IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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Certificate No.: IECEx IMQ 18.0006X

Issue No: 0

Certificate history:
Issue No. 0 (2018-08-28)

Status: **Current**

Date of Issue: **2018-08-28**

Applicant: **Rose Systemtechnik Gmbh**
Erbeweg 13-15
D-32457 PORTA WESTFALICA
Germany

Equipment: **Polyamide cable glands for circular and flat cables, plugs**

Optional accessory: *Cable glands series: P..-X; HTP..-X; HTP..-X (DS); HTP..-X (axb); EHIP..-X; EHIP..-X (DS); Plugs series: H..-X; HIH..-X*

Type of Protection: **Ex eb; Ex tb**

Marking:

Ex eb IIC Gb

Ex tb IIIC Db

Approved for issue on behalf of the IECEx Certification Body: Mr. Mauro CASARI

Position: IMQ ExCB Manager

Signature:
(for printed version)

Date:

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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.

Certificate issued by:

Istituto Italiano del Marchio di Qualità S.p.A
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IECEx Certificate of Conformity

Certificate No: IECEx IMQ 18.0006X Issue No: 0

Date of Issue: **2018-08-28** Page 2 of 3

Manufacturer: **Rose Systemtechnik Gmbh**
Erbeweg 13-15
D-32457 PORTA WESTFALICA
Germany

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 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 Edition:6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-31 : 2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

*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:

IT/IMQ/ExTR18.0006/00

Quality Assessment Report:

DE/EPS/QAR17.0003/07 DE/EPS/QAR17.0003/08

IECEx Certificate of Conformity

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The polyamide cable glands series P..-X, HTP..-X, HTP..-X (DS), EHIP..-X, EHIP..-X (DS) are used to introduce permanently circular cables into enclosure.
The polyamide cable glands series HTP..-X (axb) are used to introduce permanently non-circular (flat) cables into enclosure.
Plugs series H..-X and HIH..-X are used to close unused cable entry of an enclosure.

Cable glands and plugs are suitable for electrical equipment either with type of protection “Ex e” or type of protection “Ex t”. Cable glands can be also used to wire intrinsically safe circuits.

Cable glands HTP..-X (DS), EHIP..-X (DS) are provided with single (S1) or double (S1+S2) sealing rings.
Cable glands HTP..-X, EHIP..-X, are provided with single (S1) sealing rings only.
Cable glands series HTP..-X (axb) are provided with sealing ring specific for non-circular (flat cables), sealing ring hole dimensions are specified in brackets.

Cable glands P..-X, HTP..-X, HTP..-X (DS), EHIP..-X, EHIP..-X (DS) can be supplied with tap, polyamide made, as accessory (PDPX), suitable to guarantee IP degree when installed according to manufacturer’s instructions. Details in Annex.
Details on sealing rings material, flat washer (placed between the body and the cover of enclosures) materials, O-ring materials and limitations are listed in Annex.
Installation of cable glands and plugs ensures protection degree IP66/68. IP rating is achieved by use of a flat washer for plugs and a flat washer/O-ring when installing cable glands.

Manufacturer's documentation: Safety, Maintenance and Mounting Instruction, code RMI06, rev. 0 issued on 2017-12-14

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The cable glands are only suitable for fixed installations. Cables shall be effectively clamped to prevent pulling or twisting.
- The cable glands/plugs and the relevant cables, shall be used where a protection against risk of mechanical damage is provided, when they are suitable for low mechanical risk (4J) only.
- The cable gland installation shall be carried out according to Manufacturer’s safety instructions to maintain degree of protection.
- For gas installations (only for cable glands with M50/PG42/PF 1 ½”/NPT 1 ½” threads and following) and dust installations: Warning. Potential electrostatic charging hazard - See instructions. Clean only with antistatic clothes.
- When cable glands are installed with polyamide insert PDPX, mechanical risk have to be taken into account, depending on cable gland and insert tap. When insert tap is removed in order to install the proper cable, the integrity of sealing rings have to be checked, in order to guarantee the correct tightness. If necessary, sealing rings have to be replaced with new ones (original spare parts only).
- Cable glands for non circular cables shall be fitted with proper cables, suitable for sealing ring, according to manufacturer’s instruction.

Annex:

IECEx IMQ 18.0006X issue No. 0 Annex.pdf

Annex to:	**IECEx IMQ 18.0006X issue No. 0**
Applicant:	**Rose Systemtechnik Gmbh**
Apparatus:	**Cable glands and plugs**
Series:	**P..-X; H..-X; HTP..-X; HTP..-X (DS); HTP..-X (axb) EHIP..-X; EHIP..-X (DS); HIH..-X.**

General description

The polyamide cable glands series P..-X, HTP..-X, HTP..-X (DS), EHIP..-X, EHIP..-X (DS) are used to introduce permanently circular cables into enclosure.
The polyamide cable glands series HTP..-X (axb) are used to introduce permanently non-circular (flat) cables into enclosure.
Plugs series H..-X and HIH..-X are used to close unused cable entry of an enclosure.

Cable glands and plugs are suitable for electrical equipment either with type of protection “Ex e” or type of protection “Ex t”. Cable glands can be also used to wire intrinsically safe circuits.

Cable glands HTP..-X (DS), EHIP..-X (DS) are provided with single (S1) or double (S1+S2) sealing rings.
Cable glands HTP..-X, EHIP..-X, are provided with single (S1) sealing rings only.
Cable glands series HTP..-X (axb) are provided with sealing ring specific for non-circular (flat cables), sealing ring hole dimensions are specified in brackets.

Cable glands P..-X, HTP..-X, HTP..-X (DS), EHIP..-X, EHIP..-X (DS) can be supplied with tap, polyamide made, as accessory (PDPX), suitable to guarantee IP degree when installed according to manufacturer’s instructions. Details in Table 4.
Details on sealing rings material, flat washer (placed between the body and the cover of enclosures) materials, O-ring materials and limitations are listed in Table 1.
Installation of cable glands and plugs ensures protection degree IP66/68. IP rating is achieved by use of a flat washer for plugs and a flat washer/O-ring when installing cable glands.

Conditions of use

- The cable glands are only suitable for fixed installations. Cables shall be effectively clamped to prevent pulling or twisting.
- The cable glands/plugs and the relevant cables, shall be used where a protection against risk of mechanical damage is provided, when they are suitable for low mechanical risk (4J) only.
- The cable gland installation shall be carried out according to Manufacturer’s safety instructions to maintain degree of protection.
- For gas installations (only for cable glands with M50/PG42/PF 1 ½”/NPT 1 ½” threads and following) and dust installations: Warning. Potential electrostatic charging hazard - See instructions. Clean only with antistatic clothes.
- When cable glands are installed with polyamide insert PDPX, mechanical risk have to be taken into account, depending on cable gland and insert tap. When insert tap is removed in order to install the proper cable, the integrity of sealing rings have to be checked, in order to guarantee the correct tightness. If necessary, sealing rings have to be replaced with new ones (original spare parts only).
- Cable glands for non circular cables shall be fitted with proper cables, suitable for sealing ring, according to manufacturer’s instruction.

Design options

Threads types: Metric ISO pitch 1,5 (ISO 965/1 and ISO 965/3)
NPT ANSI ASME B1.20.1
ISO 228/1
PG DIN 40430

Manufacturer’s documentation:

Safety, Maintenance and Mounting Instruction, code RMI06, rev. 0 issued on 2017-12-14

Table 1: materials and service temperatures					
Series	Service temperature [1]	Sealing rings material	Flat washer materials	OR materials	Mechanical risk
P..-X	-40 ÷ +80 °C (See note 2)	chloroprene (neoprene) silicone	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	Low (4J)
H..-X	-40 ÷ +80 °C	-	NBR chloroprene (neoprene) EPDM rubber	-	Low (4J)
	-60 ÷ +80 °C		silicone		
	-50 ÷ +80 °C		KLINGERSIL® C-4400		
HTP..-X	-30 ÷ +70 °C	NBR	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	High (7J)
	-40 ÷ +70 °C	chloroprene (neoprene)			
	-60 ÷ +70 °C (See note 2)	silicone			
EHIP..-X	-30 ÷ +70 °C	NBR	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	High (7J)
	-40 ÷ +70 °C	chloroprene (neoprene)			
	-60 ÷ +70 °C (See note 2)	silicone			
HTP..-X (axb)	-60 ÷ +70 °C (See note 2)	silicone	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	High (7J)
HTP..-X (DS)	-30 ÷ +70 °C	NBR	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	High (7J)
	-40 ÷ +70 °C	chloroprene (neoprene)			
	-60 ÷ +70 °C (See note 2)	silicone			
EHIP..-X (DS)	-30 ÷ +70 °C	NBR	chloroprene (neoprene) silicone KLINGERSIL® C-4400 EPDM rubber, NBR	chloroprene (neoprene) silicone EPDM rubber	High (7J)
	-40 ÷ +70 °C	chloroprene (neoprene)			
	-60 ÷ +70 °C (See note 2)	silicone			
HIH..-X	-40 ÷ +70 °C	-	NBR chloroprene (neoprene) EPDM rubber	-	High (7J)
	-60 ÷ +70 °C		silicone		
	-50 ÷ +70 °C		KLINGERSIL® C-4400		

Notes
[1] Service temperature is related to material of sealing rings and polyamide which cable glands body is made of, but can be additionally limited by material of flat washer/O-Ring material temperature limitations:
Chloroprene (-40÷100 °C); silicone (-60÷180 °C); EPDM rubber (-40÷110 °C); KLINGERSIL® C-4400 fiber (-50÷130 °C); NBR (-40÷100 °C).
The use of these materials in flat washer/O-Ring shall be taken into account in determination of lower limit of service temperature of cable glands, while upper limit is 80 °C for series P..-X and 70°C for all other series.

[2] When blue caps are used the service temperature changes to -40÷70 °C and low mechanical risk (4J) shall be considered.
When PDPX protection taps are used mechanical risk is determined according table 4.

Table 2: key code

P	1	3	-	2	4	-	5	-	6		
HIP	1	3	-	2	4	-	5	-	6		
EHIP	1	3	-	2	4	-	5	-	6		
HTP	1	-	2	4	(axb)	-	5	-	6		
HTP	1	3	-	2	4	-	(DS)	5	-	6	
EHIP	1	3	-	2	4	-	(DS)	5	-	6	

1	Thread type:	"N" – NPT ANSI ASME B1.20.1 "M" – Metric ISO pitch 1,5 (ISO 965/1 and ISO 965/3) "P" – PG DIN 40430 "PF" – ISO 228/1
2	Size and dimensions, according to Tables 3	
3	Cap:	"I" – blue cap for use in circuits Ex-i none – black cap "T"- Tampon blue print on black material
(axb)	Dimensions in mm of sealing ring, as follows: type SXL 5,0x15,0 type SXM 5,0x12,8 type SXS 6,0x10,8	
(DS) DC	double sealing ring (S1; S1+S2) double crowns (sealing rings)	
4	Sealing rings material:	C: Chloroprene seal S: Silicone seal N: NBR (only codes H.. and EH..)
5	Flat washer material:	W: same material with sealing ring WF: Fiber washer WE: EPDM washer WN: NBR washer
6	O-ring material:	Blank: None OC: Chloroprene O-Ring OS: Silicone O-Ring OE: EPDM O-Ring

H	1	-	2	3		
HIH	1	-	2	3		

1	Thread type:	"N" – NPT ANSI ASME B1.20.1 "P" – Metric ISO pitch 1,5 (ISO 965/1 and ISO 965/3) "B" – PG DIN 40430 "G" – ISO 228/1
2	Size and dimensions, according to Tables 3	
3	Flat washer material:	C: Chloroprene washer S: Silicone washer WF: Fiber washer WE: EPDM washer WN: NBR washer

Note: Flat washer must be always fitted with plug

PDPX	1	-	2	-	2	(3)

	1: color	" " – Black colour "B" – Blue colour "G" – Green colour
	2:	Size and dimensions (example; -13-22)
	3:	Plug size (example PG11)

Cable glands/plugs sizes

Table 3.1: P..-X series				
Model	**Thread**	**Min-max cable [mm]**	**Torque value [Nm]**	**Mechanical risk**
PM.-SX2	M20x1.5	5,0-10,0	2,5	Low (4J)
PM.-X2	M20x1.5	6,0-12,0	5,0	
PM.-X2L	M20x1.5	6,0-12,0	5,0	
PM.-X3	M20x1.5	10,0-14,0	5,5	
PM.-X4	M20x1.5	10,0-14,0	5,5	
PM.-SX5	M25x1.5	10,0-14,0	5,5	
PM.-X5	M25x1.5	13,0-18,0	8,0	
PM.-SX6	M25x1.5	10,0-14,0	5,5	
PM.-X6	M25x1.5	13,0-18,0	8,0	
PM.-XEU25	M25x1.5	11,0-17,0	5,0	
PM.-XEU32	M32x1.5	15,0-21,0	6,0	
PM.-SX7	M32x1.5	13,0-18,0	8,0	
PM.-X7	M32x1.5	18,0-25,0	9,0	
PM.-XEU40	M40x1.5	19,0-28,0	5,0	
PM.-XEU40L	M40x1.5	19,0-28,0	5,0	
PM.-X8	M40x1.5	22,0-32,0	17,5	
PM.-X9	M50x1.5	30,0-38,0	22,0	
PM.-X10	M63x1.5	34,0-44,0	23,0	
PN.-SX2	NPT 1/2"	5,0-10,0	2,5	Low (4J)
PN.-X2	NPT 1/2"	6,0-12,0	5,0	
PN.-LX2	NPT 1/2"	10,0-14,0	5,5	
PN.-X3	NPT 3/4"	13,0-18,0	8,0	
PN.-X4	NPT 1"	18,0-25,0	9,0	
PN.-X8	NPT 1 1/4"	22,0-32,0	17,5	
PN.-X9	NPT 1 1/2"	30,0-38,0	22,0	
PN.-X10	NPT 2"	34,0-44,0	23,0	
PPF.-SX2	PF 1/2"	5,0-10,0	2,5	Low (4J)
PPF.-X2	PF 1/2"	6,0-12,0	5,0	
PPF.-LX2	PF 1/2"	10,0-14,0	5,5	
PPF.-X3	PF 3/4"	13,0-18,0	8,0	
PPF.-X4	PF 1"	18,0-25,0	9,0	
PP.-X4	PG 13,5	6,0-12,0	5,0	Low (4J)
PP.-X5	PG 16	10,0-14,0	5,5	
PP.-X6	PG 21	13,0-18,0	8,0	
PP.-X7	PG 29	18,0-25,0	9,0	
PP.-X8	PG 36	22,0-32,0	17,5	
PP.-X9	PG 42	30,0-38,0	22,0	
PP.-X10	PG 48	34,0-44,0	23,0	

Table 3.2: H..-X series								
Model	**Torque value [Nm]**	**Model**	**Torque value [Nm]**	**Model**	**Torque value [Nm]**	**Model**	**Torque value [Nm]**	**Mechanical risk**
HP-X02	P-X02	c□□oOJ”cvk““qO/cJqJDc□□oOJ”cvk““q’qvJ“ODiS+qFkv+DPSC”vk“q’qvJ“Ovq“vJDXS6SC”’qvJ“’DQS□□®ok’O/c//“cO/c□□oDS’qvvv/T/+qO/ckckckc						

* Table 3.3: HTP..-X and EHIP..-X series				
Model		**Min-max cable [mm]**	**Torque value [Nm]**	**Mechanical risk**
HTP..-0XS	EHIP..-0XS	4-6.5	2	High (7J)
HTP..-XS	EHIP..-XS	4-6.5	2	
HTP..-SX1	EHIP..-SX1	5-8	4	
HTP..-SX1L	EHIP..-SX1L	5-8	4	
HTP..-X1	EHIP..-X1	6-10	4	
HTP..-X1L	EHIP..-X1L	6-10	4	
HTP..-SX2	EHIP..-SX2	6-10	2.5	
HTP..-X2	EHIP..-X2	7-12	5	
HTP..-X2L	EHIP..-X2L	7-12	5	
HTP..-MX2	EHIP..-MX2	7-13	4.5	
HTP..-X3	EHIP..-X3	11-14	5.5	
HTP..-X4	EHIP..-X4	11-14	5.5	
HTP..-SX5	EHIP..-SX5	11-14	5.5	
HTP..-SX6	EHIP..-SX6	11-14	5.5	
HTP..-XEU25	EHIP..-XEU25	12-17	5	
HTP..-XEU25L	EHIP..-XEU25L	12-17	5	
HTP..-X5	EHIP..-X5	14-18	8	
HTP..-X6	EHIP..-X6	14-18	8	
HTP..-SX7	EHIP..-SX7	14-18	8	
HTP..-XEU32	EHIP..-XEU32	16-21	6	
HTP..-XEU32L	EHIP..-XEU32L	16-21	6	
HTP..-X7	EHIP..-X7	19-25	9	
HTP..-XEU40	EHIP..-XEU40	20-28	5	
HTP..-XEU40L	EHIP..-XEU40L	20-28	5	
HTP..-X8	EHIP..-X8	23-32	17.5	
HTP..-X9	EHIP..-X9	31-38	22	
HTP..-X10	EHIP..-X10	35-44	24	

* Table 3.4: HTP..-X (axb) series						
Cable gland code	**Sealing ring dimensions [mm x mm]**	**Complete code**	**Cable min [mm x mm]**	**Cable max [mm x mm]**	**Torque value [Nm]**	**Mechanical risk**
HTP..-SX5	6,0x10,8	HTP..-SX5 (6,0x10,8)	4,21x11,69	5,23 x 13,21	8	High (7J)
	5,0x12,8	HTP.-SX5 (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
HTP..-X5	6,0x10,8	HTP.-X5 (6,0x10,8)	4,21x11,69	5,23 x 13,21		
	5,0x12,8	HTP.-X5 (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
	5,0x15,0	HTP.-X5 (5,0x15,0)	6,09 x 13,72	7,11 x 15,24		
HTP..-XEU25	6,0x10,8	HTP.-XEU25 (6,0x10,8)	4,21x11,69	5,23 x 13,21		
	5,0x12,8	HTP.-XEU25 (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
	5,0x15,0	HTP.-XEU25 (5,0x15,0)	6,09 x 13,72	7,11 x 15,24		
HTP..-SX6	6,0x10,8	HTP..-SX6 (6,0x10,8)	4,21x11,69	5,23 x 13,21		
	5,0x12,8	HTP..-SX6 (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
HTP..-X6	6,0x10,8	HTP..-X6 (6,0x10,8)	4,21x11,69	5,23 x 13,21		
	5,0x12,8	HTP..-X6 (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
	5,0x15,0	HTP..-X6 (5,0x15,0)	6,09 x 13,72	7,11 x 15,24		
HTP..-XEU25L	6,0x10,8	HTP..-XEU25L (6,0x10,8)	4,21x11,69	5,23 x 13,21		
	5,0x12,8	HTP..-XEU25L (5,0x12,8)	5,03 x 12,50	6,05 x 14,02		
	5,0x15,0	HTP..-XEU25L (5,0x15,0)	6,09 x 13,72	7,11 x 15,24		

* metric threads cable glands sizes are shown; models with other threads, as detailed in table 2, are available. Full list is shown in “Relevant drawings for Certificate”.

* Table 3.5: HTP..-X (DS) and EHIP..-X (DS) series				
Model	**Min-max cable [mm] ****	**Torque value [Nm]**		**Mechanical risk**
		S1+S2	**S1**	

Annex to:	**IECEx IMQ 18.0006X issue No. 0**
Applicant:	**Rose Systemtechnik Gmbh**
Apparatus:	**Cable glands and plugs**
Series:	**P..-X; H..-X; HTP..-X; HTP..-X (DS); HTP..-X (axb)**
	EHIP..-X; EHIP..-X (DS); HIH..-X.