



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 16ATEX2171** Issue: **0**

4 Equipment: **Trex Device Communicator**

5 Applicant: **R. STAHL HMI Systems GmbH**

6 Address: Adolf-Grimme-Allee 8  
50829 Köln  
Germany

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

8 Sira Certification Service, notified body number 0518 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2012/A11:2013 EN 60079-11:2012

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



II 2G (1GD)  
Ex ia [ia Ga] [ia Da IIIC] IIC T4 Gb  
Ta = -20°C ≤ Ta ≤ +50°C

Project Number 70017224

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N Jones  
Certification Manager

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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

The Trex Device Communicator is a handheld, battery-powered, intrinsically safe, portable maintenance tool, typically for use in a process plant. The device communicates with microprocessor-based measurement and actuation field devices. It supports multiple communication protocols including HART® and FOUNDATION<sup>(TM)</sup> Fieldbus.

The equipment is powered by four lithium-ion cells (ICR18650K) in a 2-series x 2 parallel combination, with a peak voltage of 8.4 V.

**Type designation: TREX – a b c d e f g**

where:

- a = Communication Module:** (specifies the installed devices according to IEC 60079-11):  
C Device Communicator  
L Device Communicator Plus  
E Blank
- b = Applications:** (specifies software items and does not affect intrinsic safety)  
H HART  
L HART + FOUNDATION Fieldbus
- c = Power Module Type:** (specifies the installed devices according to IEC 60079-11)  
P Rechargeable Li-Ion Power Module
- d = Product Certification:**  
KL ATEX, CSA, CSA us, IECEx Intrinsically Safe (includes FISCO as applicable)  
KB CSA and CSA us, Intrinsically Safe
- e = Radio Options:**  
W WiFi / Bluetooth  
9 None
- f = Support:**  
Sn Standard Support (not relevant for hazardous area certification)  
Pn Premium Support (not relevant for hazardous area certification)
- g = Options:**  
These options do not affect intrinsic safety

The Trex Device Communicator consists of the following basic modules:

- Baseboard main unit with CPU and I.S. power supply circuits;
- Front panel with keypad, LED backlighted touch-display;
- Replaceable power module.

The following modules are optionally built in or may be attached by the customer or a service center:

- Wireless Board
- Trex Device Communicator communication module.
- Trex Device Communicator Plus communication module

Apart from the HART, mA and FOUNDATION Fieldbus, two connectors (protected by rubber covers) are for use outside the hazardous area:

- Micro USB interface for downloading updates from a PC: 7.13 V, 85 mA.
- AC adaptor for charging the power module and operating in parallel: 12-17 Vdc, 4A



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There are three versions:

- Trex Device Communicator blank module, with no electronics or external connections;
- Trex Device Communicator communication module, with four external connections;
- Trex Device Communicator Plus communication module, with nine external connections.

The **Trex Device Communicator communication module** has the following entity parameters:

<b>Table 1</b>			
	<b>FOUNDATION<sup>(TM)</sup> fieldbus (non-FISCO)</b>	<b>FOUNDATION<sup>(TM)</sup> fieldbus (FISCO)</b>	<b>HART<sup>®</sup></b>
	<b>FF + and -</b>	<b>FF + and -</b>	<b>HART + and -</b>
Ui	30 Vdc	30 Vdc	30 Vdc
Ii	380 mA	215 mA (IIC) 380 mA (IIB)	200 mA
Pi	1.3 W	1.9 W (IIC) 5.3 W (IIB)	1.0 W
Ci	0	0	0
Li	0	0	0
Uo	1.89 V	1.89 V	1.89 V
Io	32 µA	32 µA	32 µA
Po	61 µW	61 µW	61 µW
Co	14.3 µF	14.3 µF	14.3 µF
Lo	100 mH	100 mH	100 mH

The **Trex Device Communicator Plus communication module** has the following entity parameters:

<b>Table 2</b>							
	<b>mA- Interface mA</b>	<b>Foundation (TM)Fieldbus (non-FISCO)</b>		<b>HART<sup>®</sup></b>		<b>Foundation (TM)Fieldbus (FISCO)</b>	
		<b>FF pwr and F-</b>	<b>FF + and -</b>	<b>HART + pwr</b>	<b>HART + and -</b>	<b>FF pwr and F-</b>	<b>FF + and -</b>
Ui	30 Vdc	17.5 Vdc	30 Vdc	30 Vdc	30 Vdc	17.5 Vdc	30 Vdc
Ii	200mA	380 mA	380 mA	200 mA	200 mA	380 mA	215 mA (IIC) 380 mA (IIB)
Pi	1.0 W	1.3 W	1.3 W	1.0 W	1.0 W	1.3 W	1.9 W (IIC) 5.3 W (IIB)
Ci	0	231 nF	0	0	0	231 nF	0
Li	0	0	0	0	0	0	0
Uo	0	17.31V	1.89 V	25.69 V	1.89 V	17.31V	1.89 V
Io	0	199 mA	32 µA	105 mA	1.9 mA	199 mA	32 µA
Po	0	0.94 W	61 µW	668 mW	3.6 mW	0.94 W	61 µW
Co	-	See table 3	14.3 µF	See table 4	14.3 µF	See table 3	14.3 µF
Lo	-	See table 3	100 mH	See table 4	100 mH	See table 3	100 mH

<b>Table 3: Co and Lo values for FF pwr and F-</b>			
Co [nF]	19	69	115
Lo [µH]	100	50	30

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Table 4: Co and Lo values for HART + pwr				
Co [nF]	57	64	75	102
Lo [ $\mu$ H]	1000	750	500	100

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	20 June 2016	R70017224A	The release of the prime certificate.

#### 15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

None

#### 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

#### 17 CONDITIONS OF MANUFACTURE

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 The manufacturer shall confirm by a routine test on 100% of samples that the output voltage and current of the CDB-1 (FDC) and BB crowbars are within the maximum value permitted.

17.4 The AC Adapter (charger) supplied with the equipment shall comply with the:

- IEC 60950 series, IEC 61010-1 or a technically equivalent standard or
- safety extra low voltage (SELV)

The maximum output voltage shall not exceed 17 Vdc. The following type only has been approved for use with the Trex Device Communicator:

- Type PSDx-y0-XX manufactured by Powersolve Electronics Ltd.

17.5 Fuses that are energised in the hazardous area and are under encapsulation shall be treated (e.g. with silicone sealant) before encapsulation to prevent ingress of casting compound into the body of the fuse.

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# Certificate Annexe



**Certificate Number:** Sira 16ATEX2171  
**Equipment:** Trex Device Communicator  
**Applicant:** R. STAHL HMI Systems GmbH

## Issue 0

Drawing number	Sheets	Rev.	Date (Sira stamp)	Description
1450000	1 of 1	02	11 May 16	General assembly
2014 44 52 2	1 of 1	2	10 Jun 16	Marking, FF port
2016 19 50 0	1 to 15	-	13 Jun 16	Control Drawing
2016 20 51 0	1 to 3	-	13 Jun 16	Marking, IECEx/ATEX
2014 22 02 0 B	1 of 1	-	11 May 16	Component list
2014 22 02 0 LC	1 to 2	-	11 May 16	Track layout
2014 22 02 0 P	1 of 1	-	11 May 16	Component placement
2014 22 02 0	1 of 1	-	11 May 16	Schematic
2012 06 01 3 B	1 to 15	-	10 Jun 16	Component list
2012 06 01 3 F1	1 to 2	-	11 May 16	Lacquering diagram
2012 06 01 3 F2	1 of 2	-	11 May 16	Potting diagram
2012 06 01 3 LC	1 to 7	-	11 May 16	Track layout
2012 06 01 3 P	1 to 2	-	10 Jun 16	Component placement
2012 06 01 3	1 to 21	-	10 Jun 16	Schematic
2013 10 01 4 B	1 to 14	-	26 May 16	Component List
2013 10 01 4 F1	1 of 2	-	10 Jun 16	Lacquering diagram
2013 10 01 4 F2	1 of 1	-	10 Jun 16	Potting diagram
2013 10 01 4 LC	1 to 7	-	10 Jun 16	Track layout
2013 10 01 4 P	1 to 2	-	10 Jun 16	Component placement
2013 10 01 4 S	1 to 7	-	26 May 16	Schematic
2013 10 02 4 B	1 to 9	-	10 Jun 16	Component List
2013 10 02 4 F1	1 to 2	-	11 May 16	Lacquering diagram
2013 10 02 4 F2	1 to 2	-	11 May 16	Potting diagram
2013 10 02 4 LC	1 to 5	-	26 May 16	Track layout
2013 10 02 4 P	1 to 2	-	10 Jun 16	Component placement
2013 10 02 4 S	1 to 3	-	26 May 16	Schematic
2012 10 01 1 LC	1 to 8	-	11 May 16	Track layout
2012 10 01 3 B	1 to 2	-	11 May 16	Component List
2012 10 01 3	1 to 8	2	11 May 16	Schematic
2012 10 02 3 F3	1 of 1	-	11 May 16	Potting diagram
2012 10 02 3 P	1 to 2	-	11 May 16	Component placement
2011 32 01 3 B	1 of 1	-	11 May 16	Component List
2011 32 01 3 F2	1 to 2	-	11 May 16	Lacquering diagram
2011 32 01 3 LC	1 to 5	-	11 May 16	Track layout
2011 32 01 3 P	1 to 2	-	10 Jun 16	Component placement
2011 32 01 3	1 to 2	-	11 May 16	Schematic
2013 07 01 2 B	1 of 1	-	11 May 16	Component List
2013 07 01 2 LC	1 to 3	-	11 May 16	Track layout
2013 07 01 2 P	1 to 2	-	11 May 16	Component placement
2013 07 01 2 S	1 of 1	-	11 May 16	Schematic
2011 31 03 4 B	1 to 6	-	11 May 16	Component List
2011 31 03 4 F2	1 to 2	-	11 May 16	Potting diagram
2011 31 03 4 LC	1 to 7	-	11 May 16	Track layout
2011 31 03 4 P	1 to 2	-	10 Jun 16	Component placement
2011 31 03 4 S	1 to 4	-	11 May 16	Schematic
2013 48 01 4 B	1 to 1	-	10 Jun 16	Component List

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Drawing number	Sheets	Rev.	Date (Sira stamp)	Description
2013 48 01 4 F2	1 to 2	-	10 Jun 16	Potting diagram
2013 48 01 4 LC	1 to 5	-	10 Jun 16	Track layout
2013 48 01 4 P	1 to 2	-	10 Jun 16	Component placement
2013 48 01 4 S	1 of 1	-	10 Jun 16	Schematic
2013 48 02 3 B	1 of 1	-	11 May 16	Component List
2013 48 02 3 F2	1 of 1	-	11 May 16	Potting diagram
2013 48 02 3 LC	1 of 3	-	11 May 16	Track layout
2013 48 02 3 P	1 of 1	-	11 May 16	Component placement
2013 48 02 3 S	1 of 1	-	11 May 16	Schematic
2012 29 01 3 B	1 of 3	-	11 May 16	Component List
2012 29 01 3 F2	1 of 1	-	11 May 16	Potting diagram
2012 29 01 3	1 to 5	-	10 Jun 16	Track layout
2012 29 01 3 P	1 to 2	-	10 Jun 16	Component placement
2012 29 01 3 S	1 to 3	-	11 May 16	Schematic

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