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 10.0015X**

Page 1 of 4

Certificate history:

Status: **Current**

Issue No: 5

Issue 4 (2017-06-08)
Issue 3 (2016-07-07)
Issue 2 (2014-10-03)
Issue 1 (2011-07-20)
Issue 0 (2011-01-20)

Date of Issue: 2020-03-19

Applicant: **TECHNOR ITALSMEA**
Via Italia, 33
I-20060 Gessate (MI)
Italy

Equipment: **Controls units and / or junction boxes type EJB ***

Optional accessory:

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

Marking: Ex db IIB or IIB+H2 T6 or T5 or T4 or T3 Gb
Ex db [ia Ga or ib] IIB or IIB+H2 T6 Gb
Ex tb IIIC T85°C or T100°C or T135°C or T200°C Db IP65 or IP66
Ex tb [ia Da or ib] IIIC T85°C Db IP65 or IP66

Approved for issue on behalf of the IECEx Certification Body:

Thierry HOUEIX

Position: Ex Certification Officer

Signature: (for printed version)

Digitally signed by Thierry HOUEIX

Date: 2020-03-19

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 www.iecex.com or use of this QR Code.

Certificate issued by:

INERIS
Institut National de l'Environnement Industriel et des Risques
BP n2 / Parc Technologique ALATA
F-60550 Verneuil-en-Halatte
France

controlling risks for sustainable development

IECEx Certificate of Conformity

Certificate No.: **IECEx INE 10.0015X**

Date of issue: 2020-03-19 Issue No: 5

Manufacturer: **TECHNOR ITALSMEA**
Via Italia, 33
I-20060 Gessate (MI)
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/ExTR10.0014/05

Quality Assessment Report:

FR/INE/QAR08.0002/11

IECEx Certificate of Conformity

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

The control units and/or junction boxes EJB* series are constituted by metallic enclosures with Ex db IIB or IIB+H2 and/or Ex tb IIIC type of protection. They are intended to contain electric and/or electronic equipment and/or terminals, defined in the technical note. The EJB units can also contain intrinsically safe associated apparatus having Type of Protection [Ex ia or ib] and IECEx certified according to the IEC 60079-0 / IEC 60079-11 standards.

These enclosures can be fitted with the following accessories:
- Drain and breather devices ECR.. as per dwg. AC1410 sheet 4;
- Push buttons PL.. as per dwg. AC1410 sheet 5;
- Push button PLC-R as per dwg. AC1410 sheet 10;
- Rotary actuators PSRC.. as per dwg. AC1410 sheet 7;
- Rotary actuators SRC.. as per dwg. AC1410 sheets 8 and 9;
- Pilot lights PLD.. as per dwg. AC1410 sheet 6 and AC1704 sheet 2 (for EJB 2S)

These enclosures can also be fitted with fans up to 50 m^3/h and battery having capacity 1.5 Ah or less (see technical note).

The photoconductive cell type FTC manufactured by SICE Srl. and certified IECEx INE 14.0022U with Type of Protection Ex d IIB Gb can be installed on EJB enclosures having temperature class T5 or T6 and in range of ambient temperature -40°C to +55°C. When FTC is installed, the unit EJB is only suitable for gas group IIB (H2 and IIIC excluded).

The lid can be hinged to the enclosure body.The lids of EJB 2 to EJB 13 and 13 A can be provided with windows made of tempered glass suitable for visualization of internal apparatus (e.g. displays, measuring instruments etc.). The temperature class of the enclosures with windows is maximum T4/T135°C.

Enclosures get the degree of protection IP65 or IP66 in accordance with the IEC 60529 standard.

SPECIFIC CONDITIONS OF USE: YES as shown below:
- The dimensions of flameproof joints are different from the values specified in the tables of the EN 60079-1 standard. The flameproof joints are not intended to be repaired.

- The screws used for the lid fastening must have a tensile strength higher or equal to 800 N/mm².

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
For issue 01:

- Addition of the following sizes : EJB2, EJB3, EJB3A, EJB4, EJB5, EJB9, EJB11 and EJB13A.

- Possibility to install intrinsic safety associated apparatus covered by an IECEx certificate.

For issue 02:

- Changes of the design of the enclosures and updates of descriptive documents.

- Change of the maximum temperature ambient of use to +60°C.

- Change of the minimum ambient temperature of use to -50°C.

- Introduction of the gas subdivision IIB+H2.

- Introduction of windows for EJB 2 to EJB 9 made of tempered glass suitable for visualization of internal apparatus (e.g. displays, measuring instruments etc.).

- Introduction of the temperature class T3/T200°C.

- Introduction of the photoconductive cell type FTC manufactured by SICE Srl. and certified IECEx INE 14.0022U with type of protection Ex d IIB Gb according to IEC 60079-0:2011 and IEC 60079-1:2007-04 standards.

- Update of standards: IEC 60079-0 (Ed. 6) and IEC 60079-11 (Ed. 6).

For issue 03:

- Introduction of windows 70x45mm, thickness 15 mm on EJB 10, 11, 12, 13 and 13A.

- Introduction of Nr 1 window 70x60mm, thickness 19 mm on EJB 10, 11, 12, 13 and 13A.

For issue 04:

- Introduction of the control units type EJB 2S: the enclosure is similar to the EJB 2 (same materials, same constructional dimensions, same accessories, etc.) Only the following elements are added or changed:

  The permitted dissipated power is different;

  In addition to cable entries, Ex d and/or Ex tb connectors with IECEx full conformity certificate can be mounted on the enclosure;

  Transparent parts have the same constructional features and material that EJB 2 but the position of the window is specific;

- Update of standards: IEC 60079-31 (Ed. 2).

For issue 05:

- Introduction of the size EJB14.

- Possibility to use the pilot lights PLD for ambient temperature down to -50°C with enclosures having temperature class maximum T4/ T135°C.

- Change of the minimum ambient temperature of use to -60°C for EJB without glass.

- Clarification about maximum dissipated powers when thermal probe is used.

- Application of the following standards: IEC 60079-0:2017 and IEC 60079-1:2014.

Annex:

IECEx INE 10.0015X-05_Annex.pdf

PARAMETERS RELATING TO THE SAFETY

Enclosures are intended to be used in range of ambient temperatures:

- From -50°C to +60°C for all EJB sizes with glass windows
- From -60°C to +60°C for all EJB sizes without glass windows

For enclosure without intrinsic safety element:

- Maximum supply voltage : 20 kVac or 20 kVdc
- Maximum current : 2 000 A
- Rated frequency : 0 to 1000 Hz

Maximum dissipated powers are defined in the Table 1 for enclosures without window and Table 2 for enclosures with window(s).

For enclosure with intrinsic safety element:

The minimum ambient temperature must be in accordance with the IS components installed inside the enclosures (Barriers, terminals...)

- Maximum supply voltage for “IS” elements : 500 V

Maximum dissipated powers are defined in the Tables 1 and 2 for enclosures with thermal probes.
Maximum dissipated powers are defined in the Tables 3 and 4 for enclosures without thermal probes.

The maximum threshold of thermal probe shall be:

Ambient temperature of the enclosure	Ambient temperature of the IS element	Threshold of release of the thermal probe
40°C and 50°C	≤ 60°C	55°C ± 5°C
	≤ 70°C	65°C ± 5°C
	≤ 80°C	75°C ± 5°C
	≤ 85°C	80°C ± 5°C
55°C and 60°C	≤ 70°C	65°C ± 5°C
	≤ 80°C	75°C ± 5°C
	≤ 85°C	80°C ± 5°C

Additional parameters for enclosure with pilot lights PLD:

These versions are intended to be used in range of ambient temperatures from -50°C to +60°C.

Pilot lights PLD can be installed on enclosures having temperature class maximum T4/T135°C.

- Nominal incandescent lamp power : ≤ 5 W
- Maximum LED lamp dissipated power : ≤ 3 W

IECEx Certificate of Conformity

Certificate No.: IECEx INE 10.0015X

Annex: IECEx INE 10.0015X-05_Annex.pdf

List of the Ex components intended to be installed on the enclosures:

List of the Ex components intended to be installed on the enclosures		
Type of component	**Certificate number**	**Editions of the standard**
Photoconductive cell type FTC (*)	IECEx INE 14.0022U	IEC 60079-0:2011 (**) IEC 60079-1:2007 (**)
Three pieces unions CORTEM	IECEx CES 10.0002U	IEC 60079-0:2011 (**) IEC 60079-1:2007 (**) IEC 60079-31:2008 (**)
Three pieces unions GADDI	IECEx IMQ 16.0009U	IEC 60079-0:2011 (**) IEC 60079-1:2014 IEC 60079-31:2013

(*) The photoconductive cell type FTC with type of protection Ex d IIB Gb can be installed on EJB enclosures having temperature class T5 or T6 and in range of ambient temperature -40°C to +55°C. When FTC is installed, the unit EJB is only suitable for gas group IIB (H2 and IIIC excluded).

(**) Not concerned by the major technical changes of the last edition of the standard.

Maximum dissipated power (W / VA) for EJB without window and/or with IS barrier protected by thermal probes:

Table 1

Enclosure type	T6/T85°C for ambient up to				T5/T100°C for ambient up to				T4/T135°C for ambient up to				T3/T200°C for ambient up to			
	40°C	50°C	55°C	60°C	40°C	50°C	55°C	60°C	40°C	50°C	55°C	60°C	40°C	50°C	55°C	60°C
EJB 2	74	56	47	38	101	83	74	65	164	146	137	128	281	263	254	245
EJB 3	96	72	61	49	131	107	96	84	213	189	178	166	365	341	330	318
EJB 3A	102	77	65	52	140	115	102	90	227	202	190	177	390	365	352	340
EJB 4	114	86	72	58	156	128	114	100	253	225	211	197	434	406	392	378
EJB 5	138	110	82	64	193	156	138	119	322	285	267	248	561	524	506	487
EJB 6	173	139	104	81	243	197	173	150	405	359	336	312	706	660	637	614
EJB 8 ; 9	216	173	130	101	303	245	216	187	505	448	419	390	881	823	794	765
EJB 10 ; 11	254	203	152	118	355	287	254	220	592	525	491	457	1033	965	931	897
EJB 12	324	237	194	151	453	367	324	280	756	670	627	583	1319	1232	1189	1146
EJB 13	431	308	246	185	615	492	431	369	1046	923	861	800	1845	1722	1661	1599
EJB 13A	487	348	278	209	695	556	487	417	1181	1042	973	904	2085	1946	1876	1807
EJB 14	728	520	416	312	1039	832	728	624	1767	1559	1455	1351	3117	2909	2806	2702
Tcable	80°C				90°C				120°C				175°C			

Maximum dissipated power (W / VA) for EJB with windows and/or with IS barrier protected by thermal probes:

Table 2

Enclosure type	T6/T85°C for ambient up to				T5/T100°C for ambient up to				T4/T135°C for ambient up to			
	40°C	50°C	55°C	60°C	40°C	50°C	55°C	60°C	40°C	50°C	55°C	60°C
EJB 2 ; 2S ; 3 ; 3A	67	48	39	30	94	76	67	58	158	140	131	121
EJB 4 ; 5 ; 6	114	86	72	58	156	128	114	100	253	225	211	197
EJB 8 ; 9	144	108	88	72	195	144	119	100	315	234	211	197
EJB 10 ; 11	180	132	108	90	268	200	161	134	360	270	216	197
EJB 12	240	180	144	120	323	242	195	162	405	301	243	203
EJB 13	280	208	168	140	365	272	221	183	450	337	270	225
EJB 13A	320	240	192	160	408	306	246	204	477	355	288	239
Tcable	80°C				90°C				120°C			

Maximum dissipated power (W / VA) for EJB with IS barrier without thermal probes protection:

Table 3

Enclosure type	Ambient temperature of the intrinsic safety element	T6/T85°C for ambient up to			
		+40°C	+50°C	+55°C	+60°C
EJB 2 ; 2S	60°C	18	4	N/A	N/A
	70°C	32	18	11	4
	80°C	46	32	25	18
	85°C	53	39	32	25
EJB 3	60°C	27	13	7	N/A
	70°C	40	27	20	13
	80°C	53	40	33	27
	85°C	60	47	40	33
EJB 3A	60°C	29	14	7	N/A
	70°C	43	29	21	14
	80°C	57	43	36	29
	85°C	64	50	43	36
EJB 4	60°C	32	16	8	N/A
	70°C	48	32	24	16
	80°C	64	48	40	32
	85°C	71	56	48	40

Table 3					
Enclosure type	**Ambient temperature of the intrinsic safety element**	**T6/T85°C for ambient up to**			
		+40°C	**+50°C**	**+55°C**	**+60°C**
EJB 5	60°C	41	20	10	N/A
	70°C	61	41	31	20
	80°C	81	61	51	41
	85°C	92	71	61	51
EJB 6	60°C	51	26	13	N/A
	70°C	77	51	38	26
	80°C	103	77	64	51
	85°C	115	90	77	64
EJB 8 ; 9	60°C	64	32	16	N/A
	70°C	96	64	48	32
	80°C	128	96	80	64
	85°C	144	112	96	80
Tcable		80°C			

Table 4					
Enclosure type	**Ambient temperature of the intrinsic safety element**	**T6/T85°C for ambient up to**			
		+40°C	**+50°C**	**+55°C**	**+60°C**
EJB 10 ; 11	60°C	75	38	19	N/A
	70°C	113	75	56	38
	80°C	150	113	94	75
	85°C	169	131	113	94
EJB 12	60°C	96	48	24	N/A
	70°C	144	96	72	48
	80°C	192	144	120	96
	85°C	215	168	144	120
EJB 13	60°C	123	61	31	N/A
	70°C	184	123	92	61
	80°C	245	184	153	123
	85°C	276	214	184	153
EJB 13A	60°C	138	69	35	N/A
	70°C	208	138	104	69
	80°C	277	208	173	138
	85°C	312	242	208	173

Annex: IECEx INE 10.0015X-05_Annex.pdf

Table 4					
Enclosure type	**Ambient temperature of the intrinsic safety element**	**T6/T85°C for ambient up to**			
		+40°C	**+50°C**	**+55°C**	**+60°C**
EJB 14	60°C	207	104	52	N/A
	70°C	311	207	155	104
	80°C	414	311	259	207
	85°C	466	362	311	259
Tcable		80°C			

MARKING

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

- TECHNOR ITALSMEA
- I-20060 GESSATE
- ITALY
- EJB * (1)
- IECEx INE 10.0015X
- (Serial number)
- Ex db IIB or IIB+H2 T(2) Gb or Ex db [ia Ga or ib] IIB or IIB+H2 T(2) Gb
  and/or
- Ex tb IIIC T(2) Db or Ex tb [ia Da or ib] IIIC T(2) Db
- IP65 or IP66
  T. Amb: (3)
- Tcable: (4)
- WARNINGS:
  - DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE IS PRESENT
  - POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS (5)
  - CABLE ENTRIES: SEE INSTRUCTIONS

(1)

EJB *

- Enclosures series
- Enclosure size (2 ; 2S ; 3 ; 3A ; 4 ; 5 ; 6 ; 8 ; 9 ; 10 ; 11 ; 12 ; 13 ; 13A ; 14)

(2) The temperature classes are defined in above Tables according to the maximum dissipated powers and the maximum ambient temperature

(3) See parameters relating to safety

(4) Tcable is defined in above Tables according to the maximum dissipated powers and the maximum ambient temperature

(5) Warning to be added when:

- thickness of not conductive paint applied on the enclosure is >2mm (Group IIB) or >0.2mm (Group IIB+H2)
  or
- not conductive individual materials (labels) applied on painted enclosures have exposed (chargeable area) >10000mm2 (Group IIB) or >2000mm2 (Group IIB+H2).
  or
- not conductive individual materials (labels) applied on unpainted (conductive earthed surface) enclosures have exposed (chargeable area) >40000mm2 (Group IIB) or >8000mm2 (Group IIB+H2).

ROUTINE EXAMINATIONS AND TESTS

In accordance with clause 16.1 of IEC 60079-1 standard, each sample of the equipment defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds under:

Size	Minimum Ambient Temperature			
	-20°C	-40°C	-50°C	-60°C
EJB 2 to EJB 8	13.5 bar	17.6 bar	17.6 bar	17.6 bar
EJB 9 to EJB 12	13.5 bar	17 bar	17 bar	17 bar
EJB 13 / EJB 13A	12.3 bar	15 bar	15.8 bar	16.97 bar
EJB 14	12.15 bar	14.85 bar	15.15 bar	16.05 bar