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 LCIE 13.0049X issue No.:1	Certificate history: Issue No. 1 (2014-10-21) Issue No. 0 (2013-11-15)
Status:	**Current**	
Date of Issue:	**2014-10-21**	Page 1 of 4

Applicant:
SATAM
Avenue de Verdun
14700 FALAISE
France

Electrical Apparatus: **Calculator-Indicator - Type : CM/HM or HM**
Optional accessory:

Type of Protection: **Ex d[ia]ia and Ex d[ia]**

Marking:
SATAM
Address:...
Type CM/HM : Ex d[ia Ga]ia IIB T4 GbGa
Type HM : Ex d[ia Ga] IIB T4 Gb
IECEx LCIE 13.0049X
IS parameters : U_0 = ...V, I_0 = ...A, C_0 = ...F, L_0 = ...H (see attachment)

Approved for issue on behalf of the IECEx Certification Body: Julien GAUTHIER

Position: Certification Officer

Signature:
(for printed version)

Date: 2014-10-21

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:
Laboratoire Central des Industries Electriques (LCIE)
33 Avenue du General Leclerc
FR-92260 Fontenay-aux-Roses
France

Documents relative to LCIE certification activites (Certificates, QARs, ExTRs) can be registered under the references "LCI" or "LCIE".

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 13.0049X

Date of Issue: **2014-10-21** Issue No.: **1**

Manufacturer: **SATAM**
Avenue de Verdun
14700 FALAISE
France

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 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

*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/LCIE/ExTR13.0043/00 FR/LCIE/ExTR13.0043/01

Quality Assessment Report:

FR/LCI/QAR11.0016/02

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 13.0049X

Date of Issue: **2014-10-21** Issue No.: **1**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

This apparatus allows loading of hydrocarbon products for depot or truck applications.

Type CM/HM : the apparatus is formed of an electronic flameproof module HM connected to an electronic intrinsically safe enclosure CM. The front side of the enclosure CM can be equipped or not with a display, a keyboard, switches.

Type HM: the apparatus is formed of an electronic flameproof module HM

The apparatus exists in two versions :
- depot application
- truck application

Marking : see attachment
Electrical parameters : see attachment.

Routine verifications and tests :
- Zener barrier :
According to clause 11.1.1. of standard EN 60079-11, each apparatus shall be submitted to a test to check correct operation of each barrier component and the resistance of any fuse.
- Flameproof enclosure :
The apparatus is exempt of routine test.

CONDITIONS OF CERTIFICATION: YES as shown below:

The intrinsic safety terminal blocks can be only connected to intrinsically safe certified apparatus or according to clause 5.7 of IEC 60079-11 Ed6.0 standards. These combinations must be compatible as regard intrinsic safety rules.
Operating ambiante temperature : -20℃ to +55℃.

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 13.0049X

Date of Issue: **2014-10-21** Issue No.: **1**

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

Initial issue (15-11-2013) :
Certification according to IEC 60079-0 Ed 6.0, IEC 60079-1 Ed 6 and IEC 60079-11 Ed 6.0.

Issue 1 :
Design modification of Ex d box in order to avoid unit pressure tests.
SATAM manufactures its own zener barrier (identical to the previous one).
Routine test modification.

Annex: LCIE 13.0049X-Issue 01 -attachment 01.pdf

MARKING :

Type : CM/HM

SATAM
Address : ....
Type : CM/HM
Serial number : .....
Year of construction : .....
Ex d [ia Ga] ia IIB T4 Gb Ga
IECEx LCIE 13.0049 X
Uo ≤ ...V, Io ≤ ....mA, Po ≤ ....W, Co ≤ ...µF, Lo ≤ ...µH
Ui ≤ ...V, Ii ≤ ....mA, Pi ≤ ....W, Ci ≤ ...µF, Li ≤ ...µH
(completed with the electrical parameters)
On the part "d" :
WARNING-DO NOT OPEN WHEN ENERGIZED
WARNING- DO NOT OPEN IN PRESENCE OF EXPLOSIVE ATMOSPHERE

Type : HM

SATAM Address : .....
Type : HM
Serial number : .....
Year of construction : .....
Ex d [ia Ga] IIB T4 Gb
IECEx LCIE 13.0049 X
Uo ≤ ...V, Io ≤ ....mA, Po ≤ ....W, Co ≤ ...µF, Lo ≤ ...µH (completed with the electrical parameters) WARNING-DO NOT OPEN WHEN ENERGIZED
WARNING- DO NOT OPEN IN PRESENCE OF EXPLOSIVE ATMOSPHERE

ELECTRICAL PARAMETERS :
Um : 230VAc or 24VDC

Type CM/HM :

Board PM :

Terminal blocks		Electrical parameters
J1	board type PLS12V_NM	Uo ≤ 10V, Io ≤ 10mA, Po ≤ 25mW, Co ≤ 20µF, Lo ≤ 1H
	board type PLS12V_FH71	Uo ≤ 16V, Io ≤ 60mA, Po ≤ 240mW, Co ≤ 2,9µF, Lo ≤ 4mH
	board type PLS12V_HF_TTL board type PLS12_HF_CO	Terminals J1.1, J1.4, J1.7, J1.10 Uo ≤ 16V, Io ≤ 106mA, Po ≤ 430mW, Co ≤ 2,9µF, Lo ≤ 2mH
		Terminals J1.2, J1.5, J1.8, J1.11 Uo ≤ 16V, Io ≤ 2mA, Po ≤ 8mW, Co ≤ 2,9µF, Lo ≤ 1H
J2		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
J3, J4, J9		Uo ≤ 7,9V, Io ≤ 272mA, Po ≤ 540mW, Co ≤ 115µF, Lo ≤ 3mH
J8		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
J6,J7		Uo/Ui ≤ 7,9V, Io/Ii ≤ 272mA, Po/Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0
J5		Ui ≤ 7,9V, Ii ≤ 272mA, Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0
Commutation board 2xPT100 CN4,CN5		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
Namur board		Uo ≤ 9,9V, Io ≤ 272mA, Po ≤ 670mW, Co ≤ 109µF, Lo ≤ 3mH
Anti over flow board		Uo ≤ 11,8V, Io ≤ 174mA, Po ≤ 510mW, Co ≤ 6,5µF, Lo ≤ 3mH

Board UI :

Terminal blocks	Electrical parameters
J1, J3	Uo/Ui ≤ 7,9V, Io/Ii ≤ 272mA, Po/Pi ≤ 540mW
J2, J5	Ui ≤ 7,9V, Ii ≤ 272mA, Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0

Type HM :

Board PM :

Terminal blocks		Electrical parameters
J1	board type PLS12V_NM	Uo ≤ 10V, Io ≤ 10mA, Po ≤ 25mW, Co ≤ 20µF, Lo ≤ 1H
	board type PLS12V_FH71	Uo ≤ 16V, Io ≤ 60mA, Po ≤ 240mW, Co ≤ 2,9 F, Lo ≤ 4mH
	board type PLS12V_HF_TTL	Terminals J1.1, J1.4, J1.7, J1.10 Uo ≤ 16V, Io ≤ 106mA, Po ≤ 430mW, Co ≤ 2,9µF, Lo ≤ 2mH
	board type PLS12_HF_CO	Terminals J1.2, J1.5, J1.8, J1.11 Uo ≤ 16V, Io ≤ 2mA, Po ≤ 8mW, Co ≤ 2,9µF, Lo ≤ 1H
J2		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
J3, J4, J9		Uo ≤ 7,9V, Io ≤ 272mA, Po ≤ 540mW, Co ≤ 115µF, Lo ≤ 3mH
J8		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
J6,J7		Uo/Ui ≤ 7,9V, Io/Ii ≤ 272mA, Po/Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0
J5		Ui ≤ 7,9V, Ii ≤ 272mA, Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0
Commutation board 2xPT100 CN4,CN5		Uo ≤ 7,9V, Io ≤ 106mA, Po ≤ 210mW, Co ≤ 115µF, Lo ≤ 4mH
Namur board		Uo ≤ 9,9V, Io ≤ 272mA, Po ≤ 670mW, Co ≤ 109µF, Lo ≤ 3mH
Anti over flow board		Uo ≤ 11,8V, Io ≤ 174mA, Po ≤ 510mW, Co ≤ 6,5µF, Lo ≤ 3mH

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Certificate No.:	IECEx LCIE 13.0049X issue No.:0	Certificate history:
Status:	**Current**	
Date of Issue:	**2013-11-15**	Page 1 of 3

Applicant: **SATAM**
Avenue de Verdun
14700 FALAISE
France

Electrical Apparatus: **Calculator-Indicator**
Optional accessory:

Type of Protection: **d[ia]ia and d[ia]**

Marking: SATAM Address
Type CM/HM : Ex d[ia Ga]ia IIB T4 GbGa
Type HM : Ex d[ia Ga] IIB T4 Gb
IECEx LCIE 13.0049X
(see attachment)

Approved for issue on behalf of the IECEx Certification Body: Julien Gauthier

Position: Certification Officer

Signature:
(for printed version)

Date: 2013-11-15

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L C I E

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 13.0049X

Date of Issue: **2013-11-15** Issue No.: **0**

Manufacturer: **SATAM**
Avenue de Verdun
14700 FALAISE
France

Additional Manufacturing location(s):

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IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"

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Quality Assessment Report:

FR/LCI/QAR11.0016/00 FR/LCI/QAR11.0016/01 FR/LCI/QAR11.0016/02

IECEx Certificate of Conformity

Certificate No.: IECEx LCIE 13.0049X

Date of Issue: **2013-11-15** Issue No.: **0**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

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Type CM/HM : the apparatus is formed of an electronic flameproof module HM connected to an electronic intrinsically safe enclosure CM. The front side of the enclosure CM can be equipped or not with a display, a keyboard, switches.
Type HM: the apparatus is formed of an electronic flameproof module HM
The apparatus exists in two versions :
- depot application
- truck application

Marking : see attachment
Electrical parameters : see attachment.

CONDITIONS OF CERTIFICATION: YES as shown below:

The intrinsic safety terminal blocks can be only connected to intrinsically safe certified apparatus or according to clause 5.7 of IEC 60079-11 Ed6.0 standards. These combinations must be compatible as regard intrinsic safety rules.
Operating ambiante temperature : -20°C to +55°C.
Routine test :
Each HM module shall be submitted to an overpressure test at 9,1 bars during at least 10s.

Annex: LCIE 13.0049X-attachment 01.pdf

MARKING :

Type : CM/HM

SATAM
Address : .....
Type : CM/HM
Serial number : .....
Year of construction : .....
Ex d [ia Ga] ia IIB T4 Gb Ga
IECEx LCIE 13.0049 X
Uo ≤ ...V, Io ≤ ....mA, Po ≤ ....W, Co ≤ ... µF, Lo ≤ ... µH
Ui ≤ ...V, Ii ≤ ....mA, Pi ≤ ....W, Ci ≤ ... µF, Li ≤ ... µH
(completed with the electrical parameters)
On the part "d" :
WARNING-DO NOT OPEN WHEN ENERGIZED
WARNING- DO NOT OPEN IN PRESENCE OF EXPLOSIVE ATMOSPHERE

Type : HM

SATAM
Address : .....
Type : HM
Serial number : .....
Year of construction : .....
Ex d [ia Ga] IIB T4 Gb
IECEx LCIE 13.0049 X
Uo ≤ ...V, Io ≤ ....mA, Po ≤ ....W, Co ≤ ... µF, Lo ≤ ... µH (completed with the electrical parameters)
WARNING-DO NOT OPEN WHEN ENERGIZED
WARNING- DO NOT OPEN IN PRESENCE OF EXPLOSIVE ATMOSPHERE

ELECTRICAL PARAMETERS :
Um : 230VAc or 24VDC

Type CM/HM :

Board PM :

Terminal blocks		Electrical parameters
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Board UI :

Terminal blocks	Electrical parameters
J1, J3	Uo/Ui ≤ 7,9V, Io/Ii ≤ 272mA, Po/Pi ≤ 540mW
J2, J5	Ui ≤ 7,9V, Ii ≤ 272mA, Pi ≤ 540mW, Ci ≈ 0, Li ≈ 0

Type HM :

Board PM :

Terminal blocks		Electrical parameters
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