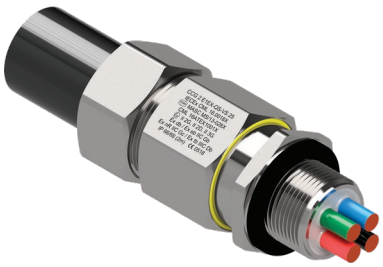
CCG CABLE TERMINATIONS

Quick Stop-Ex Injection Resin Barrier Gland

# E1EX-VS QuickStop-Ex®

## Ex db IIC, Ex eb IIC, Ex tb IIIC, Ex nR IIC BARRIER GLAND

## WITH VARIABLE DELUGE SEAL™ for Unfilled Steel Wire Armour, Copper Tape or Lead Sheathed Cable



### Features and Benefits

- For indoors, outdoors, Group II, III, Zone 1, 2, 21 and 22 hazardous areas.
- 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.
- Two part handling, no loose parts. Freely rotating captive cone and inspectible cone ring provides an armour clamp and earth bond on steel wire armour and aluminium armour.
- With a patented Variable Deluge Seal™ as standard. Provides 360° earthing to copper tape.
- 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 cable.
- Precision manufactured from high-quality brass (Marine Grade Electroless Nickel Plated™) available in stainless steel 316/316L on request.
- Complete with thread sealing gasket.

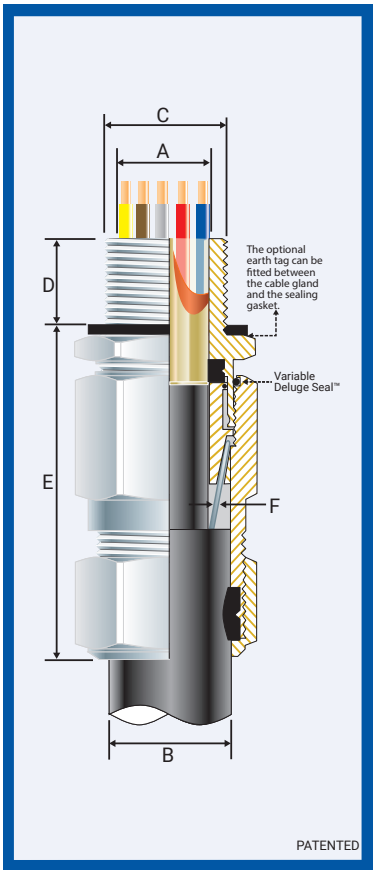
100m IP68 | Ex 30 BAR SEAL | EMC

### Technical Data

| | |
|---|---|
| Type: | E1EX-VS QuickStopEx® |
| Gland Material: | Brass (Marine Grade Electroless Nickel Plated™), Stainless Steel 316/316L |
| Seal Material: | Thermoset Elastomer Standard or Extreme Temperature Seals, Quick setting Barrier Resin |
| Seal Gasket Material: | HDPE, Nylon 66 or PTFE |
| Cable Type: | Steel Wire Armour, Copper Tape used for VSD (Variable Speed Drives) or Lead Sheathed |
| Armour Clamping: | Rotating Captive Cone and Inspectible Cone Ring |
| Sealing Area: | Outer Sheath, Variable Deluge Seal™ and QuickStop® 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: | IECEx: Ex db IIC Gb, Ex eb IIC Gb, Ex nR IIC Gc, Ex tb IIIC D<br>ATEX: Ⓔx II 2GD, II 3G, Ex db IIC Gb, Ex eb IIC Gb, Ex nR IIC Gc | |
| Continuous Operating Temp: | Standard Seals -50°C to +95°C/100°C (HDPE/Nylon Sealing Gasket)<br>Extreme Temp. Seals: -50°C to +120°C (PTFE Sealing Gasket) | |
| Conformance: | Standard: | Certificate: |
| IEC/BS EN | IEC/BS EN 62444, 6121 | CML 14CA364 |
| IECEx | IEC 60079 Parts 0, 1, 7, 15, 31 | IEC Ex CML 18.0018X |
| ATEX | EN 60079 Parts 0, 1, 7, 31 | CML 16ATEX1001X |
| | EN 60079 Parts 0, 15 | CML 16ATEX4002X |
| INMETRO (Brazil) | ABNT NBR IEC 60079 Parts 0, 1, 7, 15, 31 | TÜV 15.0483X |
| SANS | SANS 60079 Parts 0, 1, 7, 15, 31 | MASC MS/13-028X |
| IP66/68 100m - Parallel | IEC 60529 | CML 15Y728 |
| IP65/66 - Tapered | IEC 60529 | |
| Deluge Protection | DTS-01 | CML 14CA370-2 |
| Marine ABS | IEC/EN 60079 Parts 0, 1, 7, 15, 31 | ABS 20-SG1952706-PDA |
| Corrosion Protection | ASTM B117-11, BS EN ISO 3231 | EXOVA N968667 |
| EMC Compatible | EN 55011:2009 + A1:2010, EN 55022:2010 | SGS EMC197708/1 |




### Conditions for Safe Use - X

- The cable glands shall only be used where the temperature, at the point of entry, is between -50°C and +95°C (standard seal & HDPE sealing gasket), +100°C (standard seal and Nylon sealing gasket) or +120°C (extreme temp. seal & PTFE sealing gasket) depending on seal and gasket used.
- Only Resin supplied by CCG may be used in the glands.

| Product Code | Gland Size Reference | Metric Entry Thread | | NPT Entry Thread | | Cable Detail | | | | Max Length 'E' | Max Dia. Over Cores | Max No. of Cores | Armour Dia | | Hexagonal Detail | | Install. Torque Value Nm |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 'C' | Min 'D' | 'C' | Min 'D' | Min 'A' | Max 'A' | Min 'B' | Max 'B' | | | | Min 'F' | Max 'F' | Max 'Flats' | Max 'Crns' | |
| 057300-16 | 00s-16ss | M16x1.5 | 15 | - | - | 3.0 | 8.5 | 5.0 | 10.5 | 60.0 | 8.0 | 6 | 0.20 | 0.90 | 25/27 | 28/30 | 21.0 |
| 057300S | 00s-20ss | M20x1.5 | 15 | ½/¾ | 15 | 3.0 | 8.5 | 5.0 | 10.5 | 60.0 | 10.9 | 6 | 0.20 | 0.90 | 25/27 | 28/30 | 21.0 |
| 057300 | 00-20ss | M20x1.5 | 15 | ½/¾ | 15 | 3.0 | 8.5 | 8.0 | 13.5 | 60.0 | 10.9 | 6 | 0.20 | 0.90 | 25/27 | 28/30 | 21.0 |
| 0573-0S | 0s-20s | M20x1.5 | 15 | ½/¾ | 15 | 7.0 | 12.0 | 8.0 | 13.5 | 60.0 | 10.9 | 6 | 0.20 | 1.25 | 25/27 | 28/30 | 21.0 |
| 0573-0 | 0-20s | M20x1.5 | 15 | ½/¾ | 15 | 7.0 | 12.0 | 11.5 | 16.0 | 60.0 | 10.9 | 6 | 0.20 | 1.25 | 25/27 | 28/30 | 21.0 |
| 057301 | 1-20 | M20x1.5 | 15 | ½/¾ | 15 | 9.0 | 15.0 | 12.5 | 20.5 | 73.0 | 12.5 | 13 | 0.20 | 1.25 | 30 | 34 | 21.0 |
| 057322 | 2s-25s | M25x1.5 | 15 | ¾/1 | 15/19 | 11.0 | 17.5 | 16.0 | 24.5 | 82.0 | 15.5 | 20 | 0.20 | 1.60 | 38 | 43 | 30.0 |
| 057302 | 2-25 | M25x1.5 | 15 | ¾/1 | 15/19 | 14.0 | 20.0 | 18.0 | 27.0 | 82.0 | 15.5 | 20 | 0.20 | 1.60 | 38 | 43 | 30.0 |
| 057333 | 3s-32s | M32x1.5 | 15 | 1/1¼ | 19 | 15.0 | 22.0 | 20.0 | 30.5 | 91.0 | 21.7 | 40 | 0.20 | 2.00 | 45 | 51 | 42.0 |
| 057303 | 3-32 | M32x1.5 | 15 | 1/1¼ | 19 | 19.0 | 26.5 | 23.0 | 33.5 | 91.0 | 21.7 | 40 | 0.20 | 2.00 | 45 | 51 | 42.0 |
| 057344 | 4s-40s | M40x1.5 | 15 | 1¼/1½ | 19/21 | 22.0 | 31.5 | 26.5 | 39.5 | 105.0 | 30.0 | 60 | 0.30 | 2.00 | 55 | 62 | 52.0 |
| 057304 | 4-40 | M40x1.5 | 15 | 1¼/1½ | 19/21 | 26.0 | 34.0 | 28.0 | 40.0 | 105.0 | 30.0 | 60 | 0.30 | 2.00 | 55 | 62 | 52.0 |
| 057355 | 5s-50s | M50x1.5 | 15 | 1½/2 | 21 | 29.0 | 38.0 | 35.2 | 46.7 | 123.0 | 36.3 | 80 | 0.40 | 2.50 | 65 | 73 | 57.0 |
| 057305 | 5-50 | M50x1.5 | 15 | 1½/2 | 21 | 34.0 | 44.5 | 44.4 | 53.0 | 123.0 | 36.3 | 80 | 0.40 | 2.50 | 65 | 73 | 57.0 |
| 057366 | 6s-63s | M63x1.5 | 15 | 2/2½ | 21/30 | 38.0 | 50.0 | 45.5 | 59.4 | 147.0 | 47.9 | 100 | 0.40 | 2.50 | 85 | 96 | 66.0 |
| 057306 | 6-63 | M63x1.5 | 15 | 2/2½ | 21/30 | 44.0 | 56.5 | 54.6 | 65.9 | 147.0 | 47.9 | 100 | 0.40 | 2.50 | 85 | 96 | 66.0 |
| 057377 | 7s-75s | M75x1.5 | 15 | 2½/3 | 30/32 | 50.0 | 62.0 | 59.0 | 72.5 | 149.0 | 58.2 | 120 | 0.40 | 3.15 | 96 | 108 | 72.0 |
| 057307 | 7-75 | M75x1.5 | 15 | 2½/3 | 30/32 | 56.0 | 67.5 | 65.0 | 78.0 | 149.0 | 58.2 | 120 | 0.40 | 3.15 | 96 | 108 | 72.0 |
| 057308 | 8-80 | M80x2.0 | 20 | 3 | 32 | 59.0 | 69.0 | 65.0 | 77.5 | 195.0 | 61.5 | 140 | 0.40 | 3.15 | 96 | 108 | 80.0 |
| 057399 | 9s-90s | M90x2.0 | 20 | 3/3½ | 32/33 | 66.0 | 75.0 | 73.0 | 86.5 | 204.0 | 70.5 | 160 | 0.40 | 3.50 | 111 | 125 | 89.0 |
| 057309 | 9-90 | M90x2.0 | 20 | 3/3½ | 32/33 | 74.0 | 81.5 | 82.0 | 91.0 | 204.0 | 70.5 | 160 | 0.40 | 3.50 | 111 | 125 | 89.0 |
| 057310 | 10-100 | M100x2.0 | 20 | 3½/4 | 33/34 | 81.0 | 91.0 | 90.0 | 100.0 | 209.0 | 79.0 | 180 | 0.40 | 3.50 | 125 | 141 | 98.0 |
| 057311 | 11-115 | M115x2.0 | 20 | 4 | 34 | 86.0 | 98.0 | 100.0 | 114.0 | 209.0 | - | - | 3.00 | 4.00 | 135.0 | 152 | 175.0 |
| 057312 | 12-120 | M120x2.0 | 20 | - | - | 96.0 | 103.0 | 103.0 | 118.0 | 209.0 | - | - | 3.00 | 4.00 | 140.0 | 158 | 175.0 |
| 057313 | 13-130 | M130x2.0 | 20 | - | - | 100.0 | 115.0 | 113.0 | 124.0 | 209.0 | - | - | 3.00 | 4.00 | 146.0 | 164 | 175.0 |

All dimensions except NPT are in mm. Intermediate thread sizes are available on request.

# FITTING INSTRUCTIONS
## Metric Illustration

CCG CABLE TERMINATIONS

# E1EX-VS QS BARRIER GLAND WITH VARIABLE DELUGE SEAL™ Ex db IIC, Ex eb IIC, Ex tb IIIC, Ex nR IIC

**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.

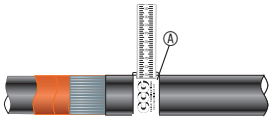
**MUST HAVE THREADED ENTRIES**

- 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)

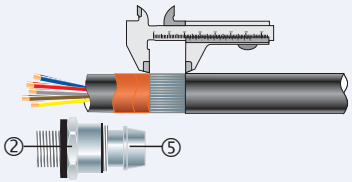
- Where the hole size is the thread nominal size with a tolerance of +0.1 to +0.7mm. (e.g. the clearance hole for an M20 thread will have a diameter between 20.1mm and 20.7mm).
- Through material that is between 1mm and 12mm thick. (Thicker materials can be accommodated using glands with extended entry threads.)

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



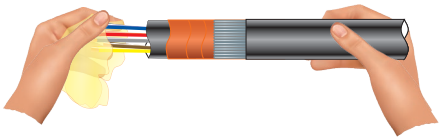

2. Separate the inner ② from the body ③. Cut back the cable outer sheath to expose the armour a length as per the table below. Strip back the inner bedding to expose the copper tape using the cone ⑤ as a gauge.

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

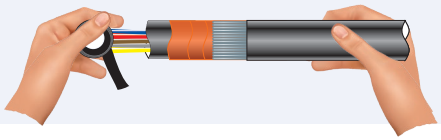



If the cable cores have screens these should be cut away or twisted together into a single core. This single core should be insulated with heat shrink tubing or coated with insulating varnish. Any drain wires should also be insulated with heat shrink tubing or coated with insulating varnish.

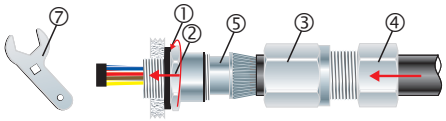
3. Using a clean cloth, clean the cable cores.



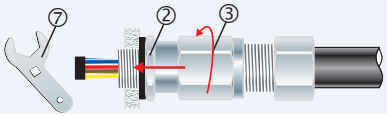
4. Using the insulation tape, bundle the cores together at the end.



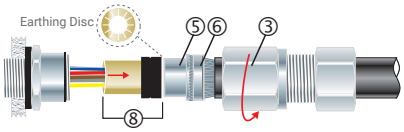
5. Ensure the thread gasket ① is in place. Screw the inner ② into the apparatus and tighten to the installation torque using a CCG Spanner ⑦. If the apparatus is untapped use a locknut. Pass the bundled cable cores through the outer nut ④ the body ③ the inner ② diaphragm seal and the earthing disc. Splay the armour wires over the cone ⑤.




6. 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.



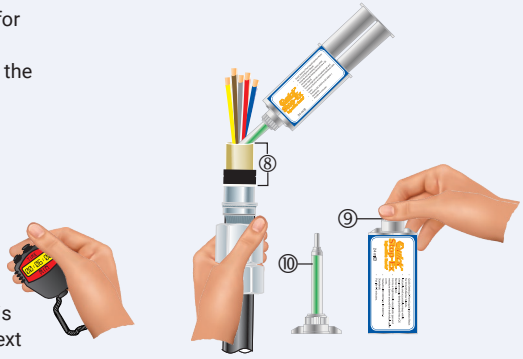

7. Unscrew the body ③. Check that the armour has locked between the cone ⑤ and the cone ring ⑥ (O-Ring on the cone ring ⑥ is sacrificial). Withdraw the barrier pot sub-assembly ⑧ and bundled cables . Remove the insulation tape. Check the copper tape has passed through and makes 360° contact with the earthing disc.



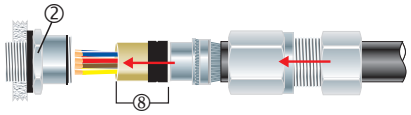

8. Remove the cap ⑨ from resin applicator and attach the mixing nozzle ⑩ (use extension nozzle for small multicore cables). Whilst holding the barrier pot sub-assembly ⑧ upright and holding the diaphragm seal firmly against the cable sheath inject the resin into the resin chamber. Make sure the resin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

   Wait for the resin to set from a liquid to a gel, this should take:
   - 15 minutes at 10°C
   - 7 minutes at 20°C
   - 6 minutes at 30°C
   - 5 minutes at 40°C

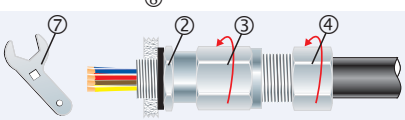
   For installations in less than 5°C Ambient, warm the Resin tube in warm water at ± 50°C. If there is still Resin left in the tube, discard the mixing nozzle ⑩ and replace the cap ⑨ for use with the next gland.




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




10. 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 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.

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