

GT2

Product Regulatory Guide



Because field operations don't have to be chaotic



GT2 Product Regulatory Guide

DRAFT

Geoforce Inc.

Document Number: HW-IS-0-0094

Guide Revision: 200320a

20-March-2020

ABOUT GEOFORCE

Combining a cloud-based software platform with ruggedized GPS tracking devices and global satellite and cellular networks, Geoforce's Track and Trace solutions bring control to often chaotic field operations.

With over 1,300 customers tracking more than 160,000 assets in over 90 countries, the company operates the world's largest network of connected field equipment within the oil & gas industry, and its solutions are used in many other field operations intensive industries, including agriculture, construction, mining, transportation, logistics, and rail. Headquartered in Dallas, Texas, Geoforce has R&D offices in Bozeman, Montana, sales and support offices in Houston, Texas, Denver, Colorado, Arroyo Grande, California, Macae, Brazil, Melbourne, Australia, and Calgary, Canada, and sales and service professionals in West Texas and South Louisiana.

For more information, visit www.geoforce.com.

APPLICABLE MODELS

This regulatory guide is applicable to the following GT2 model codes:

GT2c

GT2C-SL-EX
GT2C-SL-NE

GT2s

GT2S-IRD-SL-EX
GT2S-IRD-SL-NE

GT2h

GT2H-IRD-SL-EX

NOTICES

SUMMARY OF WARRANTY TERMS

1. - GENERAL STATEMENT OF WARRANTY

Geoforce warrants that for one year from that date that title passes to Customer for Hardware (the "Warranty Period"), the Hardware sold will be free of defects in materials and workmanship when installed, operated, and serviced in strict accordance with Geoforce's and the manufacturer's requirements.

Geoforce will, at its sole option and at no charge to Customer, refund, repair, or send a replacement for the Hardware to the location of initial export from a Geoforce affiliate noting Customer as the importer/exporter of record (if outside the US).

2. - EXCEPTIONS FROM WARRANTY COVERAGE

This warranty does not cover: (a) Hardware that has been tampered with or serviced without Geoforce's authorization, (b) Hardware that has been lost or stolen through no fault of Geoforce, (c) Hardware that is designed to be consumable or (d) Hardware subjected to abuse, misuse, or neglect, or (e) Hardware that has been deemed failed due to improper operational use or mis-matched to ineffective use-case by the customer.

Geoforce does not warrant that the hardware will meet customer's needs or expectations or that any piece of hardware will work on any particular networks.

ALL OTHER WARRANTIES ARE EXPRESSLY DISCLAIMED INCLUDING THE WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

3. - ADDITIONAL WARRANTY TERMS

See the fully executed Geoforce purchase agreement and Statement of Warranty for a complete statement of warranty terms.

REGULATORY COMPLIANCE STATEMENT

The customer is solely responsible for compliance with all legal, regulatory, and safety-related requirements concerning the products and any use of Geoforce products in the customer's applications, not withstanding any applications related information or support that may be provided by Geoforce.

RIGHT TO CHANGE MATERIAL

The information and specifications in this document are subject to change without notice.

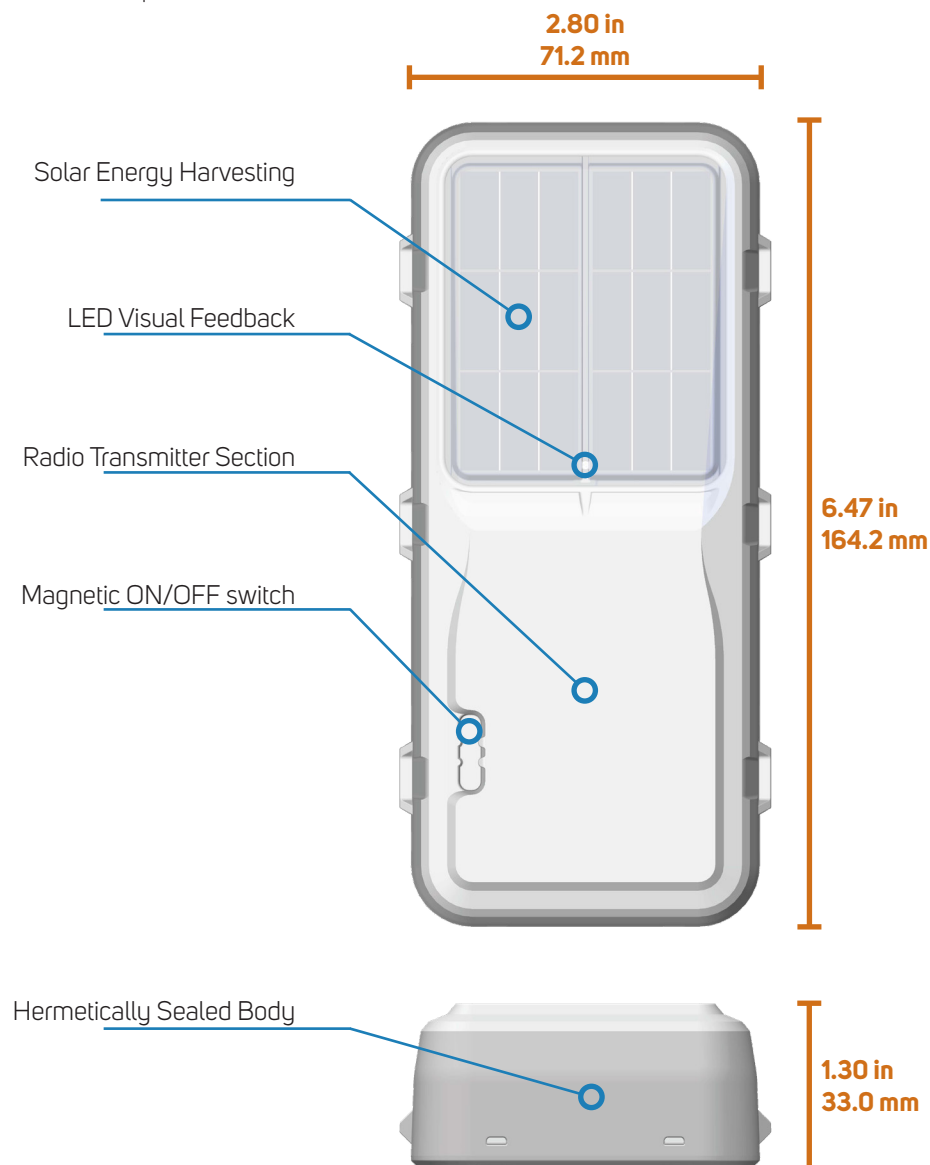
COPYRIGHT NOTICE

Copyright © 2020 Geoforce Inc. - All Rights Reserved. No portion of this media may be reproduced in any form without permission from Geoforce, except as permitted by U.S. copyright law. For permissions contact Geoforce at www.geoforce.com.

ABOUT THE GEOFORCE GT2

The Geoforce GT2 is the 4th generation GPS tracker in the proven Geoforce GT series of world-leading industrial tracking devices. The GT2 is a single-device platform available in three configurations: Satellite-only, Cellular-only, and Hybrid (Sat + Cell). All variants have a dual power system (solar plus primary battery), providing 100% global asset visibility, while operating in the world's harshest environments.

The GT2's rigid design and manufacturing processes provide unmatched and proven durability in the field. The dual battery combination ensures a service life of 10+ years. Combining advanced wireless technologies and smart power management, the GT2 is the most rugged and reliable device family of trackers ever produced.



Shipping and Transport Guidance

TRANSPORT AND EXPORT CONTROL CODES

ECCN - EXPORT CONTROL CLASSIFICATION NUMBER

5A991.B.3: TELECOMMUNICATION EQUIPMENT, NOT CONTROLLED BY 5A001 "TELECOMMUNICATIONS SYSTEMS, EQUIPMENT, COMPONENTS AND ACCESSORIES"

HTS/HS - INTERNATIONAL HARMONIZED TARIFF CODE

8517.62.0050: DIGITAL (MODEMS, SWITCHES, ETC.) AND RF PRODUCTS

FOR WARRANTY RETURNS: 9801.10.0000

US CENSUS BUREAU "SCHEDULE B" CODE

8517.62.0050: DIGITAL (MODEMS, SWITCHES, ETC.) AND RF PRODUCTS

FOR WARRANTY RETURNS: 9801.10.0000

ITAR - INTERNATIONAL TRAFFIC IN ARMS REGULATIONS

The Geoforce GT2 is not classified as a "defense article" or as "dual use" and does not require an export license under ITAR regulations.

GT2 OPERATIONS DURING AIRLINE SHIPMENTS (FUTURE)

The GT2 has been tested and evaluated under normal operations to DO-160G guidelines for non-interference with aircraft systems during aircraft transport. Normal operations with a single installed unit are typically acceptable.

For bulk shipments the GT2 is shipped in radio silence mode.

ENABLING RADIO SILENCE MODE

Firmly insert and leave the GT2 magnet pull tab into the magnet slot on the GT2 upper housing to initiate Radio Silence.

This magnet insertion aborts any ongoing radio message event and prevents any new radio message events from starting. This is equivalent to the OFF state.

NOTE: The BLE low-power communications interface remains active while in the OFF state. During this state the maximum ERP wireless power emitted by the GT2 is 2.2mW (3.39dBm) at 0.02% duty cycle.

For questions or any additional information related to GT2 operation during airline shipments and operations, contact Geoforce.



GT2 OPERATIONS NEAR EXPLOSIVES (FUTURE)

The GT2 has been tested and evaluated to DOE M 440.1-1 guidelines for explosives safety while being in proximity to explosives and explosive detonators.

For questions or any additional information related to GT2 operation with explosives, contact Geoforce.

Battery Transport and Disposal Guidance

LITHIUM BATTERY REGULATORY INFORMATION



LITHIUM METAL PRIMARY CELLS

Lithium Battery Cell Type	Lithium Metal Batteries Contained in Equipment
Cell Chemistry	Lithium-Thionyl-Chloride
Individual Cell Lithium Mass	0.66 grams
Cell Installation Method	4 cells, permanently installed, non-serviceable
IATA Regulated Packing Instruction	PI 970, Section 2

NOTE: GT2 products are packaged from Geoforce in packaging acceptable for air cargo shipments of lithium batteries contained in equipment. If the GT2 product is repackaged it is the responsibility and liability of the shipper to ship according to all applicable laws and regulations for shipping lithium batteries.

Battery manufacturer's SDS is available upon request.

LITHIUM BATTERY DISPOSAL GUIDANCE

Electrochemical primary cells and batteries require special handling for disposal. Disposal requirements are region specific and many waste handlers have further requirements that need to be followed when disposing of cells or batteries.

Primary cells and batteries can be recycled or disposed of as a hazardous waste.

General best practices that should be followed when packaging a cell or battery for disposal or recycling include:

- Secure terminals to prevent short circuiting
- Package each cell or battery in a manner that prevents shorting with the container or another cell/battery
- Package leaking cells/batteries in a manner that contains the leak
- Use packaging material that is in compliance with local regulations
- All dented battery cells should be disposed, regardless of electrolyte leakage. Denting of sides or ends increases the likelihood of developing an internal short circuit at a later time.

Refer to the battery manufacturer's SDS for additional safety and disposal information.

ROHS (2011/65/EC, EU 2015/863), WEEE (2012/19/EU) GUIDANCE



The Geoforce GT2 is compliant with the Restriction of Hazardous Substances (RoHS) Directive (2011/65/EU, EU 2015/863). This signifies that all Geoforce GT2 units are RoHS compliant for restricted and hazardous substances. The RoHS Directive prevents all new electrical and electronic equipment placed on the market in the European Economic Area from containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, poly-brominated biphenyls (PBB) and poly-brominated diphenyl esters (PBDE).



The Geoforce GT1 is compliant with the Waste Electrical and Electronic Equipment (WEEE) Directive (2012/19/EU) disposal symbol and is classified in the WEEE Directive as Category 9 — EEE: Monitoring and Control Instruments. This signifies that all Geoforce GT2 units are classified as Electrical and Electronic Equipment (EEE) and should NOT be disposed of in municipal waste areas. All local regulations must be followed in the disposal and disposition process of EEE.



RF Regulatory Notices

RF TECHNICAL DECLARATIONS

Meets FCC Part 15 and 25 regulations, Canada type approval, CISPR Publication 22, and Radio Eqmt. Directive 2014/53/EU

- Satellite Transmitter Maximum ERP and Operating Frequency
1.479 W (31.7 dBm), 1616MHz to 1626.5 MHz
- Bluetooth LE Transmitter Maximum ERP and Operating Frequency
2.2 mW (3.39 dBm), 2402 - 2480 MHz
- GPS Receiver Frequencies Utilized
1575.42 MHz, 1227.60 MHz



ID DECLARATIONS

GT2c PRODUCTS

RADIO CONFIG MODEL: OWAC00
HOST FCCID: OWA00GT2X
HOST ICID: 10540A-00GT2X

CONTAINS FCCID(s):

2ANP000NRF9160
2ABPY-5B9198

CONTAINS ICID(s):

24529-NRF9160
11685A-5B9198

GT2s PRODUCTS

RADIO CONFIG MODEL: OWAS86
HOST FCCID: OWA00GT2X
HOST ICID: 10540A-00GT2X

CONTAINS FCCID(s):

Q639603

CONTAINS ICID(s):

4629A-9603

GT2h PRODUCTS

RADIO CONFIG MODEL: OWAH86
HOST FCCID: OWA00GT2X
HOST ICID: 10540A-00GT2X

CONTAINS FCCID(s):

2ANP000NRF9160
Q639603

CONTAINS ICID(s):

2ABPY-5B9198
24529-NRF9160
4629A-9603
11685A-5B9198

REGULATORY NOTICES

UNITED STATES FCC PART 15/25

FCC ID: OWA00GT2X

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by un-authorized modifications to this equipment. Such modifications could void the user's authority to operate the equipment.

NOTE: 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 in-stalled 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.

NOTE: 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.

FCC RF RADIATION EXPOSURE STATEMENT

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.



RF Regulatory Notices

REGULATORY NOTICES



CANADA ISED

ICID:10540A-00GT2X

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (EIRP) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.



BRAZIL ANATEL (FUTURE)

ANATEL HOMOLOGATION NO: NNNN-NN-NNNN

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistemas operando em caráter primário.

O produto é alimentado por bateria interna.

Sistemas operando na faixa de 2400 MHz a 2483,5 MHz, só poderão operar com potência e.i.r.p. superior a 400 mW, em localidades com população inferior a 500.000 habitantes.

Caso o equipamento utilize antenas de transmissão com ganho direcional superior a 6 dBi, devem ter a potência de picomáxima na saída do transmissor reduzida para valores abaixo daqueles especificados nos incisos VI, VII e VIII do art. 40 e no inciso II do art. 41 (da Resolução no 506), pela quantidade em dB que o ganho direcional da antena exceder a 6 dBi.

Sistemas operando na faixa de 2400-2483,5 MHz e utilizados exclusivamente em aplicações ponto-a-ponto do serviço fixo podem fazer uso de antenas de transmissão com ganho direcional superior a 6 dBi, desde que potência de pico máxima na saída do transmissor seja reduzida de 1 dB para cada 3 dB que o ganho direcional da antena exceder a 6 dBi.

A descrição sobre as semelhanças e diferenças entre os produtos encontra-se no campo 16 do RACT.



MEXICO IFETEL/NOM (FUTURE)

**IFETEL HOMOLOGATION NO: RCSGEGTNN-NNNN
NOM-121 CERTIFICATE NO: NNNN01CONNNN**

La operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Safety Regulatory Guidance

ORDINARY LOCATIONS SAFETY (FUTURE)

All Geoforce GT2 products are conformant, recognized and certified in a variety of industrial operating environments including ordinary locations.

Conforms to:

IEC 62368-1:2018 (for ordinary locations safety)
EN 62368-1: 2018 (for ordinary locations safety)
ANSI / UL 62368-1: 2014 (for ordinary locations safety)

Certified to:

CAN / CSA C22.2 No. 62368-1-2014 (for ordinary locations safety)

HAZARDOUS LOCATIONS SAFETY (FUTURE)

In addition to Ordinary Locations operations, the following GT2 model codes are conformant, recognized, and certified for full time operation in classified Hazardous Locations:

GT2c

GT2C-SL-EX

GT2s

GT2S-IRD-SL-EX

GT2h

GT2H-IRD-SL-EX

These device models are certified Intrinsically Safe for operation in Class I: Division 1, Class I: Division 2, and Zone O, 1 and 2 environments for all Gas Groups.

Conforms To:

IEC 60079-0: 2011 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)
IEC 60079-11: 2011 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)
EN 60079-0: 2012 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)
EN 60079-11: 2012 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)
ANSI / UL 913: 2013 (for hazardous locations safety
Class I: Division 1, Groups A-D classification)
ANSI / UL 60079-0: 2013 (for hazardous locations safety
AEx Class I: Zone O, Group IIC classification)
ANSI / UL 60079-11: 2013 (for hazardous locations safety
AEx Class I: Zone O, Group IIC classification)

Certified To:

CAN / CSA C22.2 No. 157-92: R2016 (for hazardous locations safety
Class I: Division 1, Groups A-D classification)
CAN / CSA C22.2 No. 60079-0: 2011 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)
CAN / CSA C22.2 No. 60079-11: 2014 (for hazardous locations safety
Ex Class I: Zone O, Group IIC classification)

Safety Regulatory Guidance

HAZARDOUS LOCATIONS MARKINGS APPLIED (FUTURE)

INTRINSICALLY SAFE

IECEX/INMETRO

Ex ia IIC T4 Ga

$-40^{\circ}\text{C} < T_{\text{amb}} < +75^{\circ}\text{C}$ IP68

IECEX CERTIFICATE NUMBER: ETL NN.NNNNX
INMETRO CERTIFICATE NUMBER: NCC NN.NNNNX

EU (ATEX)

CE NNNN Ex II 1 G Ex ia IIC T4 Ga

$-40^{\circ}\text{C} < T_{\text{amb}} < +75^{\circ}\text{C}$ IP68

ATEX CERTIFICATE NUMBER: ITSNNATEXNNNNNX

USA/CANADA

Class I: Division 1 | Groups A-D T4

US: Class I: Zone O | AEx ia IIC T4 Ga

US/CANADA LISTING NUMBER: NNNNNNN

CAN: Class I: Zone O | Ex ia IIC T4 Ga

$-40^{\circ}\text{C} < T_{\text{amb}} < +75^{\circ}\text{C}$ IP68

MARKINGS SENTENCES BREAKDOWN (FUTURE)

Ex:

Explosion Protection "Ex" for equipment certified for Hazardous Locations

Equipment Group:

"II" for non-mining applications

Equipment Category:

"1" for equipment suitable for Gas, Vapor, Mist and Dust Environments

Protection Method:

"ia" for Intrinsic Safety with two fault protection

Gas Group:

"IIC" for all Gas Groups (IIA, IIB and IIC)

Temperature Classification:

"T4"

Equipment Protection Level:

"Ga" Very high protection suitable for Zone O, 1, and 2 Gas Environments

Ambient Temperature Range:

$-40^{\circ}\text{C} < T_{\text{amb}} < +75^{\circ}\text{C}$ The device is approved for EX operation within this temperature range.

Safety Regulatory Guidance

HAZARDOUS LOCATIONS REGULATORY NOTICES (FUTURE)

EX WARNING FOR INSTALLS WHERE METAL TO METAL CONTACT BETWEEN THE GT2 BEZEL AND ITS MOUNTING SURFACE IS NOT POSSIBLE:

WARNING: THE MEASURED CAPACITANCE OF THE WORST CASE UNEARTHED METALLIC BEZEL, BASEPLATE AND NON-METALLIC SPACER ACCESSORY ASSEMBLY WAS DETERMINED TO BE 32PF PER THE MEASUREMENT OF CAPACITANCE TEST PER CLAUSE 26.14 OF IEC 60079-0: 2011. IT IS THE INSTALLER'S RESPONSIBILITY TO DETERMINE SAFE USE WHEN INSTALLING IN A HAZARDOUS LOCATION WHERE THE ASSEMBLY MUST BE ISOLATED FROM ITS MOUNTING SURFACE. WHERE ISOLATION IS NOT USED THE PRODUCT ASSEMBLY SHALL MAINTAIN CONDUCTIVE CONTACT WITH ITS MOUNTING SURFACE. REFER TO THE PRODUCT'S INSTRUCTIONS MANUAL FOR PROPER GROUNDING TECHNIQUES AND IEC TS 60079-32-1 FOR FURTHER GUIDANCE.

PAINTING OR POWDER COATING OF THE METAL BEZEL IS PERMITTED AS LONG AS THE MAXIMUM COATING THICKNESS IS BELOW 0.008" (0.20MM)

AVERTISSEMENT: LA CAPACITÉ MESURÉE CAS LE PLUS DÉFAVORABLE UNEARTHED METALLIC LUNETTE, BASEPLATE ET NON MÉTALLIQUES SPACER ENSEMBLE ACCESSOIRE A ÉTÉ DÉTERMINÉE À 32pf PAR LA MESURE DE LA CAPACITÉ D'ESSAI PAR CLAUSE 26.14 DE LA CEI 60079-0: 2011. IL EST LA RESPONSABILITÉ DE L'INSTALLATEUR POUR DÉTERMINER L'UTILISATION SÉCURITAIRE LORS DU MONTAGE DANS UN EMPLACEMENT DANGEREUX OÙ L'ENSEMBLE DOIT ÊTRE ISOLÉ DE SON MONTAGE EN SURFACE. OÙ L'ISOLEMENT EST PAS UTILISER L'ASSEMBLÉE DES MARCHANDISES ILS MAINTIENNENT LE CONTACT CONDUCTEUR AVEC SA SURFACE DE MONTAGE. CONSULTER LES INSTRUCTIONS LE MANUEL DU PRODUIT POUR LES TECHNIQUES DE TERRE CORRECTE ET CEI TS 60079-32-1 POUR PLUS DE CONSEILS.

EX WARNING FOR ELECTRO-STATIC DISCHARGE HAZARDS FROM SURFACE RUBBING AND CLEANING ACTIVITIES:

ESD WARNING: RISK OF ELECTRO-STATIC DISCHARGE! TO REDUCE THE RISK OF IGNITION DUE TO ELECTROSTATIC DISCHARGE, AVOID CONTACT WITH THIS PRODUCT OR PERSONNEL SHOULD PROPERLY GROUND THEMSELVES PRIOR TO TOUCHING SURFACES OF THIS PRODUCT WHILE AN EXPLOSIVE OR HAZARDOUS ENVIRONMENT IS PRESENT.

ESD AVERTISSEMENT: RISQUE DE LA DÉCHARGE ÉLECTROSTATIQUE! ÉVITER LE CONTACT AVEC L'UNITÉ OU PERSONNEL DEVRAIT SE TERRE APPROPRIÉE AVANT DE TOUCHER SURFACES DE CE PRODUIT TOUT UN ENVIRONNEMENT EXPLOSIF OU DANGEREUX EST PRÉSENT. LAVÉ EXCLUSIVEMENT AVEC UN CHIFFON HUMIDE. NE PAS UTILISER DE NETTOYANTS CHIMIQUES.

Safety Regulatory Guidance

MANUFACTURER'S REGULATORY NOTICES (FUTURE)

MANUFACTURER'S POSTAL ADDRESS INFORMATION

GEOFORCE INC.
5830 GRANITE PARKWAY, SUITE 1200
PLANO TX 75024
USA



NOTES

[illegible]



Copyright © 2020, Geoforce Inc.

www.geoforce.com

5830 Granite Parkway, Suite 1200
Plano, TX 75024

Because field operations don't have to be chaotic