

GEXOL®

WORLD CLASS TYPE P

LAND & OFFSHORE ENERGY CABLES



ENERGY GROUP

Nexans
AmerCable

INDEX



■ Best On-Time Delivery Rate

■ Highest Ampacity Ratings

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

■ Extremely Flexible

| | |
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GEXOL® Energy Cables

are the industry's standard for premium power, control and instrumentation performance. GEXOL energy cables prove their value daily in the punishing environments of land and offshore energy production operations around the world.

Harsh environments challenge cable construction with relentless heat, vibration, corrosion, drilling mud exposure and mechanical stress. Reliability is a huge issue because in today's energy markets, productivity is the key to profitability. You can depend on GEXOL Energy cables for reliable, consistent performance.



| AMPACITY RATINGS | |
|--------------------------|--|
| 110°C (Free Air) Ratings | 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. |
| 110°C 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 110°C ampacities should be multiplied by 0.8. |
| 100°C 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 100°C ampacities should be multiplied by 0.8. |
| 95°C Ratings | Based on Table 4/3C.10 of the 1997 ABS MODU rules and a 45°C ambient. |

- 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).
- For free air ratings, the IEEE Std. 45 numbers can be divided by 0.85

| 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

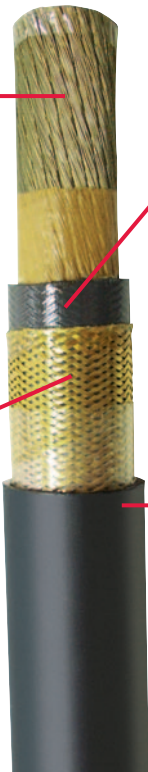
GEXOL® cross-linked polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 2000V/IEC 1000V.

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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.



APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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

**GEXOL®
600V
UNARMORED
SINGLE
CONDUCTOR**
(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® 2KV SINGLE CONDUCTOR POWER CABLE

| Size AWG/ kcmil | mm ² | 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 |

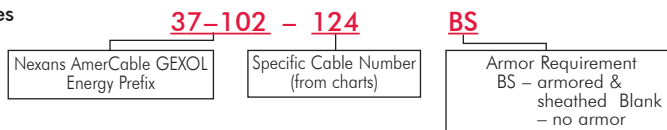
*Unarmored 3/0 and smaller has a jacket per UL1309 & IEEE1580
Cable diameters shown as nominal are subject to a ±5% manufacturing tolerance

GEXOL® is a registered trademark
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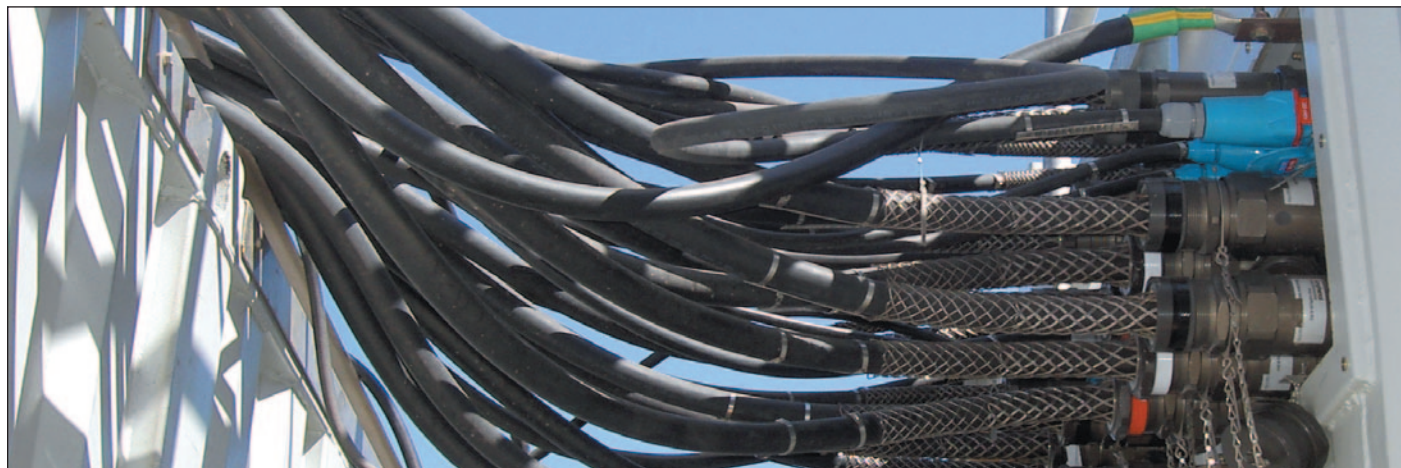
Ordering GEXOL Energy Cables

Example:

- Single-conductor power cable
- 2kV 100%
- 535 kcmil
- Bronze armored & sheathed



See Back Cover 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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.

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 energy production 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

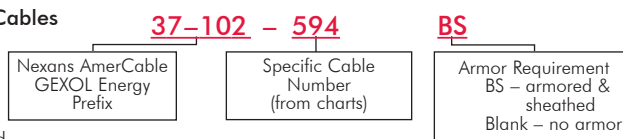
| Size AWG/ kcmil | mm ² | Part No. 37-102 | Unarmored | | Armored (B) | | Armored and Sheath (BS) | | DC Resistance at 25°C (Ohms/ 1000 ft.) | AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.) | Inductive Reactance (Ohms / 1000 ft.) | Voltage Drop 110°C (Volts/Amp/ 1000 ft.) | Ampacity | | |
|-----------------------|-----------------|-----------------------|---------------------------------|--------------------------|---------------------------------|--------------------------|---------------------------------|--------------------------|--|--|--|--|----------|-------|------|
| | | | 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 |
| 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 Energy Cables

Example:

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



See Back Cover 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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.



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.

APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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
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- Lloyd's Register of Shipping (LRS)
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| Hawke Gland Types | Unarmored | Armored & Sheathed |
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| 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 | 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.) | 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 |

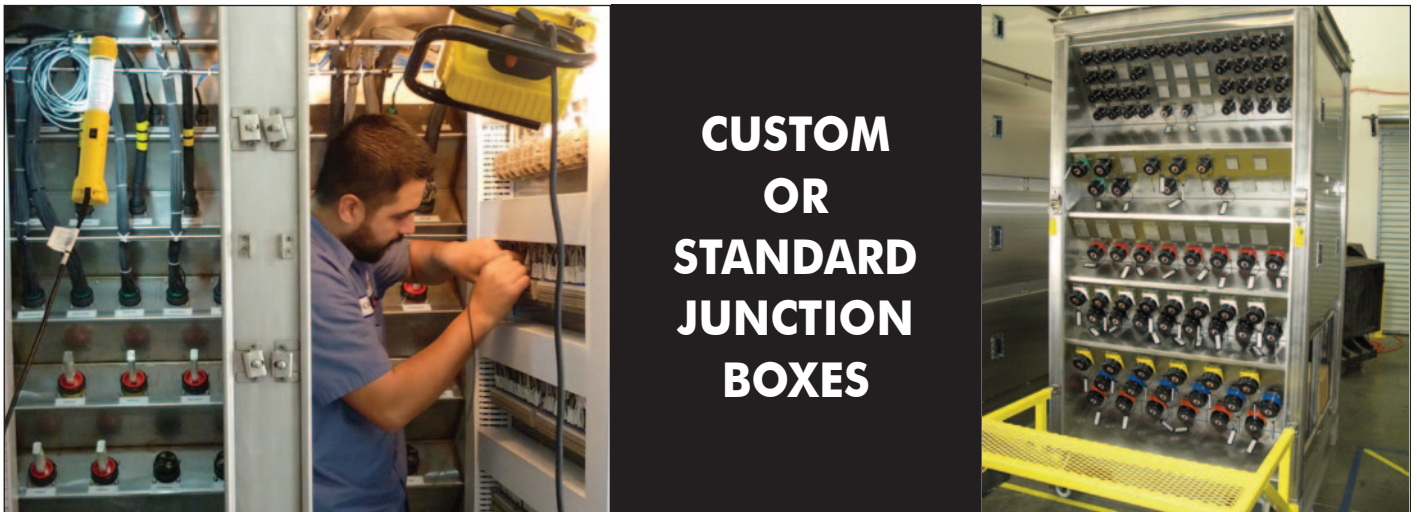
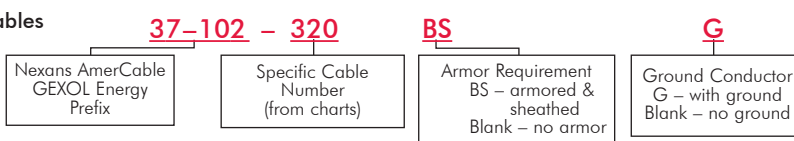
Cable diameters shown as nominal are subject to a $\pm 5\%$ manufacturing tolerance

See Back Cover for
Stranding Profile

Ordering GEXOL Energy Cables

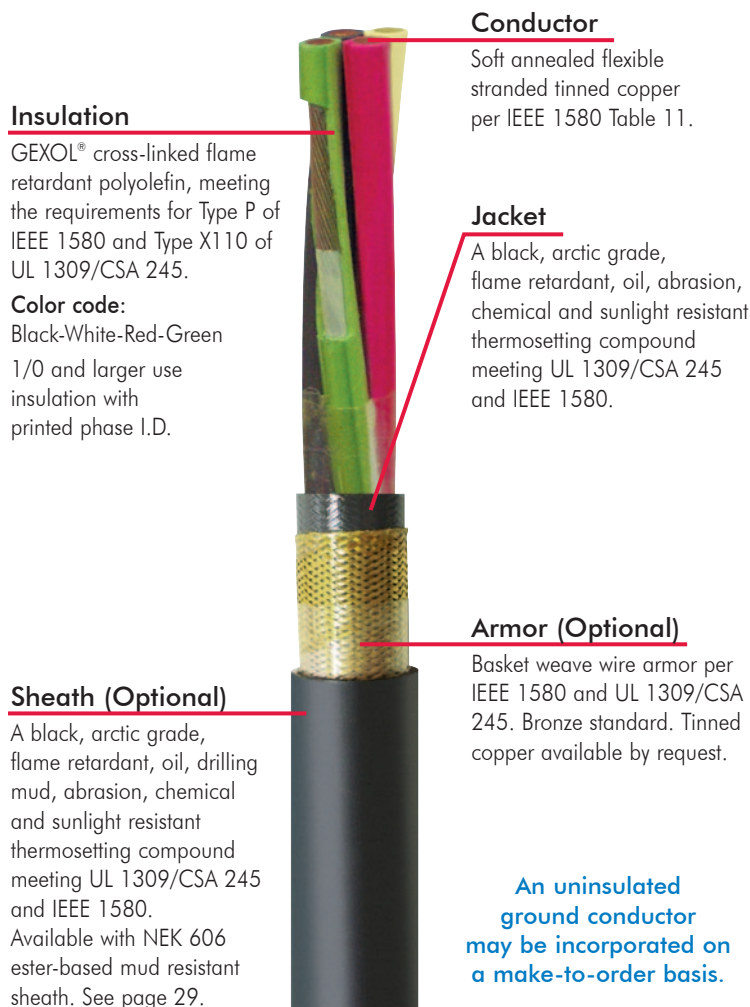
Example:

- 3-conductor power cable
- 0.6/1kV
- Bronze armored & sheathed
- Ground



FOUR CONDUCTOR POWER CABLE GEXOL® INSULATED

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



APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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 POWER CABLE – FOUR CONDUCTOR

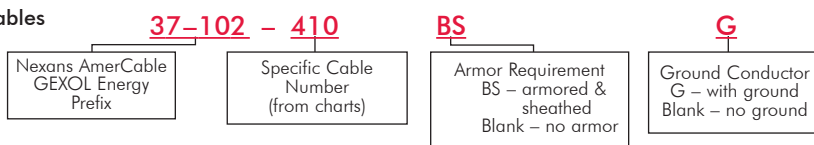
| Size AWG/ kcmil | mm ² | Part No. 37-102 | Unarmored | | Armored (B) | | Armored and Sheath (BS) | | DC Resistance at 25°C (Ohms/ 1000 ft.) | AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.) | Inductive Reactance (Ohms / 1000 ft.) | Voltage Drop 110°C (Volts/Amp/ 1000 ft.) | Opt. Uninsulated Grounding Cond. 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

Ordering GEXOL Energy Cables

Example:

- 4-conductor power cable
- 0.6/1kV
- #6 AWG
- Bronze armored & sheathed
- Ground



See Back Cover for
Stranding Profile



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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.

APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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® FLEXIBLE POWER CABLE – FIVE CONDUCTOR

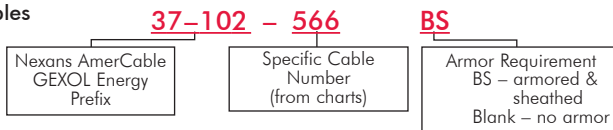
| Size AWG/ kcmil | mm ² | Part No. 37-102 | Unarmored | | Armored (B) | | Armored and Sheath (BS) | | DC Resistance at 25°C (Ohms/ 1000 ft.) | AC Resistance 110°C, 60 Hz (Ohms/ 1000 ft.) | Inductive Reactance (Ohms / 1000 ft.) | Voltage Drop 110°C (Volts/Amp/ 1000 ft.) | Ampacity | | |
|-----------------------|-----------------|-----------------------|---------------------------------|--------------------------|---------------------------------|--------------------------|---------------------------------|--------------------------|--|--|--|--|----------|-------|------|
| | | | 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

Ordering GEXOL Energy Cables

Example:

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



See Back Cover for Stranding Profile



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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580.

Color code:

IEEE 1580 Table 22

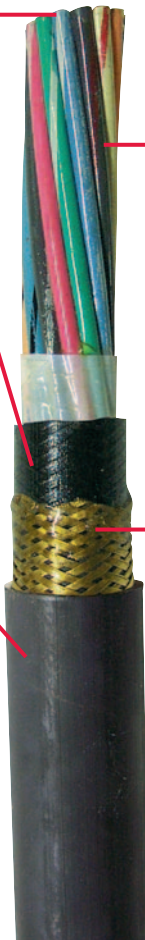
Sheath (Optional)

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

Color code:

IEEE 1580 Table 22

Available with NEK 606 ester-based mud resistant jacket / sheath. See page 29.



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 energy production 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 |

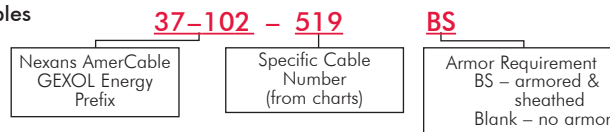
* Colored singles through 37/C. Black ink printed singles above 37/C.

Cable diameters shown as nominal are subject to a $\pm 5\%$ manufacturing tolerance

Ordering GEXOL Energy Cables

Example:

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



See Back Cover
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



APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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

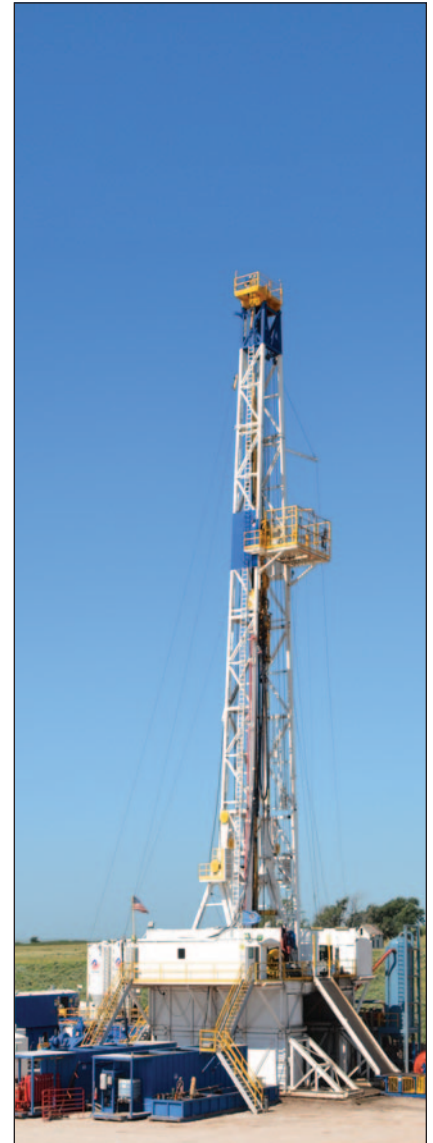
GEXOL® is a registered trademark of AmerCable Incorporated

| Hawke Gland Types | Unarmored | Armored & Sheathed |
|-------------------------------|---|--|
| Industrial & Safe Area (IP68) | 121 | 153-X |
| Increased Safety “EEExe” | 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 “EEExd” | 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 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 $\pm 5\%$ 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)

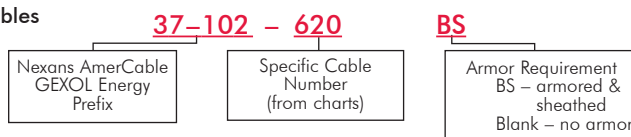
#14 Pairs

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

Ordering GEXOL Energy Cables

Example:

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



See Back Cover 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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.



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

APPLICATION

Designed and constructed for the demanding environments of offshore drilling and energy production 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 Back Cover
for Stranding
Profile

Cable diameters shown as nominal are subject to a $\pm 5\%$ 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

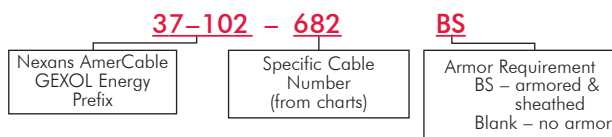
Capacitance – (nF/1000 feet) = 32
 Inductance – (mH/1000) = 0.20
 Resistance – (Ohms/1000 feet) = 4.52 (@ 20°C)



Ordering GEXOL Energy 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, drilling mud, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245 and IEEE 1580. Available with NEK 606 ester-based mud resistant sheath. See page 29.

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 ² | 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

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.

*See Back Cover for
Stranding Profile*



GEXOL® is a registered trademark of AmerCable Incorporated

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

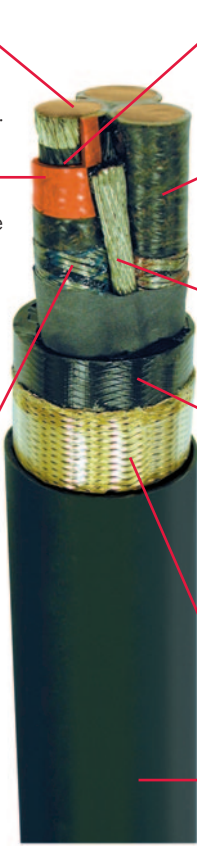
Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.

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).

APPLICATION

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 | 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 | -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

| 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 | -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 |

See page 28 for MMV Stranding Profile

37-105

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 | 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 |

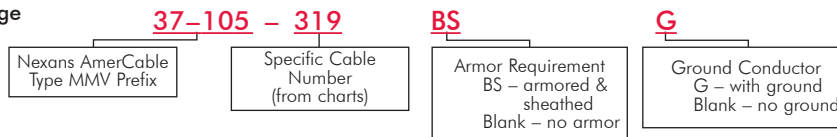
SINGLE CONDUCTOR TYPE MMV MARINE MEDIUM VOLTAGE – 15KV, 100% INSULATION LEVEL

| Size AWG/ kcmil | 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



See page 28 for MMV Stranding Profile

SINGLE CONDUCTOR TYPE MMV MARINE MEDIUM VOLTAGE – 15KV, 133% INSULATION LEVEL

| Size AWG/ kcmil | mm ² | 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 |

THREE CONDUCTOR TYPE MMV MARINE MEDIUM VOLTAGE – 5KV, 100/133% INSULATION LEVEL

| Size AWG/ kcmil | mm ² | 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 | -302 | 1.294 | 918 | 1.539 | | 88 | 75 | 0.445 | 0.556 | 0.044 | 0.815 | 6 |
| 4 | 21 | -303 | 1.469 | 1252 | 1.773 | 1371 | 116 | 99 | 0.300 | 0.376 | 0.039 | 0.560 | 6 |
| 2 | 34 | -304 | 1.615 | 1620 | 1.935 | 1847 | 152 | 129 | 0.184 | 0.230 | 0.036 | 0.356 | 6 |
| 1 | 43 | -305 | 1.746 | 1942 | 2.045 | 2299 | 175 | 149 | 0.147 | 0.184 | 0.035 | 0.291 | 4 |
| 1/0 | 54 | -306 | 1.845 | 2257 | 2.149 | 2646 | 201 | 171 | 0.117 | 0.147 | 0.034 | 0.239 | 4 |
| 2/0 | 70 | -307 | 1.996 | 2744 | 2.300 | 2994 | 232 | 197 | 0.093 | 0.117 | 0.033 | 0.196 | 4 |
| 3/0 | 86 | -308 | 2.081 | 3110 | 2.398 | 3540 | 266 | 226 | 0.074 | 0.094 | 0.032 | 0.163 | 3 |
| 4/0 | 109 | -309 | 2.222 | 3714 | 2.539 | 3966 | 306 | 260 | 0.058 | 0.075 | 0.031 | 0.136 | 3 |
| 262 | 132 | -310 | 2.410 | 4486 | 2.789 | 4614 | 348 | 296 | 0.048 | 0.063 | 0.030 | 0.118 | 3 |
| 313 | 159 | -311 | 2.488 | 4599 | 2.867 | 5614 | 386 | 328 | 0.040 | 0.053 | 0.029 | 0.104 | 2 |
| 373 | 189 | -312 | 2.659 | 5825 | 3.038 | 5760 | 429 | 365 | 0.034 | 0.045 | 0.029 | 0.092 | 2 |
| 444 | 227 | -313 | 2.892 | 6946 | 3.270 | 7061 | 455 | 387 | 0.028 | 0.039 | 0.028 | 0.083 | 1 |
| 535 | 273 | -314 | 3.036 | 7961 | 3.415 | 8297 | 528 | 449 | 0.024 | 0.033 | 0.028 | 0.074 | 1 |
| 646 | 326 | -315 | 3.249 | 9274 | 3.627 | 9317 | 584 | 496 | 0.020 | 0.028 | 0.027 | 0.067 | 1 |
| 777 | 394 | -316 | 3.458 | 10902 | 3.823 | 10789 | 647 | 550 | 0.016 | 0.025 | 0.027 | 0.062 | 1/0 |

See page 28
for MMV
Stranding Profile

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 ² | 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 |

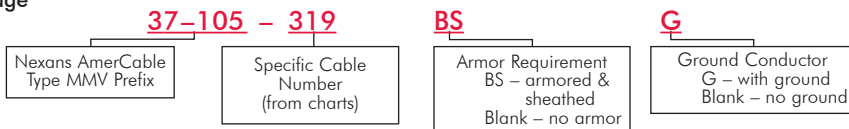
THREE CONDUCTOR TYPE MMV MARINE MEDIUM VOLTAGE – 8KV, 133% INSULATION LEVEL

| Size AWG/ kcmil | mm ² | 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

| | | | Unarmored | | Armored & Sheathed (BS) | | Ampacity | | | | | | |
|-----------------------|-----|--------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|--------------------------|--|---|---|---|---|------------------------------------|
| Size AWG/ kcmil | mm2 | Part No. 37-105 | Nominal Diameter (inches) | Weight (Lbs./ 1000 ft.) | Nominal Diameter (inches) | Weight (Lbs./ 1000 ft.) | In Free Air (amps) | Single Banked in Trays (amps) | 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 |
| 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 |

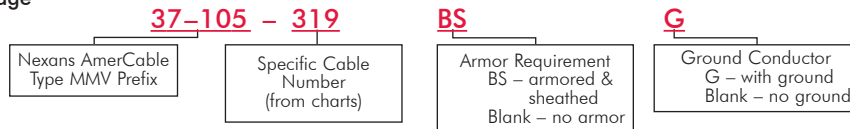
THREE CONDUCTOR TYPE MMV MARINE MEDIUM VOLTAGE – 15KV, 133% INSULATION LEVEL

| | | | Unarmored | | Armored & Sheathed (BS) | | Ampacity | | | | | | |
|-----------------------|-----|--------------------|---------------------------------|-------------------------------|---------------------------------|-------------------------------|--------------------------|--|---|---|---|---|------------------------------------|
| Size AWG/ kcmil | mm2 | Part No. 37-105 | Nominal Diameter (inches) | Weight (Lbs./ 1000 ft.) | Nominal Diameter (inches) | Weight (Lbs./ 1000 ft.) | In Free Air (amps) | Single Banked in Trays (amps) | 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 |
| 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



*See page 28
for MMV
Stranding Profile*

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

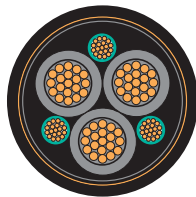
A black, arctic grade, flame retardant, oil, abrasion, chemical and sunlight resistant thermosetting compound meeting UL 1309/CSA 245, IEEE 1580, and UL 1072. This jacket allows for isolation between the insulation shields and overall shield. Shields can then be terminated on opposite ends to minimize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



APPLICATION

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

| | | | | Ampacity | | | | | | | | | |
|-----------------------|------|--------------------|---------------------------------|-------------------------------|--------------------------|--|---|---|---|---|--|--|--|
| Size AWG/ kcmil | mm2 | Part No. 37-105 | Nominal Diameter (Inches) | Weight (Lbs./ 1000 Ft.) | In Free Air (Amps) | Single Banked in Trays (Amps) | 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) | | |
| 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

| | | | | Ampacity | | | | | | | | | |
|-----------------------|-----|--------------------|---------------------------------|-------------------------------|--------------------------|--|---|---|---|---|--|--|--|
| Size AWG/ kcmil | mm2 | Part No. 37-105 | Nominal Diameter (Inches) | Weight (Lbs./ 1000 Ft.) | In Free Air (Amps) | Single Banked in Trays (Amps) | 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) | | |
| 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 ²) | 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.

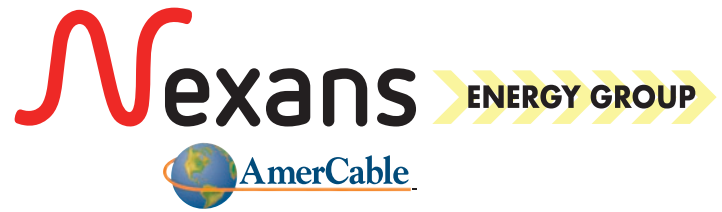
Please consult Nexans AmerCable on values for other configurations.

| 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 |



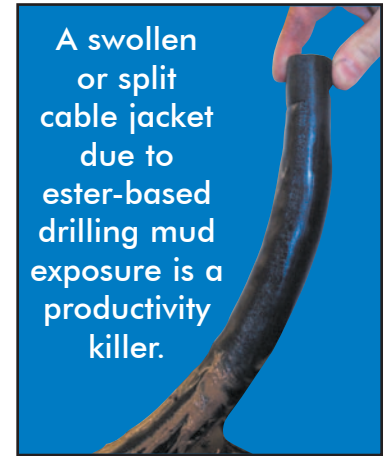
ESTER-BASED MUD RESISTANT JACKETED CABLES

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.¹ 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.



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

Table I

| World Class Mud Resistant Jacket | Specifications | UL-1309 Table 4 | IEEE 1580 Table 5-7 | AmerCable Testing Program ¹ |
|---|---|-----------------|---------------------|--|
| | 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 ² | 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 |

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

1/C MARINE GEXOL® 600V GREEN/YELLOW STRIPE GROUNDING CABLE

Conductors

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



Insulation

Green GEXOL® Cross-linked Polyolefin (XLPO), with an extruded yellow stripe

APPLICATION

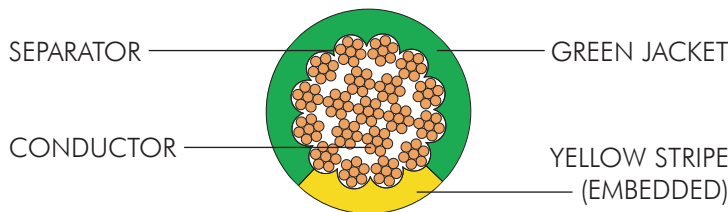
A flexible, highly durable grounding cable constructed with Nexans AmerCable's premium Gexol® thermoset insulation.

RATINGS & APPROVALS

- 125°C Manufacturer's Temperature Rating
- UL Listed 110°C Marine Shipboard Cable meeting
- UL 1309 Type X110P
- UL Classified IEEE-45 Type P (1998 standard and 1993 draft)
- CSA Listed as Marine Shipboard Cable
- 600/1000V UL/IEC
- UL Type SIS 90C
- VW-1 Rated

JACKET MARKING

AMERCABLE GEXSIS-125 (SIZE) 1/C UL MARINE SHIPBOARD 110C TYPE SIS-VW1 90C UL 600V/1000V IEC (YEAR) - 37102XXXGRNYEL



| Size | Part Number | Diameter | Weight* lbs/1000ft | Ampacity 100°C* |
|------|-----------------|----------|-----------------------|--------------------|
| 10 | 37-102158GRNYEL | 0.180 | 41 | 58A |
| 8 | 37-102159GRNYEL | 0.236 | 64 | 72A |
| 2 | 37-105164GRNYEL | 0.425 | 247 | 169A |
| 2/0 | 37-102167GRNYEL | 0.590 | 507 | 262A |
| 4/0 | 37-102169GRNYEL | 0.710 | 770 | 351A |

*Single banked values at 45C Ambient

GEXOL® Insulated Power, Control and Instrumentation Cable

STRANDING PROFILE

| Size | Equivalent mm ² | IEEE 45 Std. Size | No. of Strands | Conductor O.D. (Inches) |
|------|----------------------------|-------------------|----------------|-------------------------|
| 18 | 0.96 | 2 | 19 | 0.048 |
| 16 | 1.32 | 3 | 19 | 0.056 |
| 14 | 2.08 | 4 | 19 | 0.070 |
| 12 | 3.30 | 6 | 19 | 0.088 |
| 10 | 5.23 | 10 | 37 | 0.112 |
| 8 | 7.57 | 16 | 37 | 0.134 |
| 6 | 12.49 | 26 | 61 | 0.173 |
| 4 | 21.11 | 41 | 133 | 0.257 |
| 2 | 33.51 | 66 | 133 | 0.324 |
| 1 | 42.79 | 83 | 209 | 0.363 |
| 1/0 | 54.45 | 106 | 266 | 0.401 |
| 2/0 | 70.01 | 133 | 323 | 0.451 |
| 3/0 | 85.57 | 168 | 418 | 0.505 |
| 4/0 | 108.91 | 212 | 532 | 0.567 |
| 262 | 132.25 | 262 | 646 | 0.615 |
| 313 | 159.06 | 313 | 777 | 0.704 |
| 373 | 189.36 | 373 | 925 | 0.735 |
| 444 | 227.23 | 444 | 1110 | 0.780 |
| 535 | 272.68 | 535 | 1332 | 0.871 |
| 646 | 325.70 | 646 | 1591 | 0.965 |
| 777 | 393.87 | 777 | 1924 | 1.050 |
| 1111 | 561.95 | 1111 | 2745 | 1.375 |



Nexans AmerCable is an ISO 9001:2015 certified cable manufacturer that combines leading-edge manufacturing technology, innovative thinking, and high-quality service to deliver the finest energy cable products available.

Serving the world from our Energy Group headquarters in Katy, Texas, our professional field engineers and sales support staff work with you to create innovative, cost-effective project solutions.

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



OFFSHORE BRIDLES & OVER WATER UMBILICAL SYSTEMS

Nexans AmerCable Energy Group

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