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

Certificate No.: **IECEx KEM 08.0035X**   issue No.:1

Status: **Current**

Date of Issue: **2012-01-27**   Page 1 of 4

Applicant:
R. STAHL Schaltgeräte GmbH
Am Bahnhof 30
74638 Waldenburg
Germany

Electrical Apparatus: **Power Module Type 9444/12-11, CPU Module Type 9441/12-0.-.0 and Socket Type 9492/12-1.-..**

Optional accessory:

Type of Protection: **Ex d, Ex e, Ex i, Ex op is**

Marking:
Ex d e [ia Ga] IIC T4 Gb
Ex d [ia Ga][op is T6 Ga] IIC T4 Gb
[Ex ia Da] [Ex op is Da] IIIC
or
Ex db eb [ia] IIC T4
Ex db [ia][op isa T6] IIC T4
[Ex ia] [Ex op isa] IIIC

Approved for issue on behalf of the IECEx Certification Body: C.G. van Es

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.

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Manufacturer: **R. STAHL Schaltgeräte GmbH**
Am Bahnhof 30
74638 Waldenburg
Germany

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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011-06 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-26 : 2006 Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga
IEC 60079-28 : 2006-08 Edition: 1	Explosive atmospheres - Part 28: Protection of equipment and transmission systems using optical radiation
IEC 60079-7 : 2006-07 Edition: 4	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:

NL/KEM/ExTR08.0032/00   NL/KEM/ExTR08.0032/01

Quality Assessment Report:

DE/BVS/QAR10.0002/02

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Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

The Power Module Type 9444/12-11 and CPU Module Type 9441/12-0.-.0 together with their belonging Socket Type 9492/12-1.-.. serve for supply and data communication to the certified I/O Modules of the certified Remote I/O - IS1 System. The Socket is provided with an LCD-display and buttons belonging thereto.

Further details are shown in Annex 1 to this certificate.

CONDITIONS OF CERTIFICATION: YES as shown below:

All equipment connected to the RS 485 circuits shall be galvanically isolated from each other and from all other circuits.

When installed in potentially explosive atmospheres, the Power Module and CPU Module with its belonging Socket and Busrail shall be installed into an enclosure which meets the requirements of a recognized type of protection in accordance with IEC 60079-0.

The free end of the permanently connected cable shall be connected by using a suitable certified junction box.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

1. assessment of minor changes in the electronics and assessment according new standards as listed above.

Annexe: Annex 1 to Certificate IECEx KEM 08.0035X Issue No.1.pdf

Annex 1 to Certificate of Conformity IECEx KEM 08.0035X Issue No. 1

Description

The Power Module Type 9444/12-11 and CPU Module Type 9441/12-0.-.0 together with their belonging Socket Type 9492/12-1.-.. serve for supply and data communication to the certified I/O Modules of the certified Remote I/O - IS1 System.
The Socket is provided with an LCD-display and buttons belonging thereto.

The Socket is provided with circuits in types of protection increased safety in accordance with IEC 60079-7 and intrinsic safety in accordance with IEC 60079-11.
The Power Module as well as the CPU Module is built into a housing in type of protection flameproof enclosure in accordance with IEC 60079-1. A part of the internal connections to the Socket is also in type of protection flameproof enclosure in accordance with IEC 60079-1.

The Power Module or CPU Module may be disconnected or connected while in operation.
With that, the Socket has a degree of protection of IP30 according to IEC 60529.

Ambient temperature range -20 °C to +65 °C.

Electrical data

Socket Type 9492/12-1.-.1:

Power supply (input/primary) (permanently connected cable):
in type of protection increased safety Ex e, based on the following values:
$U_{n\,S} = 20...35$ Vdc; $I_{n\,S} = 3$ A.
$U_m = 253$ V.

Power supply (output/secondary); Plug to BusRail X5 and X6 and Plug X11):
in type of protection intrinsic safety Ex ia IIC, with the following maximum value:
$U_o = 26,2$ V.
The circuits require an external current limitation (which is guaranteed by the certified IS1 system, including the required separations).

Address- and Databus (secondary) (Plug to BusRail X5 and X6):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values (linear characteristic):
$U_o = 6,51$ V; $I_o = 110$ mA; $P_o = 179$ mW; $C_o = 25$ μF; $L_o = 2,5$ mH;
and only for connection to the internal Address- and Databus of the IS1 System with the following maximum values:
$U_i = 6,6$ V; $C_i = 0$ nF; $L_i = 0$ mH.

Input/output RS 485 interface (secondary) (Plug X9):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values (linear characteristic):
$U_o = 3,7$ V; $I_o = 134$ mA; $P_o = 124$ mW; $C_o = 1000$ μF; $L_o = 1,9$ mH;
and only for connection to a certified intrinsically safe circuit, with the following maximum values:
$U_i = +4,2$ V and $-4,2$ V; $C_i = 0$ nF; $L_i = 0$ mH.

Input/output Ethernet interfaces EP1, EP2 and EP3 (secondary) (Plug X12):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values per circuit (linear characteristic):
$U_o = 4$ V; $I_o = 413$ mA; $P_o = 413$ mW; $C_o = 600$ μF; $L_o = 0,2$ mH;
and only for connection to certified intrinsically safe circuits, with the following maximum values per circuit:
$U_i = 4$ V; $I_i = 413$ mA; $P_i = 413$ mW; $C_i = 0$ nF; $L_i = 0$ mH.

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Input/output Interfaces SS1 and SS2 (secondary) (Plug X11):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values per circuit (linear characteristic):
U_o = 4 V; I_o = 45,1 mA; P_o = 45,1 mW; C_o = 600 µF; L_o = 16 mH;
and only for connection to certified intrinsically safe circuits, with the following maximum values per circuit:
U_i = 4 V; I_i = 316 mA; P_i = 316 mW; C_i = 0 nF; L_i = 0 mH.

Socket Type 9492/12-1.-.2:

Power supply (input/primary) (two permanently connected cables):
in type of protection increased safety Ex e, per circuit based on the following values:
$U_{n\,S}$ = 20...35 Vdc; $I_{n\,S}$ = 3 A.
U_m = 253 V.

Power supply (output/secondary); Plug to BusRail X5 and X6 and Plug X11):
in type of protection intrinsic safety Ex ia IIC, with the following maximum value:
U_o = 26,2 V.
The circuits require an external current limitation (which is guaranteed by the certified IS1 system, including the required separations).

Address- and Databus (secondary) (Plug to BusRail X5 and X6):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values (linear characteristic):
U_o = 6,51 V; I_o = 220 mA; P_o = 358 mW; C_o = 25 µF; L_o = 0,5 mH;
and only for connection to the internal Address- and Databus of the IS1 System with the following maximum values:
U_i = 6,6 V; C_i = 0 nF; L_i = 0 mH.

Input/output RS 485 interface (secondary) (Plug X9):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values (linear characteristic):
U_o = 3,7 V; I_o = 134 mA; P_o = 124 mW; C_o = 1000 µF; L_o = 1,9 mH;
and only for connection to a certified intrinsically safe circuit, with the following maximum values:
U_i = +4,2 V and -4,2 V; C_i = 0 nF; L_i = 0 mH.

Input/output Ethernet interfaces EP1, EP2, EP3, REP1, REP2 and REP3 (secondary) (Plug X12):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values per circuit (linear characteristic):
U_o = 4 V; I_o = 413 mA; P_o = 413 mW; C_o = 600 µF; L_o = 0,2 mH;
and only for connection to certified intrinsically safe circuits, with the following maximum values per circuit:
U_i = 4 V; I_i = 413 mA; P_i = 413 mW; C_i = 0 nF; L_i = 0 mH.

Input/output Interfaces SS1 and SS2 (secondary) (Plug X11):
in type of protection intrinsic safety Ex ia IIC/IIIC, with the following maximum values per circuit (linear characteristic):
U_o = 4 V; I_o = 90,2 mA; P_o = 90,2 mW; C_o = 600 µF; L_o = 5 mH;
and only for connection to certified intrinsically safe circuits, with the following maximum values per circuit:
U_i = 4 V; I_i = 270,6 mA; P_i = 270,6 mW; C_i = 0 nF; L_i = 0 mH.

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CPU Module Type 9441/12-0.-.0:

Optical Ethernet interface (Plug X10):
in type of protection inherently safe optical radiation Ex op isa IIC T6/IIIC , with the following maximum value:
Radiated optical power: < 15 mW.

All intrinsically safe circuits are infallibly galvanically isolated from earth and up to a peak voltage of 375 V from the Power supply circuit (input/primary).

The intrinsically safe circuits Power supply (output/secondary) and Address- and Databus (secondary) are connected to each other over their common reference.

Installation instructions

The installation instructions as provided by the manufacturer shall be followed in detail, in order to assure proper and safe operation of the equipment.