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 14.0037X**

Page 1 of 4

Certificate history:

Status: **Current**

Issue No: 3

Issue 2 (2021-09-29)
Issue 1 (2018-11-12)
Issue 0 (2015-02-12)

Date of Issue: 2022-02-14

Applicant: **OFFICINE MECCANICHE M.A.M**
Via Vico Veneto, 32
Fizzonasco Di Pieve Emanuele 20072
Italy

Equipment: **Enclosures type EJB...**

Optional accessory:

Type of Protection: **db, db [ia], db [ib], tb [ia], tb [ib]**

Marking:
Ex db IIB or IIB+H2 T6…T4 Gb
Ex db [ia IIA or IIB or IIC Ga] IIB or IIB+H2 T6…T4 Gb
Ex db [ib IIA or IIB or IIC] IIB or IIB+H2 T6…T4 Gb
Ex db I Mb or Ex db [ia Ma] I Mb or Ex db [ib] I Mb
Ex tb IIIC T85°C…T135°C Db
Ex tb [ia Da] IIIC T85°C…T135°C Db
Ex tb [ib] IIIC T85°C…T135°C Db
IP66

Approved for issue on behalf of the IECEx Certification Body: **Thierry HOUEIX**

Position: **Ex Certification Officer**

Signature: (for printed version)

Signé électroniquement
Digitally signed by
Thierry HOUEIX
Ex Certification Officer
Délégué Certification

Date: **2022-02-14**

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BP n2 / Parc Technologique ALATA
F-60550 Verneuil-en-Halatte
France

controlling risks for sustainable development

IECEx Certificate of Conformity

Manufacturer: **OFFICINE MECCANICHE M.A.M**
Via Vico Veneto, 32
Fizzonasco Di Pieve Emanuele 20072
Italy

Additional manufacturing locations:

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

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

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 Report:

FR/INE/ExTR14.0072/03

Quality Assessment Report:

FR/INE/QAR11.0004/10

IECEx Certificate of Conformity

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

The flameproof enclosures type EJB01.. up to EJB10.. are made in aluminium, stainless steel or structural steel for group IIB+H2 and IIIC and in stainless steel for group I, covered by Ex component certificate IECEx INE 14.0036U/01.

They are intended to contain mainly electrical "NIS" elements and also type certified "IS" element. The enclosures fitted with internal "IS" elements are provided with or without an internal thermal probe.

The enclosures can be fitted with operator devices as push-buttons, signaling lamp and switch. The list of the components covered by IECEx component certificates is defined in Annex. The terminal blocks are used for the connection of intrinsic safety elements.

Enclosures can be fitted with internal containment system with limited release.

These enclosures get the degrees of protection IP66 in accordance with IEC 60529 standard.

SPECIFIC CONDITIONS OF USE: YES as shown below:
The following specific conditions use below concern only the type of protection Ex db:

- The flameproof joints have different values from those specified in teh tables of IEC 60079-1 standard, contact the manufacturer for any repair.
- For used in group I, during the installation, the user will take into consideration that the enclosures underwent only a shock corresponding to an energy of a low risk.
- When a containment system is fitted inside the enclosure, flame arrestors shall be installed at the inlet and outlet of the containment system. A flowlimiter and 1 or 2 breathing device(s) must also be fitted on the enclosure in accordance with the values specified in safety parameters.

The instructions for safe use are completed by those stipulated in the instructions manuals of the manufacturer and of each Ex component fitted on the final product.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Subject of the issue n°3 to IECEx INE 14.0037X (File number 037180):

A - Modification of the safety parameter for use of internal containment system.

Subject of the issue n°2 to IECEx INE 14.0037X (File number 036922):

A -Application of the new standard IEC 60079-0:2017.

Subject of the issue n°1 to IECEx INE 14.0037X (File number 026718):

A - Application of the new standards IEC 60079-1:2014.

B - Possibility to install different type of batteries.

C - Possibility to use intrinsic safety element [ib].

D - Adding ambient temperature -30°C and -40°C.

E - Adding group IIB in the type of protection.

F - Introduction of the new type EJB03A.

G - Possibility to use the version with intrinsic safety elements up to -50°C when the enclosure is fitted with an internal thermal probe except if the intrinsic safety element is intended for low ambient temperature down to -50°C

Annex:

IECEx INE 14.0037X-03_Annex.pdf

IECEx Certificate of Conformity

Certificate No.: IECEx INE 14.0037X

Issue No.: 03

Annex: IECEx INE 14.0037X-03_Annex.pdf

PARAMETERS RELATING TO THE SAFETY

For enclosure without intrinsic safety element:

Maximum power for the LED lamp : 1 W.

Maximum dissipated powers : See tables below.

This version is intended to use in range of ambient temperatures from -20°C, -30°C, -40°C or -50°C to + 40°C, 50°C or +60°C.

For enclosure with intrinsic safety elements:

Maximum supply voltage for "IS" elements : 250 Vac.

Maximum power for the LED lamp : 1 W.

Maximum dissipated powers : See tables below.

This version is intended to use in range of ambient temperatures from -20°C, -30°C, -40°C or -40°C to + 40°C, 50°C or +60°C.
When the minimum ambient temperature of the enclosure is greater or equal than the minimum ambient temperature specified in the certificate of the intrinsic safety elements, it is not necessary to add an internal thermostat.

When the minimum ambient temperature of the enclosure is lower than the minimum ambient temperature specified in the certificate of the intrinsic safety elements, the enclosure shall be provided with a calibrated thermostat near the intrinsic safety elements in order to switch off the power supply of these elements.

The threshold of thermal probe shall be:

Ambient Temperature of "IS" element	Threshold of release of the thermal probe
≥ - 30°C	- 25°C ± 5°C
≥ - 40°C	- 35°C ± 5°C
≥ - 50°C	- 45°C ± 5°C

For enclosure fitted with internal containment system

Maximum internal pressure = 10 bar

Maximum inlet flowrate is fixed as follow =

Maximum flowrate allowed at the inlet of the containment system			
Flame arrestor at containment system inlet	Breathing device(s) fitted on enclosure	Fluid type inside the containment system	
		Gas (nl/h)	Liquid (l/h)
FT CROSS	FT CROSS X 1	115	2,9
FT CROSS	FT CROSS X 2	290	4,6
FT VS	FT VS X 1	95	2,1
FT VS	FT VS X 2	180	4,6

MARKING

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

A – Enclosure without safety intrinsic element:

- OFFICINE MECCANICHE M.A.M.
- I – 20072 Fizzonasco di Pieve Emanuele (MI)
- EJB…**(*)**
- IECEx INE 14.0037X
- (Serial number)
- Ex db IIB or IIB+H_2 T6…T4 Gb **(**)**
- Ex tb IIIC T85°C…T135°C Db **(**)**
- IP66
- …°C < Tamb < …°C**(***)**
- T.Cable **(****)**
- CABLE GLAND : see instructions
- **WARNINGS:** DO NOT OPEN WHEN ENERGIZED
  DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  DO NOT OPERATE UNDER LOAD **(*****)**

B – Enclosure with safety intrinsic elements [ia]:

- OFFICINE MECCANICHE M.A.M.
- I – 20072 Fizzonasco di Pieve Emanuele (MI)
- EJB…**(*)**
- IECEx INE 14.0037X
- (Serial number)
- Ex db [ia IIA or IIB or IIC Ga] IIB or IIB+H_2 T6…T4 Gb **(**)**
- Ex tb [ia Da] IIIC T85°C…T135°C Db
- IP66
- …°C < Tamb < …°C **(***)**
- T.Cable **(****)**
- CABLE GLAND : see instructions
- **WARNINGS:** DO NOT OPEN WHEN ENERGIZED
  DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  DO NOT OPERATE UNDER LOAD **(*****)**

C – Enclosure with safety intrinsic elements [ib]:

- OFFICINE MECCANICHE M.A.M.
- I – 20072 Fizzonasco di Pieve Emanuele (MI)
- EJB…**(*)**
- IECEx INE 14.0037X
- (Serial number)
- Ex db [ib IIA or IIB or IIC] IIB or IIB+H_2 T6…T4 Gb **(**)**
- Ex tb [ib] IIIC T85°C…T135°C Db
- IP66
- …°C < Tamb < …°C **(***)**
- T.Cable **(****)**
- CABLE GLAND : see instructions
- **WARNINGS:** DO NOT OPEN WHEN ENERGIZED
  DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  DO NOT OPERATE UNDER LOAD **(*****)**

D - Enclosure without window for group I without intrinsic safety element:

- OFFICINE MECCANICHE M.A.M.
- I – 20072 Fizzonasco di Pieve Emanuele (MI)
- EJB…**(*)**
- IECEx INE 14.0037X
- (Serial number)
- Ex db I Mb
- …°C < Tamb < …°C **(***)**
- T.Cable **(****)**
- CABLE GLAND : see instructions
- **WARNINGS:** DO NOT OPEN WHEN ENERGIZED
  DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  DO NOT OPERATE UNDER LOAD **(*****)**

E - Enclosure without window for group I with intrinsic safety element [ia] or [ib]:

- OFFICINE MECCANICHE M.A.M.
- I – 20072 Fizzonasco di Pieve Emanuele (MI)
- EJB…**(*)**
- IECEx INE 14.0037X
- (Serial number)
- Ex db [ia Ma] I Mb or Ex db [ib] I Mb
- …°C < Tamb < …°C **(***)**
- T.Cable **(****)**
- CABLE GLAND : see instructions
- **WARNINGS:** DO NOT OPEN WHEN ENERGIZED
  DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  DO NOT OPERATE UNDER LOAD **(*****)**

(*) The type is completed by a letter and numbers in accordance with the manufacturing variations.
(***) Range of ambient temperatures if different from -20°C to +40°C.
(****) The maximum disspated power can be be one of the corresponding classes T6 to T4 depending on the temperature of the cable indicated in the table below.
(*****) Only when the enclosure is fitted with disconnectors which are not designed to be operated under the intended load.

ROUTINE EXAMINATIONS AND TESTS

Covered by the Ex component certificate IECEx INE 14.0036U/01.

For ambient temperatures -30°C and -40°C the value of the overpressure test will be scheduled to - 50 °C as indicated in the certificate IECEx INE 14.0036U/01.

For enclosure fitted with internal containment system

- For containment system, with maximum internal pressure below 4 bar, in accordance with clause G.4.1 of the EN 60079-1 standard, the equipment defined above is exempted of routine test due to the fact that it has undergone a static type test at 4 times the reference pressure under 16 bar.
- For containment system, with maximum pressure upper than 4 bar, in accordance with clause G.4.1 of the EN 60079-1 standard, an overpressure test under 1.5 times the maximum pressure during at least 2 minutes.

TABLES

TABLE 1 (with marking of the cable temperature)

Enclosure without intrinsic safety element or with intrinsic safety elements when the enclosure is fitted with an internal thermal probe.

Type of enclosure	Maximum Ambient temperature	Maximum dissipated power (W)	Concerned explosive atmosphere		Cable temperature
			Gas	Dusts	
EJB01	40°C	60	T6	T85°C	No marking
	50°C	40			
	60°C	25			
	40°C	85	T5	T100°C	90°C
	50°C	70			
	60°C	50			
	40°C	145	T4	T135°C	120°C
	50°C	130			
	60°C	110			
EJB02	40°C	85	T6	T85°C	No marking
	50°C	60			
	60°C	35			
	40°C	120	T5	T100°C	90°C
	50°C	95			
	60°C	70			
	40°C	200	T4	T135°C	120°C
	50°C	180			
	60°C	160			
EJB03and EJB03A	40°C	155	T6	T85°C	No marking
	50°C	110			
	60°C	65			
	40°C	220	T5	T100°C	90°C
	50°C	175			
	60°C	135			
	40°C	370	T4	T135°C	120°C
	50°C	330			
	60°C	285			

Type of enclosure	Maximum Ambient temperature	Maximum dissipated power (W)	Concerned explosive atmosphere		Cable temperature
			Gas	Dusts	
EJB04	40°C	185	T6	T85°C	No marking
	50°C	135			
	60°C	80			
	40°C	265	T5	T100°C	90°C
	50°C	215			
	60°C	160			
	40°C	450	T4	T135°C	120°C
	50°C	400			
	60°C	350			
EJB05	40°C	130	T6	T85°C	No marking
	50°C	90			
	60°C	50			
	40°C	190	T5	T100°C	90°C
	50°C	150			
	60°C	110			
	40°C	325	T4	T135°C	120°C
	50°C	285			
	60°C	245			
EJB06	40°C	125	T6	T85°C	No marking
	50°C	90			
	60°C	50			
	40°C	185	T5	T100°C	90°C
	50°C	145			
	60°C	110			
	40°C	320	T4	T135°C	120°C
	50°C	280			
	60°C	240			

IECEx Certificate of Conformity

Certificate No.: IECEx INE 14.0037X

Issue No.: 03

Annex: IECEx INE 14.0037X-03_Annex.pdf

Type of enclosure	Maximum Ambient temperature	Maximum dissipated power (W)	Concerned explosive atmosphere		Cable temperature
			Gas	Dusts	
EJB07	40°C	220	T6	T85°C	No marking
	50°C	155			
	60°C	90			
	40°C	295	T5	T100°C	90°C
	50°C	320			
	60°C	190			
	40°C	580	T4	T135°C	120°C
	50°C	515			
	60°C	450			
EJB08	40°C	290	T6	T85°C	No marking
	50°C	205			
	60°C	120			
	40°C	420	T5	T100°C	90°C
	50°C	335			
	60°C	250			
	40°C	760	T4	T135°C	120°C
	50°C	675			
	60°C	590			
EJB09	40°C	430	T6	T85°C	No marking
	50°C	305			
	60°C	180			
	40°C	620	T5	T100°C	90°C
	50°C	495			
	60°C	370			
	40°C	1125	T4	T135°C	120°C
	50°C	1000			
	60°C	875			
EJB10	40°C	495	T6	T85°C	No marking
	50°C	350			
	60°C	205			
	40°C	710	T5	T100°C	90°C
	50°C	570			
	60°C	425			
	40°C	1290	T4	T135°C	120°C
	50°C	1150			
	60°C	1000			

TABLE 2 (without marking of the cable temperature)

Enclosure without intrinsic safety element or with intrinsic safety elements when the enclosure is fitted with an internal thermal probe.

Type of enclosure	Maximum Ambient temperature	Maximum dissipated power (W)	Concerned explosive atmosphere	
			Gas	Dusts
EJB01	40°C	60	T6	T85°C
	50°C	40		
	60°C	25		
	40°C	75	T5	T100°C
	50°C	60		
	60°C	35		
EJB02	40°C	85	T6	T85°C
	50°C	60		
	60°C	35		
	40°C	110	T5	T100°C
	50°C	85		
	60°C	50		
EJB03 and EJB03A	40°C	155	T6	T85°C
	50°C	110		
	60°C	65		
	40°C	210	T5	T100°C
	50°C	145		
	60°C	95		
EJB04	40°C	185	T6	T85°C
	50°C	135		
	60°C	80		
	40°C	255	T5	T100°C
	50°C	180		
	60°C	115		
EJB05	40°C	130	T6	T85°C
	50°C	90		
	60°C	50		
	40°C	190	T5	T100°C
	50°C	150		
	60°C	95		

Annex: IECEx INE 14.0037X-03_Annex.pdf

Type of enclosure	Maximum Ambient temperature	Maximum dissipated power (W)	Concerned explosive atmosphere	
			Gas	Dusts
EJB06	40°C	125	T6	T85°C
	50°C	90		
	60°C	50		
	40°C	185	T5	T100°C
	50°C	145		
	60°C	95		
EJB07	40°C	220	T6	T85°C
	50°C	155		
	60°C	90		
	40°C	295	T5	T100°C
	50°C	210		
	60°C	120		
EJB08	40°C	290	T6	T85°C
	50°C	205		
	60°C	120		
	40°C	390	T5	T100°C
	50°C	275		
	60°C	160		
EJB09	40°C	430	T6	T85°C
	50°C	305		
	60°C	180		
	40°C	580	T5	T100°C
	50°C	410		
	60°C	240		
EJB10	40°C	495	T6	T85°C
	50°C	350		
	60°C	205		
	40°C	665	T5	T100°C
	50°C	470		
	60°C	275		

TABLE 3

Characteristic of thermal probe installed in the enclosure with intrinsic safety elements for classes T6/T85°C, T5/T100°C or T4/T135°C:

Threshold of release	Ambient temperature for the enclosure	Ambient temperature of the intrinsic safety element
55°C ± 5°C	40°C or 50°C	≥ 60°C
65°C ± 5°C	40°C or 50°C	≥ 70°C
75°C ± 5°C	40°C, 50°C or 60°C	≥ 80°C

TABLE 4

Enclosure with intrinsic safety elements without thermal probe for class T6/T85°C for ambient temperature 40°C, 50°C or 60°C.

Type of enclosure	Ambient temperature of the intrinsic safety element	Maximum dissipated power (W) For ambient temperature		
		40°C	50°C	60°C
EJB01	60°C	**15**	**4**	**----------**
	70°C	**30**	**15**	**4**
	80°C	**45**	**30**	**15**
EJB02	60°C	**25**	**5**	**----------**
	70°C	**45**	**25**	**5**
	80°C	**65**	**45**	**25**
EJB03 and EJB03A	60°C	**25**	**----------**	**----------**
	70°C	**65**	**25**	**----------**
	80°C	**100**	**65**	**25**
EJB04	60°C	**35**	**----------**	**----------**
	70°C	**80**	**35**	**----------**
	80°C	**125**	**80**	**35**
EJB05	60°C	**45**	**1O**	**----------**
	70°C	**80**	**45**	**10**
	80°C	**115**	**80**	**45**
EJB06	60°C	**45**	**10**	**----------**
	70°C	**80**	**45**	**10**
	80°C	**115**	**80**	**45**
EJB07	60°C	**60**	**20**	**----------**
	70°C	**100**	**60**	**20**
	80°C	**135**	**100**	**60**
EJB08	60°C	**80**	**25**	**----------**
	70°C	**130**	**80**	**25**
	80°C	**180**	**130**	**80**
EJB09	60°C	**115**	**40**	**----------**
	70°C	**190**	**115**	**40**
	80°C	**270**	**190**	**115**
EJB10	60°C	**135**	**50**	**----------**
	70°C	**220**	**135**	**50**
	80°C	**310**	**220**	**135**

LIST OF THE COMPONENT INTENDED TO BE INSTALLED ON THE ENCLOSURES

Type of component	Name of Manufacturer	Operating temperature	Certificate number	IEC 60079-0	IEC 60079-1	IEC 60079-7	IEC 60079-31
Enclosures	MAM	-50°C to +140°C	IECEx INE 14.0036U	2011 (1)	2014		2013
Operator devices	MAM	-60°C to +140°C	IECEx INE 14.0032U	2011 (1)	2007 (2)		2008 (5)
Breathing or draining device type FTVS	MAM	-60°C to +200°C	IECEx INE 12.0002U	2017	2014	2017	2013
Breathing or draining device type FTCROSS	MAM	-60°C to +200°C	IECEx INE 19.0003U	2017	2014	2015 (3)	2013
Terminal blocks type ZDU	WEIDMULLER	-60°C to +110°C	IECEx ULD 16.0036U	2017		2017	
Terminal blocks type WDU 2,5	WEIDMULLER	-60°C to +110°C	IECEx ULD 14.0005U	2017		2017	
Terminal blocks, CBD** series and TC/PO type	CABUR	-40°C to +110°C	IECEx CES 09.0009U	2011 (1)		2015 (3)	
Terminal block type PT	PHOENIX CONTACT	-60°C to +110°C	IECEx SEV 13.0005U	2017		2017	
Terminal AKZ / AKE	WEIDMULLER	-50°C or -60°C to +45°C or +110°C	IECEx TUR 18.0024U	2017		2017	
Terminal block type USLKG	PHOENIX CONTACT	-60°C to +110°C	IECEX KEM 06.0035U	2017		2017	
Terminal block type UK	PHOENIX CONTACT	-60°C to +110°C	IECEX KEM 06.0029U	2017		2017	
Fitting type EM, NP, ELF…	ELFIT CORTEM	-20°C or -60°C to +80°C or +150°C	IECEx CES 15.0005U	2011 (1)	2007 (2)	2006 (4)	2008 (5)
Fittings series R..., B... and RB	ELFIT CORTEM	-20°C or -60°C to +60°C or +150°C	IECEx CES 10.0002U	2011 (1)	2007 (2)		2008 (5)
Command and Signaling units type RS/RX	COELBO	-50°C or -60°C up to +180°C	IECEx INE 14.0023U	2017	2014		2013

(1) No impacted by the Major technical changes between the standards: IEC 60079-0:2011 ed 6 and IEC 60079-0:2017 ed 7.

(2) No impacted by the Major technical changes between the standards: IEC 60079-1:2007 ed 6 and IEC 60079-1:2014 ed 7.

(3) No impacted by the Major technical changes between the standards: IEC 60079-7:2015 ed 5 and IEC 60079-7:2017 ed 5.1.

(4) No impacted by the Major technical changes between the standards: IEC 60079-7:2006 ed 4 and IEC 60079-7:2017 ed 5.1.

(5) No impacted by the Major technical changes between the standards: IEC 60079-31:2008 ed 1 and IEC 60079-31:2013 ed 2.