



UNITEx™ -F VX

VORTEX® BARRIER GLAND WITH VARIABLE DELUGE SEAL™
for Unfilled Multi Armoured Tray and Marine Shipboard Cables

Features and Benefits

- Gland for use in ordinary and hazardous locations.
- For unfilled hygroscopic multicore cables. Refer to IEC 60079-14; 9.3.2 and 10.6.2a, IEC 61892-7, 10.6 and 10.7.
- Freely rotating captive cone and inspectable cone ring provides an armour clamp and earth bond on steel wire armour, aluminium wire armour, tape armour, braid wire armour cables and NEK 606 marines cable susceptible to cold flow.
- With a patented Variable Deluge Seal™ as standard.
- Instantly mixed and injected resin forms a 100% barrier seal around the individual cores of the cable.
- Prevents explosive gases and/or liquids transmitting down the cable.
- Precision manufactured from high-quality brass (Marine Grade Electroless Nickel Plated™) available in aluminium and stainless steel 316/316L on request. Complete with thread sealing gasket.



Technical Data

Type:	UNITEx™ -F VX (VORTEX®)
Gland Material:	Brass (Marine Grade Electroless Nickel Plated™) Aluminium, Stainless Steel 316/316L
Seal Material:	Standard Thermoset Elastomer Quick setting Injection Resin Barrier Seal
Sealing Gasket Material:	HDPE, Nylon 66
Cable Type:	Steel or Aluminium Wire, Braided and Tape Armour Cables, including cables at risk of Coldflow
Armour Clamping:	Rotating Captive Cone and Inspectable Cone Ring
Sealing Area:	Outer Sheath, Variable Deluge Seal™ and VORTEX® Resin around Cable Conductors
Optional Accessories:	Adaptor, Reducer, Earth Tag, Locknut, Serrated Washer and Shroud
Note:	The installer should ensure that the materials are suitable for the installation environment.

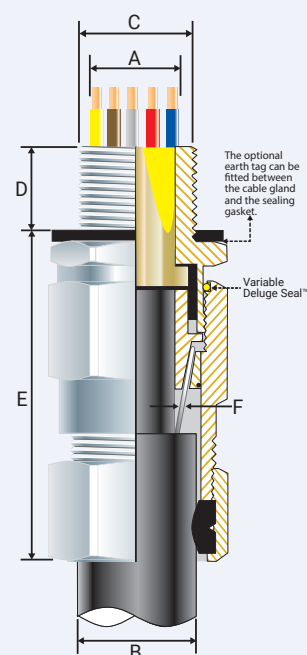
Temperature Range

 When fitted with sealing gaskets the temperature range for the gland will be:-

All types: -50°C and +95°C

Standards and Certifications

Equipment Protection Levels:	NEC/CEC: CI I Div 1, 2 Gr ABCD; CI II Div 1 Gr EFG; CI II Div 2 Gr FG; CI III Div 1, 2; Ex db IIC Gb / Ex eb IIC Gb / Ex ta IIIC Da / Ex nR IIC Gc; CI I Zn 1 AEx db IIC Gb / AEx eb IIC Gb / Zone 20 AEx ta IIIC Da / CI I Zn 2 AEx nR IIC Gc. IECEX: Ex db IIC Gb / Ex eb IIC Gb / Ex ta IIIC Da / Ex nR IIC Gc	
Conformance:	Standard:	Certificate:
CEC	CSA C22.2 No. 18.3-12, 174:2018 & 213:2017	E115595
NEC	CSA C22.2 No. 60079 - 0, 1, 7, 15, 31	UL514B, UL121201, UL2225, UL60079-0,1,7,15,31
IECEX	IEC 60079 - 0, 1, 7, 15, 31	IECEX TSA 22.0011X
IP66/68 850m - Parallel	IEC 60529	CML 15Y728
IP68 - Tapered and approved grease	IEC 60529	IECEX TSA 22.0011X
Nema Type 4X	NEMA 250	E115595
Deluge Protection	DTS-01	CML 14CA370-2
Corrosion Protection	ASTM B117-11, BS EN ISO 3231	EXOVA N968667
Marine ABS	IEC/EN 60079 - 0, 1, 7, 15, 31	ABS 20-SG1952706-1-PDA
DNV	IEC/EN 60079 - 0, 1, 7, 15, 31	TAE0000010
EMC Compatible	EN 55011, + A1, EN 55022	SGS EMC305079/1



Installation Requirements / Specific Conditions of Use

- The cable glands, sizes M20, ¾" NPT and smaller, shall only be used on fixed installations where the cable is clamped, or stress applied to the cable in the gland is prevented. (NEC/CEC only)
- The cable glands, when supplied with suffix '-FC', shall only be used with an approved UL 514B conduit fitting. (NEC/CEC only)
- The UNITEx-F VX cable glands are not suitable for use with Acetic Acid or Methanol. (NEC/CEC only)
- The cable glands shall only be used if the temperature, at the point of entry, is as specified above.

NPT Entry Thread

Gland Size Ref	Product Code	NPT Entry Thread		Alternative Thread Product Code	NPT Entry Thread		Cable Detail			Max Length 'E'	Max Dia. Over Cores	Max No. of Cores	Armour Dia		Hex Detail	
		'C'	Min 'D'		'C'	Min 'D'	Max 'A'	Min 'B'	Max 'B'				Min 'F'	Max 'F'	Max 'Flats'	Max 'Crns'
00-20ss	058700VX-012NPT-MNA	½	0.782	058700VX-034NPT-MNA	¾	0.794	0.453	0.315	0.531	2.322	0.429	0.236	0.008	0.035	0.945	1.063
0-20s	0587-0VX-012NPT-MNA	½	0.782	0587-0VX-034NPT-MNA	¾	0.794	0.453	0.453	0.630	2.361	0.429	0.236	0.008	0.049	0.945	1.063
1-20	058701VX-012NPT-MNA	½	0.782	058701VX-034NPT-MNA	¾	0.794	0.551	0.571	0.807	2.795	0.492	0.512	0.008	0.049	1.063	1.181
2s-25s	058722VX-034NPT-MNA	¾	0.794	058722VX-001NPT-MNA	1	0.985	0.748	0.630	0.965	3.266	0.610	0.787	0.008	0.063	1.377	1.535
2-25	058702VX-034NPT-MNA	¾	0.794	058702VX-001NPT-MNA	1	0.985	0.748	0.807	1.043	3.268	0.610	0.787	0.008	0.063	1.378	1.535
3s-32s	058733VX-001NPT-MNA	1	0.985	058733VX-114NPT-MNA	1½	1.009	0.996	0.906	1.200	3.778	0.854	1.574	0.008	0.079	1.653	1.850
3-32	058703VX-001NPT-MNA	1	0.985	058703VX-114NPT-MNA	1½	1.009	0.996	1.039	1.319	3.780	0.854	1.575	0.008	0.079	1.654	1.850
4s-40s	058744VX-114NPT-MNA	1½	1.009	058744VX-112NPT-MNA	1½	1.025	1.291	1.181	1.555	3.778	1.181	2.361	0.012	0.079	2.046	2.322
4-40	058704VX-114NPT-MNA	1½	1.009	058704VX-112NPT-MNA	1½	1.025	1.291	1.299	1.673	3.976	1.181	2.362	0.012	0.079	2.047	2.323
5s-50s	058755VX-112NPT-MNA	1½	1.025	058755VX-002NPT-MNA	2	1.058	1.692	1.339	1.870	4.486	1.429	3.148	0.016	0.098	2.558	2.873
5-50	058705VX-112NPT-MNA	1½	1.025	058705VX-002NPT-MNA	2	1.058	1.693	1.673	2.063	4.488	1.429	3.150	0.016	0.098	2.559	2.874
6s-63s	058766VX-002NPT-MNA	2	1.058	058766VX-212NPT-MNA	2½	1.571	2.145	1.791	2.381	4.841	1.885	3.935	0.016	0.098	3.148	3.542
6-63	058706VX-002NPT-MNA	2	1.058	058706VX-212NPT-MNA	2½	1.571	2.146	2.067	2.579	4.843	1.886	3.937	0.016	0.098	3.150	3.543
7s-75s	058777VX-212NPT-MNA	2½	1.571	058777VX-003NPT-MNA	3	1.634	2.597	2.244	2.854	5.510	2.290	4.723	0.016	0.124	3.778	4.250
7-75	058707VX-212NPT-MNA	2½	1.571	058707VX-003NPT-MNA	3	1.634	2.598	2.579	3.070	5.512	2.291	4.724	0.016	0.124	3.780	4.252
8-80	058708VX-003NPT-MNA	3	1.634	-	-	-	2.676	2.560	3.051	5.549	2.420	5.510	0.016	0.124	3.778	4.250
9s-90s	058799VX-003NPT-MNA	3	1.634	058799VX-312NPT-MNA	3½	1.684	3.071	2.874	3.406	6.142	2.776	6.299	0.016	0.138	4.370	4.921
9-90	058709VX-003NPT-MNA	3	1.634	058709VX-312NPT-MNA	3½	1.684	3.070	3.227	3.581	6.139	2.774	6.297	0.016	0.138	4.368	4.919
10-10	058710VX-312NPT-MNA	3½	1.684	058710VX-004NPT-MNA	4	1.734	3.524	3.542	3.935	6.850	3.110	7.087	0.016	0.138	4.921	5.551

All dimensions are in inches. NPT threads should be tightened 'wrench tight'.

CCG reserves the right to make alterations to the technical data, dimensions, designs and products available without notice. The illustrations cannot be considered binding. Please contact CCG for assistance. UNITEx-FVX-OMG020924NA

Metric Entry Thread

Gland Size Ref	Product Code	Metric Entry Thread		Cable Detail			Max Length 'E'	Max Dia. Over Cores	Max No. of Cores	Armour Dia		Hex Detail		Tightening Torque Nm/lb ft
		'C'	Min 'D'	Max 'A'	Min 'B'	Max 'B'				Min 'F'	Max 'F'	Max 'Flats'	Max 'Crns'	
00-20ss	058700VX-MNA	M20x1.5	0.591	0.453	0.315	0.531	2.323	0.429	0.236	0.008	0.035	0.945	1.063	21/15
0-20s	05870VX-MNA	M20x1.5	0.591	0.453	0.453	0.630	2.362	0.429	0.236	0.008	0.049	0.945	1.063	21/15
1-20	058701VX-MNA	M20x1.5	0.591	0.551	0.571	0.807	2.795	0.492	0.512	0.008	0.049	1.063	1.181	21/15
2s-25s	058722VX-MNA	M25x1.5	0.591	0.748	0.630	0.965	3.268	0.610	0.787	0.008	0.063	1.378	1.535	30/22
2-25	058702VX-MNA	M25x1.5	0.591	0.748	0.807	1.043	3.268	0.610	0.787	0.008	0.063	1.378	1.535	30/22
3s-32s	058733VX-MNA	M32x1.5	0.591	0.996	0.906	1.200	3.780	0.854	1.575	0.008	0.079	1.654	1.850	42/31
3-32	058703VX-MNA	M32x1.5	0.591	0.996	1.039	1.319	3.780	0.854	1.575	0.008	0.079	1.654	1.850	42/31
4s-40s	058744VX-MNA	M40x1.5	0.591	1.291	1.181	1.555	3.780	1.181	2.362	0.012	0.079	2.047	2.323	52/38
4-40	058704VX-MNA	M40x1.5	0.591	1.291	1.299	1.673	3.976	1.181	2.362	0.012	0.079	2.047	2.323	52/38
5s-50s	058755VX-MNA	M50x1.5	0.591	1.693	1.339	1.870	4.488	1.429	3.150	0.016	0.098	2.559	2.874	57/42
5-50	058705VX-MNA	M50x1.5	0.591	1.693	1.673	2.063	4.488	1.429	3.150	0.016	0.098	2.559	2.874	57/42
6s-63s	058766VX-MNA	M63x1.5	0.591	2.146	1.791	2.381	4.843	1.886	3.937	0.016	0.098	3.150	3.543	66/49
6-63	058706VX-MNA	M63x1.5	0.591	2.146	2.067	2.579	4.843	1.886	3.937	0.016	0.098	3.150	3.543	66/49
7s-75s	058777VX-MNA	M75x1.5	0.591	2.598	2.244	2.854	5.512	2.291	4.724	0.016	0.124	3.780	4.252	72/53
7-75	058707VX-MNA	M75x1.5	0.591	2.598	2.579	3.070	5.512	2.291	4.724	0.016	0.124	3.780	4.252	72/53
8-80	058708VX-MNA	M80x2.0	0.787	2.677	2.560	3.051	5.551	2.421	5.512	0.016	0.124	3.780	4.252	80/59
9s-90s	058799VX-MNA	M90x2.0	0.787	3.071	2.874	3.406	6.142	2.776	6.299	0.016	0.138	4.370	4.921	89/66
9-90	058709VX-MNA	M90x2.0	0.787	3.071	3.227	3.581	6.142	2.776	6.299	0.016	0.138	4.370	4.921	89/66
10-100	058710VX-MNA	M100x2.0	0.787	3.524	3.542	3.935	6.850	3.110	7.087	0.016	0.138	4.921	5.551	98/72

All dimensions are in inches.

FITTING INSTRUCTION

ENCLOSURES AND EQUIPMENT TO WHICH CABLE GLANDS ARE FITTED:-

- Must be made from materials which are compatible with the cable gland materials.
- Have a sealing area around the cable gland entry point with a surface roughness < Ra 6.3 µm.
- Have entries that are perpendicular to the enclosure face in the area where the cable gland will seal to within 2.5°.
- Are sealed using the supplied sealing gasket (parallel threads) or by fully tightening into a threaded entry (tapered threads). Note that for tapered threads the IP rating can be improved to IP68 with the use of a suitable thread sealant.

MUST HAVE THREADED ENTRIES

- The same thread size as the cable gland. (Thread adapters should be used to correct

any mismatch).

- With a thread tolerance of metric class '6H' or equivalent.
 - Where the thread length is a minimum of 10mm for Ex d applications or 3mm for all other applications
- OR CLEARANCE HOLES** (not Ex d)
- Where the hole size is the thread nominal size with a tolerance of +0.1 to +0.7mm. (e.g. the clearance hole for an M20 thread will have a diameter between 20.1mm and 20.7mm).
 - Through material that is between 1mm and 12mm thick. (Thicker materials can be accommodated using glands with extended entry threads.)

- For accurate sizing, use a CCG Dimension Tape ① on the inner and outer cable sheath.

- Separate the inner ② from the body ③. Cut back the cable outer sheath to expose the armour to a length as per the table below. Strip back the inner bedding to expose the inner cable cores using the cone ⑤ as a gauge.

Gland Size	Armour Length	Gland Size	Armour Length	Gland Size	Armour Length	Gland Size	Armour Length
00-16ss	20.0	3s-32s	30.0	6s-63s	45.0	9-90	50.0
00-20ss	20.0	3-32	30.0	6-63	45.0	10-100	60.0
0-20s	20.0	4s-40s	30.0	7s-75s	50.0	11-115	60.0
1-20	25.0	4-40	30.0	7-75	50.0	12-120	60.0
2s-25s	25.0	5s-50s	35.0	8-80	50.0	13-130	60.0
2-25	25.0	5-50	35.0	9s-90s	50.0		

If the cable cores have screens these should be cut away or twisted together into a single core. This single core should be insulated with heat shrink tubing or coated with insulating varnish. Any drain wires should also be insulated with heat shrink tubing or coated with insulating varnish.

- Using a clean cloth, clean the cable cores.

If the gland has NPT entry threads fitted to a threaded entry then IP68 (2m) can be achieved by applying one of the following tested and approved grease types to the thread:- Renolit Lubrene CA700 or LX220 EP2, Renolit LC-WP2 or Moly LX2, or Dow Corning 4 Electrical Compound.

- Using the insulation tape, bundle the cores together at the end.

- To maintain IP66/68, ensure the thread gasket ① is in place. Screw the inner ② into the apparatus and tighten to the installation torque using a CCG Spanner ⑦. If the apparatus is untapped use a locknut. Pass the bundled cable cores through the outer nut ④ and the body ③. Pass the bundled cables cores through the inner ② and inner diaphragm seal and splay the armour wires over the cone ⑤.

If the gland has NPT entry threads fitted to a threaded entry, then IP68 (2m) can be achieved by applying one of the following tested and approved grease types to the thread:- Renolit Lubrene CA700 or LX220 EP2, Renolit LC-WP2 or Moly LX2, or Dow Corning 4 Electrical Compound.

- Tighten the body ③ onto the inner ② until hand tight, then tighten with a CCG Spanner ⑦ with ¾ turn to lock the armour between the cone ⑤ and the cone ring ⑥.

- Unscrew the body ③. Check that the armour has locked between the cone ⑥ (is sacrificial). Withdraw the barrier pot sub-assembly ⑧ and bundled cables. Remove the insulation tape.

Only Resin supplied by CCG may be used in the glands.

- Remove the cap ⑪ from resin applicator and attach the mixing nozzle ⑫ (use extension nozzle for small multicore cables). Whilst holding the barrier pot sub-assembly ⑧ upright and holding the diaphragm seal firmly against the cable sheath inject the resin into the resin chamber*. Make sure the resin fills the inspectible resin seal pot ⑩ all the way to the top of the protective resin pot ⑩ and wipe any excess resin away.

Wait for the resin to change from a liquid to a solid state, this should take:

- 15 minutes at 10°C
- 7 minutes at 20°C
- 6 minutes at 30°C
- 5 minutes at 40°C

The cable gland can now be handled safely, and the resin will continue to cure until it reaches its full hardness.

For installations in less than 5°C Ambient, warm the Resin Tube in warm water at ± 50°C. If there is still resin left in the tube, discard the mixing nozzle ⑫ and replace the cap ⑪ for use with the next gland.

* The installation is acceptable if the cable sheath is pushed 2mm or 3mm into the resin seal.

- Re-insert the barrier pot sub-assembly ⑧ back into the inner ②.

- Tighten the body ③ onto the inner ② to the required torque using a CCG Spanner ⑦. The Variable Deluge Seal™ will engage automatically as the body ③ is tightened onto the inner ②. Tighten the outer nut ④ to produce a moisture proof seal by turning until the seal makes contact with the outer sheath of cable and then make one full turn.