

AMS Trex™ Device Communicator

Approvals and Certifications



Scan the QR code to view all product related documentation.

Available languages

The AMS Trex Device Communicator Approvals and Certifications is available in multiple languages. See the AMS Trex website to view this guide in the following languages:

Approvals and Certifications	(ENG) English
Одобрения и сертификати	(BUL) Български (Bulgarian)
Schválení a certifikace	(CES) Čeština (Czech)
Godkendelser og certificeringer	(DAN) Dansk (Danish)
Zulassungen und Zertifizierungen	(DEU) Deutsch (German)
Εγκρίσεις και πιστοποιήσεις	(ELL) Ελληνικά (Greek)
Hyväsennät ja sertifioinnit	(FIN) Suomi (Finnish)
Homologations et certifications	(FRA) Français (French)
Jóváhagyások és tanúsítványok	(HUN) Magyar (Hungarian)
Approvazioni e certificazioni	(ITA) Italiano (Italian)
承認および認証	(JPN) 日本語 (Japanese)
승인 및 인증	(KOR) 한국어 (Korean)
Goedkeuringen en certificeringen	(NLD) Nederlands (Dutch)
Godkjenninger og sertifiseringer	(NOR) Norsk (Norwegian)
Atesty i certyfikaty	(POL) Polski (Polish)
Aprovações e certificações	(POR) Português (Portuguese)
Aprobări și certificări	(RON) Română (Romanian)
Разрешения и сертификаты	(RUS) Русский (Russian)
Schválenia a certifikáty	(SLK) Slovenský (Slovak)
Aprobaciones y certificaciones	(SPA) Español (Spanish)
Godkännanden och certifieringar	(SWE) Svenska (Swedish)
批准和认证	(ZHO) 中文 (Chinese)

Copyright and trademark information

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Notice

Important

Read this manual before working with the Trex unit. For personnel and system safety, and for optimum product performance, thoroughly understand the contents before using or servicing this product.

For equipment service needs, contact technical support.

Important

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ WARNING

If the Trex unit is used in a manner not specified by Emerson, the protection provided by the equipment may be impaired.

⚠ WARNING

Do not directly connect the ports or terminals on the Trex unit to any main line voltage.

⚠ WARNING

WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS.

AVERTISSEMENT - DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES - VOIR INSTRUCTIONS

1 Overview

This guide provides safety precautions, certification information, and hazardous area approvals for the AMS Trex Device Communicator. For more information please reference the *AMS Trex Device Communicator User Guide* on the Emerson website.

⚠ CAUTION

When the Trex unit communicates with devices, follow all standards and procedures applicable to the location. Failure to comply may result in equipment damage and/or personal injury. Understand and comply with the sections in this manual.

1.1 Precautions for AMS Trex Device Communicator

Before operating the Trex unit, ensure:

- The Trex unit is not damaged.
- The power module is securely attached.
- All screws are sufficiently tightened.
- The communication terminal recess is free of dirt and debris.
- The communication module is securely attached.

Precautions for the power module and AC adapter

Understand and follow the precautions below before using the power module or AC adapter.

- Ensure sufficient grounding. Ensure the personnel, working surfaces, and packaging are sufficiently grounded when handling electrostatically sensitive parts.
- Avoid touching the pins on the connectors or components. Discharged energy can affect the power modules.
- Protect the power module and AC adapter from moisture, and respect operating and storage temperature limits listed in the *AMS Trex Device Communicator User Guide*. The AC adapter is for indoor use only.
- Charge the power module with only the provided AC adapter. The AC adapter should not be used with other products. Failure to comply may permanently damage the Trex unit and void the IS approval and warranty.
- Do not open or modify the power module or AC adapter. There are no user-serviceable components or safety elements inside. Opening or modifying them will void the warranty and could cause personal harm.

⚠ WARNING

Do not use the AC adapter in a hazardous area environment.

⚠ WARNING

Do not install, remove, or charge the Lithium Ion (Li-ion) power module in a hazardous area environment.

Precautions for the communication module

Understand and follow the precautions below before using the Device Communication Module or the Device Communication Plus Module.

- Before you insert or remove a communication module, ensure the Trex unit is powered off.
- Ensure the personnel, working surfaces, and packaging are sufficiently grounded when handling electrostatically sensitive parts.
- Avoid touching the pins on the connectors or components. Discharged energy can affect the modules.
- When you insert/attach the communication module to the Trex unit, do not over tighten the screws. Use 0.5Nm maximum torque load.

1.2 Product support

Emerson provides a variety of ways to reach your Product Support team to get the answers you need when you need them:

Phone Toll free 800.833.8314 (U.S. and Canada)
+1.512.832.3774 (Latin America)
+63.2 702.1111 (Asia Pacific, Europe, and Middle East)

Email Guardian.GSC@Emerson.com

Web <http://www.emerson.com/en-us/contact-us>

To view toll free numbers for specific countries, visit <http://www.emerson.com/technicalsupport>.

1.3 Product certifications

See the AMS Trex Device Communicator website for the latest certificates, declaration of conformity, and approval information.


Approved manufacturing location

R. STAHL HMI Systems GmbH - Cologne, Germany

Labels

Each Trex unit has a main unit label. An Intrinsically Safe (KL option) Trex unit has another label on the side. If the Trex unit does not have this label, it is considered non-IS approved.

Certifications and approvals

European directive information - CE compliance	
ATEX (2014/34/EU)	This equipment complies with the ATEX Directive. Applicable standards are EN IEC 60079-0:2018, IEC 60079-11:2023 Ed 7 and EN 60079-11:2012.
	Certification No. CSANe 25ATEX1027
	 II 2 G (1GD) Ex ia [ia Ga] [ia Da IIIC] IIC T4 Gb (Ta = -20°C < Ta < +50°C)
	CE 0158
Electro Magnetic Compatibility (EMC) 2014/30/EU	Tested to the CISPR 32 V2.0 :2015/AMD1:2019, ETSI 301489-17 V 3.2.4:2020, IEC 61000-6-1 V3.0:2016, IEC 61000-3-2 V5.0:2018/AMD1:2020/AMD2:2024, IEC 61000-3-3 V3.0:2013/AMD1:2017/AMD2:2021 specification.
Low Voltage 2014/35/EU	Tested to the IEC 61010-1:2010, IEC 61010-1:2010/AMD1:2016, and IEC 61010-2-030:2017 specification.
RED 2014/53/EU	This equipment is in conformity with the Radio Equipment Directive (RED) Directive, ETSI EN 300328 V2.2.2:2019, and EN 18031-1:2024 standards.
Battery Regulation 2023/1542/EU	Product is compliant with EU regulation 2023/1542:2023-07 and EU 2025/1561:2025-07.
RoHS 2011/65/EU	Product is compliant with the RoHS Directive, EN IEC 63000:2018 /Exemption 7(a), 7(c)-I.

International certifications	
IECEX	Certification No. CSAE 25.0013
	Ex ia [ia Ga] [ia Da IIIC] IIC T4 Gb (Ta = -20°C < Ta < +50°C)

North American certifications	
Canadian Standards Association - cCSAus	Certification No. 25CA80222871
	Class I, Division 1, Groups A, B, C, D, T4. Class 1, Zone 1 AEx ia [ia Ga] [ia Da IIIC] IIC T4 Gb

North American certifications	
CSA	Certification No. 25CA80222871
	Ex ia [ia Ga] [ia Da IIC] IIC T4 Gb

1.4 Hazardous areas

A Trex unit that meets the Intrinsic Safety requirements (IS-approved) can be used in Zone 1, or Zone 2, for Group IIC, and Class I, Division 1 and Division 2, Groups A, B, C, and D locations.

An IS-approved Trex unit may be connected to loops or segments that are attached to equipment located in Zone 0, Zone 1, Zone 2, for Group IIC; Zone 20, Zone 21, Zone 22, and Class I, Division 1 and Division 2, Groups A, B, C, and D locations.

An IS-approved Trex unit can be ordered by selecting the KL option. The Trex unit has a label that lists the approvals.

▲ WARNING

Explosions can result in serious injury or death.

Use in an explosive environment must be in accordance with the appropriate local, national, and international standards, codes, and practices. Please review the Technical specifications and Product certifications sections of the *AMS Trex Device Communicator User Guide* for any restrictions associated with safe use.

Electrical shock can result in serious injury or death.

1.5 Intrinsically Safe electrical parameters

Table 1: Device Communication Module

	FOUNDATION™ fieldbus	FOUNDATION™ fieldbus	HART®
	(non-FISCO)	(FISCO)	
	FF + and -	FF + and -	HART + and -
Ui	30 Vdc	30 Vdc	30 Vdc
li	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

	FOUNDATION™ fieldbus	FOUNDATION™ fieldbus	HART®
	(non-FISCO)	(FISCO)	
	FF + and -	FF + and -	HART + and -
Uo	1.89 Vdc	1.89 Vdc	1.89 Vdc
Io	1.91 μA	1.91 μA	19.1 μA
Po	3.61 μW	3.61 μW	36.1 μW
Co	14.3 μF	14.3 μF	14.3 μF
Lo	100 mH	100 mH	100 mH

Table 2: Device Communication Plus Module

	mA interface	FOUNDATION™ fieldbus		HART®		FOUNDATION™ fieldbus	
		(non-FISCO)				(FISCO)	
	mA	FF pwr and F-	FF + and -	HART + pwr	HART + and -	FF pwr and F -	FF + and -
Ui	30 Vdc	17.5 Vdc	30 Vdc	30 Vdc	30 Vdc	17.5 Vdc	30 Vdc
Ii	200 mA	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	20.5 nF	0	0	0	20.5 nF	0
Li	0	0	0	0	0	0	0
Uo	0.09 Vdc	17.44 V	1.89 V	28.35 Vdc	1.89 Vdc	17.44 V	1.89 V
Io	14.63 mA	153 mA	1.91 μA	68.1 mA	19.1 μA	153 mA	1.91 μA
Po	1.28 mW	1.73 W	3.61 μW	0.78 W	36.1 μW	1.73 W	3.61 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

Table 3: Co and Lo values for FF pwr and F-			
Co [nf]	249.5	318.5	318.5
Lo [μ H]	100	50	30

Table 4: Co and Lo values for HART + pwr				
Co [nf]	56	62	71	79
Lo [μ H]	1000	750	500	100

1.6 AC adapter approvals

The following AC adapter has been approved for use with AMS Trex: TREX-0003-0003.

Approvals

cUL North America, TUV GS Europe, Japan PSE, IRAM Argentina, Kazakhstan EAC, South Africa SANS IEC 60 950, China CCC, Korea KC, Taiwan BSMI, UKCA

WEEE 2012/19/EU, RoHS (2011/65/EU)

1.7 AMS Trex Device Communicator Control Drawings

See the AMS Trex Device Communicator website at <http://www.emerson.com/Trex> to view the latest full-size control drawings.

TREX2 DEVICE COMMUNICATOR

Control Drawing / Safety instructions

The TREX2 Device Communicator is a handheld, battery-powered, intrinsically safe, portable maintenance tool, typically for use in a process plant.

Trex Device Communicator communication mode:

- HART
- FOUNDATION Fieldbus (FFBC and non-FF BC0)

Trex Device Communicator HART communication mode:

- HART
- FOUNDATION Fieldbus (FFBC and non-FF BC0)

MAIN MARKING

IN ACCORDANCE WITH CONTROL DRAWING 14530004

Installez en conformité avec le schéma de contrôle n° 14530004

R. STARE, IMA Systems GmbH, Cologne / Germany

20°C ≤ T_a ≤ 50°C

ATEX: CSA No 25ATEX1007
CSA Class I, D1 (DIV 1) Ex ia Ga [ja] Da [Da IIC] IC T4 Gb

IECEx: IECEx CSAE 20 013
Ex ia [ja] Ga [ja Da IIC] IC T4 Gb

25CA8022281

CSA ZONE MARKINGS
 Class I, Zone 1, IEC Ex ia Ga [ja] Da [Da IIC] IC T4 Gb

CSA ZONE MARKINGS
 Ex ia [ja] Ga [ja Da IIC] IC T4 Gb

CSA US DIVISION EQUIPMENT MARKINGS
 CLASS I, DIVISION 1, GROUPS A, B, C, D T4

WARNINGS:

- DO NOT USE THE USB CONNECTION IN HAZARDOUS LOCATIONS
- INSTALL, CHARGE, OR REMOVE THE POWER MODULE ONLY IN NON-HAZARDOUS LOCATIONS
- ADDITION OR SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY
- BEFORE CONNECTING FFW, DISCONNECT ALL FURTHER POWER SUPPLIES AND TERMINATORS
- CONNECT THE TREX2 DEVICE COMMUNICATOR ACCORDING TO THE SCHEMES IN THE CONTROL DRAWING
- POTENTIAL ELECTROSTATIC CHARGING HAZARDOUS DEVICE MUST BE PROTECTED AGAINST HIGH ELECTROSTATIC CHARGES (CLEAN ONLY WITH DAMP CLOTH)

VERTICEMENTS:

- NE JAMAIS UTILISER LE CONNECTEUR USB DANS DES ZONES À RISQUE D'ÉCLAIRGEMENT
- NE RÉALISER DE CHARGES OU NE RETIRER LE MODULE D'ALIMENTATION QU'EN DEHORS DES ZONES À RISQUE D'ÉCLAIRGEMENT
- LAUJOUT OU LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SÉCURITÉ INTRINSÈQUE
- AVANT DE CONNECTER FFW, DÉCONNECTER PARVOIR TOUTES LES ALIMENTATIONS ET LES DISPOSITIFS DE TERMINATION
- RACCORDER ET DÉRACCORDER LE TREX2 DEVICE COMMUNICATOR SELON LE PLAN FOURNI
- DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES VÉRIABLES DOIT ÊTRE PROTÉGÉ PAR CONTRE LES CHARGES ÉLECTROSTATIQUES ÉLEVÉES!
- NETTOYER SOUS TENSION AVEC UN TISSU HUMIDE

SECURITY ADVICES (NOTES)

CONSEILS DE SÉCURITÉ (NOTES)

1. No revision to drawing prior to certification body.
 Aucune révision du dessin avant l'envoi à l'organisme de certification.

2. The Associated Apparatus must be NRTL approved in accordance to IEC 60079-11.
 L'appareil associé doit être certifié NRTL, conformément à la norme IEC 60079-11.

3. Manufacturer's installation drawing must be followed when installing associated apparatus.
 Le plan d'installation du fabricant doit être respecté lors de l'installation de l'appareil associé.

4. Selected intrinsically safe equipment must be fully listed as intrinsically safe in the application, and have intrinsically safe entry parameters conforming with Table A1 below. When used in a Division area, the intrinsically safe equipment may be replaced with non-intrinsically safe wiring apparatus having the same electrical rating.
 L'équipement de sécurité intrinsèque sélectionné doit être répertorié par un tiers comme étant de sécurité intrinsèque pour l'application, et avoir des paramètres d'entrée de sécurité intrinsèque conformes au tableau A1 ci-dessous. Lorsqu'ils sont utilisés dans des divisions dangereuses, les équipements de sécurité intrinsèque peuvent être remplacés par des appareils NI ayant les mêmes paramètres électriques.

Table A1		Intrinsically safe equipment or Non-intrinsically equipment		Associated Apparatus	
U (or Umax)		U ₀ (or U _{0max})		U ₀ (or U _{0max})	
U (or Umax)	≥	U ₀ (or U _{0max})	≥	U ₀ (or U _{0max})	≥
C ₀ + C _{add}	≤	C ₀	≤	C ₀	≤
L + L _{add}	≤	L ₀ (or L _{0max})	≤	L ₀ (or L _{0max})	≤

5. FOR USA: Installation should be in accordance with NFPA 70E 501.05.11
 "Installation of intrinsically safe systems for Hazardous (classified) Locations" and the National Electrical Code (NFPA70E)

Pour les USA: l'installation doit être conforme aux réglementations électriques du NFPA 70E 501.05.11 et une installation de systèmes de sécurité intrinsèque pour les emplacements dangereux (classifiés) et le National Electrical Code (NFPA70E)

FOR CANADA: Installation should be in accordance with Canadian Electrical Code CSA 22.1, Part 1.
 Pour le CANADA: L'installation doit être conforme au code canadien de l'électricité CSA 22.1, partie 1.

Calculation of cable length:

A. Determination of maximum possible capacitance of cable:
 $C_{max} = C_0 + C_1$ (associated apparatus)

B. Determination of maximum possible inductance of cable:
 $L_{max} = L_0 + L_1$ (associated apparatus)

C. Determination of maximum possible cable length by capacitance and inductance of cable:
 length $L = L_{max} \times (Capable)^{1/2}$

D. Determination of maximum length of cable:
 length C or length L , whatever is less.

(*) when cable parameters are unknown, the following values may be used:
 Cable = 60 pF/m (200 pF/m)
 Coable = 1 μH/m for TREX2 / IECEx
 Coable = 0.2 μH/m (0.06 μH/m) for NEO/ICE Code

Type code:
 TREX2 followed by numbers and / or letters

TREX2-abcde

a = Communication Module
 C= TREX2 Device communication Plus
 L= TREX2 Device communication Plus
 D= Reserved for the complete TREX2 device assembly
 For further details, see the marking on the communication module label
 0= None

b = Power Module type
 P= Chargepack Lipo Power Module Rev. 04 (new call)
 0= None

c = Product Certification:
 C= IECEx and/or ATEX / IECEx / Intrinsically Safe (includes FFBC as applicable)
 NA= None (also for individual modules that are not IECEx certified as a stand-alone device, as well as for use of the complete TREX2 device in non-hazardous areas)

d = Ratio options
 W= Wi-Fi and/or Bluetooth for TREX2
 B= None for TREX2
 M= Reserved for the complete TREX2 device assembly
 For further details, see the marking on the Display and CPU module label

e = Options
 *any alphanumeric or symbolic characters, not relevant for hazardous area certification

LIST OF STANDARDS

See certificate.

14530004 Rev.01 TREX2 Device Communicator B Control Drawing / Safety instructions

REVISION	DESCRIPTION	DATE	BY	CHKD
01	Issue for certification	2024-08-20

14530004 Rev.01 TREX2 Device Communicator B Control Drawing / Safety instructions

REVISION	DESCRIPTION	DATE	BY	CHKD
01	Issue for certification	2024-08-20

TABLE 1- CSA ENTITY PARAMETERS for HART Interface with the TREX2 Device communicator - communication module

Input parameters		Output parameters	
U ₀ (or U _{0max}) = 30 Vdc	W or W ₀ of loop must be ≤ 30 Wdc	U ₀ (or U _{0c}) = 1.58 Vdc	
I ₀ (or I _{0max}) = 200 mA	W or W ₀ of loop must be ≤ 200 mW	I ₀ (or I _{0c}) = 15.1 μA	
P ₀ (or P _{0max}) = 1 W		P _{0c} = 36.1 μW	
C ₀ = 0.1 μF	Device does not add capacitance to loop	C _{0c} (or C _{0c}) = 14.3 μF	
L ₀ = 0 mH	Device does not add inductance to loop	L _{0c} (or L _{0c}) = 100 mH	

HAZARDOUS AREA

For device classification, see separate approval of the device!

TREX2 Device communicator (with communication module)

Class I, Zone 1 (EPL, 0/1) / IC / T4
 Class I, Division 1, Groups A, B, C, D
 For more details, see technical manual

NON-HAZARDOUS AREA

Approved barrier or converter. See Note 4 on page 1 of this document!

Power supply

HAZARDOUS AREA

For device classification, see separate approval of the device!

TREX2 Device communicator (with communication module)

Class I, Zone 1 (EPL, 0/1) / IC / T4
 Class I, Division 1, Groups A, B, C, D
 For more details, see technical manual

NON-HAZARDOUS AREA

Approved barrier or converter. See Note 4 on page 1 of this document!

Power supply

14530004 Rev.01 TREX2 Device Communicator B Control Drawing / Safety instructions

REVISION	DESCRIPTION	DATE	BY	CHKD
01	Issue for certification	2024-08-20

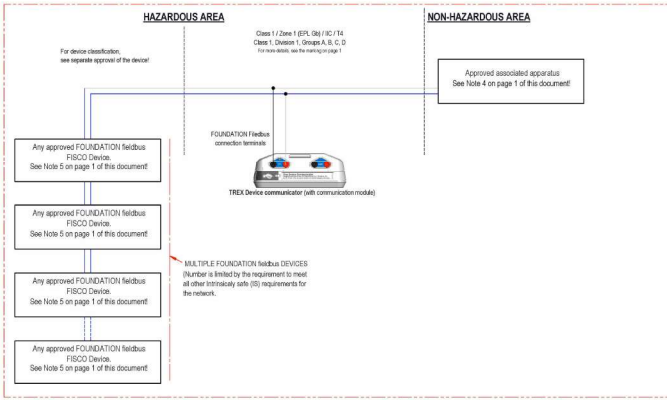
14530004 Rev.01 TREX2 Device Communicator B Control Drawing / Safety instructions

REVISION	DESCRIPTION	DATE	BY	CHKD
01	Issue for certification	2024-08-20

TABLE 2- CSA ENTITY PARAMETERS for FOUNDATION fieldbus interface (for Non-FISCO installation)
with the TREX2 Device communicator - communication module

Input parameters		Output parameters	
U _i (or V _{in(max)}) = 30 Vdc	Leakage current ≤ 50 µA	U _o (or V _{oc}) = 1.80 Vdc	Lo (or L _o) = 100 mH
I _i (or I _{in(max)}) = 350 mA		I _o (or I _{oc}) = 1.91 µA	
P _i (or P _{in(max)}) = 13 W		P _o = 351 µW	
C _i = 0 µF		C _o (or C _{o1}) = 14.3 µF	
L _i = 0 mH		L _o (or L _{o1}) = 100 mH	

⚠ See security advices on page 1 of this document
Voir les conseils en matière de sécurité à la page 1 du présent document.



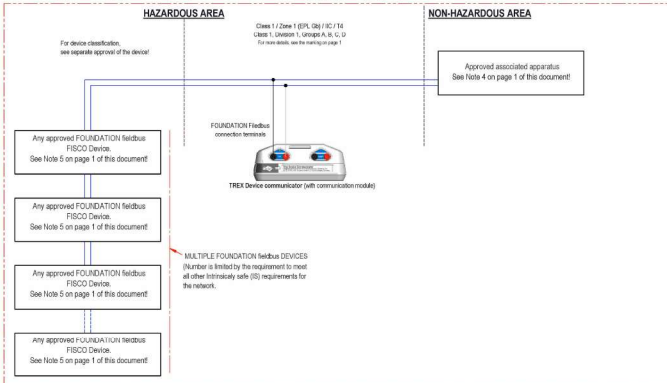
UNIVERSAL APPROVAL CERTIFICATE (UNIVERSAL APPROVALS) (EN60950)		E-STAT, Ltd. Systems Division	
UNIVERSAL APPROVALS		UNIVERSAL APPROVALS	
Model	Part Number	Class	Country
14350004 Rev01	TREX2 Device communicator	Class 1, Zone 1	Canada
14350004 Rev01 TREX2 Device communicator is Control drawing Safety instructions.			
Model	Part No.	Class	Country
TREX201	14350004	Class 1, Zone 1	Canada

TABLE 3- CSA ENTITY PARAMETERS for FOUNDATION fieldbus interface (for FISCO installation)
with the TREX2 Device communicator - communication module

Input parameters		Output parameters	
U _i (or V _{in(max)}) = 30 Vdc	Leakage current ≤ 50 µA	U _o (or V _{oc}) = 1.80 Vdc	Lo (or L _o) = 100 mH
I _i (or I _{in(max)}) = 215 mA (for IC) = 350 mA (for IB)		I _o (or I _{oc}) = 1.91 µA	
P _i (or P _{in(max)}) = 13 W (for IC) = 5.3 W (for IB)		P _o = 3.91 µW	
C _i = 0 µF		C _o (or C _{o1}) = 14.3 µF	
L _i = 0 mH		L _o (or L _{o1}) = 100 mH	

⚠ See security advices on page 1 of this document
Voir les conseils en matière de sécurité à la page 1 du présent document.

⚠ See security advices on page 14 of this document
Voir les conseils en matière de sécurité du concept FISCO à la page 14 du présent document.



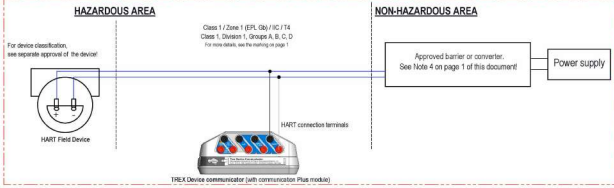
UNIVERSAL APPROVAL CERTIFICATE (UNIVERSAL APPROVALS) (EN60950)		E-STAT, Ltd. Systems Division	
UNIVERSAL APPROVALS		UNIVERSAL APPROVALS	
Model	Part Number	Class	Country
14350004 Rev01	TREX2 Device communicator	Class 1, Zone 1	Canada
14350004 Rev01 TREX2 Device communicator is Control drawing Safety instructions.			
Model	Part No.	Class	Country
TREX201	14350004	Class 1, Zone 1	Canada

TABLE 4- CSA ENTITY PARAMETERS for HART interface
with the TREN2 Device communicator - communication Plus module

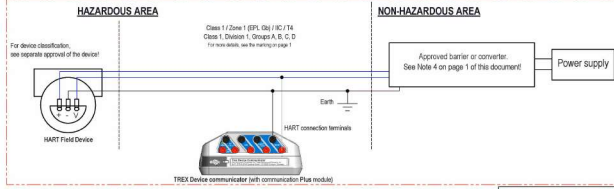
Input parameters		Output parameters	
U _i (or V _{max}) = 30 Vdc	V _i or V _{oc} of loop must be ≤ 30 Vdc	U _o (or V _{oc}) = 1,89 Vdc	
I _i (or I _{max}) = 200 mA	I _i or I _{oc} of loop must be ≤ 200 mA	I _o (or I _{sc}) = 16,1 μA	
P _i (or P _{max}) = 1 W		P _o = 26,1 μW	
C _i = 0 μF	Device does not add capacitance to loop	C _o (or C ₀) = 14,3 nF	
L _i = 0 mH	Device does not add inductance to loop	L _o (or L ₀) = 100 nH	

⚠ See security advices on page 1 of this document
Voir les conseils en matière de sécurité à la page 1 du présent document.

In case of use as Current ID:



In case of use of Voltage ID:



CLASSIFICATION DETAILS (REVISIONS AND EVALUATION STATUS)		3. OTHER IEC System Class	
Rev	Change	Rev	Change
01	Initial release	01	Initial release
02	Update of safety information	01	Initial release
03	Update of safety information	01	Initial release
04	Update of safety information	01	Initial release
05	Update of safety information	01	Initial release
06	Update of safety information	01	Initial release
07	Update of safety information	01	Initial release
08	Update of safety information	01	Initial release
09	Update of safety information	01	Initial release
10	Update of safety information	01	Initial release
11	Update of safety information	01	Initial release
12	Update of safety information	01	Initial release
13	Update of safety information	01	Initial release
14	Update of safety information	01	Initial release
15	Update of safety information	01	Initial release
16	Update of safety information	01	Initial release
17	Update of safety information	01	Initial release
18	Update of safety information	01	Initial release
19	Update of safety information	01	Initial release
20	Update of safety information	01	Initial release

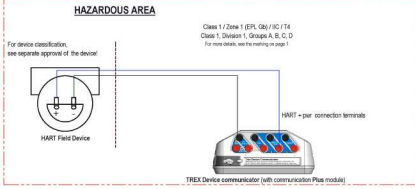
14530004 Rev01 TREN2 Device communicator
© Control Drawing_Safety Instructions

TABLE 5- CSA ENTITY PARAMETERS for HART+pur interface
with the TREN2 Device communicator - communication Plus module

Input parameters		Output parameters			
U _i (or V _{max}) = 30 Vdc	V _i or V _{oc} of loop must be ≤ 30 Vdc	U _o (or V _{oc}) = 28,35 Vdc			
I _i (or I _{max}) = 200 mA	I _i or I _{oc} of loop must be ≤ 200 mA	I _o (or I _{sc}) = 68,1 mA			
P _i (or P _{max}) = 1 W		P _o = 0,78 W			
C _i = 0 μF	Device does not add capacitance to loop	C _o (or C ₀) = 56 nF	62 nF	71 nF	79 nF
L _i = 0 mH	Device does not add inductance to loop	L _o (or L ₀) = 1000 μH	750 μH	500 μH	100 μH

⚠ See security advices on page 1 of this document
Voir les conseils en matière de sécurité à la page 1 du présent document.

In case of use as Current ID:



CLASSIFICATION DETAILS (REVISIONS AND EVALUATION STATUS)		3. OTHER IEC System Class	
Rev	Change	Rev	Change
01	Initial release	01	Initial release
02	Update of safety information	01	Initial release
03	Update of safety information	01	Initial release
04	Update of safety information	01	Initial release
05	Update of safety information	01	Initial release
06	Update of safety information	01	Initial release
07	Update of safety information	01	Initial release
08	Update of safety information	01	Initial release
09	Update of safety information	01	Initial release
10	Update of safety information	01	Initial release
11	Update of safety information	01	Initial release
12	Update of safety information	01	Initial release
13	Update of safety information	01	Initial release
14	Update of safety information	01	Initial release
15	Update of safety information	01	Initial release
16	Update of safety information	01	Initial release
17	Update of safety information	01	Initial release
18	Update of safety information	01	Initial release
19	Update of safety information	01	Initial release
20	Update of safety information	01	Initial release

14530004 Rev01 TREN2 Device communicator
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TABLE 6- CSA ENTITY PARAMETERS for mA Meter Interface with the TREQ2 Device communicator - communication Plus module

Input parameters		Output parameters	
UI (or VImax) = 30 Vdc	VI or Voc of loop must be ≤ 30 Vdc	Uo (or Voc) = 0,09 Vdc	
Ii (or Imax) = 200 mA	Ii or Isc of loop must be ≤ 200 mA	Io (or Isc) = 14,63 mA	
PI (or PImax) = 1 W		Po = 1,28 mW	
CI = 0 μF	Device does not add capacitance to loop	Co (or Ca) = -	
LI = 0 mH	Device does not add inductance to loop	Lo (or La) = -	

In case of use as Current ID

HAZARDOUS AREA

For device classification, see separate approval of the device!

MART Field Device

NON-HAZARDOUS AREA

Approved barrier or converter. See Note 4 on page 1 of this document!

Power supply

TREX Device communicator (with communication Plus module)

mA connection terminals

Class 1, Zone 1 (BPL, OBL, IEC / T4)
Class 1, Division 1, Groups A, B, C, D
For more details, see the marking on page 1!

144330004 Rev01 (144330004) - 2 Zone (BPL, OBL, IEC / T4)
Class 1, Division 1, Groups A, B, C, D
For more details, see the marking on page 1!

Model	Year	Country	Approval	Approval No.	Approval Date	Approval Status
144330004 Rev01	2021	Canada	CSA	144330004	2021-08-10	Valid
144330004 Rev01	2021	USA	UL	144330004	2021-08-10	Valid

ETIM 5-ETIM-108 Systems System
"Smart" systems
www.etim.com

144330004 Rev01 TREQ2 Device communicator & Control drawing_Safety instructions

TABLE 7- CSA ENTITY PARAMETERS for mA Meter Interface with the TREQ2 Device communicator - communication Plus module

Input parameters		Output parameters	
UI (or VImax) = 30 Vdc	VI or Voc of loop must be ≤ 30 Vdc	Uo (or Voc) = 0,09 Vdc	
Ii (or Imax) = 200 mA	Ii or Isc of loop must be ≤ 200 mA	Io (or Isc) = 14,63 mA	
PI (or PImax) = 1 W		Po = 1,28 mW	
CI = 0 μF	Device does not add capacitance to loop	Co (or Ca) = -	
LI = 0 mH	Device does not add inductance to loop	Lo (or La) = -	

HAZARDOUS AREA

For device classification, see separate approval of the device!

MART Field Device
(Test terminal referenced to -)

NON-HAZARDOUS AREA

Approved barrier or converter. See Note 4 on page 1 of this document!

Power supply

TREX Device communicator (with communication Plus module)

mA connection terminals

Class 1, Zone 1 (BPL, OBL, IEC / T4)
Class 1, Division 1, Groups A, B, C, D
For more details, see the marking on page 1!

144330004 Rev01 (144330004) - 2 Zone (BPL, OBL, IEC / T4)
Class 1, Division 1, Groups A, B, C, D
For more details, see the marking on page 1!

Model	Year	Country	Approval	Approval No.	Approval Date	Approval Status
144330004 Rev01	2021	Canada	CSA	144330004	2021-08-10	Valid
144330004 Rev01	2021	USA	UL	144330004	2021-08-10	Valid

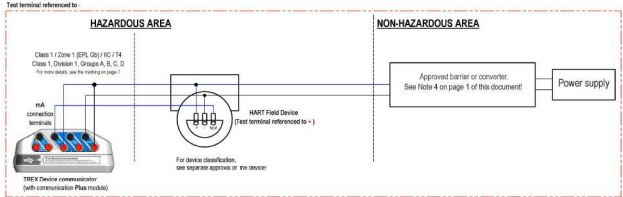
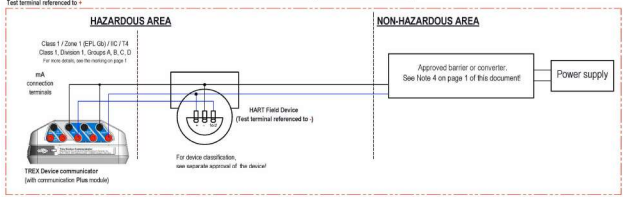
ETIM 5-ETIM-108 Systems System
"Smart" systems
www.etim.com

144330004 Rev01 TREQ2 Device communicator & Control drawing_Safety instructions

TABLE 8- CSA ENTITY PARAMETERS for mA Meter interface with HART with the TREX2 Device communicator - communication Plus module

Input parameters		Output parameters	
U _i (or V _{max}) = 30 Vdc	V _i or V _{oc} of loop must be ≤ 30 Vdc	U _o (or V _{oc}) = 1,89 Vdc	
I _i (or I _{max}) = 200 mA	I _i or I _{sc} of loop must be ≤ 200 mA	I _o (or I _{sc}) = 14,64 mA	
P _i (or P _{max}) = 1 W		P _o = 3,31 mW	
C _i = 0 μF	Device does not add capacitance to loop	C _o (or C ₀) = 14,3 μF	
L _i = 0 mH	Device does not add inductance to loop	L _o (or L ₀) = 100 nH	

! See security advices on page 1 of this document
 Voir les conseils en matière de sécurité à la page 1 du présent document



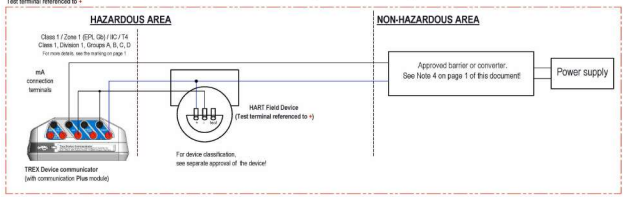
LISTE DES PARAMÈTRES D'ENTRÉE		LISTE DES PARAMÈTRES D'ISSUE	
ENTRÉE / INPUT			
Paramètre	Unité	Paramètre	Unité
U _i (ou V _{max})	Vdc	U _o (ou V _{oc})	Vdc
I _i (ou I _{max})	mA	I _o (ou I _{sc})	mA
P _i (ou P _{max})	W	P _o	mW
C _i	μF	C _o (ou C ₀)	μF
L _i	mH	L _o (ou L ₀)	nH

14530004 Rev11 TREX2 Device communicator
 © Control drawing, Safety Instructions

TABLE 9- CSA ENTITY PARAMETERS for mA Meter interface with HART with the TREX2 Device communicator - communication Plus module

Input parameters		Output parameters	
U _i (or V _{max}) = 30 Vdc	V _i or V _{oc} of loop must be ≤ 30 Vdc	U _o (or V _{oc}) = 1,89 Vdc	
I _i (or I _{max}) = 200 mA	I _i or I _{sc} of loop must be ≤ 200 mA	I _o (or I _{sc}) = 14,64 mA	
P _i (or P _{max}) = 1 W		P _o = 3,31 mW	
C _i = 0 μF	Device does not add capacitance to loop	C _o (or C ₀) = 14,3 μF	
L _i = 0 mH	Device does not add inductance to loop	L _o (or L ₀) = 100 nH	

! See security advices on page 1 of this document
 Voir les conseils en matière de sécurité à la page 1 du présent document



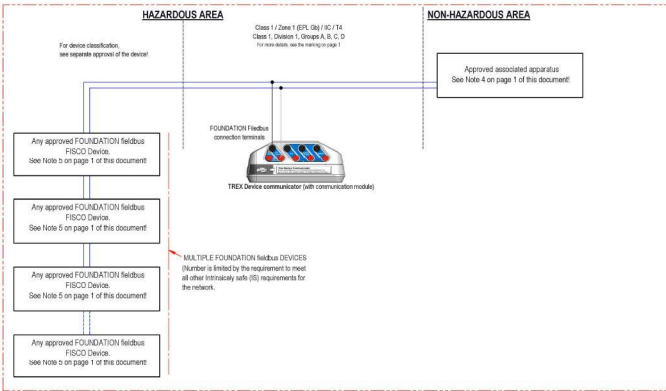
LISTE DES PARAMÈTRES D'ENTRÉE		LISTE DES PARAMÈTRES D'ISSUE	
ENTRÉE / INPUT			
Paramètre	Unité	Paramètre	Unité
U _i (ou V _{max})	Vdc	U _o (ou V _{oc})	Vdc
I _i (ou I _{max})	mA	I _o (ou I _{sc})	mA
P _i (ou P _{max})	W	P _o	mW
C _i	μF	C _o (ou C ₀)	μF
L _i	mH	L _o (ou L ₀)	nH

14530004 Rev11 TREX2 Device communicator
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TABLE 10- CSA ENTITY PARAMETERS for FOUNDATION fieldbus interface (for Non-FISCO installation) with the TREX2 Device communicator - communication Plus module

Input parameters		Leakage current $\leq 50 \mu\text{A}$	Output parameters	
U _i (or U _{max})	= 30 Vdc		U _o (or U _{oc})	= 1,80 Vdc
I _i (or I _{max})	= 350 mA		I _o (or I _{sc})	= 1,51 μA
P _i (or P _{max})	= 13 W		P _o	= 3,61 μW
C _i	= 0 μF		C _o (or C _{in})	= 14,3 μF
L _i	= 0 mH	L _o (or L _{in})	= 100 mH	

! See security advices on page 1 of this document
 Voir les conseils en matière de sécurité à la page 1 du présent document.

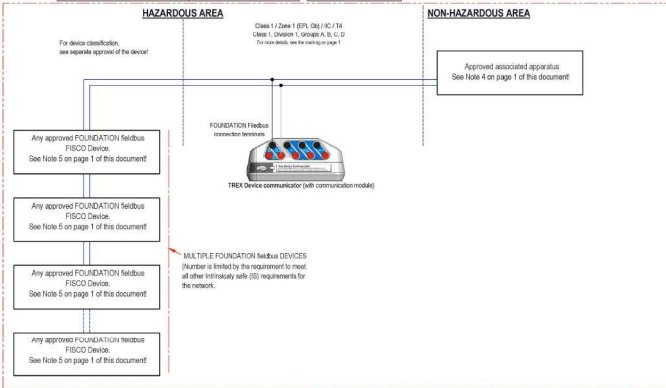


UNCLASSIFIED PRODUCT		S. STANLEY, Ltd. Systems Group	
UNCLASSIFIED PRODUCT		UNCLASSIFIED PRODUCT	
Product Name	1453004 Rev01	Product Name	1453004 Rev01
Product Code	1453004	Product Code	1453004
Product Description	1453004 Rev01	Product Description	1453004 Rev01
Product Category	1453004	Product Category	1453004
Product Version	1453004	Product Version	1453004
Product Date	1453004	Product Date	1453004
Product Location	1453004	Product Location	1453004
Product Status	1453004	Product Status	1453004
Product Type	1453004	Product Type	1453004
Product Model	1453004	Product Model	1453004
Product Part	1453004	Product Part	1453004
Product Assembly	1453004	Product Assembly	1453004
Product Material	1453004	Product Material	1453004
Product Finish	1453004	Product Finish	1453004
Product Weight	1453004	Product Weight	1453004
Product Dimensions	1453004	Product Dimensions	1453004
Product Compliance	1453004	Product Compliance	1453004
Product Certification	1453004	Product Certification	1453004
Product Approval	1453004	Product Approval	1453004
Product Release	1453004	Product Release	1453004
Product Revision	1453004	Product Revision	1453004
Product Change	1453004	Product Change	1453004
Product History	1453004	Product History	1453004
Product Notes	1453004	Product Notes	1453004
Product Comments	1453004	Product Comments	1453004
Product Details	1453004	Product Details	1453004
Product Information	1453004	Product Information	1453004
Product Data	1453004	Product Data	1453004
Product Specifications	1453004	Product Specifications	1453004
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Product Assumptions	1453004	Product Assumptions	1453004
Product Dependencies	1453004	Product Dependencies	1453004
Product Interactions	1453004	Product Interactions	1453004
Product Effects	1453004	Product Effects	1453004
Product Impacts	1453004	Product Impacts	1453004
Product Risks	1453004	Product Risks	1453004
Product Opportunities	1453004	Product Opportunities	1453004
Product Challenges	1453004	Product Challenges	1453004
Product Solutions	1453004	Product Solutions	1453004
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Product Best Practices	1453004	Product Best Practices	1453004
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Product Support	1453004	Product Support	1453004
Product Training	1453004	Product Training	1453004
Product Documentation	1453004	Product Documentation	1453004
Product Maintenance	1453004	Product Maintenance	1453004
Product Troubleshooting	1453004	Product Troubleshooting	1453004
Product Safety	1453004	Product Safety	1453004
Product Security	1453004	Product Security	1453004
Product Reliability	1453004	Product Reliability	1453004
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Product Cost	1453004	Product Cost	1453004
Product Value	1453004	Product Value	1453004
Product Profitability	1453004	Product Profitability	1453004
Product Sustainability	1453004	Product Sustainability	1453004
Product Innovation	1453004	Product Innovation	1453004
Product Research	1453004	Product Research	1453004
Product Development	1453004	Product Development	1453004
Product Testing	1453004	Product Testing	1453004
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Product Maintenance	1453004	Product Maintenance	1453004
Product Support	1453004	Product Support	1453004
Product Training	1453004	Product Training	1453004
Product Documentation	1453004	Product Documentation	1453004


TABLE 11- CSA ENTITY PARAMETERS for FOUNDATION fieldbus interface (for FISCO Installation) with the TREX2 Device communicator - communication Plus module

Input parameters		Leakage current $\leq 50 \mu\text{A}$	Output parameters	
U _i (or U _{max})	= 30 Vdc		U _o (or U _{oc})	= 1,80 Vdc
I _i (or I _{max})	= 215 mA (for IC) = 350 mA (for IB)		I _o (or I _{sc})	= 1,51 μA
P _i (or P _{max})	= 13 W (for IC) = 5,3 W (for IB)		P _o	= 3,61 μW
C _i	= 0 μF		C _o (or C _{in})	= 14,3 μF
L _i	= 0 mH	L _o (or L _{in})	= 100 mH	

! See security advices on page 1 of this document
 Voir les conseils en matière de sécurité à la page 1 du présent document.
 See security advices for FISCO concept on page 14 of this document!
 Voir les conseils en matière de sécurité du concept FISCO à la page 14 du présent document!



UNCLASSIFIED PRODUCT		S. STANLEY, Ltd. Systems Group	
UNCLASSIFIED PRODUCT		UNCLASSIFIED PRODUCT	
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Product Code	1453004	Product Code	1453004
Product Description	1453004 Rev01	Product Description	1453004 Rev01
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Product Maintenance	1453004	Product Maintenance	1453004
Product Support	1453004	Product Support	1453004
Product Training	1453004	Product Training	1453004
Product Documentation	1453004	Product Documentation	1453004

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All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without the prior written permission of Emerson.	Details and instructions:							
	- The TREX2 Device Communicator is a handheld, battery powered, intrinsically safe, portable maintenance tool, typically for use in a process plant. It supports multiple communication protocols including HART® and FOUNDATION™ Fieldbus™.							
	The device consists of 3 main modules: - Display and CPU module: A module that mainly contains the display, the motherboard with IS circuits and CPU and the PCBs for the front-panel keyboards, plus an optional WLAN/Bluetooth module. - Communication module: A communication and measurement module containing various PCBs in different options. - Power module: A power supply module containing the batteries and the PCBs controlling charging and discharging.							
	- This device is manufactured by R. STAHL LHM Systems GmbH (www.stahl.com) for EMERSON (www.emerson.com) - Any repairs must always be contacted by the manufacturer or an authorized service center (www.emerson.com). - System maintenance should focus on the following: Safety: Damage to front screens / glass: All screws are tightened properly. All cables and lines are properly connected and undamaged. - Only appropriate tools must be used for the installation. - If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.							
	- Before you insert or remove the different modules, ensure that the TREX2 unit is powered off. - Ensure sufficient grounding: Ensure the personnel, working surfaces, and packaging are sufficiently grounded when handling electrostatically sensitive parts. - Avoid loading the pins on the connectors or components. Discharged energy can still flow through the modules. - When you install/dismantle the different modules to the Test unit, do not over-tighten the screws. Use 0.8Nm maximum torque tool. - Remove the USB cable from the TREX2 unit before connecting to a device.							
	- The TREX2 may only be operated in an undamaged, dry and clean condition! Any damage may compromise the explosion protection! - Keep unit free of contaminants. Use suitable cleaning agents for cleaning. Do not use aggressive or abrasive agents.							
- The national assembly and installation rules and the generally accepted technical rules must be observed. The device and its accessories must be connected and operated according to applicable standards, directives and installation guidelines. Only qualified personnel or personnel that has been instructed accordingly are allowed to install the device.								
- The device has to be installed in such a way that mechanical effects (pulling forces) on the cables are excluded. The cable has to be fixed and effectively protected against damage.								
- Ambient rating: 20°C_T to 40°C_T at place of installation. Rel. humidity 90% at 40 °C without condensation. Altitude up to 2000m above sea level. - The equipment is intended for installation in an area providing at least pollution degree 2, as defined in IEC 60664-1. - Specification of the Overvoltage Category: II - Using with external power source with limited energy. The equipment shall be supplied by a Limited Power Source or Class 2 output in accordance with CEC Part 1, Rule 19-200 and NFPA 70, Article 725.121. - Environmental conditions for installation regarding NEC®/CE Code: Indoor use dry location. The device TREX2 is not intended for permanent outdoor use. The associated apparatus may also be connected to simple apparatus as defined in the National Electrical Code (ANSI/NFPA 70), or other local codes, as applicable. Intrinsically safe circuits must be wired and separated in accordance with Article 504.02 of the National Electrical Code (ANSI/NFPA 70) or other local codes, as applicable. - When installed with cable, this device shall be installed in areas where the cables have been deemed suitable for the locale as defined in the NEC®/CE Code. - IEC/USA: All circuits must be wired using the National Electric Code (NFPA 70) or other local codes for installation within the United States. - IEC/Canada: All circuits must be wired as specified in the Canadian Electric Code or other local codes for installation within Canada.								
Condition of use: The Test Device Communicator shall only be charged in a non-hazardous location with suitable environmental control, using a charger specifically supplied for use with the unit. The following type only has been approved for use to charge the Test Device Communicator (in non-hazardous areas): Type PDSV-10-XD, manufactured by Powerwise Electronics Ltd. Type PMSFD-10/400 by Powerwise Electronics Ltd.								
The charging locations shall provide pollution degree 2 or 1 environment, and the ambient temperature during charging shall be in the range 0°C to 30°C.								
						 R. STAHL LHM Systems GmbH Division - Instrumentation 70001-10000 70001-10000		
						1452004 Rev-01 TREX2 Device Communicator IS Control drawing_Safety instructions		
						1452004 Rev-01 TREX2 Device Communicator IS Control drawing_Safety instructions		
						1452004 Rev-01 TREX2 Device Communicator IS Control drawing_Safety instructions		

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