



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX DEK 16.0010X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 2	Issue 1 (2022-08-01) Issue 0 (2016-07-22)
Date of Issue:	2024-10-15		
Applicant:	R. STAHL Schaltgeräte GmbH Am Bahnhof 30 74638 Waldenburg Germany		
Equipment:	Digital Input Output Module (DIOM), Type 947*/35-16-1*		
Optional accessory:			
Type of Protection:	Ex ia, Ex ec		
Marking:	For type 947z/35-16-1f: (z = 1, 2; f = 0, 1, 2) Ex ec ic [ia Ga] IIC T4 Gc		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:
(for printed version)

2024-10-15

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Netherlands





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

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

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 equipment 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 60079-0:2017](#) Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

[IEC 60079-11:2023](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:7.0

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with 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/DEK/ExTR16.0012/02](#)

Quality Assessment Report:

[DE/BVS/QAR10.0002/20](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Digital Input Output Module (DIOM) Type 947*/35-16-1*, for operation in the Remote I/O Systems IS1 and IS1+. The modules are connected to the system via the BusRail.

The DIOM type 9471/35-16-1* provides 16 non-intrinsically safe input and/or output channels (configurable) for connection and supply of up to 16 potential free contacts or 2wire proximity switches (according to NAMUR) or up to 16 low power valves or indicators or any mixture of input and output channels. Channels 8 to 15 can also be used for frequency measurement or as pulse counters.

The DIOM type 9472/35-16-1* in addition to the DIOM type 9471/35-16-1* provides connection for 3-wire proximity switches and more output power and is equipped with a "Plant Stop" input, to shut down all outputs simultaneously. The non-intrinsically safe input/output circuits are infallibly galvanically isolated from the IS1 and IS1+ bus supply and data circuits up to 100 V.

Module type 947*/35-16-1* is in type of protection Ex ec ic and may be installed in an explosive gas atmosphere suitable for EPL Gc.

The enclosure of the module provides a degree of protection IP30 according to IEC 60529.

The complete Digital Input Output Module (DIOM) Type 947*/35-16-1* may be disconnected or connected to the IS1 or IS1+ Bus Rail while in operation in hazardous area. However, it is not allowed to (dis)connect conductors at or the terminal blocks X0, X1, X2.

For thermal and electrical data refer to Annex 1.

SPECIFIC CONDITIONS OF USE: YES as shown below:

When installed in an explosive gas atmosphere, the Digital Input Output Module (DIOM) Type 947 * / 35-16-1* shall only be used in an area of at least pollution degree 2, as defined in IEC 60664-1 and only be placed in an enclosure that meets the requirements of an appropriate, recognized type of protection in accordance with IEC 60079-0, providing a degree of protection not less than IP54.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

1. Assessed per IEC 60079-11 Ed. 7
2. Minor constructional changes.
3. Um is changed from 253 Vac to 60 V. With a maximum current of 100 A.

Annex:

[228843900-6-Annex1 to ExTR16.0012.02.pdf](#)

Type designation

Digital Input	Output	Modul	9	4	7	*	/	3	5	-	1	6	-	1	*
			z	a	b	c	d	e	f						
Output design															
8 V, Ri = 1 kOhm			1												
24 V / 0.5 A			2												
Version:															
IS1+			3												
Category:															
Category 2 – Input/Output Ex ec			5												
Number of channels:															
16 channels			16												
Type:															
Standard			1												
Options:															
Without channel indication			0												
With channel indication			1												
With channel indication and “Plant Stop”			2												

Electrical data

Circuit connecting to the IS1 or IS1+ System:

Power supply (input); Plug to BusRail V101/ Pin 7, 8, 9, 10 (+), Pin 27, 28, 29, 30 (-):
in type of protection intrinsic safety Ex ia IIC, with the following maximum values:
 $U_i = 26.2 \text{ V}$.

Electronic switch control (input); Plug to BusRail V101/ Pin: 18, 19:
in type of protection intrinsic safety Ex ia IIC, with the following maximum values:
 $U_o = 26.2 \text{ V}$; $I_o = 3.1 \text{ mA}$; $P_o = 20.4 \text{ mW}$.

Address- and Databus (communication); Plug to BusRail V101/ Pin: 4 (Bus Red.); 5 (Bus Prim.);
14, 15, 16, 24 (Bank 1-4):
in type of protection intrinsic safety Ex ia IIC, only for connection to the internal Address- and
Databus of the IS1/IS1+ System with the following maximum values:
 $U_o = 6.6 \text{ V}$; $I_o = 102 \text{ mA}$; $P_o = 168 \text{ mW}$
 $U_i = 6.6 \text{ V}$; $C_i = 0 \text{ nF}$; $L_i = 0 \text{ mH}$

Non-intrinsically safe field circuits:

Non intrinsically safe field circuits at connections X0, X1, X2, in type of protection increased safety Ex ec,
 $U_m = 60 \text{ V}$ (@ max. 100 A), where all circuits at X0, X1 and X2 reference to a common return (GND):

Connections at X1 and X2 (terminals 1 to 48 for channels 0 to 15; (+24V, Signal, GND))

Input (NAMUR) or low Power output: (Signal, GND), with the following nominal values:
 $U_{E/A} = 8 \text{ V} \pm 5\%$, $I_{E/A} = 8 \text{ mA}$ ($R_i = 1 \text{ k}\Omega$)

Power output (+24V, GND) or 3-wire PNP (+24V, Signal, GND) (only at type 9472/35-16-1*), with the
following nominal values:
 $U_A = U_H - 0.7 \text{ V}$, with voltage range of U_H : 18 V to 32 V dc
 $I_A = 30 \text{ mA}$ to 0.5 A, up to the maximum total current permissible for T_a

Connections at X0: Ext. Supply 1(+), 2(-); Plant Stop 3(+), 4(-); (only at type 9472/35-16-1*)

Ext. Supply: $U_H = 24 \text{ V dc}$ (18 V to 32 V dc)
 $I_H = 4 \text{ A dc}$ at $T_a = 75^\circ\text{C}$ (reduces to $I_H = 8 \text{ A dc}$ at $T_a = 65^\circ\text{C}$)

Plant Stop: $U_{AUS} = U_H$ (Voltage range 18 V to 32 V dc)
 $I_{AUS} = 0.36 \dots 0.65 \text{ mA dc}$

Thermal data

Rated ambient temperature range:

External supply current at X0: $I_H \leq 4$ A: -40 °C to +75 °C

External supply current at X0: $I_H \leq 8$ A: -40 °C to +65 °C.