

CERTIFICATE

(1) EU-Type Examination

(2) **Equipment or protective systems intended for use in potentially explosive atmospheres - Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number: **DEKRA 16ATEX0016 X** Issue Number: **1**

(4) Product: **Digital Input Output Module (DIOM) Type 947*/35-16-1***

(5) Manufacturer: **R. STAHL Schaltgeräte GmbH**

(6) Address: **Am Bahnhof 30, 74638 Waldenburg, Germany**

(7) This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) DEKRA Certification B.V., Notified Body number 0344 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential test report number NL/DEK/ExTR16.0012/01.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0 : 2018

EN 60079-7 : 2015 + A1 : 2018

EN 60079-11 : 2012

except in respect of those requirements listed at item 18 of the Schedule.

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the product shall include the following:



II 3 (1) G Ex ec ic [ia Ga] IIC T4 Gc

Type 947z/35-16-1f
z = 1, 2; f = 0, 1, 2

Date of certification: 01 August 2022

DEKRA Certification B.V.

R. Schuller
Certification Manager



(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 16ATEX0016 X**

Issue No. 1

(15) **Description**

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

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 2 wire 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 a peak voltage of 375 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 EN 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.

Electrical data / Thermal data

Refer to Annex 1 to ExTR NL/DEK/ExTR16.0012/01.

Installation instructions

The instructions provided with the product shall be followed in detail to assure safe operation.

(16) **Report Number**

No. NL/DEK/ExTR16.0012/01.

(17) **Specific conditions of use**

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 EN 60664-1 and only be placed in an enclosure that meets the requirements of an appropriate, recognized type of protection in accordance with EN IEC 60079-0. The installation shall provide a degree of protection not less than IP54.

(18) **Essential Health and Safety Requirements**

Covered by the standards listed at item (9).

(13) **SCHEDULE**

(14) **to EU-Type Examination Certificate DEKRA 16ATEX0016 X**

Issue No. 1

(19) **Test documentation**

As listed in Report No. NL/DEK/ExTR16.0012/01.

(20) **Certificate history**

| | |
|---------------------|--|
| Issue 0 - 218969200 | initial certificate |
| Issue 1 - 226728100 | assessed per IEC 60079-0 Ed. 7 and IEC 60079-7 Ed. 5.1, Ex nA no longer in scope and minor constructional changes. |

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 | | | | | | | | | | |
| Categorie: | | | | | | | | | | | |
| Categorie 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,
 $U_m = 253 \text{ V ac}$, 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)
 $I_{AUS} = 2.4 \text{ mA dc}$

Thermal data

Rated ambient temperature range:

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

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