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GOVERNMENT APPROVED TEST LABORATORY

IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **05 Jan 2022**
*Expiry date: **05 Jan 2025**

Issue: 4

Ex – Type Examination Certificate

Certificate Number:	**S-XPL/12.0779 X**
Equipment:	**Connection and Junction Box and Control Box**
Model / Type:	**05.XX XX XX and 15. XX XX XX**
Applicant:	**Rose Systemtechnik GmbH** **Postfach 1362** **D-32439** **Porta Westfalica**
Manufacturer:	**ROSE Systemtechnik GmbH**
Serial No:	All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
Rose Systemtechnik GmbH
Identified by Inspection Authority number
S-XPL/12.0779 X

And as described in the Explolabs file number **XPL/13351/12.0779** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

IEC/SANS 60079-0: 2017	Explosive atmospheres Part 0: Equipment — General requirements
SANS 60079-1: 2015 Ed 5 **IEC 60079-1: 2014 Ed 7**	Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
IEC/SANS 60079-7: 2015	Explosive atmospheres Part 7: Equipment protection by increased safety "e"
SANS 60079-11: 2012 Ed 4 **IEC 60079-11: 2011 Ed 6**	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
SANS 60079-18: 2017 Ed 4 **IEC 60079-18: 2014 Ed 4**	Explosive atmospheres Part 18: Equipment protection by encapsulation "m"
SANS 60079-31: 2014 Ed 2 **IEC 60079-31: 2013 Ed 2**	Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"

This report supersedes all previous documents bearing the reference no XPL/13351/12.0779 Rev 3.

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL) Group	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	T6 (85°C) T5 (100°C) T4 (135°C)
High	Db Group III	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 21 and 22	T85°C T100° C T135°C

1. **GENERAL**

The marking of the Connection and Junction Box and Control Box shall include the following:

Ex db eb ia [ia] mb IIC T4, T5, T6 Gb; Ex tb IIIC T85 °C, T100 °C, T135 °C Db

Description of equipment

The power distribution, switch and control gear assembly, type 05.XX XX XX and 15.XX XX XX, consist of an aluminium enclosure designed to increased Safety "e" or Protection by enclosure "tb" type of protection, which can be terminals, and can be provided with actuator elements and pilot equipment, if necessary.
'Ex' cable glands are used for connection.
All installed and attached components are tested and certified with a separate examination certificate.

Technical Data

-55 °C to +90 °C with gasket out of silicon
-40 °C to +90 °C with gasket out of HF
-40 °C to +90 °C with PU-Foam
-20 °C to +90 °C with gasket out of CR
-50 °C to +85 °C with window out of PC
-20 °C to +90 °C with window out of glass

Degree of Protection

Technical data	
Rated voltage	UP to 1500 V
Rated current	Max. to 500 A
Conductor size	Max. 300 mm^2
Protective cross section	Max. 150 mm^2

Thread rod of the earth bolt: M6x60, M8x50, M10x60, M12x80

No	Product Type	Height [mm]	Width [mm]	Depth [mm]	Max. Power Dissipation [W] (dT 40 °K)
1	XX. 06 06 03	64	58	34	5
2	XX. 06 10 03	64	98	34	8
3	XX. 06 15 03	64	150	34	11
4	XX. 08 08 06	80	75	57	10
5	XX. 08 13 06	80	125	57	15
6	XX. 08 18 06	80	175	57	20
7	XX. 08 25 05	80	250	52	25

8	XX. 10 10 08	100	100	81	19
9	XX. 10 16 08	100	160	81	26
10	XX. 10 20 08	100	200	81	31
11	XX. 12 12 08	120	122	81	24
12	XX. 12 12 09	120	122	91	26
13	XX. 12 22 08	120	220	81	38
14	XX. 12 22 09	120	220	91	40
15	XX. 12 22 12	120	220	121	45
16	XX. 12 36 08	120	360	81	57
17	XX. 14 14 09	140	140	91	32
18	XX. 14 20 09	140	200	91	42
19	XX. 16 16 09	160	160	91	39
20	XX. 16 26 09	160	260	91	56
21	XX. 16 36 09	160	360	91	73
22	XX. 16 56 09	160	560	91	107
23	XX. 18 18 10	180	180	101	49
24	XX. 18 28 10	180	280	101	68
25	XX. 23 10 11	230	100	111	45
26	XX. 23 20 11	232	202	111	68
27	XX. 23 20 18	232	202	181	92
28	XX. 23 28 11	230	280	111	86
29	XX. 23 33 11	230	330	111	97
30	XX. 23 33 18	230	330	181	127
31	XX. 23 40 11	230	400	111	113
32	XX. 23 40 23	230	400	225	208
33	XX. 23 60 11	230	600	111	159
34	XX. 31 40 11	313	404	111	145
35	XX. 31 40 14	313	404	141	160
36	XX. 31 40 18	313	404	181	183
37	XX. 31 40 23	313	404	227	208
38	XX. 31 60 11	310	600	111	199
39	XX. 31 60 18	310	600	181	246
40	XX. 60 60 20	600	600	201	428

The rated values are maximum values, the actual electrical values depend on the electrical equipment incorporated. Within the scope of these maximum permissible values and with due regard to the standards, the manufacturer specifies the final rated values dependent on the system conditions, mode of operation, utilization category, etc. The characteristic values of the intrinsically safe circuits are to be given by the manufacturer on his own responsibility. Further technical details have been specified in the test documents.

The composition of the symbol specifying the type of protection depends on the types of pro-tection of the components used.

The maximum permissible ambient temperature range of the terminal housing can be limited by the maximum permissible ambient temperature ranges of the separately certified equip-ment.

Nomenclature

XX.	**	**	**
1	2	3	4

1: Type, material aluminum
2: Length
3: Width
4: Depth

Type reference:

Increased Safety
05.XX XX XX Ex Aluminium standard

Intrinsic Safety / mixed assembled 15.XX XX XX Ex Aluminium standard

This report supersedes all previous documents bearing the reference no XPL/13351/12.0779 Rev 3.

Additional Advices

Components attached or installed (terminal compartments, bushings, Ex-type cable glands, connectors) shall be of a technical standard that at least complies with the specifications on the cover sheet, and they shall have a separate examination certificate. The operating conditions specified in the component certificates must definitely be complied with, and the operating instructions must include a note to inform the operating company of this equipment. The method used for assessing the suitability of the used component must be documented in a verifiable manner in compliance with the QM system.
For repair of separately certified components, the IECEx Examination for these components must be observed.

Equipment of the type of protection intrinsic safety "i" according to IEC 60079-11 is to be in-stalled in such a way that the distances, creepage distances und clearances between intrinsically safe circuits and non-intrinsically safe circuits required according to EN 60079-14 are complied with.

When more than one intrinsically safe circuit is used, the rules for interconnection are to be observed.

Degree of protection IP66 will be safeguarded only when sealing and cable entry fittings are properly fitted. The manufacturer's instructions must be followed.
Installation of the components in the electrical apparatus shall be made such that the local temperatures will be within the operating temperature range.

Notes for manufacturing and operation

Each device needs to be evaluated concerning the max. allowed temperature limit according to the relevant temperature class and concerning the limiting temperature of the materials. This evaluation needs to be done within the engineering process and must be complemented by an additional temperature measurement in any case of doubt. The admissible ambient temperature ranges of the build-in components may not be exceeded at the place of installation.

Based on the following documentation: IECEx PTB 08.0006 Issue No 2

2. **INSTALLATION INSTRUCTIONS**
It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

3. **SPECIAL CONDITIONS FOR SAFE USE** *(denoted by "X" after certificate number)*
The empty enclosure with a coating must not be used in areas affected by charge-producing processes, mechanical friction and separation processes, electron emission (e.g. in the vicinity of electrostatic coating equipment), and pneumatically conveyed dust.

4. **SCHEDULE OF LIMITATIONS** *(denoted by "U" after certificate number)*
None.

5. **CONDITIONS OF CERTIFICATION**
All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

6. MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier	: Rose Systemtechnik GmbH
Manufacturer	: ROSE Systemtechnik
Equipment	: Connection and Junction Box and Control Box
Model/Type	: 05.XX XX XX and 15. XX XX XX
Serial No.	: ---
Ex Rating	: Ex db eb ia [ia] mb IIC T4, T5, T6 Gb; Ex tb IIIC T85 °C, T100 °C, T135 °C Db
IA Certificate No	: S-XPL/12.0779 X

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
ii) Any conditions mentioned in the above report;
iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
v) A revision certificate replaces all previous version of the certificate.
vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

Responsible Testing Officer:

K Malibe
Technical Specilaist
EXPLOLABS EXPLOSION PREVENTION SERVICES