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**Making Hazardous
 Environments Work**

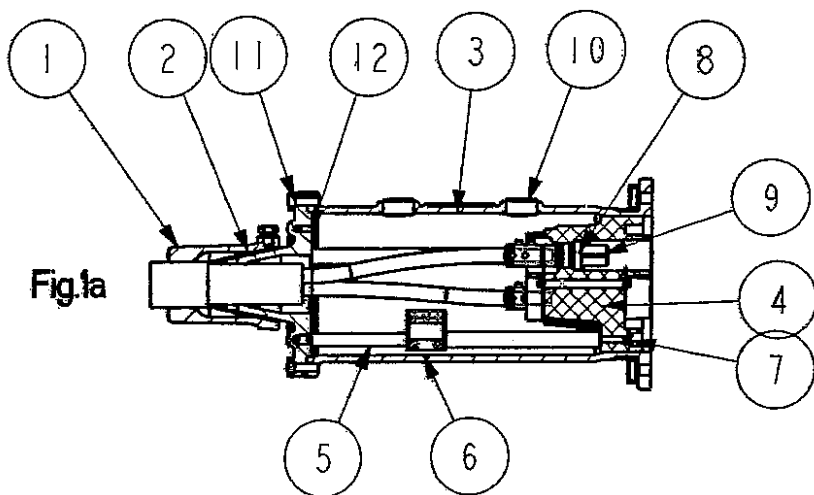
3.3kV HALF COUPLER – 33MK1A

Certification number MECS02ATEX5087U I M2 EExd I

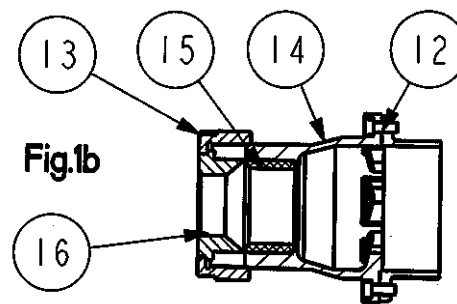
	Victor Products Ltd. South Shields, NE33 5SQ UK
	TYPE 33MK1A HALF COUPLER I M2 Eexd I MECS02ATEX5087U
	TWO UNITS AS MECS02ATEX5087U FORM APPARATUS TYPE 33MK1A I M2 Eexd I MECS02ATEX5088
CE 2813	
DO NOT SEPARATE WHEN ENERGISED	
3300 VOLTS 500 AMPS	SERIAL No.

The ATEX certificate carries the ATEX group and category marking **I M2**

Where:- I signifies suitability for use in mining.
 M2 signifies suitability for use in mines where it must be de-energised in the presence of an explosive atmosphere.



ARMOURED GLAND



UNARMOURED GLAND

MAIN COMPONENTS

- 1. Armour Clamp
- 2. Inner Cone – DWA only
- 3. Main Body
- 4. Main Insulator
- 5. Support Pillars
- 6. Earth Bosses – optional
- 7. Insulator Retaining Screws
- 8. Contact Tube Locking Rings

- 9. Contact Tubes
- 10. Certified FLP Stopper Plug
- 11. Screen terminating points – optional
- 12. Gland Fixing Screws
- 13. Gland Nut
- 14. Gland Body
- 15. Sealing Ring
- 16. Clamp Washer

SPECIFICATION:-

3300 VOLTS 500 AMPS GENERALLY CONSTRUCTED IN ACCORDANCE WITH BS3454 FOR USE WITH THE FOLLOWING CABLES.

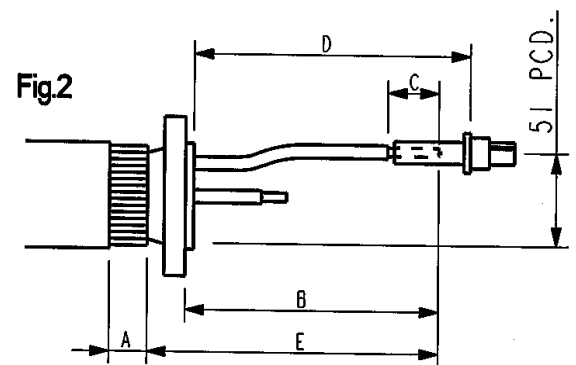
Suitable for use with SWA, DWA cables to BCC 295 & 656, PWA cable to BCC504, PILC cables to BS6480 generally constructed in accordance with these specifications and unarmoured cables.

Contact tubes are available to suit stranded copper or aluminium or solid aluminium cables with PVC, XLPE or EPR insulated cables.

PRE-CABLE MAKE OFF - Prior to cable make off, the half coupler should be disassembled and the parts kept in a clean and safe area. For SWA, DWA, PWA and PILC cables the armour clamp (1) should be passed over the cable until clear of the jointing area. For unarmoured cable the gland nut (13), cable sealing ring (15) and clamp washer (16) should be passed over the cable until clear of the jointing area.

TABLE 1.

CODE		Strand. Copper	Alum. Cored Cables			
		All Cond. Sizes	50/70/95mm ²		120/150/185mm ²	
			SOLID	STR	SOLID	STR.
A	Armour length	75	75	75	75	
B	Core Length	127	137	117	137	
C	Insulation Removal	38	48	50	60	
D	Contact Tube Posn. prior to comp'n.	156	156	156	156	
E	Conductor length	150	160	150	160	



CABLE MAKE OFF – SWA AND DWA.

- 1a) For SWA and DWA cables remove the outer insulation, armouring and bitumised tape to dimension E in Table 1 down to the inner PVC bedding that protects the insulated power cores. The bitumised tape, if fitted, should be retained for later use.
- 1b) Remove the outer insulation to dimension 'A' in Table 1. Unlay the cable armour removing all traces of the insulating compound.
- 1c) Position the gland body (14) inside the inner armouring and form the armour to suit the tapered profile. For DWA cable only, position the inner cone (2) between the inner and outer armouring.
- 1d) Slide the armour clamp (1) over the armour onto the gland body (14), fit retaining nuts to studs and tighten down. The bitumen tape can now be packed into the inside of the gland body (14) around the cable to provide a seal for the filling compound.
- 1e) Remove the inner cable sheath and melinex tapes parallel with the gland body (14) face avoiding damage to the core insulation.
- 1f) Straighten the cable cores and preform to the diameter in fig.2
- 1g) From the front face of the gland body (14), measure in a straight line, mark and cut each conductor to the dimension 'B' in Fig.1
- 1h) From the cut end measure, cut and remove the insulation from each conductor. All conductors should be firmly brushed with a wire brush.

Note:- DO NOT use the same wire brush for copper and aluminium conductors.

CABLE MAKE OFF – PWA.

- 2a) Remove the outer insulation to expose the armoured wires to a dimension of A + E in Table 1 and unlay the armour.
- 2b) Remove the inner sheath to expose the screened or unscreened insulated power cores to dimension 'B' in Table 1. This will line up approx. with the front face of gland body **(14)** when it is fitted.
- 2c) Remove all the conductor insulation on the earth core to the front face of the gland body **(14)**.
- 2d) Unwind the screening (if fitted) on the power cores onto the earth core ready for terminating at the earth bosses or front face of gland body.
- 2e) Position the gland body **(14)** under the armouring, locating the armour clamp **(1)** over the armouring with the armouring split equally to either side of the studs, fit retaining nuts and tighten down.
- 2f) The armouring should be turned back along the armour clamp **(1)**. Using a jubilee type clip securely clamp the armouring midway along the armour clamp **(1)** and remove the excess armour.
- 2g) Follow 1f – 1h.

CABLE MAKE OFF – PILC

- 3a) Pack the gland body **(14)** with sufficient lead wool around the lead sheath to ensure a compound seal then screw down the packing ring.
- 3b) Remove the lead sheath and papers to dimension 'B' in Table 1.
- 3c) Commencing at the crutch apply a 12mm wide of G518 tape, half lapped, for a distance of 50mm over each core.
- 3d) Position the gland body **(14)** inside the inner armouring and form the armour to suit the tapered profile.
- 3e) Slide the armour clamp **(1)** over the armour onto the gland body **(14)**, fit retaining nuts and tighten down.
- 3f) Follow 1f – 1h.

CABLE MAKE OFF – UNARMOURED OR SWB

- 4a) Remove the outer insulation to expose the screened or unscreened insulated power cores to dimension 'B' + 15mm in table 1.
- 4b) Position the gland body **(14)** on the cable to position 'B' in Table 1. Sliding both the gland nut **(13)**, the clamp washer **(16)** and the sealing ring **(15)** along the cable, locate the sealing ring into the recess of the gland body **(14)** and hand tighten the gland nut **(13)**.
- 4c) Unwind the screening (if fitted) on the power cores onto the earth core ready for terminating at the earth bosses or front gland body face.

4d) Follow 1f – 1h.

CONTACT TUBE FITTING.

5a) Remove conductor insulation to dimension `C' Table 1, firmly wire-brush each exposed conductor – IMPORTANT - do not use the same wire brush for copper and aluminium cable.

5b) Select the correct die set from Table 2. For Stranded Aluminium Conductors only, follow procedures 5c) and 5d) to pre-compact conductors.

5c) Compact the first half of conductor then make a second compression leaving approx. 5 mm of compacted conductor protruding from die.

5d) Position the contact tube (9) onto the end of conductor and complete the pre-compacting of the conductor with an additional compression and finally push the contact tube onto the conductor.

5e) Check dimension `D' Fig.2. Line up one of the flats on contact tubes (9) with the location flat on the insulator bore and (4) mark tube position on the conductor insulation.

5f) Crimp each tube in turn between the knurled lines. Reset the cores to the pre-compression positions and ensure the location flats on tubes correspond with those in insulator bores.

5g) Fit EPR self amalgamating tape (three half lapped layers) to a point 15mm on the core insulation and bare metal of the contact tube(9) ensuring this does not prevent the fitment of the insulator.

NOTE: If contact tubes with grub screws are fitted they should be positioned with the grub screws facing out over. These should only be used with copper conductors. All other details as 5a – 5f.

TABLE 2						
Conductor Size	Stranded Copper		Stranded Aluminium			Solid Alum. Indentor Die
	Indentor Die	Nest Die	Indentor Die	Compactor Die	Nest Die*	
16mm ²	Up 35-70 CP1-U10AD-1	UN70C	-	-	-	-
25mm ²	"	"	-	-	-	-
35mm ²	"	"	-	-	-	-
50mm ²	Up 75-300 CP1-U10AD-1	UN150C	-	-	-	-
70mm ²	"	"	UP70 AST3	U70PC	UNA3-1	UP70A3
95mm ²	"	"	UP95 AST3	U95PC	UNA-3	UP95A3
120mm ²	"	"	-	-	-	-
150mm ²	"	"	UP150 AST3	U150PC	UNA-3	UP150A3
185mm ²	"	UN185C	UP185 AST3	U185PC	UNA-3	UP185A3

*Nest Die common to both stranded and solid aluminium Die Sets.

HALF COUPLERS WITH CENTRE PILOT.

6a) For half couplers with a centre pilot, the pilot core conductor should be cut to a length that will allow the boss, when clamped onto the bared conductor, to fit snugly into the crutch of the preformed power cores. After determining this length remove 15mm of insulation and insert into boss and tighten grub screws. Apply half lap layers of self amalgamating tape to cover the boss to a point 15mm along both cable insulations and position into the crutch of the power cores.

HALF COUPLERS WITH AUXILLIARY.

7a) For further information on auxilliary circuits please contact the Technical Department.

GENERAL ASSEMBLY

8a) Locate and tighten the 3 steel or brass support pillars **(5)** into the gland body **(14)**. If they are brass additional brass earth bosses **(6)** will be fitted for terminating any screening from around the insulated conductor cores.

8b) Locate the insulator **(4)** onto the contact tubes **(9)** ensuring the small protrusion on one of the contact tube housings corresponds with the small protrusion on the gland body **(14)**. Using the 3 insulator screws **(7)**, tighten the insulator **(4)** onto the support pillars **(5)**.

8c) Locate the contact tube retaining rings **(8)** and without overtightening, clamp into the insulator **(4)**.

8d) The main body **(3)** can now be assembled to the insulator/cable gland body assembly ensuring that the small protrusion on the insulator is in line with the filling ports on the main body **(3)**. The gland body spigot **(14)** should fit neatly into the rear end of the main body **(3)**. Using the 4 screws provided tighten to a torque of 70Nm, the gland plate assembly onto the coupler body, ensuring that no distortion occurs.

8e) IMPORTANT – Ensure that the insulator **(4)** is flush or below the FLP face of the Main Body **(3)** using a straight edge – if not tighten insulator retaining screws **(7)**.

8f) Perform pre-insulation test.

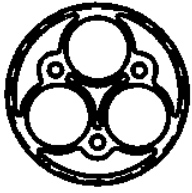
FILLING PROCEDURE

9a) Check coupler to ensure correct make off then position coupler level with filling ports at the top.

9b) Using the **MECS approved Victor Products Limited polyurethane resin C18-1** thoroughly mixing the resin to the mixing instructions and fill to the bottom of the FLP filler port screw thread. If topping up is required this should be done within 10 minutes of the main fill ensuring that the level of the filling medium does not fall below the bottom of the thread and fit approved stopper plugs **(10)**.

9c) Allow 2 hours before moving or commencing high voltage testing.

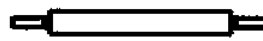
NOTE: ONLY VICTOR PRODUCTS LIMITED RESIN C18-1 SHOULD BE USED WHEN FILLING THE VICTOR PRODUCTS RANGE OF HALF COUPLERS AND ADAPTORS.



TYPICAL SEALING RING



INTER-CONNECTING
KIT ASSEMBLY



AUXILIARY/ PILOT PIN
NOTE PILOT IS INSULATED.



PHASE CONTACT PIN

MAINTENANCE AND INSPECTION.

1. When assembled to an associated half coupler or adaptor with an interface flange designed to BS3454 the electrical contact is made between each component by the insertion of three 3 contact pins or if fitted the pilot/auxilliary contact pins into their respective contact tubes.
2. When assembled to a blanking cover, adaptor or half coupler a rubber sealing ring complying to BS3454 must be used between the two interface flanges with the flanges secured by using the interconnecting kit.
3. After assembly the gap between the two mating faces should be checked using feeler gauges and should not exceed .5mm.
4. Ensure there is an adequate earth connection from the Half Coupler. This can be achieved by an earth connection from the studs on the rear of the armoured gland plate or from the earth boss on the rear of the un-armoured gland plate to the Half Couplers mating part.

HEALTH AND SAFETY AT WORK etc. ACT 1974

In the United Kingdom all equipment must be installed, operated and disposed of (as required) within the legislative requirements of the Health and Safety at Work etc. Act 1974. Leaflet No. HSS L1 refers to the Company's obligation and is available on request.

It is the responsibility of the user to select, install, operate and maintain the equipment in accordance with the relevant legislation and appropriate code of practice.



EU Only

Prices and design are subject to alteration without notice. All products are sold subject to our conditions of sale, copies of which are available on request.

We reserve the right to change characteristics of our products. All data is for guidance only

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Attestation of Conformity

Attestation de Conformité
Konformitätsbescheinigung



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3.3Kv HALF COUPLER – 33MK1A


Certification number MECS02ATEX5087U I M2 EExd I

Victor Products Ltd

Hereby declare our sole responsibility that the product which is the subject of this attestation is in conformity with the following standards or normative documents.

Erklären in alleiniger Verantwortung, daß das Product auf das sich diese Bescheinigung bezieht, mit der/den folgenden Norm(en) oder normativen Dokumenten Ubereinstimmt.

Déclarons de notre seule responsabilité, que le produit auquel cette attestation se rapporte, est conforme aux norme(s) ou aux documents normatifs suivants.

Number and date of standard Nr. Sowie Ausgabedatum der Norm No. Ainsi que date d'émission des normes.	Directive description Bestimmungen der Richtlinie Prescription de la directive
EN 50014 (1998) EN 50018 (2000) <i>This equipment has been reviewed against the requirements of EN60079-0: 2018 and EN60079-1: 2014, in respect of the differences from the standards to which this certificate was issued; none of these differences affect this equipment.</i> Dieses Gerät wurde hinsichtlich der Unterschiede zu den Standards, für die dieses Zertifikat ausgestellt wurde, mit den Anforderungen von EN60079-0: 2018 und EN60079-1: 2014 verglichen. Keiner dieser Unterschiede wirkt sich auf dieses Gerät aus. Cet équipement a été passé en revue contre les conditions d'EN60079-0 : 2018 et EN60079-1 : 2014, en ce qui concerne les différences des normes auxquelles ce certificat a été délivré ; aucune de ces différences n'affecte cet équipement.	Equipment and protective systems intended for use in potentially explosive atmospheres. This Attestation is valid for directive 2014/34/EU. Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen. Diese Bescheinigung gilt für die Richtlinie 2014/34 /EU. Appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles. Cette Attestation est valable pour la directive 2014/34 /UE.
EN50082 (1992) EN55015 (1993) EN 60555-2 (1987)	89/336 EEC: Electromagnetic Compatibility 89/336 EWG: Elektromagnetische Verträglichkeit 89/336 CEE: Compatibilité électromagnétique
Notified Body: CSA Group Netherlands B.V. Notified Body No. 2813	 P. Devlin Operations Manager January 2024

SERIAL NUMBER