

# MV-105 MEDIUM VOLTAGE CABLE

5kV, 8kV, 15kV, 25kV & 35kV



# MV-105 MEDIUM VOLTAGE POWER CABLE

## 5kV 133% INSULATION LEVEL

## 8kV 100% INSULATION LEVEL

### Conductor

Bare, annealed copper conforming to ASTM B3 and Class B Compact stranded in accordance with ASTM B496.

### Grounding Conductor

Bare, annealed copper conforming to ASTM B3 and Class B stranded in accordance with ASTM B8.

### Insulation Shield Nonmetallic

Extruded semiconducting insulation shield meets or exceeds electrical and physical requirements of UL 1072.

### Conductor Shield

Extruded semiconducting conductor shield meets or exceeds electrical and physical requirements of UL 1072.

### Insulation

EPR meets or exceeds electrical and physical requirements of UL 1072.

### Metallic Shield

Bare copper tape shield helically wrapped to provide 100% coverage.

### Binder Tape

Synthetic material assembles the core in an essentially round configuration.

### Jacket

Overall polyvinyl chloride jacket per UL 1072, 90°C temperature rating; low acid gas emission; limited flame spread and excellent corrosion resistance.



## APPLICATION

Nexans AmerCable medium voltage power cables are recommended for use as feeder circuits, in electric utility generating stations, for distribution circuits, and for feeders or branch circuits in industrial and commercial installations. Type MV cables may be installed in wet or dry locations, indoors or outdoors (exposed to sunlight), in any raceway or underground duct, directly buried if installed in a system with a grounding conductor in close proximity that conforms with NEC Section 250.4(A)(5), or messenger supported in industrial establishments and electric utilities.

## FEATURES

- UL listed as Type MV-105
- Flame retardant: UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, IEEE 1202 and CSA FT4
- Excellent mechanical and physical properties
- Sunlight resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete

## BEND RADIUS

- Fixed position: 7 x cable overall diameter
- During pulling: 12 x cable overall diameter

## Ratings & Approvals

- 105°C Temperature Rating
- Meets UL 1072 requirements for medium voltage power cables
- Insulation meets electrical and physical requirements of ICEA S-93-639/NEMA WC 74 and UL 1072
- Meets AEIC CS 8 – Specification for Extruded Dielectric Shielded Power Cables Rated 5 Through 46kV

## 5kV • 100% INSULATION • 1/C

| Part Number (37-505) | Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 101                  | 8    | 90                   | 0.575            | 231              | 74         | –          | 69            | 0.6535                    | 0.6663                    | 0.8332                              | 0.056  | 0.700                       |
| 102                  | 6    | 90                   | 0.605            | 277              | 99         | –          | 92            | 0.4112                    | 0.4192                    | 0.5242                              | 0.053  | 0.451                       |
| 103                  | 4    | 90                   | 0.645            | 344              | 130        | –          | 120           | 0.2585                    | 0.2636                    | 0.3296                              | 0.049  | 0.293                       |
| 104                  | 2    | 90                   | 0.700            | 448              | 175        | –          | 155           | 0.1626                    | 0.1659                    | 0.2075                              | 0.045  | 0.193                       |
| 105                  | 1    | 90                   | 0.735            | 518              | 205        | –          | 180           | 0.1289                    | 0.1315                    | 0.1644                              | 0.043  | 0.157                       |
| 106                  | 1/0  | 90                   | 0.770            | 603              | 240        | 218        | 210           | 0.1022                    | 0.1042                    | 0.1304                              | 0.041  | 0.129                       |
| 107                  | 2/0  | 90                   | 0.810            | 707              | 275        | 248        | 235           | 0.0811                    | 0.0827                    | 0.1035                              | 0.040  | 0.107                       |
| 109                  | 4/0  | 90                   | 0.950            | 1035             | 475        | 334        | 310           | 0.0510                    | 0.0520                    | 0.0653                              | 0.038  | 0.075                       |
| 110                  | 250  | 90                   | 0.995            | 1179             | 415        | 371        | 345           | 0.0432                    | 0.0440                    | 0.0553                              | 0.037  | 0.066                       |
| 111                  | 350  | 90                   | 1.095            | 1546             | 515        | 461        | 415           | 0.0308                    | 0.0314                    | 0.0396                              | 0.035  | 0.053                       |
| 112                  | 500  | 90                   | 1.215            | 2074             | 645        | 581        | 505           | 0.0361                    | 0.0220                    | 0.0280                              | 0.034  | 0.043                       |
| 113                  | 750  | 90                   | 1.460            | 3001             | 835        | 750        | 630           | 0.0144                    | 0.0147                    | 0.0191                              | 0.031  | 0.034                       |

## 5kV 133% INSULATION • 8kV 100% INSULATION • 1/C

| Part Number (37-505) | Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 118                  | 6    | 115                  | 0.645            | 302              | 110        | –          | 97            | 0.4112                    | 0.4192                    | 0.5242                              | 0.054  | 0.452                       |
| 119                  | 4    | 115                  | 0.690            | 374              | 140        | –          | 125           | 0.2585                    | 0.2636                    | 0.3296                              | 0.050  | 0.294                       |
| 120                  | 2    | 115                  | 0.745            | 480              | 195        | –          | 165           | 0.1626                    | 0.1659                    | 0.2075                              | 0.047  | 0.194                       |
| 121                  | 1    | 115                  | 0.775            | 547              | 225        | –          | 185           | 0.1289                    | 0.1315                    | 0.1644                              | 0.044  | 0.158                       |
| 122                  | 1/0  | 115                  | 0.815            | 636              | 255        | 218        | 215           | 0.1022                    | 0.1042                    | 0.1304                              | 0.043  | 0.130                       |
| 123                  | 2/0  | 115                  | 0.895            | 779              | 295        | 251        | 245           | 0.0811                    | 0.0827                    | 0.1035                              | 0.042  | 0.108                       |
| 125                  | 4/0  | 115                  | 0.995            | 1076             | 390        | 334        | 315           | 0.0510                    | 0.0520                    | 0.0653                              | 0.039  | 0.076                       |
| 126                  | 250  | 115                  | 1.040            | 1222             | 430        | 371        | 345           | 0.0432                    | 0.0440                    | 0.0553                              | 0.038  | 0.067                       |
| 127                  | 350  | 115                  | 1.135            | 1586             | 525        | 458        | 415           | 0.0308                    | 0.0314                    | 0.0396                              | 0.036  | 0.053                       |
| 128                  | 500  | 115                  | 1.255            | 2119             | 650        | 574        | 500           | 0.0361                    | 0.0220                    | 0.0280                              | 0.034  | 0.043                       |
| 129                  | 750  | 115                  | 1.505            | 3059             | 820        | 743        | 610           | 0.0144                    | 0.0147                    | 0.0191                              | 0.032  | 0.034                       |

## 5kV 133% INSULATION • 8kV 100% INSULATION • 3/C

| Part Number (37-505) | Size | Ground Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|-------------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |             |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 302                  | 6    | 6           | 115                  | 1.305            | 1099             | 105        | 87         | 95            | 0.4112                    | 0.4192                    | 0.5242                              | 0.049  | 0.449                       |
| 303                  | 4    | 6           | 115                  | 1.400            | 1304             | 135        | 114        | 125           | 0.2585                    | 0.2636                    | 0.3296                              | 0.045  | 0.291                       |
| 304                  | 2    | 6           | 115                  | 1.520            | 1642             | 185        | 157        | 160           | 0.1626                    | 0.1659                    | 0.2075                              | 0.042  | 0.191                       |
| 305                  | 1    | 4           | 115                  | 1.590            | 1913             | 210        | 176        | 185           | 0.1289                    | 0.1315                    | 0.1644                              | 0.040  | 0.156                       |
| 306                  | 1/0  | 4           | 115                  | 1.635            | 2032             | 240        | 204        | 210           | 0.1022                    | 0.1042                    | 0.1304                              | 0.038  | 0.127                       |
| 307                  | 2/0  | 4           | 115                  | 1.810            | 2632             | 275        | 233        | 235           | 0.0811                    | 0.0827                    | 0.1035                              | 0.037  | 0.105                       |
| 309                  | 4/0  | 3           | 115                  | 2.030            | 3619             | 360        | 304        | 305           | 0.0510                    | 0.0520                    | 0.0653                              | 0.035  | 0.073                       |
| 310                  | 250  | 3           | 115                  | 2.125            | 4133             | 400        | 333        | 335           | 0.0432                    | 0.0440                    | 0.0553                              | 0.034  | 0.065                       |
| 311                  | 350  | 2           | 115                  | 2.335            | 5271             | 490        | 409        | 400           | 0.0308                    | 0.0314                    | 0.0396                              | 0.032  | 0.051                       |
| 312                  | 500  | 1           | 115                  | 2.595            | 7100             | 600        | 499        | 485           | 0.0361                    | 0.0220                    | 0.0280                              | 0.031  | 0.041                       |
| 313                  | 750  | 1/0         | 115                  | 3.190            | 10359            | 745        | 603        | 585           | 0.0144                    | 0.0147                    | 0.0191                              | 0.029  | 0.033                       |

**Notes:**

- 1) Ampacities in air are based on NEC 2017 Table 310.60(C)(71), for insulated three conductor copper cable isolated in air, maximum conductor temperature of 105°C, ambient air temperature of 40°C.
- 2) Ampacities in cable tray are based on NEC 2017 Table 310.60(C)(75), for insulated three conductor copper cable in isolated conduit in air, maximum conductor temperature of 105°C, ambient air temperature of 40°C.
- 3) Ampacities for direct burial are based on NEC 2017 Table 310.60(C)(83), for insulated three conductor copper cable, directly buried, maximum conductor temperature of 105°C, ambient earth temperature of 20°C, 100 percent load factor, earth thermal resistivity of 90°C cm / W.

# MV-105 MEDIUM VOLTAGE POWER CABLE RATED 15kV– 35kV

## Conductor

Bare, annealed copper conforming to ASTM B3 and Class B Compact stranded in accordance with ASTM B496.

## Grounding Conductors

Bare, annealed copper conforming to ASTM B3 and Class B stranded in accordance with ASTM B8.

## Insulation Shield Nonmetallic

Extruded semiconducting insulation shield meets or exceeds electrical and physical requirements of UL 1072.

## Conductor Shield

Extruded semiconducting conductor shield meets or exceeds electrical and physical requirements of UL 1072.

## Insulation

EPR meets or exceeds electrical and physical requirements of UL 1072.

## Metallic Shield

Bare copper tape shield helically wrapped to provide 100% coverage.

## Binder Tape

Synthetic material assembles the core in an essentially round configuration.

## Jacket

Overall polyvinyl chloride jacket per UL 1072, 90°C temperature rating; low acid gas emission; limited flame spread and excellent corrosion resistance.



## Ratings & Approvals

- 105°C Temperature Rating
- Meets UL 1072 requirements for medium voltage power cables
- Insulation meets electrical and physical requirements of ICEA S-93-639/NEMA WC 74 and UL 1072
- Meets AEIC CS 8 – Specification for Extruded Dielectric Shielded Power Cables Rated 5 Through 46kV

## APPLICATION

Nexans AmerCable medium voltage power cables are recommended for use as feeder circuits, in electric utility generating stations, for distribution circuits, and for feeders or branch circuits in industrial and commercial installations. Type MV cables may be installed in wet or dry locations, indoors or outdoors (exposed to sunlight), in any raceway or underground duct, directly buried if installed in a system with a grounding conductor in close proximity that conforms with NEC Section 250.4(A)(5), or messenger supported in industrial establishments and electric utilities.

## FEATURES

- UL listed as Type MV-105
- Flame retardant: UL 1685 and IEEE 383 vertical tray fire tests at 70,000 BTU/hr, IEEE 1202 and CSA FT4
- Excellent mechanical and physical properties
- Sunlight resistant jacket
- Suitable for direct burial, use in cable tray and embedment in concrete
- Phase identification: Color coded (black, red, blue) polyester ribbon laid longitudinally under the copper shield tape

## BEND RADIUS

- Fixed position: 7 x cable overall diameter
- During pulling: 12 x cable overall diameter

## 15kV • 133% INSULATION • 1/C

| Part Number (37-505) | Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 164                  | 2    | 220                  | 1.005            | 700              | 195        | -          | 165           | 0.1626                    | 0.1659                    | 0.2075                              | 0.054  | 0.198                       |
| 165                  | 1    | 220                  | 1.035            | 774              | 225        | -          | 185           | 0.1289                    | 0.1315                    | 0.1644                              | 0.051  | 0.162                       |
| 166                  | 1/0  | 220                  | 1.070            | 867              | 255        | 218        | 215           | 0.1022                    | 0.1042                    | 0.1304                              | 0.049  | 0.134                       |
| 167                  | 2/0  | 220                  | 1.115            | 987              | 295        | 251        | 245           | 0.0811                    | 0.0520                    | 0.1035                              | 0.047  | 0.111                       |
| 169                  | 4/0  | 220                  | 1.210            | 1295             | 390        | 334        | 315           | 0.0510                    | 0.0440                    | 0.0653                              | 0.044  | 0.079                       |
| 170                  | 250  | 220                  | 1.275            | 1473             | 430        | 371        | 345           | 0.0432                    | 0.0827                    | 0.0553                              | 0.043  | 0.070                       |
| 171                  | 350  | 220                  | 1.370            | 1856             | 525        | 458        | 415           | 0.0308                    | 0.0314                    | 0.0396                              | 0.040  | 0.056                       |
| 172                  | 500  | 220                  | 1.480            | 2411             | 650        | 574        | 500           | 0.0361                    | 0.0220                    | 0.0280                              | 0.038  | 0.045                       |
| 173                  | 750  | 220                  | 1.780            | 3478             | 820        | 743        | 610           | 0.0144                    | 0.0147                    | 0.0191                              | 0.036  | 0.037                       |

## 15kV 133% INSULATION LEVEL • 3/C

| Part Number (37-505) | Size | Ground Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|-------------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |             |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 357                  | 2    | 6           | 220                  | 2.045            | 2401             | 185        | 157        | 160           | 0.1626                    | 0.1659                    | 0.2075                              | 0.049  | 0.195                       |
| 358                  | 1    | 4           | 220                  | 2.110            | 2729             | 210        | 176        | 185           | 0.1289                    | 0.1315                    | 0.1644                              | 0.047  | 0.160                       |
| 359                  | 1/0  | 4           | 220                  | 2.190            | 3069             | 240        | 204        | 210           | 0.1022                    | 0.1042                    | 0.1304                              | 0.045  | 0.131                       |
| 360                  | 2/0  | 4           | 220                  | 2.275            | 3343             | 275        | 233        | 235           | 0.0811                    | 0.0827                    | 0.1035                              | 0.043  | 0.109                       |
| 362                  | 4/0  | 3           | 220                  | 2.490            | 4345             | 360        | 304        | 305           | 0.0510                    | 0.0520                    | 0.0653                              | 0.040  | 0.076                       |
| 363                  | 250  | 3           | 220                  | 2.625            | 4957             | 400        | 333        | 335           | 0.0432                    | 0.0440                    | 0.0553                              | 0.039  | 0.068                       |
| 364                  | 350  | 2           | 220                  | 2.895            | 6349             | 490        | 409        | 400           | 0.0308                    | 0.0314                    | 0.0396                              | 0.037  | 0.054                       |
| 365                  | 500  | 1           | 220                  | 3.155            | 8359             | 600        | 499        | 485           | 0.0361                    | 0.0220                    | 0.0280                              | 0.035  | 0.043                       |
| 366                  | 750  | 1/0         | 220                  | 3.655            | 11657            | 745        | 603        | 585           | 0.0144                    | 0.0147                    | 0.0191                              | 0.033  | 0.035                       |

## 25kV 133% INSULATION • 35kV 100% INSULATION 1/C

| Part Number (37-505) | Size | Insulation Thickness | Outside Diameter | Weight (lbs/Kft) | Ampacities |            |               | DC Res. 20C $\Omega$ /kft | DC Res. 25C $\Omega$ /kft | AC Resist. 90C, 60 Hz $\Omega$ /kft | Inductive Reactance 90C, 60 Hz $\Omega$ /kft | Voltage Drop Volts/Amps/kft |
|----------------------|------|----------------------|------------------|------------------|------------|------------|---------------|---------------------------|---------------------------|-------------------------------------|--|-----------------------------|
|                      |      |                      |                  |                  | In Air     | Cable Tray | Direct Burial |                           |                           |                                     |  |                             |
| 180                  | 1/0  | 345                  | 1.350            | 1178             | 255        | 218        | 215           | 0.1022                    | 0.1042                    | 0.1304                              | 0.054  | 0.144                       |
| 181                  | 2/0  | 345                  | 1.385            | 1296             | 295        | 248        | 245           | 0.0811                    | 0.0827                    | 0.1035                              | 0.052  | 0.115                       |
| 183                  | 4/0  | 345                  | 1.485            | 1632             | 390        | 334        | 315           | 0.0510                    | 0.0520                    | 0.0653                              | 0.049  | 0.072                       |
| 184                  | 250  | 345                  | 1.530            | 1797             | 430        | 368        | 345           | 0.0432                    | 0.0440                    | 0.0553                              | 0.047  | 0.061                       |
| 185                  | 350  | 345                  | 1.625            | 2198             | 525        | 454        | 415           | 0.0308                    | 0.0314                    | 0.0396                              | 0.044  | 0.043                       |
| 186                  | 500  | 345                  | 1.805            | 2890             | 650        | 566        | 500           | 0.0361                    | 0.0220                    | 0.0280                              | 0.043  | 0.042                       |
| 187                  | 750  | 345                  | 2.055            | 3945             | 820        | 728        | 610           | 0.0144                    | 0.0147                    | 0.0191                              | 0.039  | 0.020                       |

### Notes:

- 1) Ampacities in air are based on NEC 2017 Table 310.60(C)(71), for insulated three conductor copper cable isolated in air, maximum conductor temperature of 105°C, ambient air temperature of 40°C.
- 2) Ampacities in cable tray are based on NEC 2017 Table 310.60(C)(75), for insulated three conductor copper cable in isolated conduit in air, maximum conductor temperature of 105°C, ambient air temperature of 40°C.
- 3) Ampacities for direct burial are based on NEC 2017 Table 310.60(C)(83), for insulated three conductor copper cable, directly buried, maximum conductor temperature of 105°C, ambient earth temperature of 20°C, 100 percent load factor, earth thermal resistivity of 90°C cm / W.

# DOWNSTREAM OIL & GAS CABLES

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