IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEx CES 15.0011X	Issue No: 0	Certificate history: Issue No. 0 (2015-09-28)
Status:	**Current**	Page 1 of 4	
Date of Issue:	**2015-09-28**		

Applicant: **ATEX SRL**
Via del Tecchione 36/B,
I-20098 San Giuliano Milanese (MI)
Italy
Italy

Electrical Apparatus: **Cable Glands, series PAP.., PNAU.. and PAP..LT**

Optional accessory:

Type of Protection: **Flameproof enclosures 'd'; increased safety 'e'; Dust ignition protection 't'**

Marking:

Ex d IIC Gb
Ex e IIC Gb
Ex tb IIIC Db
IP 66/68

Approved for issue on behalf of the IECEx Certification Body: Mirko Balaz

Position: Head of IECEx CB

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

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Date of Issue:	**2015-09-28**	Page 2 of 4
Manufacturer:	**ATEX SRL** Via del Tecchione 36/B, I-20098 San Giuliano Milanese (MI) Italy **Italy**	
Additional Manufacturing location(s):		

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The electrical apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2011 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-31 : 2008 Edition:1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

IT/CES/ExTR15.0010/00

Quality Assessment Report:

NO/DNV/QAR13.0003/02

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The cable glands type **PAP.. , PNAU.. and PAP..LT..** have trademark **"ATEX SRL".**

Types **PNAU..** cable glands are designed for non-armoured cables .

Types **PAP.. and PAP..LT** cable glands are designed for steel wire armoured or shielded cables.

Types **PAP.. and PAP..LT (Standard)** cable glands are used for steel wire armoured cables.
For t ypes **PAPO.. and PAPO..LT (Offshore)** cable glands instead of the grounding cone, shielding cone is used and they are used for shielded cables. While for types **PAPU.. and PAPU..LT (Universal)** cable glands an armour reduction ring is used.
The cable glands characteristics are further described in the Annexe of this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

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Cable glands types PAP.. and PNAU..:
Cable glands types PAP..LT:

- The degree of protection IP 66/68 according to the IEC 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. Therefore it is the users' responsibility to ensure that the appropriate ingress protection level is maintained.

Annex:

IECEx CES 15.0011X ANNEX- Cable glands PAP_PAPLT_PNAU_ATEXsrl.pdf

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Prot: B5027605

Annex to certificate: **IECEx CES 15.0011X Issue No.:0 of 2015-09-28**

Applicant: **ATEX SRL**
Via del Tecchione 36/B,
I-20098 San Giuliano Milanese (MI), Italy

Apparatus: **Cable Glands, series PAP.., PNAU.. and PAP..LT**

Description of the equipment:

The cable glands type **PAP.. , PNAU..** and **PAP..LT..** have trademark **"ATEX SRL"**.

Types PNAU.. cable glands are designed for non-armoured cables. They are comprised of a male body, inner sealing ring, pressure ring and cap. When the cap is screwed onto the male body, the pressure ring comprises the lower sealing ring onto the outer sheath of the cable and realizes the clamp.

Types PAP.. and PAP..LT cable glands are designed for steel wire armoured or shielded cables.

Types **PAP..** and **PAP..LT (Standard)** cable glands are used for steel wire armoured cables. They are comprised of a male body, lower sealing ring, grounding cone, swivel braid retainer, middle body, upper sealing ring and cap. When the middle body is screwed onto the male body the cable wire armour is clamped between the swivel braid retainer and the grounding cone and the lower sealing ring is compressed onto the inner sheath of the cable. For types **PAPO..** and **PAPO..LT (Offshore)** cable glands instead of the grounding cone, shielding cone is used and they are used for shielded cables. While for types **PAPU..** and **PAPU..LT (Universal)** cable glands an armour reduction ring is used. With this additional ring, they can be used for shielded cables. When the armour reduction ring is taken out, then they can be used for armoured cables. For these cable glands the sealing of the armoured cable outer sheath is facilitated by the upper sealing ring which is compressed onto the outer sheath when the cap is screwed onto the middle body. For **PAP..** and **PAP..LT** cable glands the sealing of the armoured cable outer sheath is facilitated by the upper sealing ring which is compressed onto the outer sheath when the cap is screwed onto the middle body.

The cable glands are suitable for inserting circular cables into Ex-d enclosures having threaded entries and Ex-e 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 sealing ring is used in each gland type to facilitate sealing between the cable and the gland body and to clamp the cable to prevent pulling or twisting forces being transmitted to the conductor connections. Ingress protection of IP66/68 (50 m for 30 min.) is maintained when the glands are installed in accordance with the manufacturer's instructions. The cable glands should be also used for intrinsically safe circuits Ex-i. In this case, these cable glands should have a part painted light blue.

For type **PAP..** the standard threads types are cylindrical ISO Metric 965/1 and 965/3 from M16x1.5 up to M110x1.5 and tapered threads type NPT ANSI/ASME B1.20.1 from 3/8" up to 3 ½". For type **PNAU..** the standard threads types are cylindrical ISO Metric 965/1 and 965/3 from M16x1.5 up to M90x1.5 and tapered threads type NPT ANSI/ASME B1.20.1 from 3/8" up to 3". For type **PAP..LT** the standard threads types are cylindrical ISO Metric 965/1 and 965/3 from M20x1.5 up to M32x1.5 and tapered threads type NPT ANSI/ASME B1.20.1 from 3/8" up to 1".

Alternative available cylindrical threads are GAS ISO 228/1, NPSM ANSI ASME B1.20.1 and type PG DIN 40430. Thread type PG DIN 40430 can be used for "Ex-e" execution only.

To guarantee the IP 66/68 degree of protection the cable glands types **PAP..**, **PNAU..** and **PAP..LT** with cylindrical threads have a sealing edge machined for fitting an O-ring, alternatively it is available a flat washer, while for all other threads the IP 66/68 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

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

- Stainless steel type AISI316, AISI304 or AISI303;
- Nickel-plated Brass CuZn39Pb3 EN 12164;
- Galvanized carbon steel type FE36; FE37 UNI 10233/4.

In addition, the cable glands can be supplied with an anti-tearing nut, only if specifically required by the purchaser.

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Apparatus: **Cable Glands, series PAP.., PNAU.. and PAP..LT**

*Identification of types **PAP.. PAP..LT** and **PNAU** cable glands:*

**** * *** * (**) ** ** * - **

Code which identifies the type:
- **PAP**: cable gland for armoured or shielded cable
- **PAP..LT**: cable gland for armoured or shielded cable
- **PNAU**: cable gland for non-armoured cable

Code which identifies the cable type *(**PAP..** and **PAP..LT** type only)*:
- **Blank**: standard *(for armoured cables only)*
- **U**: universal *(for armoured or shielded cables)*
- **O**: offshore *(for shielded cables only)*

Size (*see Table 1, 2 and 3*)

Type of thread:
- **N**: NPT ANSI/ASME B1.20.1
- **S**: NPSM ANSI/ASME B1.20.1
- **P**: PG DIN 40430 *(assessed for Ex e protection type only)*
- **M**: ISO Metric pitch 1,5
- **C**: GAS ISO 228-1

Thread size (*see Table 1, 2 and 3*)

- **Blank**: for **PAP..** or **PNAU..** cable gland type
- **LT**: for **PAP..LT** cable gland type

Manufacturing material:
- **B**: brass
- **BN**: nickel-plated brass
- **X**: stainless steel
- **Z**: galvanized carbon steel

Seals material:
- **C**: Chloroprene (Neoprene)
- **S**: Silicon

Flat washer
- **Blank**: none (Standard O-ring)
- **WC**: with flat washer in Chloroprene (Neoprene)
- **WS**: with flat washer in Silicon
- **WF**: with flat washer in fibre (Ta -40 ÷ +80 °C)

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Apparatus: **Cable Glands, series PAP.., PNAU.. and PAP..LT**

Types and thread sizes of cable glands are listed on the followings Table 1, Table 2 and Table 3.

Table 1:

PAP..					
Cable glands		**Thread size**		**Cable Dia. ranges** (mm)	
Type	**Size**	**NPT**	**ISO** pitch 1,5	**Inner sheath**	**Armour sheath**
PAP..	01S..	3/8”	M 16	3-8,5	6-12
PAP..	01..	3/8”	M 16	6-12	8,5-16
PAP..	1S..	1/2”	M 20	3-8,5	6-12
PAP..	1..	1/2”	M 20	6-12	8,5-16
PAP..	1L..	1/2”	M 20	12-14,5	16-20
PAP..	2XS..	3/4”	M 25	3-8,5	6-12
PAP..	2S..	3/4”	M 25	6-12	8,5-16
PAP..	2..	3/4”	M 25	12-16	16-21
PAP..	2L..	3/4”	M 25	12-20	16-26
PAP..	3XS..	1”	M 32	6-12	8,5-16
PAP..	3S..	1”	M 32	12-20	16-26
PAP..	3..	1”	M 32	15-26	20-33
PAP..	4XS..	1 ¼”	M 40	12-20	16-26
PAP..	4S..	1 ¼”	M 40	15-26	20-33
PAP..	4..	1 ¼”	M 40	20-32	29-41
PAP..	5XS..	1 ½”	M 50	15-26	20-33
PAP..	5XM..	1 ½”	M 50	20-32	29-41
PAP..	5S..	1 ½”	M 50	22-35	33-48
PAP..	5..	1 ½”	M 50	27-41	36-52
PAP..	6XS..	2”	M 63	22-35	33-48
PAP..	6XM..	2”	M 63	27-41	36-52
PAP..	6S..	2”	M 63	35-45	43-57
PAP..	6..	2”	M 63	40-52	47-60
PAP..	7XS..	2 ½”	M 75	35-45	43-57
PAP..	7S..	2 ½”	M 75	40-52	47-60
PAP..	7..	2 ½”	M 75	45-60	54-70
PAP..	8XS..	3“	M 90	40-52	47-60
PAP..	8S..	3“	M 90	45-60	54-70
PAP..	8..	3“	M 90	60-72	63-80
PAP..	9S..	3 ½”	-	45-60	54-70
PAP..	9..	3 ½”	-	60-72	63-80
PAP..	10S..	-	M 110	45-60	54-70
PAP..	10..	-	M 110	60-72	63-80

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Table 2:

PAP..LT					
Cable glands		**Thread size**		**Cable Dia. ranges** (mm)	
Type	**Size**	**NPT**	**ISO pitch 1,5**	**Inner sheath**	**Armour sheath**
PAP..LT	20	1/2”	M 20	8,5-14,5	12,0-20,0
PAP..LT	25XM	3/4”	M 25	8,5-14,5	12,0-20,0
PAP..LT	25	3/4”	M 25	8,5-16,0	12,0-21,0
PAP..LT	32XM	1”	M 32	8,5-16,0	12,0-21,0

Table 3:

PNAU.. (Crater)				
Cable glands		**Thread size**		**Cable Dia. ranges** (mm)
Type	**Size**	**NPT**	**ISO pitch 1,5**	
PNAU..	01..	3/8”	M 16	3-8,5
PNAU..	01L..	3/8”	M 16	6-12
PNAU..	1..	1/2”	M 20	6-12
PNAU..	1L..	1/2”	M 20	12-14,5
PNAU..	2S..	3/4”	M 25	6-12
PNAU..	2..	3/4”	M 25	12-16
PNAU..	2L..	3/4”	M 25	12-20
PNAU..	3S..	1”	M 32	12-20
PNAU..	3..	1”	M 32	15-26
PNAU..	4S..	1 ¼”	M 40	15-26
PNAU..	4..	1 ¼”	M 40	20-32
PNAU..	5S..	1 ½”	M 50	22-35
PNAU..	5..	1 ½”	M 50	27-41
PNAU..	6S..	2”	M 63	35-45
PNAU..	6..	2”	M 63	40-52
PNAU..	7S..	2 ½”	M 75	40-52
PNAU..	7..	2 ½”	M 75	45-60
PNAU..	8S..	3“	M 90	45-60
PNAU..	8..	3“	M 90	60-72

Constructional characteristics

Degree of protection (IEC 60529): IP 66 / IP 68 (50 m for 30 min.).

Service temperature range for **PAP, PNAU**: - 40 ÷ + 100 °C for models with sealing rings made of Chloroprene.
- 60 ÷ + 130 °C for models with sealing rings made of Silicon.
up to -20 °C for models made of Galvanized carbon steel.
-40 ÷ +80 °C for models supplied with Fiber flat washers.

Service temperature ranges for **PAP..LT**: -40 ÷ +80 °C for models with sealing rings made of Chloroprene.
-60 ÷ +80 °C for models with sealing rings made of Silicon.
up to -20 °C for models made of Galvanized carbon steel.
up to -40 °C for models supplied with Fiber flat washers.