



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

Certificate No.: IECEx EPS 14.0086X Issue No: 0 Certificate history:  
Issue No. 0 (2015-02-24)

Status: **Current** Page 1 of 4

Date of Issue: **2015-02-24**

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

Electrical Apparatus: **Junction boxes and enclosures for instrument series S...; SO...; RI...;  
ROI...; SRI...; SROI...; SJ...; SOJ...; and type EMH90...**

*Optional accessory:*

Type of Protection: **flameproof enclosure "d", dust protection by enclosure "tb"**

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

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

Dieter Zitzmann

*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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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





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Date of Issue: 2015-02-24 Page 2 of 4  
Manufacturer: COELBO S.r.l.  
V. Santa Margherita, 83  
20861 Brugherio (MB)  
Italy

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** Explosive atmospheres - Part 0: General requirements  
Edition:6.0  
**IEC 60079-1 : 2007-04** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:6  
**IEC 60079-31 : 2008** Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:1

*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:

[DE/EPS/ExTR14.0088/00](#)

Quality Assessment Report:

[IT/CES/QAR10.0009/04](#)



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## Schedule

### 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 -50°C to +160°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.

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 mm<sup>2</sup>

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...

### **CONDITIONS OF CERTIFICATION: 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.



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**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
- R\*I stainless steel enclosure without sight glass
- S\*J brass enclosure without sight glass
- SO\* Aluminium enclosure with sight glass
- RO\*I stainless steel enclosure with 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**

1 – 1/2" NPT	1..M – M20x1.5
2 – 3/4" NPT	2..M – M25x1.5
3 – 1" NPT	3..M – M32x1.5
4 – 1.1/4" NPT	4..M – M40x1.5
5 – 1.1/2" NPT	5..M – M50x1.5
6 – 2" NPT	6..M – M63x1.5
H – Mixed	

**(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) – Internal height of enclosure (if any extension is used)**

**(e) – Presence of electrical equipment (indicated by letter “K”)**





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

ENCLOSURE	MAX T <sub>amb</sub>	MAX P <sub>diss</sub>	TEMPERATURE CLASS (GAS)	MAX. SURFACE TEMP. (DUST)	T <sub>cable</sub>	O-RING
<b>S...4</b>	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	T4	T135°C	130°C	SILICON
	40°C	19.5 W				
	50°C	17 W				
	60°C	14 W				
70°C	12 W					
85°C	8.5 W					
<b>S...6 S..236</b>	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	T4	T135°C	130°C	SILICON
	40°C	20.5 W				
	50°C	18 W				
	60°C	15 W				
70°C	12.5 W					
85°C	9 W					
<b>S...65</b>	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	T4	T135°C	130°C	SILICON
	40°C	30 W				
	50°C	26 W				
	60°C	21 W				
70°C	17 W					
85°C	12.5 W					



<b>S...7</b>	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	T4	T135°C	130°C	SILICON
	40°C	31 W				
	50°C	27 W				
	60°C	22 W				
70°C	18 W					
85°C	12.5 W					
<b>S...9</b>	40°C	14 W	T6	T85°C	80°C	SILICON / EPDM
	50°C	10 W				
	60°C	6 W				
	70°C	2.5 W				
	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	T4	T135°C	130°C	SILICON
	40°C	42 W				
	50°C	35 W				
	60°C	29 W				
70°C	24 W					
85°C	16 W					
<b>EMH90</b>	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	T4	T135°C	130°C	SILICON
	40°C	31 W				
	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 <sub>amb</sub>	MAX P <sub>diss</sub>	TEMPERATURE CLASS (GAS)	MAX. SURFACE TEMP. (DUST)	T <sub>cable</sub>	O-RING	
R..I...4 SR..I...4 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					
	R..I...4 SR..I...4 SJ..I...4	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				
	R..I...4 SR..I...4 SJ..I...4	85°C	1 W	T4	T135°C	130°C	SILICON
		40°C	19.5 W				
		50°C	17 W				
		60°C	14 W				
70°C		12 W					
	85°C	8.5 W					
R..I...6 R..I...6A SR..I...6 SR..I...6A SJ..I...6 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					
	R..I...6 R..I...6A SR..I...6 SR..I...6A	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				
	R..I...6 R..I...6A SR..I...6 SR..I...6A SJ..I...6 SJ..I...6A	85°C	1 W	T4	T135°C	130°C	SILICON
		40°C	20.5 W				
		50°C	18 W				
		60°C	15 W				
70°C		12.5 W					
	85°C	9 W					
R..I...7 SR..I...7 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					
	R..I...7 SR..I...7 SJ..I...7	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				
	R..I...7 SR..I...7 SJ..I...7	85°C	1.5 W	T4	T135°C	130°C	SILICON
		40°C	30 W				
		50°C	26 W				
		60°C	21 W				
70°C		17 W					
	85°C	12.5 W					



Attachment to Certificate  
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<b>R..I...8</b> <b>SR..I...8</b> <b>SJ..I...8</b>	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	T4	T135°C	130°C	SILICON
	40°C	31 W				
	50°C	27 W				
	60°C	22 W				
70°C	18 W					
85°C	12.5 W					
<b>R..I...9</b> <b>SR..I...9</b> <b>SJ..I...9</b>	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	T4	T135°C	130°C	SILICON
	40°C	42 W				
	50°C	35 W				
	60°C	29 W				
	70°C	24 W				
	85°C	16 W				