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T3CDS

TRITON™ CDS

Deluge Proof Cable Glands & Connectors

CMP PRODUCTS

Ease of Installation and Crucial Cable Care

Triton T3CDS cable glands deliver a unique concept in cable sealing techniques incorporating the patented Compensating Displacement Seal system, CDS™.

Introduced to effectively handle all types and sizes of cable construction taking the concern out of the mind of the operator, letting the product do the job instead. This concept provides effective sealing on the cable inner sheath, utilising a proven reliable and robust flameproof sealing device. Taking a crucial care principle into account in its design, this concept leaves nothing to chance yet delivers the ultimate in assembly and installation simplicity that guarantees a safety level that is unsurpassed by its rivals.

This latest development in a long line of original cable gland solutions from CMP Products is designed and fully approved to EN 60079-0,1,7,15, 31 & IEC 60079-0,1,7,15, 31. Triton T3CDS complies fully with the Essential Health & Safety Requirement is detailed in Annex 11 of Directive 94/9/EC (ATEX 95) in relation to the design and construction of equipment intended for use in potentially explosive atmospheres. This compliance covers not only the traditional protection required against ignition of gas and vapours, but also the latest dust hazard protection. This enables the product to be CE marked and coded with an ATEX Category 2 gas and dust marking, and it is effectively labelled '⟨Ex⟩II 2GD'.

The Unique Compensating Displacement Seal (CDS) System Demonstrated

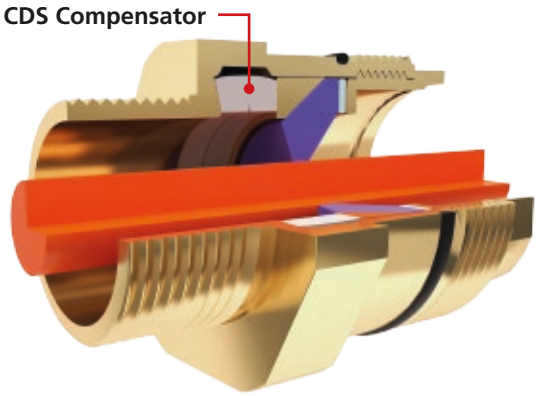


Figure 1 - When a smaller diameter cable is installed the inner compensator operates to a lesser extent.

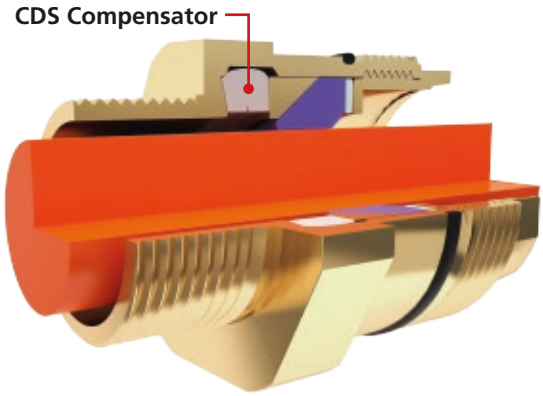


Figure 2 - When a larger diameter cable is installed the inner compensator operates to a greater extent.

Design Features & Benefits

Inner Flameproof Seal

- Unique Compensating Displacement Seal (CDS) system, compatible with all types of cable.
- At the critical cable sealing point the CDS system protects the cable inner sheath from any excess force, which is transferred to and absorbed by the internal compensator incorporated in the CDS system.
- Allows the Cable Gland to be tightened face to face every time regardless of cable diameter.

Armour Termination

- Multiple Universal Armour Clamp for Single Wire Armour, Tape Armour & Braided Cables.

Deluge Seal

- Proven, reliable "O" Ring arrangement which is concealed and protected from damage after installation. Shell deluge tested to DTS01:91, after 20 years simulated ageing.

Outer Seal

- Closure range accepts all commonly used cables in the industry.
- Using the CMP Outer Seal Tightening Guide a perfect seal, guaranteed to withstand the environment is achieved every time.

New High Temperature Rating

- Optional new seals now rated an industry leading -20°C to 200°C, for high temperature seals please use 'T3CDSHT' ordering reference.

Triton T3CDS Cable Gland

Inner Seal Housing

- Robust Flameproof CDS System, less susceptible to damage than equivalent diaphragm seals.
- No need for Cable Guide to protect CDS system as cable conductors do not penetrate or damage the Flameproof Seal as they pass through it.
- Flameproof seal does not tear or split as a result of frictional rotation during installation.
- Flameproof inner seal remains in the Cable Gland, and does not ride on the cable, therefore is not prone to mechanical damage when the cable needs to be withdrawn from the equipment.
- Remote make off, disconnection and re-connection does not jeopardise the safety integrity of the Ex apparatus.
- Inspection can be affected without disturbing the inner seal.

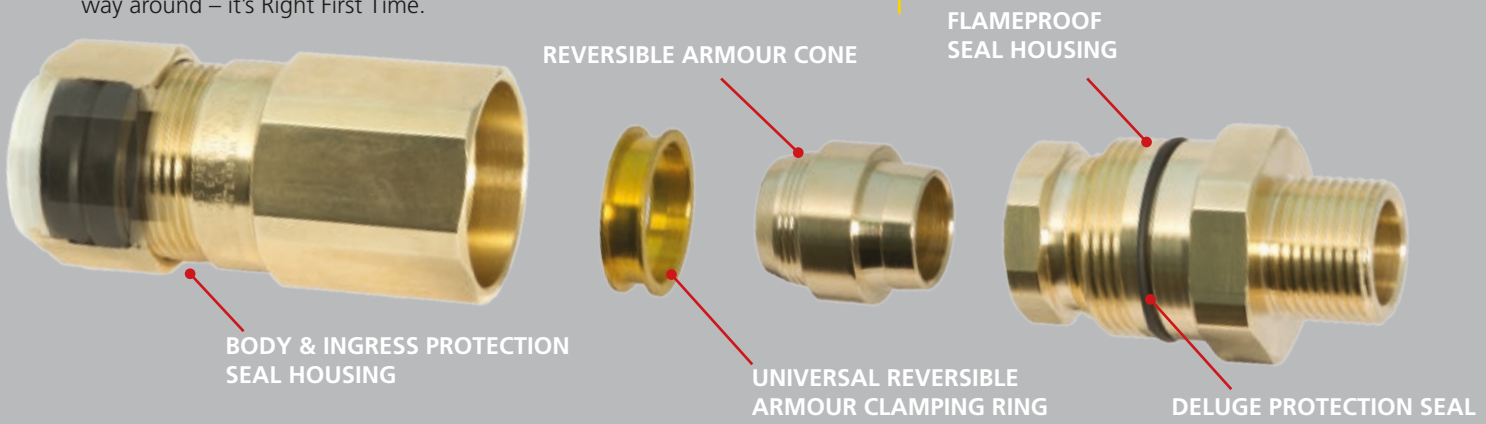
Universal Reversible Armour Clamping Cone & Ring

- Simple methodical Installation Procedure without the need for any confusing scientific recipe or torque measurement for cable clamping as the installation method uses a face to face installation every time.
- Reversible Armour Cone, for Multiple Cable Armour types, has clearly visible marking which makes incorrect assembly virtually impossible.
- Reversible Armour Clamping Ring is truly "Universal" with bi-directional functionality – identical on both sides.
- No possibility of inserting the Reversible Armour Clamping Ring the wrong way around – it's Right First Time.

Pertinent Technical Considerations

Under IEC 60079-14 Clause 9.3.10 states that "The connection of cables and conduits to the electrical equipment shall maintain the explosion protection integrity of the relevant type of protection."

The latest standard also goes on to state that "Low smoke and/or fire-resistant cables usually exhibit cold flow characteristics", and that "cold flow can be more fully described as thermoplastic materials which flow when subjected to pressure at ambient temperature." With its revolutionary concept of cable inner sheath sealing, the CMP Triton T3CDS fully embraces the requirements of this latest standard and addresses a number of other fundamental compatibility and installation issues that have remained unanswered by most other cable gland manufacturers.

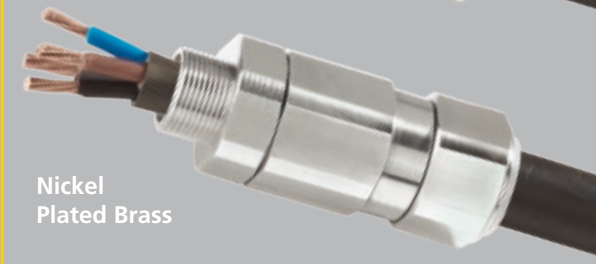


Deluge Protection Seal

- Deluge Protection by means of tried & tested "O" ring feature – Simple and effective arrangement.
- Internal Deluge seal is not exposed to mechanical damage or ultra violet radiation after installation and is completely protected in its operational working life, latest design limits the potential for over tightening.
- There is no need to "Pull" or re-position the deluge seal on installation or subsequent re-assembly after inspection, as the CMP "O" Ring arrangement engages automatically during a simple installation procedure providing effective protection every time.

Body & Outer Seal Housing

- Tried and tested Displacement Seal arrangement.
- Latest design limits the potential for over tightening.
- Wide cable acceptance range handles virtually all cable sizes obtainable.
- One seal range per cable gland / hub size.



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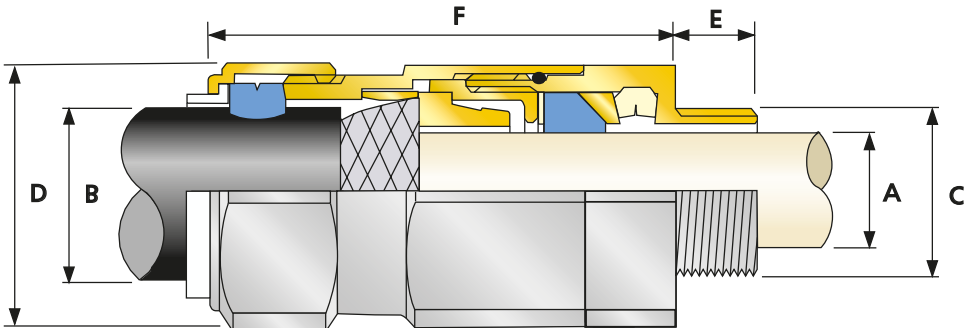
Practical Installation Benefits

- Fully sequential, three step make off procedure.
- Quick and easy assembly process, with face to face installation every time.
- CMP make no exaggerated claims concerning its speed of installation but guarantee a "Right First Time" installation well within the highest expectations prescribed.
- This "Right First Time" Installation concept, helps to reduce "down time" during plant construction whilst instilling peace of mind in the user.
- The risk of damage to the cable inner sheath is eliminated, regardless of the cable construction, even though the CDS sealing system is fully tightened every time.
- EMC Noise Reduction levels for radiation emissions comply with the current European guidelines (providing in the region of 50db attenuation when terminated with screened cable).
- Continuous Operating Temperatures from -60°C to 130°C or optionally -20°C to 200°C.
- Complies with Low Voltage Directive 73/23/EEC.
- Uniform hexagon profile.

Options

- Version for effective termination of lead sheathed cables, designated type (T3CDS/PB).
- T3CDSVAR version available for variable speed drive cables with a copper tape screen.
- T3CDSHT version available for high temperatures (-20°C to 200°C)
- Integral Entry Thread Seal, which removes the need for separate sealing washers. Designation Type RT3CDS or RT3CDS/PB, the advantages of this option are:
  i. Accidental omission of loose seals are prevented.
  ii. Mechanically enclosed, UV protected seal, eliminates the risk of seal damage.
  iii. Length of thread engagement maximised by virtue of reduced seal thickness.



Other Complementary Cable Gland Solutions & Associated Accessories

Other Materials: CMP Products offers cable glands in Brass, Brass with Electroless Nickel Plated Finish, Stainless Steel & Copper Free Aluminium.

CMP Products is also able to offer a wide range of Thread Conversion Adaptors and Reducers, from stock, together with a selection of Stopper Plugs with and without integral sealing ring.

Integral Entry Thread Seal Option

Note: Stepped Cone is suitable for SWA cables, Grooved Cone is suitable for all other approved armoured cables.

Cable Gland Size	Available Entry Threads 'C'					Cable Bedding Diameter 'A'		Overall Cable Diameter 'B'		Armour Wire Diameter †				Across Flats 'D'	Across Corners 'D'	Protrusion Length 'F'	Combined Ordering Reference (*Brass Metric)			Cable Gland Weight (Kgs)
	Standard				Option					Grooved Cone		Stepped Cone					Reference Number		Ordering Suffix	
	Metric	Thread Length 'E' Metric	NPT	Thread Length (NPT)	NPT	Min	Max	Min	Max	Min	Max	Min	Max	Max	Max		Size	Type		
20S/16	M20	15	1/2"	19.9	3/4"	3.1	8.7	6.1	13.2	0.3	0.8	0.8	1.25	24.0	26.4	78.7	20S16	T3CDS	1RA	0.200
20S	M20	15	1/2"	19.9	3/4"	6.1	11.7	9.5	15.9	0.3	0.8	0.8	1.25	24.0	26.4	78.7	20S	T3CDS	1RA	0.196
20	M20	15	1/2"	19.9	3/4"	6.5	14.0	12.5	20.9	0.4	0.9	0.8	1.25	30.5	33.6	76.2	20	T3CDS	1RA	0.277
25S	M25	15	3/4"	20.2	1"	11.0	20.0	14.0	22.0	0.4	1.0	1.25	1.6	37.5	41.3	88.8	25S	T3CDS	1RA	0.435
25	M25	15	3/4"	20.2	1"	11.0	20.0	18.2	26.2	0.4	1.0	1.25	1.6	37.5	41.3	88.8	25	T3CDS	1RA	0.435
32	M32	15	1"	25.0	1-1/4"	17.0	26.3	23.7	33.9	0.4	1.1	1.6	2.0	46.0	50.6	90.7	32	T3CDS	1RA	0.633
40	M40	15	1-1/4"	25.6	1-1/2"	22.0	32.2	27.9	40.4	0.4	1.1	1.6	2.0	55.0	60.5	93.2	40	T3CDS	1RA	0.905
50S	M50	15	1-1/2"	26.1	2"	29.5	38.2	35.2	46.7	0.4	1.5	2.0	2.5	60.0	66.0	100.7	50S	T3CDS	1RA	1.124
50	M50	15	2"	26.9	2-1/2"	35.6	44.1	40.4	53.1	0.6	1.5	2.0	2.5	70.1	77.1	105.8	50	T3CDS	1RA	1.604
63S	M63	15	2"	26.9	2-1/2"	40.1	50.0	45.6	59.4	0.6	1.5	2.0	2.5	75.0	82.4	102.5	63S	T3CDS	1RA	1.732
63	M63	15	2-1/2"	39.9	3"	47.2	56.0	54.6	65.9	0.6	1.5	2.0	2.5	80.0	88.0	105.4	63	T3CDS	1RA	1.778
75S	M75	15	2-1/2"	39.9	3"	52.8	62.0	59.0	72.1	0.6	1.5	2.5	3.0	90.0	99.0	110.6	75S	T3CDS	1RA	2.573
75	M75	15	3"	41.5	3-1/2"	59.1	68.0	66.7	78.5	0.6	1.5	2.5	3.0	100.0	110.0	120.3	75	T3CDS	1RA	3.329
90	M90	24	3-1/2"	42.8	4"	66.6	80.0	76.2	90.4	0.6	1.3	3.15	4.0	115.0	126.5	138.9	90	T3CDS	1RA	4.870
100	M100	24	4"	44.0	5"	76.0	91.0	86.1	101.5	0.6	1.6	3.15	4.0	127.0	139.7	128.2	100	T3CDS	1RA	4.969
115	M115	24	4"	44.0	5"	86.0	98.0	101.5	110.3	0.6	2.5	3.15	4.0	138.0	151.8	161.3	115	T3CDS	1RA	7.721
130	M130	24	5"	46.8	6"	97.0	115.0	114.2	123.3	0.6	2.5	3.15	4.0	157.0	172.7	173.3	130	T3CDS	1RA	9.777
*Note : For material options please add the following suffix to change the Ordering Reference ; Brass (no suffix required), Nickel Plated Brass "5", 316 Grade Stainless Steel "4", Copper Free Aluminium "1"																				
For NPT options please add the following digits to the material suffix ; 1/2" = 31, 3/4" = 32, 1" = 33, 1 1/4" = 34, 1 1/2" = 35, 2" = 36, 2 1/2" = 37, 3" = 38, 3 1/2" = 39 (Brass requires prefix "0")																				
Examples : 32T3CDS1RA534 = Nickel Plated Brass 1-1/4" NPT, 50ST3CDS1RA035 = Brass 1-1/2" NPT, 25T3CDS1RA432 = Stainless Steel 3/4" NPT, 20T3CDS1RA5 = Nickel Plated Brass 20mm																				
Dimensions are displayed in millimetres																				

Note: †Alternative armour clamping range available for non-standard armour sizes.

TECHNICAL DATA		
Type		T3CDS
Design Specification		EN 50262, BS 6121:Part 1:1989, IEC 62444
Mechanical Classification		Impact = Level 8, retention = Class B (EN 50262), Class D (IEC 62444)
Electrical Classification		Category B (Category A when used with braided cable)
Continuous Operating Temperature		-60°C to 130°C Standard or -20°C to 200°C T3CDSHT
Ingress Protection Rating		IP66, IP67, IP68 (Tested at 100 meters water depth for a duration of 10 days)
Deluge Protection		DTS01 : 91
EMC Test Information		SGS report DUR23743/EMC/KH/02 to EN55022
Cable Gland Material		Brass, Electroless Nickel Plated Brass, Aluminium, Stainless Steel
Seal Material		CMP SOLO LSF Thermoplastic Elastomer
Cable Type(s)		Single Wire Armour (SWA), Aluminium Wire Armour (AWA), Pliable Wire Armour (PWA), Steel Tape Armour (STA), Aluminium Strip Armour (ASA), Screened Flexible Wire Braid (e.g. CY/SY), Wire Braid Armour (e.g. SWB)
Armour Clamping		Reversible Armour Cone & AnyWay Universal Clamping Ring
Sealing Technique		Inner Bedding Sealing Ring: Compensating Displacement Seal (CDS), Outer Sheath Sealing Ring: Load Retention Seal (LRS)
Sealing Area(s)		Cable Inner Bedding & Outer Cable Sheath
Accessories		Adaptor/Reducer, Earth Tag, Locknut, Serrated Washer, Entry Thread Seal, Shroud
Ex	ATEX Certificate	SIRA13ATEX1073X, SIRA13ATEX4079X
	Code of Protection	Ex II 2 G, II 1D, Ex d IIC Gb, Ex e IIC Gb, Ex ta IIIC Da, Ex II 3 G Ex nR IIC Gc, Ex I M2, Ex d I Mb, Ex e I Mb, EN 60079-0,1,7,15, 31
IEC IECEx	IECEx Certificate	IECEx SIR 13.0028X
	Code of Protection	Ex d IIC Gb, Ex e IIC Gb, Ex nR IIC Gc, Ex ta IIIC Da, Ex d I Mb, Ex e I Mb
	Compliance Standards	IEC 60079-0,1,7,15, 31
C SP US	cCSAus Certificate	1310517
	Code of Protection	Class I, Div 2, Groups A,B,C and D; Class II, Div 2, Groups E,F and G; Enclosure Type 3, 4 and 4X; Ex d IIC; Ex e II; Class I, Zone 1, AEx e II
	Compliance Standards	CAN/CSA-C22.2 Various Sections (See Certificate) CAN/CSA-E60079-0,1,7; ANSI/UL 514B Edition 5, ANSI/UL 50 Edition 11, ANSI/UL 2225 Edition 4, UL60079-0,1,7
UL	UL approval	Cert Number E 256367. CLASS 1 Zone 1, 2 AEx e TYPE 4X OIL RES II
EAC	EAC Certificate	TC RU C-GB.ГБ05.B.00138
	Code of Protection Compliance Standards	1Ex d IIC Gb X,1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex ta IIIC Da X ГОСТ Р 52350. 7, ГОСТ Р МЭК 60079-0,15,31, ГОСТ IEC 60079-1,7, ГОСТ 31610.7
Ex NEPSI	NEPSI Certificate	GYJ13.1141X
	Code of Protection	Ex d IIC Gb / Ex e IIC Gb, DIP A21 Ta
	Compliance Standards	GB3836.1/2/3, GB12476.1
INMETRO	INMETRO Approval	TUV 11.0374X
	Code of Protection	Ex d I Mb, Ex e I Mb, Ex d IIC Gb, Ex e IIC Gb, Ex nR IIC Gb, Ex tb IIIC Db
	Compliance Standards	ABNT NBR IEC 60079-0, 1,7,15,31; ABNT NBR IEC 60529
CIDET	RETIE Approval	03866
PESO	CCOE / PESO (India) Certificate	P333688/1
ABS DNV Lloyds Register	Marine Approvals	LRS: 01/00172 DNV: E-13286 ABS: 01-LD234401A/3-PDA

Approvals

- ATEX & IECEx approved.
- Fulfils the test requirements of Ex nR equipment or apparatus with Restricted Breathing features.
- Shell Deluge Tested to DTS01:91, after 20 years simulated accelerated ageing.
- Cable Glands rated IP66, IP67 to EN60529:1992 as standard, & IP68 to a depth of 10 meters.
- EMC Tested to EN55022 by SGS Independent Test Laboratory.

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