# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION
## IEC Certification System for Explosive Atmospheres

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

Certificate No.: **IECEx INE 12.0025X**

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Certificate history:

Status: **Current**

Issue No: 5

Issue 4 (2017-07-21)
Issue 3 (2014-10-03)
Issue 2 (2014-02-28)
Issue 1 (2013-02-20)
Issue 0 (2012-10-19)

Date of Issue: 2019-07-01

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.
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Certificate issued by:

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

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

Additional manufacturing locations: **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 equipment 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 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

**IEC 60079-15:2010** Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:4

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

**IEC 60079-7:2017** Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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 Reports:

FR/INE/ExTR12.0022/01
FR/INE/ExTR12.0022/02
FR/INE/ExTR12.0022/03
FR/INE/ExTR12.0022/04
FR/INE/ExTR12.0022/05

Quality Assessment Reports:

FR/LCI/QAR07.0002/11
GB/BAS/QAR07.0041/09

# IECEx Certificate of Conformity



**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).

**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 :
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 fibers | 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

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**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

Purpose of the issue 5 of IECEx INE 12.0025X:

•Addition of a new type of sealing washer (gasket) in green fiber

•Update of manufacturer documentations.

•Application of IEC 60079-0:2017 and IEC 60079-7:2015 5th ed. + AMD1:2017 standards

**Annex:**

IECEx INE 12.0025X-05_Annex.pdf

# IECEx Certificate of Conformity

Certificate No.: IECEx INE 12.0025X

Issue No.: 5



Annex: IECEx INE 12.0025X-05_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 | |
|---|---|---|---|---|---|---|---|---|---|
| **version** | N° | With Neoprene Sealing Ring | With Silicone Sealing Ring | With Silicone Internal Sealing (Diaphragm) | With TSC Compound | Cylindrical | Conical | I | II & III |
| **ADE-1F2**<br>**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**<br>**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**<br>**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 |

N/A = Not applicable
X= Not relevant for parameter relating to the safety

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Annex: IECEx INE 12.0025X-05_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...(1)
- 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)

**(1)** 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.

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...(1)
- IECEx INE 12.0025X

**(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.

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