

DuraTracker® Ex Logger Safety and Certification Sheet

Overview

This document contains the required safety and regulatory information for the DuraTracker Ex Logger. The DuraTracker Ex Logger Installation and Operation Guide and Warranty Statement are available and can be downloaded from www.teledyneisco.com.

CAUTION

Cautions identify a potential hazard, which if not avoided, may result in minor or moderate injury. This category can also warn you of unsafe practices, or conditions that may cause property damage.

WARNING

Warnings identify a potentially hazardous condition, which if not avoided, could result in death or serious injury.

DANGER

DANGER – limited to the most extreme situations to identify an imminent hazard, which if not avoided, will result in death or serious injury.

Hazard Symbols

Warnings and Cautions



The exclamation point within the triangle is a warning sign alerting you of important instructions in the instrument's technical reference manual.



The lightning flash and arrowhead within the triangle is a warning sign alerting you of "dangerous voltage" inside the product.



Pinch point. These symbols warn you that your fingers or hands will be seriously injured if you place them between the moving parts of the mechanism near these symbols.



Hazard Symbols (Continued)

Symboles de sécurité



Ce symbole signale l'existence d'instructions importantes relatives au produit dans ce manuel.



Ce symbole signale la présence d'un danger d'électocution.



Risque de pincement. Ces symboles vous avertissent que les mains ou les doigts seront blessés sérieusement si vous les mettez entre les éléments en mouvement du mécanisme près de ces symboles.

Warnungen und Vorsichtshinweise



Das Ausrufezeichen in Dreieck ist ein Warnzeichen, das Sie darauf aufmerksam macht, daß wichtige Anleitungen zu diesem Handbuch gehören.



Der gepfeilte Blitz im Dreieck ist ein Warnzeichen, das Sie vor "gefährlichen Spannungen" im Inneren des Produkts warnt.



Vorsicht Quetschgefahr! Dieses Symbol warnt vor einer unmittelbar drohenden Verletzungsgefahr für Finger und Hände, wenn diese zwischen die beweglichen Teile des gekennzeichneten Gerätes geraten.

Before installing, operating, or maintaining this equipment, it is imperative that all hazards and preventive measures are fully understood. While specific hazards may vary according to location and application, take heed in the following general warnings:

 **WARNING**

Avoid hazardous practices! If you use this instrument in any way not specified in this manual, the protection provided by the instrument may be impaired.

 **AVERTISSEMENT**

Éviter les usages périlleux! Si vous utilisez cet instrument d'une manière autre que celles qui sont spécifiées dans ce manuel, la protection fournie de l'instrument peut être affaiblie; cela augmentera votre risque de blessure.

 **WARNING**

The installation and use of this product may subject you to hazardous working conditions that can cause you serious or fatal injuries. Take any necessary precautions before entering a worksite. Install and operate this product in accordance with all applicable safety and health regulations, and local ordinances.

 **WARNING**

Injury and/or equipment damage can result from connecting modules or cables to a power source exceeding the specified operating voltage range. Check labeling on all modules and cables for voltage ranges.

Technical Assistance for the Teledyne ISCO DuraTracker Logger can be obtained from:

Teledyne ISCO
4700 Superior St.
Lincoln NE 68504

Phone: (800) 228-4373 or (402) 464-0231
Fax: (402) 465-3022
Email: iscowatersupport@teledyne.com

Teledyne ISCO

P.O. Box 82531, Lincoln, Nebraska, 68501 USA
Toll-free: (800) 775-2965 • Phone: (402) 464-0231 • Fax: (402) 465-3001
E-mail: IscoService@teledyne.com

Teledyne ISCO is continually improving its products and reserves the right to change product specifications, replacement parts, schematics, and instructions without notice.



Installation in Hazardous Locations

Read all labels carefully before installing the equipment!

The DuraTracker Ex device is ATEX, UKEX, and IECEx approved for use in potentially explosive atmospheres when specific conditions are met, as described in this section in reference to “X” Marking.

The DuraTracker Ex is Group II, Category 1G equipment for use in gas hazard zones 0, 1, and 2 ((European, Canadian and International standards), or Class I Division 1 (North American standards).

Installation must be performed only by trained, qualified personnel. Refer to the control drawings provided on pages 6-7.

Important Information Regarding “X” Marking

The ATEX, UKEX, and IECEx labeling on the serial tag of the DuraTracker Ex device includes a number ending in “X.” The X marking indicates that there are specific conditions that must be met in order for the equipment to comply with intrinsic safety requirements. These specific conditions are as follows for HazLoc locations:

- The USB, TIENet and the Modbus terminals are not isolated from chassis ground.
- When Antenna Part No. 604804035 is used, heed warning:

 **WARNING**

Warning - Potential electrostatic charging hazard. See instructions.

Electrical Requirements

Always refer to the electrical values listed on the DuraTracker Ex Control Drawing when connecting equipment (i.e., sensors, Modbus, etc.).

This control drawing indicates the maximum output voltage (U_o), maximum output current (I_o), and maximum power (P_o) that can be present at the specified terminals without invalidating intrinsic safety.

Ambient Environment

Installation in designated hazardous areas must fall within temperature range of -20 to +60 °C, as specified on the serial tag labeling.

 **DANGER**

The DuraTracker Ex MUST be installed in accordance with control drawings on pages 6 through 7 in this document and in accordance with the requirements of the authority that has jurisdiction for the installation of equipment in hazardous areas at your specific installation site.

Bluetooth Regulatory Compliance

United States

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canada

This device contains license-exempt transmitter(s)/ receiver(s) that comply with Innovation, Science and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference;
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Europe

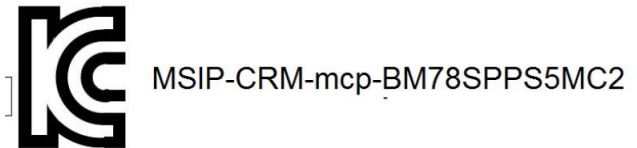
This device has been Radio Equipment Directive tested and complies with EN 55011:2016/A1:2017/A11:2020 and EN 61326-1:2013.



Japan



Korea



Taiwan



注意！

依據 低功率電波輻射性電機管理辦法

第十二條 經型式認證合格之低功率射頻電機，非經許可，

公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計

之特性及功能。

第十四條 低功率射頻電機之使用不得影響飛航安全及干擾合法通信；

經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信規定作業之無線電信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性

電機設備之干擾。

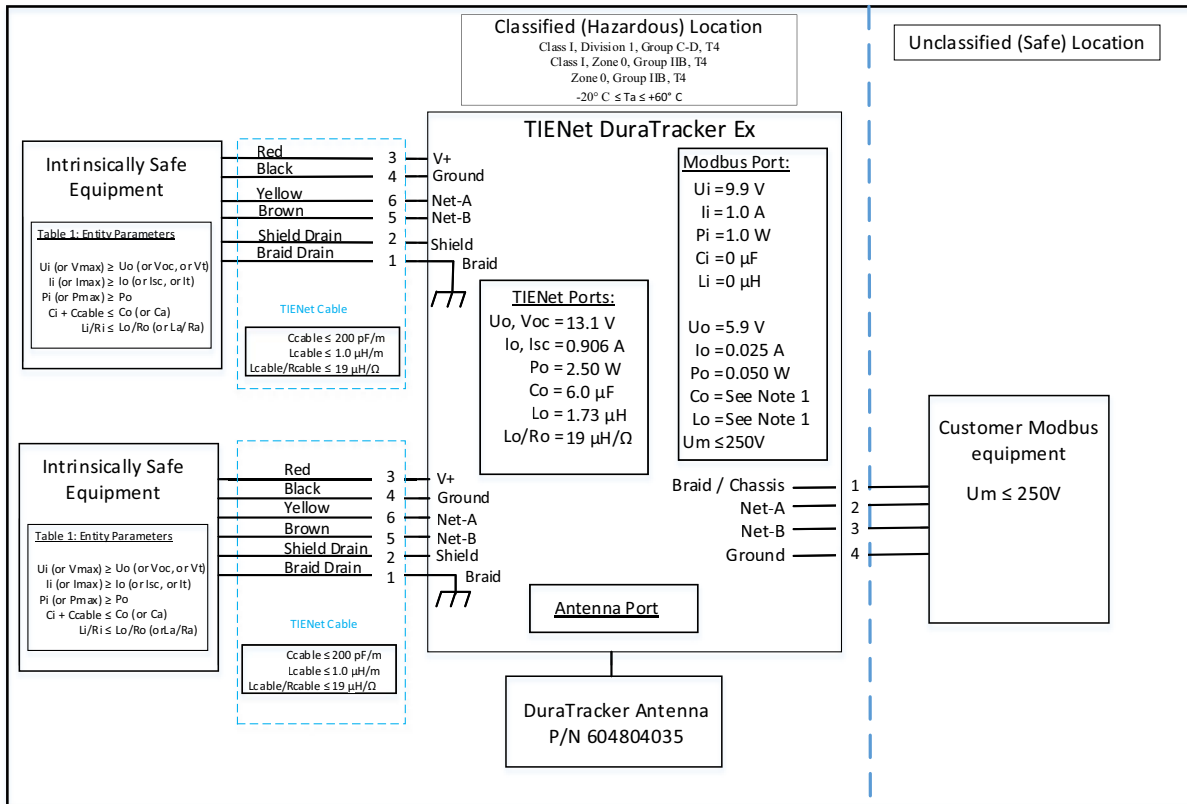
China

This device contains SRRC approved Radio module
CMIIT ID: 2015DJ7133

United Kingdom



DuraTracker Ex



Installation requirements:

- Intrinsically safe equipment must be listed as suitable for the application and have intrinsically safe entity parameters as shown.
- Equipment must be installed in accordance with installation instructions and all national and local regulations, including the National Electrical Code (NFPA 70) Article 504, the Canadian Electrical Code (CSA C22.1) Section 18, and EN/IEC 60079-14, as applicable.
- Cables other than the TIENet cables shown may be used. If used, special care must be taken to ensure correct wiring since wire colors may not match those shown. All conductors must be rated 70°C or higher and either shielded or kept 50mm (2”) away from other conductors. Keep unshielded wire lengths as short as possible.
- Capacitance of field wiring must be calculated and included in the system entity calculations. Unknown cable assessed at 400 pF/m (122 pF/ft). If $L_{cable} / R_{cable} \leq L_o / R_o$, cable inductance may be ignored; otherwise, inductance of field wiring must be calculated and included in the system entity calculations. Unknown cable assessed at 2.0 μH/m (0.610 μH/ft).
- USB Type B port for use in non-hazardous location only. Connect only to equipment providing $U_m = 5.25V$.
- For Modbus installations in which both the C_i and L_i of the intrinsically safe apparatus exceeds 1% of the C_a (or C_o) and L_a (or L_o) parameters of the associated apparatus (excluding the cable), then 50% of C_a (or C_o) and L_a (or L_o) parameters are applicable and shall not be exceeded. The reduced capacitance shall not be greater than 1 μF for Groups C and/or D. The values of C_a (or C_o) and L_a (or L_o) determined by this method shall not be exceeded by the sum of all of C_i plus cable capacitances and the sum of all of the L_i plus cable inductances in the circuit respectively.
- The DuraTracker Ex does not provide 500V isolation between chassis and the USB, TIENet, and Modbus terminals.

Note 1:

Acceptable Modbus combinations of L_o and C_o :

L_o (mH)	100	50	20	10	5	2	1	0.5	0.2	0.1	0.05	0.02	0.01	0.005	0.002
C_o (μF)	5.8	6.8	8.1	9.3	11	13	15	18	24	30	40	63	100	230	1000

Teledyne ISCO, Inc. Made in U.S.A.
 4700 Superior St., Lincoln, NE 68504
 www.teledyneisco.com (402)464-0231
 DuraTracker Ex



Telemetry Equipment for Use in Hazardous Locations
 INTRINSICALLY SAFE / SECURITE INTRINSEQUE
 WHEN INSTALLED PER CONTROL DRAWING 604802045



DuraTracker Ex w/o Modem

Class I, Division 1, Groups C-D, T4
 Class I, Zone 0, AEx ia [ia] IIB T4 Ga
 Ex ia [ia] IIB T4 Ga X -20°C ≤ Tamb ≤ +60°C



⊕ II 1 [1] G Ex ia [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C UL 23 ATEX 2954X
 ⊕ II 1 [1] G Ex ia [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C UL23UKEX2782X
 Ex ia [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C IECEX UL 23.0006X

DuraTracker Ex w/ Modem

Class I, Division 1, Groups C-D, T4
 Class I, Zone 0, AEx ia ma [ia] IIB T4 Ga
 Ex ia ma [ia] IIB T4 Ga X -20°C ≤ Tamb ≤ +60°C

⊕ II 1 [1] G Ex ia ma [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C UL 23 ATEX 2954X
 ⊕ II 1 [1] G Ex ia ma [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C UL23UKEX2782X
 Ex ia ma [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C IECEX UL 23.0006X

Entity parameters:

Modbus: Um = 250V

Uo = 5.9V Io = 0.025A Po = 0.050W
 Co = 30 μF Lo = 100 μH

Ui = 9.9V Ii = 1.0A Pi = 1.0W
 Ci = 0 μF Li = 0 μH

TIENet: Uo = 13.1V Io = 0.906A Po = 2.50W
 Co = 6 μF Lo = 1.73 μH Lo/Ro = 19 μH /ohm

USB: Um = 5.25V

Connect only to Teledyne Isco equipment. Install in conformance with control drawing 604802045.
 Connectez uniquement à l'équipement Teledyne Isco. Installer conformément au schéma de contrôle 604802045.

WARNING: Use only Duracell MN1300, Energizer E95 or Rayovac 813 batteries. Do not remove or replace battery when an explosive atmosphere is present. Do not mix old and new batteries or batteries from different manufacturers.

AVERTISSEMENT : Utilisez uniquement des piles Duracell MN1300, Energizer E95 ou Rayovac 813. Ne retirez pas ou ne remplacez pas la batterie lorsqu'une atmosphère explosive est présente. Ne mélangez pas des piles anciennes et neuves ou des piles de différents fabricants.



Read and understand all safety instructions.
 Lire et comprendre toutes les consignes de sécurité.

WARNING: Substitution of components may impair intrinsic safety

AVERTISSEMENT : la substitution de composants peut compromettre la sécurité intrinsèque

DESCRIPTION OF CHANGE	DATE	BY
Rev. F – Update Ci and Li for Modbus, removed Li-Ion battery info from French text, add CE & UKCA	4/7/2023	BSH

EU DECLARATION OF CONFORMITY

We the manufacturer:

Manufacturer's Name:	Teledyne ISCO
Manufacturer's Address:	4700 Superior Street, Lincoln, NE 68504 USA

Declare, under our sole responsibility that the following equipment:


Product Model:	DuraTracker Ex Logger
Object of Declaration:	Water flow logger for recording and transmitting data. The logger has 310 Ex, 350 Ex, 360 Ex sensors, modem options.
ATEX Marking: DuraTracker Ex without Modem DuraTracker Ex with Modem	<div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> ⊕ II 1 [1] G Ex ia [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C </div> <div style="display: flex; align-items: center;"> ⊕ II 1 [1] G Ex ia ma [ia] IIB T4 Ga -20°C ≤ Tamb ≤ +60°C </div> </div>
EU Type-examination Certificate:	UL 23 ATEX 2954X
Notified Body:	UL LLC, 333 Pfingsten Rd Northbrook, IL 60062 USA
Notified Body Number:	0539
Quality Assurance Notification Number:	SGS ATEX 4270

Is designed and manufactured in compliance with the following applicable Directives and Standards:

Directive (Union Legislation)	Standard
2014/53/EU Radio Equipment	EN 301 511 v12.5.1 / EN 301 908-1 v13.1.1 / EN 301 908-2 v13.1.1 EN 301 908-13 v13.1.1 / EN 303 413 v1.1.1 ETSI EN 301 489-1 v2.2.3 ETSI EN 301 489-3 v2.3.0 ETSI EN 301 489-17 v3.2.5 EN 61326-1:2013 ETSI EN 300 328 v1.9.1 EN 61010-1:2010/A1:2019
2014/34/EU ATEX	EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-18:2015/A1:2017
2011/863/EU RoHS (including all amendments)	EN IEC 63000:2018

I, the undersigned, hereby declare, by sole responsibility of the manufacturer that the design of the equipment specified above conforms to the above Directives and Standards, and the fulfilment of essential safety requirements and essential requirements set out in the Directives have been demonstrated.

Authorized Signatory

Signature: 
 Name: Samuel Ramey
 Title: Director of Engineering
 Date: 5/12/2023

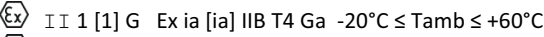



UK DECLARATION OF CONFORMITY

We the manufacturer:

Manufacturer's Name:	Teledyne ISCO
Manufacturer's Address:	4700 Superior Street, Lincoln, NE 68504 USA

Declare, under our sole responsibility that the following equipment:

Product Model:	DuraTracker Ex Logger
Object of Declaration:	Water flow logger for recording and transmitting data. The logger has 310 Ex, 350 Ex, 360 Ex sensors, modem options.
ATEX Marking: DuraTracker Ex without Modem DuraTracker Ex with Modem	 
EU Type-examination Certificate:	UL23UKEX2782X
Notified Body:	UL LLC 333 Pfingsten Rd Northbrook, IL 60062 USA
Notified Body Number:	0539
Quality Assurance Notification Number:	SGS ATEX 4270

Is designed and manufactured in compliance with the following applicable Regulations and Standards:

Regulation (Statutory Instrument)	Standard
UKSI 2017/1206 Radio Equipment	EN 301 511 v12.5.1 / EN 301 908-1 v13.1.1 / EN 301 908-2 v13.1.1 EN 301 908-13 v13.1.1 / EN 303 413 v1.1.1 ETSI EN 301 489-1 v2.2.3 ETSI EN 301 489-3 v2.3.0 ETSI EN 301 489-17 v3.2.5 EN 61326-1:2013 ETSI EN 300 328 v1.9.1 EN 61010-1:2010/A1:2019
UKSI 2016/1107 (as amended by UKSI 2019/696) Potentially Explosive Atmospheres	EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-18:2015/A1:2017
UKSI 2012/3032 RoHS	EN IEC 63000:2018

I, the undersigned, hereby declare, by sole responsibility of the manufacturer that the design of the equipment specified above conforms to the above Regulations and Standards, and the fulfilment of essential safety requirements and essential requirements set out in the Regulations have been demonstrated.

Authorized Signatory

Signature: _____


Samuel Ramey

Name: _____

Director of Engineering

Title: _____

Date: _____

5/12/2023



TELEDYNE ISCO
Everywhereyoulook™

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Lincoln, Nebraska 68504 USA
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www.teledyneisco.com

产品中有毒有害物质或元素的名称及含量
Name and amount of Hazardous Substances or Elements in the product

部件名称 Component Name	有毒有害物质或元素 Hazardous Substances or Elements					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二联苯 (PBDE)
线路板 Circuit Boards	O	O	O	O	O	O
接线 Wiring	O	O	O	O	O	O
接头 Connectors	O	O	O	O	O	O
电池 Battery	O	O	O	O	O	O

产品中有毒有害物质或元素的名称及含量：Name and amount of Hazardous Substances or Elements in the product

O: 表示该有毒有害物质在该部件所有均质材料中的含量均在ST/ 标准规定的限量要求以下。

O: Represent the concentration of the hazardous substance in this component's any homogeneous pieces is lower than the ST/ standard limitation.

X: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出ST/ 标准规定的限量要求。

(企业可在此处，根据实际情况对上表中打“X”的技术原因进行进一步说明。)

X: Represent the concentration of the hazardous substance in this component's at least one homogeneous piece is higher than the ST/ standard limitation.

(Manufacturer may give technical reasons to the "X"marks)

环保使用期由经验确定。

The Environmentally Friendly Use Period (EFUP) was determined through experience.

生产日期被编码在系列号码中。前三位数字为生产年(221 代表 2021 年)。随后的一个字母代表月份：

A 为一月，B 为二月，等等。

The date of Manufacture is in code within the serial number. The first three numbers are the year of manufacture (221 is year 2021) followed by a letter for the month. "A" is January, "B" is February and so on.