VGE1 & FER1 SERIES

Railway Qualified Connectors

Fire smoke certified

SOURIAU
Connection Technologies

Contents

VGE1& FER1 SERIES

Overview

SOURIAU's railway connector range overview

For outdoor equipments

VGE1 / FER1

Up to 60 contacts
Signal, Quadrax and Fiber Optics layouts
Reverse bayonet or screw system
Tested following EN 50 467 and NF F 61-030
HL3/R22 & HL3/R23 - EN 45545-2

838

Up to 61 contacts
Signal, Quadrax and Fiber optic layouts
Inter-vehicle applications (Jumper)
Tested following EN 50 467 and NF F 61-030
HL2/R22 & HL3/R23 - EN 45545-2

8525

Up to 61 contacts
Signal, Quadrax and hermetic versions
-65°C to +200°C
HL3/R22 & HL3/R23 - EN 45545-2

38999

Up to 128 contacts
Signal, Quadrax and Fiber Optics layouts
High density solution
HL3/R22 & HL3/R23 - EN 45545-2

For indoor equipments

SMS flame retardant

Up to 36 contacts #16
Quick Mating plastic rectangular solution
Tested following EN 50 467 and NF F 61-030
HL3/R22 & HL3/R23 - EN 45545-2

SMS IP

3 or 6 contacts
Latch locking system up to 500V
Tested following EN 50 467 and NF F 61-030
HL3/R22 & HL3/R23 - EN 45545-2

MSG 3U

29 / 41 / 51 signal contacts
5 Quadrax layout
Low profile I/0 connector
HL3/R22 & HL3/R23 - EN 45545-2

UTO

Up to 61 contacts
Shielded bayonet solution
HL2/R22 & HL2/R23 - EN 45545-2

UTS

Up to 32 contacts
Plastic bayonet solution
HL2/R22 & HL2/R23 - EN 45545-2

UTS LC / UTS MPO

Fiber optic solution
Compatible with standard LC & MPO types
HL2/R22 & HL2/R23 - EN 45545-2

SOURIAU on the railway market

SOURIAU celebrated its 100 year anniversary in 2017; during these years SOURIAU has become a trusted name by major railway equipment manufacturers, signaling companies and their subcontractors.

SOURIAU has developed a dedicated range of ruggedized and reliable connectors for the railway market, fully compliant with railway standards, RoHS and fire smoke certified.

SOURIAU is always committed to providing quality products and to support their customers with customized solutions.

Quality and customer support is our first goal

STANDARD

✓ **Standard contacts for 8 railway ranges**
+
✓ **Same crimping tools**
+
✓ **Simplified process**
=
Best option between technology and cost

HIGH SPEED

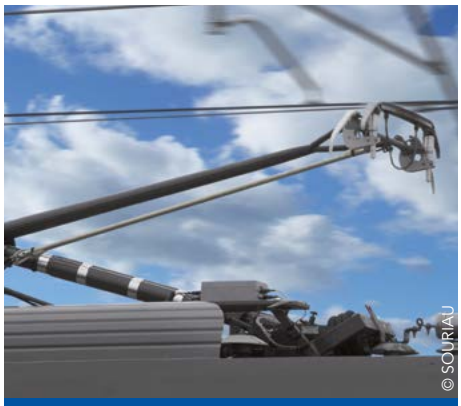
✓ **Fiber optic**
+
✓ **Quadrax technology**
=
High speed solutions for real-time information

ENVIRON-MENT & SAFETY

✓ **Eco-conception & process**
+
✓ **International safety standards**
+
✓ **Lightweight material**
=
Safe railway equipment

Typical applications

Closed electrical areas



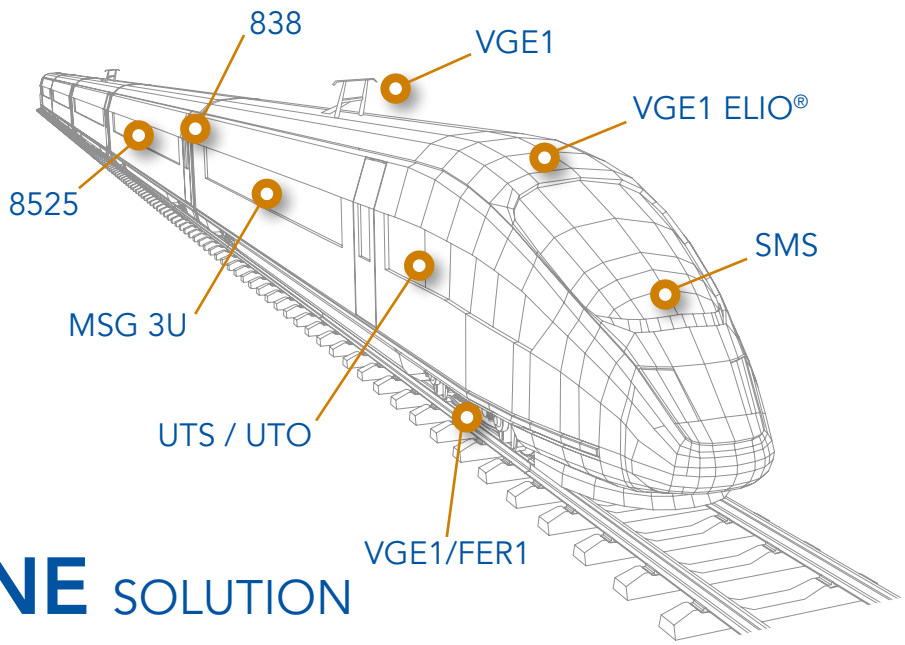
Outdoor static

Outdoor dynamic

Outdoor highly dynamic

Signalling

ONE LOCATION



ONE SOLUTION

Features & Benefits

QUALI-FIED

Railway standard qualified

Tested and qualified according to international railway and environmental standards. VGE1/FER1 range is RoHS compliant and fire smoke certified (HL3/R22 - HL3/R23) according to EN 45545-2.

SECURE YOUR EQUIPMENT

Ruggedized connector

Designed to withstand high vibration, climate ingress and exposure to salt spray while still maintaining mechanical and electrical functionality.

QUICK MATING

1/3 bayonet coupling

With only 1/3 twist of the bayonet coupling system, connectors are mated with audible "click" and tactile feel to confirm proper mating. This mating feature eliminates uncertainty and reduces time and labor during installation.

ONE NEED ONE SOLUTION

High speed data transmission

Signal, Quadrax and Fiber optic contacts : a large range to fulfill all your data transfer needs.

COST SAVINGS

One unique contact design

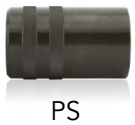
A standardized electrical contact interchangeable with SOURIAU railway connector ranges (SMS, MSG 3U, UTS, UTO) .

Range

Straight version

Elbow 90° version

PE



PS

Strain relief

CE

CS

PMA conduit adaptator

SE

SS

Sealed gland

VE

VS

Cable gland with sealing gland (IP67)

JE

JS

Shielded backshell with sealing gland (IP67)

TE

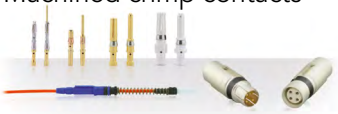
TS

Cable clamp with sealing trumpet shape (IP67)

KE

KS

Machined crimp contacts



ELIO® contacts

Quadrax contacts

Grommet

Without grommet

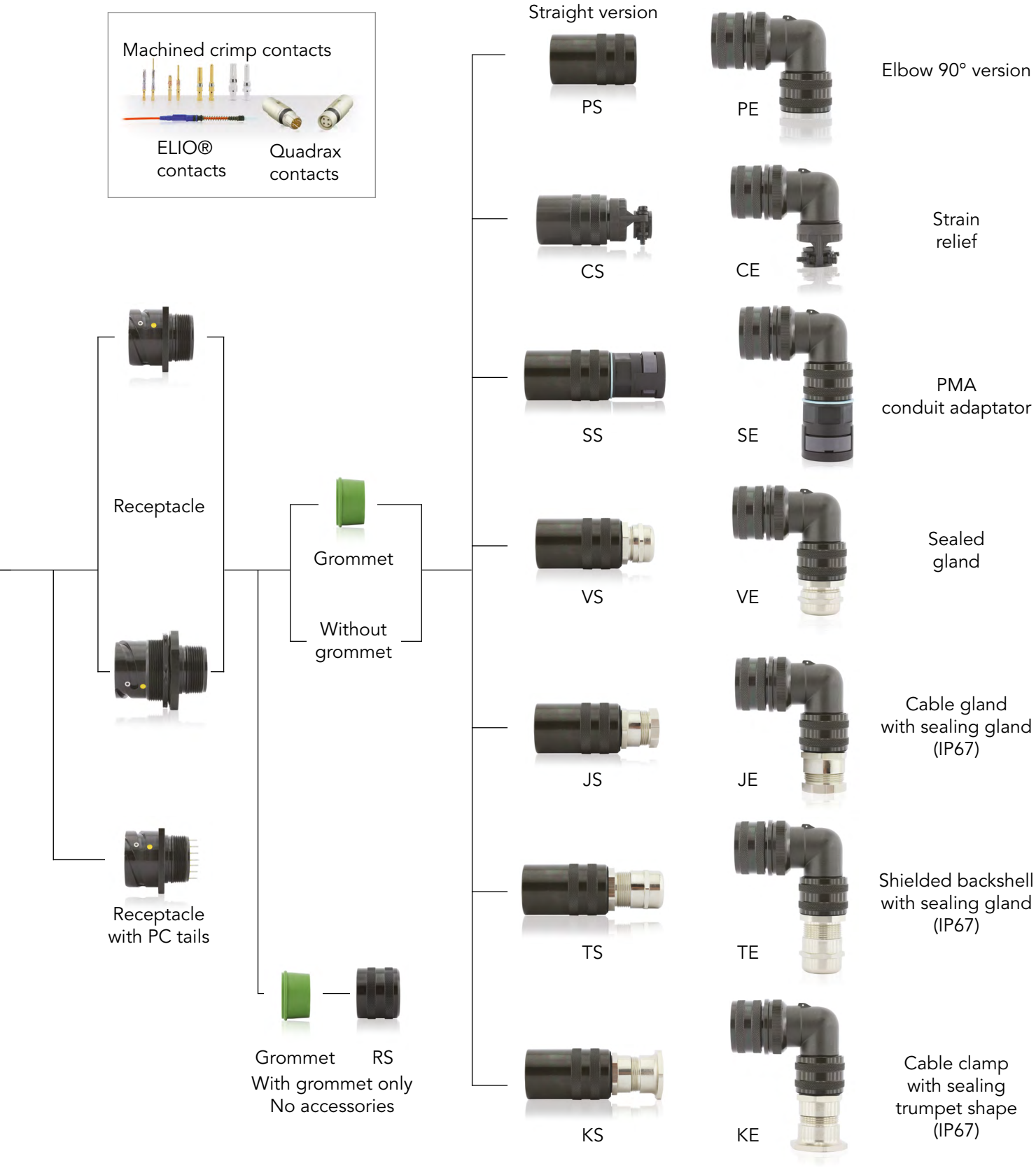
Plug

RS Grommet

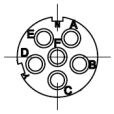
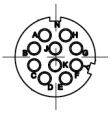
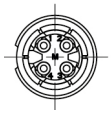
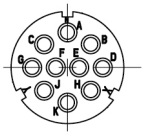
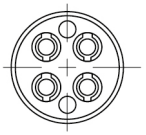
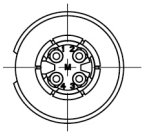
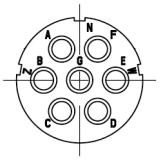
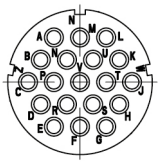
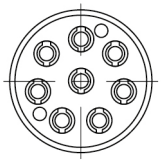
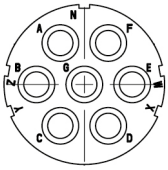
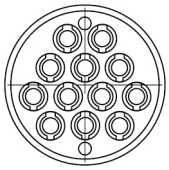
With grommet only

No accessories

overview



Layouts (Electrical parameter according to NF F 61-030 or * EN 50-124)

Shell size	Contact #8 (Ø 3.6 mm)	Contact #12 (Ø 2.4 mm)	Contact #16 (Ø 1.6 mm)	Contact #20 (Ø 1.0 mm)	Contact ELIO®	Contact Quadrax
14			14A6 ■ 15A 110V 6 contacts 6xØ1.6 (#16) 	14A10* ■ 7A 110V 10 contacts 10xØ1.0 (#20) 		14R ■ 7A 110V 4 contacts 4xØ1.0 (#20) 
18			18-19 ■ ▲ 15A 220V 10 contacts 10xØ1.6 (#16) 		18-04 4 contacts ELIO® 	18A1 ■ ▲ 7A 500V 4 contacts 4xØ1.0 (#20) 
20		20-15 ■ 20A 500Vcc 7 contacts 7xØ2.4 (#12) 				
22			22-14 ■ ▲ 15A 220V 19 contacts 19xØ1.6 (#16) 		22-08 8 contacts ELIO® 	
24	24-10 ■ 30A 500Vcc 7 contacts 7xØ3.6 (#8) 				24-12 12 contacts ELIO® 	

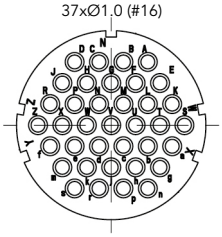
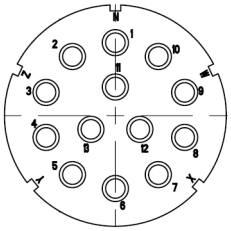
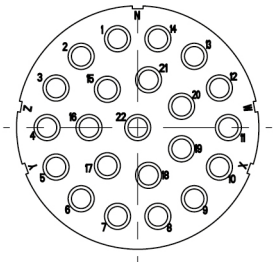
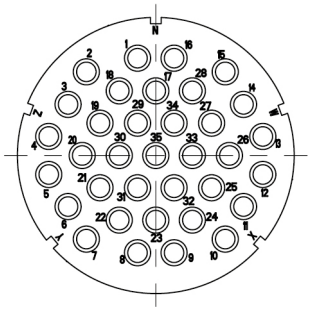
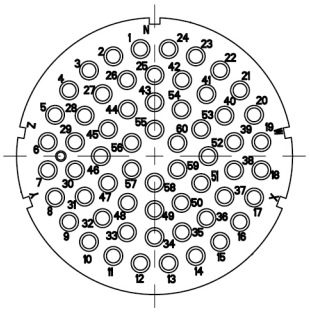
■: VGE1 standard version ▲: FER1 standard version

Contacts #8:
from AWG 16 to 10,
1.5 to 6 mm²

Contacts #12:
from AWG 20 to 14,
0.5 to 2.5 mm²

Contacts #16:
from AWG 22 to 14,
0.32 to 2.5 mm²

Contacts #20:
from AWG 20 to 18,
0.5 to 0.93 mm²

Shell size	Contact #12 (Ø 2.4 mm)	Contact #16 (Ø 1.6 mm)
28		28-21 ■ ▲ 15A 220V 37 contacts 37xØ1.0 (#16) 
32	32A13 ■ 20A 500V 13 contacts 13xØ2.4 (#12) 	
36	36A22 ■ 20A 500Vcc 22 contacts 22xØ2.4 (#12) 	
40	40A35 ■ 20A 500Vcc 35 contacts 35xØ2.4 (#12) 	40A60 ■ 15A 220V 60 contacts 60xØ1.0 (#16) 

■: VGE1 standard version ▲: FER1 standard version

Description

VGE1 receptacle

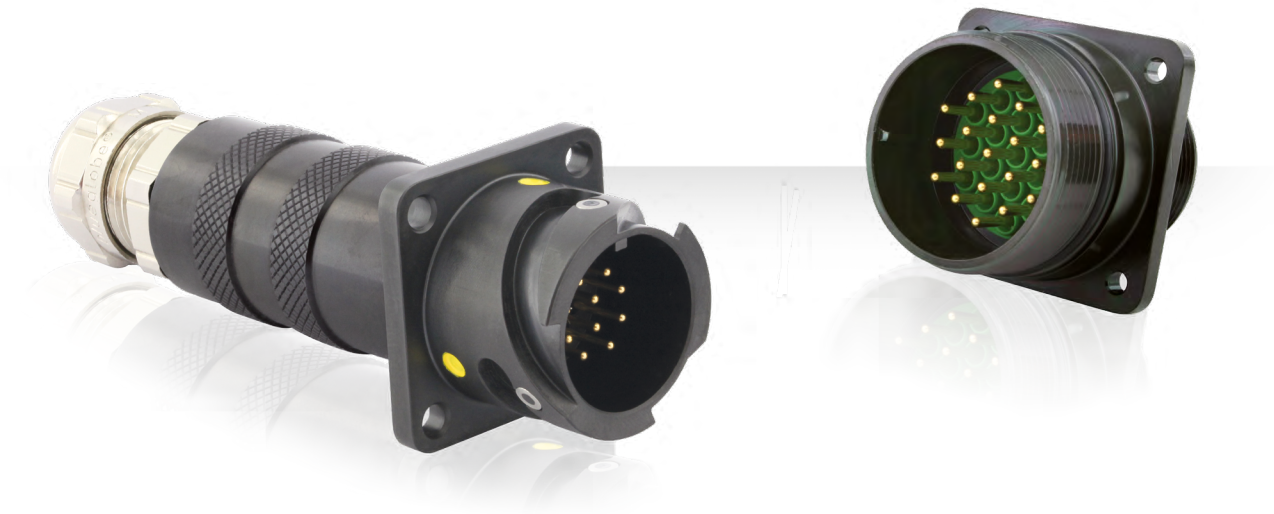
VGE1 plug

FER1 is a threaded version of VGE1 available in sizes 18, 22 & 28.

FER1 plug

FER1 receptacle

General technical characteristics



Materials

- **Shell:**
  Aluminum alloy
  Conductive plating - 500 hours salt spray resistant
- **Insert:**
  Hard thermoplastic:
  - HL3/R22 & HL3/R23 following EN 45545-2
  - NFPA 130 compliant
  - JRMA class 3
- **Contacts:**
  Machined crimp contacts / PCB contacts

Mechanical

- **Design:**
  Derivative of MIL-DTL-5015 & VG 95234
- **Coupling system:**
  - VGE1: 1/3 bayonet coupling with an audible «click» and a yellow point indicating end of coupling
  - FER1: Screw coupling
- **Durability:**
  - 500 mating/unmating cycles
- **Shock and vibration resistance:**
  According to EN 61 373 - Cat.2
- **Drop:**
  Free fall of plug at a height of 0.75 m:
  no mechanical damage following NFF 61-030

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 - IP 67 in mated condition:**
  - Cable : With sealing gland backshells, JS/JE - KS/KE - TS/TE - VS/VE
  - Wires: with grommet
- **Dynamic sealing:**
  IP67 guaranteed when cable is moving
- **Resistance to fluids:**
  Gas oil, mineral oil, acid bath, basic bath, following NF F 61-030, oxalic acid

Electrical

- **Contacts resistance, following NF F 61-030:**
  - Contact #20: 6 mΩ maxi
  - Contact #16: 2.5 mΩ maxi
  - Contact #12: 1.3 mΩ maxi
  - Contact #8: 0.9 mΩ maxi
  - Quadrax Contacts #20: ≤ 6 mΩ, ≤ 2 mΩ (cell)
- **Contact rating:**
  - Contact #20: 7A
  - Contact #16: 15A
  - Contact #12: 20A,
  - Contact #8: 30A
- **Dielectric resistance:**
  - Contact #20: 1,500 Volts/mm
  - Contact #16: 2,550 Volts/mm
  - Contact #12: 3,250 Volts/mm
  - Contact #8: 3,250 Volts/mm
  - Quadrax between contacts #20: ≥ 1,000V
  - Quadrax between cell / contacts #20: ≥ 500V
- **Insulation resistance:**
  - ≥ 3,000 MΩ (under 100 Vdc)
  - ≥ 5,000 MΩ (under 500 Vdc)
  - ≥ 4,000 MΩ (under 220 Vdc)
  - Quadrax: ≥ 3,000 MΩ (contacts #20)
- **Creepage and clearance:**
  - 14A6: 6 mm creepage, 2 mm clearance
  - 14A10: 2.1 mm creepage, 0.8 mm clearance
  - 18-19, 22-14, 28-21, 40A60: 9 mm mini
  - 20-15, 24-10, 32A13, 36A22, 40A35: 2 mm mini
- **Operating voltage:**
  - 14A6: 110 V following NF F 61-030
  - 14A10: 110V following EN 50-124
  - 18-19, 22-14, 28-21, 40A60: 220 V following NF F 61-030
  - 20-15, 24-10, 32A13, 32A22, 40A35: 500 Vcc following NF F 61-030
- **Shell continuity:**
  20 mΩ maxi
- **High Speed data Transmission performances:**
  IEC11-801
  Standard contact: cat. 5
  Quadrax contact: cat. 6

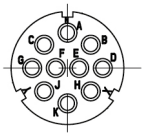
Heating curves

Test conditions:

- Current per contact
- All contacts loaded
- Maxi heating in C° allowed following NF F 61-030: 50°C

Size 18

18-19 ■ ▲
10 contacts
10xØ1.6 (#16)



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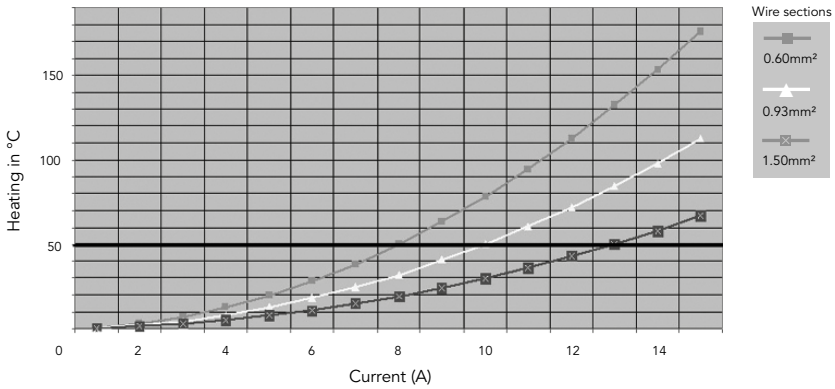
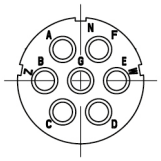
18-19 only Maxi. operating voltage: 220 V following NF F 61-030



Size 20

20-15 ■
7 contacts
7xØ2.4 (#12)



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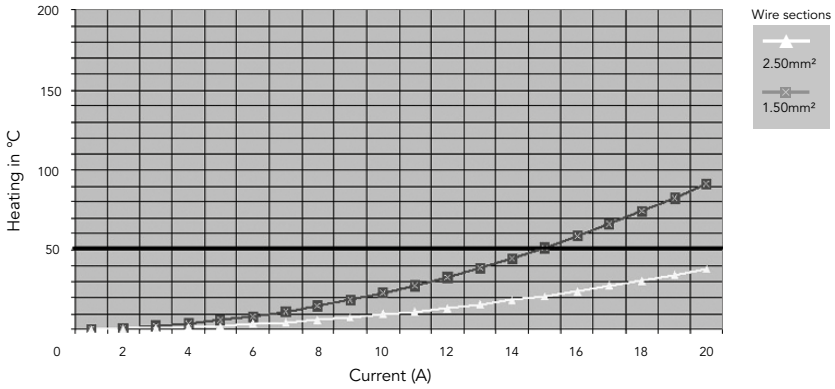
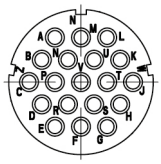
Maxi. operating voltage: 500 Vcc following NF F 61-030



Size 22

22-14 ■ ▲
19 contacts
19xØ1.6 (#16)



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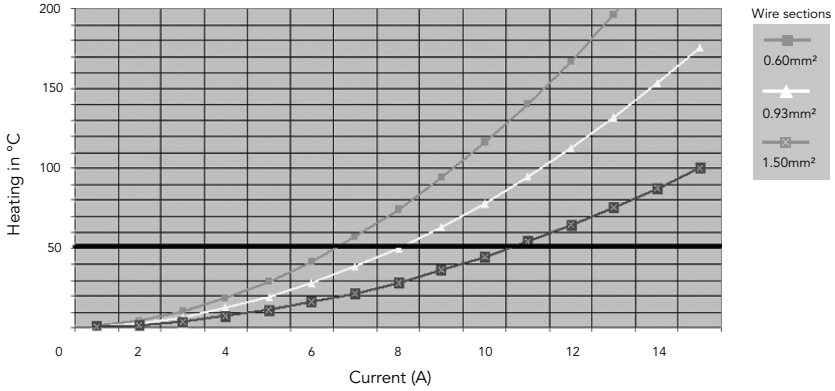
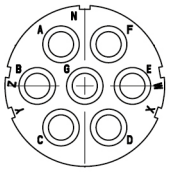
Maxi. operating voltage: 220 V following NF F 61-030



Size 24

24-10 ■
7 contacts
7xØ3.6 (#8)



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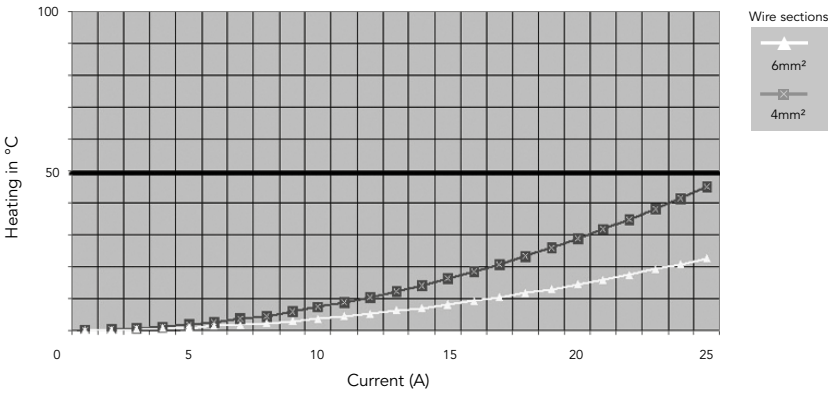
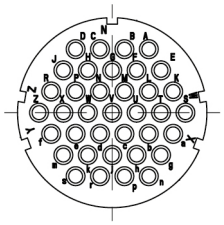
Maxi. operating voltage: 500 Vcc
following NF F 61-030



Size 28

28-21 ■ ▲
37 contacts
37xØ1.0 (#16)



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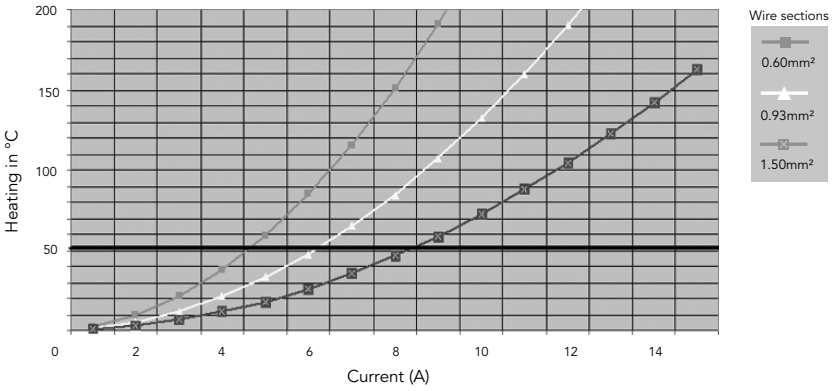
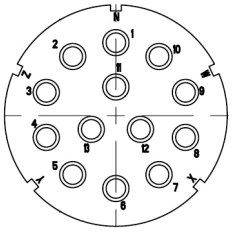
Maxi. operating voltage: 220 V
following NF F 61-030



Size 32

32A13 ■
13 contacts
13xØ2.4 (#12)



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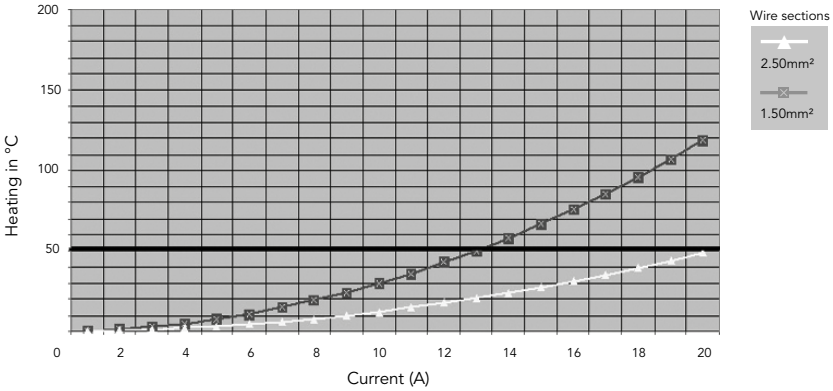
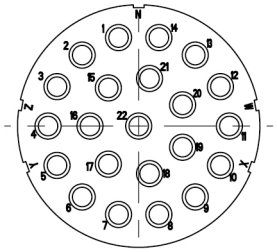
Maxi. operating voltage: 220 V
following NF F 61-030



Size 36

36A22 ■

20A 500Vcc
22 contacts
22xØ2.4 (#12)



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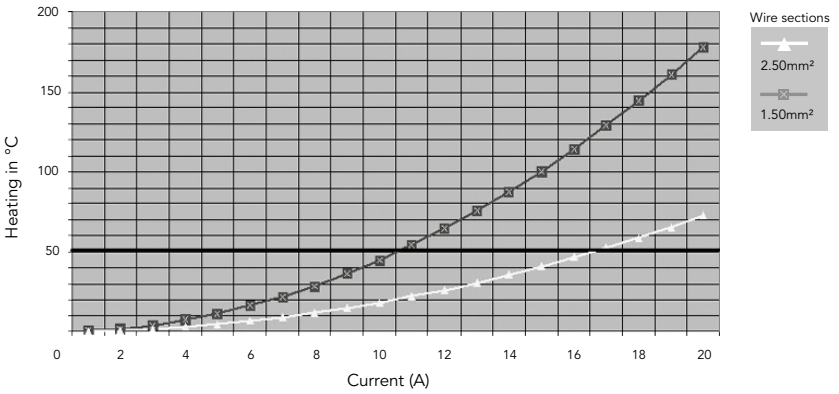
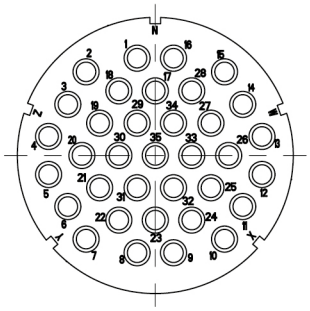
Maxi. operating voltage: 500 Vcc
following NF F 61-030



Size 40

40A35 ■

20A 500Vcc
35 contacts
35xØ2.4 (#12)



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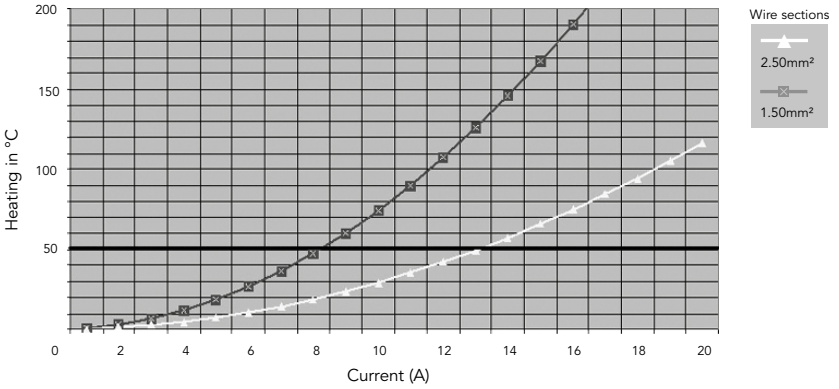
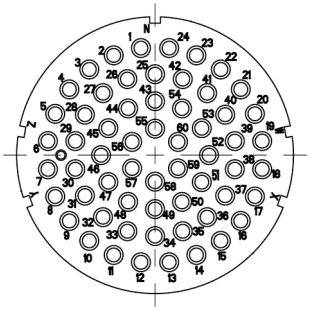
Maxi. operating voltage: 500 Vcc
following NF F 61-030



40A60 ■

15A 220V
60 contacts
60xØ1.0 (#16)



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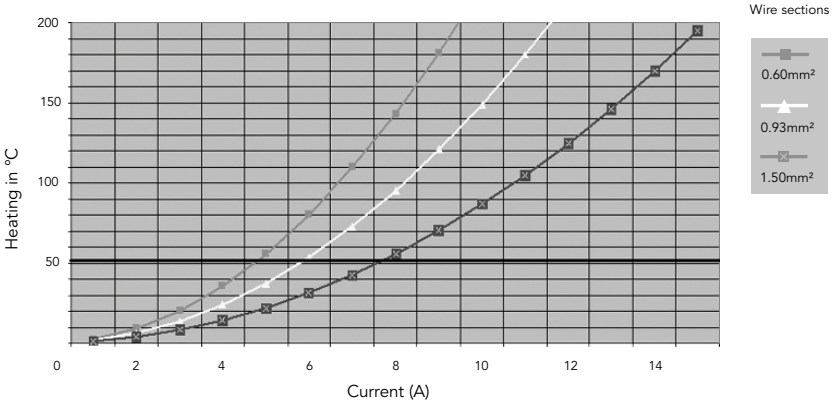
Maxi. operating voltage: 220 V
following NF F 61-030



Data transmission performances

High speed data transmissions with layouts 18-19, 14R and 18A1

Tests following IEC 11-801
For cabling specifications please contact us.

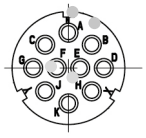
18-19

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 / IEC11-801

18-19



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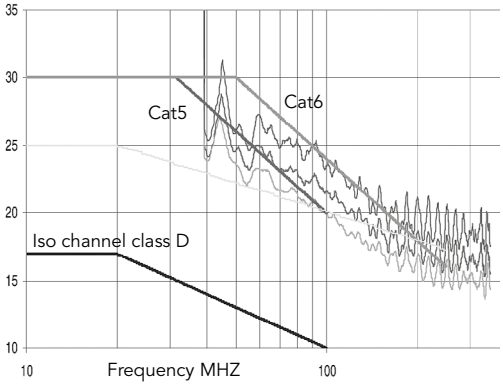
Return Loss



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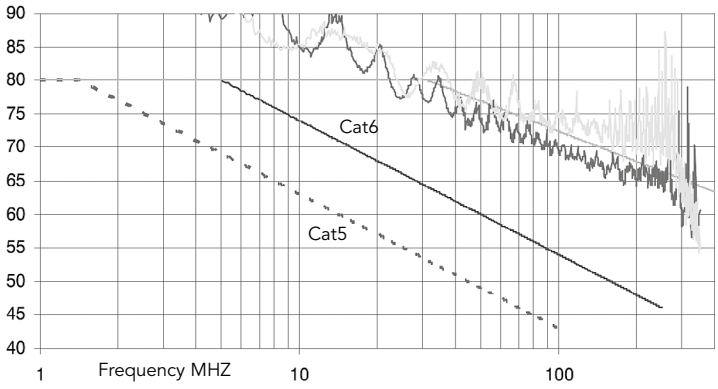


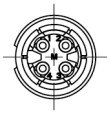
Quadrax-14R & 18A1

Cat. 6 level obtained with 1 contact Quadrax

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

Quadrax version: Cat. 6 / IEC11-801

14R



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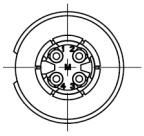
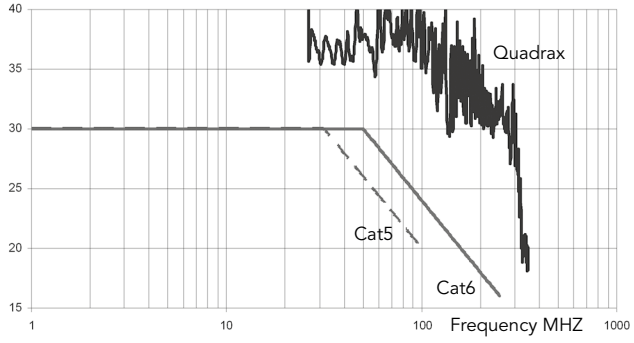
18A1



Page 28

Return Loss



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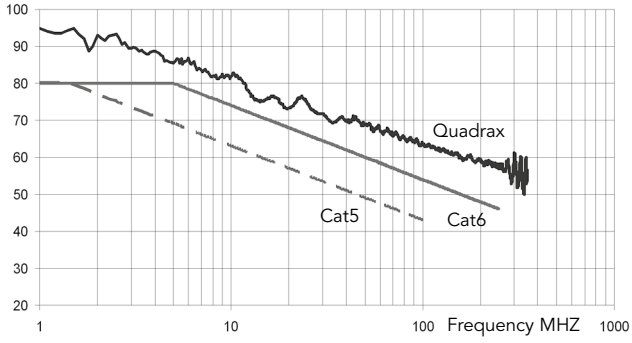


Ordering information

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

VGE1 (pages 24-33)

Basic Series	VGE1	B	22	14	P	N	04
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: **14; 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 (pages 34-37)

Basic Series	FER1	B	22	14	P	N	04
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

Backshell (pages 48-67)

Basic Series	VGE1	J	S	18	00	0	0	M
Shell type:								
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: **14; 18; 20; 22; 24; 28; 32; 36; 40**								
Layout (if grommet needed) **or 00** (without grommet)								
Adaptor type: **1:** long **0:** Short, or other specification code								
Specification: Number **0** to **9**; please refer to each backshell type								
Grommet type: **-:** Without grommet **M:** Male **L:** Female								

Backshell marking example: VGE1JS40A3500M

VGE1 & FER1 SERIES

Connectors

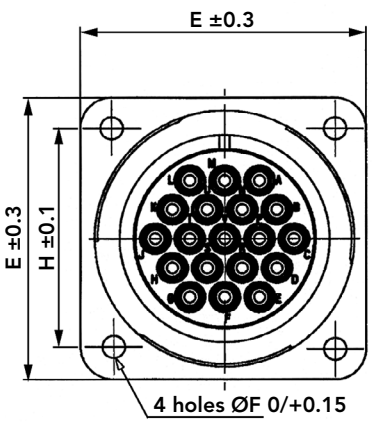
VGE1 receptacle

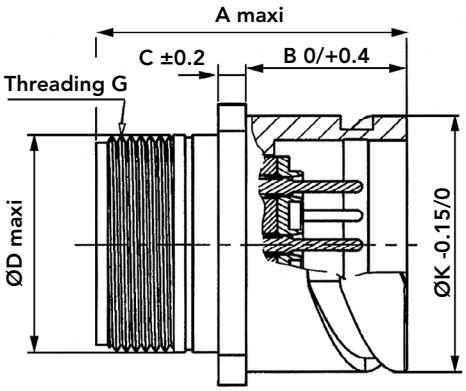
Connector part numbers

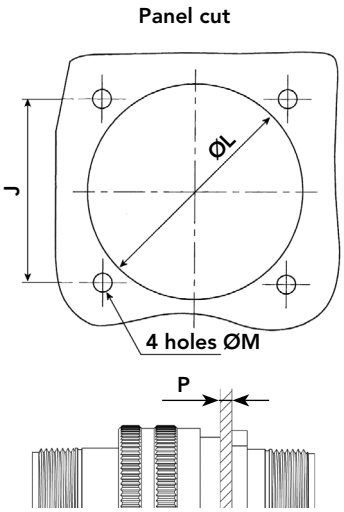
Shell size	Layout	Number of contact	Contact size	Contact type	Orientation (1)	Part numbers (2)
14	14A6	6	#16	Male	O, N, Y	VGE1 B 14A6 PN
				Female		VGE1 B 14A6 SN
	14A10	10	#20	Male	O, N, Y	VGE1 B 14A10 PN
				Female		VGE1 B 14A10 SN
	14R	1	Quadrax	Male	-	VGE1 B 14R
18	18-19	10	#16	Male	O, N, X, Y	VGE1 B 1819 PN
				Female		VGE1 B 1819 SN
	18A1	1	Quadrax	Male	N	VGE1 B 18A1 PN
				Female		VGE1 B 18A1 SN
	18-04	4	ELIO®	Male	N	VGE1 B 18E04 GN
				Female		VGE1 B 18E04 JN
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
	22-08	8	ELIO®	Male	N	VGE1 B 22E08 GN
				Female		VGE1 B 22E08 JN
24	24-10	7	#8	Male	O, N, W, X, Y, Z	VGE1 B 2410 PN
				Female		VGE1 B 2410 SN
	24-12	12	ELIO®	Male	N	VGE1 B 24E12 GN
				Female		VGE1 B 24E12 JN
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		Male	O, N, W, X, Y, Z	VGE1 B 36A22 PN
				Female		VGE1 B 36A22 SN
40	40A35	35		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. 38
2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

VGE1 receptacle







Connector dimensions (connector mated length see page 38)

Part numbers (2)	A	B	C	ØD	E	ØF	Threading G Class 2A	H	ØK	Weight (3)	J±0.15	ØL±0.3	ØM±0.10	P
VGE1 B 14A6 PN	40.5	18.4	3.2	19.2	30	3.25	3/4"x20 UNEF	23	24.6	24 g	23	24.7	3.4	3
VGE1 B 14A6 SN										25 g				
VGE1 B 14A10 PN										23 g				
VGE1 B 14A10 SN										25 g				
VGE1 B 14R										21 g				
VGE1 B 1819 PN	45.5	23.05	4	25.5	35	3.25	1"x20 UNEF	27	30.8	52 g	27	31.2	3.4	3
VGE1 B 1819 SN										47 g				
VGE1 B 18A1 PN										47 g				
VGE1 B 18A1 SN										40 g				
VGE1 B 18E04 GN										41 g				
VGE1 B 18E04 JN										48 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	29.4	34.6	3.4	3
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	31.8	37.8	3.4	3
VGE1 B 2214 SN										66 g				
VGE1 B 22E08 GN										61 g				
VGE1 B 22E08 JN										61 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	34.9	41.3	3.9	3
VGE1 B 2410 SN										77 g				
VGE1 B 24E12 GN										66 g				
VGE1 B 24E12 JN										71 g				
VGE1 B 2821 PN	48	24.05	4	41.5	50.8	3.75	1 5/8"x18 UNEF	39.7	46.7	92 g	39.7	47.1	3.9	3
VGE1 B 2821 SN										105 g				
VGE1 B 32A13 PN	48	24.05	4	47.9	57	4.35	1 7/8"x16 UNEF	44.5	53.4	122 g	44.5	53.8	4.5	3
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	49.2	60	4.5	3
VGE1 B 36A22 SN										184 g				
VGE1 B 40A35 PN	48	24.05	4	59	70	4.35	2 5/16"x16 UNEF	55.5	65.5	170 g	55.5	66.4	4.5	3
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: all dimensions are in mm.
Dimensions are not contractual and may be subject to modifications

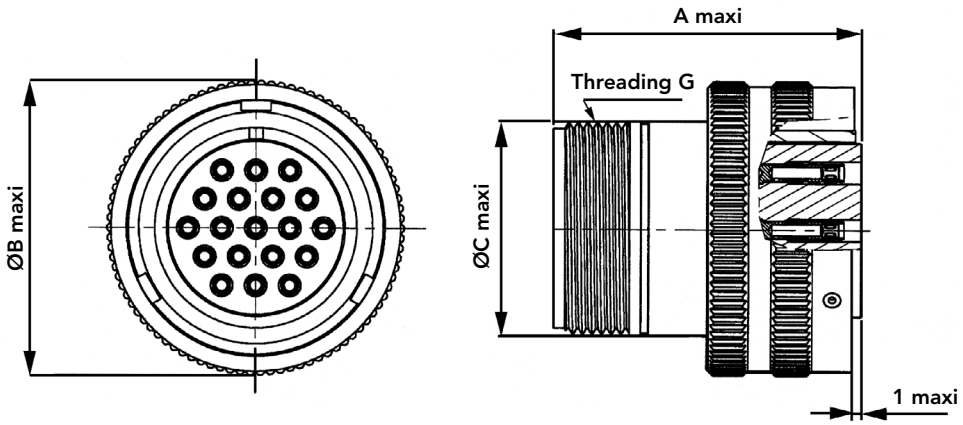
VGE1 plug

Connector part numbers

Shell size	Layout	Number of contact	Contact size	Contact type	Orientation (1)	Part numbers (2)
14	14A6	6	#16	Male	O, N, Y	VGE1 D 14A6 PN
				Female		VGE1 D 14A6 SN
	14A10	10	#20	Male	O, N, Y	VGE1 D 14A10 PN
				Female		VGE1 D 14A10 SN
	14R	1	Quadrax	Male	-	VGE1 D 14R
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
	18-04	4	ELIO®	Male	N	VGE1 D 18E04 GN
				Female		VGE1 D 18E04 JN
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
	22-08	8	ELIO®	Male	N	VGE1 D 22E08 GN
				Female		VGE1 D 22E08 JN
24	24-10	7	#8	Male	O, N, W, X, Y, Z	VGE1 D 2410 PN
				Female		VGE1 D 2410 SN
	24-12	12	ELIO®	Male	N	VGE1 D 24E12 GN
				Female		VGE1 D 24E12 JN
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		Male	O, N, W, X, Y, Z	VGE1 D 36A22 PN
				Female		VGE1 D 36A22 SN
40	40A35	35		Male	O, N, W, X, Y, Z	VGE1 D 40A35 PN
				Female		VGE1 D 40A35 SN
	40A60	60	#16	Male	O, N, W, X, Y, Z	VGE1 D 40A60 PN
				Female		VGE1 D 40A60 SN

1: for orientation see p. 38
2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

VGE1 plug



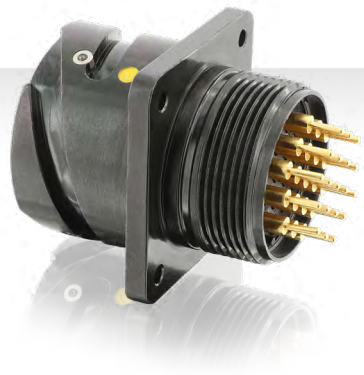
Connector dimensions (connector mated length see page 38)

Part numbers [2]	A	ØB	ØC	Threading G Class 2A	Weight [3]
VGE1 D 14A6 PN	41	31.7	19.2	3/4"x20 UNEF	27 g
VGE1 D 14A6 SN					28 g
VGE1 D 14A10 PN					26 g
VGE1 D 14A10 SN					28 g
VGE1 D 14R					24 g
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 18E04 GN					39 g
VGE1 D 18E04 JN					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 22E08 GN					59 g
VGE1 D 22E08 JN					63 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 24E12 GN					67 g
VGE1 D 24E12 JN					72 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 UNEF	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 UNEF	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: all dimensions are in mm.
Dimensions are not contractual and may be subject to modifications

VGE1 receptacle with PC tails contacts

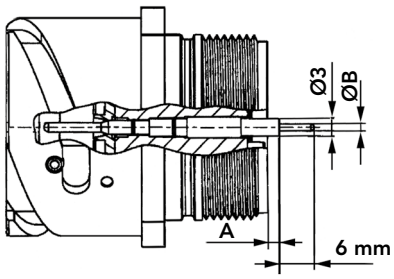


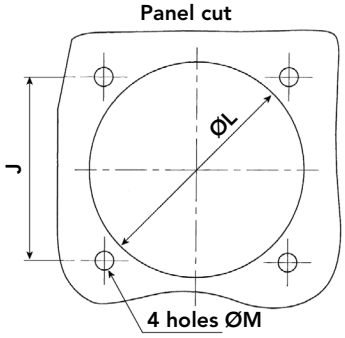
Connector part numbers

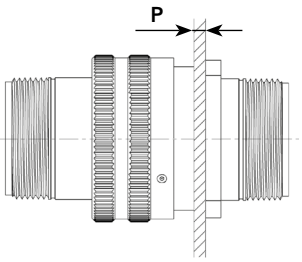
Shell size	Layout	Contact type	Orientation [1]	Part numbers [2]			
					PCB plating		
					Gold Ø 1.2	Gold Ø 1	Tin* Ø 1
18	18-19	Male	O, N, X, Y	**VGE1C 1819 PN...**	-	**01**	**14**
22	22-14	Male	O, N, W, Z	**VGE1C 2214 PN...**	-	**01**	**14**
28	28-21	Male	O, N, W, X, Y, Z	**VGE1C 2821 PN...**	-	**01**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

1: for orientation see p. 38
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation
Examples: with PCB Gold plated Ø 1.2 mm **VGE1C2214PN**, with PCB Tin plated Ø 1 mm **VGE1C2214PN14**, with Gold plated Ø 1 mm **VGE1C2214PN01**
* Tin plating only on the tail of the contact

Connector dimensions (connector mated length see page 38)







Part numbers [2]	Shell size	A maxi	ØB maxi*			J ±0.15	ØL ±0.3	ØM ±0.10	P
VGE1 C 1819 PN...	18	2.00	Gold plating standard (-) Ø 1.2	Gold plating specific (01) Ø 1	Tin plating (14) Ø 1	27	31.2	3.4	3
VGE1 C 2214 PN...	22					31.8	37.8	3.4	3
VGE1 C 2821 PN...	28	- 0.40				39.7	47.1	3.9	3

*: Example of Part numbers with Gold plating standard **VGE1C1819PN**,
with Gold plating specific **VGE1C1819PN01**, with Tin plating **VGE1C1819PN14**
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

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

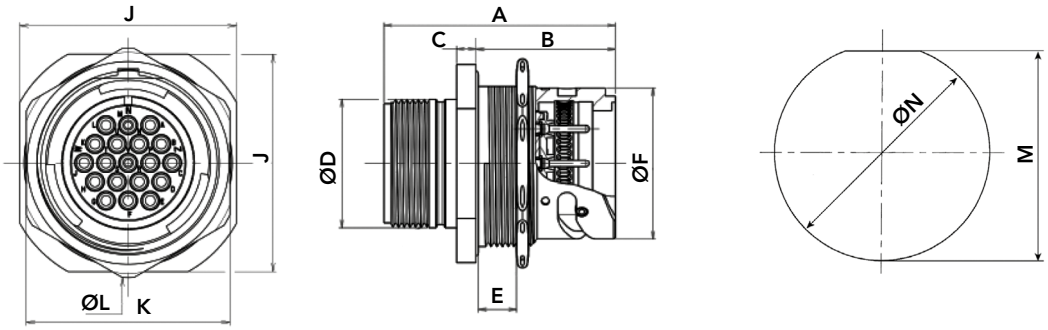
VGE1 jam nut receptacle with shielding ring

Connector part numbers

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

1: for orientation see p. 38
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

Connector dimensions



Part numbers (2)	Shell size	A maxi	B	C	ØD maxi	E maxi	ØF	J	K	ØL	M	ØN	Weight (3)
VGE1 H 1819 ...N	18	57.70	34.50	4.80	25.50	10.00	30.80	42.00	39.90	44.50	33.90	35.20	70 g
VGE1 H 2214 ...N	22	57.70	34.50	4.80	31.90	10.00	37.40	49.00	46.00	51.30	40.25	41.55	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: all dimensions are in mm.
Dimensions are not contractual and may be subject to modifications

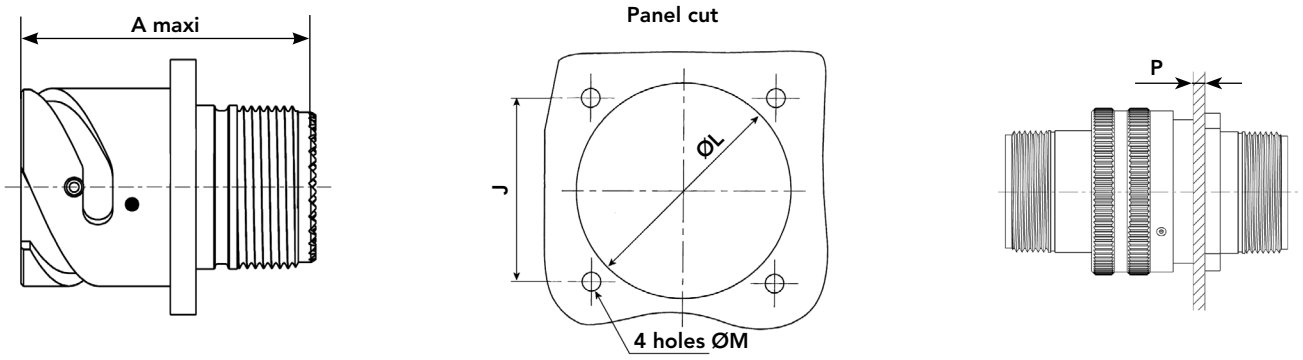
VGE1 receptacle with serrations

Connector part numbers

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**
22	22-14	19	Male	O, N, W, Z	**VGE1 B 2214 PN09**
			Female		**VGE1 B 2214 SN09**
28	28-21	37	Male	O, N, W, X, Y, Z	**VGE1 B 2821 PN09**
			Female		**VGE1 B 2821 SN09**

1: for orientation see p. 38
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

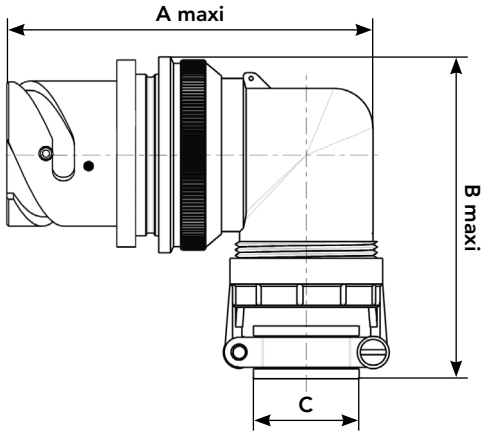
VGE1 receptacle with serrations (continued)



Connector dimensions (connector mated length see page 38)

Part numbers (2)	Shell size	A maxi	Nb. of teeth	J±0.15	ØL±0.3	ØM±0.10	P
VGE1 C 1819 PN...	18	45.5	28	27	31.2	3.4	3
VGE1 C 2214 PN...	22		28	31.8	37.8	3.4	3
VGE1 C 2821 PN...	28	48	36	39.7	47.1	3.9	3

Serrations on body connector allow the use of a shorter backshell, for a use in short area.
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation



Specific backshell dimensions

Part numbers (2)	Shell size	A maxi	B maxi	C Capacity cable
VGE1 CE 18 0003	18	80	76.2	Ø4 / Ø15.5
VGE1 CE 22 0003	22	89.9	78.1	Ø9 / Ø15.5
VGE1 CE 28 0003	28	77.9	82	Ø9.5 / Ø19.5

It is not possible to use a grommet with this backshell

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

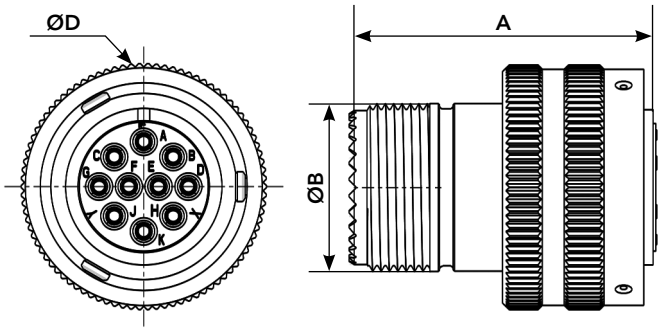
VGE1 plug with serrations

Connector part numbers

Shell size	Layout	Number of contact	Contact type	Orientation (1)	Part numbers (2)
18	18-19	10	Male	O, N, X, Y	VGE1 D 1819 PN09
			Female		VGE1 D 1819 SN09
22	22-14	19	Male	O, N, W, Z	VGE1 D 2214 PN09
			Female		VGE1 D 2214 SN09
28	28-21	37	Male	O, N, W, X, Y, Z	VGE1 D 2821 PN09
			Female		VGE1 D 2821 SN09

1: for orientation see p. 38
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

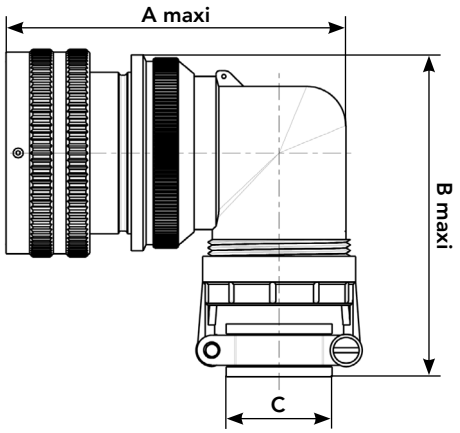
VGE1 plug with serrations (continued)



Connector dimensions (connector mated length see page 38)

Part numbers (2)	Shell size	A	ØB	ØD maxi	Nb. of teeth
VGE1 D 1819 ..N09	18	45	25.5	37.3	28
VGE1 D 2214 ..N09	22		31.9	44	
VGE1 D 2821 ..N09	28		41.5	55.3	36

Serrations on body connector allow the use of a shorter backshell, for a use in short area.
2: Example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation



Specific backshell dimensions

Part numbers (2)	Shell size	A maxi	B maxi	C Capacity cable
VGE1 CE 18 0003	18	79.5	77.8	Ø4 / Ø15.5
VGE1 CE 22 0003	22	89.4	79.8	Ø9 / Ø15.5
VGE1 CE 28 0003	28	91.9	84.6	Ø9.5 / Ø19.5

It is not possible to use a grommet with this backshell

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

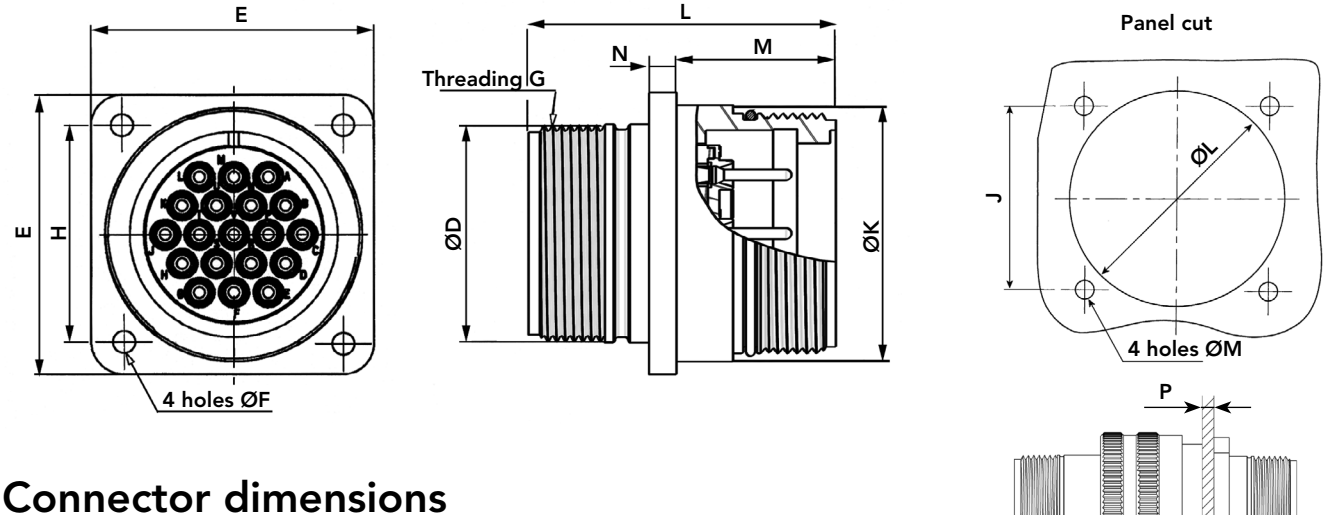
FER1 receptacle

Connector 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	**FER1 B 1819 PN**
				Female		**FER1 B 1819 SN**
	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**

1: for orientation see p. 38
2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

FER1 receptacle



Connector dimensions

Part numbers [2]	L maxi	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

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: all dimensions are in mm.
Dimensions are not contractual and may be subject to modifications

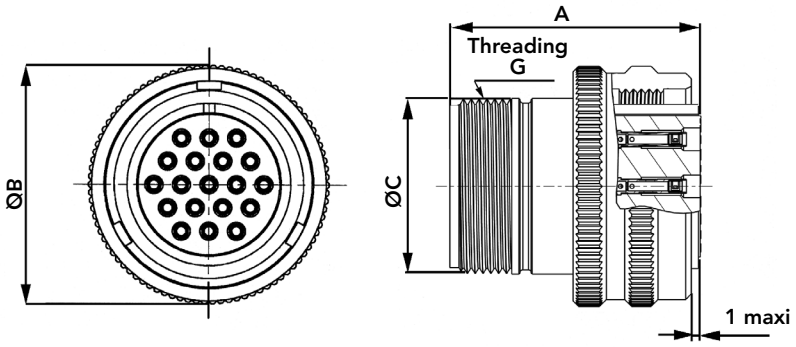
FER1 plug

Connector 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	**FER1 D 1819 PN**
				Female		**FER1 D 1819 SN**
	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. 38
2: example of Part numbers with orientation "N". "N" can be replaced by other orientation - see column orientation

FER1 plug



Connector dimensions

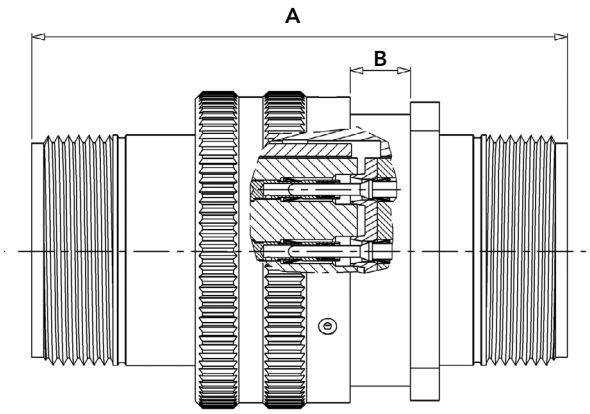
Part numbers [2]	A	ØB	ØC	Threading G Class 2A	Weight [3]
FER1 D 1819 PN	45.6	37.3	25.5	1"x20 UNEF	54 g
FER1 D 1819 SN					58 g
FER1 D 18A1 PN					44 g
FER1 D 18A1 SN					51 g
FER1 D 2214 PN	45.6	44	31.9	1 1/4"x18 UNEF	87 g
FER1 D 2214 SN					96 g
FER1 D 2821 PN	48.1	55.3	41.5	1 5/8"x18 UNEF	81 g
FER1 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: all dimensions are in mm.
Dimensions are not contractual and may be subject to modifications

VGE1 connector mated length

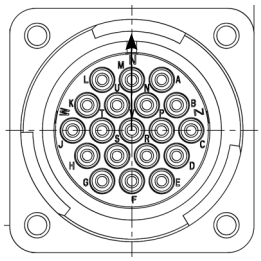
Shell size	A maxi mm	B maxi mm
14	70	7
18	75.50	7.80
20		
22		
24		
28	80.50	8.80
32		
36		
40		



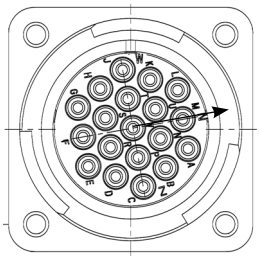
VGE1 & FER1 insert orientations

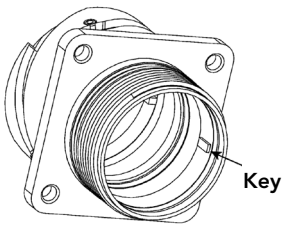
Layouts	N	W	X	Y	Z
14A6 / 14A10 14R	0°	-	-	108°	-
18-19	0°	-	120°	240°	-
20-15	0°	80°	-	-	280°
22-14	0°	80°	-	-	280°
24-10	0°	80°	110°	250°	280°
28-21	0°	80°	110°	250°	280°
32A13	0°	65°	130°	230°	295°
36A22	0°	80°	110°	250°	280°
40A35	0°	70°	130°	230°	290°
40A60	0°	80°	110°	250°	280°

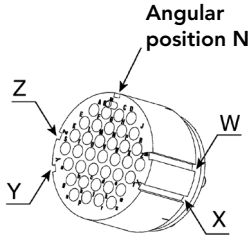
22-14 position N



22-14 position W







Orientation 0: insert not mounted in the shell

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

Notes

VGE1& FER1 SERIES

Contacts

Contacts

Description

The VGE1 series is delivered with contact (crimp version, Quadrax) and offers the unique feature to use the same contact style in any layout with the same active part size (i.e. #20, #16, #12, #8). This provides our customers with an easy solution to buy only one type of contact to equip all their connectors even if housings/shell sizes are different.

This provides the benefit of standardisation and subsequent reduced inventory costs. In addition, it eliminates the need for added tooling and simplifies the assembly process. SOURIAU contacts are designed for simple snap-in installation and further eliminate the need for insertion tooling.

In addition to the below "crimp" style contact options, the VGE1 series can also be equipped with ELIO® optical contacts.

Contacts are available in different versions:

• Machined

• Quadrax

• ELIO® optical contact

Contact selector guide

Electrical characteristics: contact resistance		
#20 Ø1mm	Machined	< 4mΩ
#16 Ø1.6mm	Machined	< 3mΩ
#12 Ø2.4mm	Machined	< 5mΩ
#8 Ø3.6mm	Machined	< 5mΩ

Available platings	
A	2µ Ni + 2µ Ag
K	Mini 0.4µ gold over 2µ Ni

Packaging

Due to the wide variety of applications, contact packaging is offered for small series (bulk package) and high volume production (reeled contacts):

Size contacts #20 (Ø1mm) & #16 (Ø1.6mm)

• 50 pieces bulk package (Machined contacts)

• 1,000 pieces bulk package (Machined contacts)

• 2,000 pieces reeled (Machined contacts)

Size contacts #12 (Ø2.4mm) & #8 (Ø3.6mm)

• 100 pieces bulk package (Machined contacts)

Note: 1,000 pieces bulk package available by adding 1000 at the end of the part number: e.g. RC16M23K1000
2,000 pieces reeled package available by adding K at the beginning of the part number: e.g. KRC16M23K

Machined crimp contacts

Part numbers & dimensions

Contact size		Wire size		Plating	Part numbers		insulator Ø	
#	mm	AWG	mm²		Male	Female	Without grommet	With grommet*
#20	1.0	20-18	0.50-1.00	Gold	**RM18W3K**	**RC18W3K**	2.10 maxi	1.15 mini 1.80 maxi
#16	1.6	22-20	0.32-0.50	Gold	**RM20M12K**	**RC20M12K**	3.50 maxi	1.20 mini 2.95 maxi
#16	1.6	20-16	0.5-1.5	Gold	**RM16M23K**	**RC16M23K**		
#16	1.6	16-14	1.5-2.5	Gold	**RM14M30K**	**RC14M30K**		
#12	2.4	20	0.5	Silver	**82911459NA**	**82911458A**	4.90 maxi	1.50 mini 3.60 maxi
				Gold	**82911459NK**	**82911458K**		
#12	2.4	18	0.75-1.0	Silver	**82911461NA**	**82911460A**		
				Gold	**82911461NK**	**82911460K**		
#12	2.4	16	1.5	Silver	**82911463NA**	**82911462A**		
				Gold	**82911463NK**	**82911462K**		
#12	2.4	14	2.5	Silver	**82911465NA**	**82911464A**		
				Gold	**82911465NK**	**82911464K**		
#8	3.6	16	1.5	Silver	**82913601A**	**82913600A**	6.50 maxi	4.20 mini 6.20 maxi
#8	3.6	14	2.5		**82913603A**	**82913602A**		
#8	3.6	12	4		**82913605A**	**82913604A**		
#8	3.6	10	6		**82913607A**	**82913606A**		

For other contact type consult us
* For more information see page 70

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

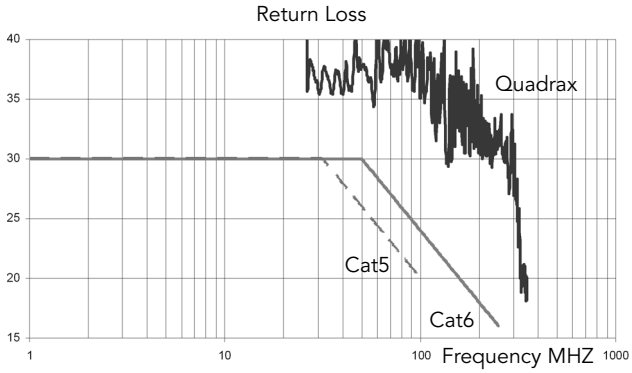
Quadrax contacts

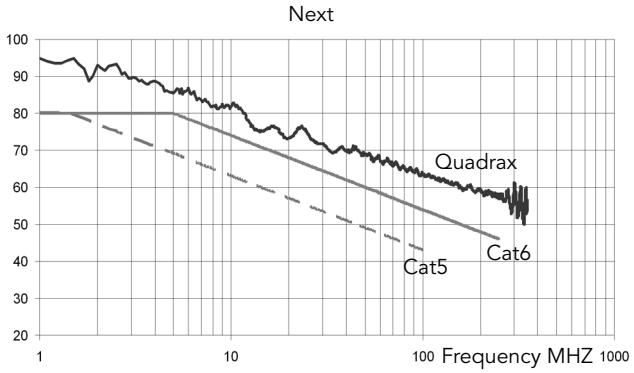
Ordering information

Cat. 6 level obtained with 1 contact Quadrax

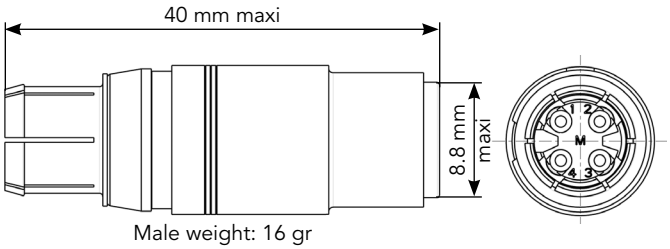
Exemple of performances with a 18A1 connector and a quarte cable:

Quadrax version: Cat. 6 / IEC11-801

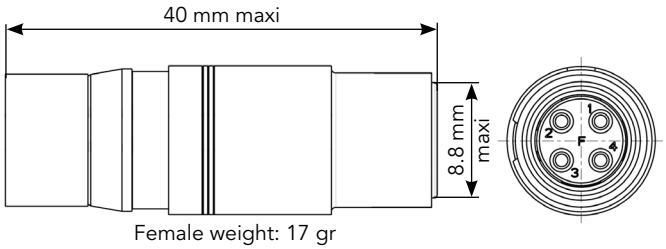




Line wire size		Part number		Maxi line wire insulator Ø	Plating
AWG	mm²	Male	Female		
24-18	0.21-0.93	**83802035A**	**83802034A**	1.2-2.11 mm	Silver



Male weight: 16 gr



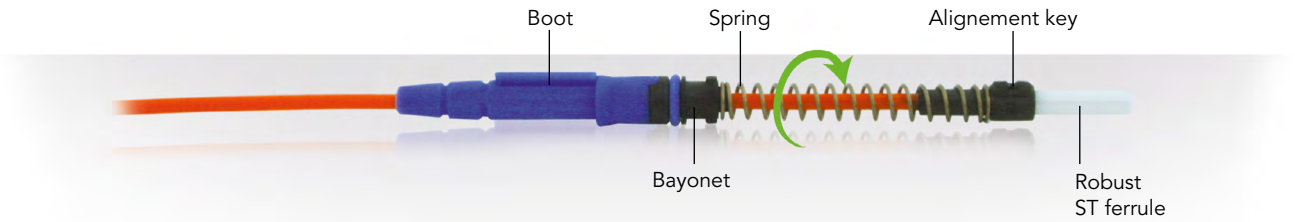
Female weight: 17 gr

*: weight for indication - receptacle + insert without contact

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

ELIO® contacts

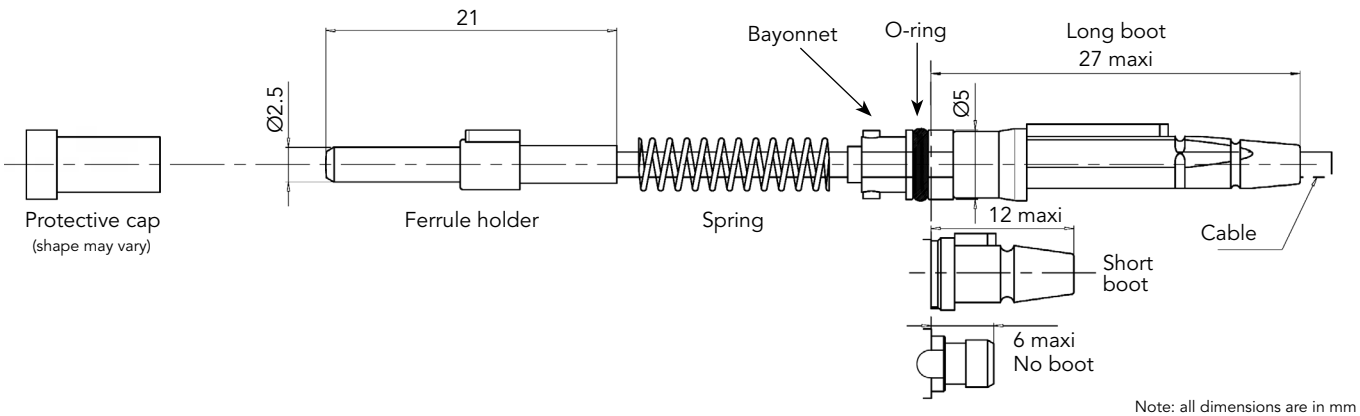
Ordering information



- Robust spring-loaded butt-joint optical contact using ST style ferrule (diameter 2.5mm)
- Contact size equivalent to a #16 contact
- Compatibility with loose and tight structure cables
- Anti-rotation of the contact for better vibration withstanding and optical performance
- Boot-grommet for rear sealing and protection of the cable against excessive bending
- High level optical performance even after aging
- Bayonet locking system: no tool needed for mounting/dismounting
- Compatible with singlemode, multimode and POF cable E.g. Radox®, Flamex® cable

Type	Cable external diameter mm	Fiber type	Part number - Boot Type (1)		
			Long boot	Short boot	No boot*
ELIO®	0.8- 1.0	9/125 µm UPC (Singlemode)	**ELIO09NELA**	**ELIO09NESA**	**ELIO09NENA**
		50 or 62,5/125 µm (Multimode)	**ELIO09NGLA**	**ELIO09NGSA**	**ELIO09NGNA**
		100/140 µm	**ELIO09NDLA**	**ELIO09NDSA**	**ELIO09NDNA**
	1.5- 1.9	9/125 µm UPC (Singlemode)	**ELIO09NELA**	**ELIO09NESA**	**ELIO09NENA**
		50 or 62,5/125 µm (Multimode)	**ELIO18NGLA**	**ELIO18NGSA**	**ELIO18NGNA**
		100/140 µm	**ELIO18NDLA**	**ELIO18NDSA**	**ELIO18NDNA**
	1.7- 2.1	9/125 µm UPC (Singlemode)	**ELIO09NELA**	**ELIO09NESA**	**ELIO09NENA**
		50 or 62,5/125 µm (Multimode)	**ELIO18NGLA**	**ELIO18NGSA**	**ELIO18NGNA**
		100/140 µm	**ELIO18NDLA**	**ELIO18NDSA**	**ELIO18NDNA**

(1): For POF cable please consult us
* non waterproof version only



Note: all dimensions are in mm

VGE1& FER1 SERIES

Backshells

Backshells overview

Accessories have to be used with an adaptor

6 accessories available

It is the responsibility of the customer to ensure that all cables and accessories are compatible with each other.

Strain relief
Straight version: **CS**...
Elbow 90° version: **CE**...
See page 50

PMA Conduit adaptor
Straight version: **SS**...
Elbow 90° version: **SE**...
See page 52

Cable clamp with sealing gland IP67
Straight version: **JS**...
Elbow 90° version: **JE**...
See page 54

Cable clamp with sealing gland (trumpet shape) IP67
Straight version: **KS**...
Elbow 90° version: **KE**...
See page 56

Shielded backshell with sealing gland IP67
Straight version: **TS**...
Elbow 90° version: **TE**...
See page 58

Sealing gland IP67
Straight version: **VS**...
Elbow 90° version: **VE**...
See page 60

3 adaptors available

Adaptor are included in the backshell Part numbers or can be order separately.
The sealing performance of the complete assembly depends on the accessory fitted to the adapter.
If the adapter has been sourced from another supplier, the sealing performance of the whole assembly becomes the responsibility of the customer.

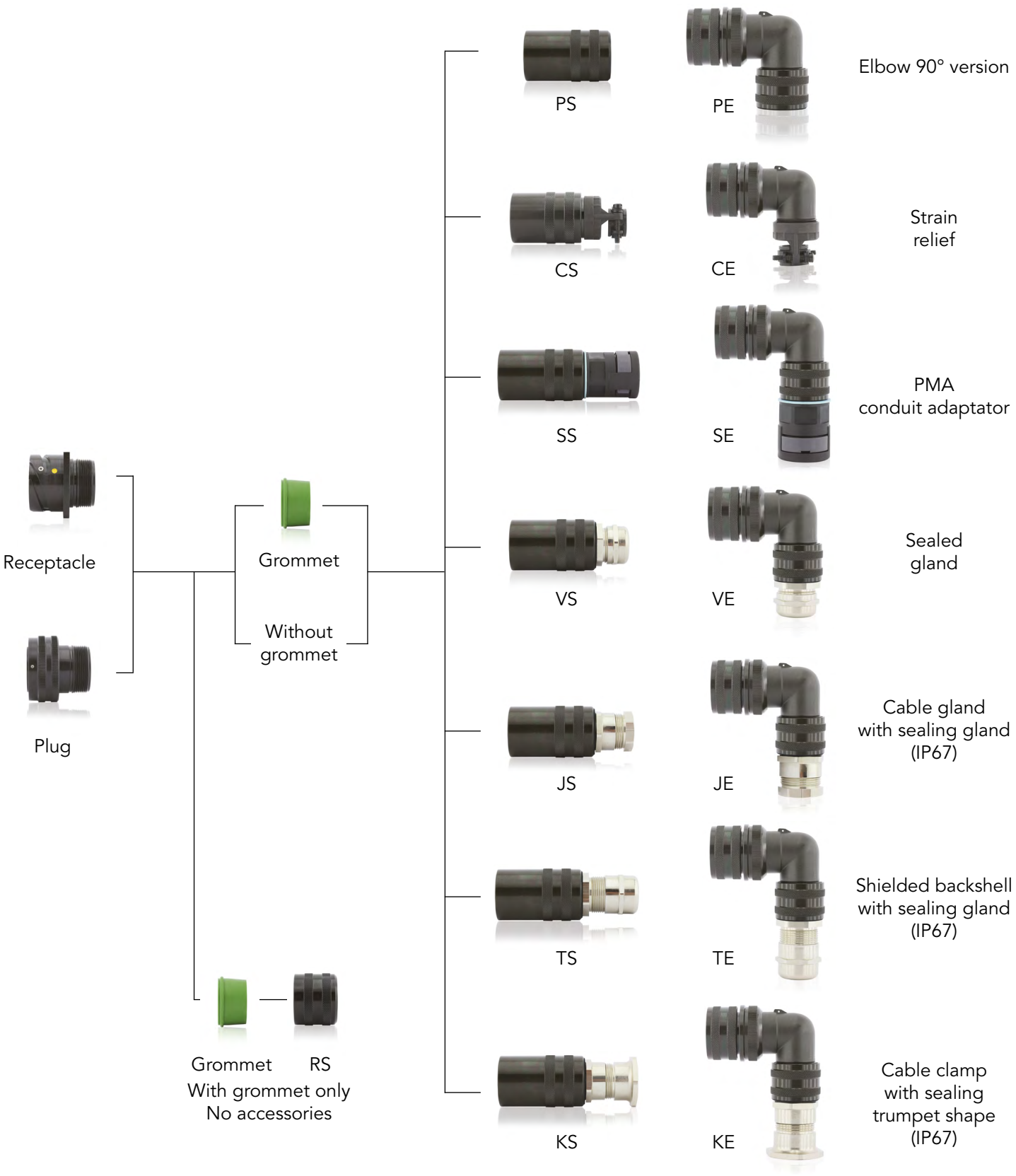
Straight short version*:
PS...0.
See page 64

Straight long version:
PS...1.
See page 64

Elbow 90° version*:
PE...
See page 67

* except for VGE1 size 14

Backshells overview - Mating possibilities



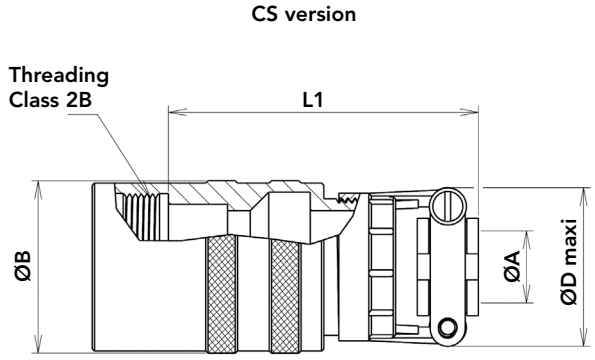
VGE1CS & VGE1CE

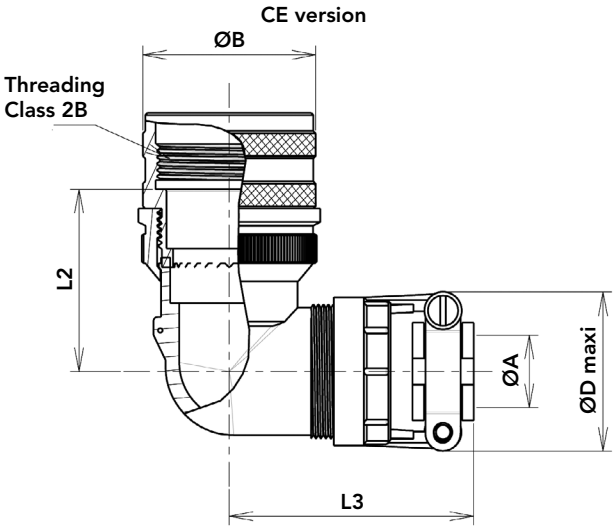
Backshell part numbers

Layout	CS straight version		CE elbow 90° version	
	Without grommet	With grommet*	Without grommet	With grommet*
14A6	VGE1CS140000	VGE1CS14A600M	-	-
		VGE1CS14A600L		
14A10	VGE1CS140000	VGE1CS14A1000M	-	-
		VGE1CS14A1000L		
14R	VGE1CS140000	-	-	-
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.

VGE1CS & VGE1CE





Backshell dimensions

Layout	ØA	ØB	ØD	L1	L2	L3
14A6 14A10 14R	7.9	23	24.5	58	-	-
18-19	12.7	30	29	72	44	59.2
18A1	12.7	30	29	72	44	59.2
20-15	15.87	33	34.8	72	43.5	60.4
22-14	15.87	38	34.8	69.4	43	578
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: maxi dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1SS & VGE1SE

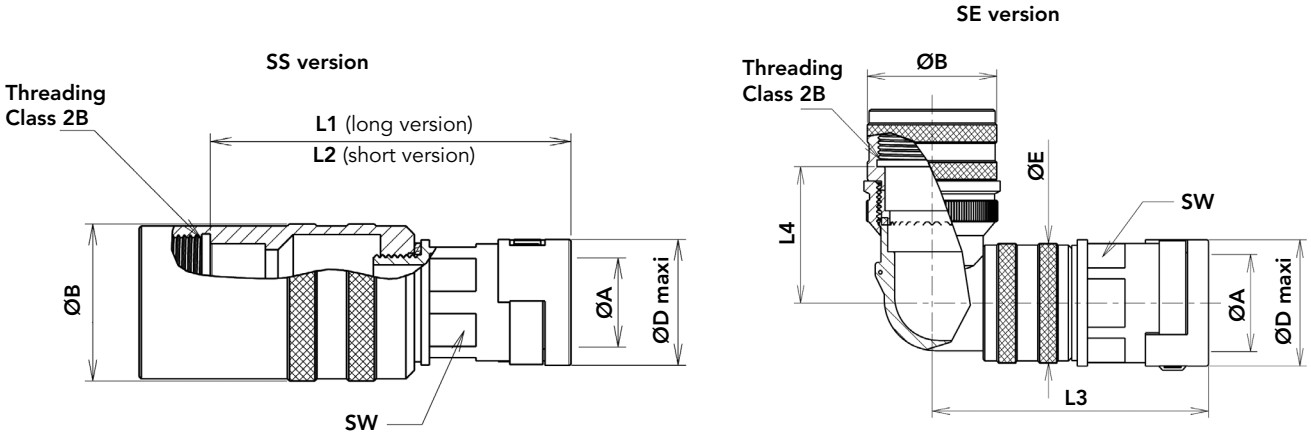
To be used with PMA conduit. For other conduits, please consult us.

Backshell 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*
14A6	VGE1SS140000	VGE1SS14A600M VGE1SS14A600L	-	-	-	-
14A10	VGE1SS140000	VGE1SS14A1000M VGE1SS14A1000L	-	-	-	-
14R	VGE1SS140000	-	-	-	-	-
18-19	VGE1SS180000	VGE1SS181900M VGE1SS181900L	VGE1SS180010	VGE1SS181910M VGE1SS181910L	VGE1SE180000	VGE1SE181900M VGE1SE181900L
18A1	VGE1SS180000	-	VGE1SS180010	-	VGE1SE180000	-
20-15	VGE1SS200000	VGE1SS201500M VGE1SS201500L	VGE1SS200010	VGE1SS201510M VGE1SS201510L	VGE1SE200000	VGE1SE201500M VGE1SE201500L
22-14	VGE1SS220000	VGE1SS221400M VGE1SS221400L	VGE1SS220010	VGE1SS221410M VGE1SS221410L	VGE1SE220000	VGE1SE221400M VGE1SE221400L
24-10	VGE1SS240000	VGE1SS241000M VGE1SS241000L	VGE1SS240010	VGE1SS241010M VGE1SS241010L	VGE1SE240000	VGE1SE241000M VGE1SE241000L
28-21	VGE1SS280000	VGE1SS282100M VGE1SS282100L	VGE1SS280010	VGE1SS282110M VGE1SS282110L	VGE1SE280000	VGE1SE282100M VGE1SE282100L
32A13	VGE1SS320000	VGE1SS32A1300M VGE1SS32A1300L	VGE1SS320010	VGE1SS32A1310M VGE1SS32A1310L	VGE1SE320000	VGE1SE32A1300M VGE1SE32A1300L
36A22	VGE1SS360000	VGE1SS36A2200M VGE1SS36A2200L	VGE1SS360010	VGE1SS36A2210M VGE1SS36A2210L	VGE1SE360000	VGE1SE36A2200M VGE1SE36A2200L
40A35	VGE1SS400000	VGE1SS40A3500M VGE1SS40A3500L	VGE1SS400010	VGE1SS40A3510M VGE1SS40A3510L	VGE1SE400000	VGE1SE40A3500M VGE1SE40A3500L
40A60	VGE1SS400000	VGE1SS40A6000M VGE1SS40A6000L	VGE1SS400010	VGE1SS40A6010M VGE1SS40A6010L	VGE1SE400000	VGE1SE40A6000M VGE1SE40A6000L

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

VGE1SS & VGE1SE



Backshell dimensions

Layout	ØA (conduit type)	ØB	ØD	ØE	SW	L1	L2	L3	L4
14A6 14A10 14R	PMA NW12	23	23.5	-	20	-	59	-	-
18-19	PMA NW17	30	30	30	26	84.1	69.1	78.5	44.7
18A1	PMA NW17	30	30	30	26	84.1	69.1	78.5	44.7
20-15	PMA NW17	33	30	34	26	84.1	69.1	80	44.8
22-14	PMA NW23	37	37	35	32	87.1	72.1	83	44.8
24-10	PMA NW23	40	37	40	32	87.1	72.1	88	47.1
28-21	PMA NW29	46	44	44.5	38	95.9	70.9	85.5	42.6
32A13	PMA NW29	52	44	52	38	85.9	70.9	98.5	53.5
36A22	PMA NW36	57	53	57	50	99.4	84.4	115	64.8
40A35	PMA NW48	63	65	63	65	93.4	78.4	115	55.7
40A60	PMA NW48	63	65	63	65	93.4	78.4	115	55.7

For other outlet type consult us

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

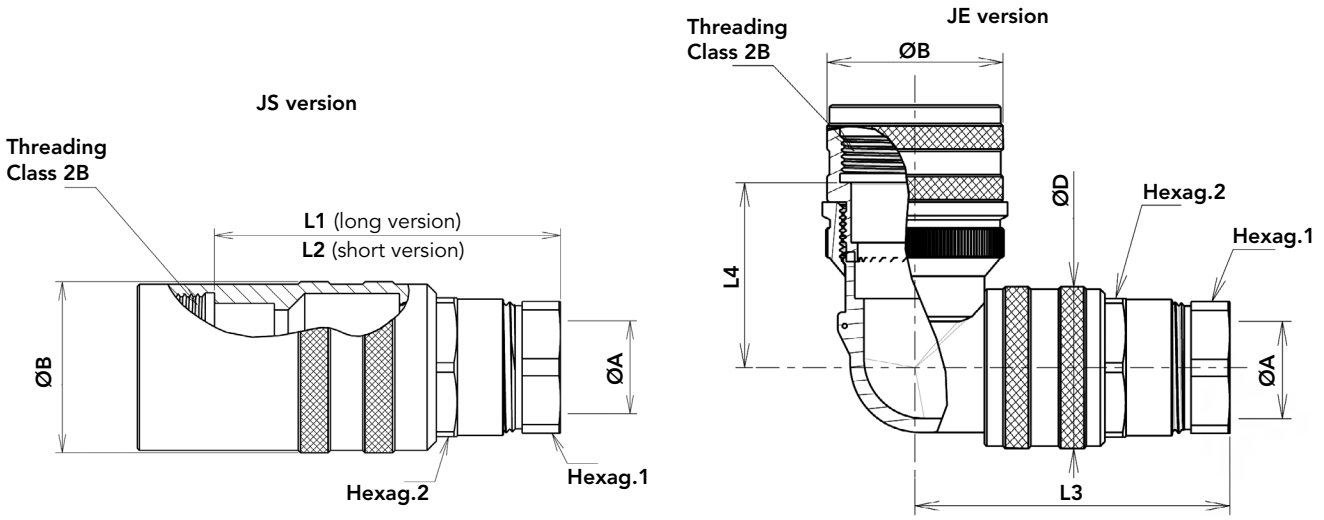
VGE1JS & VGE1JE

Backshell 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.

VGE1JS & VGE1JE



Backshell 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	44.7
18A1	7/12	30	30	20	22	71.6	56.6	65.2	44.7
20-15	9/14	33	34	22	24	71.6	56.6	66.4	44.8
22-14	10/18	37	35	28	30	79.6	64.6	74.4	44.8
24-10	10/18	40	40	28	30	79.6	64.6	79.4	47.1
28-21	14/24	46	44.5	38	40	88.9	63.9	76.9	42.6
32A13	14/24	52	52	38	40	78.9	63.9	89.9	53.5
36A22	22/30	57	57	48	50	84.9	69.9	96.9	64.8
40A35	25/35	63	63	55	58	92.4	77.4	106.7	55.7
40A60	25/35	63	63	55	58	92.4	77.4	106.7	55.7

For other outlet type consult us

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

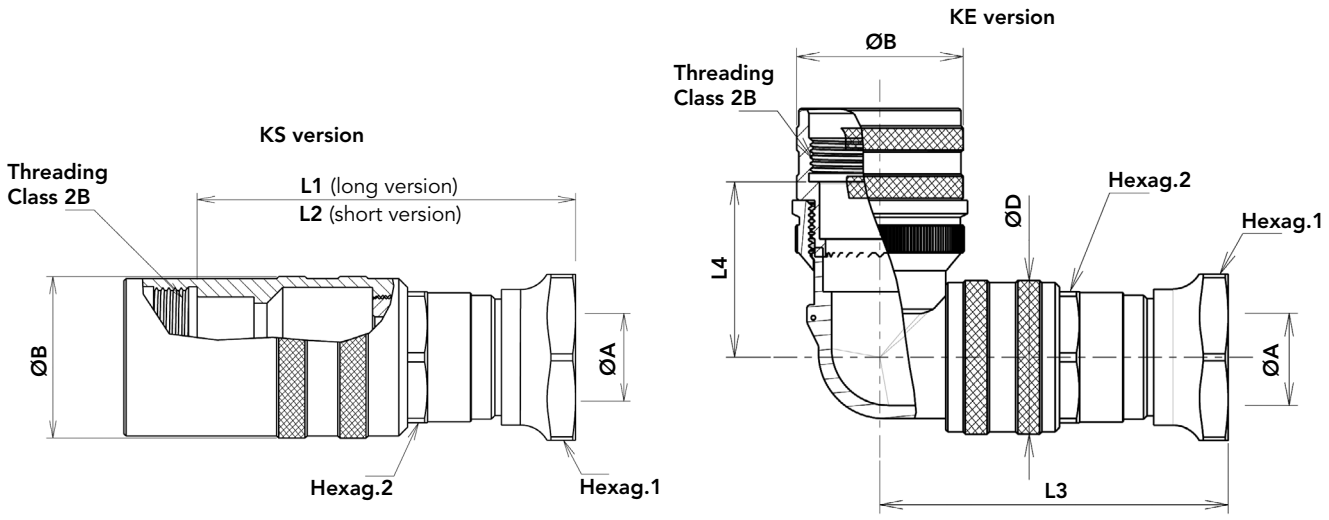
VGE1KS & VGE1KE

Backshell 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.

VGE1KS & VGE1KE



Backshell 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	44.7
18A1	7/12	30	30	28	22	78.6	63.6	72.2	44.7
20-15	9/14	33	34	30	24	80.1	65.1	74.9	44.8
22-14	10/18	37	35	38	30	87.1	72.1	81.9	44.8
24-10	10/18	40	40	38	30	87.1	72.1	86.9	47.1
28-21	14/24	46	44.5	50	40	102.4	77.4	90.4	42.6
32A13	14/24	52	52	50	40	92.4	77.4	103.4	53.5
36A22	22/30	57	57	54	50	98.9	83.9	110.9	64.8
40A35	25/35	63	63	60	58	104.4	89.4	118.7	55.7
40A60	25/35	63	63	60	58	104.4	89.4	118.7	55.7

For other outlet type consult us

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

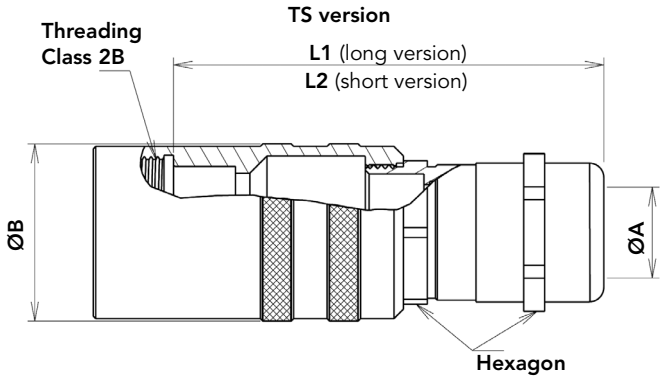
VGE1TS & VGE1TE

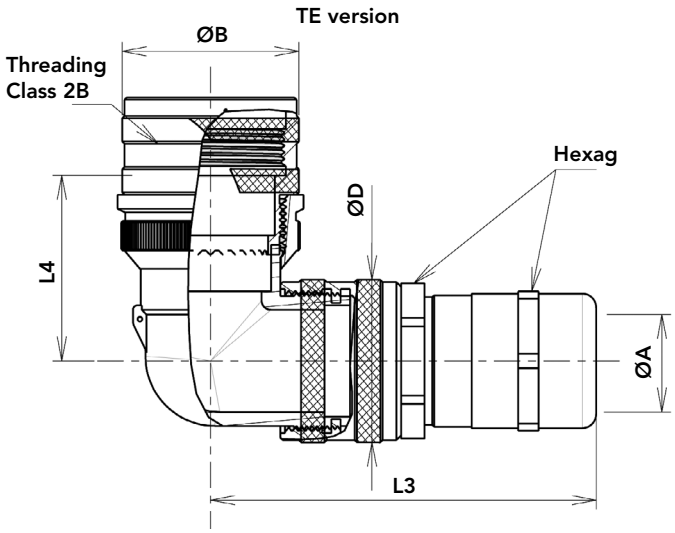
Backshell part numbers

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.

VGE1TS & VGE1TE





Backshell dimensions

layout	ØA	ØB	ØD	Hexagon	L1	L2	L3	L4
18-19	8/12.5	30	30	22	82.1	67.1	75.7	44.7
18A1	8/12.5	30	30	22	82.1	67.1	75.7	44.7
20-15	10/14.5	33	34	24	82.1	67.1	76.9	44.8
22-14	13.5/18	37	35	30	91.6	76.6	86.4	44.8
24-10	13.5/18	40	40	30	91.6	76.6	91.4	47.1
28-21	17/24	46	44.5	40	109.4	84.4	97.4	42.6
32A13	17/24	52	52	40	99.4	84.4	110.4	53.5

For other outlet type consult us

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

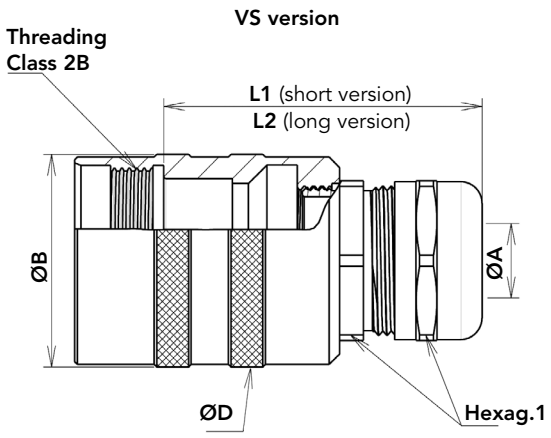
VGE1VS & VGE1VE

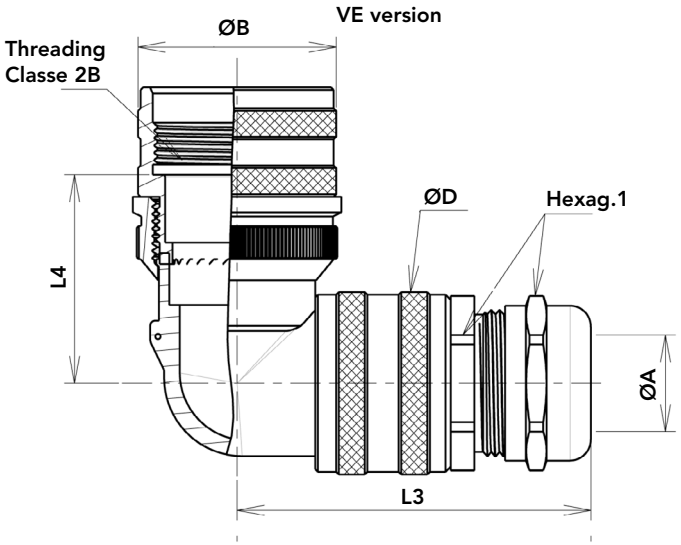
Backshell part numbers

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*
14A6	VGE1VS1400015	VGE1VS14A6015M VGE1VS14A6015L	-	-	-	-
14A10	VGE1VS1400015	VGE1VS14A10015M VGE1VS14A10015L	-	-	-	-
14R	VGE1VS1400015	-	-	-	-	-
18-19	VGE1VS180001	VGE1VS181901M VGE1VS181901L	VGE1VS180011	VGE1VS181911M VGE1VS181911L	VGE1VE180001	VGE1VE181901M VGE1VE181901L
18A1	VGE1VS180001	-	VGE1VS180011	-	VGE1VE180001	-
20-15	VGE1VS200001	VGE1VS201501M VGE1VS201501L	VGE1VS200011	VGE1VS201511M VGE1VS201511L	VGE1VE200001	VGE1VE201501M VGE1VE201501L
22-14	VGE1VS220001	VGE1VS221401M VGE1VS221401L	VGE1VS220011	VGE1VS221411M VGE1VS221411L	VGE1VE220001	VGE1VE221401M VGE1VE221401L
24-10	VGE1VS240001	VGE1VS241001M VGE1VS241001L	VGE1VS240011	VGE1VS241011M VGE1VS241011L	VGE1VE240001	VGE1VE241001M VGE1VE241001L
28-21	VGE1VS280001	VGE1VS282101M VGE1VS282101L	VGE1VS280011	VGE1VS282111M VGE1VS282111L	VGE1VE280001	VGE1VE282101M VGE1VE282101L
32A13	VGE1VS320001	VGE1VS32A1301M VGE1VS32A1301L	VGE1VS320011	VGE1VS32A1311M VGE1VS32A1311L	VGE1VE320001	VGE1VE32A1301M VGE1VE32A1301L

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

VGE1VS & VGE1VE





Backshell dimensions

Layout	ØA	ØB	ØD	L1	L2	L3	L4	Hexag.1
14A6 14A10 14R	4/11	22	23	54	-	-	-	-
18-19	6/12.5	30	30	55.6	70.6	64	44.7	22
18A1	6/12.5	30	30	55.6	70.6	64	44.7	22
20-15	7/14.5	33	34	57.6	72.6	67.5	44.8	24
22-14	10/18	37	35	62.1	77.1	72	44.8	30
24-10	10/18	40	40	62.1	77.1	77	47.1	30
28-21	14/24	46	44.5	67.9	92.9	81	42.6	40
32A13	14/24	52	52	67.9	82.9	94	53.5	40

For other outlet type consult us

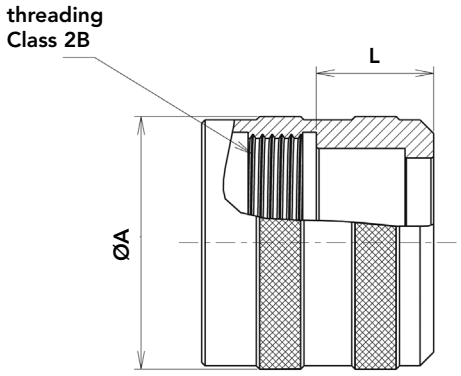
Note: maxi dimensions in mm
Dimensions are not contractual and may be subject to modifications

VGE1RS

Backshell part numbers

Layout	RS backshell with grommet	Grommet type
14A6	VGE1RS14A600M	Male
	VGE1RS14A600L	Female
14A10	VGE1RS14A1000M	Male
	VGE1RS14A1000L	Female
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

VGE1RS



Backshell dimensions

Layout	ØA	L
14A6 14A10	23	16.5
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: maxi dimensions in mm
Dimensions are not contractual and may be subject to modifications

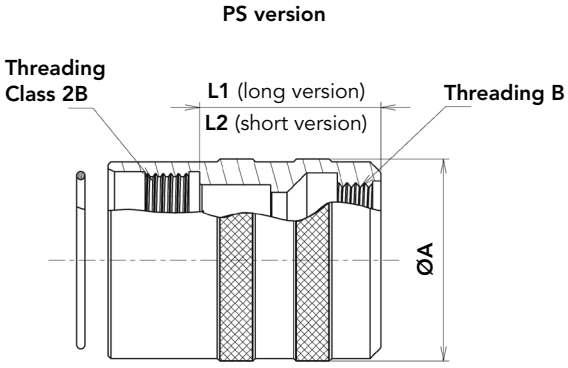
VGE1PS

Backshell part numbers

Layout	Threading	PS straight short version			PS straight long version		
		Without grommet	Male grommet	Female grommet	Without grommet	Male grommet	Female grommet
14A6	M16	VGE1PS140000	VGE1PS14A6000M	VGE1PS14A6000L	-	-	-
14A10	-	VGE1PS140000	VGE1PS14A1000M	VGE1PS14A1000L	-		
18-19	M20	VGE1PS180007	VGE1PS181907M	VGE1PS181907L	VGE1PS180017	VGE1PS181917M	VGE1PS181917L
	M25	VGE1PS180008	VGE1PS181908M	VGE1PS181908L	VGE1PS180018	VGE1PS181918M	VGE1PS181918L
	PG13	VGE1PS180009	VGE1PS181909M	VGE1PS181909L	VGE1PS180019	VGE1PS181919M	VGE1PS181919L
20-15	M25	VGE1PS200007	VGE1PS201507M	VGE1PS201507L	-	-	-
	M20	VGE1PS200008	VGE1PS201508M	VGE1PS201508L	-	-	-
22-14	M25	VGE1PS220007	VGE1PS221407M	VGE1PS221407L	VGE1PS220017	VGE1PS221417M	VGE1PS221417L
	M32	VGE1PS220008	VGE1PS221408M	VGE1PS221408L	VGE1PS220018	VGE1PS221418M	VGE1PS221418L
24-10	M25	VGE1PS240007	VGE1PS241007M	VGE1PS241007L	-	-	-
	M32	VGE1PS240008	VGE1PS241008M	VGE1PS241008L	-	-	-
28-21	M32	VGE1PS280007	VGE1PS282107M	VGE1PS282107L	VGE1PS280017	VGE1PS282117M	VGE1PS282117L
	M40	VGE1PS280008	VGE1PS282108M	VGE1PS282108L	VGE1PS280018	VGE1PS282118M	VGE1PS282118L
	PG29	VGE1PS280009	VGE1PS282109M	VGE1PS282109L	-	-	-
32A13	M32	VGE1PS320007	VGE1PS32A1307M	VGE1PS32A1307L	-	-	-
	M40	VGE1PS320008	VGE1PS32A1308M	VGE1PS32A1308L	-	-	-
36A22	M40	VGE1PS360008	VGE1PS36A2208M	VGE1PS36A2208L	-	-	-
40A35	M32	VGE1PS400007	VGE1PS40A3507M	VGE1PS40A3507L	VGE1PS400017	VGE1PS40A3517M	VGE1PS40A3517L
	M40	VGE1PS400008	VGE1PS40A3508M	VGE1PS40A3508L	VGE1PS400018	VGE1PS40A3518M	VGE1PS40A3518L
	M32	VGE1PS400000	-	-	VGE1PS400010	-	-
	PG42	-	-	-	VGE1PS400019	VGE1PS40A3519M	VGE1PS40A3519L
40A60	M32	VGE1PS400007	VGE1PS40A6007M	VGE1PS40A6007L	VGE1PS400017	VGE1PS40A6017M	VGE1PS40A6017L
	M40	VGE1PS400008	VGE1PS40A6008M	VGE1PS40A6008L	VGE1PS400018	VGE1PS40A6018M	VGE1PS40A6018L
	PG42	-	-	-	VGE1PS400019	VGE1PS40A6019M	VGE1PS40A6019L

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

VGE1PS



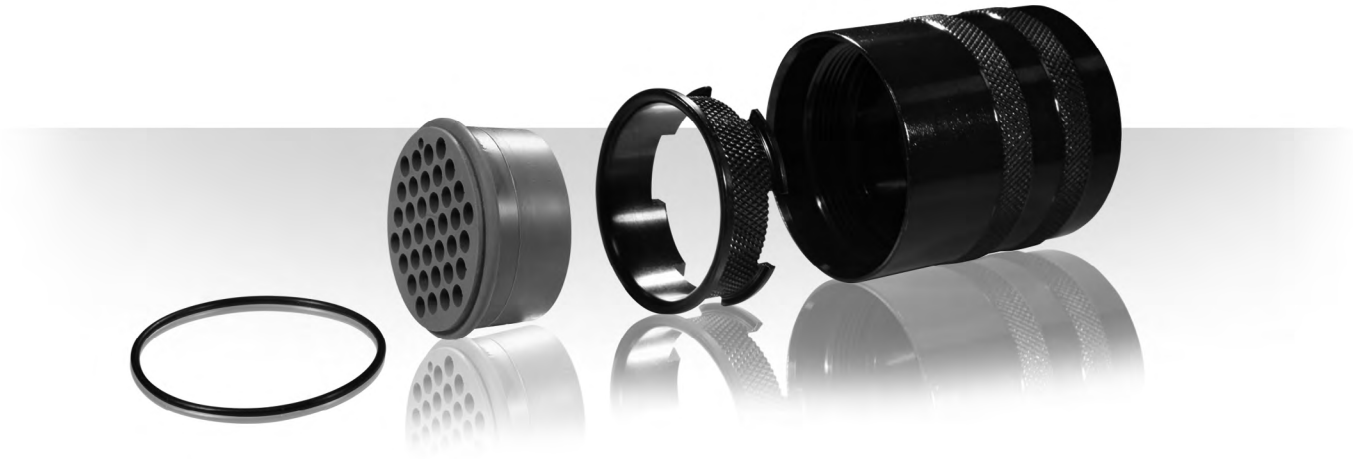
Backshell dimensions

Layout	PS version			
	Threading B	ØA	L1	L2
14A6	M16x1.5	23	-	29
14A10	M16x1.5	23	-	29
18-19	PG13	30	48.6	34
20-15	PG16	33	48.6	34
22-14	PG21	37	48.6	34
24-10	PG21	40	48.6	34
28-21	PG29	46	58	33
32A13	PG29	52	48	33
36A22	PG36	57	48	33
40A35	PG42	63	48	33
40A60	PG42	63	48	33

For other outlet type consult us

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

VGE1 specific PS backshell with braid fixation accessory



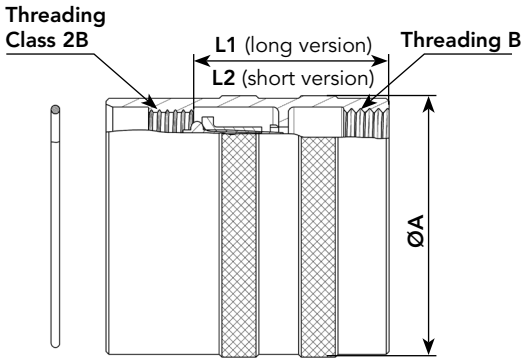
Backshell part numbers

Layout	PS straight short version		PS straight long version	
	Grommet male	Grommet female	Grommet male	Grommet female
18-19	VGE1 PS 1819 06M	VGE1 PS 1819 06L	-	-
28-21	VGE1 PS 2821 06M	VGE1 PS 2821 06L	VGE1 PS 2821 16M	VGE1 PS 2821 16L

The braid fixation accessory can not be supplied separately

Connector dimensions

Layout	Threading B	ØA	L1	L2
18-19	M20	30	-	34.1
28-21	M40	46	53.6	34.1



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

VGE1 PE

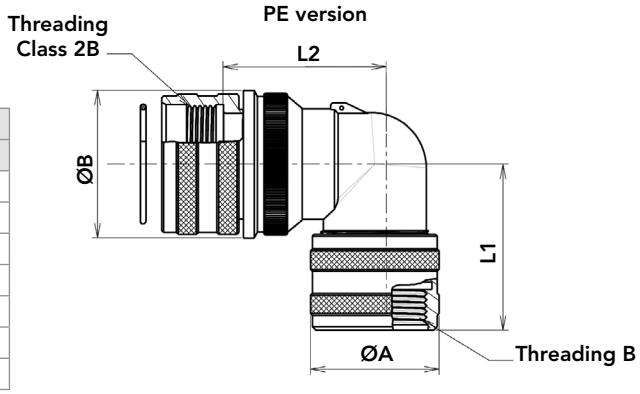
Backshell part numbers

Layout	Threading	PE elbow 90° version		
		Without grommet	Male grommet	Female grommet
1819	M25	VGE1PE180009	VGE1PE181909M	VGE1PE181909L
20-15	M25	VGE1PE200009	VGE1PE201509M	VGE1PE201509L
22-14	M25	VGE1PE220001	VGE1PE221401M	VGE1PE221401L
	M32	VGE1PE220009	VGE1PE221409M	VGE1PE221409L
28-21	M32	VGE1PE280009	VGE1PE282109M	VGE1PE282109L
40A35	M32	VGE1PE400009	VGE1PE40A3509M	VGE1PE40A3509L
40A60	M32	VGE1PE400009	VGE1PE40A6009M	VGE1PE40A6009L

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

Connector dimensions

Layout	PE version				
	Threading B	ØA	ØB	L1 maxi	L2 maxi
18-19	PG13	34.2	30	31	44.7
18A1	PG13	34.2	30	31	44.7
20-15	PG16	37.4	34	32	44.8
22-14	PG21	40.5	35	32	44.8
28-21	PG29	50.1	44.5	34	42.6
40A35	PG42	69.2	63	52.5	55.7
40A60	PG42	69.2	63	52.5	55.7



For other outlet type consult us

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

VGE1& FER1 SERIES

Accessories

Grommet part numbers

Layout	Type of grommet	Part numbers	Ø Wire insulator	
			Mini	Maxi
14A6	Male	VGE1M14A600	1.2	2.95
	Female	VGE1L14A600		
14A10	Male	VGE1M14A1000	1.15	1.8
	Female	VGE1L14A1000		
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 part numbers

Contact size	Part numbers	Color
#20	8500-4144	Red
#16	8500-479	Blue
#12		
#8	SB0834	Red

To use in empty grommet cavities

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

Metallic caps IP 67 for VGE1 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	VGE1F40

Metallic caps IP 67 for FER1 part numbers

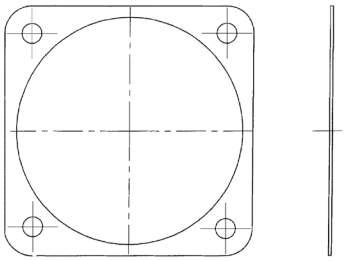
Shell size	Cap for receptacle
18	FER1 E 18
22	FER1 E 22
28	FER1 E 28

Panel gasket for VGE1 & FER1 receptacles

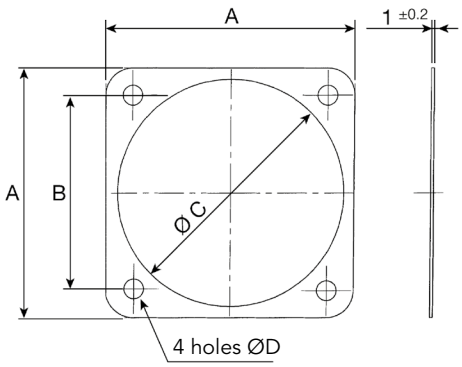
Part numbers & dimensions

Shell size	Part numbers		Dimensions			
	Non conductive	Conductive	A	B	Ø C	Ø D
14	**VGE1G14**	**VGE1G14A**	30	23	24.7	4.4
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 ?

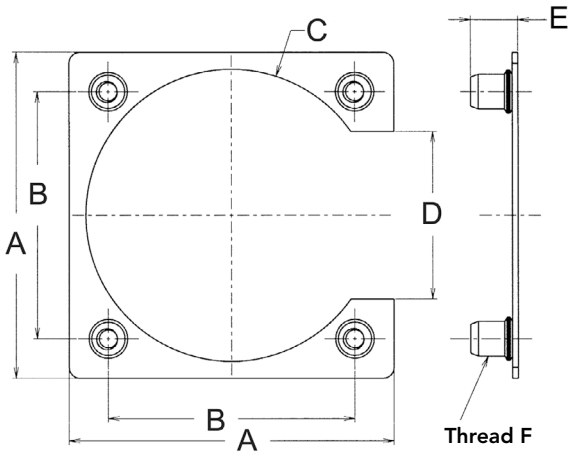
VGE1B.....**04**: Receptacle with non conductive gasket
VGE1B.....**05**: Receptacle with conductive gasket
FER1B.....**04**: Receptacle with non conductive gasket
FER1B.....**05**: Receptacle with conductive gasket
Example: **VGE1B2214SN05** = Female receptacle layout 22-14 delivered with a conductive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

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

Fixing plate for VGE1 & FER1 receptacles

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		



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

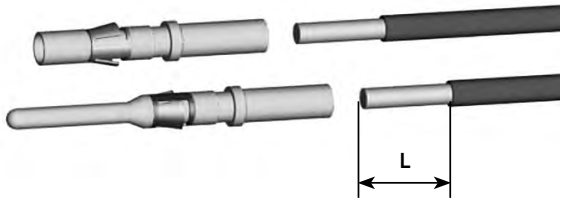
VGE1& FER1 SERIES

Technical information

Contact crimping instruction

Wire stripping

Contact type & size	Part numbers		Stripping length (L)
	Male	Femelle	
Contact #20	RM24W3K	RC24W3K	4.8
	RM20W3K	RC20W3K	
	RM18W3K	RC18W3K	
Contact #16	RM28M1*	RC28M1*	4.8
	RM24M9*	RC24M9*	
	RM20M12*	RC20M12*	
	RM16M23*	RC16M23*	7.1
	RM14M30*	RC14M30*	
Contact #12	82911459N*	82911458*	7 to 8
	82911461N*	82911460*	
	82911463N*	82911462*	
	82911465N*	82911464*	
Contact #8	82913601*	82913600*	6.5 to 7.5
	82913603*	82913602*	
	82913605*	82913604*	
	82913607*	82913606*	



Tooling

Contact size		Wire size		Part numbers		Tool	Locator	Tool selector
#	mm	AWG	mm²					
#20	1.0	26-24	0.13-0.20	RM24W3K	RC24W3K	MH860 (M22520/7-01)	MH86301	6/7
		22-20	0.32-0.52	RM20W3K	RC20W3K			
		20-18	0.50-0.93	RM18W3K	RC18W3K			
#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*	RC14M30*	AF8 (M22520/1-01)	TP1142	8
#12	2.4	20	0.5	82911459N*	82911458*	M317	VGE10077A	-
		18	0.75-1.0	82911461N*	82911460*	M317	VGE10077A	-
		16	1.5	82911463N*	82911462*	M317	VGE10077A	-
		14	2.5	82911465N*	82911464*	M317	VGE10077A	-
#8	3.6	16	1.5	82913601*	82913600*	M317	VGE10078A	-
		14	2.5	82913603*	8291 3602*	M317	VGE10078A	-
		12	4	82913605*	82913604*	M317	VGE10078A	-
		10	6	82913607*	82913606*	M317	VGE10078A	-

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

* Plating code see page 42

Contact crimp tooling

Tooling

M22520 1-02

M22520/1-01 or AF8

Y116

M22520/5-01

MH860 or
M22520/7-01

MH86301

MH86164G

M317

Contact removal

Tooling

Contact size	Extractor
#20	RX20D44
#16	RX2025GE1
#12	5106.021.09.24
#8	5106.021.09.36
Quadrax	VGE1-0324A

5106.021.09.36

5106.021.09.24

RX20D44

RX2025GE1

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.

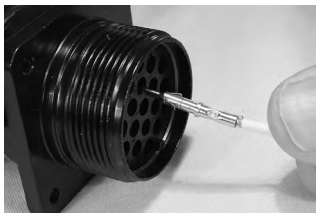
Extraction:

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

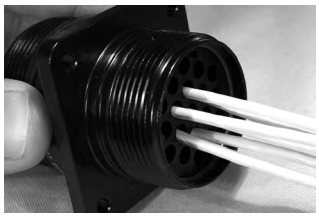
Contact mounting

Without grommet

A - Place manually the contacts in the cavity, push until the mecanical stop is reached. Operation control: manually pull with a little effort and the contact should not withdraw.

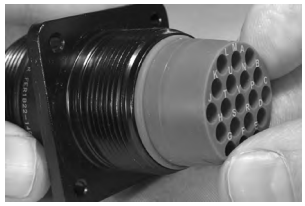


B - Not mandatory to wire all cavities.

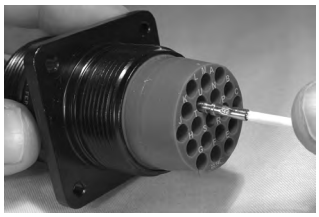


With grommet

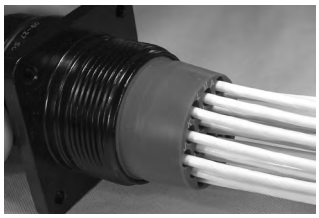
A - For grommet mounting, insert the three insulator pins with grommet's hole.



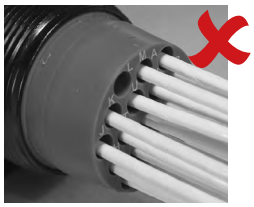
B - Place manually the contacts in the cavity, push until the mecanical stop is reached. Operation control: manually pull with a little effort and the contact should not withdraw.



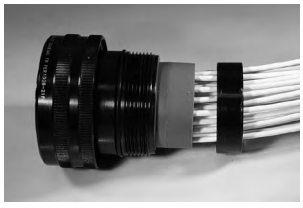
C - Mandatory to wire all cavities.

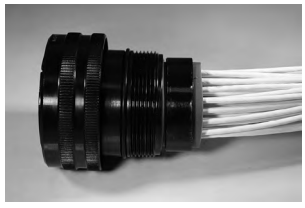


D - If a cavity is empty, it is mandatory to use a grommet filler plug.



E - Put the compression ring over the grommet.

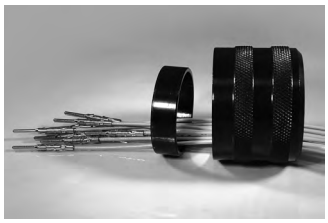




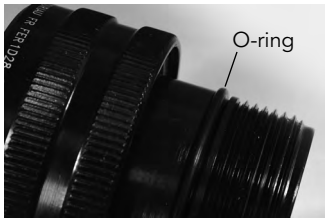
Cabling with backshell

With grommet

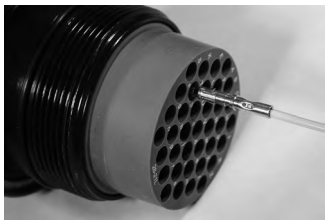
A - Pass wires through the backshells/accessories.

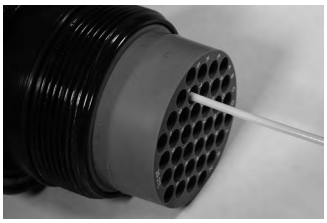


B - On sealed version, mount the O-ring on the groove's plug.

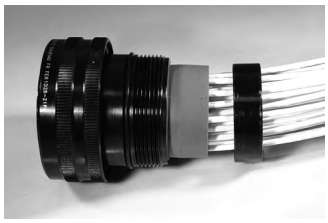


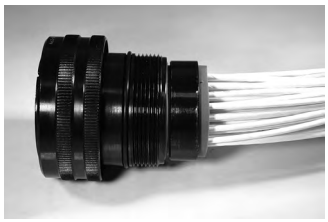
C - Contact mounting: place grommet in the rear connector face, push each contact in insulator's hole.



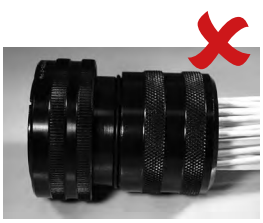


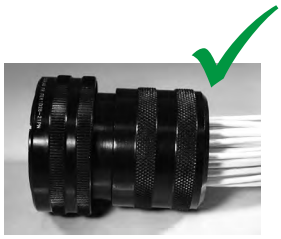
D - Place the conical ring on the grommet.





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





Backshell mounting sequence and coupling torque

	Shell		Recormanded torque
Adaptor/connector	T 14		8 Nm
	Other size		10 Nm
Reductor/adaptor	40		10 Nm
Backshell/adaptor or Backshell/reductor	CS	T 14	4 Nm
	PS	T 40	10 Nm
	SS (PMA)	T 22	5 Nm
	VS	All	10 Nm

Modular gasket for backshells JS, JE, KS & KE

A - Through the packing rings closed using a screwdriver

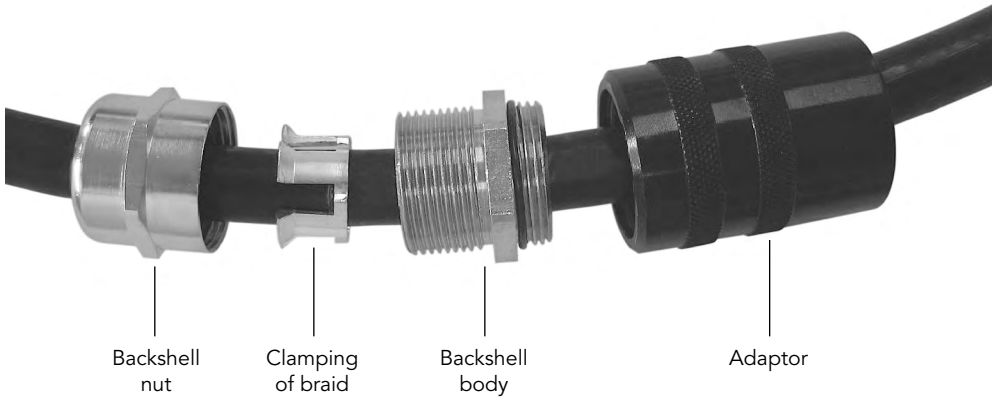
B - To turned the packing rings around the screwdriver

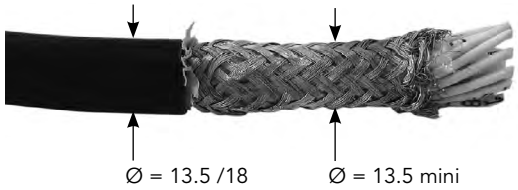
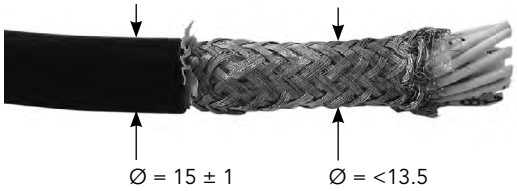
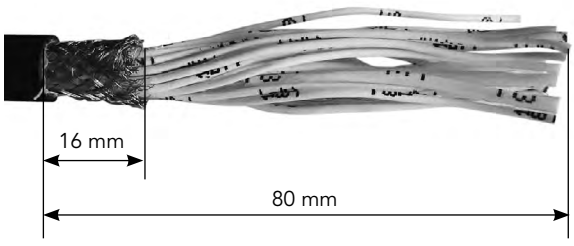
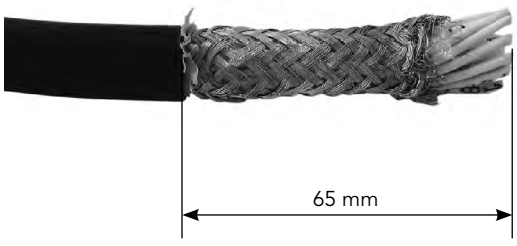
C - Remove the rest of the cap by hand

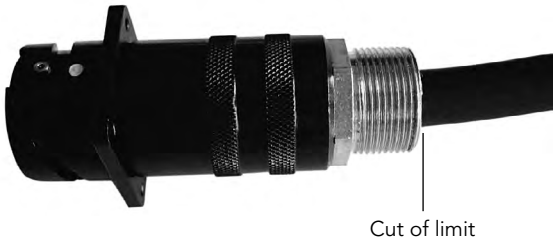
D - Finally

How to harness a shielded cable?

Method A: braid fixed with TS type backshell



Case n°1: cable Ø = 13.5 to18 mm brand Ø > 13.5 mm	Case n°2: cable Ø = 15±1 mm brand Ø ⩽ 13.5 mm
	
A - Strip cable, adjust braid length.	A - Turn the shielding on the sheath.
	
	
B - Strip wires, crimp and mount contacts.	B - Strip wires, crimp and mount contacts.

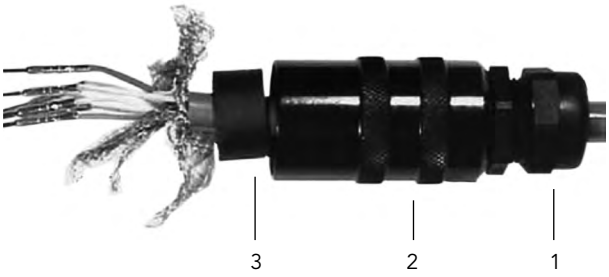
Case n°1: cable Ø = 13.5 to18 mm brand Ø > 13.5 mm	Case n°2: cable Ø = 15±1 mm brand Ø ⩽ 13.5 mm
C - Thread accessories: • Adaptor / plug body or receptacle: tightening torque = 10 Nm	C - Thread accessories: • Adaptor / plug body or receptacle: tightening torque = 10 Nm
	
• Backshell body / adaptor: tightening torque = 10 Nm	• Backshell body / adaptor: tightening torque = 10 Nm
	
D - slip the clamping of braid inside the backshell' body	D - slip the clamping of braid inside the backshell' body
	
	• Cut excess of braid
	
E - Thread the backshell nut /backshell body • Tightening torque = 7 Nm	E - Thread the backshell nut /backshell body • Tightening torque = 7 Nm
	
Warning: during the clamping of part, always support the cable to avoid rotation.	Warning: during the clamping of part, always support the cable to avoid rotation.

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).

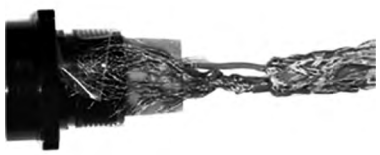


B - Pass the contacts through the grommet (4)

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



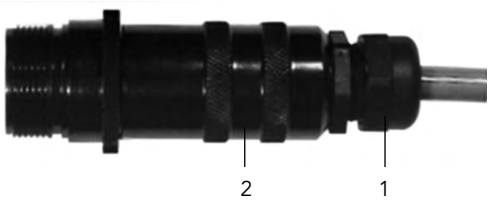
F - Put the external braid on the grommet

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

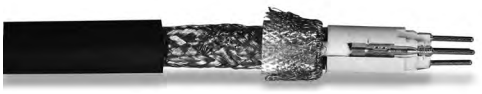
M22520/1-01 or AF8

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.

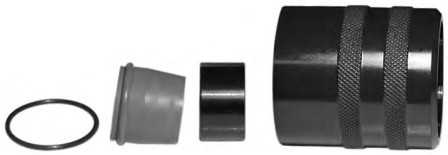
Mount insulator in external contact cell, crimp the contact.
Cut excess of braid.

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)

PS backshell with braid fixation accessory

Grommet in option

Similar product range

SMS Series

Quick mating plastic solution.

Fire smoke:
. Flame retardant version : HL3/R22 - HL3/R23 according to EN 45545-2.
. PCB board version : HL2/R22 - HL2/R23 according to EN 45545-2.
. UL94 V-0.

Easy and quick mating:
. Push to mate.
. Press and release to unmate.

Cost saving solution:
. Trim trio contacts : machined or stamp contacts for a secure solution with optimized costs.
. Full plastic solution.
. Integrated strain relief.

See «SMS Series» catalog on
www.souriau.com

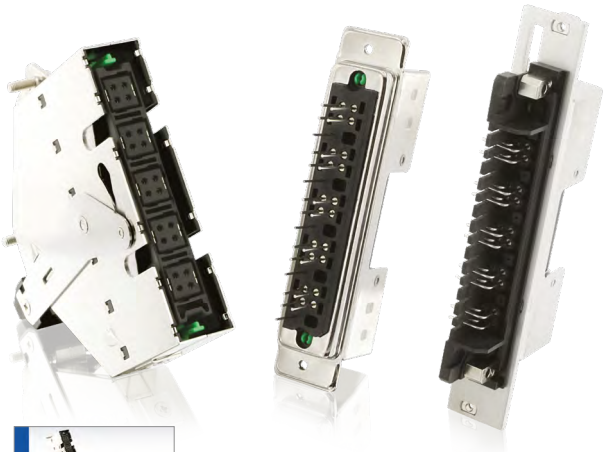
MSG 3U Series

Easy & Secure Connectors for rack systems. Front I/O solutions.

Fire smoke:
. HL3/R22 - HL3/R23 according to EN 45545-2.
. NFPA 130 compliant.

Easy and secure solution:
. Quick lever with safe locking system.
. 360° metal housing for an improved shielding.
. High density solution with 4 layouts: 29 pos / 41 pos / 51 pos / 5 quadrax.

Cost saving solution:
. Trim trio contacts : machined or stamp contacts for a secure solution with optimized costs.
. Full plastic solution.
. Integrated strain relief.



See «MSG 3U Series» catalog on
www.souriau.com

Similar product range

838 Series

Intercoach solution with screw coupling system.

Fire smoke:
. HL2/R22 - HL3/R23 according to EN 45545-2.

Ruggedized solution:
. High vibration Cat. 2 (Cat 3 for size E) according EN 61373.
. IP 67.
. -40°C to 100°C.
. Current up to 180 A.

High speed data transmission:
. Signal up to 61 contacts.
. Quadrax.
. Fiber optic.

See «838 Series»
www.souriau.com

8525 Series

Metal high density solution with bayonet coupling system.

Fire smoke:
. HL3/R22 - HL3/R23 according to EN 45545-2.

High Performances:
. High density up to 61 contacts #20.
. High sealing performances: possibility of hermetic solutions.
. Improved shielding and signal intergrity.
. Up to 200°C.

See «8525 Series»
www.souriau.com

Similar product range

UTS Series

Plastic waterproof solution with bayonet coupling system.

Fire smoke:
. HL2/R22 - HL2/R23 according to EN 45545-2.
. UL94 V-0.

Indoor and outdoor use:
. Waterproof: IP68/69K Dynamic Mated & Unmated.
. UV resistant: F1 rated per UL 746C. No mechanical detrioration after 5 years of exposure in natural environment.

High speed data transmision:
. Signal (Trim Trio contacts).
. LC and MPO contacts.

See «UTS Series» catalog on
www.souriau.com

UTO Series

Metal waterproof solution with bayonet coupling system.

Fire smoke:
. HL2/R22 - HL2/R23 according to EN 45545-2.
. UL94 V-0.

Indoor and outdoor use:
. High vibration Cat. 2 (Cat 3 for size E) according EN 61373.
. Waterproof: IP68/69K Dynamic Mated & Unmated.
. EMI shielded: 65 dB at 100 Mhz.
. 500 mating cycles.

Cost saving:
. Trim trio contacts : Machined or stamp contacts for a secure solution with optimized costs.
. Mixed Power & Signal contacts layouts.

See «UTO Series» catalog on
www.souriau.com

Similar product range

D38999 Series

Metal high density solution with screw system.

Fire smoke:
. HL3/R22 - HL3/R23 according to EN 45545-2.

High Performances:
. High sealing performances: possibility of hermetic solutions.
. Improved shielding and signal intergrity.
. Up to 200°C.

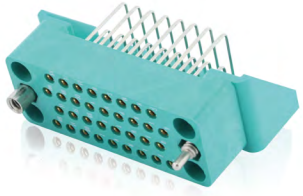
High speed data transmission:
. Signal up to 128 contacts #22.
. Quadrax.
. Fiber optic.

See «D 38999 Series» catalog on
www.souriau.com

MSM & MSO Series

High Performance Boardmount Connector.

High Performances:
. From 9 to 75 positions.
. -55°C to +125°C.
. Up to 500 mating cycles.
. UL 94V0.
. Trim Trio contacts.



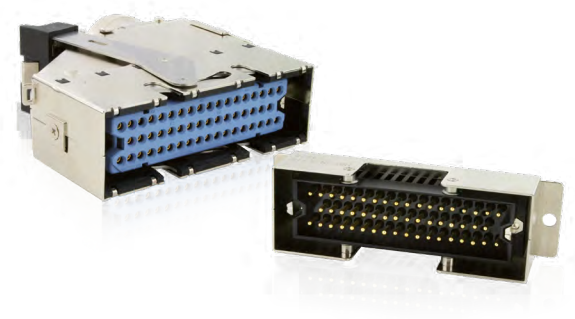
See «MSM & MSO Series»
www.souriau.com

Similar product range

MB Series

High Density Rectangular connector.

Easy and secure solution:
. Quick lever with safe locking system.
. 360° metal housing for an improved shielding.
. High density solution up to 52 contacts.
. -55°C to +125°C.
. Trim Trio contacts.



See «MB Series»
www.souriau.com

JBX Series

Metal Push-Pull connector.

Easy to use:
. Mate and unmate the connector with only two finger.

High performances:
. From 2 to 30 contacts in small diameter connector (from 7 to 16 mm diameter).
. Up to 5,000 mating cycles.
. 360° shielding.

See «JBX Series» catalog on
www.souriau.com

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