# 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 EPS 14.0086X**



Certificate history:
Issue 0 (2015-02-24)

Status: **Current**

Issue No: 1

Date of Issue: 2020-10-28

Applicant: **COELBO S.r.l.**
V. Santa Margherita, 83
20861 Brugherio (MB)
**Italy**

Equipment: **Junction boxes and enclosures for instrument series S...; SO...; RI...; ROI...; SRI...; SROI...; SJ...; SOJ...; and type EMH90...; with or without intrinsically safe circuits**

Optional accessory:

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

Marking:
Ex db IIC T6 ... T4 Gb
Ex db I Mb (stainless steel or brass variant only)
Ex db [ia Ga] IIC T6 Gb
Ex tb IIIC T85°C...T135°C IP66/67 Db
Ex tb [ia Da] IIIC T85°C IP66/67 Db

Approved for issue on behalf of the IECEx Certification Body: **Holger Schaffer**

Position: **Certification Manager**

Signature:
(for printed version)

Date:

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:

**Bureau Veritas Consumer Products Services Germany GmbH**
**Businesspark A96**
**86842 Türkheim**
**Germany**

# IECEx Certificate of Conformity



Manufacturer: **COELBO S.r.l.**
V. Santa Margherita, 83
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 Reports:

DE/EPS/ExTR14.0088/00 DE/EPS/ExTR14.0088/01

Quality Assessment Report:

IT/CES/QAR10.0009/10

# IECEx Certificate of Conformity



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

Junction boxes and enclosures for instrument series S/SO are boxes of aluminium light alloy, series RI/ROI and SRI/SROI are boxes of stainless steel AISI 316L and series SJ/SOJ are boxes of brass. Enclosures can be fitted with extensions which modify the total height of the enclosures and completed by a specific kit for internal instruments assembly. Both extension and cover are locked by screws with hex socket and sealed with O-rings which guarantee IP66/67 degree of protection. Boxes series SO, ROI, SROI and SOJ have a cover with tempered glass sealed with a resin suitable for working temperature range equal to -70°C to +250°C. Enclosures are equipped with 1 to 5 NPT or metric threaded holes. Appropriate certified cable glands for direct entry have to be used.
The type EMH90... is an aluminium enclosure with threaded cover and sight glass. It is equipped with one metric M25x1,5 threaded entry (type EMH90M) or with one 3/4" NPT threaded entry (type EMH90).
Enclosures contain various electrical apparatus or terminal blocks and may be equipped with or without intrinsically safe circuits.
Service temperature:
-40°C to +110°C with EPDM o-ring (max. surface temperature T6 - T5 / T85°C - T100°C)
-50°C to +160°C with silicone o-ring (max. surface temperature T6 - T4 / T85°C - T135°C)
Enclosures series RI...; ROI...; SRI...; SROI...; SJ...; SOJ... are equipment suitable for group I, II and III.
Enclosures series S...; SO... and type EMH90... are equipment suitable for group II and III.

Technical specification:

| | |
|---|---|
| Degree of protection: | IP66/67 |
| Max. rated voltage: | 660 VAC / 440 VDC |
| Max. rated current: | 109 A |
| Max. rated cross section: | 35 mm² |
| Min. ambient temperature: | -40°C with EPDM o-ring / -50°C with silicone o-ring |
| Max. ambient temperature: | +85°C |

The correlation between power dissipations, temperature classes, max. surface temperatures and max. ambient temperatures is determined in tables no. 1 and 2 (see attachment).
Routine overpressure test is not required for series S...; RI...; SJ...
Routine overpressure test with 20 bar is required for series SO...; ROI...; SOJ...; SRI...; SROI...
Routine overpressure test with 13 bar is required for type EMH90...

**SPECIFIC CONDITIONS OF USE: YES as shown below:**
Mechanical resistance for types SJ...; SOJ... matches to low risk of mechanical danger for equipment group I.
Equipment must be installed to avoid risk from propagating brush discharges.
When connecting more than one intrinsic safe circuit, the rules and regulations for interconnection shall be duly observed. IEC 60079-14 and manufacturer instructions apply.

# IECEx Certificate of Conformity



**DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**
Standards updated. Incorporation of already certified associated apparatus.

**Annex:**

IECEx EPS 14.0086X-Attachment.pdf

***Type designation of instrument enclosures (except EMH90…):***

**(a) (b) (c) (d) (e)**

**(a)** – Series:

S* Aluminium enclosure without sight glass
SO* Aluminium enclosure with sight glass
R*I stainless steel enclosure without sight glass
RO*I stainless steel enclosure with sight glass
S*J brass enclosure without sight glass
SO*J brass enclosure with sight glass
SR*I stainless steel enclosure without sight glass, with bottom soldered threaded hole
SRO*I stainless steel enclosure with sight glass, with bottom soldered threaded hole

*Number and position of threaded holes – …; A; B; C; L; D; M; T; W; X; XA
NOTE: With the following cable entries scheme C, L, T and X may be provided external fixing bracket identified with the letter "F" (i.e. SFC, SOFL, SFT, SOFX, etc.).

**(b)** – Dimension of cable entry:

| *NPT (Std)*<br>*Tapered thread* | *EN 10226 (Gk)*<br>*tapered threading* | *ISO 261*<br>*Cylindrical threading* |
|---|---|---|
| 1 – 1/2" NPT | 1..U – 1/2" | 1..M – M20x1.5 |
| 2 – 3/4" NPT | 2..U – 3/4" | 2..M – M25x1.5 |
| 3 – 1" NPT | 3..U – 1" | 3..M – M32x1.5 |
| 4 – 1.1/4" NPT | 4..U – 1.1/4" | 4..M – M40x1.5 |
| 5 – 1.1/2" NPT | 5..U – 1.1/2" | 5..M – M50x1.5 |
| 6 – 2" NPT | 6..U – 2" | 6..M – M63x1.5 |

**(c)** – Size of the enclosure:

4; 6; 236*; 65; 7; 9 (series S…; SO…)
4; 6; 6A; 7; 8; 9 (series RI…; ROI…; SRI…; SROI…; SJ…; SOJ…)
*: already includes information on threading size

**(d)** – Internal height of enclosure (only if an extension is used)

**(e)** – Reference to electrical equipment:

"K": Presence of electrical equipment;
"I": Presence of intrinsically safe electrical equipment or circuits

***Type designation of instrument enclosure type EMH90..:***

**EMH90 (a) (b)**

**(a)** – Dimension of cable entry:

"..." – for NPT (standard) threading
"M" – in case of ISO 261 metric threading
"U" – in case of EN 10226 Gk tapered threading

**(b)** – Reference to electrical equipment:

"K" if electrical equipment is present
"I" if intrinsically safe electrical equipment is present

***Type designation of terminal boxes:***

**(a) (b) (c) (d) (e)**

**(a)** – Series:

S* Aluminium enclosure without sight glass
R*I stainless steel enclosure without sight glass
S*J brass enclosure without sight glass
SR*I stainless steel enclosure without sight glass, with bottom soldered threaded hole

* Number and position of threaded holes – …; A; B; C; L; D; M; T; W; X; XA

NOTE: With the following cable entries scheme C, L, T and X may be provided external fixing bracket identified with the letter "F" (i.e. SFC, SOFL, SFT, SOFX, etc.).

**(b)** – Dimension of cable entry:

| *NPT (Std)*<br>*Tapered thread* | *EN 10226 (Gk)*<br>*tapered threading* | *ISO 261*<br>*Cylindrical threading* |
|---|---|---|
| 1 – 1/2” NPT | 1..U – 1/2” | 1..M – M20x1.5 |
| 2 – 3/4" NPT | 2..U – 3/4” | 2..M – M25x1.5 |
| 3 – 1” NPT | 3..U – 1” | 3..M – M32x1.5 |
| 4 – 1.1/4” NPT | 4..U – 1.1/4” | 4..M – M40x1.5 |
| 5 – 1.1/2” NPT | 5..U – 1.1/2” | 5..M – M50x1.5 |
| 6 – 2” NPT | 6..U – 2” | 6..M – M63x1.5 |

**(c)** – Size of the enclosure:

4; 6; 236; 65; 7; 9 (series S…; SO…)
4; 6; 6A; 7; 8; 9 (series RI…; ROI…; SRI…; SROI…; SJ…; SOJ…)

**(d) –** Code of terminal installed:

“MM” or “MH”;
“MMI” or “MHI” in case of presence of intrinsically safe devices and circuits.

**(e) –** Max. No. of terminals (at manufacturer’s discretion)

## *Table No. 1: S/SO/EMH90*

| ENCLOSURE | MAX $T_{amb}$ | MAX $P_{diss}$ | TEMPERATURE CLASS (GAS) | MAX. SURFACE TEMP. (DUST) | $T_{cable}$ | O-RING |
|---|---|---|---|---|---|---|
| S...4 | 40°C | 7.5 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 5.5 W | | | | |
| | 60°C | 3 W | | | | |
| | 70°C | 1 W | | | | |
| | 40°C | 11 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 8.5 W | | | | |
| | 60°C | 6 W | | | | |
| | 70°C | 4.5 W | | | | |
| | 85°C | 1 W | | | | |
| | 40°C | 19.5 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 17 W | | | | |
| | 60°C | 14 W | | | | |
| | 70°C | 12 W | | | | |
| | 85°C | 8.5 W | | | | |
| S...6 S..236 | 40°C | 8 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 5.5 W | | | | |
| | 60°C | 3 W | | | | |
| | 70°C | 1 W | | | | |
| | 40°C | 11.5 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 9 W | | | | |
| | 60°C | 6.5 W | | | | |
| | 70°C | 4.5 W | | | | |
| | 85°C | 1 W | | | | |
| | 40°C | 20.5 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 18 W | | | | |
| | 60°C | 15 W | | | | |
| | 70°C | 12.5 W | | | | |
| | 85°C | 9 W | | | | |
| S...65 | 40°C | 10 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 7 W | | | | |
| | 60°C | 4 W | | | | |
| | 70°C | 1.5 W | | | | |
| | 40°C | 15 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 11.5 W | | | | |
| | 60°C | 8.5 W | | | | |
| | 70°C | 5 W | | | | |
| | 85°C | 1.5 W | | | | |
| | 40°C | 30 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 26 W | | | | |
| | 60°C | 21 W | | | | |
| | 70°C | 17 W | | | | |
| | 85°C | 12.5 W | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **S...7** | 40°C | 11 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 7.5 W | | | | |
| | 60°C | 4.5 W | | | | |
| | 70°C | 2 W | | | | |
| | 40°C | 16 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 12.5 W | | | | |
| | 60°C | 9 W | | | | |
| | 70°C | 6 W | | | | |
| | 85°C | 2 W | | | | |
| | 40°C | 31 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 27 W | | | | |
| | 60°C | 22 W | | | | |
| | 70°C | 18 W | | | | |
| | 85°C | 12.5 W | | | | |
| **S...9** | 40°C | 14 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 10 W | | | | |
| | 60°C | 6 W | | | | |
| | 70°C | 2.5W | | | | |
| | 40°C | 21 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 16 W | | | | |
| | 60°C | 12 W | | | | |
| | 70°C | 8 W | | | | |
| | 85°C | 2.5 W | | | | |
| | 40°C | 42 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 35 W | | | | |
| | 60°C | 29 W | | | | |
| | 70°C | 24 W | | | | |
| | 85°C | 16 W | | | | |
| **EMH90** | 40°C | 11 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 7.5 W | | | | |
| | 60°C | 4.5 W | | | | |
| | 70°C | 2 W | | | | |
| | 40°C | 16 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 12.5 W | | | | |
| | 60°C | 9 W | | | | |
| | 70°C | 6 W | | | | |
| | 85°C | 2 W | | | | |
| | 40°C | 31 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 27 W | | | | |
| | 60°C | 22 W | | | | |
| | 70°C | 18 W | | | | |
| | 85°C | 12.5 W | | | | |

***Table No. 2: RI/ROI/SRI/SROI/SJ/SOJ***

| ENCLOSURE | MAX $T_{amb}$ | MAX $P_{diss}$ | TEMPERATURE CLASS (GAS) | MAX. SURFACE TEMP. (DUST) | $T_{cable}$ | O-RING |
|---|---|---|---|---|---|---|
| R..I...4<br>SR..I...4<br>SJ..I...4 | 40°C | 7.5 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 5.5 W | | | | |
| | 60°C | 3 W | | | | |
| | 70°C | 1 W | | | | |
| | 40°C | 11 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 8.5 W | | | | |
| | 60°C | 6 W | | | | |
| | 70°C | 4.5 W | | | | |
| | 85°C | 1 W | | | | |
| | 40°C | 19.5 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 17 W | | | | |
| | 60°C | 14 W | | | | |
| | 70°C | 12 W | | | | |
| | 85°C | 8.5 W | | | | |
| R..I...6<br>R..I...6A<br>SR..I...6<br>SR..I..6A<br>SJ..I...6<br>SJ..I...6A | 40°C | 8 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 5.5 W | | | | |
| | 60°C | 3 W | | | | |
| | 70°C | 1 W | | | | |
| | 40°C | 11.5 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 9 W | | | | |
| | 60°C | 6.5 W | | | | |
| | 70°C | 4.5 W | | | | |
| | 85°C | 1 W | | | | |
| | 40°C | 20.5 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 18 W | | | | |
| | 60°C | 15 W | | | | |
| | 70°C | 12.5 W | | | | |
| | 85°C | 9 W | | | | |
| R..I...7<br>SR..I...7<br>SJ..I...7 | 40°C | 10 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 7 W | | | | |
| | 60°C | 4 W | | | | |
| | 70°C | 1.5 W | | | | |
| | 40°C | 15 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 11.5 W | | | | |
| | 60°C | 8.5 W | | | | |
| | 70°C | 5 W | | | | |
| | 85°C | 1.5 W | | | | |
| | 40°C | 30 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 26 W | | | | |
| | 60°C | 21 W | | | | |
| | 70°C | 17 W | | | | |
| | 85°C | 12.5 W | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| R..I...8<br>SR..I...8<br>SJ..I...8 | 40°C | 11 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 7.5 W | | | | |
| | 60°C | 4.5 W | | | | |
| | 70°C | 2 W | | | | |
| | 40°C | 16 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 12.5 W | | | | |
| | 60°C | 9 W | | | | |
| | 70°C | 6 W | | | | |
| | 85°C | 2 W | | | | |
| | 40°C | 31 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 27 W | | | | |
| | 60°C | 22 W | | | | |
| | 70°C | 18 W | | | | |
| | 85°C | 12.5 W | | | | |
| R..I...9<br>SR..I...9<br>SJ..I...9 | 40°C | 14 W | T6 | T85°C | 80°C | SILICON / EPDM |
| | 50°C | 10 W | | | | |
| | 60°C | 6 W | | | | |
| | 70°C | 2.5W | | | | |
| | 40°C | 21 W | T5 | T100°C | 95°C | SILICON / EPDM |
| | 50°C | 16 W | | | | |
| | 60°C | 12 W | | | | |
| | 70°C | 8 W | | | | |
| | 85°C | 2.5 W | | | | |
| | 40°C | 42 W | T4 | T135°C | 130°C | SILICON |
| | 50°C | 35 W | | | | |
| | 60°C | 29 W | | | | |
| | 70°C | 24 W | | | | |
| | 85°C | 16 W | | | | |