

Ex D Cable Glands

M20 armored ADE 4F

(01846-001)

Documentation

Content

- 1 Assembly Instruction**
- 2 Ineris ATEX 0032X.....**
- 3 Ineris IECEx 0025X**
- 4 Konformitätsbescheinigung Brasilien.....**
- 5 Konformitätsbescheinigung ATEX**
- 6 Konformitätsbescheinigung UL**
- 7 EACEx RU C.....**
- 8 Notes**

ADE 4F

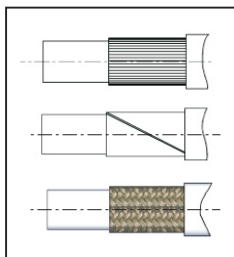
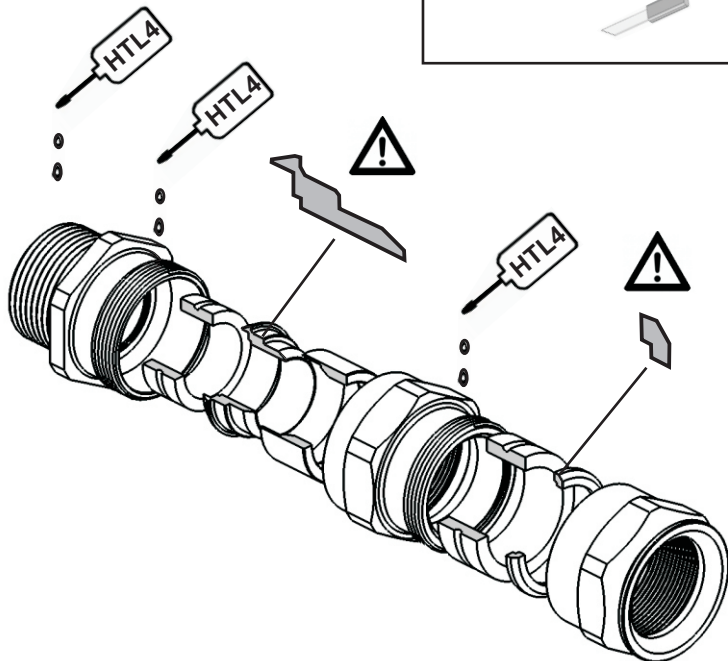
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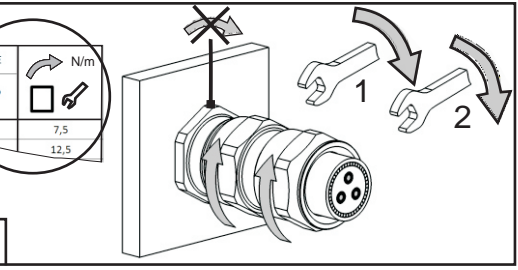
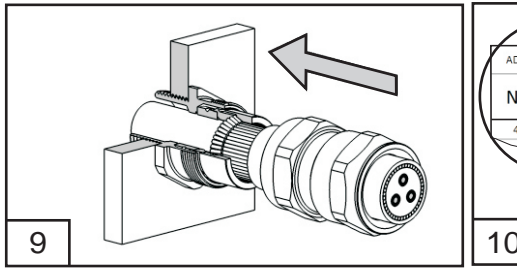
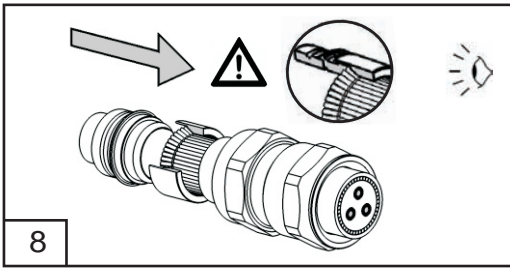
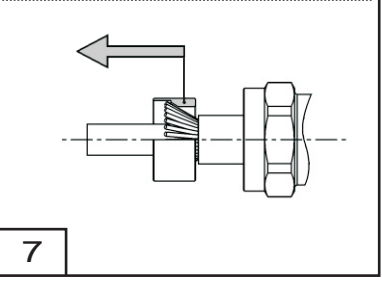
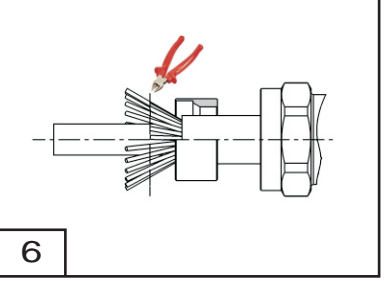
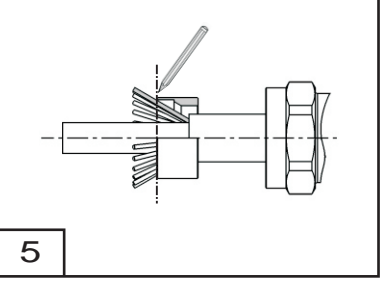
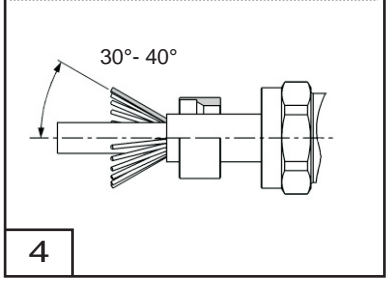
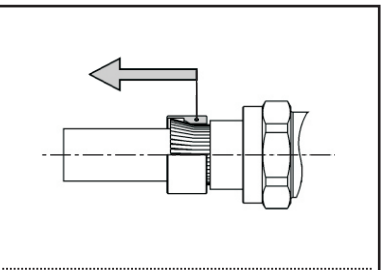
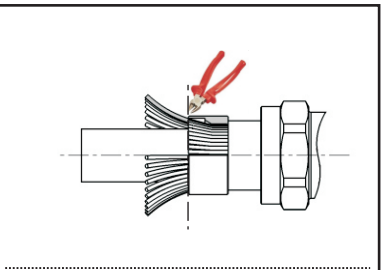
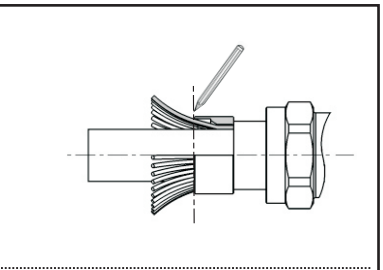
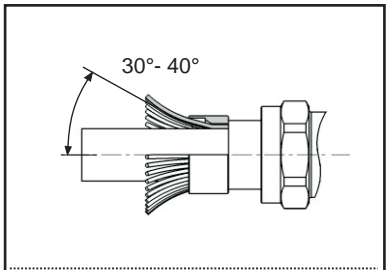
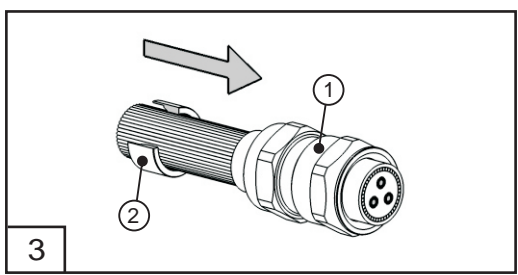
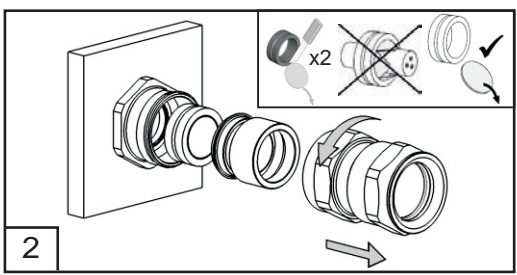
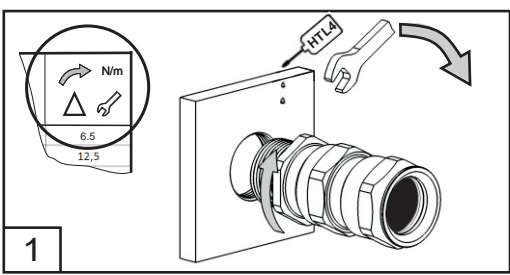


2/2



NPT	ISO	N/m
1/8"	M10	6,5
1/4"	M12	7,5
3/8"	M16	12,5
1/2"	M20	20
3/4"	M25	30
1"	M32	55
1 1/4"	M40	75
1 1/2"	M50	100
2"	M63	135
2 1/2"	M75	175
3"	M90	300
3 1/2"		400
4"	M110	480

ADE N°				N/m
	A (mm)	B (mm)	C (mm)	
4	4,5 - 8,5	2,75 - 5,5	0,2 - 0,9	7,5
5	7 - 12	4,5 - 8	0,2 - 0,9	12,5
6	10 - 16	7 - 12	0,2 - 1,25	20
7	13,5 - 21	10 - 15,5	0,2 - 1,25	30
8	18 - 27,5	13,5 - 20,5	0,2 - 1,6	55
9	23 - 34	18 - 26	0,2 - 1,6	75
10	29 - 41	23 - 34	0,2 - 2,0	100
11	35 - 48	29 - 41	0,2 - 2,5	135
12	42 - 56	35 - 45	0,2 - 2,5	175
13	50 - 65	42 - 53	0,2 - 2,5	240
14	58 - 74	50 - 62,5	0,2 - 2,5	300
15	66 - 83	58 - 73	0,2 - 3,15	400
16	75 - 93	66 - 78	0,2 - 3,15	480
17	85 - 104	75 - 92	0,2 - 3,15	610





- (2) **Equipment and protective systems intended for use in potentially explosive atmospheres
Directive 94/9/EC**

(1) **EC-TYPE EXAMINATION CERTIFICATE**

- (3) Number of the EC type examination certificate: **INERIS 12ATEX0032X**

- (4) Equipment or protective system: **CABLE GLANDS TYPE ADE... versions:**
ADE-1F2 n° 3 to N° 13
ADE-4F n° 4 to N° 17
ADE-6F n° 5 to N° 11

- (5) Manufacturer: **COOPER CAPRI S.A.S**

- (6) Address: **36-40 rue des Fontenils
F - 41600 Nouan Le Fuzelier**

- (7) This equipment or protective system and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

- (8) INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/EC of the 23rd March 1994, certifies that this equipment or protective system fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, described in annex II of the Directive.

The examinations and the tests are consigned in report No 026711/12.

- (9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:

EN 60079-0	:	2009	IEC 60079-0	:	2011
EN 60079-1	:	2007	IEC 60079-1	:	2007
EN 60079-7	:	2007	IEC 60079-7	:	2006
EN 60079-31	:	2009	IEC 60079-31	:	2008

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

- (10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protective system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.
- (11) This EC type examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system, these are not covered by this certificate.
- (12) The marking of the equipment or the protective system will have to contain:

 II 2 GD  I M2

Verneuil-en-Halatte, 2012.12.21



The Chief Executive Officer of INERIS,
By delegation
T. HOUEIX
Ex Certification Officer

(13)

ANNEX

(14)

EC TYPE EXAMINATION CERTIFICATE N° INERIS 12ATEX0032X

(15)

DESCRIPTION OF THE EQUIPMENT OR THE PROTECTIVE SYSTEM

This ADE... cable glands type is made in stainless steel, brass, bronze or aluminum alloy (group I excluded).

They are protected by flameproof enclosure, increased safety and dust protection. They can also be fitted on 'Ex i', 'Ex m', 'Ex o', "Ex p" and "Ex q" equipment.

The threaded joint can be cylindrical in accordance with the ISO 965/1 and ISO 965/3 or conical NPT in accordance with ANSI/ASME B1.20.1.

These cable glands can be with elastomeric sealing ring in Neoprene or Silicone according to the range of service temperature.

These cable glands, in accordance with the type:

- Are foreseen for armored cables or non armored cables.
- Can be realized with a simple sealing ring or double sealing ring.

These cable glands with conical or cylindrical threaded joint get the protection degrees IP66 according to the IEC 60 529 standard.

PARAMETERS RELATING TO THE SAFETY


These cable glands are intended with the following sizes and threaded joints:

- ADE-1F₂ cable glands series with single sealing ring for unarmored cable.
 - n°3 to n°13 for cable external diameter from 2,75 to 65 mm.
 - Cylindrical thread from M10 to M75 inclusive, according to ISO 965-1 & 965-3
 - Conical thread from NPT 1/8" to NPT 3" inclusive, according to ANSI/ASME B1.20.1.
- ADE-4F cable glands series with double sealing ring for armored or braided cable.
 - n°4 to n°17 for cable external diameter from 4,5 to 104 mm.
 - Cylindrical thread from M10 to M110 inclusive, according to ISO 965-1 & 965-3
 - Conical thread from NPT 1/8" to NPT 4" inclusive, according to ANSI/ASME B1.20.1.
- ADE-6F cable glands series with double sealing ring for armored or braided cable.
 - n°5 to n°11 for cable external diameter from 6 to 48 mm.
 - Cylindrical thread from M16 to M63 inclusive, according to ISO 965-1 & 965-3.
 - Conical thread from NPT 3/8" to NPT 2" inclusive, according to ANSI/ASME B1.20.1.


MARKING

Marking has to be readable and indelible; it has to include the following indications:

CCH CAPRI
F - 41600 Nouan Le Fuzelier
ADE... (1)
INERIS 12ATEX0032X
(Year of construction)

 II 2 GD

Ex db/eb IIC

 I M2 (*)

Ex db I/Ex eb I(*)

Ex tb IIIC IP66

(Type and size of thread)

(1) Type is completed by letters and numbers corresponding to the manufactured variations.

(*) Additional marking only for ADE-4F made in brass, bronze and stainless steel.

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

On the small cable glands the marking can be reduced at:

CCH CAPRI
ADE...(1)
INERIS 12ATEX0032X

(1) Type is completed by letters and numbers corresponding to the manufacturer variations.

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive document quoted hereafter constitutes the technical documentation of the equipment, subject of this certificate.

Certification file SRD/Certificates/INERIS/Files/ADE File Rev-I-0 (11 rubrics) dated and signed on 2012.06.06.

(17) SPECIAL CONDITIONS FOR SAFE USE

These cable glands are intended in the following service temperature:

For type ADE-1F₂ and 4F:

from -30°C to 80°C for sealing ring in Neoprene.

from -60°C to 140°C for sealing ring in silicone.

For type ADE-6F:

from -30°C to 80°C for sealing ring in silicone.

- For ADE-1F₂ version, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.
- For ADE-6F version, used with braided cable, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

The other conditions are stipulated in the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is ensured by:

- Conformity to the standards quoted in clause (9).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

ADDITION(3) **INERIS 12ATEX0032X/01**(4) **CABLE GLANDS TYPE ADE-....**(5) **Made by COOPER CAPRI S.A.S****(15) PURPOSE OF THE ADDITION**

Addition of the following cable glands with sealing ring:

- ADE-1F2 sizes n° 14 to 17 and ADE-1F2 anchorage sizes N° 3 to 17.
- ADE-5F sizes n° 4 to 17.

Addition of the following cable glands with TSC compound:

- ADE-1FC sizes n° 4 to 16
- ADE-6FC sizes n° 5 to 17

Addition of IPX8 in accordance with EN/IEC 60529 for conical threaded joint without additional sealing washer (gasket) and for cylindrical threaded joint fitted with sealing washer. The verification of the protection degree IPX8 corresponds to an immersion under 30 meters of water during 7 days.

PARAMETERS RELATING TO THE SAFETY

The parameters are replaced by the followings:

ADE	Size	Service temperature (°C)				Threaded joint		Groups	
		With Neoprene Sealing Ring	With Silicone Sealing Ring	With Silicone Internal Sealing (Diaphragm)	With TSC Compound	Cylindrical	Conical	I	II and III
ADE-1F2	3 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	X	All N°
ADE-1F2 Anchorage	3 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-4F	4 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-5F	4 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-6F	5 to 11	X	X	-30 to +80	X	M16 to M63	NPT 3/8" to NPT 2"	X	All N°
ADE-1FC	4 to 16	X	X	X	-60 to +80	M16 to M110	NPT 3/8" to NPT 4"	N° 11 to N° 17	All N°
ADE-6FC	4 to 17	X	X	X	-60 to +80	M16 to M110	NPT 3/8" to NPT 4"	N° 11 to N° 17	All N°

MARKING

The marking is replaced by the following:


CCH-CAPRI

F - 41600 Nouan Le Fuzelier

ADE...(1)

INERIS 12ATEX0032X

(Year of construction)

 II 2 GD

Ex db/eb IIC

 I M2 (*)

Ex db I / Ex eb I(*)

Ex tb IIIC IP66

(Type and size of thread)

(1) Type is completed by letters and numbers corresponding to the manufactured variations.

(*) Additional marking only for brass, bronze and stainless steel versions, for:

- ADE-1F2-Anchorage, ADE4F, ADE-5F.

- ADE-1FC (N° 11 up to N° 16) and ADE-6FC (N° 11 up to N° 17).

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

On the small cable glands the marking can be reduced at:

CCH-CAPRI

ADE...(1)

INERIS 12ATEX0032X

(1) Type is completed by letters and numbers corresponding to the manufacturer variations.

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) **DESCRIPTIVE DOCUMENTS**

The descriptive document quoted hereafter constitutes the technical documentation describing the modifications of the equipment, subject of this present addition.

- Certification file SRD/Certificates/INERIS/Files/ADE File Rev-I-1 (26 rubrics) dated and signed on 2013.01.16.

(17) **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use are replaced by the followings:

- These cable glands are intended in the following service temperature:

For type ADE-1F2, 4F and 5F:

From -30°C to 80°C with sealing ring in Neoprene.

From -60°C to 140°C with sealing ring in Silicone.

For type ADE-6F:

From -30°C to 80°C with internal sealing ring (diaphragm) in Silicone.

For type ADE-1FC and 6FC:

From -30°C to 80°C with TSC compound.

- For ADE-1F2 version, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.
- For ADE-6F version, used with braided cable, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

(18) **ESSENTIAL SAFETY AND HEALTH REQUIREMENTS**

The respect of the Essential Health and Safety Requirements is unchanged.

Verneuil-en-Halatte, 2013.03.29



A handwritten signature in blue ink, appearing to read "T. Houeix".

The Chief Executive Officer of INERIS
By delegation
T.HOUEIX
Ex Certification Officer

ADDITION

- (3) **INERIS 12ATEX0032X/02**
- (4) **CABLE GLANDS TYPE ADE-...**
- (5) **Made by COOPER CAPRI S.A.S**

(15) **PURPOSE OF THE ADDITION**

- Application of the EN 60079-0: 2012 standard.
- New version of cable gland ADE-1F2 DS :
 - o n° 3 to n° 17, for cable Ø 2,75 to 104 mm
 - o Cylindrical thread M10 to M110
 - o Conical thread NPT 3/8" to NPT 4"
- Modification of the operating temperatures for the type ADE-6F :
 - o -60°C to +80°C with internal sealing ring (diaphragm) in Silicone
- Addition of new external sealing washers with their own operating temperatures following :
 - o -30°C to +75°C for sealing washer in white mat nylon
 - o -35°C to +100°C for sealing washer in black Neoprene R
 - o -40°C to +80°C for sealing washer in black Neoprene C
 - o -60°C to +140°C for sealing washer in white PTFE

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are modified as follows:

ADE	Size	Service temperature (°C)				Threaded joint		Groups	
		With Neoprene Sealing Ring	With Silicone Sealing Ring	With Silicone Internal Sealing (Diaphragm)	With TSC Compound	Cylindrical	Conical	I	II and III
ADE-1F2	3 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	X	All N°
ADE-1F2 Anchorage	3 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-1F2 DS	3 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°

ADE	Size	Service temperature (°C)				Threaded joint		Groups	
		With Neoprene Sealing Ring	With Silicone Sealing Ring	With Silicone Internal Sealing (Diaphragm)	With TSC Compound	Cylindrical	Conical	I	II and III
ADE-4F	4 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-5F	4 to 17	-30 to +80	-60 to +140	X	X	M10 to M110	NPT 1/8" to NPT 4"	All N°	All N°
ADE-6F	5 to 11	X	X	-60 to +80	X	M16 to M63	NPT 3/8" to NPT 2"	X	All N°
ADE-1FC	4 to 16	X	X	X	-60 to +80	M16 to M110	NPT 3/8" to NPT4"	N° 11 to N° 17	All N°
ADE-6FC	4 to 17	X	X	X	-60 to +80	M16 to M110	NPT 3/8" to NPT4"	N° 11 to N° 17	All N°

MARKING

The marking is modified as follow for the new type:

CCH-CAPRI

F - 41600 Nouan Le Fuzelier

ADE-1F2 DS

INERIS 12ATEX0032X

(Year of construction)

⊕ II 2 GD

Ex db/eb IIC

⊕ I M2

Ex db I / Ex eb I (*)

Ex tb IIIC IP66

(Type and size of thread)

(*) Additional marking only for brass, bronze and stainless steel versions.

On the small cable glands the marking can be reduced at:

CCH-CAPRI

ADE-F2 DS

INERIS 12ATEX0032X

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

ROUTINE EXAMINATIONS AND TESTS

None.

(16) DESCRIPTIVE DOCUMENTS

The descriptive documents quoted hereafter constitute the technical documentation describing the modification of the equipment, subject of this present addition.

- Certification file SRD/Certificates/INERIS/Files/ADE File Rev-I-2 (32 rubrics) dated and signed on 2014.01.20

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use are modified as follows:

The maximum operating temperatures ranges of the entire cable glands must always be in accordance with the operating temperature of the internal sealing ring or compound and with the external sealing washer which ensure the degree of protection of the cylindrical threaded joint.

Maximum operating temperature range for internal sealing ring or compound :

- For type ADE-1F2, ADE-1F2 A, ADE-1F2 DS , 4F and 5F:

from -30°C to 80°C with sealing ring in Neoprene.

from -60°C to 140°C with sealing ring in Silicone.

- For type ADE-6F:

from -60°C to 80°C with internal sealing ring (diaphragm) in Silicone.

- For type ADE-1FC and 6FC:

from -60°C to 80°C with TSC compound.

Maximum operating temperature range for external sealing washer :

Sealing washer	Red fiber	Neoprene R	Neoprene C	Nylon	Green fiber	PTFE
Temperature °C	-30 to +80	-35 to +100	-40 to +80	-30 to +75	-60 to +140	-60 to +140

For ADE-1F2 version, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

For ADE-6F version, used with braided cable, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is completed as follows:

- Conformity to the standards quoted in clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2014.02.21



The Chief Executive Officer of INERIS
By delegation
T. HOUEIX
Ex Certification Officer

ADDITION

- (3) **INERIS 12ATEX0032X/03**
- (4) **CABLE GLANDS TYPE ADE-...**
- (5) **Made by COOPER CAPRI S.A.S**

(15) **PURPOSE OF THE ADDITION**

- Update of the manufacturer's details : Crouse-Hinds by EATON - Cooper Capri SAS - 36 rue des Fontenils - F - 41600 NOUAN-LE-FUZELIER.
- Addition of an alternative site of production : Cooper Electric (Changzhou) Co., Ltd. N°189 Liuyanghe Road, Xinbei District, Changzhou Jiangsu, 213031 CHINA.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The routine examinations and tests are unchanged.

(16) **DESCRIPTIVE DOCUMENTS**

The descriptive document quoted hereafter constitutes the technical documentation describing the modification of the equipment, subject of this present addition.

- Certification technical file SRD/Certificates/INERIS/Files/ADE Rev-I-3 (32 rubrics/51 pages) dated on April 2014.

(17) **SPECIAL CONDITIONS FOR SAFE USE**

The special conditions for safe use are unchanged.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is unchanged.

Verneuil-en-Halatte, 2014.10.02



The Chief Executive Officer of INERIS
By delegation
T. HOUÉIX
Ex Certification Officer





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 INE 12.0025X

Issue No: 4

Certificate history:

Issue No. 4 (2017-07-21)

Issue No. 3 (2014-10-03)

Issue No. 2 (2014-02-28)

Issue No. 1 (2013-02-20)

Issue No. 0 (2012-10-19)

Status: **Current**

Page 1 of 5

Date of Issue: **2017-07-21**

Applicant: **Crouse-Hinds by EATON - COOPER CAPRI S.A.S.**
36-40 rue des Fontenils
F - 41600 Nouan le Fuzelier
France

Equipment: **Cable gland type ADE...**

Optional accessory:

Type of Protection: **db, eb, nRc and tb**

Marking:

For ADE-1F2, ADE-1F2 Anchorage, ADE-1F2 ADCC, ADE-1F2 ADCS, ADE-1F2 DS, ADE-1F2 DS ADCH, ADE-4F, ADE-5F, ADE-6F, ADE-1FC, ADE-1FC ADCC, ADE-1FC ADCS and ADE-6FC:

Ex db IIC Ex eb IIC

Ex nRc IIC

Ex tb III C IP66

Additional marking for brass, bronze and stainless steel versions, for ADE-1F2 DS, ADE-1F2 DS ADCH, ADE-4F, ADE-5F, ADE-1F2 Anchorage, ADE-1FC (N°11 to N°16), ADE-1FC ADCC (N°11 to N°16), ADE-1FC ADCS (N°11 to N°16) and ADE-6FC (N°11 to N°17):

Ex db I Ex eb I

Approved for issue on behalf of the IECEx
Certification Body:

Thierry HOUEIX

Position:

Ex Certification Officer

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](http://www.iecex.com).

Certificate issued by:

INERIS
Institut National de l'Environnement Industriel
et des Risques, BP n2
Parc Technologique ALATA
France



IECEX Certificate of Conformity

Certificate No: IECEx INE 12.0025X Issue No: 4
Date of Issue: 2017-07-21 Page 2 of 5
Manufacturer: **Crouse-Hinds by EATON - COOPER CAPRI S.A.S.**
36-40 rue des Fontenils
F - 41600 Nouan le Fuzelier
France

Additional Manufacturing location(s):
Cooper Electric (Changzhou) Co., Ltd.
N°189 Liuyanghe Road
Xinbei District,
Changzhou Jiangsu
213031
China

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 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-15 : 2010 Edition:4	Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	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:

FR/INE/ExTR12.0022/02 FR/INE/ExTR12.0022/03 FR/INE/ExTR12.0022/04

Quality Assessment Report:

FR/LCI/QAR07.0002/09 GB/BAS/QAR07.0041/07



IECEx Certificate of Conformity

Certificate No: IECEx INE 12.0025X

Issue No: 4

Date of Issue: 2017-07-21

Page 3 of 5

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

Cable glands type ADE... versions ADE-1F2, ADE-1F2 A, ADE-1F2 DS, ADE-1FC, ADE-4F, ADE-5F, ADE-6F, ADE-6FC, ADE-1FC ADCC (ADFC), ADE-1FC ADCS (ADFS), ADE-1F2 DS ADCH, ADE-1F2 ADCC and ADE-1F2 ADCS are protected by flameproof enclosure and increased safety for groups IIC and dust protection for group IIIC.

Furthermore, the versions ADE-1F2 A, ADE-1F2 DS, ADE-1FC (sizes 11 to 17), ADE-4F, ADE-5F, ADE-1FC ADCC (sizes 11 to 17), ADE-1FC ADCS (sizes 11 to 17), ADE-6FC (sizes 11 to 17) and ADE-1F2 DS ADCH are protected by flameproof enclosure and increased safety for group I.

The threaded joint can be cylindrical in accordance with the ISO 965/1 and ISO 965/3 or conical NPT in accordance with ANSI/ASME B1.20.1.

These cable glands are foreseen, in accordance with the type, for armoured cables or non-armoured cables, they are made in stainless steel, brass, bronze or aluminium alloy; group I excluded for aluminium alloy.

The cable glands types ADE "Conduit" (ADCC or ADCS versions) are designed with treaded termination intended to be connected on threaded conduit.

The cable glands "ADE - Stopcap", option for version : ADE-1F2, ADE-1F2 A, ADE-1F2 DS, can be used in order to provide an external cable gland protection by guaranteeing the "Ex e" protection mode without the use of cable.

The cable glands "ADE-1F2 O-ring", are option for metric versions, for threaded or blank hole, with an O-ring embedded in a groove of a specific body.

The cable glands type ADE-1F2 DS "Hose" (ADCH version) are designed to be connected to a semi-rigid elastomeric hose.

These cable glands get the protection degrees IP66 according to IEC 60529 standard for conical threaded joint and also for cylindrical threaded joint without additional sealing washer (gasket).

When fixed with locknut through a blank hole, the degree of protection IP66 depends on the roughness of the contact surface on the equipment (Ra 0.4 µm maximum without sealing washer and Ra 6.3 µm maximum with sealing washer).

Cable glands with conical threaded joint without additional sealing washer (gasket) and cylindrical threaded joint fitted with sealing washer in Red Fiber or Green Fiber provide a protection degree IPX8 according to IEC 60529.

The verification of the protection degree IPX8 corresponds to an immersion under 30 meters of water during 7 days.

SPECIFIC CONDITIONS OF USE: YES as shown below:

The maximum operating temperatures ranges of the entire cable glands must always be in accordance with the operating temperature of the internal sealing ring or compound and with the external sealing washer which ensure the degree of protection.

- Maximum operating temperature range for internal sealing ring or compound :



IECEX Certificate of Conformity

Certificate No: IECEx INE 12.0025X

Issue No: 4

Date of Issue: 2017-07-21

Page 4 of 5

For type ADE-1F2, ADE-1F2 A, ADE-1F2 DS, ADE-1F2 DS ADCH, ADE-1F2 ADCC, ADE-1F2 ADCS, ADE-4F and ADE-5F:

- from -30°C to 80°C with sealing ring in Neoprene.
- from -60°C to 140°C with sealing ring in Silicone.

For type ADE-6F:

- from -60°C to 80°C with internal sealing ring (diaphragm) in Silicone.

For type ADE-1FC, ADE-1FC ADCC, ADE-1FC ADCS and ADE-6FC:

- from -60°C to 80°C with TSC compound.

- Maximum operating temperature range for external sealing washer :

Gasket	Red fiber	Neoprene R	Neoprene C	Nylon	Green fiber	PTFE
Temperature °C	-30 to +80	-35 to +100	-40 to +80	-30 to +75	-60 to +140	-60 to +140

- Maximum operating temperature range for external O-ring (for version with an O-ring embedded in a groove) :

- from -30 to + 80°C with Nitrile/Perbunan O-ring
- from -60 to + 140°C with Silicone O-ring

- For ADE-1F2, ADE-1F2 ADCC and ADE-1F2 ADCS, version, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

- For ADE-6F version, used with braided cable, the user shall provide additional clamping of the cable nearby to the enclosure on which the cable gland is installed. A Cooper Capri anchorage module can be used.

- When shrouds are used, for the risk from electrostatic discharge, the user shall read the instructions.

The other conditions of use are stipulated in the instructions



IECEX Certificate of Conformity

Certificate No: IECEx INE 12.0025X

Issue No: 4

Date of Issue: 2017-07-21

Page 5 of 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Purpose of the issue 1 of IECEx INE 12.0025X:

- Addition of the following cable glands with sealing ring:
 - ADE-1F2 sizes N°14 to 17 and ADE-1F2 anchorage sizes N°3 to 17
 - ADE-5F sizes N°4 to 17
- Addition of the following cable glands with TSC compound:
 - ADE-1FC sizes N°4 to 16
 - ADE-6FC sizes N°5 to 17
- Addition IP68

Purpose of the issue 2 of IECEx INE 12.0025X:

- New version of cable gland ADE... : ADE-1F2 DS
 - n°3 to n°17, for cable Ø 2,75 to 104 mm
 - Cylindrical thread M10 to M110
 - Conical thread NPT 3/8" to NPT 4"
- Modification of the operating temperatures :
 - For ADE-6F : -60°C to +80°C with internal sealing ring (diaphragm) in Silicone.
- Addition of new external sealing washers with their own operating temperatures following :
 - From -30°C à +75°C for sealing washer in white mat nylon
 - From -35°C to +100°C for sealing washer in black Neoprene R
 - From -40°C to +80°C for sealing washer in black Neoprene C
 - From -60°C to +140°C for sealing washer in white PTFE

Purpose of the issue 3 of IECEx INE 12.0025X:

- Update of the manufacturer's details : Crouse-Hinds by EATON – Cooper Capri SAS – 36 rue des Fontenils – F – 41600 NOUAN-LE-FUZELIER.
- Addition of an alternative site of production : Cooper Electric (Changzhou) Co., Ltd. N°189 Liuyanghe Road, Xinbei District, Changzhou Jiangsu, 213031 CHINA.

Purpose of the issue 4 of IECEx INE 12.0025X:

- Addition of "stocaps" versions
- Addition of cable glands cable glands types ADE "Conduit"
- Update of manufacturer documentations
- Application of standards IEC 60079-1:2014, IEC 60079-7:2015 and IEC 60079-31:2013

Annex:

[IECEX INE 12.0025X-04_Annex.pdf](#)



IECEX Certificate of Conformity

Certificate No.: IECEx INE 12.0025X

Issue No.: 4

Page 1 of 2

Annex: IECEx INE 12.0025X-04_Annex.pdf

PARAMETERS RELATING TO THE SAFETY

These cable glands are intended for use in the following service temperature:

ADE	Size	Service Temperature °C				Threaded joint		Groups	
		With Neoprene Sealing Ring	With Silicone Sealing Ring	With Silicone Internal Sealing (Diaphragm)	With TSC Compound	Cylindrical	Conical	I	II & III
ADE-1F2 ADE-1F2 "Conduit"	3 to 17	-30 to +80	-60 to +140	N/A	N/A	M10 to M110	NPT 1/8" to NPT 4"	N/A	All Sizes
ADE-1F2 "Anchorage"	3 to 17	-30 to +80	-60 to +140	N/A	N/A	M10 to M110	NPT 1/8" to NPT 4"	All Sizes	All Sizes
ADE-1F2 DS ADE-1F2 DS "Hose"	3 to 17	-30 to +80	-60 to +140	N/A	N/A	M10 to M110	NPT 1/8" to NPT 4"	All Sizes	All Sizes
ADE-4F	4 to 17	-30 to +80	-60 to +140	N/A	N/A	M10 to M110	NPT 1/8" to NPT 4"	All Sizes	All Sizes
ADE-5F	4 to 17	-30 to +80	-60 to +140	N/A	N/A	M10 to M110	NPT 1/8" to NPT 4"	All Sizes	All Sizes
ADE-6F	5 to 11	N/A	N/A	-60 to +80	N/A	M16 to M63	NPT 3/8" to NPT 2"	N/A	All Sizes
ADE-1FC ADE-1FC "Conduit"	4 to 16	X	X	N/A	-60 to +80	M16 to M110	NPT 3/8" to NPT4"	N° 11 to N° 17	All Sizes
ADE-6FC	4 to 17	X	X	N/A	-60 to +80	M16 to M110	NPT 3/8" to NPT4"	N° 11 to N° 17	All Sizes



IECEX Certificate of Conformity

Certificate No.: IECEx INE 12.0025X

Issue No.: 4

Page 2 of 2

Annex: IECEx INE 12.0025X-04_Annex.pdf

MARKING

Marking has to be readable and indelible; it has to include the following indications:

- EATON-Crouse.Hinds.Series or CCH-CAPRI
- ADE...(*)
- IECEx INE 12.0025X
- Ex db/eb IIC
- Ex db I / Ex eb I(**)
- Ex tb IIIC IP66
- Ex nRc IIC
- (Type and size of thread)

(*) Type is completed by letters and numbers corresponding to the manufactured variations.

(**) Additional marking only for brass, bronze and stainless steel versions, and in accordance with the table of the parameters relating to the safety. (*) Type is completed by numbers or number and letters corresponding to size of the enclosure.

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

When there is insufficient space on the cable entries the marking can be reduced until :

- EatonCHS or CCH-CAPRI
- ADE...(*)
- IECEx INE 12.0025X

(*) Type is completed by letters and numbers corresponding to the manufacturer variations.

On the sealing ring: size number to indicate the minimum and maximum cable diameters.

The sealing ring is identified allowing the user to determine if the ring is appropriate for the cable gland.

Note : Cable entries of size 3 to 6 meet the requirements of the protection modes "Ex db, Ex eb, Ex tb, nRc", even if they are not specifically marked.

ROUTINE EXAMINATIONS AND TESTS

None



CENTRO DE PESQUISAS DE ENERGIA ELÉTRICA

Organismo de Certificação Acreditado pelo INMETRO



Certificado de Conformidade

Certificate of Conformity / Certificado de Conformidad

Número: Number Número	CEPEL 05.0558X	Emissão: Issue Expedición	31/08/2012	Validade: Validity Validez	01/09/2015
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Produto: **PRENSA-CABOS DE AÇO INOX, LATÃO, BRONZE OU ALUMÍNIO, PARA CABO CIRCULAR NÃO ARMADO**

Tipo/Modelo: **ADE-1F2 e ADE-1F2 A (N^{os} 4 a 17, para Ø4,5 mm a 104 mm) e ADE-1FC (N^{os} 4 a 16, para Ø4,0 mm a 93 mm).**

Número de Série: ---

Solicitante/Endereço: **COOPER CAPRI SAS**
36-40, Rue des Fontenils - BP6.
41600 - Nouan-Le-Fuselier - França

Fabricante/Endereço: **COOPER CAPRI SAS**
36-40, Rue des Fontenils - BP6.
41600 - Nouan-Le-Fuselier - França

Norma(s) Aplicáveis: ABNT NBR IEC 60079-0:2008 Atmosferas explosivas - Parte 0: Equipamentos - Requisitos gerais;
ABNT NBR IEC 60079-1:2009 Atmosferas explosivas - Parte 1: invólucro à prova de explosão "d"
ABNT NBR IEC 60079-7:2008 Atmosferas explosivas - Parte 7: segurança aumentada "e"
IEC 60079-15:2010 Explosive Atmospheres-Part 15: Type of Protection "n"
ABNT NBR IEC 60529:2009 Grau de proteção para invólucros de equipamentos elétricos (Cod. IP)
IEC 60079-31: 2008 Explosive Atmospheres-Part 31: dust ignition protection by enclosure t

Laboratório de Ensaio: CEPEL - Centro de Pesquisas de Energia Elétrica
Laboratório de Acionamentos e Segurança em Equipamentos Eletroeletrônicos - AP4

Número do Relatório: **RAV-EX-9997/13 - Avaliação do Produto**
RASQ-EX-10012/13 - Avaliação do Sistema de Gestão da Qualidade

Marcação: **Ex db IIC / Ex eb IIC / Ex nRc IIC / Ex tb IIIC IP66**
Ex db I / Ex eb I (somente para ADE-1F2 A e ADE-1FC)

Condições de Emissão: - Com base na Portaria INMETRO nº 179, de 18/05/2010. Modelo com Avaliação do Sistema de Gestão da Qualidade do Fabricante e ensaios no produto. Produto e Sistema da Qualidade aprovados em conformidade com o item 4.4 da 41ª Reunião Ordinária da CCEX, a ser apresentado para ratificação na 175ª Reunião Ordinária da CCEX.

- A existência da letra "X" ou "U" após a referência do certificado de conformidade, indica uma condição especial que deve ser analisada no momento da instalação (ver o campo Observações).

CERT-39845/2012
Página 1/6

Número da Emissão: **2**
Issue number
Número de la Expedición

Emissão original: **22/01/2005**
Original Issue
Expedición Original

Carlos Azevedo Sanguedo
SIGNATÁRIO AUTORIZADO
Authorized Signatory
Persona Autorizada



CERTIFICADO DE CONFORMIDADE CEPEL 05.0558X



Os **PRENSA-CABOS MODELOS ADE-1F2 e ADE-1F2 A (ancorado) e ADE-1FC**, fabricado por **COOPER CAPRI SAS**, são abaixo qualificados em termos de suas especificações, análises e ensaios a que foram submetidos, conforme documentação descritiva.

Especificações:

Acessório para entrada de cabos de seção circular não armado, com capa de diâmetro externo até Ø104 mm (Ø93 mm para o modelo ADE-1FC), em material plástico ou elastomérico, com rosca de base métrica e tamanhos equivalentes em rosca NPT. Utilizado na instalação ou conexão elétrica de invólucro de equipamentos elétricos de uso geral, ou equipamentos com tipo de proteção não acendível, segurança aumentada, segurança intrínseca, encapsulado, imerso em óleo, imerso em areia, equipamentos pressurizados, à prova de explosão ou protegidos por invólucro para atmosferas de poeiras combustíveis com tipo de proteção "t". Opcionalmente pode ser utilizado um dispositivo para continuidade de aterramento em todos os modelos.

Prensa-cabo ADE 1F2, nos tamanhos de 3 a 17, para cabos com capa externa de Ø2,75 mm a 104 mm, com a rosca da base podendo ser métrica, de M10 a M110, ou NPT de 1/8" a 4". É composto por uma base roscada no qual é montados um anel de vedação compressível, em neoprene ou silicone, com altura axial mínima de 5 mm, para capa externa do cabo, uma peça combinada de compressão e uma porca de aperto. Se for utilizado com cabo com armadura ou malha, então o anel de vedação deve ser montado sobre a capa interna do cabo. Se o anel de vedação é montado sobre a capa externa do cabo então a aplicação em invólucros a prova de explosão "d" é **proibida**.

- o prensa-cabo **NÃO** provê a plena fixação do cabo, assim um sistema adicional de ancoragem ou fixação do cabo deve ser utilizado pelo instalador.
- Os Prensa-cabo ADE 1F2 **NÃO** são aprovados para o **Grupo I**.

Prensa-cabo ADE 1F2 A (com ancoragem) nos tamanhos de 3 a 17, para cabos com capa externa de Ø2,75 mm a 104 mm, com a rosca da base podendo ser métrica, de M10 a M110, ou NPT de 1/8" a 4". É idêntico ao modelo ADE 1F2, porém sua construção possui um sistema adicional de ancoragem que provê a plena fixação do cabo.

- o prensa-cabo **provê** a plena fixação do cabo, através um sistema acoplado de ancoragem.

Prensa-cabo ADE 1FC, nos tamanhos de 4 a 16, para cabos com capa externa de Ø4,0 mm a 93 mm, com a rosca da base podendo ser métrica, de M16 a M110, ou NPT de 3/8" a 4". É composto por uma base roscada no qual é montado um anel de vedação compressível, em neoprene ou silicone, com altura axial mínima de 5 mm, para a capa externa e adicionalmente provê uma barreira à prova de explosão através da selagem dos condutores com um composto de enchimento TSC e uma anel de aperto para o anel de vedação. Se aplicado a um cabo com armadura ou malha, então a barreira deve ser construída da mesma forma, porém garantindo que a armadura ou malha não avancem para dentro do composto de enchimento. Este sistema garante um grau de proteção IP68 e uma selagem contra inundação (Deluge).

- O prensa-cabo provê a fixação do cabo, pelo efeito combinado do composto de enchimento e do aperto do anel de vedação.
- O conjunto pode ser desmontado permitindo a inspeção da selagem dos condutores pelo composto de enchimento.
- Os Prensa-cabo ADE 1FC nos tamanhos 4 a 10, **NÃO** são aprovados para o **Grupo I**.

Número da Emissão: **2**
Issue number
Número de la Expedición

CERT-39845/2012
Página 2/6



**CERTIFICADO DE CONFORMIDADE
CEPEL 05.0558X**



Documentação descritiva do equipamento (arquivada junto ao processo do equipamento - confidencial):

Documento	Descrição	Rev	Data
IECEX INE 12.0025X	IECEX Type Examination Certificate	1	20/02/13
FR/LCI/ExTR12.022/01	Report Ex Cable Glands		22/01/13
SRD/Certificates/INERIS/Files/ADE	Certification Technical files	I-1	16/01/13
SRD/Certificates/INERIS/Instructions/ADE	Instruction sheet	I-1	16/01/13
SRD/Certificates/INERIS/Descriptives/ADE	Descriptive information	I-1	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1F2 ISO	Drawing version ADE- 1F2 ISO	I-1	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1F2 NPT	Drawing version ADE- 1F2 NPT	I-1	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1F2 A ISO	Drawing version ADE- 1F2 A ISO	I-0	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1F2 A NPT	Drawing version ADE- 1F2 A NPT	I-0	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1FC 4 -10 ISO	Drawing version ADE- 1FC 4 -10 ISO	I-0	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1FC 4 -10 NPT	Drawing version ADE- 1FC 4 -10 NPT	I-0	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1FC 11 - 16 ISO	Drawing version ADE- 1FC 11 - 16 ISO	I-0	16/01/13
SRD/Certificates/INERIS/Drawings/ADE- 1FC 11 - 16 NPT	Drawing version ADE- 1FC 11 - 16 NPT	I-0	16/01/13
SRD/Certificates/INERIS/Materials/Sealing ring / Neoprene 2108	Raw material data sheet Neoprene 2018	-	06/09/12
SRD/Certificates/INERIS/Materials/Sealing ring / silicone 10740	Raw material data sheet silicone 10740	-	06/09/12
SRD/Certificates/INERIS/Materials/Compound / TSC	Raw material data sheet TSC Compound	-	16/01/13
SRD/Certificates/INERIS/Materials/Gasket / Green Fiber gasket	material data sheet Green Fiber gasket	-	16/01/13
SRD/Certificates/INERIS/Materials/Green / Red Fiber gasket	material data sheet Red Fiber gasket	-	16/01/13

Número da Emissão: **2**
Issue number
Número de la Expedición

CERT-39845/2012
 Página 3/6



CERTIFICADO DE CONFORMIDADE CEPEL 05.0558X



Marcação:

Na marcação dos **Prensa-cabos modeloS ADE-1F2 e ADE-1F2 A (ancorado) e ADE-1FC**, deverão constar as seguintes informações:

CEPEL 05.0558X

**Ex db IIC / Ex eb IIC / Ex nRc IIC / Ex tb IIIC
IP66/IP68 (Designação, tamanho e tipo de rosca da base)
Ex db I / Ex eb I (somente para ADE-1F2 A e ADE-1FC)**

Observações:

1. Os prensa-cabos são apropriados para os seguintes limites de temperatura de serviço:

Modelo	Tamanho	Limite de temperatura de serviço (°C)			
		Com anel de Neoprene (preto)	Com anel de Silicone (vermelho ou cinza)	Com diafragma de silicone	Com composto TSC
ADE-1F2	3 a 17	-30 a +80	-40 a +140	x	x
ADE-1F2 A	3 a 17	-30 a +80	-40 a +140	x	x
ADE-1FC	4 a 16	x	x	x	-60 a +80

2. O número do certificado é finalizado pela **letra "X"** para indicar que os Prensa-cabos modelos **ADE-1F2 e ADE-1F2 A (ancorado) e ADE-1FC**:

- São apropriados para temperaturas de operação conforme Tabela da observação 1;
- Nas montagens dos prensa-cabos com **rosca de base métrica** (não aplicável para roscas NPT), para garantir o grau de proteção IP66, deve ser utilizada uma das respectivas gaxetas apresentadas nos documentos SRD/Certificates/INERIS/Materials/Gasket/Green Fiber gasket ou SRD/Certificates/ INERIS/Materials/Red Fiber gasket;
- Somente roscas métricas são possíveis para montagem em furos não roscados (**não permitido para Ex 'd'**), adicionalmente deve ser garantido uma rugosidade máxima Ra 1,6 µm na superfície de contato da gaxeta. Utilizar também a porca de travamento apresentada no desenho SRD/Certificates/INERIS/Descriptives/ADE Rev. 1-, pagina 8/13;
- Os prensa-cabos com rosca NPT não podem ser utilizados em furos não roscados;
- **O prensa-cabo ADE 1F2** são apropriados somente para instalações fixas, o prensa-cabo **NÃO** provê a fixação do cabo, um sistema adicional de ancoragem ou fixação do cabo deve ser utilizado pelo instalador;
- Prensa-cabos em **alumínio NÃO** são permitidos para aplicação no **Grupo I**.

Número da Emissão: **2**
Issue number
Número de la Expedición

CERT-39845/2012
Página 4/6

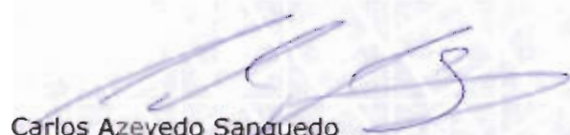


CERTIFICADO DE CONFORMIDADE CEPEL 05.0558X



3. O grau de proteção IPX8 foi ensaiado para a seguinte condição: **30 m/ 7 dias**, aprovado para as montagens com rosca **métrica com o uso de uma das gaxetas** especificadas e nas montagens com **rosca NPT com aplicação de vedante de rosca** que esteja em conformidade com os requisitos da norma ABNT NBR IEC 60079-14;
4. Este Certificado é válido apenas para os prensa-cabos de modelo, tipo e série, correspondente a especificação e documentação listada neste certificado. Qualquer modificação no projeto, bem como a utilização de componentes ou materiais diferentes daqueles definidos pela documentação listada ou relacionada do equipamento, sem a prévia autorização do CEPEL, invalidará este certificado.
5. É responsabilidade do fabricante assegurar que os PRENSA-CABOS fornecidos ao mercado brasileiro estejam de acordo com as especificações e documentação descritiva do equipamento listada neste certificado;
6. Cada prensa-cabo deve ser fornecido com instruções de instalação e aplicação em língua portuguesa;
7. Este Certificado não tece considerações sobre a instalação do prensa-cabos, sendo responsabilidade do usuário assegurar que o produto será instalado em atendimento as instruções do fabricante e a norma de Instalações Elétricas em Atmosferas Explosivas;
8. As atividades de instalação, inspeção, manutenção, reparo, revisão e recuperação dos equipamentos são de responsabilidade dos usuários e devem ser executadas de acordo com os requisitos das normas técnicas vigentes e com as recomendações do fabricante;
9. A marcação é executada conforme os Requisitos de Avaliação da conformidade para Equipamentos Elétricos e Eletrônicos para Atmosferas Explosivas (RAC), e fixada na superfície externa do equipamento em local visível. Esta marcação deve ser legível e durável, levando-se em conta possível corrosão química.

Nova Iguaçu-RJ, 03 de Maio de 2013


Carlos Azevedo Sanguedo
Responsável pela Certificação

Número da Emissão: **2**
Issue number
Número de la Expedición

CERT-39846/2012
Página 5/6



CERTIFICADO DE CONFORMIDADE CEPEL 05.0558X



Validade: **22/08/2015**

Validity
Validez

Controle de Emissão:

Data	Emissão	Descrição
04/04/2013	1	Primeira emissão do certificado conforme Portaria INMETRO nº 179 de 18/05/2010.
03/05/2013	2	Revisado modelo ADL para ADE incluído aprovação para o Grupo I, menos no ADE 1F2, e nos tamanhos 4 a 10 do ADE 1FC

Número da Emissão: **2** CERT-39845/2012
Issue number
Número de la Expedición
Página 6/6

EC Declaration of Conformity

ADE type of cable glands

Déclaration CE de Conformité

Entrées de câble de type ADE

Nous

Cooper Capri SAS 36-40 rue des Fontenils
F- 41600 Nouan-Le-Fuzelier FRANCE

Déclarons que :

Les entrées de câble Ex de type ADE avec marquage INERIS (INE) satisfont :

- Aux exigences essentielles de santé et de sécurité de la Directive 94/9/CE

"Directive ATEX" en conformité avec :

- EN 60079-0:2009 Règles générales
- EN 60079-1:2007 Enveloppe antidéflagrante "d"
- EN 60079-7:2007 Sécurité augmentée "e"
- EN 60079-15:2010 Mode de protection "n"
- EN 60079-31:2009 Protection par enveloppe "t"

- Aux exigences CEI en conformité avec :

- IEC 60079-0:2011 Règles générales
- IEC 60079-1:2007 Enveloppe antidéflagrante "d"
- IEC 60079-7:2006 Sécurité augmentée "e"
- IEC 60079-15:2010 Mode de protection "n"
- IEC 60079-31:2008 Protection par enveloppe "t"

Conçu pour une utilisation en :

Zones 1 et 2, en atmosphères explosives gazeuses, sur des équipements électriques Groupes I, IIA, IIB et IIC, mode (ou niveau) de protection "d", "e", "ia", "ib", "ic", "ma", "mb", "mc", "nA", "nC", "nR", "o", "pv", "px", "py", "pz" & "q".

Zones 21 et 22, en atmosphères de poussières explosives, sur des équipements électriques Groupes IIIA, IIIB et IIIC, mode (ou niveau) de protection "tb", "tc", "ia", "ib", "ma", "mb", "mc" & "p".

Code Marquage ATEX:

⊕ II2GD / Ex db IIC / Ex eb IIC / Ex tb IIIC

⊕ II3G Ex nRc IIC

⊕ IM2 Ex db I Ex eb I (pour application mine)

Attestation d'examen CE de type N° INERIS12ATEX0032X

Notification Qualité N° LCIE 00 ATEX Q 8005

L'attestation d'examen CE de type et la notification qualité ne s'appliquent pas à la catégorie 3.

Code Marquage IECEX:

Ex db IIC / Ex eb IIC / Ex nRc IIC / Ex tb IIIC

Ex db I Ex eb I (pour application mine)

Certificate IECEX N° IECEX INE 12.0025X

Notification Qualité N° FR/LCI/QAR 07.0002/03

We

Cooper Capri SAS 36-40 rue des Fontenils
F- 41600 Nouan-Le-Fuzelier FRANCE

Declare that:

ADE Ex cable gland type with marking INERIS (INE) satisfy:

- The Essential Health and Safety requirements of the 94/9/EC directive

"ATEX Directive" in compliance with:

- EN 60079-0:2009 General requirements
- EN 60079-1:2007 Flameproof enclosures "d"
- EN 60079-7:2007 Increased safety "e"
- EN 60079-15:2010 Type of protection "n"
- EN 60079-31:2009 Dust protection enclosure "t"

- The IEC requirements in compliance with:

- IEC 60079-0:2011 General requirements
- IEC 60079-1:2007 Flameproof enclosures "d"
- IEC 60079-7:2006 Increased safety "e"
- IEC 60079-15:2010 Type of protection "n"
- IEC 60079-31:2008 Dust protection enclosure "t"

Intended for use in:

Zones 1 and 2, in explosive gas atmospheres, on electrical equipment Groups I, IIA, IIB and IIC, type (or level) of protection "d", "e", "ia", "ib", "ic", "ma", "mb", "mc", "nA", "nC", "nR", "o", "pv", "px", "py", "pz" & "q".

Zones 21 and 22, in explosive dust atmospheres, on electrical equipment Groups IIIA, IIIB and IIIC, type (or level) of protection "tb", "tc", "ia", "ib", "ma", "mb", "mc" & "p".

ATEX Marking code:

⊕ II2GD / Ex db IIC / Ex eb IIC / Ex tb IIIC

⊕ II3G Ex nRc IIC

⊕ IM2 Ex db I Ex eb I (for mining application)

EC type examination certificate N° INERIS12ATEX0032X

Quality notification N° LCIE 00 ATEX Q 8005

EC type certificate and Quality notification does not apply to category 3.

IECEX Marking code:

Ex db IIC / Ex eb IIC / Ex nRc IIC / Ex tb IIIC

Ex db I Ex eb I (for mining application)

IECEX certificate N° IECEX INE 12.0025X

Quality notification N° FR/LCI/QAR 07.0002/03

Nouan le Fuzelier le 27 février 2013
La personne autorisée ATEX Capri,
Marc PHILIPPE

Nouan le Fuzelier on February 27, 2013
The Capri ATEX authorized person,
Marc PHILIPPE

CERTIFICATE OF COMPLIANCE

Certificate Number 20120829-E324850
Report Reference E324850-20120306
Issue Date 2012-AUGUST-29
Issued to: **COOPER CAPRI SAS**
36 RUE DES FONTENILS
41600 NOUAN LE FUZELIER, FRANCE

**This is to certify that
representative samples of**

**MARINE SHIPBOARD CABLE SEALING FITTINGS FOR USE IN
HAZARDOUS LOCATIONS**

Model ADE-1FC, followed by No. 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, or 16; may be followed by the letters SL. For use in Class I, Division 2, Groups A, B, C and D Hazardous Locations. For use with for use with unarmored marine shipboard cable and Cooper Crouse-Hinds Type TSC sealing compound.

Thread sizes 1/2 to 4 in. NPT inclusive or M20 to M110 inclusive, for vertical or horizontal mounting.

Model ADE-6FC, followed by No. 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 or 17, may be followed by the letters SL. For use in Class I, Division 1, Groups A, B, C and D Hazardous Locations. For use with armored braided marine shipboard cable employing aluminum, bronze, copper or stainless steel bonding braid and Cooper Crouse-Hinds Type TSC sealing compound.


Thread sizes 1/2 to 4 in. NPT inclusive or M20 to M110 inclusive, for vertical or horizontal mounting.

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

Standard(s) for Safety: UL 2225, Cables and Cable-Fittings for Use in Hazardous (Classified) Locations
UL514B, Conduit, Tubing, and Cable Fittings.

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.

William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus





СЕРТИФИКАТ СООТВЕТСТВИЯ

№ ТС RU C-FR.ГБ05.В.00858

Серия RU № 0194219

ОРГАН ПО СЕРТИФИКАЦИИ

НАНИО "Центр по сертификации взрывозащищенного и рудничного электрооборудования". 115230, Москва, Электролитный проезд, д. 1, корп. 4, комната № 9 (юридический); РФ, 140004, Московская обл., г. Люберцы, ВУГИ, ОАО "Завод "ЭКОМАШ" (фактический), тел. /факс: +7 (495) 554-2494, E-mail: zalogin@ccve.ru. Аттестат (рег. № РОСС RU.0001.11ГБ05) выдан 09.08.2011 Федеральным агентством по техническому регулированию и метрологии. Приказ об аккредитации Федеральной службы по аккредитации № 2860 от 13.08.2012

ЗАЯВИТЕЛЬ

Общество с ограниченной ответственностью «Купер Индастриз Раша», РФ, 107076, Москва, ул. Электрозаводская, д. 33, стр. 4. Телефон (495) 510-2427; факс (495) 510-2428. ОГРН: 1067746365983.

ИЗГОТОВИТЕЛЬ

Cooper Capri SAS / Groupe EATON
36 rue des Fontenils, 41600 Nouan Le Fuzelier, Франция.

ПРОДУКЦИЯ

Кабельные вводы типа ADE... с Ex-маркировками согласно приложению (бланки №№ 0177869, 0177870, 0177871). Серийный выпуск.

КОД ТН ВЭД ТС

8536 90 850 0

СООТВЕТСТВУЕТ ТРЕБОВАНИЯМ

Технического регламента Таможенного союза ТР ТС 012/2011 «О безопасности оборудования для работы во взрывоопасных средах»; ГОСТ Р МЭК 60079-0-2011. Взрывоопасные среды. Часть 0. Оборудование. Общие требования; ГОСТ IEC 60079-1-2011. Взрывоопасные среды. Часть 1. Оборудование с видом взрывозащиты «взрывонепроницаемые оболочки "d"»; ГОСТ Р МЭК 60079-7-2012. Взрывоопасные среды. Часть 7. Оборудование. Повышенная защита вида «е»; ГОСТ Р МЭК 60079-15-2010. Взрывоопасные среды. Часть 15. Оборудование с видом взрывозащиты «п»; ГОСТ Р МЭК 60079-31-2010. Взрывоопасные среды. Часть 31. Оборудование с видом взрывозащиты от воспламенения пыли «t».

СЕРТИФИКАТ ВЫДАН НА ОСНОВАНИИ

Протокола испытаний № 385.2014-Т от 14.10.2014 ИЛ ЦСВЭ (рег. № РОСС RU.0001.21ГБ04, от 17.10.2014);

Акта о результатах анализа состояния производства № 91-А/13 от 11.07.2013 г. ОС ЦСВЭ (рег. № РОСС RU.0001.11ГБ05, срок действия с 09.08.2011 по 28.07.2015).

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ

Схема сертификации 1с
Сертификат действителен с приложением на 3-х листах.
Инспекционный контроль – 2016 г., 2018 г.

СРОК ДЕЙСТВИЯ С 12.12.2014 ПО 12.12.2019 ВКЛЮЧИТЕЛЬНО



Руководитель (уполномоченное лицо) органа по сертификации

(подпись)

А.С. Залогин

(инициалы, фамилия)

Эксперт (эксперт-аудитор) (эксперты (эксперты-аудиторы))

(подпись)

С.В. Серов

(инициалы, фамилия)

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ №ТС RU C-FR.ГБ05.В.00858 Лист 1

Серия RU № 0177869

1. НАЗНАЧЕНИЕ И ОБЛАСТЬ ПРИМЕНЕНИЯ

Кабельные вводы типа ADE... предназначены для ввода кабеля в оболочку электрооборудования, а также для уплотнения и фиксации гибких кабелей с резиновой и пластмассовой изоляцией.

Область применения – взрывоопасные зоны помещений и наружных установок согласно маркировке взрывозащиты, ГОСТ IEC 60079-14-2011, регламентирующим применение электрооборудования во взрывоопасных газовых и пылевых средах, а также подземные выработки шахт, рудников и их наземные строения, опасные по рудничному газу и/или горючей пыли в концентрациях, согласно действующим Правилам безопасности в угольных шахтах ПБ 05-618-03.

2. ОСНОВНЫЕ ТЕХНИЧЕСКИЕ ДАННЫЕ

2.1. Технические характеристики кабельных вводов типа ADE...

Таблица 1

ADE	Номер ввода	Диапазон температур окружающей среды				Тип резьбы		Номера кабельных вводов для групп оборудования	
		с неопреновым внутренним уплотнительным кольцом	с силиконовым внутренним уплотнительным кольцом	с силиконовым внутренним уплотнительным кольцом (диафрагма)	с компаундом TSC	цилиндрическая	коническая	I	II, III
ADE-1F2	3 - 17	-30 ... + 80	-60 ... + 140	-	-	M10-M110	NPT1/8"-NPT 4"	-	Все номера
ADE-1F2 с кабельным зажимом	3 - 17	-30 ... + 80	-60 ... + 140	-	-	M10-M110	NPT1/8"-NPT 4"	Все номера	Все номера
ADE-1F2 DS	3 - 17	-30 ... + 80	-60 ... + 140	-	-	M10-M110	NPT3/8"-NPT 4"	Все номера	Все номера
ADE-4F	4 - 17	-30 ... + 80	-60 ... + 140	-	-	M10-M110	NPT1/8"-NPT 4"	Все номера	Все номера
ADE-5F	4 - 17	-30 ... + 80	-60 ... + 140	-	-	M10-M110	NPT1/8"-NPT 4"	Все номера	Все номера
ADE-6F	5 - 11	-	-	-60 ... + 80	-	M16-M63	NPT 3/8"-NPT 2"	-	Все номера
ADE-1FC	4 - 16	-	-	-	-60 ... + 80	M16-M110	NPT 3/8"-NPT 4"	11 - 16	Все номера
ADE-6FC	5 - 17	-	-	-	-60 ... + 80	M16-M110	NPT 3/8"-NPT 4"	11 - 17	Все номера

Кабельные вводы типа ADE... с дополнительным внешним уплотнительным кольцом, в зависимости от применяемого материала внешнего уплотнительного кольца, имеют диапазон температур окружающей среды при эксплуатации, °С:

-30...+75 - для внешнего уплотнительного кольца из белого матового нейлона;

-35...+100 - для внешнего уплотнительного кольца из черного неопрена R;

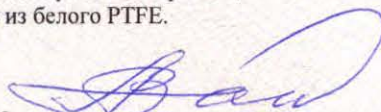
-40...+80 - для внешнего уплотнительного кольца из черного неопрена С;

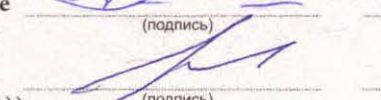
-60...+140 - для внешнего уплотнительного кольца из белого PTFE.



Руководитель (уполномоченное лицо) органа по сертификации

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))


(подпись)


(подпись)

А.С. Залогин
(инициалы, фамилия)

С.В. Серов
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ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ №ТС RU.C-FR.ГБ05.В.00858 Лист 2

Серия RU № 0177870

2.2. Ех-маркировка

Таблица 2

Тип изделия	Ех-маркировка	Степень защиты от внешних воздействий по ГОСТ 14254-96, не ниже
ADE-1F2	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X	IP66 или IP68
ADE-1F2 с кабельным зажимом	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68
ADE-1F2 DS	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68
ADE-4F	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68
ADE-5F	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68
ADE-6F	1 Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X	IP66 или IP68
ADE-1FC	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68
ADE-6FC	1Ex d IIC Gb X, 1Ex e IIC Gb X, 2Ex nR IIC Gc X, Ex tb IIIC Db IP6X PB Ex db I Mb X, PП Ex eb I Mc X	IP66 или IP68

3. ОПИСАНИЕ КОНСТРУКЦИИ И ОБЕСПЕЧЕНИЯ ВЗРЫВОЗАЩИЩЕННОСТИ ИЗДЕЛИЙ

3.1. Описание конструкции

Вводы кабельные с различными типами резьбы для небронированных кабелей состоят из:

- корпуса, который крепится к оболочке электрооборудования с помощью резьбы;
- внутреннего уплотнительного кольца;
- нажимной муфты для закрепления кабеля;
- внешнего уплотнительного кольца для уплотнения мест соединения ввода и оболочки.
- дополнительного закрепляющего устройства Cooper Carpi.

Вводы кабельные с различными типами резьбы для бронированных кабелей состоят из:

- корпуса кабельного ввода;
- внутреннего уплотнительного кольца для обеспечения взрывозащиты
- корпуса кабельного ввода для зажима брони;
- зажимного кольца брони;
- внешнего уплотнительного кольца для защиты IP;
- гайки внешнего уплотнительного кольца;
- дополнительного закрепляющего устройства Cooper Carpi.


Вводы кабельные с различными типами резьбы для бронированных кабелей с заливкой компаундом состоят из:


- корпуса кабельного ввода;
- гильза для заливки компаундом
- корпуса кабельного ввода для зажима брони;
- зажимного кольца брони;
- внешнего уплотнительного кольца для защиты IP;
- гайки внешнего уплотнительного кольца.



Руководитель (уполномоченное
лицо) органа по сертификации

Эксперт (эксперт-аудитор)
(эксперты (эксперты-аудиторы))


(подпись)


(подпись)

A.C. Залогин
(инициалы, фамилия)

S.B. Серов
(инициалы, фамилия)

ПРИЛОЖЕНИЕ

К СЕРТИФИКАТУ СООТВЕТСТВИЯ № ТС RU C-FR.ГБ05.В.00858 Лист 3

Серия RU № 0177871

3.2. Описание обеспечения взрывозащищенности

Взрывозащищенность кабельных вводов типа ADE... с маркировкой взрывозащиты IEx d IIC Gb X, IEx e IIC Gb X и Ex tb IIC Db IP6X (см. табл. 2) обеспечивается видами взрывозащиты «взрывонепроницаемая оболочка» по ГОСТ IEC 60079-1:2011, защита вида «e» по ГОСТ Р МЭК 60079-7-2012, взрывозащита от воспламенения пыли «t» в соответствии с требованиями ГОСТ Р МЭК 60079-31-2010 и выполнением их конструкции в соответствии с требованиями ГОСТ Р МЭК 60079-0-2011.

Взрывозащищенность кабельных вводов типа ADE... с маркировкой взрывозащиты 2Ex nR IIC Ge X, Ex tb IIC Db IP6X

(см. табл. 2) обеспечивается видами взрывозащиты «n» по ГОСТ Р МЭК 60079-15-2010, взрывозащита от воспламенения пыли «t» в соответствии с требованиями ГОСТ Р МЭК 60079-31-2010 и выполнением их конструкции в соответствии с требованиями ГОСТ Р МЭК 60079-0-2011.

Взрывозащищенность кабельных вводов типа ADE... с маркировкой взрывозащиты PB Ex db I Mb X, PP Ex eb I Mc X и Ex tb IIC Db IP6X (см. табл. 2) обеспечивается видами взрывозащиты «взрывонепроницаемая оболочка» по ГОСТ IEC 60079-1:2011, защита вида «e» по ГОСТ Р МЭК 60079-7-2012, взрывозащита от воспламенения пыли «t» в соответствии с требованиями ГОСТ Р МЭК 60079-31-2010 и выполнением их конструкции в соответствии с требованиями ГОСТ Р МЭК 60079-0-2011.

4. МАРКИРОВКА

Маркировка, нанесенная на корпуса кабельных вводов, включает следующие данные:

- товарный знак или наименование предприятия - изготовителя;
- тип изделия;
- заводской номер и год выпуска;
- маркировку в зависимости от исполнения (см. таблицу 2);
- специальный знак взрывобезопасности;
- степень защиты от внешних воздействий;
- диапазон температур окружающей среды;
- наименование или знак центра по сертификации и номер сертификата,

и другие данные, требуемые нормативной и технической документацией, которые изготовитель должен отразить в маркировке.

5. СПЕЦИАЛЬНЫЕ УСЛОВИЯ ПРИМЕНЕНИЯ

Специальные условия для обеспечения безопасности при эксплуатации, обозначенные знаком X, следующим за Ex-маркировкой, означают, что:


- кабельные вводы типов ADE-1F2, ADE-1F2 DS, ADE-4F, ADE-5F с внутренними уплотнительными кольцами из неопрена предназначены для применения в температурных диапазонах от минус 30°C до +80°C; с внутренним уплотнительным кольцом из силикона – от минус 60°C до +140°C; кабельные вводы типа ADE-6F с внутренним уплотнительным кольцом из силикона предназначены для применения в температурном диапазоне от минус 60°C до +80°C;
- кабельные вводы типа ADE-1FC, ADE-6FC с компаундом TSC применяются в диапазоне от минус 60°C до +80°C;
- кабельные вводы с дополнительным внешним уплотнительным кольцом применяются в температурном диапазоне:
 - минус 30...+75 - для внешнего уплотнительного кольца из белого матового нейлона;
 - минус 35...+100 - для внешнего уплотнительного кольца из черного неопрена R;
 - минус 40...+80 - для внешнего уплотнительного кольца из черного неопрена C;
 - минус 60...+140 - для внешнего уплотнительного кольца из белого PTFE.
- для кабельных вводов ADE-1F2 с функцией закрепляющего устройства и ADE-6F при использовании экранированного кабеля необходимо использовать кабельный зажим Cooper Carpi.


Внесение изменений в конструкцию кабельных вводов возможно только по согласованию с НАНИО ЦСВЭ.



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