



(1) **EC TYPE-EXAMINATION CERTIFICATE**
(TRANSLATION)

- (2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres –
Directive 94/9/EC
- (3) EC type-examination certificate number:

SIQ 11 ATEX 103X



- (4) Equipment: Junction box, types RO-X-Ex and RO-X-Exia
- (5) Manufacturer: TEVEL d.o.o.
- (6) Address: Borovniško naselje 7, SI-1412 Kisovec
- (7) This equipment and any acceptable variations thereto are specified in the schedule to this certificate and in the documents therein referred to.
- (8) SIQ Ljubljana, Notified body number 1304 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.
- The examination and test results are recorded in the confidential test report TEx103/11.
- (9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with the following standards:

EN 60079-0 : 2009

EN 60079-7 : 2007

EN 60079-11 : 2007

- (10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.
- (11) This EC type-examination certificate relates only to the design, examination and tests of the specified equipment in accordance with the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.
- (12) The marking of the equipment shall include the following:

type RO-X-Ex:  **I M2 Ex e I Mb**

type RO-X-Exia:  **I M1 Ex ia I Ma**

Certification body

Ljubljana, 18 March 2011

Igor Likar



(13)

SCHEDULE

(14)

EC TYPE-EXAMINATION CERTIFICATE SIQ 11 ATEX 103X


(15) Description of the equipment

Junction boxes, type RO-X-Ex, are designed in the type of explosion protection increased safety "e". In the walls of the enclosure at most eight cable glands can be mounted.

Junction boxes, type RO-X-Exia, are designed in the type of explosion protection intrinsic safety "i". In the walls of the enclosure at most eight cable glands for type RO-1-Exia and at most twelve cable glands for type RO-2-Exia can be mounted.

Type key:

RO-X-Ex and RO-X-Exia

 dimension of junction box

X = 1 : dimensions (without cable glands) 160 mm × 200 mm × 88 mm

X = 2 : dimensions (without cable glands) 200 mm × 240 mm × 102 mm

Technical data

Type	Type of terminals	Maximum number of terminals (power + ground)	Maximum conductor cross-section [mm ²]		I _{max} [A]
			Stranded	Solid	
RO-1-Ex	UT 2.5, UT 2.5-PE	12 + 2	2.5	4	24
	UT 4, UT 4-PE	10 + 2	4	6	32
	UT 6, UT 6-PE	8 + 2	6	10	41
	UT 10, UT 10-PE	6 + 2	10	16	57
RO-2-Ex	UT 6, UT 6-PE	10 + 2	6	10	41
	UT 10, UT 10-PE	8 + 2	10	16	57
	UT 16, UT 16-PE	6 + 2	16	25	65
RO-1-Exia	UT 2.5, UT 2.5-PE	12 + 2	2.5	4	24
	UT 4, UT 4-PE	10 + 2	4	6	32
RO-2-Exia	UT 2.5, UT 2.5-PE	16 + 2	2.5	4	24
	UT 4, UT 4-PE	14 + 2	4	6	32

Allowed ambient temperature is from -20°C to +40°C.

Degree of ingress protection of enclosure of junction box of type RO-X-Ex is IP66.

Degree of ingress protection of enclosure of junction box of type RO-X-Exia is IP55.

(16) Test report

TEx103/11 dated 17 March 2011.



(17) Special conditions for safe use

For junction boxes of type RO-X-Ex with connected conductors of cross-section of 10 mm² or 16 mm² temperature resistant conductors up to at least +90°C must be used.

(18) Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements has been assured by compliance with the requirements of the standards listed under item (9).



1. SUPPLEMENT

according to Directive 94/9/EC, Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE SIQ 11 ATEX 103X (TRANSLATION)

Replaces 1. supplement dated 14 December 2012

Equipment: Junction box, types RO-X-Ex and RO-X-Exia

Marking:  I M2 Ex e I Mb (type RO-X-Ex)

 I M1 Ex ia I Ma (type RO-X-Exia)

Manufacturer: TEVEL, d.o.o.

Address: Borovniško naselje 7, SI-1412 Kisovec

Description of supplements and modifications

Following supplements and modifications were made:

- new versions of junction boxes of type RO-X-Exia were added: RO-3-Exia, RO-4-Exia and RO-5-Exia. Junction boxes RO-3-Exia and RO-4-Exia have the same dimensions as RO-1-Exia and RO-2-Exia respectively. Junction box RO-5-Exia is bigger than other and has dimensions of 790 mm × 479 mm × 230 mm;
- new possible types of cable glands and terminals were added for all junction boxes of type RO-X-Exia;
- mounting of the nameplate was changed for all junction boxes of types RO-X-Ex and RO-X-Exia;
- junction boxes RO-3-Exia and RO-4-Exia have connector sockets installed on three sides, RO-3-Exia at most two per side and RO-4-Exia at most three per side; on fourth side cable glands are installed as on RO-1-Exia and RO-2-Exia;
- junction box RO-5-Exia has cable entries on one side only, at most 39 cable glands can be installed. Inside junction box suitable apparatus in type of protection intrinsic safety "i" of category M1 and terminals can be installed.

Technical data

Changes are only at junction boxes of type RO-X-Exia.

Type	Type of terminals	Maximum number of terminals	Maximum conductor cross-section, [mm ²]		I _{max} [A]
			Stranded	Solid	
RO-1-Exia	UT 2.5 BU, UT 2.5-PE	14	2.5	4	22
	UT 4 BU, UT 4-PE	12	4	6	30
	STTB 2.5 BU, STTB 2.5-PE	30	2.5	4	19.5
	UTTB 2.5 BU, UTTB 2.5-PE	30	4	4	20
RO-2-Exia	UT 2.5 BU, UT 2.5-PE	18	2.5	4	22
	UT 4 BU, UT 4-PE	16	4	6	30
	STTB 2.5 BU, STTB 2.5-PE	46	2.5	4	19.5
	UTTB 2.5 BU, UTTB 2.5-PE	46	4	4	20

Page 1/2

The supplement to EC-type-examination certificate is valid only if signed.
The supplement may be reproduced only in full and without changes. Any extracts and changes shall be approved by SIQ Ljubljana.
In the case of dispute, Slovenian text shall prevail.

SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana



1. SUPPLEMENT TO EC-TYPE-EXAMINATION CERTIFICATE SIQ 11 ATEX 103X

Type	Type of terminals	Maximum number of terminals	Maximum conductor cross-section, [mm ²]		I _{max} [A]
			Stranded	Solid	
RO-3-Exia	UT 2.5 BU, UT 2.5-PE	14	2.5	4	22
	UT 4 BU, UT 4-PE	12	4	6	30
	STTB 2.5 BU, STTB 2.5-PE	30	2.5	4	19.5
	UTTB 2.5 BU, UTTB 2.5-PE	30	4	4	20
RO-4-Exia	UT 2.5 BU, UT 2.5-PE	18	2.5	4	22
	UT 4 BU, UT 4-PE	16	4	6	30
	STTB 2.5 BU, STTB 2.5-PE	46	2.5	4	19.5
	UTTB 2.5 BU, UTTB 2.5-PE	46	4	4	20
RO-5-Exia	STTB 2.5 BU, STTB 2.5-PE	116	2.5	4	19.5
	ST 2.5 BU, ST 2.5-PE	116	2.5	4	21

Maximum permissible voltage for junction boxes of type RO-X-Exia is 60 V.

Test Report: TEx289/12 dated 12 December 2012.

Special conditions for safe use

Each connector socket on junction boxes of type RO-3-Exia and RO-4-Exia can contain only one intrinsically safe circuit.

Other special conditions remain unchanged.

Certification body

Ljubljana, 7 August 2013

Igor Likar



2. SUPPLEMENT

according to Directive 94/9/EC, Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE SIQ 11 ATEX 103X (TRANSLATION)

Equipment: Junction box, types RO-X-Ex and RO-X-Exia

Marking:  I M2 Ex e I Mb (type RO-X-Ex)

 I M1 Ex ia I Ma (type RO-X-Exia)

Manufacturer: TEVEL, d.o.o.

Address: Borovniško naselje 7, SI-1412 Kisovec, Slovenia

Description of supplements and modifications

New version of junction box type RO-X-Ex was added, namely RO-1-Ex/Pn16. Enclosure is the same as for RO-1-Ex, just terminals mounted inside are of the type PN16, Bartec Varnost d.o.o., OBAC 07 ATEX 089U. Mounted are four terminals.

For all junction boxes conformity with standards EN 60079-0 : 2012 and EN 60079-11 : 2012 was checked.

Technical data

Terminal type	Maximum number and cross-section of conductors in one terminal		I _{max} [A]	U _{max} [V]
	Stranded wire	Hard wire		
PN16	5 × 2.5 mm ²	6 × 2.5 mm ²	80	630
	4 × 4 mm ²	5 × 4 mm ²		
	3 × 6 mm ²	4 × 6 mm ²		
	3 × 10 mm ²	3 × 10 mm ²		

Test Report: TEx249/13 dated 7 August 2013.

Applied standards:

EN 60079-0 : 2012

EN 60079-7 : 2007

EN 60079-11 : 2012

Special conditions for safe use

For junction boxes RO-1-Ex/Pn16 temperature resistant cables up to at least +100°C must be used.

Other special conditions remain unchanged.

Certification body

Igor Likar

Ljubljana, 7 August 2013

Page 1/1

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SIQ Ljubljana, Tržaška cesta 2, SI-1000 Ljubljana



3. SUPPLEMENT

according to Directive 94/9/EC, Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE SIQ 11 ATEX 103 X

Equipment: Junction box, types RO-X-Ex and RO-X-Exia

Marking:  **I M2 Ex e I Mb** (type RO-X-Ex)
 **I M1 Ex ia I Ma** (type RO-X-Exia)

Manufacturer: TEVEL, d.o.o.

Address: Borovniško naselje 7, 1412 Kisovec, Slovenia

Description of supplements and modifications

Junction box type RO-X-Exia except RO-5-Exia can be designed also with degree of ingress protection of enclosure of IP66.

Test Report: TEx039/16 dated 15 January 2016.

Applied standards:

EN 60079-0 : 2012

EN 60079-11 : 2012

Special conditions for safe use

- In order to achieve degree of ingress protection of enclosure of IP66 junction box type RO-X-Exia except RO-5-Exia must be equipped with cable glands and connectors with IP66 or more.

Certification body

Ljubljana, 15 January 2016

Igor Likar