

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Cable Gland**

with type designation(s)

**ADE**

Issued to

**COOPER CAPRI SAS (EATON GROUP)****Nouan le Fuzelier, France**

is found to comply with

**DNV GL rules for classification – Ships, offshore units, and high speed and light craft****Application :****Hazardous areas cable glands & cable gland's accessories.****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.**

<b>Material</b>	<b>See product description</b>
<b>Suitable for open deck</b>	<b>Yes</b>
<b>Suitable for Hazardous areas</b>	<b>Yes</b>

Issued at **Høvik** on **2018-02-05**for **DNV GL**This Certificate is valid until **2020-12-31**.DNV GL local station: **Marseille**Approval Engineer: **Nicolay Horn**

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**Andreas Kristoffersen**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



Job Id: **262.1-010486-5**  
 Certificate No: **TAE000010X**  
 Revision No: **1**

## Name place of manufacturers

COOPER CAPRI SAS NOUAN FUZELIER, France	Cooper Electric Changzhou Jiangsu China
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## Product description

ADE-1F2, ADE-1F2-Anchorage, 1F2-DS, ADE-4F, ADE-5F, ADE-6F, ADE-1FC & ADE-6FC cable glands

Type	ADE-1F2 / ADE-1F2 ADCC / ADE-1F2 ADCS
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66  The user shall provide additional clamping of the cable nearby to the enclosure. A Cooper Capri Clamping module can be used.
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-30 to +80°C with Neoprene sealing ring -60 to +140°C with Silicon sealing ring
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	Neoprene or Silicone
Cable type	Unarmoured
Gland sizes	Gland size n°3 to n°17, for cable outer diameter from Ø 2.75 to 104mm Metric thread size: 10, 12, 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Clamping module, Shroud, Locknut, Earth-tag, Sealing washer

Type	ADE-1F2 Anchorage
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: Ex db I Ex eb I Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-30 to +80°C with Neoprene sealing ring -60 to +140°C with Silicon sealing ring
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	Neoprene or Silicone
Cable type	Unarmoured
Gland sizes	Gland size n°3 to n°17, for cable outer diameter from Ø 2.75 to 104mm Metric thread size: 10, 12, 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Shroud, Locknut, Earth-tag, Sealing washer

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Type	ADE-1F2 DS / ADE-1F2 DS ADCH
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: Ex db I Ex eb I Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-30 to +80°C with Neoprene sealing ring -60 to +140°C with Silicon sealing ring
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	Neoprene or Silicone
Cable type	Unarmoured
Gland sizes	Gland size n°3 to n°17, for cable outer diameter from Ø 2.75 to 104mm Metric thread size: 10, 12, 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Shroud, Locknut, Earth-tag, Sealing washer

Type	ADE-4F
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: Ex db I Ex eb I Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66.
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-30°C to +80°C with Neoprene sealing ring -60°C to +140°C with Silicone sealing ring
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass (option of stainless steel, marin bronze or aluminium versions)
Seal material	Neoprene or Silicon
Cable type	Armoured or braided
Gland sizes	Gland size n°4 to n°17 for cable outer diameter from Ø 4,5 to 104 mm Metric thread size: 10, 12, 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Integrated or Independent Clamping flanges; Shroud, Locknut, Earth tag, Entry sealing washer

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Type	ADE-5F
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: Ex db I Ex eb I Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66.
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-30°C to +80°C with Neoprene sealing ring -60°C to +140°C with Silicone sealing ring
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass (option of stainless steel, marin bronze or aluminium versions)
Seal material	Neoprene or Silicon
Cable type	Armoured or braided
Gland sizes	Gland size n°4 to n°17 for cable outer diameter from Ø 4,5 to 104 mm Metric thread size: 10, 12, 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Integrated or Independent Clamping flanges; Shroud, Locknut, Earth tag. Sealing washer

Type	ADE-6F
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014
Classification	Hazardous Area: Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66 With braided cable, the user shall provide additional clamping of the cable nearby to the enclosure. A Cooper Capri Clamping module can be used.
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-60°C to +80°C with Silicone internal sealing (Diaphragm) and Neoprene or Silicone external sealing ring.
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	Neoprene or Silicon
Cable type	Armoured or braided
Gland sizes	N°5 to N°11, for cable outer diameter from Ø 6 to 48 mm Metric thread size: 16, 20, 25, 32, 40, 50, 63. NPT thread size: 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"
Optional accessories	Clamping flanges, Shroud, Locknut, Earth-tag, Sealing washer

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Type	ADE-1FC / ADE-1FC ADFC / ADE-1FC ADFS
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014.
Classification	Hazardous Area: All sizes N°4 to N°16: Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66 Additional classification for sizes N°11 to N°16: Ex db I Ex eb I
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-60°C to +80°C with internal TSC Compound & Neoprene or Silicone external sealing ring.
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	TSC Compound and Neoprene or Silicone external sealing ring
Cable type	Unarmoured.
Gland sizes	N°4 to N°16, for cable outer diameter from Ø 4 to 93 mm Metric thread size: 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Clamping flanges, Shroud, Locknut, Earth-tag, Sealing washer

Type	ADE-6FC
Design Specification / Compliance Code	IEC62444:2014 ; IEC60079-0:2011, IEC60079-1:2014, IEC60079-7:2015, IEC 60079-31:2013, IEC60079-15:2010 EN60079-0:2012/A11:2013, EN60079-1:2014, EN60079-7:2015, EN60079-31:2014
Classification	Hazardous Area: All sizes N°5 to N°17: Ex db IIC / Ex eb IIC / Ex nRc IIC Ex tb IIIC IP66 Additional classification for sizes N°11 to N°17: Ex db I Ex eb I
Certification	INERIS12ATEX0032X IECEX INE 12.0025X
Continuous operating temperature range	-60°C to +80°C with Silicone internal sealing (diaphragm).
Ingress protection	IP66, IP67 & IP68 (30m/7days) NEMA-4X
Gland material	Brass, Aluminum alloy, Bronze, Stainless steel
Seal material	TSC Compound and Neoprene or Silicone external sealing ring
Cable type	Armored or braided cable
Gland sizes	N°5 to N°17, for cable outer diameter from Ø 6 to 104 mm Metric thread size: 16, 20, 25, 32, 40, 50, 63, 75, 90, 110. NPT thread size: 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3", 3 1/2", 4".
Optional accessories	Clamping flanges, Shroud, Locknut, Earth-tag, Sealing washer

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## Application/Limitation

Cable glands for hazardous area of type ADE-1F2, ADE-1F2 Anchorage, ADE-1F2 DS, ADE-4F, ADE-5F, ADE-6F, ADE-1FC & ADE-6FC.

Series ADE-1F2, ADE-1F2 Anchorage, ADE-1F2 DS, ADE-4F, ADE-5F, ADE-6F, ADE-1FC and ADE-6FC:  
Ex db IIC / Ex eb IIC / Ex nRc IIC / Ex tb IIIC

In addition for series ADE-1F2 Anchorage, ADE-1F2 DS, ADE-4F, ADE-5F, ADE-1FC (N°11 to N°16) and ADE-6FC (N°11 to N°17): Ex db I Ex eb I (for mining application), 3.7.12 Stopcaps

Manufacturer's application instructions to be followed.

Manufacturer's assembly instructions to be followed.

The information related to Ex certification from recognised test institution is given as information only.

## Type Approval documentation

### Technical info:

Examination certification Technical file: File Rev-I-4 Crouse-Hinds-byEaton, dated June, 2017; 50 Items: including drawings:

ADE-1F2 ISO & ADE-1F2 NPT

ADE-1F2 Anchorage ISO & ADE-1F2 Anchorage NPT

ADE-1F2 DS ISO & ADE-1F2 DS NPT

ADE-1F2 ADCC

ADE-1F2 ADCS

ADE-1FC ADFS

ADE-1F2DS ADCH

STOPCAPS

ADE-4F ISO & ADE-4F NPT

ADE-5F ISO & ADE-5F NPT

ADE-6F ISO & ADE-6F NPT

ADE-1FC n°4-10 ISO & ADE-1FC n°4-10 NPT

ADE-1FC n°11-16 ISO & ADE-1FC n°11-16 NPT

ADE-6FC n°5-11 ISO & ADE-6FC n°5-11 NPT

ADE-6FC n°12-17 ISO & ADE-6FC n°12-17 NPT

ADE-6FC n°12-17 ISO & ADE-6FC n°12-17 NPT

### Test reports/Certificates:

Certificates:

IECEX INE 12.0025X Issue no.4 Revised 2017-07-21: Certificate of Conformity for Explosive Atmospheres:

INERIS 12ATEX0032X Issue 04 Revised 2017-07-21: EC Type examination certificate

Test reports:

FR/INE/ExTR12.0022/00 dated 2012-10-15

FR/INE/ExTR12.0022/01 dated 2013-01-22

FR/INE/ExTR12.0022/02 dated 2014-02-06

FR/INE/ExTR12.0022/03 dated 2014-09-15

FR/INE/ExTR12.0022/04 dated 2017-07-21

## Tests carried out

Type tests in according to IEC 60079-0, IEC 60079-1, IEC 60079-7 and IEC 60079-31, UL standard.

## Marking of product

Name of manufacturer – type designation – Ex rating.

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## **Periodical assessment**

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2, 3.5 year and at renewal.

END OF CERTIFICATE