



# E1EX

Ex db IIC, Ex eb IIC, Ex ta IIIC, Ex nR IIC

CAPTIVE COMPONENT GLAND® WITH VARIABLE DELUGE SEAL™ for Steel and Aluminium Armoured Cable

## Features and Benefits

- For indoors, outdoors, Group II, III, Zone 1, 2, 20, 21 and 22 hazardous areas.
- Two part handling, no loose parts.
- Freely rotating captive cone and inspectible cone ring provides an armour clamp and earth bond on steel wire and aluminium armour.
- Patented disconnect system allows for inspection of armour clamp and inner seal after assembly.
- With a patented Variable Deluge Seal™ as standard.
- Factory fitted with a specially formulated elastomeric seal for Built-in Safety™, seals on the inner and outer sheath of the cable to IP65/66/68.
- 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 (parallel threads only).



## Technical Data

|                          |   |
|--------------------------|---|
| Type:                    | E1EX  |
| Gland Material:          | Brass (Marine Grade Electroless Nickel Plated™), Aluminium, Stainless Steel 316/316L          |
| Seal Material:           | Standard Thermoset Elastomer or Extreme Temperature Seals                                     |
| Sealing Gasket Material: | HDPE, Nylon 66 or PTFE  |
| Cable Type:              | Steel Wire Armour and Aluminium Armour  |
| Armour Clamping:         | Rotating Captive Cone and Inspectible Cone Ring   |
| Sealing Area:            | Inner Sheath, Outer Sheath and Variable Deluge Seal™  |
| 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. |

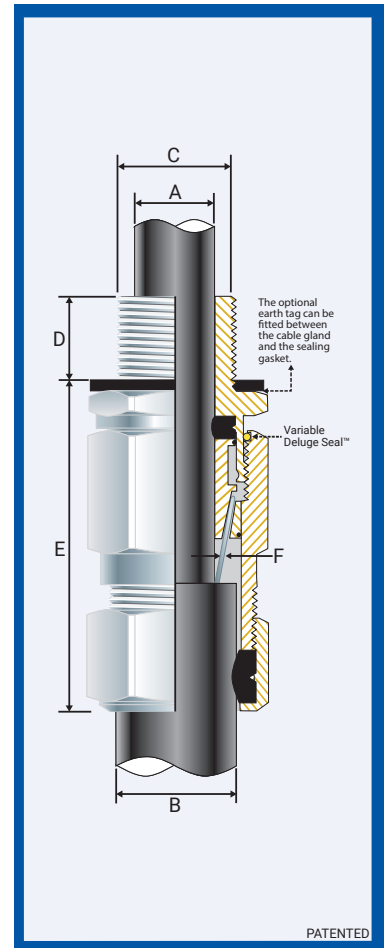
## Standards and Certifications

|                                    |  |                              |
|------------------------------------|--|------------------------------|
| Equipment Protection Levels:       | IECEX/INMETRO: Ex db IIC Gb, Ex eb IIC Gb, Ex nR IIC Gc, Ex ta IIIC Da<br>TR CU: Ex 1Ex d IIC Gb X / 1Ex e IIC Gb X / 2Ex nR IIC Gc X / Ex tb IIIC Db X<br>CCC: Ex db IIC Gb, Ex eb IIC Gb, Ex ta IIIC Da' |                              |
| Continuous Operating Temp:         | Standard Seals: -60°C to +95°C/100°C (HDPE/ Nylon Sealing Gasket)<br>Extreme Temp. Seals: -60°C to +160°C (PTFE Sealing Gasket)  |                              |
| Conformance:                       | Standard: Certificate:   |                              |
| IEC/BS EN                          | IEC/BS EN 62444, 6121  | CML 14CA364                  |
| IECEX                              | IEC 60079 Part 0, 1, 7, 15, 31   | IECEX CML 18.0018X           |
| ATEX                               | EN 60079 Part 0, 1, 7, 31  | CML 16ATEX1001X              |
|                                    | EN 60079 Part 0, 15  | CML 16ATEX4002X              |
| UKEX                               | BS EN 60079 Part 0, 1, 7, 31   | CML 21UKEX1011X              |
|                                    | BS EN 60079 Part 0, 15   | CML 21UKEX4006X              |
| INMETRO (Brazil)                   | ABNT NBR IEC 60079 Part 0, 1, 7, 15, 31  | TUV 15.0483X                 |
| TR CU (Russia)                     | ГОСТ 31610-0, 15, ГОСТ IEC 60079-1   | EA9C RU C-ZA.HA91.B.00245/21 |
|                                    | ГОСТ P MЭК 60079-7, 31   | CNEx 21.3387X                |
| CCC/CNEx (Chinese)                 | GB/T3836.1, 2, 3, 31-2021  | CCC 2021312313000396         |
| SANS                               | SANS/IEC 60079 Part 0, 1, 7, 15, 31  | MASC MS/22-9001X             |
| IP66/68 100m - Parallel            | IEC 60529  | CML 15Y728                   |
| IP65/66 - Tapered                  | IEC 60529  |                              |
| IP68 - Tapered and approved grease | IEC 60529  | IECEX CML 18.0018X           |
| Deluge Protection                  | DTS-01   | CML 14CA370-2                |
| Corrosion Protection               | ASTM B117-11, BS EN ISO 3231   | EXOVA N968667                |
| Marine ABS                         | IEC 60079 Part 0, 1, 7, 15, 31 and IEC 60529   | ABS 20-1952706-1-PDA         |
| DNV-GL                             | IEC 60079 Part 0, 1, 7 and IEC 60529   | DNV-GL TAE0000010            |
| EMC Compatible                     | EN 55011, + A1, EN 55022   | SGS EMC305079/1              |



## Conditions for Safe Use - X

- The cable glands shall only be used where the temperature, at the point of entry, is between -60°C to +95°C (standard seals & HDPE sealing gaskets), -60°C to +100°C (standard seal and Nylon sealing gasket) or -60°C to +160°C (extreme temp. seal & PTFE sealing gasket) depending on seal and gasket used.
- Note: According to IEC 60079-14, 10.6.2: An Ex d gland will only maintain Ex d integrity when used with substantially round, compact and filled cable. If not a CCG VORTEX® barrier gland should be used.



| Product Code | Gland Size Reference | Metric Entry Thread |         | NPT Entry Thread |         | Cable Detail |         |         |         | Max Length 'E' | 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' |                          |
| 052300-16    | 00-16ss              | M16x1.5             | 15      | -                | -       | 3.0          | 8.5     | 8.0     | 13.5    | 60.0           | 0.90       | 0.90    | 24.0             | 27.0       | 21.0                     |
| 052300       | 00-20ss              | M20x1.5             | 15      | 1/2/3/4          | 15      | 3.0          | 8.5     | 8.0     | 13.5    | 60.0           | 0.90       | 0.90    | 24.0             | 27.0       | 21.0                     |
| 0523-0       | 0-20s                | M20x1.5             | 15      | 1/2/3/4          | 15      | 7.0          | 12.0    | 11.5    | 16.0    | 60.0           | 0.90       | 1.25    | 24.0             | 27.0       | 21.0                     |
| 052301       | 1-20                 | M20x1.5             | 15      | 1/2/3/4          | 15      | 9.0          | 15.0    | 14.5    | 20.5    | 63.0           | 0.90       | 1.25    | 27.0             | 30.0       | 21.0                     |
| 052322       | 2s-25s               | M25x1.5             | 15      | 3/4/1            | 15/19   | 11.0         | 17.5    | 16.0    | 24.5    | 70.0           | 1.25       | 1.60    | 35.0             | 39.0       | 30.0                     |
| 052302       | 2-25                 | M25x1.5             | 15      | 3/4/1            | 15/19   | 14.0         | 20.0    | 20.5    | 26.5    | 70.0           | 1.25       | 1.60    | 35.0             | 39.0       | 30.0                     |
| 052333       | 3s-32s               | M32x1.5             | 15      | 1/1 1/4          | 19      | 15.0         | 22.0    | 23.0    | 30.5    | 76.0           | 1.60       | 2.00    | 42.0             | 47.0       | 42.0                     |
| 052303       | 3-32                 | M32x1.5             | 15      | 1/1 1/4          | 19      | 19.0         | 26.5    | 26.5    | 33.5    | 76.0           | 1.60       | 2.00    | 42.0             | 47.0       | 42.0                     |
| 052344       | 4s-40s               | M40x1.5             | 15      | 1 1/4/1 1/2      | 19/21   | 22.0         | 31.5    | 30.0    | 39.5    | 93.0           | 1.60       | 2.00    | 52.0             | 59.0       | 52.0                     |
| 052304       | 4-40                 | M40x1.5             | 15      | 1 1/4/1 1/2      | 19/21   | 26.0         | 34.0    | 33.0    | 42.5    | 93.0           | 1.60       | 2.00    | 52.0             | 59.0       | 52.0                     |
| 052355       | 5s-50s               | M50x1.5             | 15      | 1 1/2/2          | 21      | 29.0         | 38.0    | 34.0    | 47.5    | 102.0          | 2.00       | 2.50    | 65.0             | 73.0       | 57.0                     |
| 052305       | 5-50                 | M50x1.5             | 15      | 1 1/2/2          | 21      | 34.0         | 44.5    | 42.5    | 52.5    | 102.0          | 2.00       | 2.50    | 65.0             | 73.0       | 57.0                     |
| 052366       | 6s-63s               | M63x1.5             | 15      | 2/2 1/2          | 21/30   | 38.0         | 50.0    | 45.5    | 60.5    | 130.0          | 2.00       | 2.50    | 80.0             | 90.0       | 66.0                     |
| 052306       | 6-63                 | M63x1.5             | 15      | 2/2 1/2          | 21/30   | 44.0         | 56.5    | 52.5    | 65.5    | 130.0          | 2.00       | 2.50    | 80.0             | 90.0       | 66.0                     |
| 052377       | 7s-75s               | M75x1.5             | 15      | 2 1/2/3          | 30/32   | 50.0         | 62.0    | 57.0    | 72.5    | 138.0          | 2.50       | 3.15    | 96.0             | 108.0      | 72.0                     |
| 052307       | 7-75                 | M75x1.5             | 15      | 2 1/2/3          | 30/32   | 56.0         | 67.5    | 65.5    | 78.0    | 138.0          | 2.50       | 3.15    | 96.0             | 108.0      | 72.0                     |
| 052308       | 8-80                 | M80x2.0             | 20      | 3                | 32      | 59.0         | 69.0    | 65.0    | 77.5    | 195.0          | 2.50       | 3.15    | 96.0             | 108.0      | 80.0                     |
| 052399       | 9s-90s               | M90x2.0             | 20      | 3/3 1/2          | 32/33   | 66.0         | 75.0    | 73.0    | 86.5    | 204.0          | 3.00       | 3.50    | 111.0            | 125.0      | 89.0                     |
| 052309       | 9-90                 | M90x2.0             | 20      | 3/3 1/2          | 32/33   | 74.0         | 81.5    | 82.0    | 91.0    | 204.0          | 3.00       | 3.50    | 111.0            | 125.0      | 89.0                     |
| 052310       | 10-100               | M100x2.0            | 20      | 3 1/2/4          | 33/34   | 81.0         | 91.0    | 90.0    | 100.0   | 209.0          | 3.00       | 3.50    | 125.0            | 141.0      | 98.0                     |
| 052311       | 11-115               | M115x2.0            | 20      | 4                | 34      | 86.0         | 98.0    | 100.0   | 114.0   | 209.0          | 3.00       | 4.00    | 135.0            | 152.0      | 175.0                    |
| 052312       | 12-120               | M120x2.0            | 20      | -                | -       | 96.0         | 103.0   | 103.0   | 118.0   | 209.0          | 3.00       | 4.00    | 140.0            | 158.0      | 175.0                    |
| 052313       | 13-130               | M130x2.0            | 20      | -                | -       | 100.0        | 115.0   | 113.0   | 124.0   | 209.0          | 3.00       | 4.00    | 146.0            | 164.0      | 175.0                    |

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

IEEX-GH280323E

# E1EX GLAND

### 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 <math>< Ra 6.3 \mu m.</math>
- 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

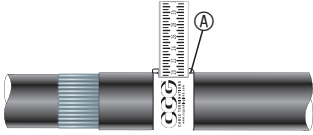
- The same thread size as the cable gland. (Thread adapters should be used to correct

any mismatch).

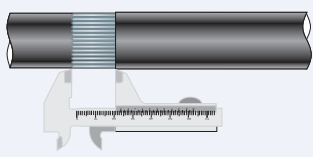
- With a thread tolerance of metric class '6H' or equivalent.
- Where the thread length is a minimum of 10mm for Ex d applications or 3mm for all other applications

### 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.)

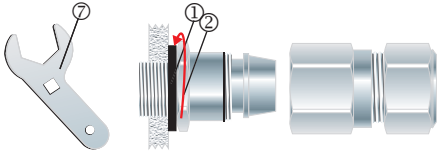


1. For accurate sizing, use a CCG Dimension Tape (A) on the inner and outer cable sheath.



| 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          |            |               |

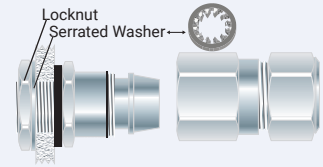
2. Cut back the cable outer sheath to expose the armour to a length as per the table above.



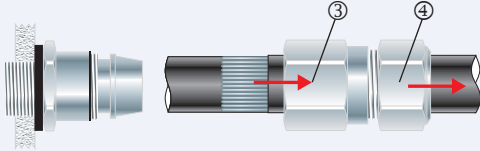
3. To maintain IP66/68, ensure the gasket (1) is in place. Screw the inner (2) into the apparatus. Tighten the inner (2) to the installation torque using a CCG Spanner (7).

Alternative installation through an unthreaded entry.

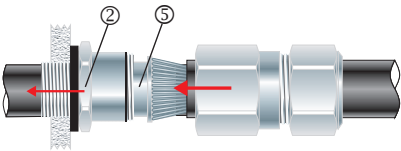
If the apparatus is untapped use a locknut.



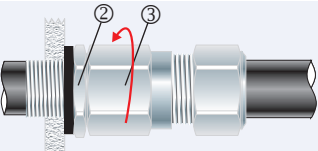
If the gland has NPT entry threads fitted to a threaded entry then IP68 (2m) can be achieved by applying one of the following tested and approved grease types to the thread:- Renolit Lubrene CA700 or LX220 EP2, Renolit LC-WP2 or Moly LX2, or Dow Corning 4 Electrical Compound.



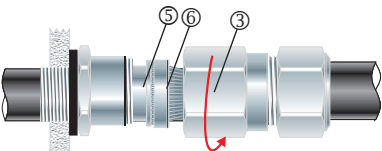
4. Pass the outer nut (4) and the body (3) over the cable.



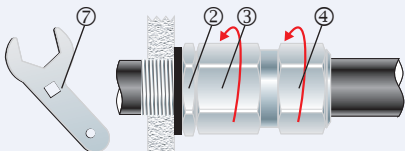
5. Pass the cable end through the inner (2). Splay the armour wires over the cone (5).



6. Tighten the body (3) onto the inner (2) until hand tight, then tighten with a CCG Spanner (7) with 3/4 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 cone ring (6). (O-Ring on the cone ring (6) is sacrificial).



8. Tighten the body (3) onto the inner (2) to the installation 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.

YouTube Instruction Video: <http://youtu.be/Lw-LxOyyoV0>