



# 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](http://www.iecex.com)

Certificate No.: **IECEx INE 13.0065X** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 2 [Issue 1 \(2014-12-12\)](#)  
[Issue 0 \(2014-03-12\)](#)  
Date of Issue: 2021-01-13  
Applicant: **COELBO S.r.l.**  
Via S. Margherita, 83  
I - 20861 Brugherio (MB)  
**Italy**  
Equipment: **Enclosures type CCF/CCV**  
Optional accessory:  
Type of Protection: **db, db [ia], tb, tb[ia]**  
Marking: Ex db IIB or IIB+H<sub>2</sub> or (H<sub>2</sub>) T6...T3 Gb  
Ex db [ia Ga] IIB or IIB+H<sub>2</sub> or (H<sub>2</sub>) T6...T3 Gb  
Ex tb IIIC T85°C...T200°C Db  
Ex tb [ia Da] IIIC T85°C...T200°C Db

Approved for issue on behalf of the IECEx  
Certification Body:

**Thierry HOUEIX**

Position:

**Ex Certification Officer**

Signature:  
(for printed version)

Date:

**2021-01-25**

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**F-60550 Verneuil-en-Halatte**  
**France**



controlling risks  
for sustainable development



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Manufacturer: **COELBO S.r.l.**  
Via S. Margherita, 83  
I - 20861 Brugherio (MB)  
**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/ExTR13.0065/02](#)

Quality Assessment Report:

[IT/CES/QAR10.0009/10](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Range of flameproof enclosures made in aluminium light alloy. They can be provided with a glass window as specified in manufacturer's descriptive documentation. The cover and the body shall be fixed by stainless steel screws having minimum yield stress: 450 N/mm<sup>2</sup> (typical grade A2-70 or better).

These enclosures are intended to contain mainly electrical and/or electronic "NIS" components, they can also contain "IS" elements covered by a separated IECEx certificate. The versions containing intrinsic safety associated apparatus have to respect power limits reported in table, otherwise the enclosure shall be equipped with an internal thermal probe..

Enclosures could be fitted with accessories : command and signalling units covered by the certificate IECEx INE 14.0023U and draining and breathing devices & bulkheads covered by the certificate IECEx INE 14.0045U.

These enclosures get the degree of protection IP66 or IP65 or IP64 in accordance with IEC 60529, but the final marking should be in accordance with the minimum degrees of protection of accessories mounted on the enclosures.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- The dimensions of flameproof joints are different from the values specified in the tables of the IEC 60079-1 standard. For any repair, contact the manufacturer.
- The stainless steel screws used for the assembly of the various parts of explosion-proof enclosures must have minimum yield stress: 450 N/mm<sup>2</sup> (typical grade A2-70).



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

*For the issue N°02:*

- Standard update : IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-31:2013
- Add the possibility to mount breathing and draining devices certified as component IECEx INE 14.0045U
- Add the possibility to install Gamma Radiation Monitor inside the enclosures
- Add the Tamb=+55°C on the table of maximum power dissipated

## **Annex:**

[IECEx INE 13.0065X-02\\_Annex.pdf](#)



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## PARAMETERS RELATING TO THE SAFETY

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

Enclosure size CCF or CCV	Minimum Temperature	Maximum Temperature	Gas Group
All except 16, 16A and 16B	-20°C or -50°C	+40°C or +50°C or +55°C or +60°C	IIB or IIB+H <sub>2</sub>
Only 16, 16A, 16B	-20°C or -40°C		IIB or IIB+H <sub>2</sub>
Only 16, 16A, 16B	-50°C		(H <sub>2</sub> )

For enclosure without intrinsic safety element:

Maximum supply voltage: 1000 Vac or Vdc

Maximum dissipated powers are defined in the Table 1.

For enclosure with intrinsic safety element:

The minimum ambient temperature must be in accordance with the "IS" elements installed inside the enclosures (barriers, terminals...).

Maximum supply voltage for Non 'IS' elements: 1000 Vac or Vdc

Maximum supply voltage for "IS" elements: 250 V

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

The maximum threshold of thermal probe shall be: (maximum barrier's temperature - 5°C) ±5°C

## MARKING

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

For enclosure without intrinsic safety element:

- COELBO
- I - 20861 Brugherio
- CCF... or CCV...<sup>(1)</sup>
- IECEx INE 13.0065X
- (Serial number)
- Ex db IIB or IIB+H<sub>2</sub> or (H<sub>2</sub>) T6...T3 Gb
- Ex tb IIIC T85°C...T200°C Db
- IP<sup>(2)</sup>
- ...°C < Tamb < ...°C<sup>(3)</sup>
- Tcable :<sup>(4)</sup>
- WARNING :  
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT  
DO NOT OPEN WHEN ENERGIZED<sup>(5)</sup>

(1) The type is completed by numbers and/or letters in accordance with the manufacturing variations.

(2) IP66 or IP65 or IP64

(3) See parameters relating to safety

(4) See tables below

(5) If there is a switchgear inside the enclosure



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## For enclosure with intrinsic safety element:

- COELBO
- I - 20861 Brugherio
- CCF... or CCV...<sup>(1)</sup>
- IECEx INE 13.0065X
- (Serial number)
- Ex db [ia IIB or IIC Ga] IIB or IIB+H<sub>2</sub> or (H<sub>2</sub>) T6...T3 Gb
- Ex tb [ia Da] IIIC T85°C...T200°C Db
- IP<sup>(2)</sup>
- ...°C < Tamb < ...°C<sup>(3)</sup>
- Tcable :<sup>(4)</sup>
- WARNING :  
DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE IS PRESENT  
DO NOT OPEN WHEN ENERGIZED<sup>(5)</sup>

(1) The type is completed by numbers and/or letters in accordance with the manufacturing variations.

(2) IP66 or IP65 or IP64

(3) See parameters relating to safety

(4) See tables below

(5) If there is a switchgear inside the enclosure

## **ROUTINE EXAMINATIONS AND TESTS**

### **Enclosures from 800 cm<sup>3</sup> to 4700 cm<sup>3</sup>:**

In accordance with clause 16.1 of the IEC 60079-1 standard, an overpressure test of a period comprised between 10 and 60 seconds under:

- 10.2 bar for -20°C.
- 13.4 bar for -50°C.

### **Enclosures from 4701 cm<sup>3</sup> to 17700 cm<sup>3</sup>:**

In accordance with clause 16.1 of the IEC 60079-1 standard, an overpressure test of a period comprised between 10 and 60 seconds under

- 11.6 bar for -20°C.
- 14.6 bar for -50°C.

### **Enclosures from 17701 cm<sup>3</sup> to 80500 cm<sup>3</sup>:**

In accordance with clause 16.1 of the IEC 60079-1 standard, an overpressure test of a period comprised between 10 and 60 seconds under

- 13.7 bar for -20°C.
- 16.7 bar for -50°C.

### **Enclosures from 80501 cm<sup>3</sup> to 161000 cm<sup>3</sup>:**

In accordance with clause 16.1 of the IEC 60079-1 standard, an overpressure test of a period comprised between 10 and 60 seconds under

- 15.6 bar for -20°C.
- 17.7 bar for -40°C and -50°C



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**Table 1: Maximum dissipated power for enclosures with window and/or with IS element protected by thermal probes**

Temperature class Tamb (°C)	T6/T85°C				T5/T100°C				T4/T135°C				T3/T200°C			
	40	50	55	60	40	50	55	60	40	50	55	60	40	50	55	60
CCF0G	23	17	13	10	33	27	23	20	57	50	47	43	90	83	80	77
CCF1G	31	22	18	13	44	35	31	26	75	66	62	57	119	110	106	101
CCF1AG	35	25	20	15	50	40	35	30	86	76	71	66	136	126	121	116
CCF2G	57	41	33	24	82	65	57	49	139	122	114	106	220	204	196	188
CCF3G	70	50	40	30	100	80	70	60	170	150	140	130	270	250	240	230
CCF3AG	91	65	52	39	130	104	91	78	221	195	182	169	351	325	312	299
CCF4G	51	37	28	18	74	55	51	42	125	111	102	92	199	139	134	129
CCF4AG	66	48	36	24	96	72	66	54	161	143	132	120	257	179	173	167
CCF5G	81	59	44	30	118	89	81	66	199	177	163	148	318	222	214	207
CCF5AG	99	72	54	36	144	108	99	81	243	216	198	180	387	270	261	252
CCF6G	90	66	49	33	131	99	90	74	222	197	181	164	353	246	238	230
CCF6AG	110	80	60	40	160	120	110	90	269	239	219	199	429	299	289	279
CCF7G	112	82	61	41	164	123	112	92	276	245	225	205	440	307	297	286
CCF7AG	136	99	74	49	198	148	136	111	334	297	272	247	532	371	359	346
CCF8G	110	80	60	40	160	120	110	90	270	240	220	200	430	300	290	280
CCF8AG	146	105	82	64	210	169	146	129	351	310	292	269	555	514	497	473
CCF9G	139	100	78	61	201	162	139	123	335	296	279	257	530	491	474	452
CCF9AG	169	121	94	74	243	196	169	148	405	358	337	310	641	594	574	547
CCF10G	167	120	93	73	240	194	167	147	401	354	334	307	634	588	568	541
CCF10AG	200	144	112	88	288	232	200	176	480	424	400	368	760	704	680	648
CCF10BG	233	168	130	103	335	270	233	205	559	494	466	429	885	820	792	755
CCF11G	220	159	123	97	317	256	220	194	529	467	441	405	837	775	749	714
CCF11AG	256	184	143	113	368	297	256	225	614	542	512	471	972	900	870	829
CCF11BG	291	210	163	128	419	338	291	256	699	618	583	536	1107	1025	990	944
CCF12G	250	180	140	110	360	290	250	220	600	530	500	460	950	880	850	810
CCF12AG	289	208	162	127	416	335	289	254	694	613	578	532	1099	1018	983	937
CCF12BG	328	236	184	144	473	381	328	289	788	696	657	604	1247	1156	1116	1064
CCF13G	72	52	40	32	103	83	72	63	172	152	144	132	273	253	244	233
CCF14G	111	80	62	49	160	129	111	98	267	236	222	205	422	391	378	360
CCF16G	402	290	225	177	579	467	402	354	965	853	804	740	1528	1416	1368	1303
CCF16AG	461	332	258	203	664	535	461	406	1107	978	923	849	1753	1624	1569	1495
CCF16BG	521	375	291	229	750	604	521	458	1249	1103	1041	958	1978	1832	1770	1686
CCF20G	142	103	80	63	205	165	142	125	342	302	285	262	541	501	484	462
CCF20AG	194	140	109	86	280	226	194	171	467	412	389	358	739	685	661	630
CCF20BG	257	185	144	113	370	298	257	226	616	545	514	473	976	904	873	832
<b>Tcable</b>	80				95				130				175			



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**Table 2: Maximum dissipated power for enclosures with IS element without thermal probes**

Ambient temperature of the enclosure: Maximum ambient temperature of IS barriers	40°C			50°C		55°C		60°C
	60°C	70°C	80°C	70°C	80°C	70°C	80°C	80°C
CCF0G	7	10	17	7	10	3	7	7
CCF1G	9	13	22	9	13	4	9	9
CCF1AG	10	15	25	10	15	5	10	10
CCF2G	16	24	41	16	24	8	16	16
CCF3G	20	30	50	20	30	10	20	20
CCF3AG	26	39	65	26	39	13	26	26
CCF4G	14	28	42	14	28	9	23	14
CCF4AG	18	36	54	18	36	12	30	18
CCF5G	22	44	66	22	44	15	37	22
CCF5AG	27	54	81	27	54	18	45	27
CCF6G	25	49	74	25	49	16	41	25
CCF6AG	30	60	90	30	60	20	50	30
CCF7G	31	61	92	31	61	20	51	31
CCF7AG	37	74	111	37	74	25	62	37
CCF8G	30	60	90	30	60	20	50	30
CCF8AG	47	82	111	47	82	29	64	47
CCF9G	45	78	106	45	78	28	61	45
CCF9AG	54	94	128	54	94	34	74	54
CCF10G	53	93	127	53	93	33	73	53
CCF10AG	64	112	152	64	112	40	88	64
CCF10BG	75	130	177	75	130	47	103	75
CCF11G	70	123	167	70	123	44	97	70
CCF11AG	82	143	194	82	143	51	113	82
CCF11BG	93	163	221	93	163	58	128	93
CCF12G	80	140	190	80	140	50	110	80
CCF12AG	93	162	220	93	162	58	127	93
CCF12BG	105	184	249	105	184	66	144	105
CCF13G	23	40	55	23	40	14	32	23
CCF14G	36	62	84	36	62	22	49	36
CCF16G	129	225	306	129	225	80	177	129
CCF16AG	148	258	351	148	258	92	203	148
CCF16BG	167	291	396	167	291	104	229	167
CCF20G	46	80	108	46	80	28	63	46
CCF20AG	62	109	148	62	109	39	86	62
CCF20BG	82	144	195	82	144	51	113	82





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## LIST OF THE COMPONENT INTENDED TO BE INSTALLED ON THE ENCLOSURES

Designation	Manufacturer	Type	Certificate	Standards	Ex marking
Command and signalling units	COELBO	RX/RS	IECEX INE 14.0023U	IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-31:2013	Ex db IIC or IIB+H2 or IIB Gb Ex tb IIIC Db IP66 Tamb: -60°C or -50°C to +80°C Ts: -60°C or -50°C to +180°C
Draining and breathing devices & bulkheads	RIBCO	VD**S (with plastic cap) VF**S VDF**S	IECEX INE 14.0045U	IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-31:2013	Ex db IIB+H2 T6 Gb Ex tb IIIC Db IP66 Tamb : -60°C to +60°C
	RIBCO	V**S VD**S P**S-**	IECEX INE 14.0045U	IEC 60079-0:2017 IEC 60079-1:2014 IEC 60079-31:2013	Ex db IIB+H2 T6 Gb Ex tb IIIC Db IP64 Tamb : -60°C to +60°C