(1) EU-TYPE EXAMINATION CERTIFICATE

(2) Equipment and Protective Systems intended for use in Potentially Explosive Atmosphere - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number

TÜV 23 ATEX 8838 X

Issue: 00

(4) Equipment: **USB RS485 Converter, Type 9787/1*-11-*2**

(5) Manufacturer: **R. STAHL Schaltgeräte GmbH**
(6) Address: **Am Bahnhof 30**
74638 Waldenburg, Germany

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

(8) The TÜV Rheinland Zertifizierungsstelle für Explosionsschutz of TÜV Rheinland Industrie Service GmbH, Notified Body No. 0035 in accordance with Article 21 of the Council Directive 2014/34/EU of 26th February 2014, certifies this product which has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmosphere, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report 557/Ex8838.00/23

(9) Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule of this certificate, has been assessed by reference to:

EN IEC 60079-0: 2018 **EN IEC 60079-7:2015/A1:2018** **EN 60079-11: 2012**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and specification for construction of the equipment or protective system. It does not cover the process for actual manufacture or supply of the equipment or protective system, for which further requirements of the directive are applicable.

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

II 2 (1) G Ex ia [ia Ga] IIC T4 Gb
resp. II 3 (1) G Ex ec [ia Ga] IIC T4 Gc
II (1) D [Ex ia Da] IIIC

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz

Cologne, 2023-08-21

Dipl.-Ing. Christian Mehrhoff

Notified Body • TÜV Rheinland • 0035

This EU-Type Examination Certificate without signature and stamp shall not be valid.
This EU-Type Examination Certificate may be circulated only without alteration. Extracts or alterations are subject to approval by the TÜV Rheinland Industrie Service GmbH TÜV Rheinland Group Am Grauen Stein 51105 Köln
Tel. +49 (0) 221 806-0 Fax. +49 (0) 221 806 114

(13) Annex

(14) # EU Type Examination Certificate

TÜV 23 ATEX 8838 X Issue: 00

(15) Description of equipment

15.1 Equipment and type:

USB RS485 Converter,
Type 9787/1*-11-*2

15.2 Description

General product information

The USB RS485 converter is an accessory for the remote I/O system "IS1+" and serves to convert USB data into serial RS485 service data.
Since the Zone 1 CPU 9442/32 does not contain RS485 interface for the service bus, the converter 9787/12-11-22 is used to convert the USB data (intrinsically safe) into serial RS485 service data (RS485-IS).
The USB RS485 Converter 9787/13-11-12 can be used when USB data (standard USB) must be converted to serial RS485 service data (RS485-IS).
In addition, the USB RS485 Converter can also be used in other applications: RS485 interfaces are in wide use for service purposes, but only few data processing systems have RS485 interfaces. Wherever a RS485 interface is missing, the USB RS485 Converter can compensate this absence.
Type 9787/12-11-22 is designed for use in Zone 1, Zone 2 or outside the hazardous area.
Type 9787/13-11-12 is intended for use in Zone 2 or outside the hazardous area. For this type, the special conditions for safe use shall be considered.

USB Converter	9787/	1	*	-	1	1	-	*	2
		a	b		c	d		e	f
Hardware-Version:									
1	1								
Hazardous area:									
Zone 1 / category 2	2								
Zone 2 / category 3	3								
Number of USB ports Interface 1 (USB)									
1 port	1								
Number of other ports Interface 2 (Other)									
1 port	1								
Design of USB ports									
Standard (Type B)	1								
USB-IS (Type B)	2								
Design of other ports									
RS485-IS	2								

Technical Data

Type	Interface X001	Interface X002
9787/12-11-22 (Zone 1)	RS485-IS [1)] $U_O \leq 3.73$ V $I_O \leq 89$ mA $U_i = \pm 4.2$ V $C_i = 0$ µF $L_i = 0$ µH	USB-IS $U_i = 5.55$ V $I_i = 1$ A $P_i = 2$ W $C_i = 8$ µF $L_i = 9$ µH
9787/13-11-12 (Zone 2)	RS485-IS [1)] $U_O \leq 3.73$ V $I_O \leq 133$ mA $U_i = \pm 16$ V [2)] $C_i = 0$ µF $L_i = 0$ µH	Standard USB $U_m = 30$ V $U_n = 5$ V $I_n = 55$ mA

[1)] RS485-IS interface according to PROFIBUS Guideline – Order No. 2.262 – Version 1.1 / June 2003.
[2)] If the interface is used according to PROFIBUS Guideline the maximum input voltage is $U_i = \pm 4.2$ V.

Ta = - 40 °C ... + 75 °C

(16) Test-Report No. 557/Ex8838.00/23

(17) Special Conditions for safe use

1. For installation in hazardous atmospheres of zone 2, the USB RS485 Converter 9787/13-11-12 shall be installed within an enclosure which has a minimum rating of IP54 in accordance with EN/IEC 60079-0, with a pollution degree of 1 or 2, as defined in EN/IEC 60664-1.

2. The USB socket shall be secured (e.g. with a cable tie).

(18) Basic Safety and Health Requirements

Covered by afore mentioned standard

TÜV Rheinland Zertifizierungsstelle für Explosionsschutz Cologne, 2023-08-21

Dipl.-Ing. Christian Mehrhoff