



A2F-F VX

VORTEX® BARRIER COMPRESSION GLAND for Unarmoured Tray Cable

Features and Benefits

- Cable gland for use in Ordinary and Hazardous Locations.
- Instantly mixed and injected Resin forms a 100% barrier seal around the individual cores of the cable.
- Prevents explosive gases and/or liquids from transmitting down the cable.
- Precision manufactured from high-quality brass (Marine Grade Electroless Nickel Plated™), available in aluminium or stainless steel 316/316L on request.
- Supplied with a thread-sealing gasket.

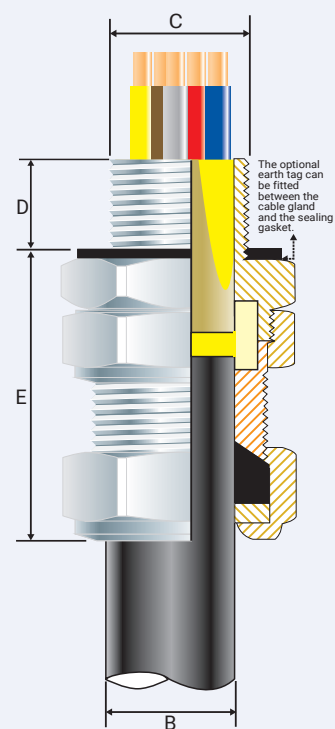


Technical Data

Type:	A2F-F VX (VORTEX®)
Gland Material:	Brass (Marine Grade Electroless Nickel Plated™), Aluminium, Stainless Steel 316/316L
Seal Material:	Standard Thermoset Elastomer, Quick Setting Injection Barrier Resin
Sealing Gasket Material:	HDPE, Nylon 66 or PTFE
Cable Type:	Unarmoured Tray Cable
Sealing Area:	Outer Sheath 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.

Standards and Certifications

Equipment Protection Levels:	NEC / CEC: Class I Div. 1, 2 Gr ABCD Class II Div. 1 Gr EFG / Div. 2 Gr FG Class III Div. 1,2 Class I Zone 1 AEx db IIC Gb / Ex db IIC Gb Class I Zone 1 AEx eb IIC Gb / Ex eb IIC Gb Zone 20 AEx ta IIIC Da / Ex ta IIIC Da Class I Zone 2 AEx nR IIC Gc / Ex nR IIC Gc IP66/67/68, Type 4X IECEx: Ex db IIC Gb, Ex eb IIC Gb, Ex ta IIIC Da, Ex nR IIC Gc	
Continuous Operating Temp:	-50°C to +95°C	
Conformance:	Standard:	Certificate:
CEC	CSA C22.2 No. 18.3-12, 174:2018 & 213:2017 CSA C22.2 No. 60079-0, 1, 7, 15, 31	E115595
NEC	UL514B, UL121201, UL2225, UL60079-0,1,7,15,31	
IECEx	IEC 60079 Part 0, 1, 7, 15, 31	IECEx TSA 23.0026
IP66/68 100m - Parallel	IEC 60529	CML 15Y728
IP55/66 - Tapered	IEC 60529	
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 Part 0, 1, 7, 15, 31	25-0164964-PDA



PATENTED



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 cable glands shall only be used if the temperature, at the point of entry, is as specified above.
- The A2F-F-VX cable glands are not suitable for use with Acetic Acid or Methanol. (NEC/CEC only)

NPT Entry Thread

Gland Size Ref	Product Code	NPT Entry Thread		Alternative Thread Product Code	NPT Entry Thread		Cable Detail		Max Length 'E'	Maximum Dia. Over Cores	Maximum No. of Cores	Hexagonal Detail	
		'C'	Min 'D'		'C'	Min 'D'	Min 'B'	Max 'B'				Max 'Flats'	Max 'Crns'
00-20ss	046000-012NPT-MNA	½	0.782	046000-034NPT-MNA	¾	0.794	0.118	0.335	0.984	0.421	10	0.945	1.063
0-20s	0460-0-012NPT-MNA	½	0.782	0460-0-034NPT-MNA	¾	0.794	0.276	0.472	0.984	0.429	10	0.945	1.063
1-20	046001-012NPT-MNA	½	0.782	046001-034NPT-MNA	¾	0.794	0.433	0.591	1.181	0.492	25	1.063	1.196
2s-25s	046022-034NPT-MNA	¾	0.794	046022-001NPT-MNA	1	0.985	0.453	0.689	1.181	0.650	48	1.378	1.550
2-25	046002-034NPT-MNA	¾	0.794	046002-001NPT-MNA	1	0.985	0.591	0.787	1.181	0.650	48	1.378	1.550
3s-32s	046033-001NPT-MNA	1	0.985	046033-114NPT-MNA	1¼	1.0085	0.630	0.866	1.181	0.945	76	1.654	1.860
3-32	046003-001NPT-MNA	1	0.985	046003-114NPT-MNA	1¼	1.0085	0.787	1.043	1.181	0.945	76	1.654	1.860
4s-40s	046044-114NPT-MNA	1¼	1.0085	046044-112NPT-MNA	1½	1.025	0.866	1.240	1.496	1.260	96	2.047	2.303
4-40	046004-114NPT-MNA	1¼	1.0085	046004-112NPT-MNA	1½	1.025	1.024	1.339	1.496	1.260	96	2.047	2.303
5s-50s	046055-112NPT-MNA	1½	1.025	046055-002NPT-MNA	2	1.058	1.142	1.496	1.811	1.429	96	2.559	2.879
5-50	046005-112NPT-MNA	1½	1.025	046005-002NPT-MNA	2	1.058	1.339	1.752	1.811	1.429	96	2.559	2.879
6s-63s	046066-002NPT-MNA	2	1.058	046066-212NPT-MNA	2½	1.571	1.496	1.969	2.047	1.886	100	3.150	3.543
6-63	046006-002NPT-MNA	2	1.058	046006-212NPT-MNA	2½	1.571	1.752	2.224	2.047	1.886	100	3.150	3.543
7s-75s	046077-212NPT-MNA	2½	1.571	046077-003NPT-MNA	3	1.634	1.969	2.441	2.126	2.362	120	3.780	4.252
7-75	046007-212NPT-MNA	2½	1.571	046007-003NPT-MNA	3	1.634	2.205	2.657	2.126	2.362	120	3.780	4.252
8-80	046008-003NPT-MNA	3	1.634	-	-	-	2.323	2.717	2.677	2.421	140	3.780	4.252
9s-90s	046099-003NPT-MNA	3	1.634	046099-312NPT-MNA	3½	1.684	2.362	2.953	2.756	2.776	160	4.370	4.916
9-90	046009-312NPT-MNA	3	1.634	046009-312NPT-MNA	3½	1.684	2.874	3.209	2.756	2.776	160	4.370	4.916
10-100	046010-312NPT-MNA	3½	1.684	046010-004NPT-MNA	4	1.734	3.189	3.583	2.756	3.110	180	4.921	5.536

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.

A2FF VX BG010725NA

FITTING INSTRUCTIONS

Metric Illustration

A2F-F VX (VORTEX®) BARRIER COMPRESSION GLAND

Metric Entry Thread

Gland Size Ref	Product Code	Metric Entry Thread		Cable Detail		Max Length 'E'	Max Dia. Over Cores	Max No. of Cores	Hexagonal Detail		Tightening Torque Nm/lb ft
		'C'	Min 'D'	Min	Max 'B'				Max 'Flats'	Max 'Crns'	
00-16ss	046000-16-MNA	M16x1.5	0.591	0.118	0.335	0.984	0.315	6	0.945	1.063	33/24
00-20ss	046000-MNA	M20x1.5	0.591	0.118	0.335	0.984	0.421	10	0.945	1.063	33/24
0-20s	0460-0-MNA	M20x1.5	0.591	0.276	0.472	0.984	0.429	10	1.063	1.196	33/24
1-20	046001-MNA	M20x1.5	0.591	0.433	0.591	1.181	0.492	25	1.378	1.550	33/24
2s-25s	046022-MNA	M25x1.5	0.591	0.453	0.689	1.181	0.650	48	1.378	1.550	48/35
2-25	046002-MNA	M25x1.5	0.591	0.591	0.787	1.181	0.650	48	1.654	1.860	48/35
3s-32s	046033-MNA	M32x1.5	0.591	0.630	0.866	1.181	0.945	76	1.654	1.860	55/41
3-32	046003-MNA	M32x1.5	0.591	0.787	1.043	1.181	0.945	76	2.047	2.303	55/41
4s-40s	046044-MNA	M40x1.5	0.591	0.866	1.240	1.496	1.260	96	2.047	2.303	65/48
4-40	046004-MNA	M40x1.5	0.591	1.024	1.339	1.496	1.260	96	2.559	2.879	65/48
5s-50s	046055-MNA	M50x1.5	0.591	1.142	1.496	1.811	1.429	96	2.559	2.879	83/61
5-50	046005-MNA	M50x1.5	0.591	1.339	1.752	1.811	1.429	96	3.150	3.543	83/61
6s-63s	046066-MNA	M63x1.5	0.591	1.496	1.969	2.047	1.886	100	3.150	3.543	98/72
6-63	046006-MNA	M63x1.5	0.591	1.752	2.224	2.047	1.886	100	3.780	4.252	98/72
7s-75s	046077-MNA	M75x1.5	0.591	1.969	2.441	2.126	2.362	120	3.780	4.252	116/85
7-75	046007-MNA	M75x1.5	0.591	2.205	2.657	2.126	2.362	120	3.780	4.252	116/85
8-80	046008-MNA	M80x2.0	0.787	2.323	2.717	2.677	2.421	140	4.370	4.916	120/89
9s-90s	046099-MNA	M90x2.0	0.787	2.362	2.953	2.756	2.776	160	4.370	4.916	120/89
9-90	046009-MNA	M90x2.0	0.787	2.874	3.209	2.756	2.776	160	4.921	5.536	120/89
10-100	046010-MNA	M100x2.0	0.787	3.189	3.583	2.756	3.110	180	4.921	5.536	120/89

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.)

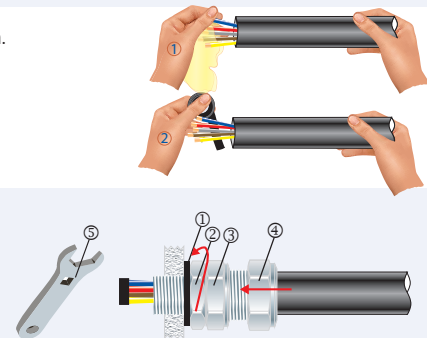
- Strip back the outer sheath to expose the inner cable cores. Using a clean cloth, clean the cable cores insulation.

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.

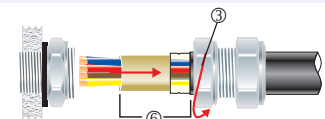
- Using insulation tape, bundle the cores together at the end.

- To maintain IP66/68, ensure that the gasket ① is in place. Screw the gland unit into the apparatus and tighten the inner ② using a CCG spanner ⑤. Slacken, but do not remove, the outer seal nut ④. Pass the cable end through the outer seal nut ④ and push the bundled cable cores through the gland, taking care as it passes through the protective resin pot ③. Once the cable is correctly positioned, tighten the outer seal nut ④ to the recommended installation torque.

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.



- Unscrew the coupling nut ③. Withdraw the cable and barrier pot sub-assembly ⑥. Remove the insulation tape.



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

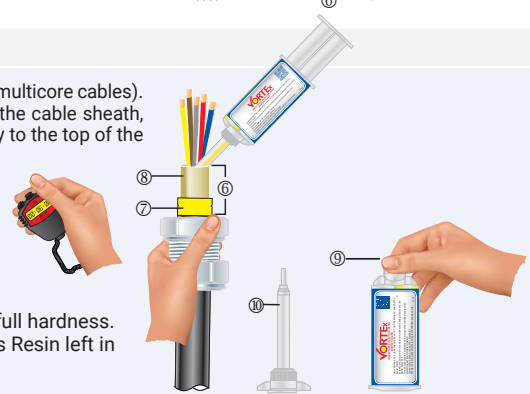
- Remove the cap ⑧ from resin applicator and attach the mixing nozzle ⑩ (use extension nozzle for small multicore cables). Whilst holding the barrier pot sub-assembly ⑥ upright and holding the diaphragm seal firmly against the cable sheath, inject the resin into the resin chamber*. Ensure the resin fills the inspectible resin seal pot ⑨ all the way to the top of the protective resin pot ⑨ and wipe any excess resin away.

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

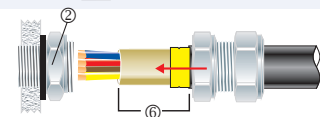
- 15 minutes at 10°C
- 7 minutes at 20°C
- 6 minutes at 30°C
- 5 minutes at 40°C

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 Resin left in the tube, discard the mixing nozzle ⑩ and replace the cap ⑧ 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 ⑥ back into the inner ②.



- Tighten the coupling nut ③ to complete the assembly.

