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ATEX C0013449-0-EN

# CERTIFICATE

#### SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE [1]

Equipment or Protective System intended for use in potentially explosive atmospheres Directive 2014/34/EU

[3] Supplementary EU-Type Examination Certificate number:

#### CESI 18 ATEX 025 X /01

- [4] Product: Cable glands 453, 453U and 453O series
- Manufacturer: Shomal Engineering & Manufacturing Co. (SEMC) [5]
- C2 St. Salmanshahr Industrial Park [6] Address: Mazandaran (Iran)
- [7] This supplementary certificate extends EU-Type Examination Certificate CESI 18 ATEX 025 X, to apply to Product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.
- [8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, certifies that this Product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report n. EX- C4009239.

Compliance with the Essential Health and Safety Requirements has been assured by compliance [9] with

#### EN IEC 60079-0:2018 EN 60079-1:2014 EN IEC 60079-7:2015+A1:2018 EN 60079-31:2014

except in respect of those requirements listed at item 18 of the Schedule.

- [10] If the sign "X" is placed after the certificate number, it indicates that the Product is subject to special conditions for safe use specified in the schedule to this certificate.
- [11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified Product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.
- The marking of the Product shall include the following: [12]



Ex db I Mb and Ex eb I Mb

(453 std. type only)



Ex db IIC Gb and Ex eb IIC Gb and Ex tb IIIC Db IP 66/67/68

(for all types)

This certificate may only be reproduced in its entirety and without any change, schedule included. Date 03.03.2025 - Translation issued the 03.03.2025

Verified Prepared Approved Giacomo Chiarini Fabio Mariani Alessandro Fedato

### Schedule

#### [14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 18 ATEX 025 X /01

#### [15] **Description of the variation to the Product**

With this new issue of the certificate, the following variations have been made to the product:

<u>Variation 1.1:</u> Reassessment of the product according to the new harmonized standards EN IEC 60079-0:2018 and EN IEC 60079-07:2015 + A1:2018.

*Variation 1.2:* Introduction of cable gland versions for lead-sheathed cables.

Variation 1.3: Extension of minimum ambient temperature.

Variation 1.4: Addition of IP67 degree of protection.

#### **Description of Product**

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The Cable glands type 453.., 453U.. and 453O.. have trademark "SEMC".

The Cable glands **453.** (STANDARD), **453U.** (UNIVERSAL) and **453O.** (OFFSHORE) series are suitable for inserting circular cables into Ex db enclosures having threaded entries and Ex eb or Ex tb enclosures having either threaded or plane entries.

Attachment of the glands to an enclosure is by means of the male threaded portion on the male body. An elastomeric inner diaphragm ring is used to realize sealing between the cable and the gland body. To prevent pulling or twisting forces being transmitted to the conductor connections, the cable glands retain the cable armour or the cable braid by specific clamping device.

Ingress protection of IP66/67/68 (50 m for 30 min.) is maintained when the glands are installed in accordance with the manufacturer's instructions.

The Cable glands 453.. type are designed for steel wire armoured cables suitable for Groups I, IIC, IIIC while 453U.. and 453O.. types are designed for steel wire armoured, shielded and braided cables suitable for Groups IIC and IIIC.

The cable gland types **453..** and **453U..** can also be used for lead sheathed cables, when fitted with the proper grounding washer.

The Cable glands **453..**, **453U..** and **453O..** series is comprised of a male lower body, upper body, diaphragm seal and lower insert, grounding cone, universal reduction for type **453U..** or shielding cone for type **453O..** used for shielded and braided cables, braid ring, O-Ring seal and a cap. The elastomeric inner diaphragm seal realizes the pressure on the cable sheath.

Armoured cable clamping: when the upper body is screwed onto the lower body, the armour of the cable is clamped between the grounding cone and the braid ring.

Braided cable clamping (**453U.** and **453O.** types only): when the upper body is screwed onto the lower body, the braid of the cable is clamped between the grounding cone on which is placed the universal reduction (**453U.** types only) or the shielding cone (**453O.** types only).

The lower insert allows the diaphragm seal to expand elastically according to the inserted cable diameter.

Cable glands **453..**, **453U..** and **453O..** series standard threads series are cylindrical ISO Metric 261 from M16x1.5 up to M100x1.5 and tapered series NPT ANSI/ASME B1.20.1 from 3/8" up to 4".

## Cable glands 453.. type with M16x1.5 or 3/8"NPT thread sizes and Cable glands 453U.. and 453O.. types are not admitted for Group I applications.

Alternative available cylindrical threads are GAS ISO 228/1, NPSM ANSI/ASME B1.20.1 and series PG DIN 40430 from PG11 up to PG42 size. Thread series PG DIN 40430 can be used for "Ex eb" execution only.

To guarantee the IP 66/67/68 degree of protection the Cable glands **453..**, **453U..** and **453O..** series with cylindrical threads use a flat washer placed in-between the male threaded gland body and the enclosure wall, while for all other threads the IP 66/67/68 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

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The Cable glands are generally made in Brass (CuZn39Pb3 EN 12164). The following alternative materials can be supplied on demand:

- Nickel-plated Brass type CuZn39Pb3 EN 12164.

- Stainless steel type AISI316; AISI304; AISI303.

- Galvanized carbon steel type FE36; FE37 UNI 10233/4.

The cable glands can be also used for intrinsically safe circuits Ex i and should have a part painted in light blue.

#### Ambient temperature ranges:

[13]

All the models are admitted for:

Models made of galvanized carbon steel: min

 $-60^{\circ}C \div +80^{\circ}C$  for cable glands with Silicon sealing rings;  $-50^{\circ}C \div +80^{\circ}C$  for cable glands with fiber flat washers. minimum temperature limited to  $-20^{\circ}C$ 

Identification of cable glands 453.., 453U.. and 453O.. series:



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#### [14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 18 ATEX 025 X /01

Types and thread sizes of cable glands are listed on the followings Table 1.

Table 1:								
Cable gland		Thread size		Cable Dia. ranges				
					(mm)			
Туре	Size	NPT	ISO	Inner	Armour			
			pitch 1.5	sheath	sheath			
453	01S	3/8"	M 16	3.5-8	6.5-12			
453	01	3/8"	M 16	6-11	9-16			
453	1XS	1/2"	M 20	3.5-8	6.5-12			
453	1S	1/2"	M 20	6-11	9-16			
453	1	1/2"	M 20	8.5-14.5	12-20			
453	2S	3/4"	M 25	8.5-14.5	12-20			
453	2	3/4"	M 25	12-20	16-26			
453	3S	1"	M 32	12-20	16-26			
453	3	1"	M 32	17-26	20-33			
453	4S	1 1⁄4"	M 40	17-26	20-33			
453	4	1 1⁄4"	M 40	23-32	29-41			
453	5S	1 1⁄2"	M 50	23-33	29-41			
453	5	1 1⁄2"	M 50	29-41	36-52			
453	6S	2"	M 63	29-41	36-52			
453	6	2"	M 63	40-56	50-65			
453	7S	2 1⁄2"	M 75	40-56	50-65			
453	7	2 1⁄2"	M 75	54.5-68	61-78			
453	80S	3"	M 80	54.5-68	61-78			
453	80	3"	M 80	67-73	75-89			
453	8	3 1/2"	M 90	67-77	75-89			
453	9	4"	M 100	75-91	88-104			

#### Warning labels

None.

#### [16] **Report n. EX- C4009239**

#### **Routine tests**

None

#### [17] Special conditions for safe use (X)

- The coupling of the cable glands with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate in order to respect the type of protection of the electrical apparatus on which cable glands are mounted.
- The cable glands shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The cable glands **453..** type have to be protected from hydraulic fluids, oils and greases when applied for Group I (mines) applications.
- The cable glands type **453.** M16x1.5 and 3/8"NPT sizes and **453U.** and **453O.** types are not admitted for Group I applications.
- The cable glands **453..** type are for steel wire armoured cables only.
- The cable glands 453U.. type are for steel wire armoured cables, shielded or braided cables.
- The cable glands **453O..** type are for shielded or braided cables only.

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[14] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 18 ATEX 025 X /01

Special conditions for safe use (X), follows:

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- The cable glands **453U..** for use with shielded or braided cables and cable glands **453O..** are only suitable for fixed installations. The cables must be effectively clamped to prevent pulling and twisting.
- The cable glands shall be installed in such a way that the temperature at the mounting point will remain within the service temperature ranges accordingly to the marking.
- The degree of protection IP 66/67/68 according to the EN 60529 standard will be guaranteed for the cable glands if the holes into which cable glands are mounted are suitably sealed. To this scope the correct positioning of the gaskets (for cylindrical threads) or the application of sealant on the threads (for tapered threads), shall be done as indicated in the manufacturer instruction.

#### [18] Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

#### [19] Descriptive documents (prot. EX- C4009243)

-* Technical note SHA4-TN-CF rev. 01 (11 pg.)	dated	28.12.2023
-* Safety, Mounting and Maintenance Instruction SHA4-MI-CF rev. 01 (19 pg.)	dated	28.12.2023
-* Drawing SHA3-IEC.453(M) rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.453(NPT) rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.453O(M) rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.453O(NPT) rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.453U(M) rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.453U(NPT) rev. 01	dated	28.12.2023
-* Drawing 453, 453U type SHA3-IEC.170 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.171 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.172 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.173 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.174 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.175 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.176 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.177 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.178 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.179 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.180 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.181 rev. 01	dated	28.12.2023
- Manufacturing materials and datasheets SHA3-IEC.182 rev. 00 (26 pg.)	dated	24.04.2018
-* Drawing SHA3-IEC.184 rev. 01	dated	28.12.2023
- Drawing SHA3-IEC.185 rev. 00	dated	24.04.2018
-* Drawing SHA3-IEC.186 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.187 rev. 01	dated	28.12.2023
-* Drawing SHA3-IEC.188 rev. 00	dated	28.12.2023
-* Drawing SHA3-IEC.189 rev. 00	dated	28.12.2023
-* Drawing SHA3-IEC.190 rev. 00	dated	28.12.2023
-* Drawing SHA3-IEC.183 rev. 01 (2 pg.)	dated	28.12.2023
Note: an * is placed before the title of documents which are new or revised annexed to this sur	nlomont	

<u>Note</u>: an \* is placed before the title of documents which are new or revised, annexed to this supplement. One copy of all documents mentioned above is kept in CESI files.

Certificate history

Issue N.	Issue Date	Summary description of variation	
01	Current	Standards update, added version for lead-sheathed cables, extension of minimum Tamb., addition of IP67 degree of protection.	
00	17.06.2018	First Issue of the Certificate.	