 2kV insulation thickness is used to resist the potential 2-3x reflected voltages experienced in 600V VFD applications.
- Dual certified IEEE 1580 Type P and UL 1309/CSA 245 Type X110.
- Highest ampacity ratings: ABS 100°C, DNV 95°C, LRS 95°C, Transport Canada 95°C.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1 and Zone 1 environments (armored and sheathed).
- Optional braid armor of bronze, aluminum or tinned copper.



# Gexol® Flexible VFD Power Cable

Size AWG/ kcmil	mm <sup>2</sup>	Unarmored			Armored & Sheathed (TS)			DC Resist. at 25°C Ohms/ 1000 Ft.	AC Resist. at 90°C, 60 Hz Ohms/ 1000 Ft.	Inductive Reactance Ohms/ 1000 Ft.	Voltage Drop at 90°C Volts/Amp/ 1000 Ft.	Grounding Conductor** Size (AWG)	Ampacity			
		Part No. 37-102	Nominal Diameter Inches*	Weight Lbs./ 1000 Ft.	Part No. 37-102	Nominal Diameter Inches*	Weight Lbs./ 1000 Ft.						110°C	100°C	90°C	75°C
14	2.1	-508VFD	0.630	194	-508TSVFD	0.772	356	2.907	3.859	0.040	5.383	18	27	25	24	20
12	3.3	-516VFD	0.675	224	-516TSVFD	0.795	401	1.826	2.424	0.038	3.394	18	33	31	29	24
10	5.2	-308VFD	0.750	308	-308TSVFD	0.918	518	1.153	1.530	0.036	2.155	14	44	41	38	32
8	7.6	-309VFD	0.815	463	-309TSVFD	1.000	734	0.708	0.940	0.037	1.339	12	56	52	48	41
6	12.5	-310VFD	0.910	570	-310TSVFD	1.110	865	0.445	0.590	0.033	0.852	12	75	70	65	54
4	21	-312VFD	1.100	925	-312TSVFD	1.262	1138	0.300	0.399	0.031	0.584	10	99	92	83	70
2	34	-314VFD	1.235	1421	-314TSVFD	1.392	1512	0.184	0.244	0.029	0.368	10	131	122	111	93
1	43	-315VFD	1.340	1517	-315TSVFD	1.509	1851	0.147	0.195	0.029	0.301	10	153	143	131	110
1/0	54	-316VFD	1.450	1803	-316TSVFD	1.615	2136	0.117	0.156	0.029	0.246	10	176	164	150	126
2/0	70	-317VFD	1.580	2120	-317TSVFD	1.792	2660	0.093	0.125	0.028	0.202	8	201	188	173	145
3/0	86	-318VFD	1.750	2827	-318TSVFD	1.959	3269	0.074	0.100	0.028	0.167	6	234	218	200	168
4/0	109	-319VFD	1.900	3416	-319TSVFD	2.101	3864	0.058	0.080	0.027	0.139	6	270	252	232	194
262	132	-320VFD	2.130	4210	-320TSVFD	2.258	4661	0.048	0.067	0.027	0.120	6	315	294	273	228
313	159	-321VFD	2.275	5105	-321TSVFD	2.353	5325	0.040	0.056	0.026	0.105	6	344	321	298	249
373	189	-322VFD	2.130	5521	-322TSVFD	2.483	6674	0.034	0.047	0.025	0.092	6	387	361	332	277
444	227	-323VFD	2.425	6440	-323TSVFD	2.634	6994	0.028	0.041	0.025	0.083	4	440	411	382	319
535	273	-324VFD	2.643	7547	-324TSVFD	2.931	8477	0.024	0.035	0.026	0.075	4	498	443	407	340
646	326	-326VFD	2.920	8916	-326TSVFD	3.178	9888	0.020	0.030	0.026	0.068	4	553	516	474	396
777	394	-327VFD	3.102	10909	-327TSVFD	3.510	11803	0.016	0.026	0.025	0.062	4	602	562	516	431

\*Cable diameters are subject to a +/- 5% manufacturing tolerance

\*\*3 Grounding Conductors – Green Insulated

*See page 29 for  
Stranding Profile*



## Standard VFD Cable Ampacity Ratings

Based on IEEE Std. 45 with a 45°C ambient and arranged in a single bank per hanger. For those instances where cable must be double banked, the ampacities should be multiplied by 0.8.

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# Type MMV Medium Power Cable

Single Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C

Multi-Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C

**Conductors**

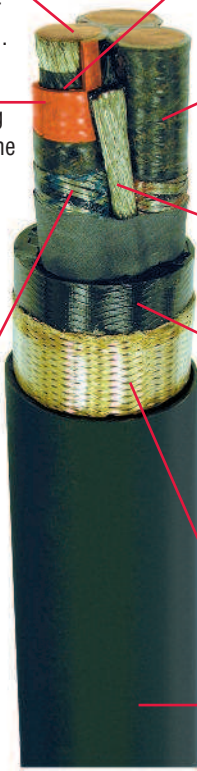
Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

**Insulation**

Extruded thermosetting 90°C Ethylene Propylene Rubber (EPR), meeting UL 1309 (Type E), IEEE 1580 (Type E) and UL 1072.

**Metallic Shield**

Composite shield consisting of 0.0126" tinned copper braided with nylon providing 60% copper Shielded coverage meeting UL 1309, IEEE Std. 1580 and UL 1072. The nylon is colored for easy phase identification (three conductor = black, blue, red) without the need to remove the shield to find an underlying colored tape.



**Conductor Shield**

A combination of semi-conducting tape and extruded thermosetting semi-conducting material meeting UL 1309, IEEE 1580 and UL1072.

**Insulation Shield**

Semi-conducting tape, with overlap, for fast and easy termination meeting UL 1309, IEEE 1580 and UL 1072.

**Grounding Conductor (optional)**

One uninsulated soft annealed flexible stranded tinned copper conductor per ASTM B 33 and sized according to Table 21.1 of UL 1072.

**Jacket**

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309, IEEE 1580 and UL 1072. Colored jackets for signifying different voltage levels are also available on special request (ie. yellow = 5kV, orange = 8kV and red = 15kV).

**Armor (optional)**

(Optional) 0.0126" bronze braid providing 88% minimum coverage meeting UL 1309 and IEEE Std. 45-1998.

**Sheath (optional)**

A black, arctic grade, flame retardant, oil, abrasion, chemical, and sunlight resistant thermosetting compound meeting UL 1309, IEEE 1580 and UL 1072. Colored jackets for signifying different voltage levels is also available on special request (ie. yellow = 5kV, orange = 8kV and red = 15kV).

## Applications

Nexans AmerCable's Type MMV marine medium voltage cables are for use aboard commercial ships, mobile offshore drilling units (MODUs), and fixed or floating offshore facilities.

## Features

- These cables utilize flexible stranded conductors, braided shields and a braided armor (when armored) which make them very suitable for applications involving repeated flexing and high vibration.
- These cables have a small minimum bending radius (6xOD for unarmored cables and 8xOD for armored cables) for easy installation.
- Optional uninsulated grounding conductors sized per UL 1072.
- The increased flexibility of this cable allows for termination of one end and coiling on multiple module offshore platforms. Then coiling and terminating other end when modules are mated at sea thereby reducing installation time.
- Passes IEC 332-3 Category A and IEEE 1202 flame tests.

## Ratings & Approvals

- UL Listed as Marine Shipboard Cable (E111461)
- American Bureau of Shipping (ABS)
- Det Norske Veritas (DNV) Pending
- Lloyd's Register of Shipping (LRS) Pending
- 90°C Temperature Rating
- Voltage Rating – 5kV to 15kV (25kV available on request)

Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2

### Single Conductor Type MMV Marine Medium Voltage – 5kV, 100/133% Insulation Level

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored				Armored & Sheathed (BS)				Ampacity			DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60 Hz (ohms/1000 ft.)
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	In Free Air (amps)	Triangular Configuration (amps)	Single Banked in Tray (amps)		
8	7.6	-101	0.587	205	0.054	1.282	0.803	398	0.061	1.288	80	69	68	0.694	0.885
6	12.5	-102	0.641	260	0.050	0.822	0.900	502	0.058	0.830	107	92	91	0.436	0.556
4	21	-103	0.723	349	0.044	0.566	0.981	620	0.051	0.573	141	121	120	0.286	0.376
2	34	-104	0.790	456	0.041	0.361	1.049	745	0.047	0.367	186	159	158	0.175	0.230
1	43	-105	0.824	522	0.040	0.296	1.082	826	0.047	0.303	214	184	182	0.140	0.184
1/0	54	-106	0.915	645	0.039	0.245	1.160	970	0.045	0.250	247	212	210	0.111	0.147
2/0	70	-107	0.991	797	0.038	0.202	1.240	1171	0.043	0.207	285	244	242	0.089	0.117
3/0	86	-108	1.020	884	0.037	0.278	1.280	1254	0.042	0.173	328	281	279	0.070	0.094
4/0	109	-109	1.087	1053	0.035	0.141	1.332	1414	0.040	0.146	381	325	324	0.056	0.075
262	132	-110	1.167	1266	0.034	0.122	1.391	1645	0.038	0.127	435	371	370	0.046	0.063
313	159	-111	1.210	1293	0.033	0.108	1.469	1725	0.037	0.112	486	413	413	0.038	0.053
373	189	-112	1.310	1683	0.032	0.095	1.555	2138	0.036	0.099	544	460	462	0.032	0.045
444	227	-113	1.369	1935	0.032	0.086	1.614	2407	0.035	0.090	606	510	515	0.027	0.039
535	273	-114	1.436	2223	0.031	0.077	1.753	2826	0.035	0.082	682	570	580	0.022	0.033
646	326	-115	1.535	2598	0.030	0.070	1.852	3236	0.034	0.075	767	635	652	0.019	0.028
777	394	-116	1.632	3066	0.030	0.065	1.935	3728	0.033	0.069	865	709	735	0.015	0.025

### Single Conductor Type MMV Marine Medium Voltage – 8kV, 100% Insulation Level

See page 28  
for MMV  
Stranding Profile

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored				Armored & Sheathed (BS)				Ampacity			DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60 Hz (ohms/1000 ft.)
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	In Free Air (amps)	Triangular Configuration (amps)	Single Banked in Tray (amps)		
6	12.5	-118	0.687	287	0.052	0.824	0.946	545	0.059	0.831	107	92	91	0.436	0.556
4	21	-119	0.771	392	0.046	0.567	1.030	667	0.052	0.574	141	121	120	0.286	0.376
2	34	-120	0.874	517	0.043	0.362	1.119	829	0.048	0.368	186	159	158	0.175	0.230
1	43	-121	0.919	594	0.042	0.298	1.164	919	0.047	0.304	214	184	182	0.140	0.184
1/0	54	-122	0.975	693	0.041	0.246	1.233	1047	0.046	0.251	247	212	210	0.111	0.147
2/0	70	-123	1.020	809	0.039	0.203	1.278	1178	0.044	0.208	285	244	242	0.089	0.117
3/0	86	-124	1.069	928	0.038	0.169	1.328	1314	0.043	0.174	328	281	279	0.070	0.094
4/0	109	-125	1.170	1128	0.036	0.142	1.429	1559	0.041	0.147	381	325	324	0.056	0.075
262	132	-126	1.213	1282	0.035	0.123	1.471	1714	0.039	0.128	435	371	370	0.046	0.063
313	159	-127	1.283	1495	0.034	0.109	1.528	1938	0.038	0.113	486	413	413	0.038	0.053
373	189	-128	1.338	1705	0.033	0.096	1.596	2185	0.037	0.100	544	460	462	0.032	0.045
444	227	-129	1.411	1977	0.033	0.087	1.656	2465	0.036	0.091	606	510	515	0.027	0.039
535	273	-130	1.492	2298	0.032	0.078	1.809	2926	0.036	0.082	682	570	580	0.022	0.033
646	326	-131	1.583	2691	0.031	0.071	1.887	3334	0.035	0.075	767	635	652	0.019	0.028
777	394	-132	1.748	3246	0.030	0.066	2.065	3970	0.034	0.070	865	709	735	0.015	0.025



# Type MMV Medium Voltage Cable

Single Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C  
 Multi-Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C

## Single Conductor Type MMV Marine Medium Voltage – 8kV, 133% Insulation Level

Size AWG/ kcmil	mm2	Part No. 37-105	Unarmored				Armored & Sheathed (BS)				Ampacity			DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60 Hz (ohms/1000 ft.)
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	In Free Air (amps)	Triangular Configuration (amps)	Single Banked in Tray (amps)		
6	12.5	-134	0.739	321	0.054	0.826	0.997	595	0.060	0.832	107	92	91	0.436	0.556
4	21	-135	0.823	419	0.047	0.569	1.081	722	0.053	0.575	141	121	120	0.286	0.376
2	34	-136	0.932	570	0.045	0.365	1.191	910	0.050	0.370	186	159	158	0.175	0.230
1	43	-137	0.971	636	0.044	0.300	1.229	989	0.049	0.305	214	184	182	0.140	0.184
1/0	54	-138	1.017	725	0.042	0.247	1.262	1062	0.047	0.252	247	212	210	0.111	0.147
2/0	70	-139	1.073	856	0.040	0.204	1.332	1243	0.045	0.209	285	244	242	0.089	0.117
3/0	86	-140	1.146	992	0.039	0.171	1.404	1406	0.044	0.175	328	281	279	0.070	0.094
4/0	109	-141	1.191	1157	0.038	0.143	1.445	1580	0.042	0.148	381	325	324	0.056	0.075
262	132	-142	1.265	1334	0.036	0.124	1.518	1525	0.040	0.129	435	371	370	0.046	0.063
313	159	-143	1.335	1554	0.035	0.110	1.580	2065	0.039	0.114	486	413	413	0.038	0.053
373	189	-144	1.392	1768	0.034	0.097	1.651	2266	0.038	0.101	544	460	462	0.032	0.045
444	227	-145	1.461	2040	0.033	0.088	1.778	2906	0.038	0.093	606	510	515	0.027	0.039
535	273	-146	1.589	2418	0.032	0.078	1.892	3063	0.036	0.083	682	570	580	0.022	0.033
646	326	-147	1.645	2676	0.032	0.072	1.962	3364	0.036	0.076	767	635	652	0.019	0.028
777	394	-148	1.790	3298	0.032	0.067	2.107	4035	0.036	0.071	865	709	735	0.015	0.025

## Single Conductor Type MMV Marine Medium Voltage – 15kV, 100% Insulation Level

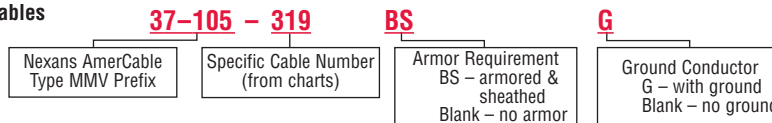
See page 28  
for MMV  
Stranding Profile

Size AWG/ kcmil	mm2	Part No. 37-105	Unarmored				Armored & Sheathed (BS)				Ampacity			DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60 Hz (ohms/1000 ft.)
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	In Free Air (amps)	Triangular Configuration (amps)	Single Banked in Tray (amps)		
2	34	-150	1.004	627	0.049	0.369	1.262	990	0.053	0.373	186	164	158	0.175	0.230
1	43	-151	1.046	705	0.047	0.303	1.304	1082	0.051	0.308	214	189	182	0.140	0.184
1/0	54	-152	1.093	815	0.045	0.251	1.351	1210	0.049	0.255	247	217	210	0.111	0.147
2/0	70	-153	1.143	925	0.044	0.208	1.402	1334	0.047	0.212	284	250	241	0.089	0.117
3/0	86	-154	1.192	1050	0.042	0.174	1.451	1478	0.046	0.178	327	288	278	0.070	0.094
4/0	109	-155	1.259	1233	0.040	0.146	1.517	1685	0.044	0.150	378	332	321	0.056	0.075
262	132	-156	1.353	1443	0.039	0.128	1.598	1909	0.042	0.131	431	377	366	0.046	0.063
313	159	-157	1.400	1628	0.038	0.113	1.658	2124	0.042	0.117	481	418	409	0.038	0.053
373	189	-158	1.453	1864	0.037	0.100	1.771	2471	0.041	0.104	536	464	456	0.032	0.045
444	227	-159	1.533	2153	0.036	0.091	1.837	2774	0.040	0.095	598	514	508	0.027	0.039
535	273	-160	1.647	2508	0.036	0.082	1.964	3189	0.039	0.086	672	574	571	0.022	0.033
646	326	-161	1.740	2825	0.035	0.075	2.043	3525	0.038	0.079	754	638	641	0.019	0.028
777	394	-162	1.880	3475	0.034	0.070	2.197	4243	0.037	0.073	848	709	721	0.015	0.025

### Ordering Type MMV Medium Voltage Cables

Example:

- 3 conductor power cable
- 8kV 100%
- #2 AWG
- ground
- bronze armored & sheathed



### Single Conductor Type MMV Marine Medium Voltage – 15kV, 133% Insulation Level

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored				Armored & Sheathed (BS)				Ampacity			DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60 Hz (ohms/1000 ft.)
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts/amp/ 1000 ft.)	In Free Air (amps)	Triangular Configuration (amps)	Single Banked in Tray (amps)		
2	34	-164	1.089	701	0.050	0.370	1.347	1095	0.055	0.375	186	164	158	0.175	0.230
1	43	-165	1.125	779	0.049	0.305	1.384	1185	0.053	0.309	214	189	182	0.140	0.184
1/0	54	-166	1.178	886	0.047	0.252	1.437	1312	0.051	0.256	247	217	210	0.111	0.147
2/0	70	-167	1.230	1022	0.045	0.209	1.488	1463	0.049	0.213	284	250	241	0.089	0.117
3/0	86	-168	1.291	1162	0.044	0.176	1.536	1614	0.047	0.179	327	288	278	0.070	0.094
4/0	109	-169	1.357	1340	0.042	0.148	1.616	1818	0.046	0.151	378	332	321	0.056	0.075
262	132	-170	1.434	1535	0.040	0.129	1.751	2132	0.044	0.133	431	377	366	0.046	0.063
313	159	-171	1.490	1743	0.039	0.114	1.807	2361	0.043	0.118	481	418	409	0.038	0.053
373	189	-172	1.543	1960	0.038	0.101	1.860	2599	0.042	0.105	536	464	456	0.032	0.045
444	227	-173	1.615	2250	0.038	0.093	1.932	2916	0.041	0.096	598	514	508	0.027	0.039
535	273	-174	1.755	2675	0.037	0.084	2.072	3398	0.040	0.087	672	574	571	0.022	0.033
646	326	-175	1.847	3068	0.036	0.077	2.164	3816	0.039	0.080	754	638	641	0.019	0.028
777	394	-176	1.969	3608	0.035	0.071	2.286	4410	0.038	0.074	848	709	721	0.015	0.025

See page 28  
for MMV  
Stranding Profile

### Three Conductor Type MMV Marine Medium Voltage – 5kV, 100/133% Insulation Level

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored		Armored & Sheathed (BS)		Ampacity		DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts per amp per 1000 ft.)	Optional Grounding Conductor
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	In Free Air (amps)	Single Banked in Trays (amps)					
8	7.6	-301	1.176	722	1.434	1356	66	56	0.708	0.885	0.048	1.275	8
6	12.5	-302	1.294	918	1.539	1371	88	75	0.445	0.556	0.044	0.815	6
4	21	-303	1.469	1252	1.773	1847	116	99	0.300	0.376	0.039	0.560	6
2	34	-304	1.615	1620	1.935	2299	152	129	0.184	0.230	0.036	0.356	6
1	43	-305	1.746	1942	2.045	2646	175	149	0.147	0.184	0.035	0.291	4
1/0	54	-306	1.845	2257	2.149	2994	201	171	0.117	0.147	0.034	0.239	4
2/0	70	-307	1.996	2744	2.300	3540	232	197	0.093	0.117	0.033	0.196	4
3/0	86	-308	2.081	3110	2.398	3966	266	226	0.074	0.094	0.032	0.163	3
4/0	109	-309	2.222	3714	2.539	4614	306	260	0.058	0.075	0.031	0.136	3
262	132	-310	2.410	4486	2.789	5614	348	296	0.048	0.063	0.030	0.118	3
313	159	-311	2.488	4599	2.867	5760	386	328	0.040	0.053	0.029	0.104	2
373	189	-312	2.659	5825	3.038	7061	429	365	0.034	0.045	0.029	0.092	2
444	227	-313	2.892	6946	3.270	8297	455	387	0.028	0.039	0.028	0.083	1
535	273	-314	3.036	7961	4.415	9317	528	449	0.024	0.033	0.028	0.074	1
646	326	-315	3.249	9274	3.627	10789	584	496	0.020	0.028	0.027	0.067	1
777	394	-316	3.458	10902	3.823	12471	647	550	0.016	0.025	0.027	0.062	1/0

# Type MMV Medium Voltage Cable

Single Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C  
 Multi-Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C

## Three Conductor Type MMV Marine Medium Voltage – 8kV, 100% Insulation Level

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored		Armored & Sheathed (BS)		Ampacity		DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts per amp per 1000 ft.)	Optional Grounding Conductor
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	In Free Air (amps)	Single Banked in Trays (amps)					
6	12.5	-317	1.383	1036	1.651	1534	88	75	0.445	0.556	0.046	0.818	6
4	21	-318	1.574	1378	1.891	2035	116	99	0.300	0.376	0.041	0.562	6
2	34	-319	1.763	1840	2.080	2563	152	129	0.184	0.230	0.038	0.357	6
1	43	-320	1.861	2119	2.178	2883	175	149	0.147	0.184	0.037	0.293	4
1/0	54	-321	1.960	2442	2.277	3242	201	171	0.117	0.147	0.036	0.241	4
2/0	70	-322	2.077	2880	2.394	3729	232	197	0.093	0.117	0.034	0.198	4
3/0	86	-323	2.184	3301	2.501	4192	266	226	0.074	0.094	0.033	0.165	3
4/0	109	-324	2.337	3943	2.654	4889	306	260	0.058	0.075	0.032	0.138	3
262	132	-325	2.493	4568	2.872	5731	348	296	0.048	0.063	0.031	0.119	3
313	159	-326	2.645	5318	3.010	6525	386	328	0.040	0.053	0.030	0.105	2
373	189	-327	2.824	6195	3.203	7510	429	365	0.034	0.045	0.030	0.093	2
444	227	-328	2.981	7150	3.360	8527	455	387	0.028	0.039	0.029	0.084	1
535	273	-329	3.156	8278	3.521	9715	528	449	0.024	0.033	0.029	0.075	1
646	326	-330	3.354	9660	3.732	11206	584	496	0.020	0.028	0.028	0.068	1
777	394	-331	3.583	11307	3.962	12971	647	550	0.016	0.025	0.028	0.063	1/0

## Three Conductor Type MMV Marine Medium Voltage – 8kV, 133% Insulation Level

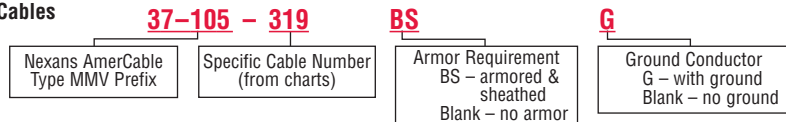
See page 28  
for MMV  
Stranding Profile

Size AWG/ kcmil	mm <sup>2</sup>	Part No. 37-105	Unarmored		Armored & Sheathed (BS)		Ampacity		DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts per amp per 1000 ft.)	Optional Grounding Conductor
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	In Free Air (amps)	Single Banked in Trays (amps)					
6	12.5	-332	1.504	1166	1.821	1796	88	75	0.445	0.556	0.048	0.820	6
4	21	-333	1.743	1629	2.060	2347	116	99	0.300	0.376	0.043	0.564	6
2	34	-334	1.889	2075	2.206	2854	152	129	0.184	0.230	0.040	0.359	6
1	43	-335	1.972	2301	2.289	3110	175	149	0.147	0.184	0.038	0.294	4
1/0	54	-336	2.071	2636	2.375	3464	201	171	0.117	0.147	0.037	0.242	4
2/0	70	-337	2.192	3088	2.509	3982	232	197	0.093	0.117	0.036	0.199	4
3/0	86	-338	2.303	3524	2.606	4442	266	226	0.074	0.094	0.035	0.166	3
4/0	109	-339	2.447	4169	2.812	5295	306	260	0.058	0.075	0.033	0.139	3
262	132	-340	2.620	4854	2.987	6055	348	296	0.048	0.063	0.032	0.121	3
313	159	-341	2.819	5736	3.198	7012	386	328	0.040	0.053	0.032	0.106	2
373	189	-342	2.942	6502	3.286	7804	429	365	0.034	0.045	0.031	0.094	2
444	227	-343	3.090	7436	3.469	8863	455	387	0.028	0.039	0.030	0.085	1
535	273	-344	3.365	8869	3.744	10418	528	449	0.024	0.033	0.030	0.076	1
646	326	-345	3.486	9753	3.864	11361	584	496	0.020	0.028	0.029	0.069	1

### Ordering Type MMV Medium Voltage Cables

Example:

- 3 conductor power cable
- 8kV 100%
- #2 AWG
- ground
- bronze armored & sheathed





### Three Conductor Type MMV Marine Medium Voltage – 15kV, 100% Insulation Level

Size AWG/ kcmil	mm2	Part No. 37-105	Unarmored		Armored & Sheathed (BS)		Ampacity		DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts per amp per 1000 ft.)	Optional Grounding Conductor
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	In Free Air (amps)	Single Banked in Trays (amps)					
2	34	-346	2.043	2314	2.360	3147	156	133	0.184	0.230	0.042	0.361	6
1	43	-347	2.133	2599	2.450	3469	178	151	0.147	0.184	0.040	0.296	4
1/0	54	-348	2.235	2992	2.552	3904	205	174	0.117	0.147	0.039	0.244	4
2/0	70	-349	2.343	3392	2.660	4339	234	199	0.093	0.117	0.037	0.201	4
3/0	86	-350	2.449	3838	2.828	4988	269	229	0.074	0.094	0.036	0.168	3
4/0	109	-351	2.592	4490	2.971	5708	309	263	0.058	0.075	0.035	0.141	3
262	132	-352	2.831	5449	3.210	6765	352	299	0.048	0.063	0.034	0.122	3
313	159	-353	2.958	6078	3.337	7448	389	331	0.040	0.053	0.033	0.107	2
373	189	-354	3.074	6892	3.453	8314	432	367	0.034	0.045	0.032	0.095	2
444	227	-355	3.245	7928	3.624	9442	456	388	0.028	0.039	0.031	0.086	1
535	273	-356	3.491	9248	3.869	10858	528	449	0.024	0.033	0.031	0.077	1

### Three Conductor Type MMV Marine Medium Voltage – 15kV, 133% Insulation Level

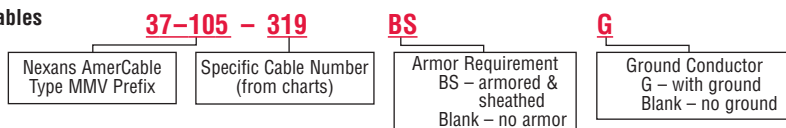
See page 28  
for MMV  
Stranding Profile

Size AWG/ kcmil	mm2	Part No. 37-105	Unarmored		Armored & Sheathed (BS)		Ampacity		DC Resistance at 25°C (ohms/1000 ft.)	AC Resistance at 90°C, 60Hz (ohms/1000 ft.)	Inductive Reactance (ohms/ 1000 ft.)	Voltage Drop (Volts per amp per 1000 ft.)	Optional Grounding Conductor
			Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	Nominal Diameter (inches)	Weight (Lbs./ 1000 ft.)	In Free Air (amps)	Single Banked in Trays (amps)					
2	34	-357	2.226	2655	2.543	3556	156	133	0.184	0.230	0.044	0.364	6
1	43	-358	2.304	2927	2.621	3866	178	151	0.147	0.184	0.043	0.299	4
1/0	54	-359	2.419	3324	2.798	4454	205	174	0.117	0.147	0.041	0.246	4
2/0	70	-360	2.529	3809	2.908	4995	234	199	0.093	0.117	0.039	0.203	4
3/0	86	-361	2.663	4329	3.041	5566	269	229	0.074	0.094	0.038	0.170	3
4/0	109	-362	2.867	5131	3.245	6458	309	263	0.058	0.075	0.037	0.142	3
262	132	-363	3.033	5863	3.411	7273	352	299	0.048	0.063	0.035	0.124	3
313	159	-364	3.153	6602	3.532	8067	389	331	0.040	0.053	0.034	0.109	2
373	189	-365	3.267	7367	3.646	8888	432	367	0.034	0.045	0.034	0.097	2
444	227	-366	3.423	8400	3.801	9991	456	388	0.028	0.039	0.033	0.088	1
535	273	-367	3.598	9594	3.976	11262	528	449	0.024	0.033	0.033	0.079	1

#### Ordering Type MMV Medium Voltage Cables

Example:

- 3 conductor power cable
- 8kV 100%
- #2 AWG
- ground
- bronze armored & sheathed



37-105VFD

# Type MMV-VFD Power Cable

Three Conductor: 8kV – 15kV • 133% Insulation Level • Rated 90°C

## Conductors (3)

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

## Insulation

Extruded thermosetting 90°C Ethylene Propylene Rubber (EPR), meeting UL 1309 (Type E), IEEE 1580 (Type E) and UL 1072.

## Insulation Shield

Composite shield consisting of 0.0126" tinned copper braided with nylon providing 60% copper shielded coverage meeting UL 1309, IEEE Std. 1580, and UL 1072. The nylon is colored for easy phase identification (three conductor = black, blue, red) without the need to remove the shield to find an underlying colored tape.

**Low smoke  
halogen-free  
jacket  
available  
on request.**

## Conductor Shield

A combination of semi-conducting tape and extruded thermosetting semi-conducting material meeting UL 1309, IEEE 1580 and UL1072.

## Insulation Shield

Semi-conducting layer meeting UL 1309, IEEE 1580 and UL 1072.

## Symmetrical Insulated Grounding Conductors (3)

Soft annealed flexible stranded tinned copper conductor per IEEE 1580 Table 11. Gexol Insulation sized per Table 23.2 of UL1072. Color: Green

## Jacket

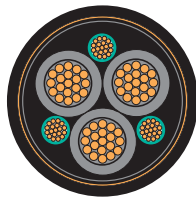
A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245, IEEE 1580, and UL 1072. This jacket allows for isolation between the insulation shields and overall shield. Shields can then be terminated on opposite ends to minimize circulating currents.

## Armor/EMI Shield

Overall tinned copper braid plus aluminum/polyester tape provides 100% coverage. This braid serves as both an armor and EMI shield meeting both IEEE 1580 and UL 1307/CSA 245.

## Sheath (optional)

A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245, IEEE 1580, and UL 1072. Colored jackets for signifying different voltage levels are also available on special request (orange = 8kV and red = 15kV).



## Applications

A flexible, braid and foil shielded, power cable specifically engineered for use in medium voltage variable frequency AC drive (VFD) applications.

## Features

- Flexible stranded conductors and braided shields. Suitable for applications involving repeated flexing and high vibration.
- Small minimum bending radius (8x OD) for easy installation.
- Insulation has a very low dielectric constant. This allows for longer output cable distances and minimizes common mode current.
- Overall braid plus foil shield is engineered with 100% coverage and a surface transfer impedance <50 milliohms at 10MHz to contain EMI.
- Symmetrical insulated ground conductors reduce induced voltage imbalances and carry common mode noise back to the drive.
- High strand count conductors and braid shield design is much more flexible, easier to install and more resistant to vibration than Type MC cable.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Suitable for use in Class I, Division 1, and Zone 1 environments.

## Ratings & Approvals

- UL Listed as Marine Shipboard Cable (E111461)
- American Bureau of Shipping (ABS)
- Det Norske Veritas (DNV) Pending
- Lloyd's Register of Shipping (LRS) Pending
- 90°C Temperature Rating
- Voltage Rating – 8kV to 15kV (25kV available on request)

## Three Conductor Type MMV-VFD Marine Medium Voltage 8kV • 133% Insulation Level

Size AWG/ kcmil	mm2	Part No. 37-105	Nominal Diameter (Inches)	Weight (Lbs./ 1000 Ft.)	Ampacity		DC Resistance at 25°C (Ohms/1000 Ft.)	AC Resistance at 90°C, 60Hz (Ohms/1000 Ft.)	Inductive Reactance (Ohms/ 1000 Ft.)	Voltage Drop (Volts/Amp/ 1000 Ft.)	Green Insulated Grounding Conductor (3x) Size (AWG)
					In Free Air (Amps)	Single Banked in Trays (Amps)					
6	12.5	-332TSVFD	1.815	1814	88	75	0.445	0.556	0.048	0.820	10
4	21	-333TSVFD	2.028	2391	116	99	0.300	0.376	0.043	0.564	10
2	34	-334TSVFD	2.174	2879	152	129	0.184	0.230	0.040	0.359	10
1	43	-335TSVFD	2.290	3387	175	149	0.147	0.184	0.038	0.294	8
1/0	54	-336TSVFD	2.356	3551	201	171	0.117	0.147	0.037	0.242	8
2/0	70	-337TSVFD	2.477	4053	232	197	0.093	0.117	0.036	0.199	8
3/0	86	-338TSVFD	2.588	4609	266	226	0.074	0.094	0.035	0.166	6
4/0	109	-339TSVFD	2.815	5393	306	260	0.058	0.075	0.033	0.139	6
262	132	-340TSVFD	2.968	6218	348	296	0.048	0.063	0.032	0.121	6
313	159	-341TSVFD	3.166	7126	386	328	0.040	0.053	0.032	0.106	6
373	189	-342TSVFD	3.289	8121	429	365	0.034	0.045	0.031	0.094	4
444	227	-343TSVFD	3.437	9035	455	387	0.028	0.039	0.030	0.085	4
535	273	-344TSVFD	3.735	10585	528	449	0.024	0.033	0.030	0.076	4

## Three Conductor Type MMV-VFD Marine Medium Voltage 15kV • 133% Insulation Level

Size AWG/ kcmil	mm2	Part No. 37-105	Nominal Diameter (Inches)	Weight (Lbs./ 1000 Ft.)	Ampacity		DC Resistance at 25°C (Ohms/1000 Ft.)	AC Resistance at 90°C, 60Hz (Ohms/1000 Ft.)	Inductive Reactance (Ohms/ 1000 Ft.)	Voltage Drop (Volts/Amp/ 1000 Ft.)	Green Insulated Grounding Conductor (3x) Size (AWG)
					In Free Air (Amps)	Single Banked in Trays (Amps)					
2	34	-357TSVFD	2.511	3591	156	133	0.184	0.230	0.044	0.364	10
1	43	-358TSVFD	2.589	3935	178	151	0.147	0.184	0.043	0.299	8
1/0	54	-359TSVFD	2.704	4368	205	174	0.117	0.147	0.041	0.246	8
2/0	70	-360TSVFD	2.876	5059	234	199	0.093	0.117	0.039	0.203	8
3/0	86	-361TSVFD	3.009	5704	269	229	0.074	0.094	0.038	0.170	6
4/0	109	-362TSVFD	3.213	6592	309	263	0.058	0.075	0.037	0.142	6
262	132	-363TSVFD	3.379	7404	352	299	0.048	0.063	0.035	0.124	6
313	159	-364TSVFD	3.500	8196	389	331	0.040	0.053	0.034	0.109	6
373	189	-365TSVFD	3.614	9135	432	367	0.034	0.045	0.034	0.097	4
444	227	-366TSVFD	3.769	10236	456	388	0.028	0.039	0.033	0.080	4

**Stranding Profile:  
See Page 28**

### Ordering Type MMV-VFD Medium Voltage Cables

**Example:**

- 3 conductor MMV-VFD power cable
- 15kV
- #2 AWG

**37-105 - 357TSVFD**

Nexans AmerCable  
Type MMV-VFD  
Prefix

Specific Cable  
Number (from charts)



# Type MMV Medium Voltage Cable

Single Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C  
Multi-Conductor: 5kV – 15kV, 100% & 133% Insulation Levels. Rated 90°C



## MMV Stranding Profile

Size AWG/kcmil	Number of Strands	Individual Strand Dia. (inches)	Closest IEEE 45 Std. Size	Equivalent Metric Size (mm <sup>2</sup> )	Uninsulated Conductor Dia. (inches)
8	37	0.0201	16	7.57	0.136
6	61	0.0201	26	12.49	0.175
4	133	0.0177	41	21.11	0.258
2	133	0.0223	66	33.51	0.324
1	209	0.0201	83	42.79	0.361
1/0	266	0.0201	106	54.45	0.407
2/0	342	0.0201	133	70.01	0.461
3/0	418	0.0201	168	85.57	0.510
4/0	532	0.0201	212	108.91	0.575
262	646	0.0201	262	132.25	0.654
313	777	0.0201	313	159.06	0.720
373	925	0.0201	373	189.36	0.785
444	1110	0.0201	444	227.23	0.860
535	1332	0.0201	535	272.68	0.941
646	1591	0.0201	646	325.70	1.029
777	1924	0.0201	777	393.87	1.132
1111	2745	0.0201	1111	561.94	1.354



### MMV Ampacities & Electrical Data

Ampacities are based on API RP 14F (June 1999) Table 4 or 5 for single conductor cables and Table 3 for multi-conductor cables. The notes to these tables are also applicable. Ampacities are also based on a 90°C conductor temperature and a 45°C ambient temperature.

Inductive reactance and voltage drop values are based on a 90°C conductor temperature and 60 Hz operation. Values for single conductor cables are based on a symmetrical triangular configuration.

Please consult Nexans AmerCable on values for other configurations.

### MMV Bend Radius

	Unarmored	Armored	Armored & Sheathed
IEEE 45	6X Diameter	8X Diameter	8X Diameter
IEC 92	<1" (25mm) 4 x Diameter >1" (25mm) 6X Diameter	6X Diameter	8X Diameter
Transport Canada	<1" (25mm) 4X Diameter >1" (25mm) 6X Diameter	6X Diameter	6X Diameter





Size AWG/kcmil	Number of Strands	Individual Strand Dia. (inches)	Closest IEEE 45 Std. Size	Equivalent Metric Size (mm <sup>2</sup> )	Uninsulated Conductor Dia. (inches)
18	19	0.0100	2	0.96	0.049
16	19	0.0117	3	1.32	0.059
14	19	0.0147	4	2.08	0.074
12	19	0.0185	6	3.29	0.093
10	37	0.0167	10	5.23	0.113
8	37	0.0201	16	7.57	0.136
6	61	0.0201	26	12.49	0.175
4	133	0.0177	41	21.11	0.258
2	133	0.0223	66	33.51	0.324
1	209	0.0201	83	42.79	0.361
1/0	266	0.0201	106	54.45	0.407
2/0	342	0.0201	133	70.01	0.461
3/0	418	0.0201	168	85.57	0.510
4/0	532	0.0201	212	108.91	0.575
262	646	0.0201	262	132.25	0.654
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646	1591	0.0201	646	325.70	1.029
777	1924	0.0201	777	393.87	1.132
1111	2745	0.0201	1111	561.94	1.354



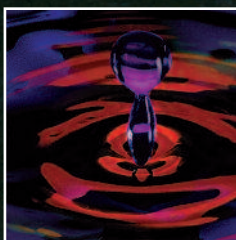
**Severe Cold Durability**  
Exceeds CSA Cold Bend / Cold Impact (-40°C/-35°C)



**Flame Retardant**  
Certified to IEC 92-3 (332-3A) and IEEE 1580



**Drilling Mud Resistant**



**Oil Resistant**

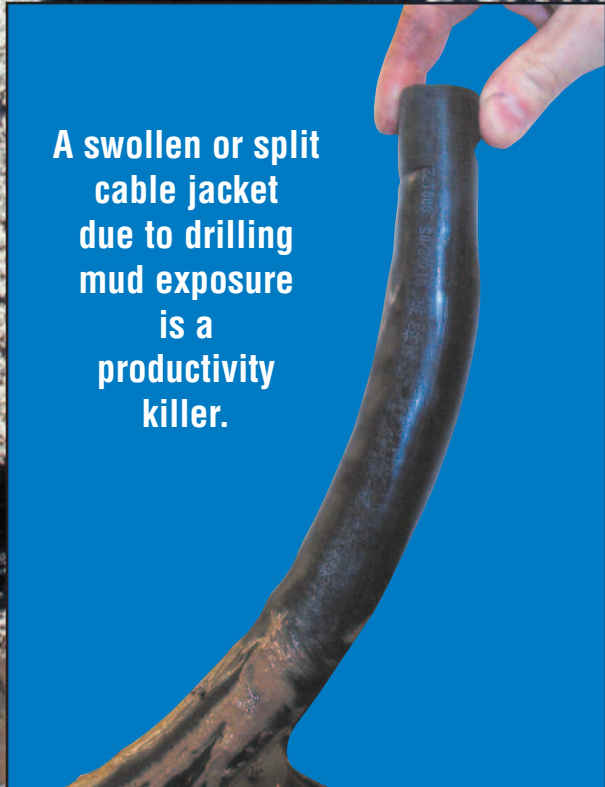
Hawke Gland Types	Unarmored	Armored & Sheathed
Industrial & Safe Area (IP68)	121	153-X
Increased Safety "EExe"	501/421	501/453/U
Explosion Proof	710 Class I, Div. 2 Class I, Zone 2	753 Class I, Div. 1 Class I, Zone 1 & 2
Flameproof "EExd"	501/421 Zone 1 & 2	501/453/U (2 liter or < enclosures) ICG 653/U (2 liter or > enclosures) Zone 1 & 2



# Ester Based Mud Resistant Jacketed Cables

110°C • UL Marine Shipboard Cable

Designed to deliver outstanding performance in the harshest operating conditions – specifically in high temperature Ester Based drilling muds.



A swollen or split cable jacket due to drilling mud exposure is a productivity killer.



# Ester Based Mud Resistant Jacketed Cables

110°C • UL Marine Shipboard Cable



When standard mud resistance isn't enough, Nexans AmerCable has a World Class Mud Resistant cable jacket designed to deliver outstanding performance in the harshest operating conditions. Designed specifically for exposure to **high temperature ESTER BASED drilling muds**, this cable meets all the performance requirements of industry standards UL 1309 and IEEE 1580 for Type N jackets. When tested for prolonged exposure to the most aggressive ester based drilling muds, it easily passes the mud resistance requirements of NEK 606.

Nexans AmerCable's ester based mud resistant cables were also tested against the requirements of UL 1309 and IEEE 1580 and the results are shown in Table I.<sup>1</sup> ***This product easily passed all the requirements.*** Table II shows the results of this cable when aged in Baroid Petrofree® (Ester Based) drilling mud per NEK 606. All aging requirements were met. Additional testing done on these cables show the jacket to pass cold impact at -20°C and cold bend at -40°C.

**Table I**

World Class Mud Resistant Jacket	Specifications	UL-1309 Table 4	IEEE 1580 Table 5-7	AmerCable Testing Program <sup>1</sup>
	Jacket Type	Type N	Type N	Mud Resistant Jacket
Physical Requirements – Unaged	Tensile Strength, Min, PSI	1800	1800	Pass
	Elongation at Rupture, Min, %	300	300	Pass
	Set, Max, %	20	20	Pass
Aging Requirements 90°C Rated Jacket 121±1°C Air Oven 240 Hours	Tensile Strength, Minimum	900 psi	900 psi	Pass
	Elongation at Rupture, %	50% Actual	50% Actual	Pass
Oil Exposure Resistance After Oil Immersion at 121±1°C 18 Hours	Tensile Strength, % Retention of Unaged, Min	80	80	Pass
	Elongation at Rupture, % Retention of Unaged, Min	60	60	Pass
Mechanical Water Absorption	mg / in <sup>2</sup>	100	130	Pass
Weatherometer Test	Per UL 1581	No Requirement	Pass	Pass
Tear	lb/in Thickness, Min	No Requirement	35	Pass
FT4/IEEE 1202 Flame Exposure (UL-1685)	–	Pass	Pass	Pass
IEC 332-3 Flame Exposure	–	No Requirement	No Requirement	Pass

**Table II**

MUD Resistant – NEK 606 Note: Tested for Changes in Each Listed Requirement 70°C, 56 Days	Requirements		Mud Type	Results
	Elongation at Break	±25%	Baroid Petrofree® (Ester Based)	Pass
	Tensile Strength	±25%	Baroid Petrofree® (Ester Based)	Pass
	Volume Swelling	Max 20%	Baroid Petrofree® (Ester Based)	Pass
	Weight Increase	Max 15%	Baroid Petrofree® (Ester Based)	Pass
	Oxygen Index	Min 25%	Baroid Petrofree® (Ester Based)	Pass

<sup>1</sup> All results representative of finished cables (6 3/C, 14 7/C and 18 7 PR). Test data on file at Nexans AmerCable



## Constructions:

- 300V – 15kV AC
- AC & DC Power
- Composite Power & Control
- Instrumentation
- Thermocouple
- Fiber Optic
- Electro-Optic

## Applications:

- Service Loops
- Driller's Console
- Mud Pump Controls
- 15kV Bridle Assembly
- Tender-to-Platform Bridle
- Ship-to-Shore Power
- Portable Power Generation
- Zone 1 (EX) Rated Cable Assemblies





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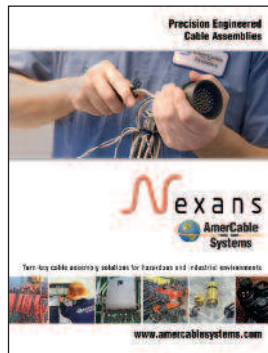
Nexans AmerCable serves the world from our Oil & Gas Group headquarters in Houston, Texas. Our professional field engineers and sales force work with you to create innovative, cost-effective project solutions.

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- Fastest Lead Times in the Industry
- On-Time Delivery
- Professional Sales, Support and Service
- Productivity Solutions
- Global Cable Management



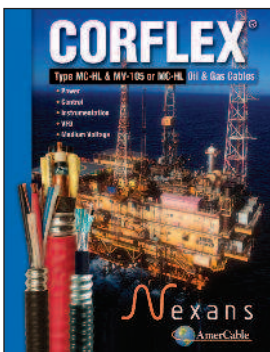
Low smoke halogen-free fire resistant or flame retardant marine cables



Precision engineered cable assemblies for hazardous and industrial applications



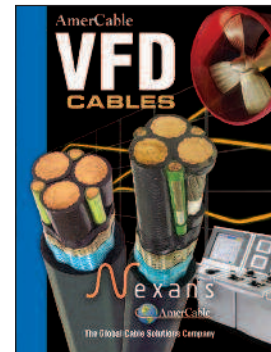
Crush and Impact Resistant Type P cables *without* external armoring



Type MC-HL Cables



Low smoke halogen-free fire resistant or flame retardant marine cables



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