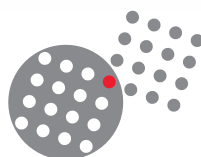




VGE1/FER1 Series

Railway Connectors



SOURIAU
Connection Technology





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Overview

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VEGETAVER

VGE1/FER1 Series

Overview

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SOURIAU's railway connector range overview

For outdoor equipments

VGE1 / FER1



Up to 60 contacts
Signal and Quadrax layouts
Tested following NFF61030

838



Up to 61 contacts
Signal, power and Quadrax layouts
Compliant to NFF61030

For indoor equipments

SMS Flame retardant



Up to 36 contacts # 16
Up to 220V according to EN50124-1 / OV2PD2
Tested following NFF61030

UTO



Up to 48 contacts # 16
Up to 120V according to EN50124-1 / OV3PD2

UTS



Up to 23 contacts # 16
Up to 120V according to EN50124-1 / OV3PD3



SOURIAU on the Railway Market

SOURIAU is a recognised worldwide market leader in the design and manufacture of connectors and interconnect systems for severe environments. SOURIAU has developed a dedicated range of ruggedised and reliable connectors for the railway market, fully compliant with railway standards, RoHS, as well as fire and smoke requirements.

For more than 50 years, SOURIAU has become a trusted name by major railway equipment manufacturers, their subcontractors, also signalling and infrastructure companies.

SOURIAU connectors are designed to integrate new functions such as Ethernet network, weight reduction, mixed signal-power in compliance with environmental protection. This offer is the best compromise between technology, safety, reliability and cost.

SOURIAU has been awarded IRIS certification since 2009.



✓ Standard contacts for
7 railway ranges
+
✓ Same crimping tools
+
✓ Simplified process
=
Best compromise between
technology and cost



✓ Fiber optic
✓
✓ Quadrax technology
=
High speed solutions
for real-time information



✓ Lightweight composite
material
+
✓ Fiber optic technology
+
✓ High density layouts
=
Weight reduction
of equipment



Mechanical

- Design:
Derivate from MIL-DTL-5015 & VG 95234
- Durability:
500 mating/unmating cycles
An audible "click" and a yellow point indicating end of coupling (VGE1 series only)
- Vibration resistance:
Following NFF 61030, sinusoidal vibration from 10 to 100Hz, acceleration: 2g
- Shock:
Acceleration: 30g Duration: 18 ms Following NFF 61030
- Drop:
Free fall of plug at a height of 0.75m: no mechanical damage
Following NFF 61030

Environmental

- ROHS compliant
- Operating temperature:
From -40°C to +100°C
- Dry heat test:
100 ° for 96 hours
- Salt spray resistance:
500 hours
- Damp heat:
21 days, 40°C, 95% relative humidity
- Sealing level:
IP67, 1m deep for 30 minutes max, coupled with appropriate backshell and grommet or accessories
- Dynamic sealing:
IP67 guaranteed when cable is moving
- Fire and smoke:
Insert material: I2F3 following NFF 16101-16102
and UL 94 VO
Seal and grommet material: I3F1 following NFF 16101-16102
- Resistance to fluids:
Gas oil, mineral oil, acid bath, basic bath, following NFF 61030, oxalic acid





characteristics



Material

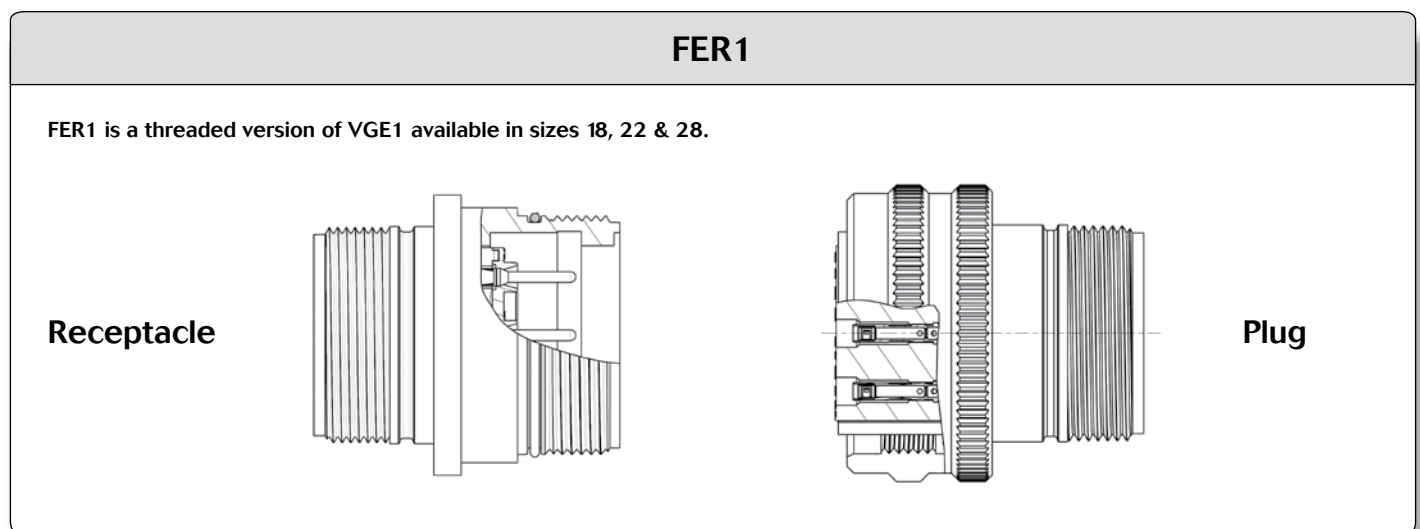
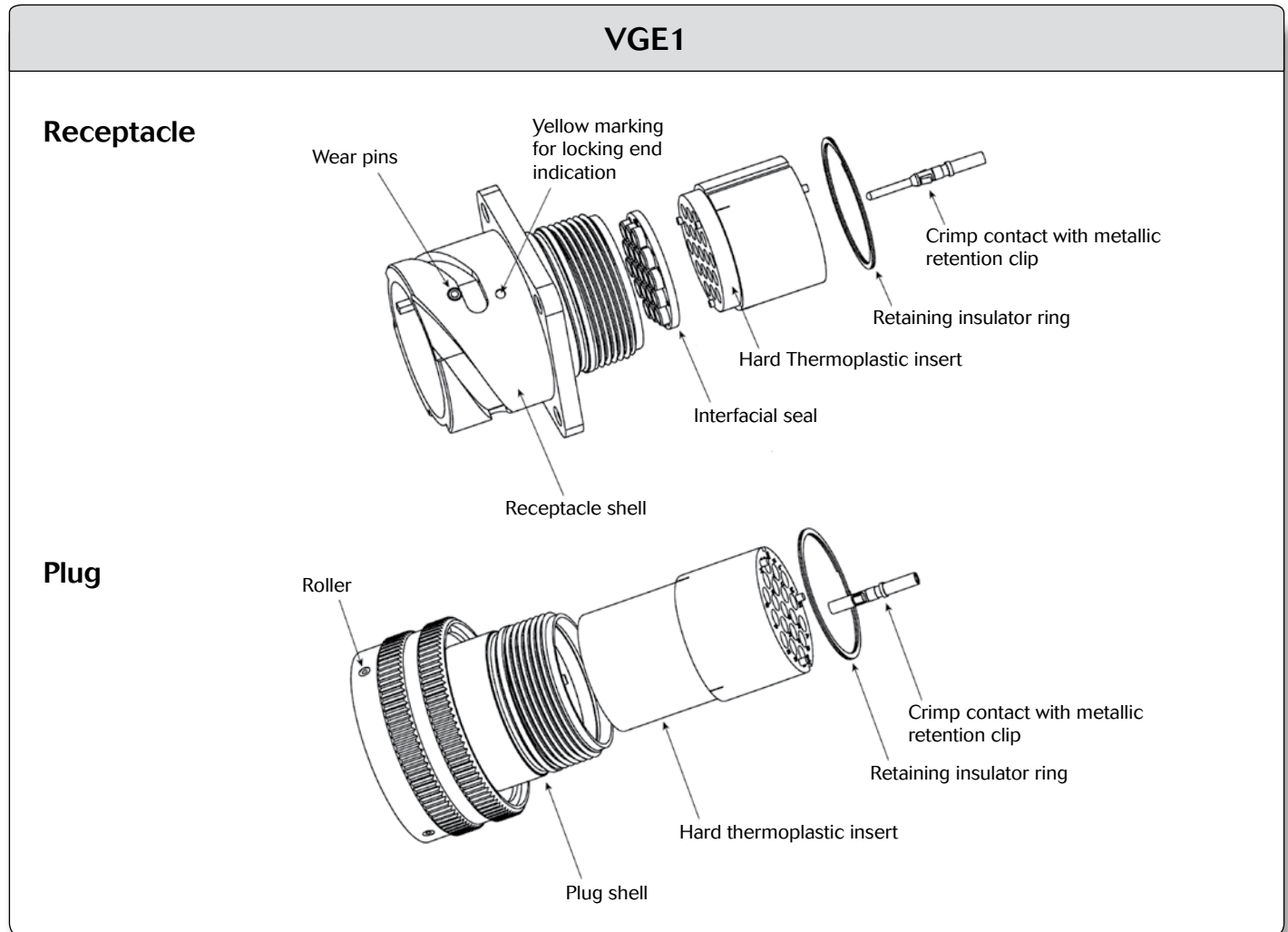
- Shell:
Aluminum alloy
Conductive plating - 500 hours salt spray resistant
- Insert:
Hard thermoplastic, I2F3 following to NFF 16101-16102 and UL94V0
- Interfacial seal and grommet:
Silicone, I3F1 following NFF 16101-16102
- Contacts:
Machined crimp contacts
PCB contacts

Electrical

- Contacts resistance, following NFF 61030:
Contact #16: 2.5 m Ω max, Contact #12: 1.3 m Ω max
Contact #8: 0.9 m Ω max
Quadrax Contacts #20: ≤ 6 m Ω , ≤ 2 m Ω (cell)
- Contact rating:
Contact #16: 15A, Contact #12: 20A, Contact #8: 30A
- Dielectric resistance:
Contact #16: 2550 Veff, Contact #12: 3250 Veff
Contact #8: 3250 Veff
Quadrax between contacts #20: ≥ 1000 V
Quadrax between cell / contacts #20 : ≥ 500 V
- Insulation resistance:
 $\geq 5\ 000$ M Ω (under 500 Vcc)
 $\geq 4\ 000$ M Ω (under 220 Vcc)
Quadrax: ≥ 3000 M Ω (contacts #20)
- Creepage and clearance:
9 mm mini for layouts using #16 contacts
12 mm mini for layouts using #12 and #8 contacts
- Operating voltage:
220 V following NFF 61030 for layouts #16
500 Vcc following NFF 61030 for layouts #12 and #8
- Shell continuity:
20 m Ω max
- High Speed data Transmission performances:
Standard contact: cat. 5 - 100 Mbps
Quadrax contact: cat. 6 - 1 Gbps



Description



VGE1/FER1 Series



Layouts overview

| | | |
|---|---|--|
| <p>Size 18</p> <p>18-19 ✓ ✓ ▲ ▲</p> <p>10 Contacts Ø1.6 mm (#16)</p> <p>Quadrax 18A1 ✓ ✓ ▲ ▲</p> <p>4 Contacts Ø1 mm (#20)</p> <p>For 18-19 Max. operating voltage: 220 V following NFF61030</p> | <p>Size 20</p> <p>20-15 ✓</p> <p>7 Contacts Ø2.4 mm (#12)</p> <p>Max. operating voltage: 500 Vcc following NFF61030</p> | <p>Size 22</p> <p>22-14 ✓ ✓ ▲ ▲</p> <p>19 Contacts Ø1.6 mm (#16)</p> <p>Max. operating voltage: 220 V following NFF61030</p> |
| <p>Size 24</p> <p>24-10 ✓</p> <p>7 Contacts Ø3.6 mm (#8)</p> <p>Max. operating voltage: 500 Vcc following NFF61030</p> | <p>Size 28</p> <p>28-21 ✓ ✓ ▲ ▲</p> <p>37 Contacts Ø1.6 mm (#16)</p> <p>Max. operating voltage: 220 V following NFF61030</p> | <p>Size 32</p> <p>32A13 ✓</p> <p>13 Contacts Ø2.4 mm (#12)</p> <p>Max. operating voltage: 220 V following NFF61030</p> |
| <p>Size 36</p> <p>36A22 ✓</p> <p>22 Contacts Ø2.4 mm (#12)</p> <p>Max. operating voltage: 500 Vcc following NFF61030</p> | <p>Size 40</p> <p>40A35 ✓</p> <p>35 Contacts Ø2.4 mm (#12)</p> <p>Max. operating voltage: 500 Vcc following NFF61030</p> <p>40A60 ✓</p> <p>60 Contacts Ø1.6 mm (#16)</p> <p>Max. operating voltage: 220 V following NFF61030</p> | |

Layouts

✓ = VGE1 standard version

▲ = FER1 standard version

VGE1/FER1 Series



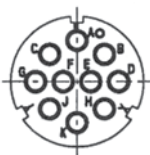
Heating curves

Test conditions:

- Current per contact
- All contacts loaded
- Max heating in C° allowed following NFF 61030: 50°C

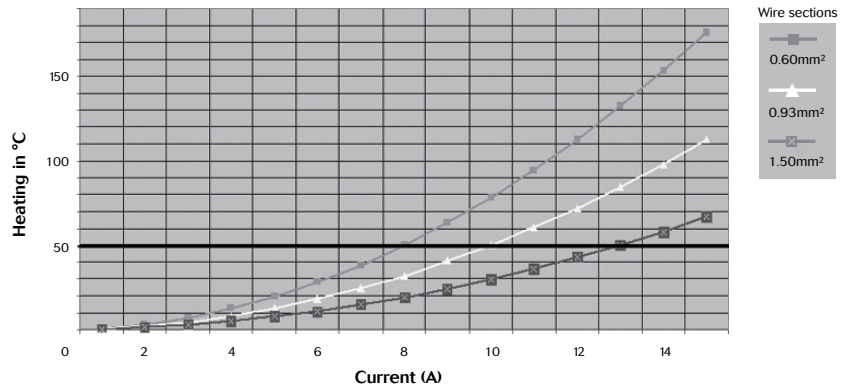
Size 18

18-19



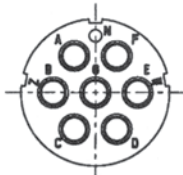
10 Contacts
Ø1.6 mm (#16)

18-19 only Max. operating voltage: 220 V following NFF61030



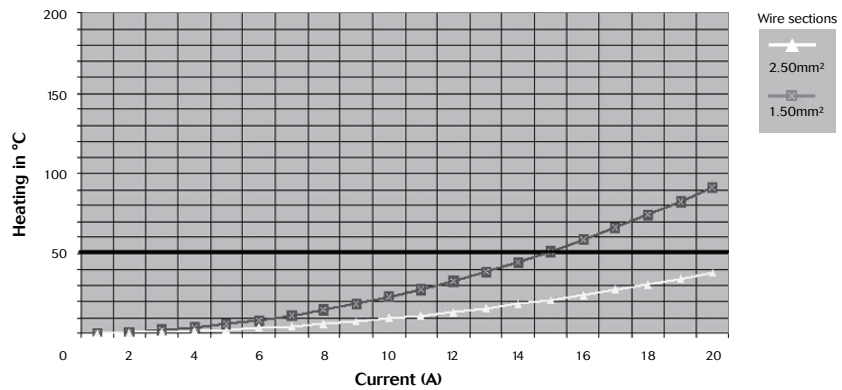
Size 20

20-15



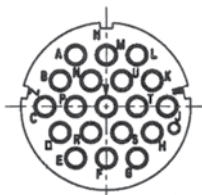
7 Contacts
Ø2.4 mm (#12)

Max. operating voltage: 500 Vcc following NFF61030



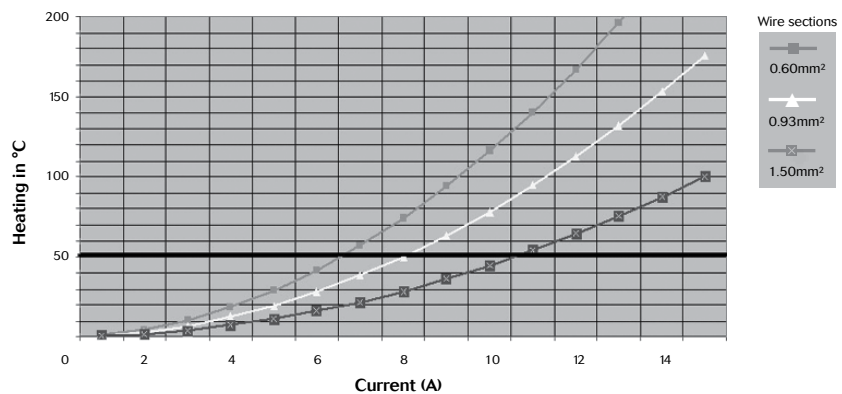
Size 22

22-14



19 Contacts
Ø1.6 mm (#16)

Max. operating voltage: 220 V following NFF61030

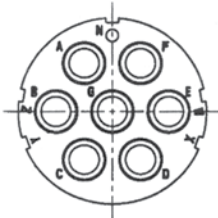


VGE1/FER1 Series



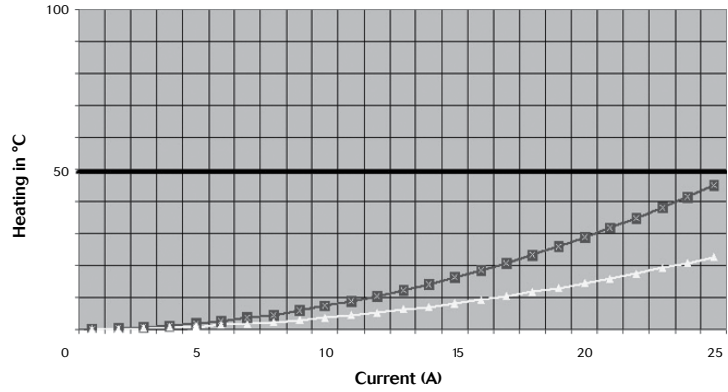
Size 24

24-10



7 Contacts
Ø3.6 mm (#8)

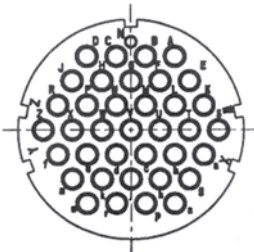
Max. operating voltage: 500 Vcc
following NFF61030



Wire sections
▲ 6mm²
■ 4mm²

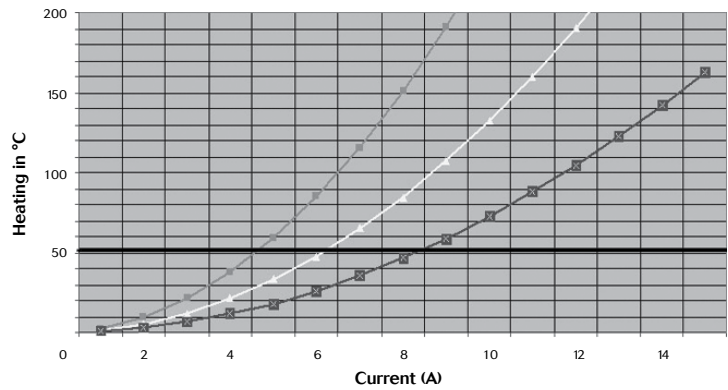
Size 28

28-21



37 Contacts
Ø1.6 mm (#16)

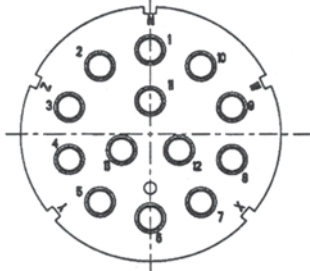
Max. operating voltage: 220 V
following NFF61030



Wire sections
■ 0.60mm²
▲ 0.93mm²
● 1.50mm²

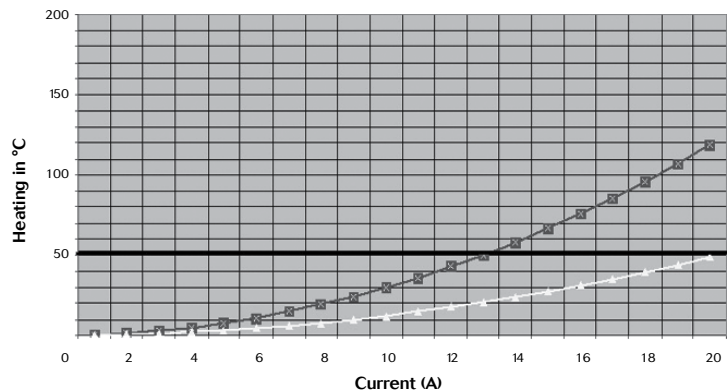
Size 32

32A13



13 Contacts
Ø2.4 mm (#12)

Max. operating voltage: 220 V
following NFF61030



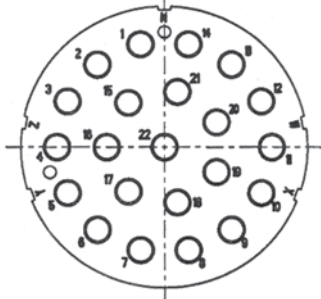
Wire sections
▲ 2.50mm²
■ 1.50mm²

VGE1/FER1 Series



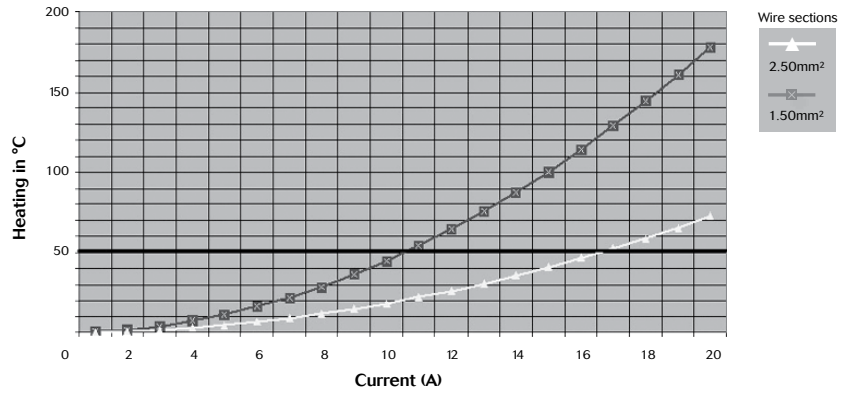
Size 36

36A22



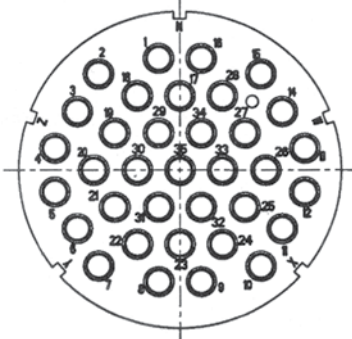
22 Contacts
Ø2.4 mm (#12)

Max. operating voltage: 500 Vcc
following NFF61030



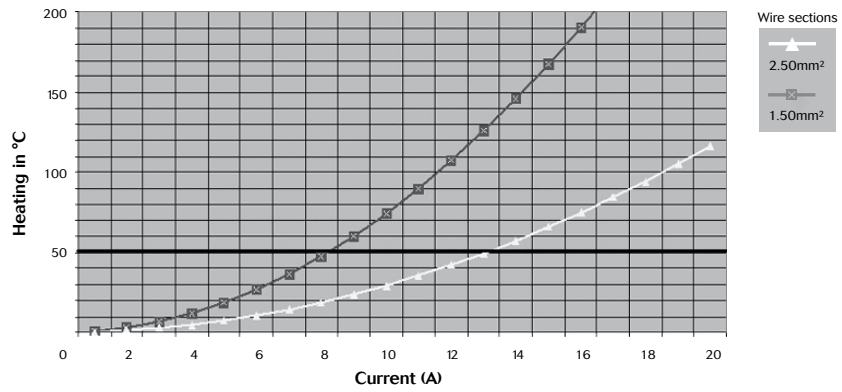
Size 40

40A35

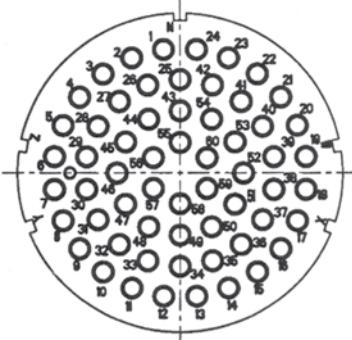


35 Contacts
Ø2.4 mm (#12)

Max. operating voltage: 500 Vcc
following NFF61030

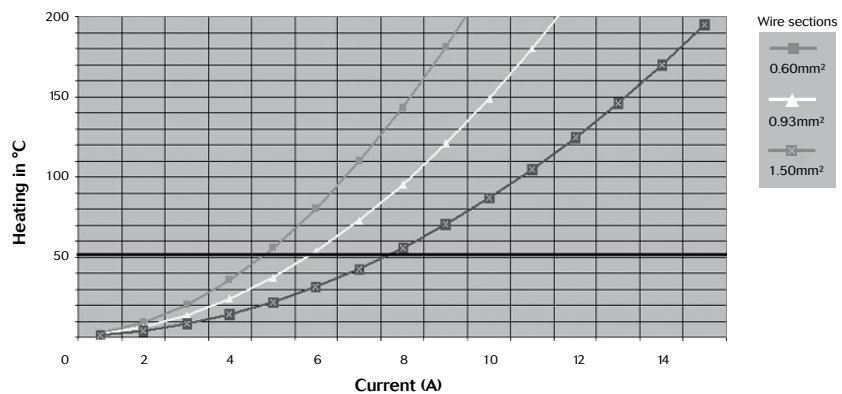


40A60



60 Contacts
Ø1.6 mm (#16)

Max. operating voltage: 220 V
following NFF61030





Data transmission performances

High speed data transmissions with layouts 18-19 and 18A1

Tests following IEC 11-801

For cabling specifications please contact us.

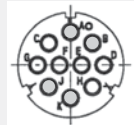
18-19

Cat. 5 level obtained with 4 contacts #16

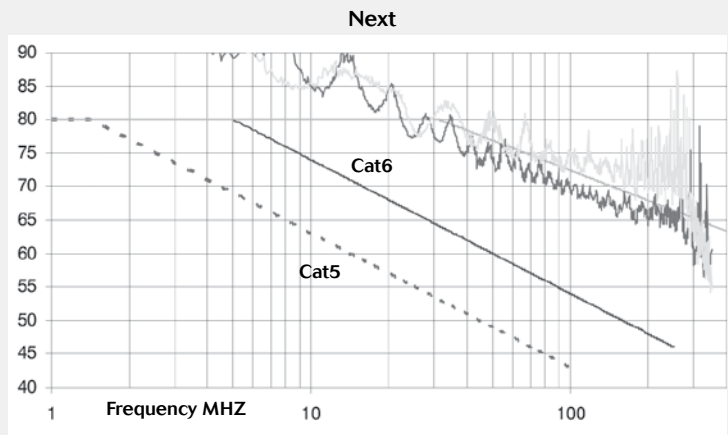
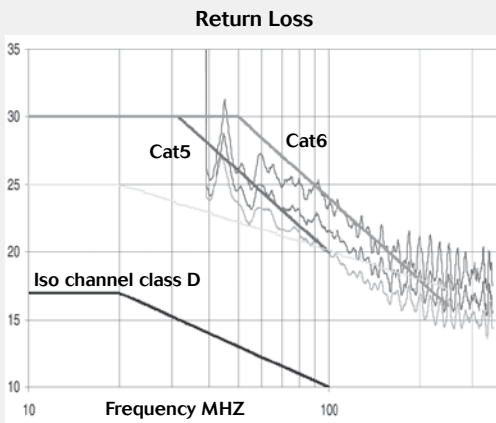
Exemple of performances with a 18-19 connector and a 2 pairs cable, for cabling specification, consult us:

Standard version with 4 contacts #16: Cat. 5 - 100 Mbps

18-19



4 Contacts
Ø3.6 mm (#16)



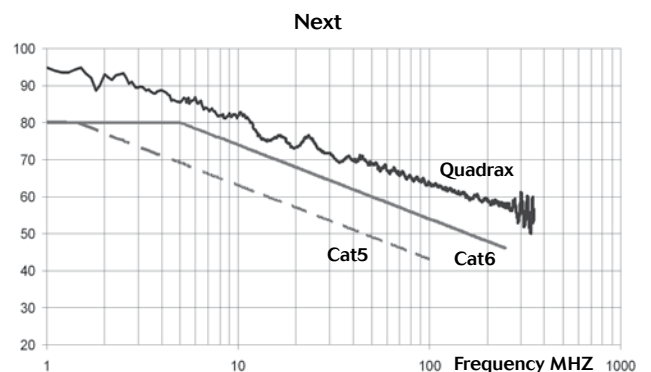
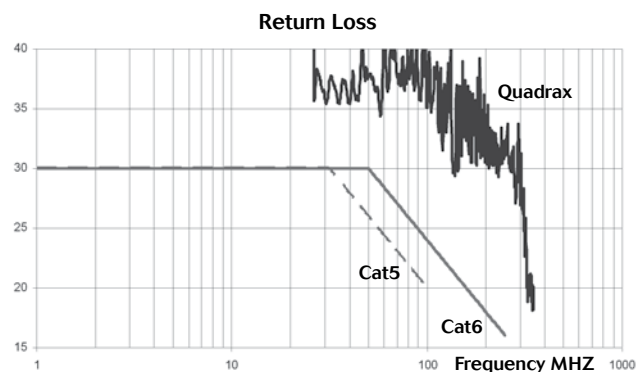
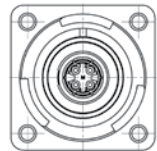
Quadrax-18A1

Cat. 6 level obtained with 1 contact Quadrax

Exemple of performances with a 18A1 connector and a quarte cable:

Quadrax version: Cat. 6 - 1 Gbps

18A1



VGE1/FER1 Series



Ordering information

Receptacle, plug, backshells, contacts and accessories have to be ordered separately.

VGE1 (page 20-29)

| | | | | | | | |
|--|------|---|----|----|---|---|----|
| Basic Series | VGE1 | B | 22 | 14 | P | N | -- |
| Shell type: | | | | | | | |
| B: Rear mounting receptacle | | | | | | | |
| D: Plug | | | | | | | |
| C: Rear mounting receptacle for PC tails contact #16 | | | | | | | |
| H: Jam Nut Receptacle with shielding ring - only available for sizes 18 and 22 | | | | | | | |
| Shell size: | | | | | | | |
| 18; 20; 22; 24; 28; 32; 36; 40 | | | | | | | |
| Layouts: see page 11 | | | | | | | |
| Contact type: | | | | | | | |
| P: Pin | | | | | | | |
| S: Socket | | | | | | | |
| Insert Orientation: see page 76 | | | | | | | |
| N; W; X; Y; Z or 0 | | | | | | | |
| (0 = insert not installed in the shell) | | | | | | | |
| Specification Code: | | | | | | | |
| 04: Receptacle delivered with non conductive panel gasket | | | | | | | |
| 05: Receptacle delivered with conductive panel gasket | | | | | | | |
| 11: Receptacle and plug delivered with plastic cap | | | | | | | |

Connector marking example: VGE1B2214PN

FER1 (page 30-31)

| | | | | | | | |
|---|------|---|----|----|---|---|----|
| Basic Series | FER1 | B | 22 | 14 | P | N | -- |
| Shell type: | | | | | | | |
| B: Rear mounting receptacle | | | | | | | |
| D: Plug | | | | | | | |
| Shell size: | | | | | | | |
| 18; 22; 28 (Other sizes: please consult us) | | | | | | | |
| Layouts: see page 11 | | | | | | | |
| Contact type: | | | | | | | |
| P: Pin | | | | | | | |
| S: Socket | | | | | | | |
| Insert Orientation: see page 76 | | | | | | | |
| N; W; X; Y; Z or 0 | | | | | | | |
| (0 = insert not installed in the shell) | | | | | | | |
| Specification Code: | | | | | | | |
| 04: Receptacle delivered with non conductive panel gasket | | | | | | | |
| 05: Receptacle delivered with conductive panel gasket | | | | | | | |
| 11: Receptacle and plug delivered with plastic cap | | | | | | | |

Connector marking example: FER1D2821SN

VGE1/FER1 Series



Backshell (page 38-56)

| | | | | | | | |
|--|------|---|---|----|----|----|---|
| Basic Series | VGE1 | J | S | 18 | 00 | 00 | - |
| | VGE1 | C | S | 22 | 14 | 00 | M |
| Backnut | | R | | | | | |
| Strain relief | | C | | | | | |
| Conduit adaptor | | S | | | | | |
| Cable clamp with sealing gland | | J | | | | | |
| Cable clamp with sealing gland (trumpet shape) | | K | | | | | |
| Shielded backshell with sealing gland | | T | | | | | |
| Sealing gland | | V | | | | | |
| Adaptor with thread outlet (without accessory) | | P | | | | | |
| S: Straight backshell E: Elbow backshell | | | | | | | |
| Shell size: 18; 20; 22; 24; 28; 32; 36; 40 | | | | | | | |
| Layout (if grommet needed) or 00 (without grommet) | | | | | | | |
| Adaptor type: 10: long 00: Short, or other specification code | | | | | | | |
| Grommet type (if grommet needed): M: Male L: Female | | | | | | | |

Backshell marking example: VGE1JS40A3500M

VEGETAVER

Mechanics

- VGE1 receptacle 20
- VGE1 plug 22
- VGE1 specific receptacle 24
- VGE1 specific plug 28
- FER1 receptacle & plug 30



VGE1/FER1 Series



VGE1 receptacle - Part numbers



| Shell size | Layout | Number of contact | Contact size | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|--------------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | 10 | #16 | Male | O, N, X, Y | VGE1 B 1819 PN |
| | | | | Female | | VGE1 B 1819 SN |
| | 18A1 | 1 | Quadrax | Male | N | VGE1 B 18A1 PN |
| | | | | Female | | VGE1 B 18A1 SN |
| 20 | 20-15 | 7 | #12 | Male | O, N, W, Z | VGE1 B 2015 PN |
| | | | | Female | | VGE1 B 2015 SN |
| 22 | 22-14 | 19 | #16 | Male | O, N, W, Z | VGE1 B 2214 PN |
| | | | | Female | | VGE1 B 2214 SN |
| 24 | 24-10 | 7 | #8 | Male | O, N, W, X, Y, Z | VGE1 B 2410 PN |
| | | | | Female | | VGE1 B 2410 SN |
| 28 | 28-21 | 37 | #16 | Male | O, N, W, X, Y, Z | VGE1 B 2821 PN |
| | | | | Female | | VGE1 B 2821 SN |
| 32 | 32A13 | 13 | #12 | Male | O, N, W, X, Y, Z | VGE1 B 32A13 PN |
| | | | | Female | | VGE1 B 32A13 SN |
| 36 | 36A22 | 22 | #12 | Male | O, N, W, X, Y, Z | VGE1 B 36A22 PN |
| | | | | Female | | VGE1 B 36A22 SN |
| 40 | 40A35 | 35 | #12 | Male | O, N, W, X, Y, Z | VGE1 B 40A35 PN |
| | | | | Female | | VGE1 B 40A35 SN |
| | 40A60 | 60 | #16 | Male | O, N, W, X, Y, Z | VGE1 B 40A60 PN |
| | | | | Female | | VGE1 B 40A60 SN |

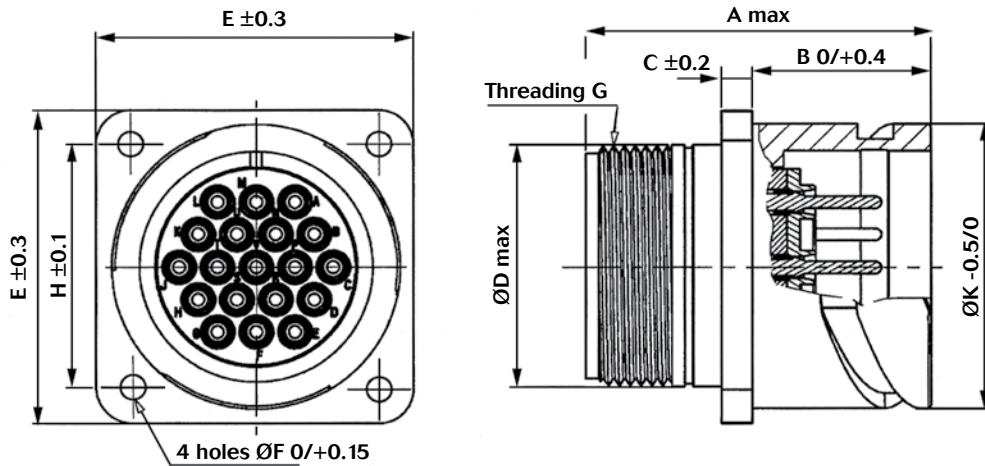
1: for orientation see p. 76

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

VGE1/FER1 Series



VGE1 receptacle - Dimensions



| Part numbers ⁽²⁾ | A | B | C | ØD | E | ØF | Threading G Class 2A | H | ØK | Weight ⁽³⁾ |
|-----------------------------|------|-------|---|------|------|------|-------------------------|------|------|-----------------------|
| VGE1 B 1819 PN | 45.5 | 23.05 | 4 | 25.5 | 35 | 3.25 | 1"x20 UNEF | 27 | 30.8 | 52 g |
| VGE1 B 1819 SN | | | | | | | | | | 47 g |
| VGE1 B 18A1 PN | | | | | | | | | | 47 g |
| VGE1 B 18A1 SN | | | | | | | | | | 40 g |
| VGE1 B 2015 PN | 45.5 | 23.05 | 4 | 28.7 | 38 | 3.25 | 1 1/8"x18 UNEF | 29.4 | 34.2 | 52 g |
| VGE1 B 2015 SN | | | | | | | | | | 60 g |
| VGE1 B 2214 PN | 45.5 | 23.05 | 4 | 31.9 | 41 | 3.25 | 1 1/4"x18 UNEF | 31.8 | 37.4 | 57 g |
| VGE1 B 2214 SN | | | | | | | | | | 66 g |
| VGE1 B 2410 PN | 45.5 | 23.05 | 4 | 35.2 | 44.5 | 3.75 | 1 3/8"x18 UNEF | 34.9 | 40.9 | 65 g |
| VGE1 B 2410 SN | | | | | | | | | | 77 g |
| VGE1 B 2821 PN | 48 | 24.05 | 4 | 41.5 | 50.8 | 3.75 | 1 5/8"x18 UNE | 39.7 | 46.7 | 92 g |
| VGE1 B 2821 SN | | | | | | | | | | 105 g |
| VGE1 B 32A13 PN | 48 | 24.05 | 4 | 47.9 | 57 | 4.35 | 1 7/8"x16 UN | 44.5 | 53.4 | 122 g |
| VGE1 B 32A13 SN | | | | | | | | | | 151 g |
| VGE1 B 36A22 PN | 48 | 24.05 | 4 | 52.5 | 63.5 | 4.35 | 2 1/16"x16 UNS | 49.2 | 59.6 | 149 g |
| VGE1 B 36A22 SN | | | | | | | | | | 184 g |
| VGE1 B 40A35 PN | 48 | 24.05 | 4 | 59 | 70 | 4.35 | 2 5/16"x16 UN | 55.5 | 65.5 | 170 g |
| VGE1 B 40A35 SN | | | | | | | | | | 208 g |
| VGE1 B 40A60 PN | | | | | | | | | | 230 g |
| VGE1 B 40A60 SN | | | | | | | | | | 208 g |

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
 3: weight for indication - receptacle + insert without contact

Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1 plug - Part numbers



| Shell size | Layout | Number of contact | Contact size | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|--------------|------------------|----------------------------|-----------------------------|
| 18 | 18-19 | 10 | #16 | Male | O, N, X, Y | VGE1 D 1819 PN |
| | | | | Female | | VGE1 D 1819 SN |
| | 18A1 | 1 | Quadrax | Male | N | VGE1 D 18A1 PN |
| | | | | Female | | VGE1 D 18A1 SN |
| 20 | 20-15 | 7 | #12 | Male | O, N, W, Z | VGE1 D 2015 PN |
| | | | | Female | | VGE1 D 2015 SN |
| 22 | 22-14 | 19 | #16 | Male | O, N, W, Z | VGE1 D 2214 PN |
| | | | | Female | | VGE1 D 2214 SN |
| 24 | 24-10 | 7 | #8 | Male | O, N, W, X, Y, Z | VGE1 D 2410 PN |
| | | | | Female | | VGE1 D 2410 SN |
| 28 | 28-21 | 37 | #16 | Male | O, N, W, X, Y, Z | VGE1 D 2821 PN |
| | | | | Female | | VGE1 D 2821 SN |
| 32 | 32A13 | 13 | #12 | Male | O, N, W, X, Y, Z | VGE1 D 32A13 PN |
| | | | | Female | | VGE1 D 32A13 SN |
| 36 | 36A22 | 22 | #12 | Male | O, N, W, X, Y, Z | VGE1 D 36A22 PN |
| | | | | Female | | VGE1 D 36A22 SN |
| 40 | 40A35 | 35 | #16 | Male | O, N, W, X, Y, Z | VGE1 D 40A35 PN |
| | | | | Female | | VGE1 D 40A35 SN |
| | 40A60 | 60 | Male | O, N, W, X, Y, Z | VGE1 D 40A60 PN | |
| | | | Female | | VGE1 D 40A60 SN | |

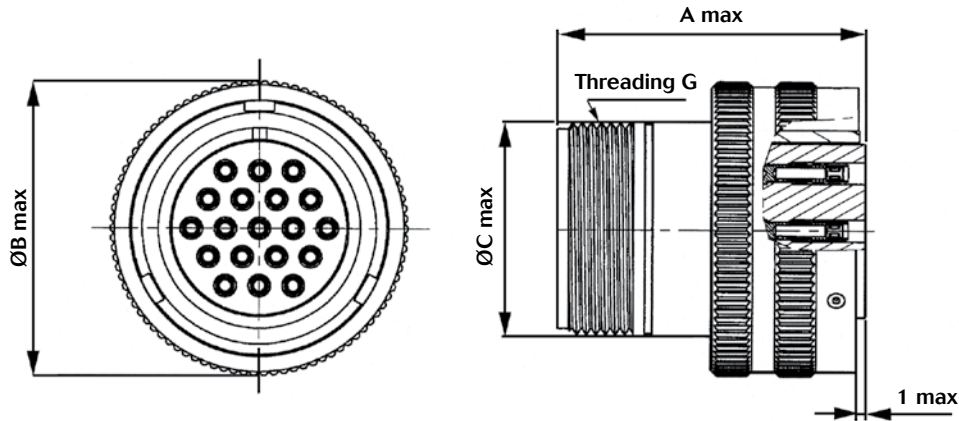
1: for orientation see p. 76

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

VGE1/FER1 Series



VGE1 plug - Dimensions



| Part numbers ⁽²⁾ | A | ØB | ØC | Threading G Class 2A | Weight ⁽³⁾ |
|-----------------------------|------|------|------|-------------------------|-----------------------|
| VGE1 D 1819 PN | 45.6 | 37.3 | 25.5 | 1"x20 UNEF | 59 g |
| VGE1 D 1819 SN | | | | | 53 g |
| VGE1 D 18A1 PN | | | | | 39 g |
| VGE1 D 18A1 SN | | | | | 46 g |
| VGE1 D 2015 PN | 45.6 | 41.5 | 28.7 | 1 1/8"x18 UNEF | 54 g |
| VGE1 D 2015 SN | | | | | 61 g |
| VGE1 D 2214 PN | 45.6 | 44 | 31.9 | 1 1/4"x18 UNEF | 58 g |
| VGE1 D 2214 SN | | | | | 67 g |
| VGE1 D 2410 PN | 45.6 | 48.5 | 35.2 | 1 3/8"x18 UNEF | 68 g |
| VGE1 D 2410 SN | | | | | 79 g |
| VGE1 D 2821 PN | 48.1 | 55.3 | 41.5 | 1 5/8"x18 UNEF | 81 g |
| VGE1 D 2821 SN | | | | | 95 g |
| VGE1 D 32A13 PN | 48.1 | 62 | 47.9 | 1 7/8"x16 UN | 125 g |
| VGE1 D 32A13 SN | | | | | 154 g |
| VGE1 D 36A22 PN | 48.1 | 66.8 | 52.5 | 2 1/6"x16 UNS | 135 g |
| VGE1 D 36A22 SN | | | | | 169 g |
| VGE1 D 40A35 PN | 48.1 | 74.5 | 59 | 2 5/16"x16 UN | 163 g |
| VGE1 D 40A35 SN | | | | | 201 g |
| VGE1 D 40A60 PN | | | | | 226 g |
| VGE1 D 40A60 SN | | | | | 201 g |

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
 3: weight for indication - receptacle + insert without contact

Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1 specific receptacle - Part numbers

Receptacle with PC tails contact

| Shell size | Layout | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ | | | |
|------------|--------|--------------|----------------------------|-----------------------------|---------------|-------------|-------------|
| | | | | | PCB plating | | |
| | | | | | Gold Ø 1.2 | Gold Ø 1 | Tin* Ø 1 |
| 18 | 18-19 | Male | O, N, X, Y | VGE1C 1819 PN... | - | 01 | 14 |
| 22 | 22-14 | Male | O, N, W, Z | VGE1C 2214 PN... | - | 01 | 14 |
| 28 | 28-21 | Male | O, N, W, X, y, Z | VGE1C 2821 PN... | - | 01 | 14 |

Examples: VGE1C2214PN - with PCB Gold plated Ø 1.2 mm
 VGE1C2214PN14 - with PCB Tin plated Ø 1 mm

* Tin plating only on the tail of the contact



Jam nut receptacle with shielding ring

| Shell size | Layout | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | Male | O, N, X, Y | VGE1 H 1819 PN |
| | | Female | | VGE1 H 1819 SN |
| 22 | 22-14 | Male | O, N, W, Z | VGE1 H 2214 PN |
| | | Female | | VGE1 H 2214 SN |



Receptacle with threaded holes

| Shell size | Layout | Number of contact | Contact type | Threading | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|----------------|-----------|----------------------------|--------------------------------------|
| 28 | 28-21 | 37 | Male Female | M5x0.8 | O, N, W, X, Y, Z | VGE1 B 2821 PN03 VGE1 B 2821 SN03 |
| | | | Male Female | M4x0.7 | | VGE1 B 2821 PN06 VGE1 B 2821 SN06 |

1: for orientation see p. 76

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

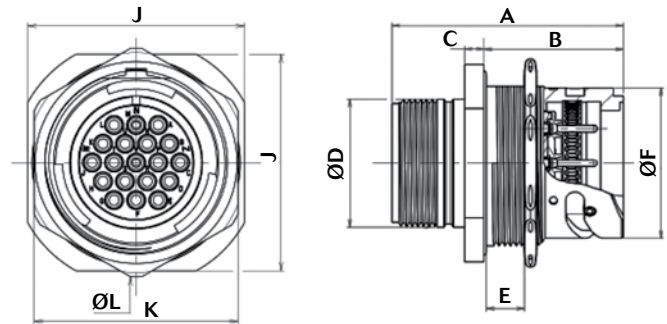
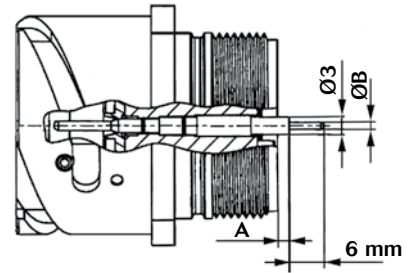
VGE1/FER1 Series



VGE1 specific receptacle - Dimensions

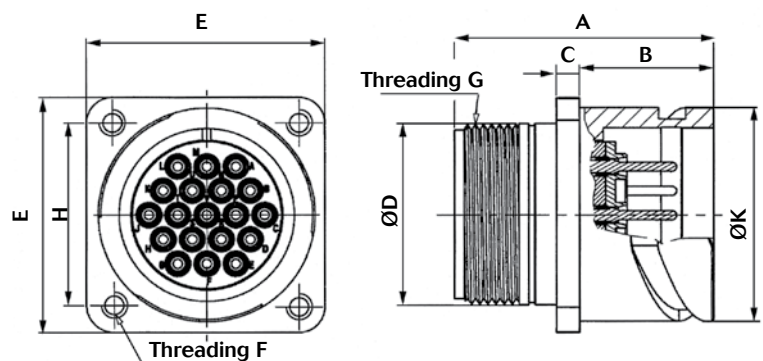
Receptacle with PC tails contact

| Part numbers ⁽²⁾ | Shell size | A max | ØB max | | |
|-----------------------------|------------|-------|------------------------|-----------------------|-----------------|
| VGE1 C 1819 PN... | 18 | 2.00 | Gold std. (-) Ø 1.2 | Gold spe. (01) Ø 1 | Tin (14) Ø 1 |
| VGE1 C 2214 PN... | 22 | | | | |
| VGE1 C 2821 PN... | 28 | 0.40 | | | |



Jam nut receptacle with shielding ring

| Part numbers ⁽²⁾ | Shell size | A max | B | C | ØD max | E max | ØF | J | K | ØL | Weight ⁽³⁾ |
|-----------------------------|------------|-------|-------|------|--------|-------|-------|-------|-------|-------|-----------------------|
| VGE1 H 1819 PN | 18 | 57.70 | 34.50 | 4.80 | 25.50 | 10.00 | 30.80 | 42.00 | 39.90 | 44.50 | 70 g |
| VGE1 H 2214 PN | 22 | 57.70 | 34.50 | 4.80 | 31.90 | 10.00 | 37.40 | 49.00 | 46.00 | 51.30 | 105 g |



Receptacle with threaded holes

| Part numbers ⁽²⁾ | A max | B | C | ØD | E | Threading F | Threading G | H | ØK | Weight ⁽³⁾ |
|-----------------------------|-------|-------|---|------|------|-------------|----------------|------|------|-----------------------|
| VGE1 B 2821 PN03 | 48 | 24.05 | 4 | 41.5 | 50.8 | M5 x0.8 | 1"x20 UNEF | 39.7 | 46.7 | 92 g |
| VGE1 B 2821 SN03 | | | | | | M4 x0.7 | 1 1/4"x18 UNEF | | | 105 g |
| VGE1 B 2821 PN09 | | | | | | M5 x0.8 | 1"x20 UNEF | | | 92 g |
| VGE1 B 2821 SN09 | | | | | | M4 x0.7 | 1 1/4"x18 UNEF | | | 105 g |

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
 3: weight for indication - receptacle + insert without contact

Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications



VGE1 specific receptacle - Part numbers



Receptacle with serrations

| Shell size | Layout | Number of contact | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | 10 | Male | O, N, X, Y | VGE1 B 1819 PN09 |
| | | | Female | | VGE1 B 1819 SN09 |
| 20 | 20-15 | 7 | Male | O, N, W, Z | VGE1 B 2015 PN09 |
| | | | Female | | VGE1 B 2015 SN09 |
| 22 | 22-14 | 19 | Male | O, N, W, Z | VGE1 B 2214 PN09 |
| | | | Female | | VGE1 B 2214 SN09 |
| 24 | 24-10 | 7 | Male | O, N, W, X, Y, Z | VGE1 B 2410 PN09 |
| | | | Female | | VGE1 B 2410 SN09 |
| 28 | 28-21 | 37 | Male | O, N, W, X, Y, Z | VGE1 B 2821 PN09 |
| | | | Female | | VGE1 B 2821 SN09 |
| 32 | 32A13 | 13 | Male | O, N, W, X, Y, Z | VGE1 B 32A13 PN09 |
| | | | Female | | VGE1 B 32A13 SN09 |
| 36 | 36A22 | 22 | Male | O, N, W, X, Y, Z | VGE1 B 36A22 PN09 |
| | | | Female | | VGE1 B 36A22 SN09 |
| 40 | 40A35 | 35 | Male | O, N, W, X, Y, Z | VGE1 B 40A35 PN09 |
| | | | Female | | VGE1 B 40A35 SN09 |
| | 40A60 | 60 | Male | O, N, W, X, Y, Z | VGE1 B 40A60 PN09 |
| | | | Female | | VGE1 B 40A60 SN09 |

1: for orientation see p. 76

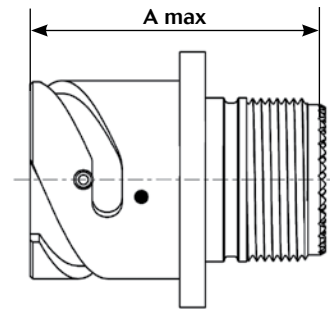
2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation



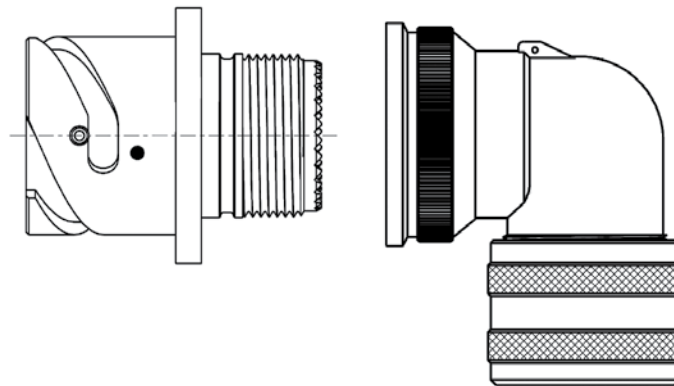
VGE1 specific receptacle - Dimensions

Receptacle with serrations

| Part numbers ⁽²⁾ | Shell size | A max | Nb. of teeth |
|-----------------------------|------------|-------|--------------|
| VGE1 B 1819 PN09 | 18 | 45.05 | 28 |
| VGE1 B 2015 PN09 | 20 | | |
| VGE1 B 2214 PN09 | 22 | | |
| VGE1 B 2410 PN09 | 24 | 47.35 | 32 |
| VGE1 B 2821 PN09 | 28 | | 36 |
| VGE1 B 32A13 PN09 | 32 | | 48 |
| VGE1 B 36A22 PN09 | 36 | | 70 |
| VGE1 B 40A35 PN09 | 40 | | |
| VGE1 B 40A60 PN09 | | | |



Serrations on body connector allow the use of a shorter backshell, for use in short area .
Backshell are specific please consult us for part numbering details.



2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation *Note: max dimensions in mm Dimensions are not contractual and may be subject to modifications*



VGE1 specific plug - Part numbers

Plug with serrations

| Shell size | Layout | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | Male | O, N, X, Y | VGE1 D 18 19 PN09 |
| | | Female | | VGE1 D 18 19 SN09 |
| 20 | 20-15 | Male | O, N, W, Z | VGE1 D 20 15 PN09 |
| | | Female | | VGE1 D 20 15 SN09 |
| 22 | 22-14 | Male | O, N, W, Z | VGE1 D 22 14 PN09 |
| | | Female | | VGE1 D 22 14 SN09 |
| 24 | 24-10 | Male | O, N, W, X, Y, Z | VGE1 D 24 10 PN09 |
| | | Female | | VGE1 D 24 10 SN09 |
| 28 | 28-21 | Male | O, N, W, X, Y, Z | VGE1 D 28 21 PN09 |
| | | Female | | VGE1 D 28 21 SN09 |
| 32 | 32A 13 | Male | O, N, W, X, Y, Z | VGE1 D 32A 13 PN09 |
| | | Female | | VGE1 D 32A 13 SN09 |
| 36 | 36A22 | Male | O, N, W, X, Y, Z | VGE1 D 36A22 PN09 |
| | | Female | | VGE1 D 36A22 SN09 |
| 40 | 40A35 | Male | O, N, W, X, Y, Z | VGE1 D 40A35 PN09 |
| | | Female | | VGE1 D 40A35 SN09 |
| | 40A60 | Male | O, N, W, X, Y, Z | VGE1 D 40A60 PN09 |
| | | Female | | VGE1 D 40A60 SN09 |



Plug with overmoulded coupling ring

| Shell size | Layout | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | Male | O, N, X, Y | VGE1 D 18 19 PN02 |
| | | Female | | VGE1 D 18 19 SN02 |
| 22 | 22-14 | Male | O, N, W, Z | VGE1 D 22 14 PN02 |
| | | Female | | VGE1 D 22 14 SN02 |



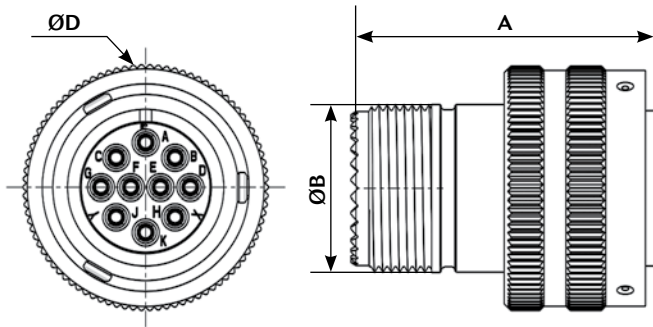
1: for orientation see p. 76

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation



VGE1 specific plug - Dimensions

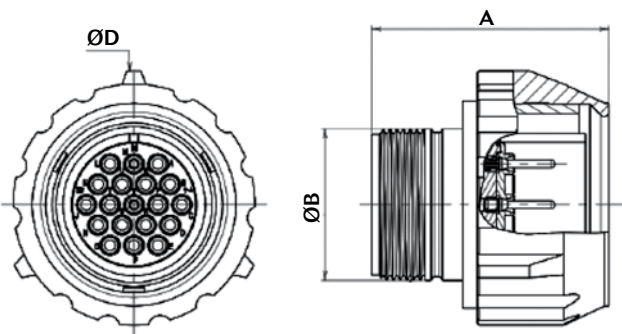
Plug with serrations



| Part numbers ⁽²⁾ | Shell size | A | ØB | ØD max | Nb. of teeth |
|-----------------------------|------------|------|------|--------|--------------|
| VGE1 D 1819 PN02 | 18 | 45 | 25.5 | 37.3 | 28 |
| VGE1 D 2015PN02 | 20 | | 28.7 | 41.5 | |
| VGE1 D 2214 PN02 | 22 | | 31.9 | 44 | |
| VGE1 D 2410 PN02 | 24 | | 35.2 | 48.5 | 32 |
| VGE1 D 2821 PN02 | 28 | 47.7 | 41.5 | 55.3 | 36 |
| VGE1 D 32A13 PN02 | 32 | | 47.9 | 62 | 48 |
| VGE1 D 36A22 PN02 | 36 | | 52.5 | 66.8 | |
| VGE1 D 40A35 PN02 | 40 | | 59 | 74.5 | 70 |

Serrations on body connector allow the use of a shorter backshell, for use in short area .

Plug with overmoulded coupling ring



| Part numbers ⁽²⁾ | Shell size | A | ØB | ØD max | Weight ⁽³⁾ |
|-----------------------------|------------|------|------|--------|-----------------------|
| VGE1 D 1819 PN02 | 18 | 49.7 | 25.5 | 49 | 61 g |
| VGE1 D 2214 PN02 | 22 | 49.7 | 31.9 | 56 | 86 g |

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
 3: weight for indication - receptacle + insert without contacts

Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications



FER1 receptacle & plug - Part numbers



Receptacle

| Shell size | Layout | Number of contact | Contact size | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|--------------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | 10 | #16 | Male | O, N, X, Y | FER1 B 1819 PN |
| | | | | Female | | FER1 B 1819 SN |
| 18 | 18A1 | 1 | Quadrax | Male | N | FER1 B 18A1 PN |
| | | | | Female | | FER1 B 18A1 SN |
| 22 | 22-14 | 19 | #16 | Male | O, N, W, Z | FER1 B 2214 PN |
| | | | | Female | | FER1 B 2214 SN |
| 28 | 28-21 | 37 | #16 | Male | O, N, W, X, Y, Z | FER1 B 2821 PN |
| | | | | Female | | FER1 B 2821 SN |

Plug

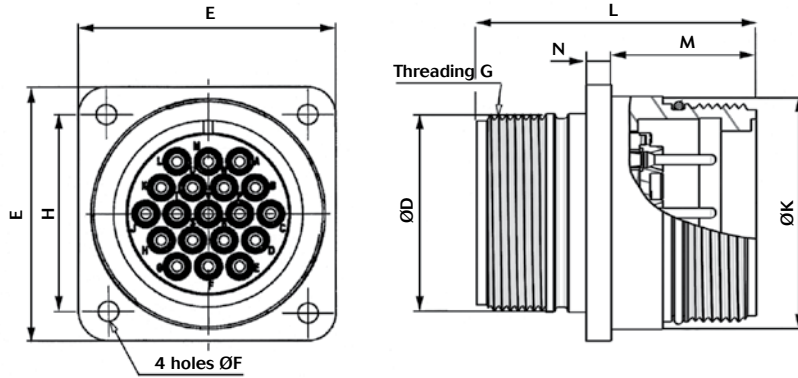
| Shell size | Layout | Number of contact | Contact size | Contact type | Orientation ⁽¹⁾ | Part numbers ⁽²⁾ |
|------------|--------|-------------------|--------------|--------------|----------------------------|-----------------------------|
| 18 | 18-19 | 10 | #16 | Male | O, N, X, Y | FER1 D 1819 PN |
| | | | | Female | | FER1 D 1819 SN |
| 18 | 18A1 | 1 | Quadrax | Male | N | FER1 D 18A1 PN |
| | | | | Female | | FER1 D 18A1 SN |
| 22 | 22-14 | 19 | #16 | Male | O, N, W, Z | FER1 D 2214 PN |
| | | | | Female | | FER1 D 2214 SN |
| 28 | 28-21 | 37 | #16 | Male | O, N, W, X, Y, Z | FER1 D 2821 PN |
| | | | | Female | | FER1 D 2821 SN |

1: for orientation see p. 76

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

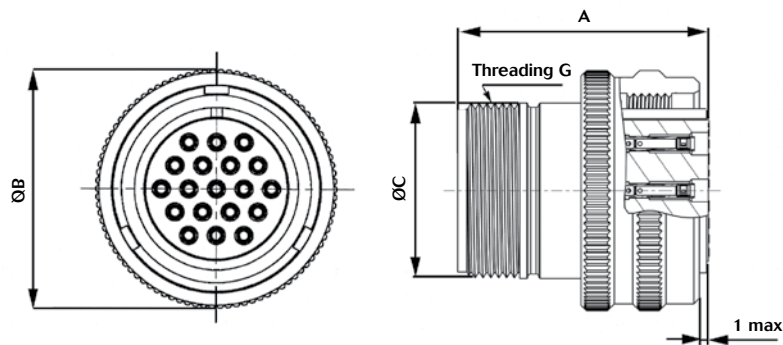


FER1 receptacle & plug - Dimensions



Receptacle

| Part numbers ⁽²⁾ | L max | M | N | ØD | E | ØF | H | ØK | Weight ⁽³⁾ |
|-----------------------------|-------|-------|---|------|------|------|------|------|-----------------------|
| FER1 B 1819 PN | 45.5 | 23.25 | 4 | 25.5 | 35 | 3.25 | 27 | 30.8 | 37 g |
| FER1 B 1819 SN | | | | | | | | | 42 g |
| FER1 B 18A1 PN | | | | | | | | | 32 g |
| FER1 B 18A1 SN | | | | | | | | | 37 g |
| FER1 B 2214 PN | 45.5 | 23.25 | 4 | 31.9 | 41 | 3.25 | 31.8 | 37.4 | 51 g |
| FER1 B 2214 SN | | | | | | | | | 60 g |
| FER1 B 2821 PN | 48 | 24.25 | 4 | 41.5 | 50.8 | 3.75 | 39.7 | 46.7 | 81 g |
| FER1 B 2821 SN | | | | | | | | | 94 g |



Plug

| Part numbers ⁽²⁾ | A max | ØB max | ØC max | Threading G Class 2A | Weight ⁽³⁾ |
|-----------------------------|-------|--------|--------|-------------------------|-----------------------|
| FER1 D 1819 PN | 45.6 | 37.3 | 25.5 | 1"x20 UNEF | 54 g |
| FER1 D 1819 SN | | | | | 58 g |
| FER1 D 18A1 PN | | | | | 44 g |
| FER1 D 18A1 SN | | | | | 51 g |
| FER1 D 2214 PN | 45.6 | 44 | 31.9 | 1 1/4"x18 UNEF | 87 g |
| FER1 D 2214 SN | | | | | 96 g |
| FER1 D 2821 PN | 48.1 | 55.3 | 41.5 | 1 5/8"x18 UNEF | 81 g |
| FER1 D 2821 SN | | | | | 94 g |

2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
 3: weight for indication - receptacle + insert without contact

Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications

VEGETATION

VGE1/FER1 Series

Contacts

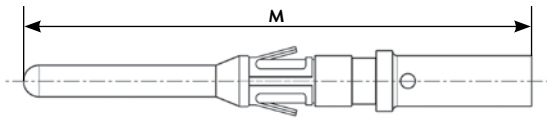
| | |
|--------------------------------|----|
| ■ Machined crimp contact | 34 |
| ■ Quadrax cell..... | 35 |



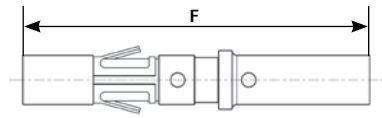


Machined crimp contact

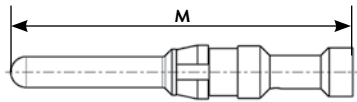
Part numbers & dimensions



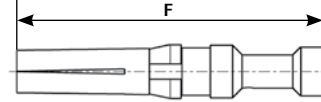
Male contact
#16



Female contact
#16



Male contact
#8 and #12



Female contact
#8 and #12

| Contact size | | Wire size | | Plating | Part numbers | | Insulator Ø | Contact length | |
|--------------|-----|-----------|-----------------|---------|--------------|------------|----------------|----------------|------------|
| # | mm | AWG | mm ² | | Male | Female | | Male (M) | Female (F) |
| #16 | 1.6 | 22-20 | 0.32-0.52 | Gold | RM20M12K | RC20M12K | 1.2-2.2 | 26.2 | 18.2 |
| #16 | 1.6 | 20-16 | 0.5-1.5 | Gold | RM16M23K | RC16M23K | 1.2-3 | 26.2 | 18.2 |
| #16 | 1.6 | 16-14 | 1.5-2.5 | Gold | RM14M30K | RC16M30K | | | |
| #16 | 1.6 | 16-14 | 1.5-2.5 | Gold | RM14M50K | RC14M50K | | | |
| #12 | 2.4 | 20 | 0.5 | Silver | 82911459NA | 82911458NA | 4.9 max | 24.75 | 22.25 |
| | | | | Gold | 82911459NK | 82911458NK | | | |
| #12 | 2.4 | 18 | 0.75-1.0 | Silver | 82911461NA | 82911460NA | | | |
| | | | | Gold | 82911461NK | 82911460NK | | | |
| #12 | 2.4 | 16 | 1.5 | Silver | 82911463NA | 82911462NA | | | |
| | | | | Gold | 82911463NK | 82911462NK | | | |
| #12 | 2.4 | 14 | 2.5 | Silver | 82911465NA | 82911464NA | | | |
| | | | | Gold | 82911465NK | 82911464NK | | | |
| #8 | 3.6 | 16 | 1.5 | Silver | 8291 3601A | 8291 3600A | 6.5 max | 25.5 | 25.5 |
| #8 | 3.6 | 14 | 2.5 | | 8291 3603A | 8291 3602A | | | |
| #8 | 3.6 | 12 | 4 | | 8291 3605A | 8291 3604A | | | |
| #8 | 3.6 | 10 | 6 | | 8291 3607A | 8291 3606A | | | |

For other contact type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

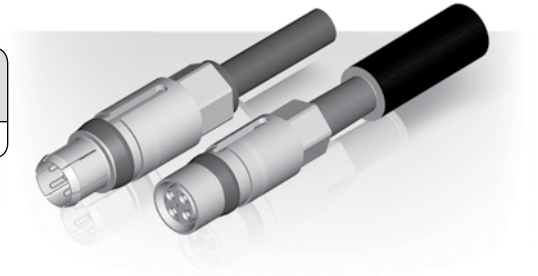
VGE1/FER1 Series



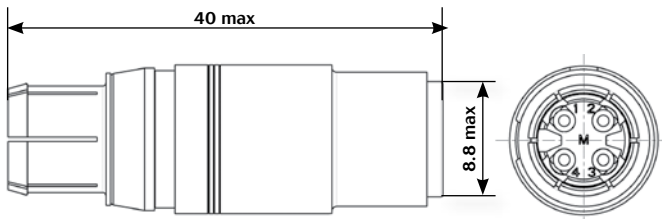
Quadrax contact

Part numbers

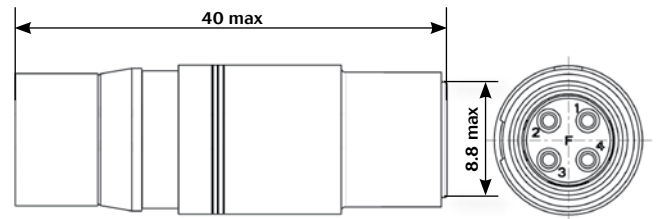
| Line wire size | | Cell plating | Part numbers | | Max line wire insulator Ø |
|----------------|-----------------|--------------|--------------|-----------|---------------------------|
| AWG | mm ² | | Male | Female | |
| 24-18 | 0.21-0.93 | Silver | VGE12035A | VGE12034A | 1.2-2.11 mm |



Dimensions



Male weight: 16gr*



Female weight: 17gr*

*: weight for indication - receptacle + insert without contact

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VEGETAVER

Backshells

- Backshell overview 38
- Overview - Mating possibilities 39
- VGE1 CS & CE 40
- VGE1 SS & SE 42
- VGE1 JS & JE 44
- VGE1 KS & KE 46
- VGE1 TS & TE 48
- VGE1 VS & VE 50
- VGE1 RS 52
- VGE1 PS & PE 54

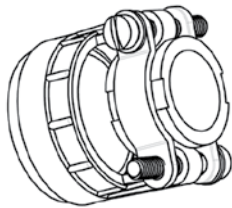




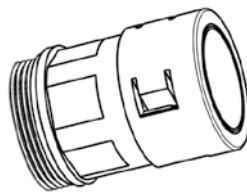
Backshells overview

Accessories have to be used with an adaptor

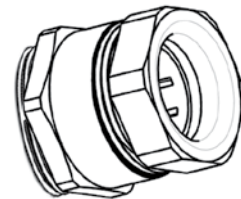
6 accessories available



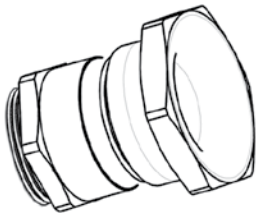
Strain relief
Straight version: CS...
Elbow 90° version: CE...
See page 40



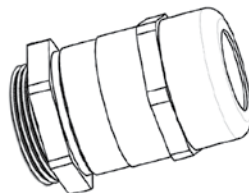
Conduit adaptor
Straight version: SS...
Elbow 90° version: SE...
See page 42



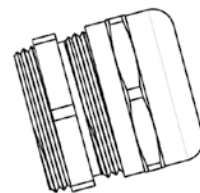
Cable clamp with sealing gland
Straight version: JS...
Elbow 90° version: JE...
See page 44



Cable clamp with sealing gland (trumpet shape)
Straight version: KS...
Elbow 90° version: KE...
See page 46



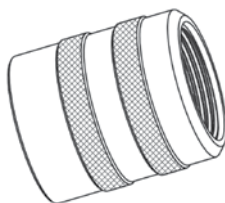
Shielded backshell with sealing gland
Straight version: TS...
Elbow 90° version: TE...
See page 48



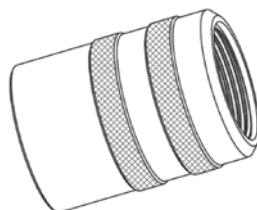
Sealing gland
Straight version: VS...
Elbow 90° version: VE...
See page 50

3 adaptors available

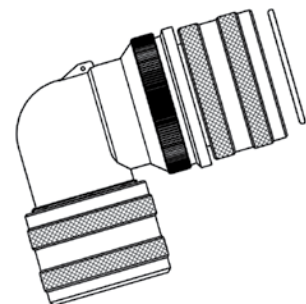
Adaptor are included in the backshell Part numbers or can be order separately.



Straight short version:
PS...



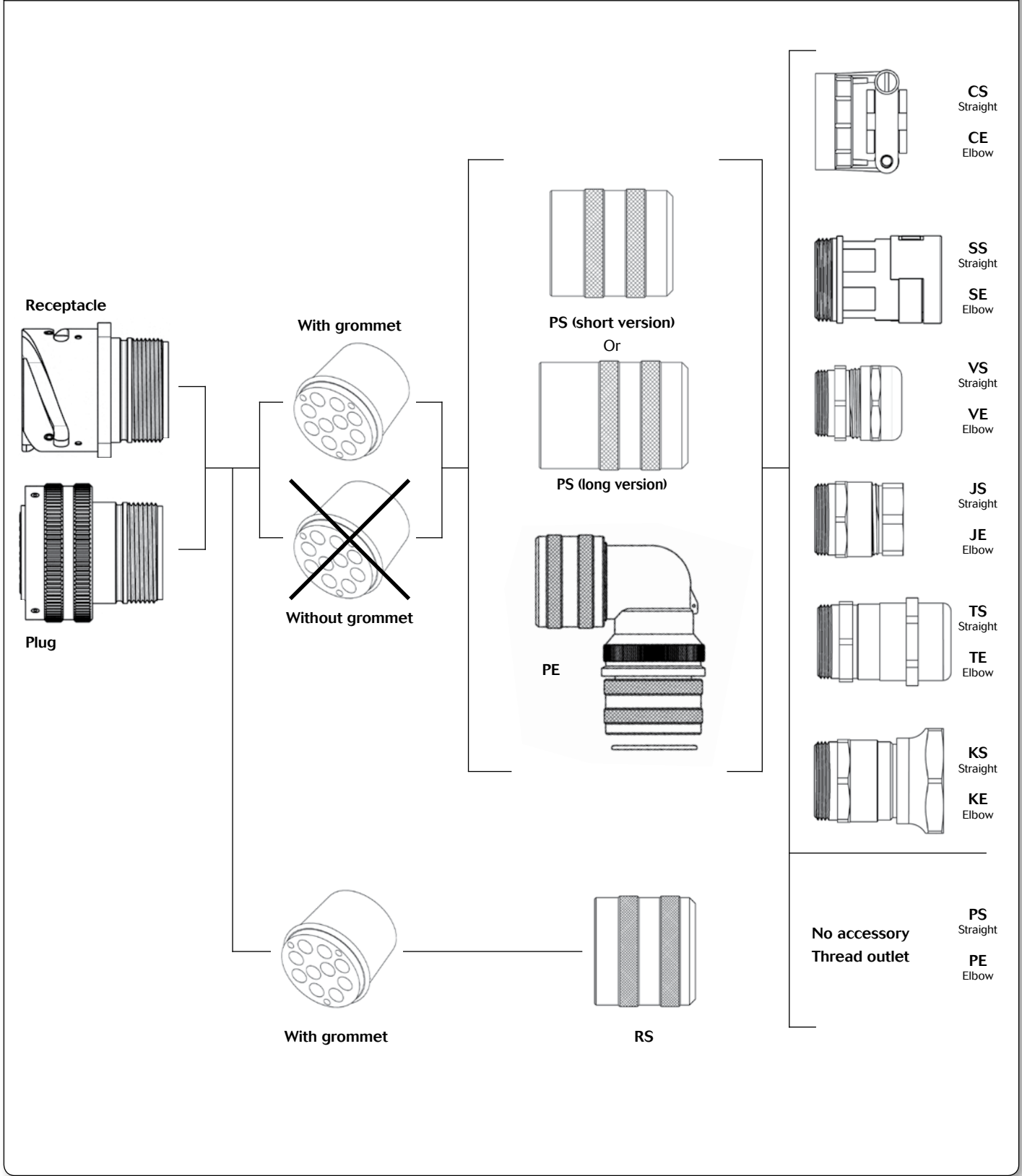
Straight long version:
PS...



Elbow 90° version:
PE...



Overview - Mating possibilities



Backshells

VGE1/FER1 Series



VGE1CS & VGE1CE - Part numbers



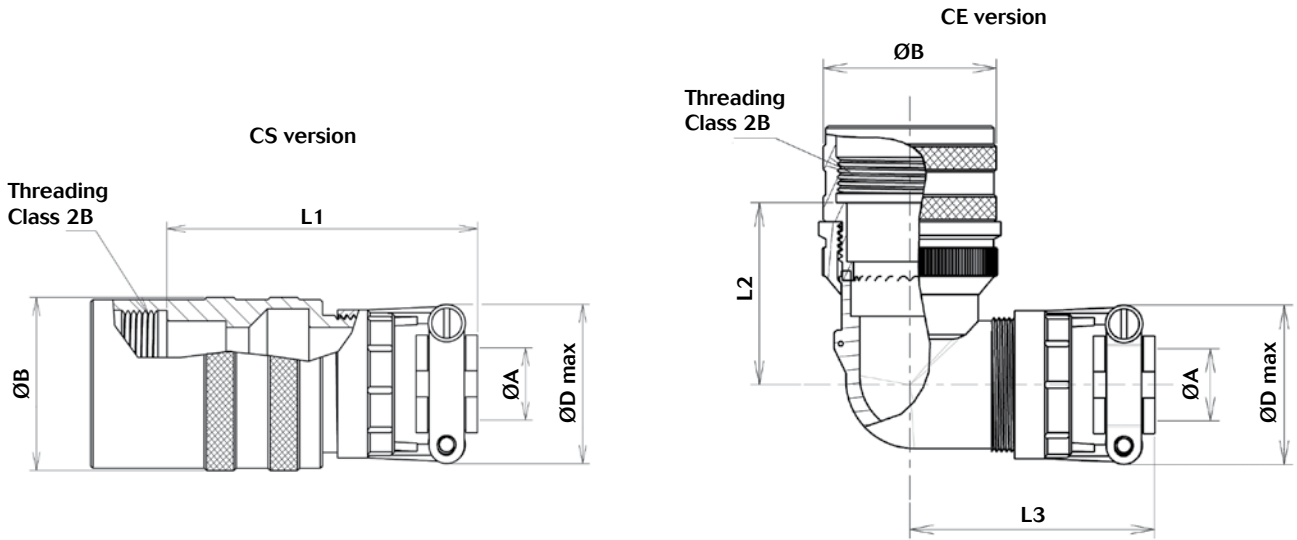
| Layout | CS straight version | | CE elbow 90° version | |
|--------|---------------------|---------------|----------------------|---------------|
| | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1CS180000 | VGE1CS181900M | VGE1CE180000 | VGE1CE181900M |
| | | VGE1CS181900L | | VGE1CE181900L |
| 18A1 | VGE1CS180000 | - | VGE1CE180000 | - |
| 20-15 | VGE1CS200000 | VGE1CS201500M | VGE1CE200000 | VGE1CE201500M |
| | | VGE1CS201500L | | VGE1CE201500L |
| 22-14 | VGE1CS220000 | VGE1CS221400M | VGE1CE220000 | VGE1CE221400M |
| | | VGE1CS221400L | | VGE1CE221400L |
| 24-10 | VGE1CS240000 | VGE1CS241000M | VGE1CE240000 | VGE1CE241000M |
| | | VGE1CS241000L | | VGE1CE241000L |
| 28-21 | VGE1CS280000 | VGE1CS282100M | VGE1CE280000 | VGE1CE282100M |
| | | VGE1CS282100L | | VGE1CE282100L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1CS & VGE1CE - Dimensions



| Layout | ØA | ØB | ØD | L1 | L2 | L3 |
|--------|-------|----|------|------|------|------|
| 18-19 | 12.7 | 30 | 29 | 72 | 44 | 59.2 |
| 18A1 | | | | | | |
| 20-15 | 15.87 | 33 | 34.8 | 72 | 43.5 | 60.4 |
| 22-14 | 15.87 | 38 | 34.8 | 69.4 | 43 | 57.8 |
| 24-10 | 19.05 | 38 | 39.5 | 69.4 | 45.5 | 62.8 |
| 28-21 | 20.32 | 46 | 41.8 | 69.4 | 41 | 57 |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1SS & VGE1SE - Part numbers



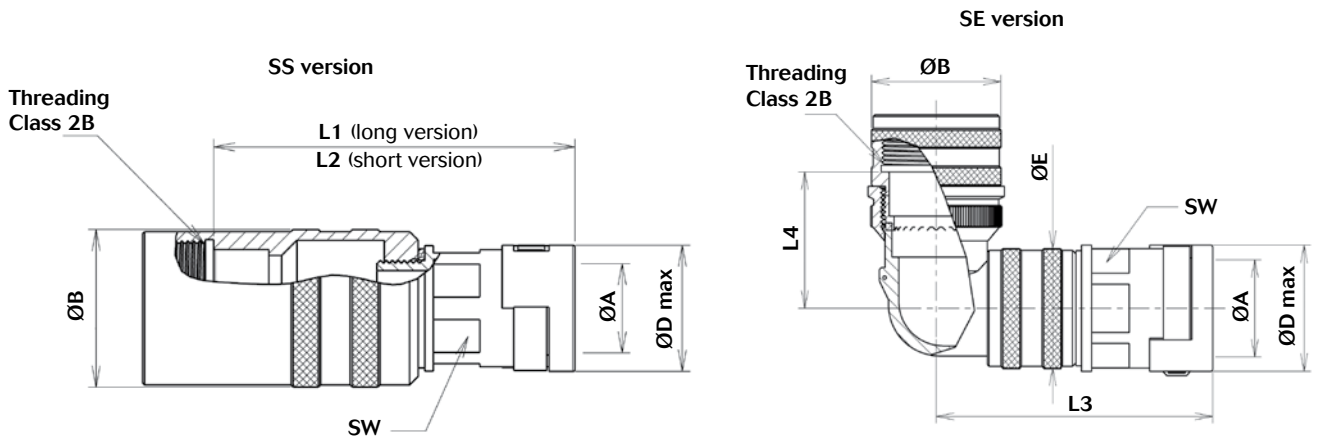
| Layout | SS straight short version | | SS straight long version | | SE elbow 90° version | |
|--------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1SS180000 | VGE1SS181900M | VGE1SS180010 | VGE1SS181910M | VGE1SE180000 | VGE1SE181900M |
| | | VGE1SS181900L | | VGE1SS181910L | | VGE1SE181900L |
| 18A1 | VGE1SS180000 | - | VGE1SS180010 | - | VGE1SE180000 | - |
| 20-15 | VGE1SS200000 | VGE1SS201500M | VGE1SS200010 | VGE1SS201510M | VGE1SE200000 | VGE1SE201500M |
| | | VGE1SS201500L | | VGE1SS201510L | | VGE1SE201500L |
| 22-14 | VGE1SS220000 | VGE1SS221400M | VGE1SS220010 | VGE1SS221410M | VGE1SE220000 | VGE1SE221400M |
| | | VGE1SS221400L | | VGE1SS221410L | | VGE1SE221400L |
| 24-10 | VGE1SS240000 | VGE1SS241000M | VGE1SS240010 | VGE1SS241010M | VGE1SE240000 | VGE1SE241000M |
| | | VGE1SS241000L | | VGE1SS241010L | | VGE1SE241000L |
| 28-21 | VGE1SS280000 | VGE1SS282100M | VGE1SS280010 | VGE1SS282110M | VGE1SE280000 | VGE1SE282100M |
| | | VGE1SS282100L | | VGE1SS282110L | | VGE1SE282100L |
| 32A13 | VGE1SS320000 | VGE1SS32A1300M | VGE1SS320010 | VGE1SS32A1310M | VGE1SE320000 | VGE1SE32A1300M |
| | | VGE1SS32A1300L | | VGE1SS32A1310L | | VGE1SE32A1300L |
| 36A22 | VGE1SS360000 | VGE1SS36A2200M | VGE1SS360010 | VGE1SS36A2210M | VGE1SE360000 | VGE1SE36A2200M |
| | | VGE1SS36A2200L | | VGE1SS36A2210L | | VGE1SE36A2200L |
| 40A35 | VGE1SS400000 | VGE1SS40A3500M | VGE1SS400010 | VGE1SS40A3510M | VGE1SE400000 | VGE1SE40A3500M |
| | | VGE1SS40A3500L | | VGE1SS40A3510L | | VGE1SE40A3500L |
| 40A60 | VGE1SS400000 | VGE1SS40A6000M | VGE1SS400010 | VGE1SS40A6010M | VGE1SE400000 | VGE1SE40A6000M |
| | | VGE1SS40A6000L | | VGE1SS40A6010L | | VGE1SE40A6000L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1SS & VGE1SE - Dimensions



| Layout | ØA (conduit type) | ØB | ØD | ØE | SW | L1 | L2 | L3 | L4 |
|--------|----------------------|----|----|------|----|------|------|------|------|
| 18-19 | NW17 | 30 | 30 | 30 | 26 | 84.1 | 69.1 | 78.5 | 44 |
| 18A1 | | | | | | | | | |
| 20-15 | NW17 | 33 | 30 | 34 | 26 | 84.1 | 69.1 | 80 | 43.5 |
| 22-14 | NW23 | 37 | 37 | 35 | 32 | 87.1 | 72.1 | 83 | 43 |
| 24-10 | NW23 | 40 | 37 | 40 | 32 | 87.1 | 72.1 | 88 | 45.5 |
| 28-21 | NW29 | 46 | 44 | 44.5 | 38 | 95.9 | 10.9 | 85.5 | 41 |
| 32A13 | NW29 | 52 | 44 | 52 | 38 | 85.9 | 70.9 | 98.5 | 52 |
| 36A22 | NW36 | 57 | 53 | 57 | 50 | 99.4 | 84.4 | 115 | 65 |
| 40A35 | NW48 | 63 | 65 | 63 | 65 | 93.4 | 78.4 | 115 | 56 |
| 40A60 | | | | | | | | | |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1JS & VGE1JE - Part numbers



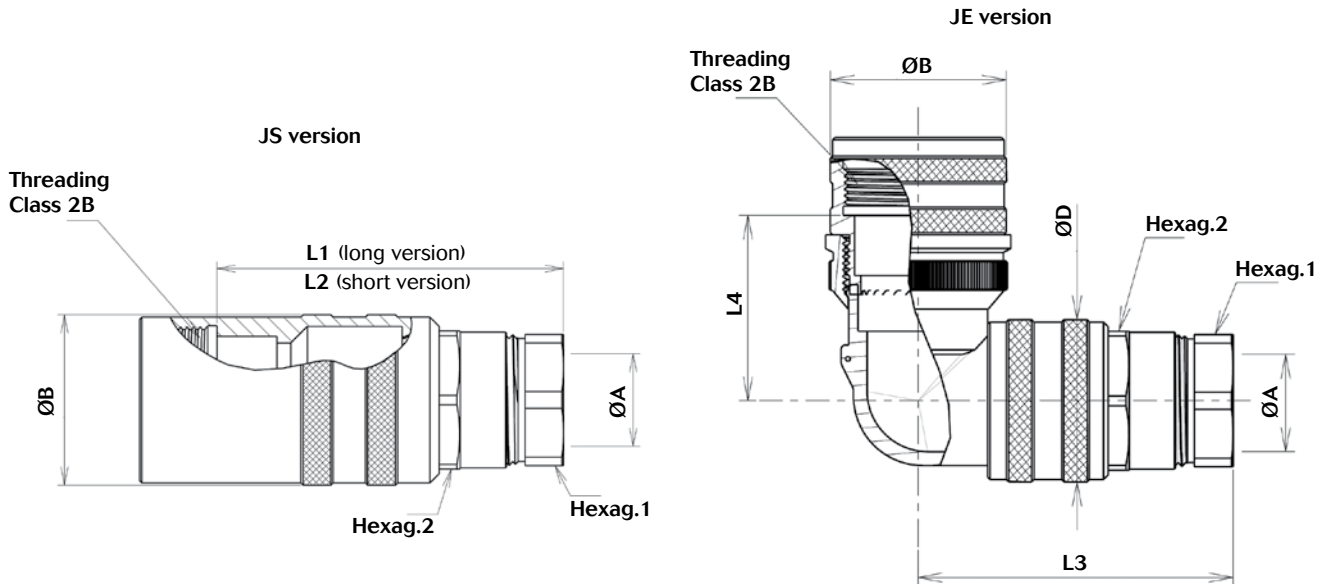
| Layout | JS straight short version | | JS straight long version | | JE elbow 90° version | |
|--------------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1JS180000 | VGE1JS181900M | VGE1JS180010 | VGE1JS181910M | VGE1JE180000 | VGE1JE181900M |
| | | VGE1JS181900L | | VGE1JS181910L | | VGE1JE181900L |
| 18A1 | VGE1JS180000 | - | VGE1JS180010 | - | VGE1JE180000 | - |
| 20-15 | VGE1JS200000 | VGE1JS201500M | VGE1JS200010 | VGE1JS201510M | VGE1JE200000 | VGE1JE201500M |
| | | VGE1JS201500L | | VGE1JS201510L | | VGE1JE201500L |
| 22-14 | VGE1JS220000 | VGE1JS221400M | VGE1JS220010 | VGE1JS221410M | VGE1JE220000 | VGE1JE221400M |
| | | VGE1JS221400L | | VGE1JS221410L | | VGE1JE221400L |
| 24-10 | VGE1JS240000 | VGE1JS241000M | VGE1JS240010 | VGE1JS241010M | VGE1JE240000 | VGE1JE241000M |
| | | VGE1JS241000L | | VGE1JS241010L | | VGE1JE241000L |
| 28-21 | VGE1JS280000 | VGE1JS282100M | VGE1JS280010 | VGE1JS282110M | VGE1JE280000 | VGE1JE282100M |
| | | VGE1JS282100L | | VGE1JS282110L | | VGE1JE282100L |
| 32A13 | VGE1JS320000 | VGE1JS32A1300M | VGE1JS320010 | VGE1JS32A1310M | VGE1JE320000 | VGE1JE32A1300M |
| | | VGE1JS32A1300L | | VGE1JS32A1310L | | VGE1JE32A1300L |
| 36A22 | VGE1JS360000 | VGE1JS36A2200M | VGE1JS360010 | VGE1JS36A2210M | VGE1JE360000 | VGE1JE36A2200M |
| | | VGE1JS36A2200L | | VGE1JS36A2210L | | VGE1JE36A2200L |
| 40A35 | VGE1JS400000 | VGE1JS40A3500M | VGE1JS400010 | VGE1JS40A3510M | VGE1JE400000 | VGE1JE40A3500M |
| | | VGE1JS40A3500L | | VGE1JS40A3510L | | VGE1JE40A3500L |
| 40A60 | VGE1JS400000 | VGE1JS40A6000M | VGE1JS400010 | VGE1JS40A6010M | VGE1JE400000 | VGE1JE40A6000M |
| | | VGE1JS40A6000L | | VGE1JS40A6010L | | VGE1JE40A6000L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1JS & VGE1JE - Dimensions



| Layout | ØA | ØB | ØD | Hexag.1 | Hexag.2 | L1 | L2 | L3 | L4 |
|--------|-------|----|------|---------|---------|------|------|-------|------|
| 18-19 | 7/12 | 30 | 30 | 20 | 22 | 71.6 | 56.6 | 65.2 | 44 |
| 18A1 | | | | | | | | | |
| 20-15 | 9/14 | 33 | 34 | 22 | 24 | 71.6 | 56.6 | 66.4 | 43.5 |
| 22-14 | 10/18 | 37 | 35 | 28 | 30 | 79.6 | 64.6 | 74.4 | 43 |
| 24-10 | 10/18 | 40 | 40 | 28 | 30 | 79.6 | 64.6 | 79.4 | 45.5 |
| 28-21 | 14/24 | 46 | 44.5 | 38 | 40 | 88.9 | 63.9 | 76.9 | 41 |
| 32A13 | 14/24 | 52 | 52 | 38 | 40 | 78.9 | 63.9 | 89.9 | 52 |
| 36A22 | 22/30 | 57 | 57 | 48 | 50 | 84.9 | 69.9 | 96.9 | 63.3 |
| 40A35 | 25/35 | 63 | 63 | 55 | 58 | 92.4 | 77.4 | 106.7 | 55.3 |
| 40A60 | | | | | | | | | |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1KS & VGE1KE - Part numbers



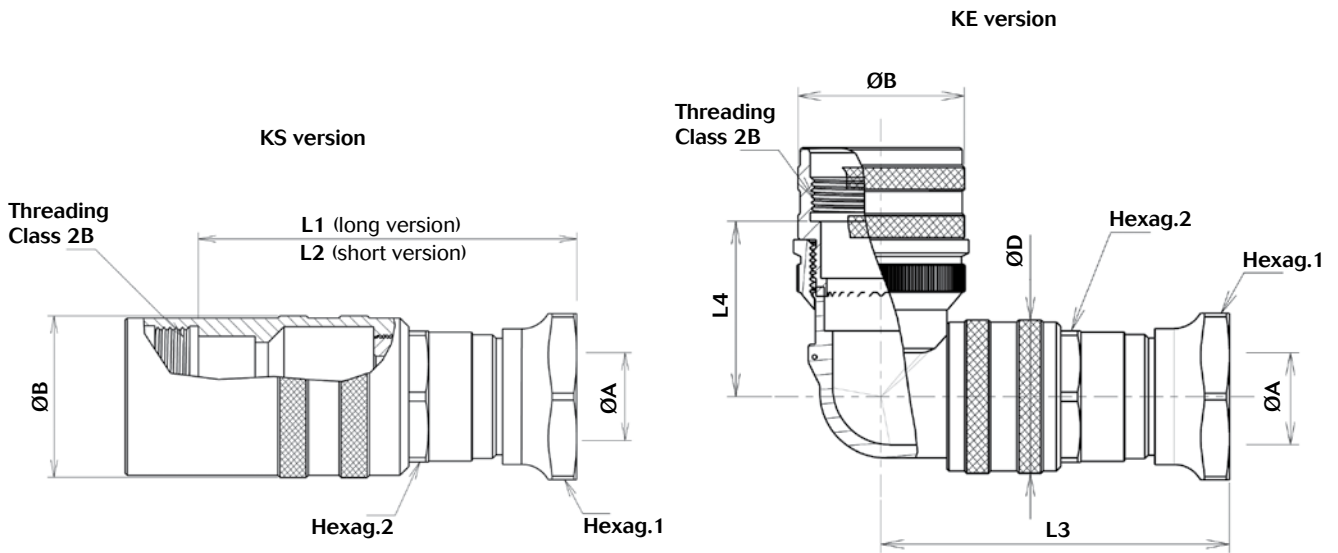
| Layout | KS straight short version | | KS straight long version | | KE elbow 90° version | |
|--------------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1KS180000 | VGE1KS181900M | VGE1KS180010 | VGE1KS181910M | VGE1KE180000 | VGE1KE181900M |
| | | VGE1KS181900L | | VGE1KS181910L | | VGE1KE181900L |
| 18A1 | VGE1KS180000 | - | VGE1KS180010 | - | VGE1KE180000 | - |
| 20-15 | VGE1KS200000 | VGE1KS201500M | VGE1KS200010 | VGE1KS201510M | VGE1KE200000 | VGE1KE201500M |
| | | VGE1KS201500L | | VGE1KS201510L | | VGE1KE201500L |
| 22-14 | VGE1KS220000 | VGE1KS221400M | VGE1KS220010 | VGE1KS221410M | VGE1KE220000 | VGE1KE221400M |
| | | VGE1KS221400L | | VGE1KS221410L | | VGE1KE221400L |
| 24-10 | VGE1KS240000 | VGE1KS241000M | VGE1KS240010 | VGE1KS241010M | VGE1KE240000 | VGE1KE241000M |
| | | VGE1KS241000L | | VGE1KS241010L | | VGE1KE241000L |
| 28-21 | VGE1KS280000 | VGE1KS282100M | VGE1KS280010 | VGE1KS282110M | VGE1KE280000 | VGE1KE282100M |
| | | VGE1KS282100L | | VGE1KS282110L | | VGE1KE282100L |
| 32A13 | VGE1KS320000 | VGE1KS32A1300M | VGE1KS320010 | VGE1KS32A1310M | VGE1KE320000 | VGE1KE32A1300M |
| | | VGE1KS32A1300L | | VGE1KS32A1310L | | VGE1KE32A1300L |
| 36A22 | VGE1KS360000 | VGE1KS36A2200M | VGE1KS360010 | VGE1KS36A2210M | VGE1KE360000 | VGE1KE36A2200M |
| | | VGE1KS36A2200L | | VGE1KS36A2210L | | VGE1KE36A2200L |
| 40A35 | VGE1KS400000 | VGE1KS40A3500M | VGE1KS400010 | VGE1KS40A3510M | VGE1KE400000 | VGE1KE40A3500M |
| | | VGE1KS40A3500L | | VGE1KS40A3510L | | VGE1KE40A3500L |
| 40A60 | VGE1KS400000 | VGE1KS40A6000M | VGE1KS400010 | VGE1KS40A6010M | VGE1KE400000 | VGE1KE40A6000M |
| | | VGE1KS40A6000L | | VGE1KS40A6010L | | VGE1KE40A6000L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1KS & VGE1KE - Dimensions



| layout | ØA | ØB | ØD | Hexag.1 | Hexag.2 | L1 | L2 | L3 | L4 |
|--------|-------|----|------|---------|---------|-------|------|-------|------|
| 18-19 | 7/12 | 30 | 30 | 28 | 22 | 78.6 | 63.6 | 72.2 | 44 |
| 18A1 | | | | | | | | | |
| 20-15 | 9/14 | 33 | 34 | 30 | 24 | 80.1 | 65.1 | 74.9 | 43.5 |
| 22-14 | 10/18 | 37 | 35 | 38 | 30 | 87.1 | 72.1 | 81.9 | 43 |
| 24-10 | 10/18 | 40 | 40 | 38 | 30 | 87.1 | 72.1 | 86.9 | 45.5 |
| 28-21 | 14/24 | 46 | 44.5 | 50 | 40 | 102.4 | 77.4 | 90.4 | 41 |
| 32A13 | 14/24 | 52 | 52 | 50 | 40 | 92.4 | 77.4 | 103.4 | 52 |
| 36A22 | 22/30 | 57 | 57 | 54 | 50 | 98.9 | 83.9 | 110.9 | 63.3 |
| 40A35 | 25/35 | 63 | 63 | 60 | 58 | 104.4 | 89.4 | 118.7 | 55.3 |
| 40A60 | | | | | | | | | |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1TS & VGE1TE - Part numbers



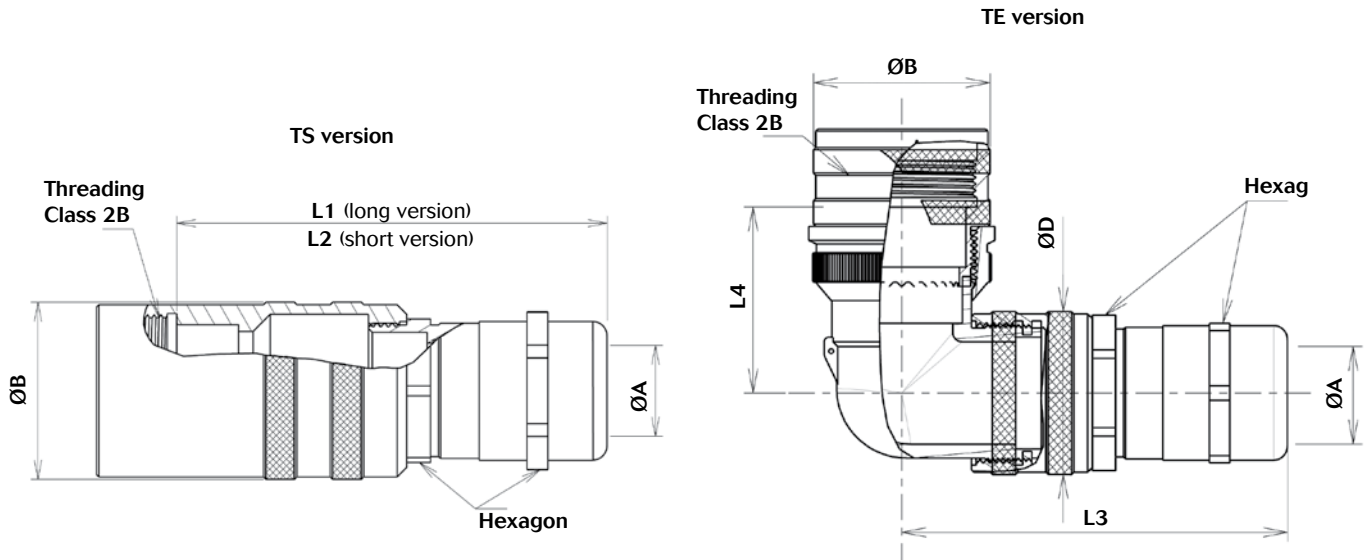
| Layout | TS straight short version | | TS straight long version | | TE elbow 90° version | |
|--------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1TS180000 | VGE1TS181900M | VGE1TS180010 | VGE1TS181910M | VGE1TE180000 | VGE1TE181900M |
| | | VGE1TS181900L | | VGE1TS181910L | | VGE1TE181900L |
| 18A1 | VGE1TS180000 | - | VGE1TS180010 | - | VGE1TE180000 | - |
| 20-15 | VGE1TS200000 | VGE1TS201500M | VGE1TS200010 | VGE1TS201510M | VGE1TE200000 | VGE1TE201500M |
| | | VGE1TS201500L | | VGE1TS201510L | | VGE1TE201500L |
| 22-14 | VGE1TS220000 | VGE1TS221400M | VGE1TS220010 | VGE1TS221410M | VGE1TE220000 | VGE1TE221400M |
| | | VGE1TS221400L | | VGE1TS221410L | | VGE1TE221400L |
| 24-10 | VGE1TS240000 | VGE1TS241000M | VGE1TS240010 | VGE1TS241010M | VGE1TE240000 | VGE1TE241000M |
| | | VGE1TS241000L | | VGE1TS241010L | | VGE1TE241000L |
| 28-21 | VGE1TS280000 | VGE1TS282100M | VGE1TS280010 | VGE1TS282110M | VGE1TE280000 | VGE1TE282100M |
| | | VGE1TS282100L | | VGE1TS282110L | | VGE1TE282100L |
| 32A13 | VGE1TS320000 | VGE1TS32A1300M | VGE1TS320010 | VGE1TS32A1310M | VGE1TE320000 | VGE1TE32A1300M |
| | | VGE1TS32A1300L | | VGE1TS32A1310L | | VGE1TE32A1300L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1TS & VGE1TE - Dimensions



| layout | ØA | ØB | ØD | Hexagon | L1 | L2 | L3 | L4 |
|--------|---------|----|------|---------|-------|------|-------|------|
| 18-19 | 8/12.5 | 30 | 30 | 22 | 82.1 | 67.1 | 75.7 | 44 |
| 18A1 | | | | | | | | |
| 20-15 | 10/14.5 | 33 | 34 | 24 | 82.1 | 67.1 | 76.9 | 43.5 |
| 22-14 | 13.5/18 | 37 | 35 | 30 | 91.6 | 76.6 | 86.4 | 43 |
| 24-10 | 13.5/18 | 40 | 40 | 30 | 91.6 | 76.6 | 91.4 | 45.5 |
| 28-21 | 17/24 | 46 | 44.5 | 40 | 109.4 | 84.4 | 97.4 | 41 |
| 32A13 | 17/24 | 52 | 52 | 40 | 99.4 | 84.4 | 110.4 | 52 |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/VER1 Series



VGE1VS & VGE1VE - Part numbers



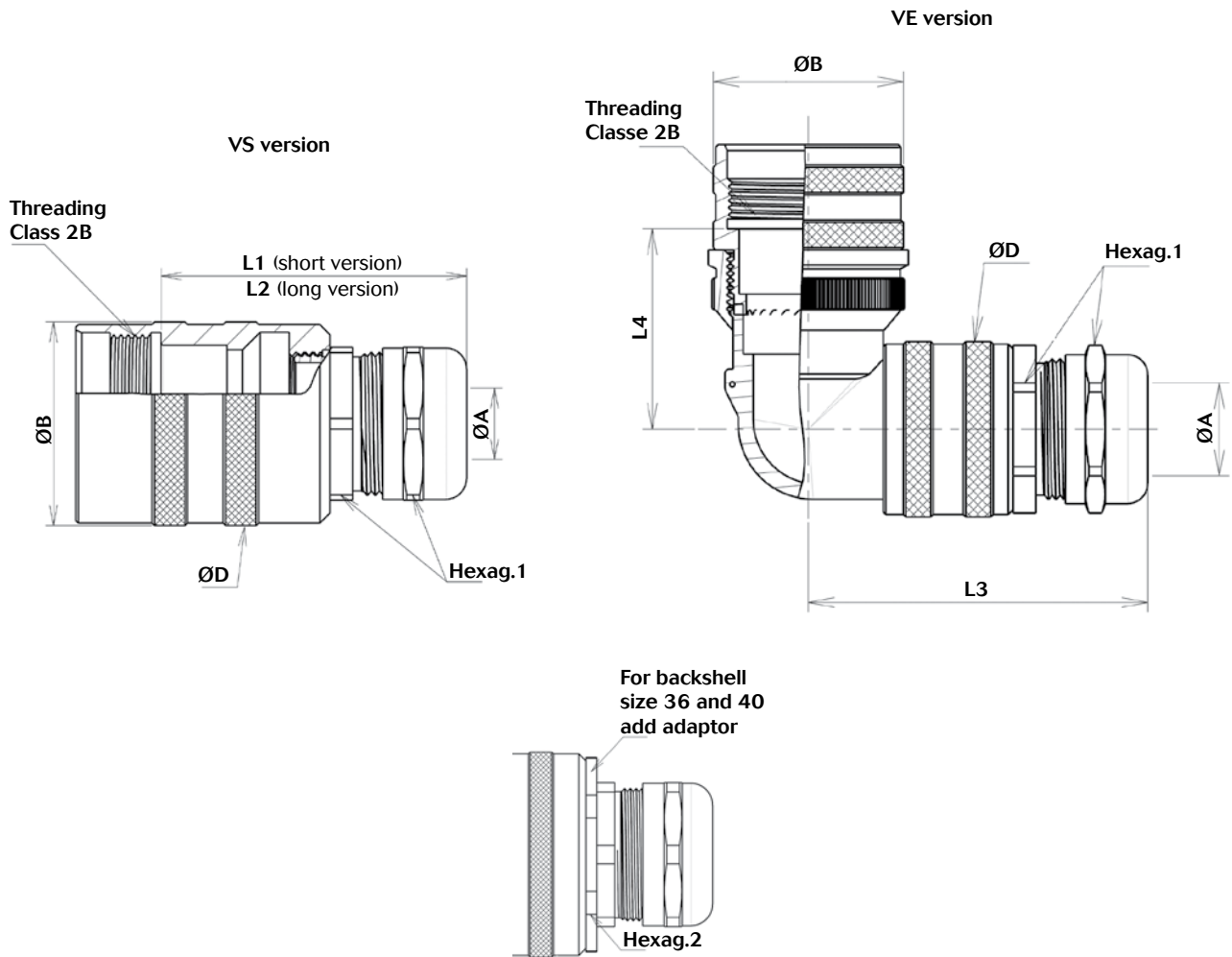
| Layout | VS straight short version | | VS straight long version | | VE elbow 90° version | |
|--------------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1VS180001 | VGE1VS181901M | VGE1VS180011 | VGE1VS181911M | VGE1VE180001 | VGE1VE181901M |
| | | VGE1VS181901L | | VGE1VS181911L | | VGE1VE181901L |
| 18A1 | VGE1VS180001 | - | VGE1VS180011 | - | VGE1VE180001 | - |
| 20-15 | VGE1VS200001 | VGE1VS201501M | VGE1VS200011 | VGE1VS201511M | VGE1VE200001 | VGE1VE201501M |
| | | VGE1VS201501L | | VGE1VS201511L | | VGE1VE201501L |
| 22-14 | VGE1VS220001 | VGE1VS221401M | VGE1VS220011 | VGE1VS221411M | VGE1VE220001 | VGE1VE221401M |
| | | VGE1VS221401L | | VGE1VS221411L | | VGE1VE221401L |
| 24-10 | VGE1VS240001 | VGE1VS241001M | VGE1VS240011 | VGE1VS241011M | VGE1VE240001 | VGE1VE241001M |
| | | VGE1VS241001L | | VGE1VS241011L | | VGE1VE241001L |
| 28-21 | VGE1VS280001 | VGE1VS282101M | VGE1VS280011 | VGE1VS28211M | VGE1VE280001 | VGE1VE282101M |
| | | VGE1VS282101L | | VGE1VS28211L | | VGE1VE282101L |
| 32A13 | VGE1VS320001 | VGE1VS32A1301M | VGE1VS320011 | VGE1VS32A1311M | VGE1VE320001 | VGE1VE32A1301M |
| | | VGE1VS32A1301L | | VGE1VS32A1311L | | VGE1VE32A1301L |

* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1VS & VGE1VE - Dimensions



| Layout | ØA | ØB | ØD | L1 | L2 | L3 | L4 | Hexag.1 | Hexag.2 |
|--------|--------|----|------|------|------|------|------|---------|---------|
| 18-19 | 6/12.5 | 30 | 30 | 55.6 | 70.6 | 64 | 44 | 22 | without |
| 18A1 | | | | | | | | | |
| 20-15 | 7/14.5 | 33 | 34 | 57.6 | 72.6 | 67.5 | 43.5 | 24 | without |
| 22-14 | 10/18 | 37 | 35 | 62.1 | 77.1 | 72 | 43 | 30 | without |
| 24-10 | 10/18 | 40 | 40 | 62.1 | 77.1 | 77 | 45.5 | 30 | without |
| 28-21 | 14/24 | 46 | 44.5 | 67.9 | 92.9 | 81 | 41 | 40 | without |
| 32A13 | 14/24 | 52 | 52 | 67.9 | 82.9 | 94 | 52 | 40 | without |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications



VGE1RS - Part numbers



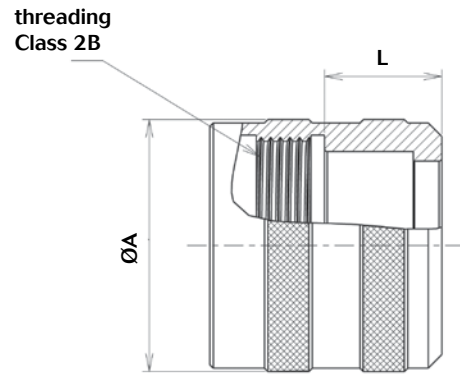
| Layout | RS backshell with grommet | Contact type |
|--------|---------------------------|--------------|
| 18-19 | VGE1RS181900M | Male |
| | VGE1RS181900L | Female |
| 20-15 | VGE1RS201500M | Male |
| | VGE1RS201500L | Female |
| 22-14 | VGE1RS221400M | Male |
| | VGE1RS221400L | Female |
| 24-10 | VGE1RS241000M | Male |
| | VGE1RS241000L | Female |
| 28-21 | VGE1RS282100M | Male |
| | VGE1RS282100L | Female |
| 32A13 | VGE1RS32A1300M | Male |
| | VGE1RS32A1300L | Female |
| 36A22 | VGE1RS36A2200M | Male |
| | VGE1RS36A2200L | Female |
| 40A35 | VGE1RS40A3500M | Male |
| | VGE1RS40A3500L | Female |
| 40A60 | VGE1RS40A6000M | Male |
| | VGE1RS40A6000L | Female |

VGE1/FER1 Series



VGE1RS - Dimensions

| Layout | ØA | L |
|--------|----|------|
| 18-19 | 30 | 17.2 |
| 20-15 | 33 | |
| 22-14 | 37 | |
| 24-10 | 42 | |
| 28-21 | 46 | 16 |
| 32A13 | 52 | |
| 36A22 | 52 | |
| 40A35 | 57 | |
| 40A60 | | |



Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



VGE1PS & VGE1PE - Part numbers



| Layout | PS straight short version | | PS straight long version | | PE elbow 90° version | |
|--------------|---------------------------|----------------|--------------------------|----------------|----------------------|----------------|
| | Without grommet | With grommet* | Without grommet | With grommet* | Without grommet | With grommet* |
| 18-19 | VGE1PS180000 | VGE1PS181900M | VGE1PS180010 | VGE1PS181910M | VGE1PE180000 | VGE1PE181900M |
| | | VGE1PS181900L | | VGE1PS181910L | | VGE1PE181900L |
| 18A1 | VGE1PS180000 | - | VGE1PS180010 | - | VGE1PE180000 | - |
| 20-15 | VGE1PS200000 | VGE1PS201500M | VGE1PS200010 | VGE1PS201510M | VGE1PE200000 | VGE1PE201500M |
| | | VGE1PS201500L | | VGE1PS201510L | | VGE1PE201500L |
| 22-14 | VGE1PS220000 | VGE1PS221400M | VGE1PS220010 | VGE1PS221410M | VGE1PE220000 | VGE1PE221400M |
| | | VGE1PS221400L | | VGE1PS221410L | | VGE1PE221400L |
| 24-10 | VGE1PS240000 | VGE1PS241000M | VGE1PS240010 | VGE1PS241010M | VGE1PE240000 | VGE1PE241000M |
| | | VGE1PS241000L | | VGE1PS241010L | | VGE1PE241000L |
| 28-21 | VGE1PS280000 | VGE1PS282100M | VGE1PS280010 | VGE1PS282110M | VGE1PE280000 | VGE1PE282100M |
| | | VGE1PS282100L | | VGE1PS282110L | | VGE1PE282100L |
| 32A13 | VGE1PS320000 | VGE1PS32A1300M | VGE1PS320010 | VGE1PS32A1310M | VGE1PE320000 | VGE1PE32A1300M |
| | | VGE1PS32A1300L | | VGE1PS32A1310L | | VGE1PE32A1300L |
| 36A22 | VGE1PS360000 | VGE1PS36A2200M | VGE1PS360010 | VGE1PS36A2210M | VGE1PE360000 | VGE1PE36A2200M |
| | | VGE1PS36A2200L | | VGE1PS36A2210L | | VGE1PE36A2200L |
| 40A35 | VGE1PS400000 | VGE1PS40A3500M | VGE1PS400010 | VGE1PS40A3510M | VGE1PE400000 | VGE1PE40A3500M |
| | | VGE1PS40A3500L | | VGE1PS40A3510L | | VGE1PE40A3500L |
| 40A60 | VGE1PS400000 | VGE1PS40A6000M | VGE1PS400010 | VGE1PS40A6010M | VGE1PE400000 | VGE1PE40A6000M |
| | | VGE1PS40A6000L | | VGE1PS40A6010L | | VGE1PE40A6000L |

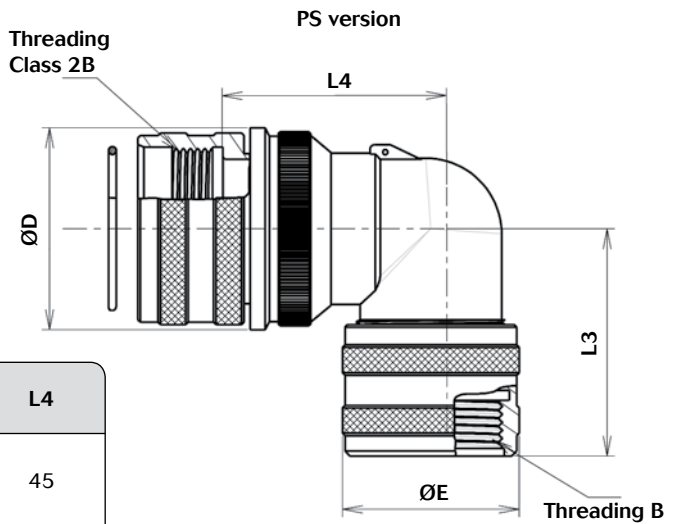
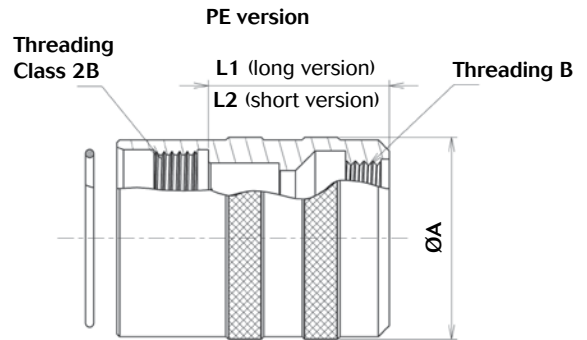
* Termination M = Male grommet / Termination L = Female grommet.

VGE1/FER1 Series



VGE1PS & VGE1PE - Dimensions

| Layout | ØA | Threading B | L1 | L2 |
|--------|----|-------------|------|----|
| 18-19 | 30 | PG13.5 | 48.6 | 34 |
| 18A1 | | | | |
| 20-15 | 33 | PG16 | 48.6 | 34 |
| 22-14 | 37 | PG21 | 48.6 | 34 |
| 24-10 | 40 | PG21 | 48.6 | 34 |
| 28-21 | 46 | PG29 | 58 | 33 |
| 32A13 | 52 | PG29 | 48 | 33 |
| 36A22 | 57 | PG36 | 48 | 33 |
| 40A35 | 63 | PG42 | 48 | 33 |
| 40A60 | | | | |



| Layout | Threading B | ØD max | ØE | L3 max | L4 |
|--------|-------------|--------|------|--------|------|
| 18-19 | PG13.5 | 34.2 | 30 | 31 | 45 |
| 18A1 | | | | | |
| 20-15 | PG16 | 37.4 | 34 | 32 | 44.5 |
| 22-14 | PG21 | 40.5 | 35 | 32 | 45 |
| 24-10 | PG21 | 44 | 40 | 37 | 47 |
| 28-21 | PG29 | 50.1 | 44.5 | 34 | 41.9 |
| 32A13 | PG29 | 56.4 | 52 | 47 | 52.5 |
| 36A22 | PG36 | 62.8 | 57 | 48 | 65 |
| 40A35 | PG42 | 69.2 | 63 | 52.5 | 56 |
| 40A60 | | | | | |

For other outlet type consult us

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series



PS specific versions with metric threads

| Version | Number | Adaptator | Out threading | Shell size | | | | | | | |
|----------|--------|-----------|---------------|------------|------|------|------|------|------|------|------|
| | | | | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 40 |
| Specific | 01 | Short | Female | | | | | M32 | | | |
| | 02 | | | M25 | M20* | M32 | M32* | M40* | M32* | M40* | M40* |
| | 04 | | | M16 | M25* | M25 | M25* | M32* | M40* | M40* | M50* |
| | 05 | | | M20 | | M20* | | M25* | | | M32* |
| | 07 | | | | M25 | | | | | | |
| Specific | 11 | Long | Female | | | | | M32 | | | |

Examples:

VGE1PS181905 = Straight backshell size 18 with female M20 thread delivered with female grommet

VGE1PS280011 = Straight backshell size 28 with female M32 thread delivered with female grommet

PE specific versions with metric threads

| Version | Number | Out threading | 18 | 20 | 22 | 24 | 28 | 32 | 36 | 40 |
|----------|--------|---------------|------|------|------|------|------|------|------|------|
| Specific | 01 | Female | | | M25 | | M32 | | | |
| Specific | 03 | Female | M20* | M20 | M32 | M32 | M40* | M32* | M40* | M40* |
| Specific | 04 | | M25* | M25* | M25* | M25* | M32* | M40* | M50* | M50* |
| Specific | 05 | | M16* | | M20* | | | | | M32* |
| Specific | 06 | | | | | | M25* | | | |

Examples:

VGE1PE181905 = Elbow backshell size 18 with female M16 thread delivered with female grommet

VGE1PE280001 = Elbow backshell size 28 with female M32 thread delivered with female grommet

* Please consult us.

Note: Packaging = individual plastic bag + individual label + consumables.

VGE1/FER1 Series



VEGETATION

VGE1/FER1 Series

Accessories

| | |
|--------------------------------------|----|
| ■ Grommet | 60 |
| ■ Metallic Caps | 61 |
| ■ Panel gasket for VGE1 & FER1 | 62 |
| ■ Fixing plate for VGE1 & FER1 | 63 |



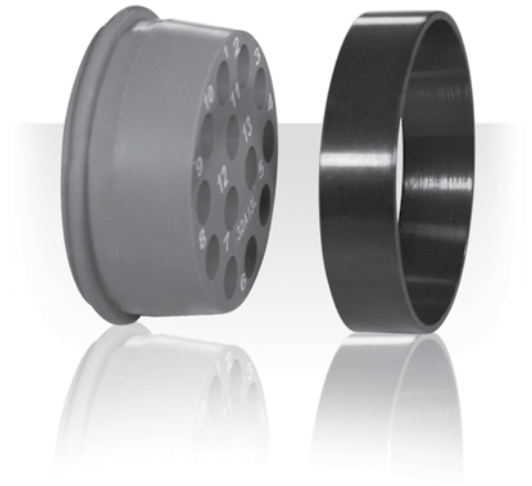
VGE1/FER1 Series



Grommet

Part numbers

| Layout | Type of grommet | Part numbers | Ø Wire insulator | |
|--------|-----------------|--------------|------------------|------|
| | | | Min | Max |
| 18-19 | Male | VGE1M181900 | 1.2 | 2.95 |
| | Female | VGE1L181900 | | |
| 20-15 | Male | VGE1M201500 | 1.5 | 3.6 |
| | Female | VGE1L201500 | | |
| 22-14 | Male | VGE1M221400 | 1.2 | 2.95 |
| | Female | VGE1L221400 | | |
| 24-10 | Male | VGE1M241000 | 4.2 | 6.2 |
| | Female | VGE1L241000 | | |
| 28-21 | Male | VGE1M282100 | 1.2 | 2.95 |
| | Female | VGE1L282100 | | |
| 32A13 | Male | VGE1M32A1300 | 1.8 | 3.6 |
| | Female | VGE1L32A1300 | | |
| 36A22 | Male | VGE1M36A2200 | 2.4 | 3.6 |
| | Female | VGE1L36A2200 | | |
| 40A35 | Male | VGE1M40A3500 | 2.4 | 3.6 |
| | Female | VGE1L40A3500 | | |
| 40A60 | Male | VGE1M40A6000 | 2 | 2.95 |
| | Female | VGE1L40A6000 | | |



Grommet has to be used with a backshell

Grommet filler plug

| Contact size | Part numbers | Color |
|--------------|--------------|-------|
| #16 | 8500-479 | Blue |
| #12 | | |
| #8 | SB0834 | Red |



To use in empty grommet cavities

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications



Metallic Caps - IP67

Part numbers

| Shell size | Cap for receptacle | Cap for plug |
|------------|--------------------|--------------|
| 18 | VGE1E18 | VGE1F18 |
| 20 | VGE1E20 | VGE1F20 |
| 22 | VGE1E22 | VGE1F22 |
| 24 | VGE1E24 | VGE1F24 |
| 28 | VGE1E28 | VGE1F28 |
| 32 | VGE1E32 | VGE1F32 |
| 36 | VGE1E36 | VGE1F36 |
| 40 | VGE1E40 | VGE1F41 |



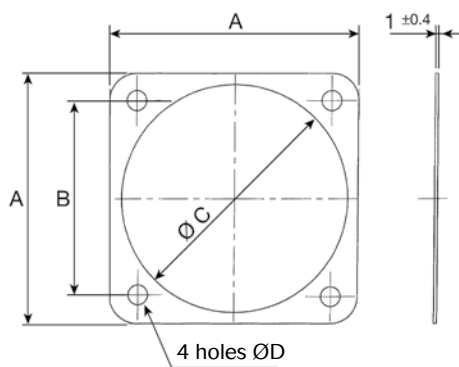


Panel gasket for VGE1 and FER1

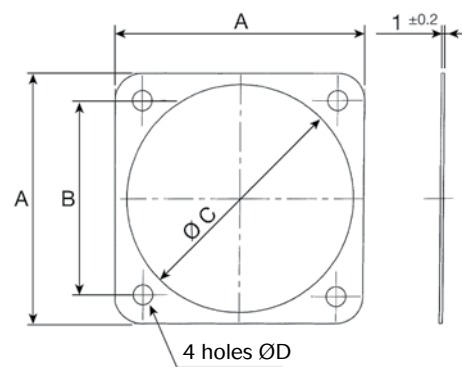
Part numbers & dimensions

| Shell size | Part numbers | | Dimensions | | | |
|------------|----------------|------------|------------|------|------|-----|
| | Non conductive | Conductive | A | B | Ø C | Ø D |
| 18 | VGE1G18 | VGE1G18A | 35 | 27 | 30.8 | 4.3 |
| 20 | VGE1G20 | VGE1G20A | 38 | 29.4 | 34.2 | |
| 22 | VGE1G22 | VGE1G22A | 41 | 31.8 | 37.4 | |
| 24 | VGE1G24 | VGE1G24A | 44.5 | 34.9 | 40.9 | |
| 28 | VGE1G28 | VGE1G28A | 50.8 | 39.7 | 46.7 | 5.2 |
| 32 | VGE1G32 | VGE1G32A | 57 | 44.5 | 53.4 | |
| 36 | VGE1G36 | VGE1G36A | 63.5 | 49.2 | 59.6 | |
| 40 | VGE1G40 | VGE1G40A | 69.9 | 55.5 | 65.5 | |

Panel gasket (not conductive)



Panel gasket (conductive)



How to order a receptacle including a panel gasket ?

VGE1B.....04: Receptacle with non conductive gasket
 VGE1B.....05: Receptacle with conductive gasket
 FER1B.....04: Receptacle with non conductive gasket
 FER1B.....05: Receptacle with conductive gasket
 Example: VGE1B2214SN05 = Female receptacle layout 22-14 delivered with a conductive gasket

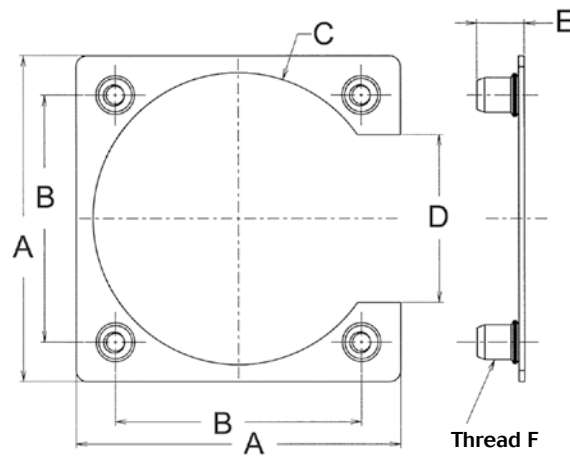
*Note: max dimensions in mm
 Dimensions are not contractual and may be subject to modifications*



Fixing plate for VGE1 and FER1

Part numbers & dimensions

| Shell size | Part numbers | Dimensions | | | | | |
|------------|--------------|------------|------|------|------|-----|----------|
| | | A | B | Ø C | D | E | Thread F |
| 18 | VGE1CP18 | 34.2 | 27 | 30.3 | 19.7 | 7.7 | M3 |
| 20 | VGE1CP20 | 38.1 | 28.4 | 33.3 | 22 | | |
| 22 | VGE1CP22 | 40.5 | 31.8 | 36.5 | 23 | | |
| 24 | VGE1CP24 | 44 | 34.9 | 38.1 | 25.8 | | |
| 28 | VGE1CP28 | 50.8 | 39.7 | 46.4 | 28.6 | | |
| 32 | VGE1CP32 | 58.7 | 44.5 | 52.6 | 30.2 | 8.5 | M4 |
| 36 | VGE1CP36 | 63.5 | 49.2 | 58.8 | 34.9 | | |
| 40 | VGE1CP40 | 74.2 | 55.5 | 68.1 | 38.1 | | |



Fixing plates can be used with VGE1 and FER1 receptacles

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VEGETATION

Technical information

| | |
|---|----|
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| ■ Backshell mounting sequence and coupling torque | 70 |
| ■ Modular gasket for backshell JS, JE, KS & KE | 70 |
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| ■ Backshell exploded views | 75 |
| ■ Coupling / Orientation | 76 |
| ■ Panel cut out | 77 |



Contact crimping instruction

| Wire stripping | | | |
|---------------------|--------------|------------|----------------------|
| Contact type & size | Part numbers | | Stripping length (L) |
| | male | femelle | |
| Contact #16 | RM28M1* | RC28M1* | 4.8 |
| | RM24M9* | RC24M9* | |
| | RM20M12* | RC20M12* | |
| | RM16M23* | RC16M23* | 7.1 |
| | RM14M50* | RC14M50* | |
| | RM14M30* | RC16M30* | |
| Contact #12 | 8291 1459N* | 8291 1458* | 7 to 8 |
| | 8291 1461N* | 8291 1460* | |
| | 8291 1463N* | 8291 1462* | |
| | 8291 1465N* | 8291 1464* | |
| Contact #8 | 8291 3601* | 8291 3600* | 6.5 to 7.5 |
| | 8291 3603* | 8291 3602* | |
| | 8291 3605* | 8291 3604* | |
| | 8291 3607* | 8291 3606* | |

| Tooling | | | | | | | | |
|--------------|-----|-----------|-----------------|--------------|------------|------------------------|-------------|---------------|
| Contact size | | Wire size | | Part numbers | | Tool | Locator | Tool selector |
| # | mm | AWG | mm ² | | | | | |
| #16 | 1.6 | 30-28 | 0.05-0.08 | RM28M1* | RC28M1* | MH860 (M22520/7-01) | MH86164G | 4/6 |
| | | 26-24 | 0.13-0.2 | RM24M9* | RC24M9* | MH860 (M22520/7-01) | MH86164G | 5/6 |
| | | 22-20 | 0.32-0.52 | RM20M12* | RC20M12* | MH860 (M22520/7-01) | MH86164G | 5/7 |
| | | 20-16 | 0.5-1.5 | RM16M23* | RC16M23* | MH860 (M22520/7-01) | MH86164G | 6/9 |
| | | 16-14 | 1.5-2.5 | RM14M30* | RC16M30* | AF8 (M22520/1-01) | TP1142 | 8 |
| | | 16-14 | 1.5-2.5 | RM14M50* | RC14M50* | | | |
| #12 | 2.4 | 20 | 0.5 | 8291 1459N* | 8291 1458* | M317 | M22520/1-05 | |
| | | 18 | 0.75-1.0 | 8291 1461N* | 8291 1460* | M317 | M22520/1-05 | |
| | | 16 | 1.5 | 8291 1463N* | 8291 1462* | M317 | VGE10077A | |
| | | 14 | 2.5 | 8291 1465N* | 8291 1464* | M317 | VGE10077A | |
| #8 | 3.6 | 16 | 1.5 | 8291 3601* | 8291 3600* | M317 | VGE10077A | |
| | | 14 | 2.5 | 8291 3603* | 8291 3602* | M317 | VGE10077A | |
| | | 12 | 4 | 8291 3605* | 8291 3604* | M317 | VGE10077A | |
| | | 10 | 6 | 8291 3607* | 8291 3606* | M317 | VGE10077A | |


* Plating code see page 34

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications




Contact crimp tooling


Tooling




M22520 1-02




M22520/5-01




M22520/1-01 or AF8




M22520/7-01 or MH860



Y116



MH86164G




M317


Contact removal

Tooling


| Contact size | Extractor |
|--------------|----------------|
| #16 | RX2025GE1 |
| #12 | 5106.021.09.24 |
| #8 | 5106.021.09.36 |
| Quadrax | VGE1-0324A |




RX2025GE1



5106.021.09.24



5106.021.09.36

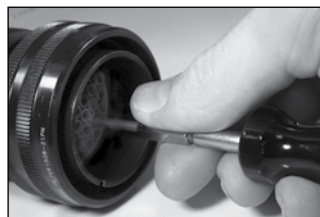


VGE1-0324A

Special case with the tool RX2025GE1:

A - When setting up in the cell, keep firmly the tool by the hexagonal metallic part and insert tool in cavity.

B - Push the tool by the handle to extract the contact.

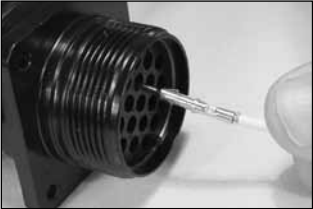
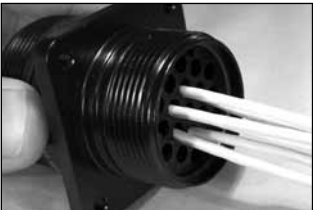
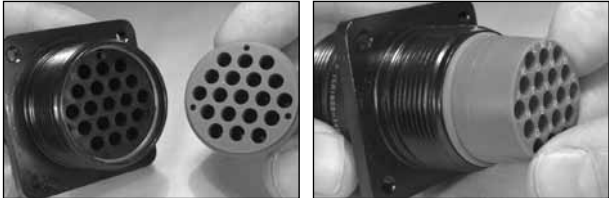

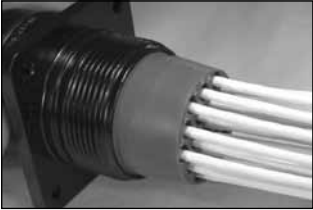
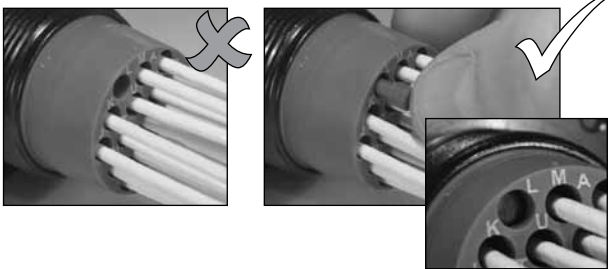
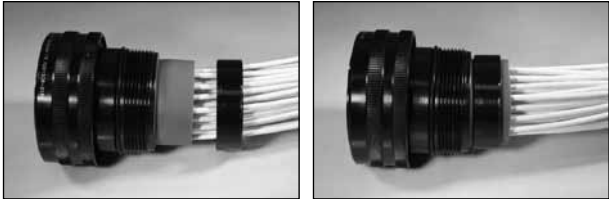


Extraction:

Place the tool into the cavity from front face of the connector, push on the handle, then remove the contact..



Contact mounting

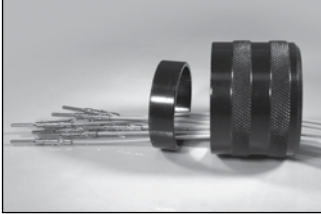
| Without grommet | With grommet |
|---|---|
| <p>A - Place manually the contacts in the cavity, push until the mechanical stop is reached. Operation control: manually pull with a little effort and the contact should not withdraw.</p>  <p>B - Not mandatory to wire all cavities.</p>  | <p>A - For grommet mounting, insert the three insulator pins with grommet's hole.</p>  <p>B - Place manually the contacts in the cavity, push until the mechanical stop is reached. Operation control: manually pull with a little effort and the contact should not withdraw.</p>  <p>C - Mandatory to wire all cavities.</p>  <p>D - If a cavity is empty, it is mandatory to use a grommet filler plug.</p>  <p>E - Put the compression ring over the grommet.</p>  |



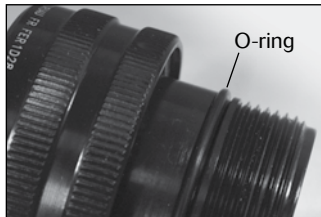
Cabling with backshell

With grommet

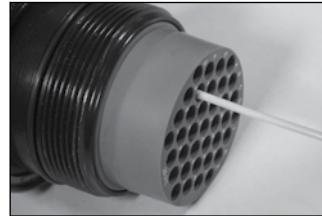
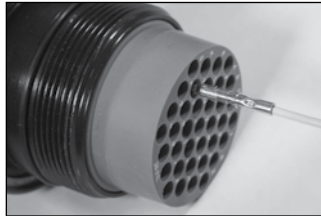
A - Pass wires through the backshells/accessories.



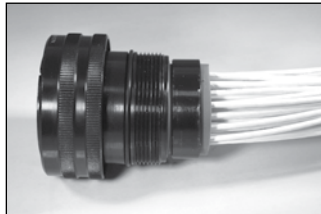
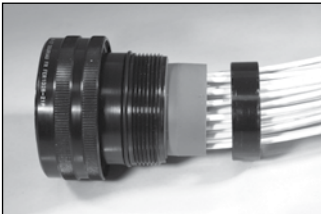
B - On sealed version, mount the O-ring on the groove's plug.



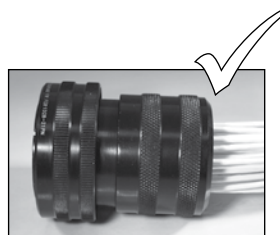
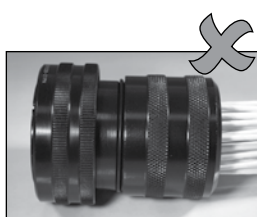
C - Contact mounting: place grommet in the rear connector face, push each contact in insulator's hole.



D - Place the conical ring on the grommet.



E - Screw the adaptor until you feel the back stop.





Backshell mounting sequence and coupling torque

| | Shell | | Recormanded torque |
|--|----------|------|--------------------|
| Adaptor/connector | All | | 10 Nm |
| Reducer/adaptor | 40 | | 10 Nm |
| Backshell/adaptor or Backshell/reducer | PS | T 40 | 10 Nm |
| | SS (PMA) | T 22 | 5 Nm |
| | VS | All | 10 Nm |

Modular gasket for backshells JS,JE, KS and KE

For cable gland backshell, the gasket is delivered clogged.

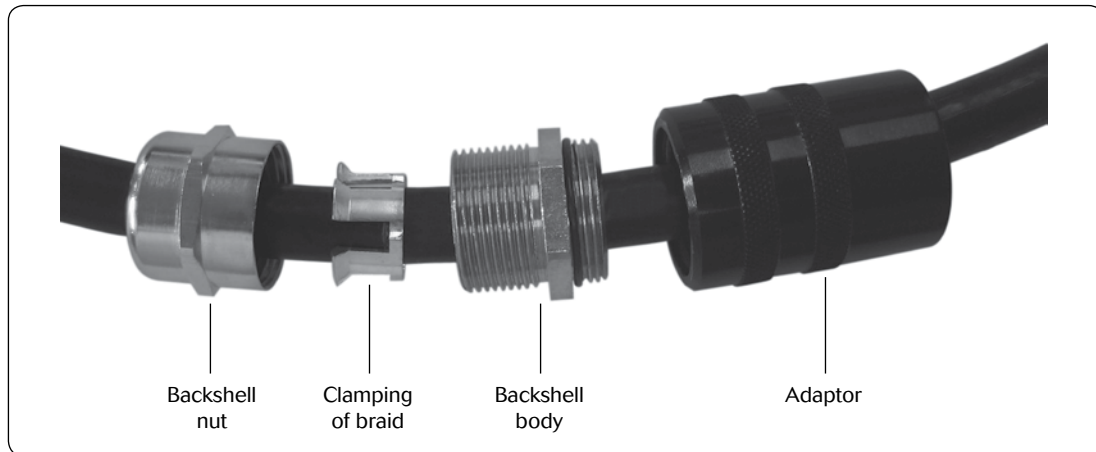
Remove inner part of the gasket to adjust the internal diameter to fit the diameter of the cable.





How to harness a shielded cable

Method A: braid fixed with TS type backshell











| Case n°1: cable $\varnothing = 13.5$ to 18 mm braid $\varnothing > 13.5$ mm | Case n°2: cable $\varnothing = 15^{\pm 1}$ mm braid $\varnothing \leq 13.5$ mm |
|---|--|
| <p>$\varnothing = 13.5 / 18$ $\varnothing = 13.5 \text{ mini}$</p> | <p>$\varnothing = 15 \pm 1$ $\varnothing = < 13.5$</p> |
| <p>A - Strip cable, adjust braid length.</p> | <p>A - Turn the shielding on the sheath.</p> |
| <p>16 mm 80 mm</p> | <p>65 mm</p> |
| <p>B - Strip wires, crimp and mount contacts.</p> | <p>B - Strip wires, crimp and mount contacts.</p> |

Technical information

VGE1/FER1 Series



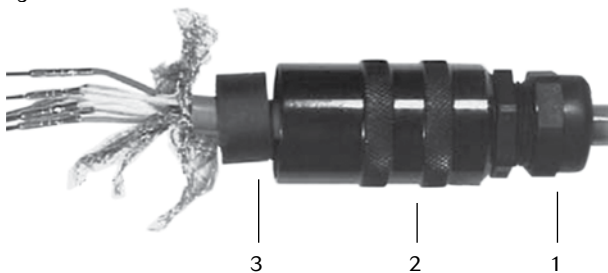
| Case n°1: cable $\varnothing = 13.5$ to 18 mm brand $\varnothing > 13.5$ mm | Case n°2: cable $\varnothing = 15^{\pm 1}$ mm brand $\varnothing \leq 13.5$ mm |
|---|---|
| <p>C - Thread accessories: • Adaptor / plug body or receptacle: tightening torque = 10 Nm</p> | <p>C - Thread accessories: • Adaptor / plug body or receptacle: tightening torque = 10 Nm</p> |
|  |  |
| <p>• Backshell body / adaptor: tightening torque = 10 Nm</p> | <p>• Backshell body / adaptor: tightening torque = 10 Nm</p> |
|  |  |
| <p>D - slip the clamping of braid inside the backshell' body</p> | <p>D - slip the clamping of braid inside the backshell' body</p> |
|  |  |
| <p>E - Thread the backshell nut /backshell body • Tightening torque = 7 Nm</p> | <p>E - Thread the backshell nut /backshell body • Tightening torque = 7 Nm</p> |
|  |  |
| <p>Warning: during the clamping of part, always support the cable to avoid rotation.</p> | <p>Warning: during the clamping of part, always support the cable to avoid rotation.</p> |



How to harness a shielded cable Method B: braid fixed on the conic ring

A - Before each operation

Pass on the cable or bundle of conductor in the following order : the sealing gland backshell (1), the adaptor (2) and the conical ring (3).



B - Pass the contacts through the grommet (4)



C - Slide the grommet onto the cable and insert the contacts into the connector



D - Place the grommet on the insulator of the connector



E - Fold the individual braid or braids on the grommet



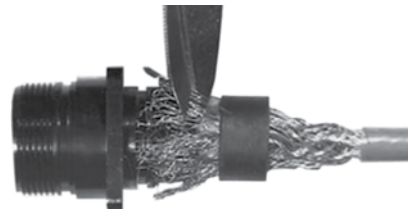
F - Put the external braid on the grommet



G - Fix the braids with the conical ring



H - Adjust the length of the braids



I - Secure the braids with the conical ring



J - Screw the adaptor (2) and secure the cable by tightening the sealing gland backshell (1)





Quadrax crimping instruction

Tooling



M22520 1-02



y116

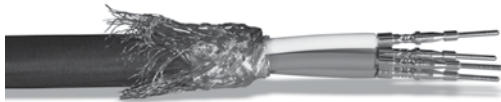
M22520/5-01



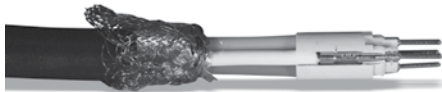
M22520/1-01 or AF8

Cabling process

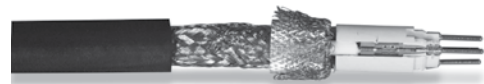
A - Cable, cable insulator, ferrule position may vary depending on cable dimensional.
For more detail, and strip length, please consult us.



Line contacts crimping.



Contact mounting on insulator.



B -Place braid around ferrule.



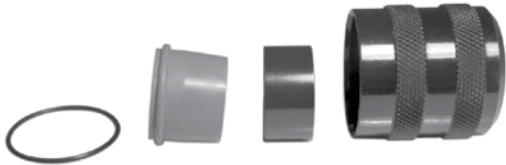
Mount insulator in external contact cell, crimp the contact.
Cut excess of braid.

Done !



Backshells exploded views

Backnut (type RS)



Adaptator



Cable clamp (type CS)



Conduit backshell (type SS)



Cable clamp with sealing gland (type JS)



Cable clamp with sealing gland and trumpet shape (type KS)



Cable clamp with sealing gland for shielding (type TS)



Grommet in option



Connector mated length

VGE1 plug & receptacle

Technical drawing showing the mated length of a VGE1 plug and receptacle. Dimension A is the total length of the mated pair, and dimension B is the length of the plug's body.

| Shell size | A max | B max |
|------------|-------|-------|
| 18 | 75.50 | 7.80 |
| 20 | | |
| 22 | | |
| 24 | | |
| 28 | 80.50 | 8.80 |
| 32 | | |
| 36 | | |
| 40 | | |

*Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications*

Insert orientations

Alternative insert orientation positions

| Layouts | N | W | 1X | Y | Z |
|---------|----|-----|------|------|------|
| 18-19 | 0° | - | 120° | 240° | - |
| 20-15 | 0° | 80° | - | - | 280° |
| 22-14 | 0° | 80° | - | - | 280° |
| 24-10 | 0° | 80° | 110° | 250° | 280° |
| 28-21 | 0° | 80° | 110° | 250° | 280° |
| 32A13 | 0° | 65° | 130° | 230° | 295° |
| 36A22 | 0° | 80° | 110° | 250° | 280° |
| 40A35 | 0° | 70° | 130° | 230° | 290° |
| 40A60 | 0° | 80° | 110° | 250° | 280° |

Diagram of a connector shell showing a key on the side.

Diagram of a connector shell showing angular positions N, W, X, Y, Z.

22-14 position N

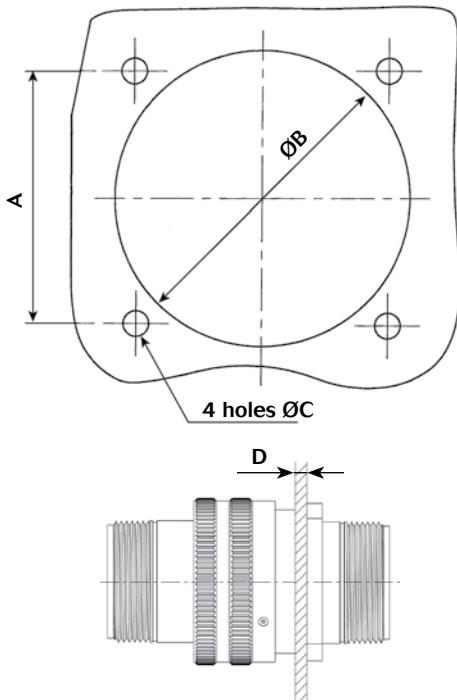
22-14 position W

0°: insert not mounted in the shell



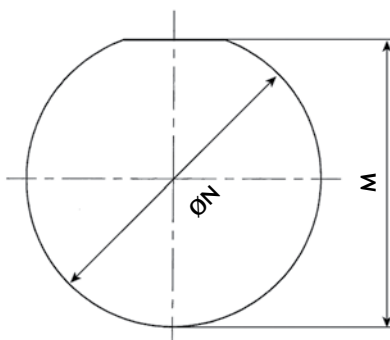
Panel cut out

Square flange receptacle



| Shell size | A ± 0.15 | ØB ± 0.3 | ØC ± 0.10 | D |
|------------|--------------|--------------|---------------|---|
| 18 | 27 | 31.2 | 3.4 | 3 |
| 20 | 29.4 | 34.6 | 3.4 | 3 |
| 22 | 31.8 | 37.8 | 3.4 | 3 |
| 24 | 34.9 | 41.3 | 3.9 | 3 |
| 28 | 39.7 | 47.1 | 3.9 | 3 |
| 32 | 44.5 | 53.8 | 4.5 | 3 |
| 36 | 49.2 | 60 | 4.5 | 3 |
| 40 | 55.5 | 66.4 | 4.5 | 3 |

Jam nut receptacle



| Shell size | M | ØN |
|------------|-------|-------|
| 18 | 33.90 | 35.20 |
| 22 | 40.25 | 41.55 |

Note: max dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1/FER1 Series





Purchase order memo

| Contact | | | |
|--------------|------|----------|------|
| Part numbers | Page | Quantity | Note |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |

| Backshell | | | |
|--------------|------|----------|------|
| Part numbers | Page | Quantity | Note |
| | | | |
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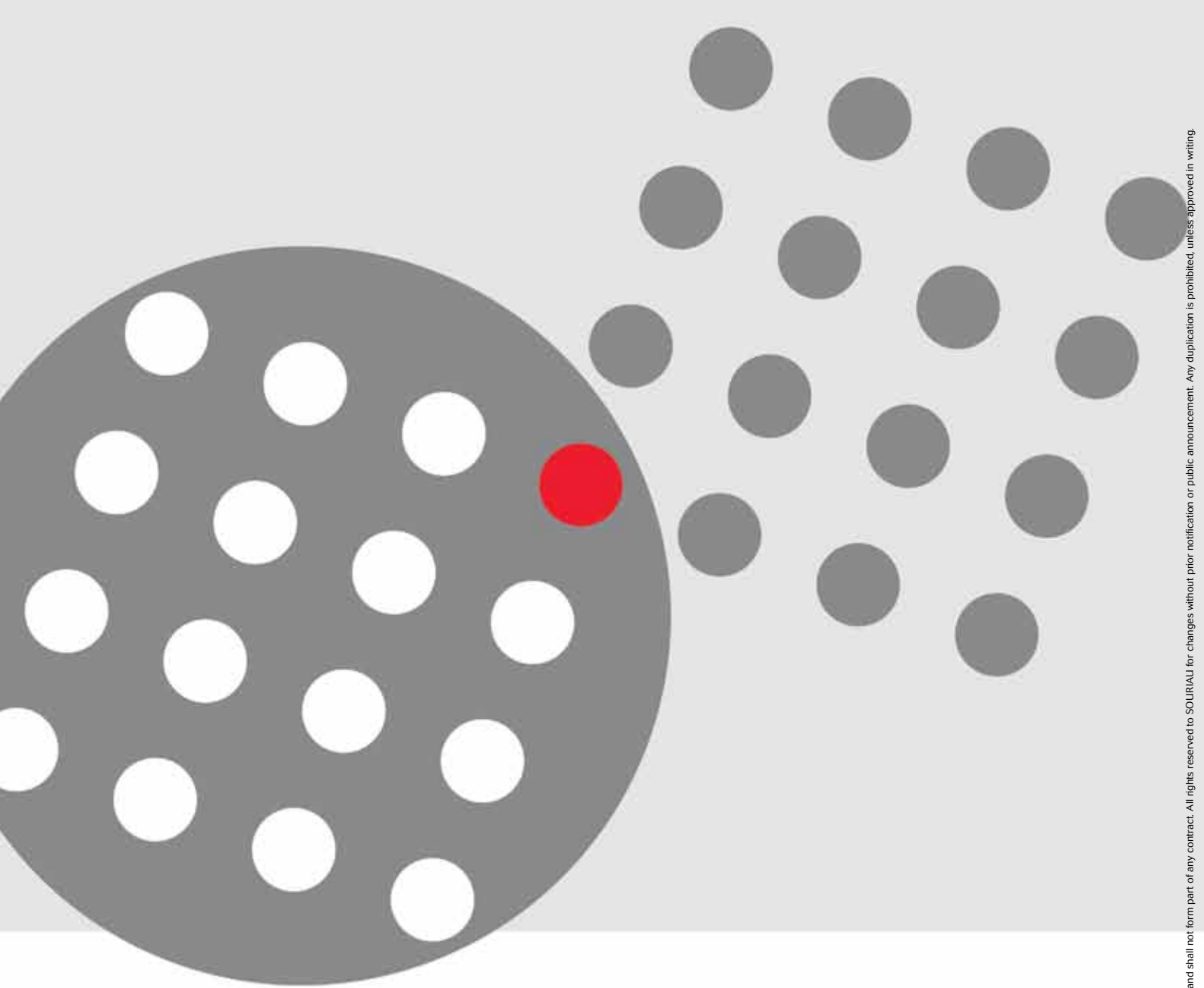
| Accessory | | | |
|--------------|------|----------|------|
| Part numbers | Page | Quantity | Note |
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Notes



Notes



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contactindustry@souriau.com

