

SD 1414

**ASSEMBLY FITTING INSTRUCTIONS FOR
INSTALLATION OF CABLE GLAND TYPE E1FW**

INCORPORATING EC DECLARATION OF CONFORMITY

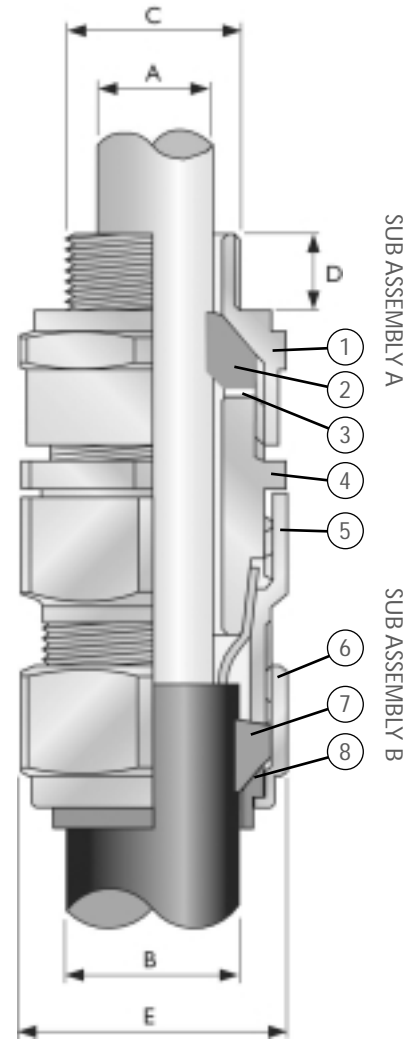
Brass indoor and outdoor cable gland for use in Zone 1 and Zone 2 Hazardous Areas with all types of SWA cable providing an explosion proof seal on the cable inner sheath and an environmental seal on the cable outer sheath. The gland also provides mechanical cable retention and electrical continuity via armour wire termination.

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|--------------------|-------------------|---------------|
| 1. Entry Component | 4. Main Item | 7. Outer Seal |
| 2. Seal | 5. Body | 8. Ferrule |
| 3. Skid Washer | 6. Outer Seal Nut | |

PLEASE READ INSTRUCTIONS CAREFULLY BEFORE BEGINNING INSTALLATION

- Separate gland assembly by unscrewing item 4 from item 5 leaving Two sub-assemblies (A) & (B) comprising of items 1,2,3, & 4 and 5, 6, 7 & 8 respectively.
- Ensure the outer seal item 7 is in its uncompressed state and pass Sub-assembly (B) over the cable. Strip back the outer sheath and armour to suit the equipment geometry.
- Expose armour further by stripping the outer sheath for a length equivalent to the knurled cone of item 4 plus 6mm. If applicable remove any tapes or wrappings to expose cable inner sheath.
- Secure the sub-assembly (A) into the equipment ensuring that item 2 (seal) is uncompressed.
- Pass the cable through Sub-Assembly A, spacing the armour evenly around the knurled cone.
- Whilst continuing to push the cable forward to maintain the armour in contact with the knurled cone, tighten item 4 by hand until heavy resistance is felt then using a spanner rotate one full turn. Note: Pull cable gently to ensure that the inner seal has made an effective seal onto the inner sheath, i.e. no movement. If movement occurs rotate item 4 by a further turn with a spanner and re-test. Repeat as necessary. NOTE :Threads are exposed between items 1 & 4 and will vary depending upon installed cable diameter.
- Lock the armour by first securing item 4 (to prevent additional stress being transferred to items 2 & 3) then tighten item 5 onto item 4 ensuring a gap exists between the two components (this will vary depending upon armour thickness).When fully tightened these items should not be face to face.
- Close outer seal by tightening item 6 onto item 5 sufficiently to ensure an adequate seal is formed around the cable. If required item 6 can be further tightened using a spanner.

This completes the termination.



Cable Gland Selection Table

Gland Size	Standard Entry Thread			Minimum Thread Length 'D'	Cable Dia 'A'		Cable Dia 'B'		Armour Wire Dia	Across Corners Dia 'E' Max	Ordering Reference	PVC Shroud Reference
	Metric	NPT	PG		Min	Max	Min	Max				
20/16	M20	1/2"	11	15	3.1	8.6	6.0	13.4	0.9	24.4	20/16E1FW	PVC02
20S	M20	1/2"	13.5	15	6.1	11.6	9.5	15.9	0.9/1.25	26.6	20SE1FW	PVC04
20	M20	1/2"	16	15	6.5	13.9	12.5	20.9	0.9/1.25	33.3	20E1FW	PVC06
25	M25	3/4"	21	15	11.1	19.9	17.0	26.2	1.25/1.6	40.5	25E1FW	PVC09
32	M32	1"	29	15	17.0	26.2	22.9	33.9	1.6/2.0	51	32E1FW	PVC11
40	M40	1-1/4"	36	15	22.0	32.1	26.0	40.4	1.6/2.0	61	40E1FW	PVC15
50S	M50	1-1/2"	36	15	29.5	38.1	35.0	46.7	2.0/2.5	66.5	50SE1FW	PVC18
50	M50	2"	42	15	35.6	44.0	38.0	53.1	2.0/2.5	78.6	50E1FW	PVC21
63S	M63	2"	48	15	40.1	49.9	45.6	59.4	2.5	83.2	63SE1FW	PVC23
63	M63	2-1/2"	-	15	47.2	55.9	54.6	65.9	2.5	89	63E1FW	PVC25
75S	M75	2-1/2"	-	15	52.8	61.9	57.0	72.1	2.5	101.6	75SE1FW	PVC28
75	M75	3"	-	15	59.1	67.9	60.4	78.5	2.5	111.1	75E1FW	PVC30
90	M90	3"	-	20	66.6	79.3	69.2	90.4	2.5/3.15	128.6	90E1FW	PCV32

All Dimensions in Millimetres



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TECHNICAL DATA

CABLE GLAND TYPE	: E1FW
INGRESS PROTECTION	: IP66, IP67, IP68
CABLE TYPE (S)	: WIRE ARMoured
PROCESS CONTROL SYSTEM	: BS EN ISO 9001 - 2000

HAZARDOUS AREA CLASSIFICATION

ATEX / CENELEC APPROVAL	: EExd II/EEEx e Equipment in Zone 1, Zone 2, Zone 21 & Zone 22, Gas Group IIA, IIB & IIC, EExd/EEExl
COMPLIANCE CODE	: EN50014-1997, EN50019-2000 & EN50281 -1 -1-1998
ATEX CERTIFICATION DETAIL	: II2 GD - SIRA01ATEX3287X - Directive : 94/9/EC, IM2 - SIRA01ATEX3287X - Directive : 94/9/EC.

SPECIAL CONDITIONS FOR SAFE USE

- These Cable Glands shall not be used where the temperature at the point of mounting is below -60°C or exceeds 130°C
- Concerning direct cable entry to Ex d enclosures, "These Cable Glands shall not be used with Group IIC Enclosures that have a free volume that exceeds 2000 cm3

ACCESSORIES

The following accessories are available from CMP Products, as optional extras, to assist with fixing, sealing and earthing :-
 Locknut | Earth Tag | Serrated Washer | Entry Thread (I.P.) Sealing Washer | Shroud *

CORRECT TOOLS

Always use the correct tools, as incorrect tools will inevitably lead to mistakes, potential damage and/or personal injury. Gloves are recommended when handling and terminating cables and cable glands.

Dedicated Cable Gland spanners for each cable gland size are available from CMP Products, and these are recommended for installing the product correctly. Adjustable spanners and wrenches are not recommended as there is a possibility of slippage that can lead to accidental injury or damage to surface finish.

Any sharp tools, instruments or knives used to cut or strip the cable sheath should be equipped with a safety blade or other safety feature consistent with the tool design and intended use.

Please refer to CMP Products in sourcing tools if required, who would be happy to assist.

Safety and personal protection should be given priority over all other considerations.

A hacksaw, or other similar tool, should be used to cut armour wires. Hacksaw blades should be checked regularly and replaced when worn, or whenever evidence that a consistent first time clean cut is no longer possible. Note, when cutting armour wires, care should be taken to avoid cutting into the inner cable sheath beneath the armour wires.

GENERAL INSTALLATION GUIDANCE

- BS EN 60079 -10 2003 Classification of Hazardous Areas
- BS EN 60079 -14 2003 Electrical Installations in Hazardous Areas (other than mines). Please refer to the selection guide in clause 10.4.2 for Ex d applications.
- Installation should only be carried out by a competent person, skilled in the installation of cable glands
- Care should be taken to avoid damage to entry threads when handling and installing cable glands
- Depending upon the specific form of protection of the main equipment it may be necessary to fit an I.P. sealing washer, at the cable entry interface, to maintain the appropriate Ingress Protection levels. For Increased Safety (EEx e) equipment, or Increased Safety terminal chambers found on EEx de equipment, a sealing washer is essential to maintain the minimum Ingress Protection rating, and should always be fitted. For other forms of protection, e.g. Flameproof EEx d apparatus, the inclusion of a sealing washer is optional. CMP (I.P.) Sealing Washers, which are installed at the cable entry interface, between the equipment enclosure and the cable entry device (cable gland) have been 3rd party tested in Ingress Protection tests to BS EN 60529
- Always ensure that the correct fixing accessories provided by CMP Products are used, as appropriate to secure the cable glands into the mating equipment. In addition to (I.P.) Sealing Washers, CMP Products are also able to provide Locknuts, Earth Tags, and Serrated Washers which should be used as appropriate to the equipment configuration. Usually for any equipment other than EEx d apparatus, it will be necessary to use as a minimum a Locknut, and also a Serrated Washer if the enclosure of the equipment or application requires it. The addition of an Earth Tag will depend upon the earth continuity provision of the enclosures installed.
- Cable Gland seals are included within the cable gland when despatched from the factory. There should be no circumstances where seals need to be removed from the cable gland. Care should be taken to avoid exposure of cable gland seals to dirt, hostile substances, e.g. solvents, and other foreign bodies.
- Cable Gland components are not interchangeable with those of any other cable gland manufacturer. It is important to note that components from one manufacturer's product cannot be used in that of another, and that modification of a cable gland product will invalidate the hazardous area certification.
- The cable gland is not a user serviceable product and spare parts are not permitted to be supplied under the certification.
- Cable Glands should not be installed whilst circuits are live. Similarly, following energising of the electrical circuits, cable glands should not be dismantled or opened until the circuit has been safely de-energised.

I, the undersigned, hereby declare that the equipment referred to herein conforms to 94/9/EC directive.

Malcolm J. Graham - Technical Director
 (Authorised Person)

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