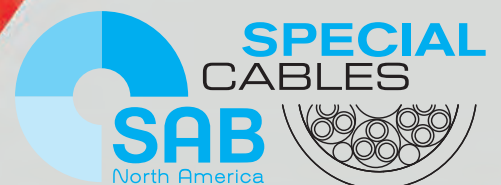


VFD CABLES & EMC GROUNDING SOLUTIONS FOR AUTOMATION



www.sabcable.com
866-722-2974 ■ info@sabcable.com



About Us



SAB North America is a focused supplier for the automation, industrial machinery, medical, high temperature, and robotics industries, providing cable solutions that meet, exceed, and set new standards in the flexible cable market. In addition to flexible cable products, we offer an extensive inventory of high-quality cable accessories including cord grips, grounding glands and other accessories that complement our flexible control and automation cables.

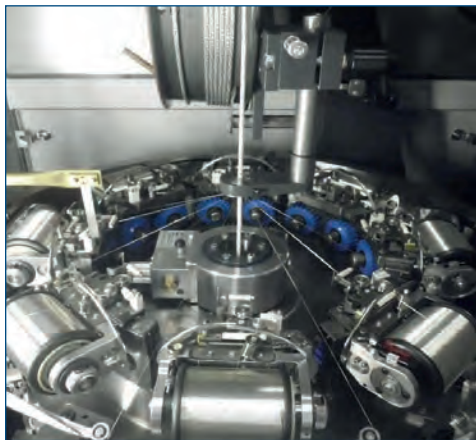
Whatever the need may be, look to SAB North America for Special Cables that can, for example, help minimize maintenance costs and increase productivity, reduce downtime, and solve specific problems. Here is a small sample of some of the challenges that Special Cables from SAB North America can help address:

- Hybrid designs for multiple functions
- Harsh environments
- Difficult applications
- Industry-specific requirements.



SAB North America offers a well-stocked line of UL and CSA-listed VFD cables for use in paper mills, cement plants, mining controls, automotive plants, and steel mills and HVAC applications as well. Anywhere VFD motors are used SAB has a cable to offer. We have one ground or symmetrical ground options, power only or power with 1 or 2 pairs. We also offer continuous flex options and 2KV for larger motors. Combine with our EMC grounding glands and protect your installation from EMI interference.

Whether you're a valued distribution partner, an automation house, an integrator, or a contractor to the manufacturer, rest assured that our cables are reliable to maximize production efficiencies. SAB brings world class performance & 75 years of ingenuity to the table.











SAB Service Advantage...We make it Easy

- Engineering & technical assistance
- Cut to length with no cut charges
- Prepaid freight within US for orders over \$2,500
- Specialty cable designs (1500 ft minimum)
- No minimum on orders from stock
- Free drop shipments (no surcharges)
- 24-hour shipments from stock
- Cord Grips for securing and grounding cables

VFD Cables for Automation

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|--|---|---|---|--|---|---|---|---|
| | |  |  |  |  |  |  |  |
| | | VFD XLPE TR | VFD XLPE TR D (with drain wire) | VFD XLPE TR Lean | VFD Combo XLPE (available with drain wire) | VFD XLPE Auto TR | VFD Symmetrical XLPE TR | VFD XLPE 2KV TR |
| Construction | Numbered conductors | ● | ● | ● | ● | ● | ● | ● |
| | Black conductors with green/yellow ground | ● | ● | ● | ● | ● | ● | ● |
| | Pair: PVC/Nylon | | | | ● | | | |
| | Insulation: Special formulated crosslinked PE, PVC ground | ● | ● | ● | ● | | | |
| | Insulation: Special formulated crosslinked PE | | | | | ● | | ● |
| | Drain wire | | ● | | ● ¹ | | | ● |
| | Stranding: in layers | ● | ● | ● | ● | ● | | |
| | Stranding: in layers with 3 ground wires | | | | | | ● | ● |
| | Double shield: foil and tinned copper braiding | ● | ● | ● | ● | ● | ● | ● |
| | Uncoated 5 mil copper tape shield with 50% overlap | | | | | | | ● |
| Jacket | Special sunlight and oil resistant copolymer | ● | ● | ● | ● | ● | ● | |
| | Special sunlight resistant & flame retardant PVC | | | | | | | ● |
| Temperature range static* | +105°C | ● | ● | ● | ● | ● | ● | |
| | +90°C | ● | ● | ● | ● | ● | ● | ● |
| | -25°C | ● | ● | ● | ● | ● | ● | ● |
| | -40°C | ● | ● | ● | ● | ● | ● | ● |
| Voltage | 600 V | ● | ● | ● | ● | ● | ● | |
| | 1000 V CSA AWM | ● | ● | ● | ● | ● | ● | |
| | 1000 V (UL) WTTC | ● | ● | ● | ● | ● | ● | |
| | 2000 V (UL) | | | | | | | ● |
| | Test voltage: 3000 V | ● | ● | ● | ● | ● | ● | |
| | Test voltage: 7500 V | | | | | | | ● |
| Standards & Approvals | Burning characteristics: FT1, FT2, FT4 | ● | ● | ● | ● | ● | ● | ● |
| | Cold bend test -40°C | ● | ● | ● | ● | ● | ● | ● |
| | Oil resistance I & II | ● | ● | ● | ● | ● | ● | ● |
| | Sunlight resistance | ● | ● | ● | ● | ● | ● | ● |
| | Exposed runs | ● | ● | ● | ● | ● | ● | ● |
| | Direct burial | ● | ● | ● | ● | ● | ● | ● |
| | Machinery area | ● | ● | ● | ● | ● | ● | ● |
| | Long installations (over 100 ft) | ● | ● | | ● | ● | ● | ● |



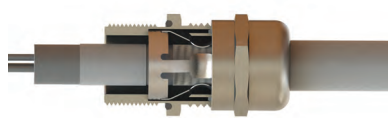
from +105°C to -40°C
¹ Drain wire with 16 AWG pair configuration only. Available with the other sized upon special request.

**The temperature range for flexible application is mentioned on the corresponding catalog page

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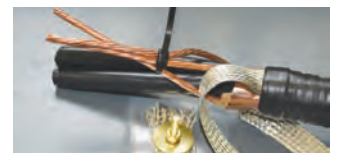
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■ Application of flexible power and power & control tray rated VFD cable, Type TC, MTW and WTTC

SAB VFD cables are designed to connect VFD Motors & Drives and to withstand the increases in voltage associated with this application.

These special multi-conductor cables shall be permitted for use in power, lighting, control and signal circuits in accordance with the National Electrical Code (NEC), NFPA 70 Article 336. They are also approved for use in cable trays, in raceways and in outdoor locations supported by a messenger wire in accordance with Underwriters Laboratories Inc. (UL) Standard of Safety UL 1277 and for class I division 2 circuits as permitted in NEC article 501.10 (B) and for class II division 2 circuits as permitted in NEC article 502.10 (B) and in industrial establishments where the conditions of maintenance and supervision ensure that only qualified persons service the installation, and where the cables are continuously supported and protected against physical damage using mechanical protection, such as struts, angles or channels. These tray rated VFD cables comply with the crush and impact requirements of Type TC and are identified for such use with the ER marking on the jacket.

Tray rated VFD cables are for use as exposed runs between a cable tray and the utilization device where the cables are continuously supported and protected against physical damage and are secured at intervals not exceeding 1.8 m (6 feet). Grounding for the utilization equipment shall be provided by an equipment grounding conductor within the cables. These tray cables shall also be permitted to be used in wet locations and are resistant to moisture and corrosive agents. Cables that are surface marked "oil resistant I" have a jacket that is for exposure to mineral oil at temperature not in excess of 60°C (140°F). Marked with "oil resistant II" they have a jacket that is for exposure to mineral oil at temperatures not in excess of 75°C (167°C). The cables are flame retardant and self-extinguishing and sunlight resistant depending on the jacket color. The cables listed as UR AWM or UL MTW can be applied in the NFPA 79 machinery area. These cables are specified for use acc. to National Electrical Code (NFPA 70) and acc. to the National Fire Protection Association Electrical Standard for industrial machinery (NFPA 79). Wind turbine power and control cables are intended to be installed in cable trays or raceways within a wind turbine generator.

Exemplary applications:

| | |
|-------------------------|------------|
| VFD XLPE TR | Type TC-ER |
| VFD XLPE TR D | Type TC-ER |
| VFD XLPE TR Lean | Type TC-ER |
| VFD Combo XLPE | Type TC-ER |
| VFD XLPE Auto TR | Type TC-ER |
| VFD Symmetrical XLPE TR | Type TC-ER |
| VFD XLPE 2KV TR | Type TC-ER |

Can be used to connect alternating current variable frequency drives to alternating current variable frequency motors



VFD Cables for Automation

VFD XLPE TR / VFD XLPE TR D

XLPE insulated, oil resistant and flexible VFD cable, available with drain wire
Type TC-ER



(UL) Type TC-ER 14AWG/3C RHW-2 CDRS + GNDG CDR 90C Dry/Wet 600V, Oil Res I & II, Sunlight Resistant, Direct Burial, (UL) WTTC 1000V, (UL) Flexible Motor Supply Cable, c(UL) CIC-TC XLPE 600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE

Construction:

| | |
|-------------------------|---|
| Conductor: | class K tinned copper stranding |
| Insulation: | special formulated XLPE |
| Color code: | blackish gray #’d conductors with green/yellow ground |
| Shielding: | double shield, AMA foil and tinned copper braiding (85% coverage) |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | | |
|---------------------------------|--------------|----------------------------------|
| Voltage: | UL/c(UL): | 600 V |
| | CSA-AWM: | 1000 V |
| | UL WTTC: | 1000 V |
| Temperature: | UL/c(UL)/ | up to +90°C static: -40/105°C |
| | CSA-AWM: | |
| | static: | |
| Burning characteristics: | UL/c(UL) FT4 | |

Outstanding features:

- XLPE insulation for excellent capacitance values
- Oil resistant meeting Oil Res 1 & 2
- Sun Res and Direct Burial approved
- Tinned copper class K stranding for improved flexibility
- UL TC-ER, UL MTW, UL WTTC & UL Flexible Motor Supply Cable
- c(UL) CIC-TC, CSA AWM FT 4
- Conductors rated for RHW-2

| Part Number | AWG/c | Drain Wire AWG | nominal OD-Ø | | Cable weight lbs/mft | Amperage† | | Maximum Horse Power Rating* | | | Capacitance (pF/ft) | | Impedance (Ohms) | |
|-------------|-------|----------------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|---------------------|--------|------------------|--------|
| | | | inch | mm | | 75° | 90° | 230V | 460V | 575V | Mutual | Ground | Mutual | Ground |
| 35681604 | 16/4c | - | 0.477 | 12.1 | 125 | - | 18 | 2 | 3 | 5 | 15.0 | 27.0 | 104 | 57 |
| 35681604D | 16/4c | - | 0.493 | 12.3 | 144 | - | 18 | 2 | 3 | 5 | 15.0 | 27.0 | 104 | 57 |
| 35681404 | 14/4c | - | 0.522 | 13.3 | 159 | 20 | 25 | 5 | 10 | 15 | 18.0 | 32.0 | 86 | 48 |
| 35681404D | 14/4c | 14 | 0.522 | 13.3 | 180 | 20 | 25 | 5 | 10 | 15 | 18.0 | 32.0 | 86 | 48 |
| 35681204 | 12/4c | - | 0.592 | 15.0 | 214 | 25 | 30 | 7 1/2 | 15 | 20 | 20.0 | 35.0 | 79 | 43 |
| 35681204D | 12/4c | 12 | 0.592 | 15.0 | 237 | 25 | 30 | 7 1/2 | 15 | 20 | 20.0 | 35.0 | 79 | 43 |
| 35681004 | 10/4c | - | 0.680 | 17.3 | 294 | 35 | 40 | 10 | 20 | 30 | 24.0 | 42.0 | 66 | 36 |
| 35681004D | 10/4c | 10 | 0.680 | 17.3 | 327 | 35 | 40 | 10 | 20 | 30 | 24.0 | 42.0 | 66 | 36 |
| 35680804 | 8/4c | - | 0.886 | 22.5 | 556 | 50 | 55 | 15 | 30 | 40 | 24.0 | 42.0 | 66 | 36 |
| 35680804D | 8/4c | 4x14 | 0.886 | 22.5 | 550 | 50 | 55 | 15 | 30 | 40 | 24.0 | 42.0 | 66 | 36 |
| 35680604 | 6/4c | - | 0.952 | 24.2 | 736 | 65 | 75 | 20 | 40 | 50 | 26.0 | 47.0 | 59 | 32 |
| 35680604D | 6/4c | 4x12 | 1.000 | 25.4 | 805 | 65 | 75 | 20 | 40 | 50 | 26.0 | 47.0 | 59 | 32 |
| 35680404 | 4/4c | - | 1.090 | 27.7 | 1079 | 85 | 95 | 25 | 50 | 60 | 29.0 | 53.0 | 53 | 29 |
| 35680404D | 4/4c | 4x10 | 1.090 | 27.7 | 1150 | 85 | 95 | 25 | 50 | 60 | 29.0 | 53.0 | 53 | 29 |
| 35680204 | 2/4c | - | 1.247 | 31.7 | 1550 | 115 | 130 | 40 | 75 | 100 | 33.0 | 60.0 | 46 | 25 |
| 35680204D | 2/4c | 4x8 | 1.247 | 31.7 | 1600 | 115 | 130 | 40 | 75 | 100 | 33.0 | 60.0 | 46 | 25 |

| Part Number | | EMC Cable Gland | | | | | | VFD Termination Kit |
|--------------------|-----------------|-----------------|---------|-----------|--------|------------|-----------|---------------------|
| | | Metric Thread | | PG Thread | | NPT Thread | | |
| Without Drain Wire | With Drain Wire | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 35681604 | 35681604D | EM2-25 | EM4-20C | EP2-16 | EP4-16 | EN2-3/4 | EN4-1/2C | - |
| 35681404 | 35681404D | EM2-25 | EM4-20C | EP2-16 | EP4-16 | EN2-3/4 | EN4-1/2C | VFD GRD KIT 14-1 |
| 35681204 | 35681204D | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35681004 | 35681004D | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35680804 | 35680804D | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-1 | VFD GRD KIT 14-1 |
| 35680604 | 35680604D | EM2-40C | EM4-40 | EP2-36 | EP4-36 | EN2-1 | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35680404 | 35680404D | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35680204 | 35680204D | EM2-50C | EM4-50 | EP2-42 | EP4-42 | - | EN4-1 1/2 | VFD GRD KIT 14-1 |

Table shows recommended cable glands. Other thread sizes may be available. Refer to EMC gland pages at the end of this brochure.

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))
* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLC) were determined from NEC Art. 430-250

VFD Cables for Automation

VFD XLPE TR Lean

XLPE insulated, double shielded and flexible VFD cable with reduced O.D.
Type TC-ER



(UL) Type TC-ER 14AWG/3C XHHN-2 CDRS + GNDG CDR 90C Dry/Wet 600V, Oil Res I & II, Sunlight Resistant, Direct Burial, (UL) WTTC 1000V, (UL) Flexible Motor Supply Cable, c(UL) CIC-TC XLPE 600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE

Construction:

| | |
|-------------------------|---|
| Conductor: | class K tinned copper stranding |
| Insulation: | special formulated XLPE |
| Color code: | blackish gray #’d conductors with green/yellow ground |
| Shielding: | double shield, AMA foil and tinned copper braiding (85% coverage) |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | | |
|---------------------------------|--------------|-------------|
| Voltage: | UL/c(UL): | 600 V |
| | CSA-AWM: | 1000 V |
| | UL WTTC: | 1000 V |
| Temperature: | UL/c(UL)/ | |
| | CSA-AWM: | up to +90°C |
| | static: | -40/105°C |
| Burning characteristics: | UL/c(UL) FT4 | |

Outstanding features:

- Interconnection of variable frequency drive control device to variable frequency motors
- UL 90°C wet
- WTTC: UL subject 2277
- TC-ER: UL standard 1277
- UL flexible motor supply cable 1000V
- recommended for installations up to 100ft
- Oil Res I & II
- double shield (100% shielded)

| Part Number | AWG/C | nominal OD-Ø | | Cable weight lbs/mft | Amperaget | | Maximum Horse Power Rating* | | |
|-------------|-------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|
| | | inch | mm | | 75° | 90° | 230V | 460V | 575V |
| 35661804 | 18/4c | 0.383 | 9.7 | 94 | | 14 | 1 | 2 | 3 |
| 35661604 | 16/4c | 0.423 | 10.7 | 120 | | 18 | 2 | 3 | 5 |
| 35661404 | 14/4c | 0.468 | 11.9 | 153 | 20 | 25 | 5 | 10 | 15 |
| 35661204 | 12/4c | 0.530 | 13.4 | 207 | 25 | 30 | 7 1/2 | 15 | 20 |
| 35661004 | 10/4c | 0.606 | 15.4 | 286 | 35 | 40 | 10 | 20 | 30 |
| 35660804 | 8/4c | 0.814 | 20.7 | 471 | 50 | 55 | 15 | 30 | 40 |

| Part Number | EMC Cable Gland | | | | | | VFD Termination Kit |
|-------------|-----------------|--------|-----------|--------|------------|----------|---------------------|
| | Metric Thread | | PG Thread | | NPT Thread | | |
| | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 35661804 | EM2-20 | EM4-20 | EP2-13 | EP4-13 | EN2-1/2 | EN4-1/2 | VFD GRD KIT 14-1 |
| 35661604 | EM2-20 | EM4-20 | EP2-13 | EP4-13 | EN2-1/2 | EN4-1/2 | VFD GRD KIT 14-1 |
| 35661404 | EM2-25 | EM4-20 | EP2-16 | EP4-16 | EN2-1/2 | EN4-1/2C | VFD GRD KIT 14-1 |
| 35661204 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35661004 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35660804 | EM2-32 | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-3/1 | VFD GRD KIT 14-1 |

Table shows recommended cable glands. Other thread sizes may be available. Refer to EMC gland pages at the end of this brochure.

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))
* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLC) were determined from NEC Art. 430-250

VFD Cables for Automation

VFD Combo XLPE

XLPE insulation plus shielded pair
Type TC-ER



UL Type TC-ER 14AWG/3C RHW-2 CDRS + GNDG CDR + 14AWG/1PR 90C Dry/Wet 600V, Oil Res I & II, Sunlight Resistant, Direct Burial, (UL) WTTTC 1000V, (UL) Flexible Motor Supply Cable, c(UL) CIC-TC XLPE 600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE



Construction:

| | |
|-------------------------|---|
| Conductor: | class K tinned copper stranding |
| Insulation: | special formulated XLPE |
| Shielding: | |
| <i>pair:</i> | aluminum foil and drain wire (drain wire same size as pair) |
| <i>overall:</i> | double shield, AMA foil and tinned copper braiding |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | |
|---------------------------------|---|
| Voltage: | UL/c(UL): 600 V |
| | CSA-AWM: 1000 V |
| | UL WTTTC: 1000 V |
| Temperature: | UL/c(UL)/CSA-AWM: up to +90°C |
| | static: -40/105°C |
| Burning characteristics: | UL/c(UL) FT4 |
| Color code: | blackish gray #’d conductors with green/yellow ground |

Outstanding features:

- XLPE insulation for excellent capacitance values
- Shielded pair for temperature sensor or brake
- Oil resistant meeting Oil Res 1 & 2
- Sun Res and Direct Burial approved
- UL TC-ER, UL MTW, UL WTTTC & UL Flexible Motor Supply Cable
- c(UL) CIC-TC, CSA AWM FT 4
- Conductors rated for RHW-2

| Part Number | AWG/C | Pair | nominal OD-Ø | | Cable weight lbs/mft | Amperaget | | Maximum Horse Power Rating* | | |
|-------------|-------|--------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|
| | | | inch | mm | | 75° | 90° | 230V | 460V | 575V |
| 35691614 | 16/4c | 18/1pr | 0.573 | 14.6 | 144 | - | 18 | - | 3 | 3 |
| 35691624D | 16/4c | 16/1pr | 0.580 | 14.7 | 210 | - | 18 | - | 3 | 3 |
| 35691414 | 14/4c | 18/1pr | 0.616 | 15.6 | 175 | 20 | 25 | 5 | 10 | 10 |
| 35691464 | 14/4c | 18/2pr | 0.662 | 16.8 | 254 | 20 | 25 | 5 | 10 | 10 |
| 35691424D | 14/4c | 16/1pr | 0.626 | 15.9 | 257 | 20 | 25 | 5 | 10 | 10 |
| 35691404 | 14/4c | 14/1pr | 0.628 | 16.0 | 213 | 20 | 25 | 5 | 10 | 10 |
| 35691214 | 12/4c | 18/1pr | 0.654 | 16.6 | 231 | 25 | 30 | 5 | 10 | 15 |
| 35691264 | 12/4c | 18/2pr | 0.698 | 17.7 | 299 | 25 | 30 | 5 | 10 | 15 |
| 35691224D | 12/4c | 16/1pr | 0.662 | 16.8 | 308 | 25 | 30 | 5 | 10 | 15 |
| 35691204 | 12/4c | 14/1pr | 0.667 | 16.9 | 277 | 25 | 30 | 5 | 10 | 15 |
| 35691064 | 10/4c | 18/2pr | 0.762 | 19.4 | 383 | 35 | 40 | 7 1/2 | 15 | 20 |
| 35691024D | 10/4c | 16/1pr | 0.738 | 18.7 | 417 | 35 | 40 | 7 1/2 | 15 | 20 |
| 35691004 | 10/4c | 14/1pr | 0.736 | 18.7 | 354 | 35 | 40 | 7 1/2 | 15 | 20 |
| 35690864 | 8/4c | 18/2pr | 0.961 | 24.4 | 576 | 50 | 55 | 10 | 25 | 30 |
| 35690804 | 8/4c | 14/1pr | 0.960 | 24.4 | 536 | 50 | 55 | 10 | 25 | 30 |
| 35690664 | 6/4c | 16/2pr | 1.032 | 26.2 | 766 | 65 | 75 | 15 | 30 | 40 |
| 35690604 | 6/4c | 14/1pr | 1.030 | 26.2 | 726 | 65 | 75 | 15 | 30 | 40 |
| 35690404 | 4/4c | 14/1pr | 1.140 | 29.0 | 1011 | 85 | 95 | 20 | 40 | 50 |
| 35690204 | 2/4c | 14/1pr | 1.280 | 32.5 | 1401 | 115 | 130 | 30 | 60 | 75 |

D in P/N includes drain wire with overall shield (same AWG as power conductors)

| Part Number | | EMC Cable Gland | | | | | | VFD Termination Kit |
|--------------------|-----------------|-----------------|--------|-----------|--------|------------|-----------|---------------------|
| without Drain Wire | with Drain Wire | Metric Thread | | PG Thread | | NPT Thread | | |
| | | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 35691614 | 35691624D | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | - |
| 35691414 | 35691424D | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691404 | - | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691464 | - | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691214 | - | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691204 | 35691224D | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691264 | - | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35691004 | 35691024D | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-1 | VFD GRD KIT 14-1 |
| 35691064 | - | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-1 | VFD GRD KIT 14-1 |
| 35690804 | - | EM2-40C | EM4-40 | EP2-36 | EP4-36 | EN2-1 | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35690864 | - | EM2-40C | EM4-40 | EP2-36 | EP4-36 | EN2-1 | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35690604 | - | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35690664 | - | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35690404 | - | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35690204 | - | EM2-50C | EM4-50 | EP2-42 | EP4-42 | - | EN4-1 1/2 | VFD GRD KIT 14-1 |

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))

* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLO) were determined from NEC Art. 430-250



VFD Cables for Automation

VFD XLPE Auto TR

Continuous flex and oil resistant VFD Cable with XLPE insulation
Type TC-ER



600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE



(UL) Type TC-ER 14AWG/4C RHW-2 90C Dry/Wet 600V, Oil Res I & II, Sunlight Resistant, Direct Burial, (UL) WTTC 1000V, (UL) Flexible Motor Supply Cable, c(UL) CIC-TC XLPE 600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE

Construction:

| | |
|-------------------------|---|
| Conductor: | class M tinned copper stranding |
| Insulation: | special formulated XLPE |
| Color code: | blackish gray #’d conductors with green/yellow ground |
| Shielding: | double shield, AMA foil and tinned copper braiding (85% coverage) |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | | |
|---------------------------------|--------------|-------------|
| Voltage: | UL/c(UL): | 600 V |
| | CSA-AWM: | 1000 V |
| | UL WTTC: | 1000 V |
| Temperature: | UL/c(UL)/ | up to +90°C |
| | CSA-AWM: | |
| | static: | |
| Burning characteristics: | UL/c(UL) FT4 | |

Outstanding features:

- XLPE insulation for excellent capacitance values
- Oil resistant meeting Oil Res 1 & 2
- Sun Res and Direct Burial approved
- Class M stranding for continuous flexing
- UL TC-ER, UL MTW, UL WTTC & UL Flexible Motor Supply Cable
- c(UL) CIC-TC, CSA AWM FT 4
- Conductors rated for RHW-2

| Part Number | AWG/C | nominal OD-Ø | | Cable weight lbs/mft | Amperaget | | Maximum Horse Power Rating* | | |
|-------------|-------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|
| | | inch | mm | | 75° | 90° | 230V | 460V | 575V |
| 35781604 | 16/4c | 0.512 | 13.0 | 129 | - | 18 | 2 | 3 | 5 |
| 35781404 | 14/4c | 0.569 | 14.5 | 164 | 20 | 25 | 5 | 10 | 15 |
| 35781204 | 12/4c | 0.646 | 16.4 | 220 | 25 | 30 | 7 1/2 | 15 | 20 |
| 35781004 | 10/4c | 0.704 | 17.9 | 303 | 35 | 40 | 10 | 20 | 30 |
| 35780804 | 8/4c | 0.909 | 23.1 | 567 | 50 | 55 | 15 | 30 | 40 |
| 35780604 | 6/4c | 0.988 | 25.1 | 758 | 65 | 75 | 20 | 40 | 50 |
| 35780404 | 4/4c | 1.173 | 29.8 | 1111 | 85 | 95 | 25 | 50 | 60 |

| Part Number | EMC Cable Gland | | | | | | VFD Termination Kit |
|-------------|-----------------|---------|-----------|--------|------------|-----------|---------------------|
| | Metric Thread | | PG Thread | | NPT Thread | | |
| | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 35781604 | EM2-25 | EM4-20C | EP2-16 | EP4-16 | EN2-3/4 | EN4-1/2C | - |
| 35781404 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35781204 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35781004 | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35780804 | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-1 | VFD GRD KIT 14-1 |
| 35780604 | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35780404 | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |

Table shows recommended cable glands. Other thread sizes may be available. Refer to EMC gland pages at the end of this brochure.

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))
* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLC) were determined from NEC Art. 430-250

VFD Cables for Automation

VFD Symmetrical XLPE TR

Flexible VFD cable with 3 symmetrical grounds
Type TC-ER



600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE



(UL) TC-ER 10AWG/3C RHW-2 CDRS + 3 x 14 AWG GNDS 90C Dry/Wet, Oil Resistant I/II, Sunlight Resistant, Direct Burial,
(UL) WTTC 1000V, (UL) Flexible Motor Supply Cable, c(UL) CIC-TC XLPE 600V FT4, CSA AWM I/II A/B 90C 1000V FT4 RoHS CE

Construction:

| | |
|-------------------------|---|
| Conductor: | class K tinned copper stranding |
| Insulation: | special formulated XLPE |
| Color code: | blackish gray #’d conductors with green/yellow ground |
| Stranding: | in layers with 3 tinned ground wires in the interstices |
| Shielding: | double shield, AMA foil and tinned copper braiding (85% coverage) |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | | |
|---------------------------------|--------------|----------------------------------|
| Voltage: | UL/c(UL): | 600 V |
| | CSA-AWM: | 1000 V |
| | UL WTTC: | 1000 V |
| Temperature: | UL/c(UL)/ | up to +90°C static: -40/105°C |
| | CSA-AWM: | |
| | static: | |
| Burning characteristics: | UL/c(UL) FT4 | |

Outstanding features:

- XLPE insulation for excellent capacitance values
- Oil resistant meeting Oil Res 1 & 2
- 3 symmetrical grounds for CMC
- Tinned Class K stranding for improved flexibility
- UL TC-ER, UL MTW, UL WTTC & UL Flexible Motor Supply Cable
- c(UL) CIC-TC, CSA AWM FT 4
- Conductors rated for RHW-2

| Part Number | AWG/C | Ground | nominal OD-Ø | | Cable weight lbs/mft | Amperaget | | Maximum Horse Power Rating* | | |
|-------------|-------|--------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|
| | | | inch | mm | | 75° | 90° | 230V | 460V | 575V |
| 35681403 | 14/3c | 3 x 18 | 0.501 | 12.7 | 170 | - | 25 | 5 | 10 | 15 |
| 35681203 | 12/3c | 3 x 16 | 0.570 | 14.5 | 230 | 25 | 30 | 7 1/2 | 15 | 20 |
| 35681003 | 10/3c | 3 x 14 | 0.642 | 16.3 | 312 | 35 | 40 | 10 | 20 | 30 |
| 35680803 | 8/3c | 3 x 14 | 0.811 | 20.6 | 465 | 50 | 55 | 15 | 30 | 40 |
| 35680603 | 6/3c | 3 x 12 | 0.954 | 24.2 | 674 | 65 | 75 | 20 | 40 | 50 |
| 35680403 | 4/3c | 3 x 12 | 1.062 | 27.0 | 877 | 85 | 95 | 25 | 50 | 60 |
| 35680203 | 2/3c | 3 x 10 | 1.226 | 31.1 | 1266 | 115 | 130 | 40 | 75 | 100 |

| Part Number | EMC Cable Gland | | | | | | VFD Termination Kit |
|-------------|-----------------|--------|-----------|--------|------------|-----------|---------------------|
| | Metric Thread | | PG Thread | | NPT Thread | | |
| | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 35681403 | EM2-25C | EM4-25 | EP2-16 | EP4-21 | - | EN4-3/4 | VFD GRD KIT 14-1 |
| 35681203 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35681003 | EM2-25C | EM4-25 | EP2-21 | EP4-21 | EN2-3/4 | EN4-3/4 | VFD GRD KIT 14-1 |
| 35680803 | EM2-32C | EM4-32 | EP2-29 | EP4-29 | EN2-1 | EN4-1 | VFD GRD KIT 14-1 |
| 35680603 | EM2-32C | EM4-40 | EP2-36 | EP4-36 | EN2-1 | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35680403 | EM2-40C | EM4-40 | EP2-36 | EP4-36 | - | EN4-1 1/4 | VFD GRD KIT 14-1 |
| 35680203 | EM2-50C | EM4-50 | EP2-42 | EP4-42 | - | EN4-1 1/2 | VFD GRD KIT 14-1 |

Table shows recommended cable glands. Other thread sizes may be available. Refer to EMC gland pages at the end of this brochure.

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))
* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLC) were determined from NEC Art. 430-250

VFD Cables for Automation

VFD XLPE 2KV TR

Shielded VFD cable 2kV with 3 symmetrical grounds
Type TC-ER



2/0 AWG/3/C RHW-2 2000V 3x6 AWG GNDS Shielded Type TC-ER SUN RES DIR BUR



Construction:

| | |
|-------------------------|--|
| Conductor: | class B bare copper stranding |
| Insulation: | special formulated XLPE |
| Color code: | blackish gray #'d conductors with green/yellow ground |
| Stranding: | in layers with three uninsulated bare ground wires in the filler |
| Shielding: | uncoated 5 mil copper tape shield with 50% overlap |
| Jacket material: | special sunlight and oil resistant black PVC |

Technical data:

| | |
|---------------------------------|----------------------------------|
| Voltage: | UL: 2000 V |
| Temperature: | UL: up to +90°C static: -25°C |
| Burning characteristics: | UL FT4 |

Outstanding features:

- XLPE insulation for excellent capacitance values
- 3 symmetrical grounds for better common mode current flow
- Sun Res and Direct Burial approved
- Copper tape shield (50% overlap) for premium EMI & RFI protection
- UL TC-ER
- Conductors rated for RHW-2

| Part Number | AWG/C | Ground | nominal OD-Ø | | Cable weight lbs/mft | Amperaget | | Maximum Horse Power Rating* | | |
|-------------|--------|--------|--------------|------|-------------------------|-----------|-----|-----------------------------|------|------|
| | | | inch | mm | | 75° | 90° | 230V | 460V | 575V |
| 8690203 | 1/3c | 3 x 8 | 1.266 | 32.2 | 1465 | 130 | 150 | 40 | 75 | 100 |
| 8691103 | 1/0-3c | 3 x 6 | 1.384 | 35.2 | 1822 | 150 | 170 | 50 | 100 | 125 |
| 8692103 | 2/0-3c | 3 x 6 | 1.476 | 37.5 | 2130 | 175 | 195 | 60 | 125 | 150 |
| 8693103 | 3/0-3c | 3 x 5 | 1.582 | 40.2 | 2650 | 200 | 225 | 60 | 150 | 150 |
| 8694103 | 4/0-3c | 3 x 4 | 1.800 | 45.7 | 3251 | 230 | 260 | 75 | 150 | 200 |
| 8692513 | 250-3c | 3 x 4 | 1.835 | 46.6 | 3720 | 255 | 290 | 75 | 150 | 200 |
| 8693503 | 350-3c | 3 x 2 | 2.130 | 54.1 | 5025 | 310 | 350 | 100 | 200 | 250 |
| 8695003 | 500-3c | 3 x 1 | 2.402 | 61.0 | 6805 | 380 | 430 | 125 | 250 | 350 |

| Part Number | EMC Cable Gland | | | | | | VFD Termination Kit |
|-------------|-----------------|-----------|-----------|--------|------------|-----------|---------------------|
| | Metric Thread | | PG Thread | | NPT Thread | | |
| | EMC-2 | EMC-4 | EMC-2 | EMC-4 | EMC-2 | EMC-4 | |
| 8690203 | EM2-50C | EM4-50 | EP2-42 | EP4-42 | - | EN4-1 1/2 | VFD GRD KIT 1-4/0 |
| 8691103 | EM2-50C | EM4-50 | EP2-42 | EP4-42 | - | EN4-1 1/2 | VFD GRD KIT 1-4/0 |
| 8692103 | EM2-63 | EM4-63 | EP2-48 | EP4-48 | - | EN4-2 | VFD GRD KIT 1-4/0 |
| 8693103 | EM2-63 | EM4-63 | EP2-48 | EP4-48 | - | EN4-2 | VFD GRD KIT 1-4/0 |
| 8694103 | - | EM4-63C | - | - | - | - | VFD GRD KIT 1-4/0 |
| 8692513 | - | EM4-63C | - | - | - | - | VFD GRD KIT 250-500 |
| 8693503 | - | EM2-75-EX | - | - | - | - | VFD GRD KIT 250-500 |
| 8695003 | - | EM2-75-EX | - | - | - | - | VFD GRD KIT 250-500 |

Table shows recommended cable glands. Other thread sizes may be available. Refer to EMC gland pages at the end of this brochure.

† Allowable ampacities are based on no more than three current carrying conductors in a raceway, cable, or direct buried and an ambient temperature of 30°C (2011 NEC Table 310.15(B)(16))
* Maximum Horse Power rating represents the largest HP motor the AWG is recommended for based on horse power (HP) and the full load current (FLC) x 125% per NEC Art. 430-122 (A). Amperes (FLC) were determined from NEC Art. 430-250

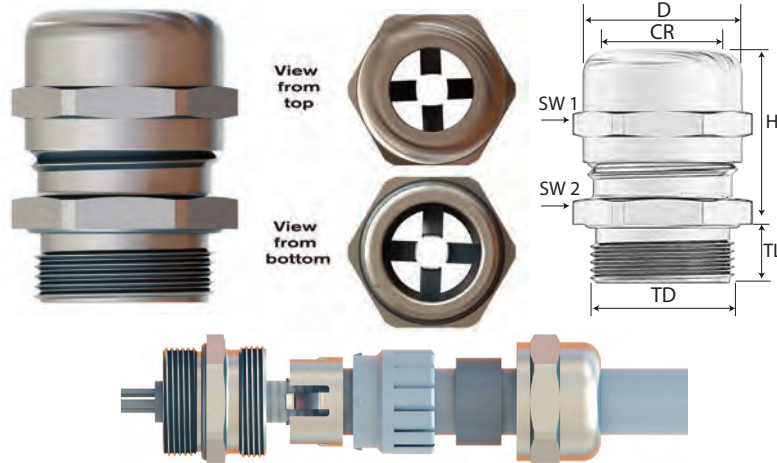
EMC Grounding Solutions

CG EMC-2 Metric Grounding Cable Gland

Nickel plated brass EMC cable gland, standard & longer thread

Metric Thread

Optimal grounding of shielded cable, easy installation, water tight, impact resistant.



Technical data:

| | |
|---------------------------|---|
| Material: | Brass, Nickel Plated |
| Contact spring: | Special Copper Alloy |
| Clamping Insert: | Polyamide 6 |
| Seal: | Chloroprene (CR) |
| O-Ring: | Neoprene (NBR) |
| Protection type: | IP 68 - 5 Bar NEMA 4X |
| Temperature range: | <i>permanent:</i> -20°C to +100°C <i>intermittent:</i> -40°C to +150°C |
| Flammability: | V2 (according to UL 94) |
| Approvals: | cURus, cULus, VDE, DNV-GL, CE |



| Part Number | Thread Type | Clamping Range Ø min-max (CR) | | Outer Ø (D) inches | Shield Diameter (Ø min) | | Wrenching Flats | | Thread Diameter (TD) inches | Thread Length (TL) inches | Max. Height (H) inches | UL |
|----------------------------------|-------------|-------------------------------------|-------------|--------------------------|----------------------------|-----|------------------------|-------------------------|-----------------------------------|---------------------------------|------------------------------|-------|
| | | inches | mm | | inches | mm | Cap (SW1) inches | Body (SW2) inches | | | | |
| Metric | | | | | | | | | | | | |
| EM2-12 | M12x1.5 | 0.118 - 0.256 | 3.0 - 6.5 | 0.610 | 0.098 | 2.5 | 0.551 | 0.551 | 0.472 | 0.236 | 0.945 | cURus |
| EM2-16 | M16x1.5 | 0.157 - 0.315 | 4.0 - 8.0 | 0.787 | 0.138 | 3.5 | 0.669 | 0.709 | 0.630 | 0.276 | 1.004 | cURus |
| EM2-16C | M16x1.5 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.157 | 4.0 | 0.787 | 0.787 | 0.630 | 0.256 | 1.240 | cURus |
| EM2-20 | M20x1.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.197 | 5.0 | 0.866 | 0.866 | 0.787 | 0.315 | 1.043 | cURus |
| EM2-25 | M25x1.5 | 0.394 - 0.551 | 10.0 - 14.0 | 1.181 | 0.335 | 8.5 | 0.945 | 1.063 | 0.984 | 0.315 | 1.181 | cULus |
| EM2-25C | M25x1.5 | 0.512 - 0.709 | 13.0 - 18.0 | 1.299 | 0.433 | 11 | 1.181 | 1.181 | 0.984 | 0.315 | 1.575 | cULus |
| EM2-32 | M32x1.5 | 0.512 - 0.709 | 13.0 - 18.0 | 1.476 | 0.433 | 11 | 1.181 | 1.339 | 1.260 | 0.354 | 1.378 | cULus |
| EM2-32C | M32x1.5 | 0.709 - 0.984 | 18.0 - 25.0 | 1.752 | 0.630 | 16 | 1.575 | 1.575 | 1.260 | 0.354 | 1.811 | cULus |
| EM2-40 | M40x1.5 | 0.709 - 0.984 | 18.0 - 25.0 | 1.909 | 0.630 | 16 | 1.575 | 1.693 | 1.575 | 0.354 | 1.594 | cULus |
| EM2-40C | M40x1.5 | 0.866 - 1.260 | 22.0 - 32.0 | 2.185 | 0.787 | 20 | 1.969 | 1.969 | 1.575 | 0.354 | 2.146 | cULus |
| EM2-50 | M50x1.5 | 0.866 - 1.260 | 22.0 - 32.0 | 2.402 | 0.787 | 20 | 1.969 | 2.165 | 1.969 | 0.354 | 1.969 | cULus |
| EM2-50C | M50x1.5 | 1.063 - 1.732 | 27.0 - 44.0 | 2.165 | 1.024 | 26 | 1.969 | 2.165 | 1.969 | 0.354 | 1.969 | - |
| EM2-63 | M63x1.5 | 1.339 - 1.732 | 34.0 - 44.0 | 2.953 | 1.220 | 31 | 2.520 | 2.677 | 2.480 | 0.551 | 2.165 | cULus |
| Metric with Long Thread * | | | | | | | | | | | | |
| EM2-12L | M12x1.5 | 0.118 - 0.256 | 3.0 - 6.5 | 0.610 | 0.098 | 2.5 | 0.551 | 0.551 | 0.472 | 0.472 | 0.945 | - |
| EM2-16L | M16x1.5 | 0.157 - 0.315 | 4.0 - 8.0 | 0.787 | 0.138 | 3.5 | 0.669 | 0.709 | 0.630 | 0.472 | 1.004 | - |
| EM2-20L | M20x1.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.197 | 5.0 | 0.866 | 0.866 | 0.787 | 0.472 | 1.043 | - |
| EM2-25L | M25x1.5 | 0.394 - 0.551 | 10.0 - 14.0 | 1.181 | 0.335 | 8.5 | 0.945 | 1.063 | 0.984 | 0.472 | 1.181 | - |
| EM2-32L | M32x1.5 | 0.512 - 0.709 | 13.0 - 18.0 | 1.476 | 0.433 | 11 | 1.181 | 1.339 | 1.260 | 0.591 | 1.378 | - |
| EM2-40L | M40x1.5 | 0.709 - 0.984 | 18.0 - 25.0 | 1.909 | 0.630 | 16 | 1.575 | 1.693 | 1.575 | 0.591 | 1.594 | - |
| EM2-50L | M50x1.5 | 0.866 - 1.260 | 22.0 - 32.0 | 2.402 | 0.787 | 20 | 1.969 | 2.165 | 1.969 | 0.591 | 1.969 | - |
| EM2-63L | M63x1.5 | 1.339 - 1.732 | 34.0 - 44.0 | 2.953 | 1.220 | 31 | 2.520 | 2.677 | 2.480 | 0.709 | 2.165 | - |

* Long thread version is not NEMA 4X rated

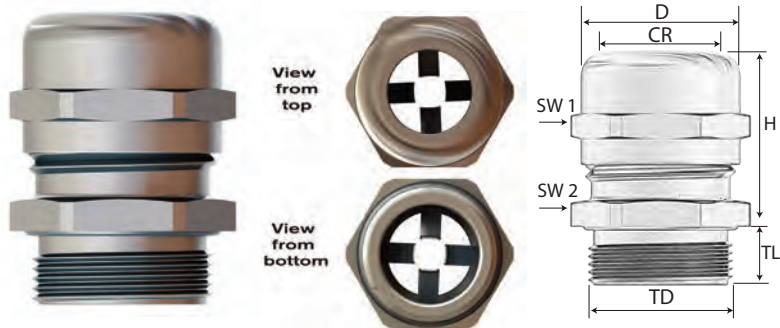
Locknuts need to be purchased separately, see page 14

CG EMC-2 PG / CG EMC-2 NPT Grounding Cable Gland

Nickel plated brass EMC cable gland, standard & longer thread

PG, & NPT
Thread

Optimal grounding of shielded cable, easy installation, water tight, impact resistant.



Technical data:

| | |
|---------------------------|--------------------------|
| Material: | Brass, Nickel Plated |
| Contact spring: | Special Copper Alloy |
| Clamping Insert: | Polyamide 6 |
| Seal: | Chloroprene (CR) |
| O-Ring: | Neoprene (NBR) |
| Protection type: | IP 68 - 5 Bar NEMA 4X |
| Temperature range: | |
| <i>permanent:</i> | -20°C to +100°C |
| <i>intermittent:</i> | -40°C to +150°C |
| Flammability: | V2 (according to UL 94) |
| Approvals: | cURus, cULus, DNV-GL, CE |



| Part Number | Thread Type | Clamping Range Ø min-max (CR) | | Outer Ø (D) inches | Shield Diameter (Ø min) | | Wrenching Flats | | Thread Diameter (TD) inches | Thread Length (TL) inches | Max. Height (H) inches | UL |
|-----------------------------|-------------|-------------------------------------|-------------|--------------------------|----------------------------|-----|------------------------|-------------------------|-----------------------------------|---------------------------------|------------------------------|-------|
| | | inches | mm | | inches | mm | Cap (SW1) inches | Body (SW2) inches | | | | |
| PG | | | | | | | | | | | | |
| EP2-7 | PG 7 | 0.118 - 0.256 | 3.0 - 6.5 | 0.610 | 0.098 | 2.5 | 0.551 | 0.551 | 0.492 | 0.236 | 0.945 | - |
| EP2-9 | PG 9 | 0.157 - 0.315 | 4.0 - 8.0 | 0.744 | 0.138 | 3.5 | 0.669 | 0.669 | 0.598 | 0.236 | 1.004 | cURus |
| EP2-11 | PG 11 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.157 | 4.0 | 0.787 | 0.787 | 0.732 | 0.236 | 1.102 | cURus |
| EP2-13 | PG 13.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.197 | 5.0 | 0.866 | 0.866 | 0.803 | 0.256 | 1.043 | cURus |
| EP2-16 | PG 16 | 0.394 - 0.551 | 10.0 - 14.0 | 1.043 | 0.335 | 8.5 | 0.945 | 0.945 | 0.886 | 0.256 | 1.181 | cULus |
| EP2-21 | PG 21 | 0.512 - 0.709 | 13.0 - 18.0 | 1.299 | 0.433 | 11 | 1.181 | 1.181 | 1.114 | 0.283 | 1.378 | cULus |
| EP2-29 | PG 29 | 0.709 - 0.984 | 18.0 - 25.0 | 1.752 | 0.630 | 16 | 1.575 | 1.575 | 1.457 | 0.315 | 1.594 | cULus |
| EP2-36 | PG 36 | 0.866 - 1.26 | 22.0 - 32.0 | 2.185 | 0.787 | 20 | 1.969 | 1.969 | 1.850 | 0.354 | 1.969 | cULus |
| EP2-42 | PG 42 | 1.181 - 1.496 | 30.0 - 38.0 | 2.520 | 1.102 | 28 | 2.283 | 2.283 | 2.126 | 0.472 | 2.008 | cULus |
| EP2-48 | PG 48 | 1.339 - 1.732 | 34.0 - 44.0 | 2.756 | 1.220 | 31 | 2.520 | 2.520 | 2.335 | 0.551 | 2.165 | cULus |
| PG with Long Thread* | | | | | | | | | | | | |
| EP2-7L | PG 7 | 0.118 - 0.256 | 3.0 - 6.5 | 0.610 | 0.098 | 2.5 | 0.551 | 0.551 | 0.492 | 0.394 | 0.945 | - |
| EP2-9L | PG 9 | 0.157 - 0.315 | 4.0 - 8.0 | 0.744 | 0.138 | 3.5 | 0.669 | 0.669 | 0.598 | 0.394 | 1.004 | - |
| EP2-11L | PG 11 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.157 | 4.0 | 0.787 | 0.787 | 0.732 | 0.394 | 1.102 | - |
| EP2-13L | PG 13.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.197 | 5.0 | 0.866 | 0.866 | 0.803 | 0.394 | 1.043 | - |
| EP2-16L | PG 16 | 0.394 - 0.551 | 10.0 - 14.0 | 1.043 | 0.335 | 8.5 | 0.945 | 0.945 | 0.886 | 0.394 | 1.181 | - |
| EP2-21L | PG 21 | 0.512 - 0.709 | 13.0 - 18.0 | 1.299 | 0.433 | 11 | 1.181 | 1.181 | 1.114 | 0.472 | 1.378 | - |
| EP2-29L | PG 29 | 0.709 - 0.984 | 18.0 - 25.0 | 1.752 | 0.630 | 16 | 1.575 | 1.575 | 1.457 | 0.472 | 1.594 | - |
| EP2-36L | PG 36 | 0.866 - 1.26 | 22.0 - 32.0 | 2.185 | 0.787 | 20 | 1.969 | 1.969 | 1.850 | 0.551 | 1.969 | - |
| EP2-42L | PG 42 | 1.181 - 1.496 | 30.0 - 38.0 | 2.520 | 1.102 | 28 | 2.283 | 2.283 | 2.126 | 0.630 | 2.008 | - |
| EP2-48L | PG 48 | 1.339 - 1.732 | 34.0 - 44.0 | 2.756 | 1.220 | 31 | 2.520 | 02.52 | 2.335 | 0.709 | 2.165 | - |
| NPT | | | | | | | | | | | | |
| EN2-3/8 | NPT 3/8 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.157 | 4.0 | 0.787 | 0.787 | 0.675 | 0.453 | 1.240 | cURus |
| EN2-1/2 | NPT 1/2 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.197 | 5.0 | 0.866 | 0.866 | 0.840 | 0.512 | 1.083 | cULus |
| EN2-3/4R* | NPT 3/4 | 0.354 - 0.630 | 9.0 - 16.0 | 1.299 | 0.335 | 8.5 | 1.181 | 1.181 | 1.050 | 0.512 | 1.496 | cULus |
| EN2-3/4 | NPT 3/4 | 0.512 - 0.709 | 13.0 - 18.0 | 1.299 | 0.433 | 11 | 1.181 | 1.181 | 1.050 | 0.512 | 1.496 | cULus |
| EN2-1 | NPT 1 | 0.709 - 0.984 | 18.0 - 25.0 | 1.909 | 0.630 | 16 | 1.575 | 1.693 | 1.315 | 0.512 | 1.791 | cURus |

* PG version and EN2-3/4R are not NEMA 4X rated

Locknuts need to be purchased separately, see page 14

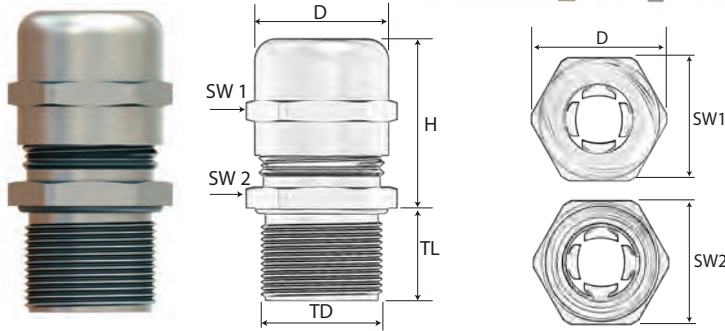
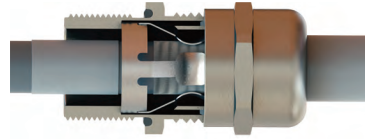
EMC Grounding Solutions

CG EMC-4 Metric / CG EMC-4 PG / CG EMC-4 NPT

Nickel plated brass EMC cable gland, vibration proof

Metric, PG, & NPT Thread

Optimal grounding of shielded cable, bi-directional cable installation, impact resistant.



Technical data:

| | |
|---------------------------|---|
| Material: | Brass, Nickel Plated |
| Contact spring: | Special Copper Alloy |
| Clamping Insert: | Polyamide 6 |
| Seal: | Chloroprene (CR) |
| O-Ring: | Neoprene (NBR) |
| Protection type: | IP 68 - 5 Bar NEMA 4X |
| Temperature range: | permanent: -20°C to +100°C intermittent: -40°C to +150°C |
| Flammability: | V2 (according to UL 94) |
| Approvals: | cURus, cULus, VDE, DNV-GL, CE |



| Part Number | Thread Type | Clamping Range Ø min-max (CR) | | Outer Ø (D) inches | Shield Diameter (Ø min) | | Wrenching Flats | | Thread Diameter (TD) inches | Thread Length (TL) inches | Max. Height (H) inches | UL |
|---------------|-------------|-------------------------------------|-------------|--------------------------|----------------------------|-----|------------------------|-------------------------|-----------------------------------|---------------------------------|------------------------------|-------|
| | | inches | mm | | inches | mm | Cap (SW1) inches | Body (SW2) inches | | | | |
| Metric | | | | | | | | | | | | |
| EM4-12 | M12x1.5 | 0.118 - 0.256 | 3.0 - 6.5 | 0.610 | 0.079 | 2.0 | 0.551 | 0.551 | 0.472 | 0.236 | 1.181 | cURus |
| EM4-16 | M16x1.5 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.138 | 3.5 | 0.787 | 0.787 | 0.630 | 0.236 | 1.378 | cURus |
| EM4-20 | M20x1.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.177 | 4.5 | 0.866 | 0.866 | 0.787 | 0.236 | 1.319 | cULus |
| EM4-20C | M20x1.5 | 0.295 - 0.551 | 7.5 - 14.0 | 1.055 | 0.217 | 5.5 | 0.945 | 0.945 | 0.787 | 0.315 | 1.634 | cULus |
| EM4-25 | M25x1.5 | 0.394 - 0.709 | 10.0 - 18.0 | 1.299 | 0.276 | 7.0 | 1.181 | 1.181 | 0.984 | 0.315 | 1.752 | cULus |
| EM4-32 | M32x1.5 | 0.630 - 0.984 | 16.0 - 25.0 | 1.752 | 0.472 | 12 | 1.575 | 1.575 | 1.260 | 0.354 | 2.165 | cULus |
| EM4-40 | M40x1.5 | 0.866 - 1.260 | 22.0 - 32.0 | 2.185 | 0.709 | 18 | 1.969 | 1.969 | 1.575 | 0.354 | 2.461 | cULus |
| EM4-50 | M50x1.5 | 1.181 - 1.496 | 30.0 - 38.0 | 2.520 | 1.024 | 26 | 2.283 | 2.283 | 1.969 | 0.354 | 2.913 | cULus |
| EM4-63 | M63x1.5 | 1.339 - 1.732 | 34.0 - 44.0 | 2.953 | 1.181 | 30 | 2.520 | 2.677 | 2.480 | 0.551 | 2.362 | cULus |
| EM4-63C | M63x1.5 | 1.457 - 2.087 | 37.0 - 53.0 | 3.268 | 1.299 | 33 | 2.953 | 2.953 | 2.480 | 0.394 | 2.953 | cULus |
| PG1* | | | | | | | | | | | | |
| EP4-7 | PG 7 | 0.118 - 0.256 | 3.0 - 6.5 | 0.650 | 0.079 | 2.0 | 0.551 | 0.591 | 0.492 | 0.236 | 1.181 | - |
| EP4-11 | PG 11 | 0.197 - 0.394 | 5.0 - 10.0 | 0.906 | 0.138 | 3.5 | 0.787 | 0.827 | 0.732 | 0.236 | 1.378 | - |
| EP4-13 | PG 13.5 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.177 | 4.5 | 0.866 | 0.866 | 0.803 | 0.256 | 1.319 | - |
| EP4-16 | PG 16 | 0.295 - 0.551 | 7.5 - 14.0 | 1.083 | 0.217 | 5.5 | 0.945 | 0.984 | 0.886 | 0.256 | 1.634 | - |
| EP4-21 | PG 21 | 0.394 - 0.709 | 10.0 - 18.0 | 1.398 | 0.276 | 7.0 | 1.181 | 1.260 | 1.114 | 0.276 | 1.752 | - |
| EP4-29 | PG 29 | 0.630 - 0.984 | 16.0 - 25.0 | 1.752 | 0.472 | 12 | 1.575 | 1.575 | 1.457 | 0.354 | 2.165 | - |
| EP4-36 | PG 36 | 0.866 - 1.26 | 22.0 - 32.0 | 2.185 | 0.709 | 18 | 1.969 | 1.969 | 1.850 | 0.354 | 2.441 | - |
| EP4-42 | PG 42 | 1.181 - 1.496 | 30.0 - 38.0 | 2.618 | 1.024 | 26 | 2.283 | 2.362 | 2.126 | 0.472 | 2.933 | - |
| EP4-48 | PG 48 | 1.339 - 1.732 | 34.0 - 44.0 | 2.953 | 1.181 | 30 | 2.520 | 2.677 | 2.335 | 0.551 | 2.382 | - |
| NPT** | | | | | | | | | | | | |
| EN4-1/4 | NPT 1/4 | 0.118 - 0.256 | 3.0 - 6.5 | 0.650 | 0.079 | 2.0 | 0.551 | 0.591 | 0.540 | 0.453 | 1.181 | - |
| EN4-3/8 | NPT 3/8 | 0.197 - 0.394 | 5.0 - 10.0 | 0.866 | 0.138 | 3.5 | 0.787 | 0.787 | 0.675 | 0.453 | 1.378 | - |
| EN4-1/2 | NPT 1/2 | 0.236 - 0.472 | 6.0 - 12.0 | 0.965 | 0.177 | 4.5 | 0.866 | 0.866 | 0.840 | 0.591 | 1.555 | cULus |
| EN4-1/2C | NPT 1/2 | 0.295 - 0.551 | 7.5 - 14.0 | 1.055 | 0.217 | 5.5 | 0.945 | 0.945 | 0.840 | 0.591 | 1.634 | cULus |
| EN4-1/2C-2 | NPT 1/2 | 0.295 - 0.551 | 7.5 - 14.0 | 1.055 | 0.217 | 5.5 | 0.945 | 0.945 | 0.840 | 0.314 | 1.634 | cULus |
| EN4-3/4 | NPT 3/4 | 0.394 - 0.709 | 10.0 - 18.0 | 1.299 | 0.276 | 7.0 | 1.181 | 1.181 | 1.050 | 0.591 | 1.713 | cULus |
| EN4-1 | NPT 1 | 0.630 - 0.984 | 16.0 - 25.0 | 1.752 | 0.472 | 12 | 1.575 | 1.575 | 1.315 | 0.787 | 2.126 | cULus |
| EN4-1 1/4 | NPT 1 1/4 | 0.866 - 1.260 | 22.0 - 32.0 | 2.185 | 0.709 | 18 | 1.969 | 1.969 | 1.660 | 0.787 | 2.480 | cULus |
| EN4-1 1/2 | NPT 1 1/2 | 1.181 - 1.496 | 30.0 - 38.0 | 2.520 | 1.024 | 26 | 2.283 | 2.283 | 1.900 | 0.866 | 2.874 | cULus |
| EN4-2 | NPT 2 | 1.339 - 1.732 | 34.0 - 44.0 | 2.953 | 1.181 | 30 | 2.520 | 2.677 | 2.375 | 0.866 | 0.866 | cULus |

† PG - DNV-GL & CE only
* NPT - cULus, DNV-GL & CE only
* PG & NPT are not NEMA 4X rated

Locknuts need to be purchased separately, see page 14

Metal EMC Locknuts

Nickel plated brass locknuts with grounding teeth

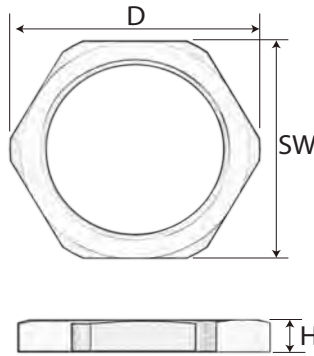
PG, & NPT
Thread

EMC locknut has grounding teeth to make connection to metal panels or control boxes.

Material:

Brass, Nickel Plated

Technical data:



| Part Number | Thread Type | Height (H) inches | Diameter (D) inches | Wrenching Flats (SW) inches |
|------------------------|-------------|-------------------|---------------------|-----------------------------|
| Metric-Standard | | | | |
| LMM-12 | M12x1.5 | 0.110 | 0.654 | 0.591 |
| LMM-16 | M16x1.5 | 0.118 | 0.827 | 0.748 |
| LMM-20 | M20x1.5 | 0.138 | 1.043 | 0.945 |
| LMM-25 | M25x1.5 | 0.157 | 1.299 | 1.181 |
| LMM-32 | M32x1.5 | 0.197 | 1.555 | 1.417 |
| LMM-40 | M40x1.5 | 0.197 | 2.008 | 1.811 |
| LMM-50 | M50x1.5 | 0.197 | 2.598 | 2.362 |
| LMM-63 | M63x1.5 | 0.236 | 3.031 | 2.756 |
| LMM-75 | M75x2.0 | 0.276 | 3.528 | 3.150 |
| LMM-80 | M80x2.0 | 0.315 | 3.937 | 3.543 |
| LMM-85 | M85x2.0 | 0.315 | 4.181 | 3.740 |
| LMM-90 | M90x2.0 | 0.315 | 4.409 | 3.937 |
| PG-Standard | | | | |
| LPM-7 | PG 7 | 0.110 | 0.654 | 0.591 |
| LPM-9 | PG 9 | 0.110 | 0.787 | 0.709 |
| LPM-11 | PG 11 | 0.118 | 0.925 | 0.827 |
| LPM-13 | PG 13.5 | 0.118 | 1.004 | 0.906 |
| LPM-16 | PG 16 | 0.118 | 1.142 | 1.024 |
| LPM-21 | PG 21 | 0.138 | 1.398 | 1.260 |
| LPM-29 | PG 29 | 0.157 | 1.772 | 1.614 |
| LPM-36 | PG 36 | 0.197 | 2.205 | 2.008 |
| LPM-42 | PG 42 | 0.197 | 2.598 | 2.362 |
| LPM-48 | PG 48 | 0.217 | 2.776 | 2.520 |
| NPT-Standard | | | | |
| LNM-3/8 | NPT 3/8 | 0.197 | 0.965 | 0.866 |
| LNM-1/2 | NPT 1/2 | 0.197 | 1.181 | 1.063 |
| LNM-3/4 | NPT 3/4 | 0.197 | 1.437 | 1.299 |
| LNM-1 | NPT 1 | 0.197 | 1.831 | 1.693 |
| LNM-1 1/4 | NPT 1 1/4" | 0.197 | 2.087 | 1.890 |
| LNM-1 1/2 | NPT 1 1/2" | 0.197 | 2.402 | 2.165 |
| LNM-2 | NPT 2" | 0.217 | 2.776 | 2.520 |

Stainless steel locknuts are available upon request

| Part Number | Thread Type | Height (H) inches | Diameter (D) inches | Wrenching Flats (SW) inches |
|-------------------|-------------|-------------------|---------------------|-----------------------------|
| Metric-EMC | | | | |
| LME-12 | M12x1.5 | 0.130 | 0.650 | 0.591 |
| LME-16 | M16x1.5 | 0.138 | 0.827 | 0.748 |
| LME-20 | M20x1.5 | 0.146 | 1.043 | 0.945 |
| LME-25 | M25x1.5 | 0.146 | 1.299 | 1.181 |
| LME-32 | M32x1.5 | 0.157 | 1.555 | 1.417 |
| LME-40 | M40x1.5 | 0.181 | 2.008 | 1.811 |
| LME-50 | M50x1.5 | 0.220 | 2.598 | 2.362 |
| LME-63 | M63x1.5 | 0.264 | 3.031 | 2.756 |
| PG-EMC | | | | |
| LPE-7 | PG 7 | 0.130 | 0.650 | 0.591 |
| LPE-9 | PG 9 | 0.130 | 0.787 | 0.709 |
| LPE-11 | PG 11 | 0.138 | 0.925 | 0.827 |
| LPE-13 | PG 13.5 | 0.138 | 1.004 | 0.906 |
| LPE-16 | PG 16 | 0.138 | 1.142 | 1.024 |
| LPE-21 | PG 21 | 0.157 | 1.398 | 1.260 |
| LPE-29 | PG 29 | 0.181 | 1.772 | 1.614 |
| LPE-36 | PG 36 | 0.220 | 2.205 | 2.008 |
| LPE-42 | PG 42 | 0.220 | 2.598 | 2.362 |
| LPE-48 | PG 48 | 0.240 | 2.776 | 2.520 |
| NPT-EMC | | | | |
| LNE-1/4 | NPT 1/4" | 0.217 | 0.740 | 0.669 |
| LNE-3/8 | NPT 3/8" | 0.224 | 0.945 | 0.866 |
| LNE-1/2 | NPT 1/2" | 0.264 | 1.043 | 0.945 |
| LNE-3/4 | NPT 3/4" | 0.256 | 1.299 | 1.181 |
| LNE-1 | NPT 1" | 0.299 | 1.752 | 1.575 |
| LNE-1 1/4 | NPT 1 1/4" | 0.299 | 2.185 | 1.969 |
| LNE-1 1/2 | NPT 1 1/2" | 0.343 | 2.520 | 2.283 |
| LNE-2 | NPT 2" | 0.425 | 3.071 | 2.756 |

VFD Termination Kit

Grounding kits for larger AWG cables

14 AWG to
500 KCMIL

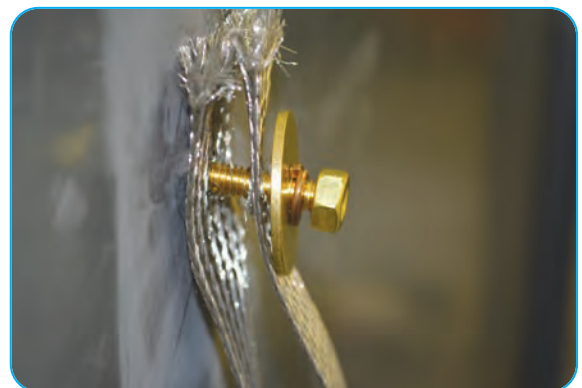
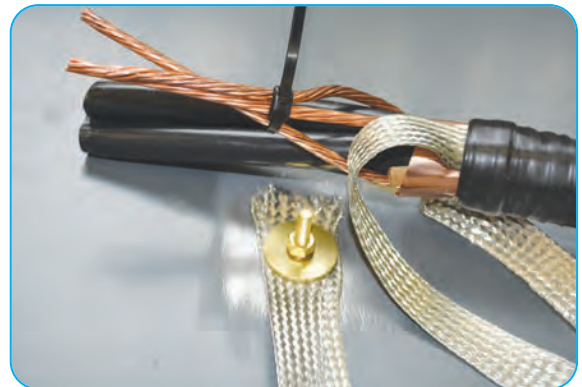
VFD Termination Kits are used to ground the shield of VFD cables to a metal enclosure. It is an effective way to remove noise associated with VFD motors and drives. Improve the effectiveness by also using a SAB EMC grounding gland where the cable enters the enclosure.



| Kit P/N | Kit Components | Quantity |
|------------------------|---------------------------------|----------|
| VFD GRD KIT 14-1 | 1/4" flat tinned copper braid | 2 x 3ft |
| | 3/4" Copper tape | 2 x 1ft |
| | Bolt assembly (see parts below) | 1 bag |
| | Rubber splicing tape | 1 roll |
| | Low profile tie wrap 7" | 2 pcs |
| | Metal sand paper 3" x 3" | 1 pc |
| | Alcohol wipes | 2 pcs |
| VFD GRD KIT 1-4/0 | 3/4" flat tinned copper braid | 2 x 3ft |
| | 3/4" Copper tape | 2 x 2ft |
| | Bolt assembly (see parts below) | 1 bag |
| | Rubber splicing tape | 1 roll |
| | Low profile tie wrap 7" | 2 pcs |
| | Metal sand paper 3" x 3" | 1 pc |
| | Alcohol wipes | 2 pcs |
| VFD GRD KIT 250-500 | 1/4" flat tinned copper braid | 2 x 3ft |
| | 3/4" Copper tape | 2 x 1ft |
| | Bolt assembly (see parts below) | 1 bag |
| | Rubber splicing tape | 1 roll |
| | Low profile tie wrap 7" | 2 pcs |
| | Metal sand paper 3" x 3" | 1 pc |
| | Alcohol wipes | 2 pcs |

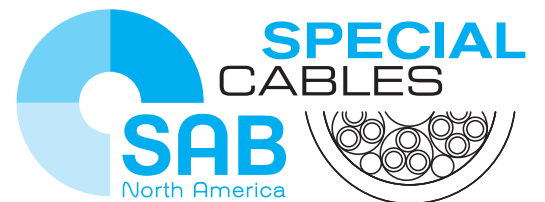
Bolt assembly

| | |
|----------------------------------|-------|
| brass bolt 1/4"-20 x 1-1/4" | 2 pcs |
| brass nut 1/4"-20 | 2 pcs |
| bronze locking washer 1/4"-20 | 2 pcs |
| brass washer 1/4"-20 x 9/16" OD | 2 pcs |
| brass washer 1/4"-20 x 1 1/4" OD | 2 pcs |



Attach to Enclosure

Installation instructions available see page O/51



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