ATEX IECEx SIL 2

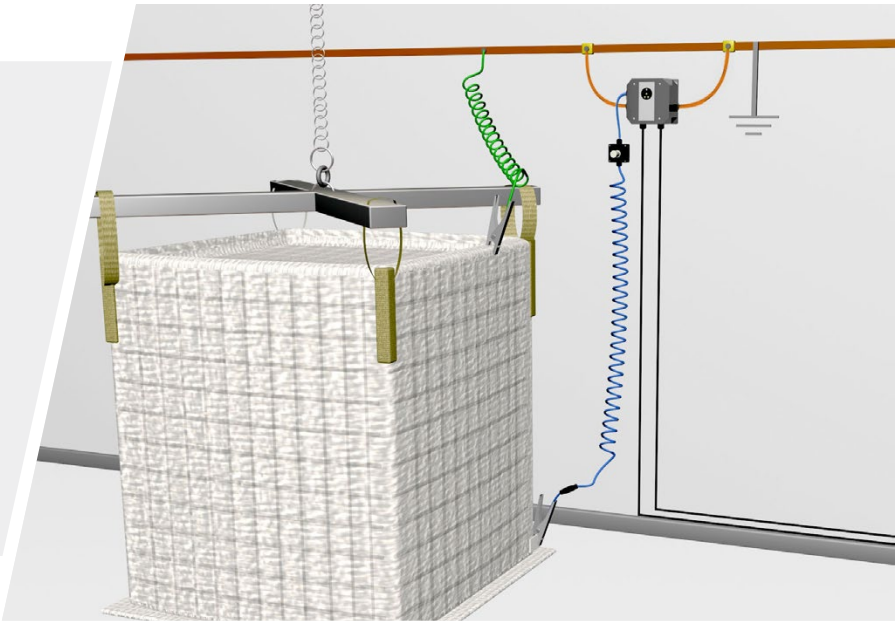
Global certification available

Online Inquiry >

Earth-Rite® II FIBC

Static Grounding Protection for Type C FIBCs

Earth-Rite II FIBC *Type C Static Grounding System*



Typical Earth-Rite II FIBC *installation consisting of two grounding clamps that establish a continuous ground monitoring loop with the site's locally verified true earth ground source.*

NFPA 77 "Recommended Practice on Static Electricity" highlights Flexible Intermediate Bulk Containers (FIBC) as being capable of accumulating electrostatic charge during product transfer operations.

NFPA 77 16.6.3 states "FIBCs should be tested in accordance with the requirements and test procedures specified in IEC 61340-4-4* and in accordance with their intended use before being used in hazardous environments."

NFPA 77 also states that Type C FIBC should be grounded during bag filling and emptying operations.

The Earth-Rite® II FIBC is a grounding system for Type C bags that are manufactured in accordance with IEC 61340-4-4. It consists of a grounding system and a pair of grounding clamps.

If the resistance through the conductive or static dissipative elements of the Type C bag is less than the required threshold, the ground status indicators switch from red to pulsing green.

It should be noted that the grounding system is not a substitute for the test methods outlined in IEC 61340-4-4. The grounding system indicates that the threshold resistance of the conductive dissipative / components of the bag are in line with the specified resistance range and that a ground loop has been established with the site's locally verified ground source.

The static dissipative performance of the bag is the sole responsibility of the bag manufacturer and the site owner.

*** Recommended upper monitoring resistance level:-**

- NFPA 77 Recommended Practice on Static Electricity, states that the resistance through a Type C FIBC bag should not exceed 1 x 10^7 Ohms (10 Meg Ohm).
- IEC 61340-4-4 Electrostatics – Part 4-4: Standard test methods for specific applications – Electrostatic classification of flexible intermediate bulk containers (FIBC), states that the resistance through a Type C FIBC bag should not exceed 1 x 10^8 Ohms (100 Meg Ohm).

The Earth-Rite II FIBC can be installed in Zoned / Classified combustible dust atmospheres. If gas and vapour atmospheres are present an Ex(d) / XP, Zone 1 / Class I, Div. 1 system may be specified.

The Earth-Rite II FIBC includes:

- Static Dissipative GRP Enclosure with Intrinsically Safe Monitoring Circuits.
- FIBC Grounding Clamp with single conductor Hytrel® Protected Cable.
- Junction Box with Stowage Pin for stowing FIBC Grounding Clamp.

Earth-Rite® II FIBC

Features

Continuous Ground Loop Monitoring

The grounding system clamp, which must be connected to the identified grounding tab on the bag, provides an intrinsically safe signal that returns to the grounding system via a locally verified ground source.

This circuit establishes a ground monitoring resistance loop so that when the resistance threshold is below (100 Meg Ohm) or (10 Meg Ohm) the grounding system will go permissive. When the permissive condition is met the ground status indicators switch from red to pulsing green. The most consistent method of achieving a ground return path is with a second grounding clamp supplied with the system. This must be connected to a separate identified grounding tab connection point, preferably to the opposite end of the bag to which the system grounding clamp is connected.

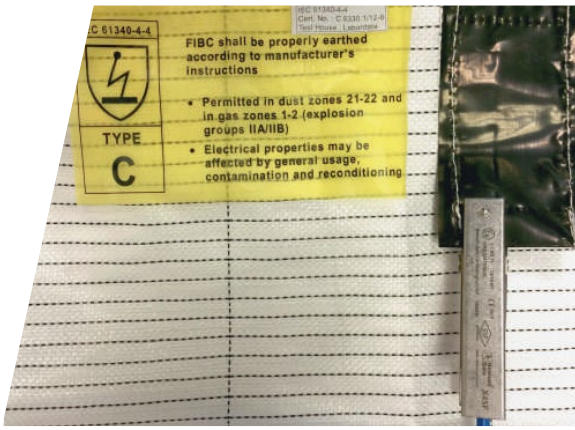
The locally verified and maintained/tested ground source must be verified by the site owner/responsible as being connected to the general mass of the earth suitable to dissipate static charges. (Contact Newson Gale for further details).

Earth-Rite II FIBC stainless steel grounding clamp
with Quick Connect and optional lengths of Hytrel protected single core cable included

Dry Contacts

Earth-Rite system output contacts can be interlocked with process equipment and/or strobes. Interlocking the grounding system with the process equipment can enhance the Standard Operating Procedures (SOP) before the movement of material can take place. Interlocking with strobes provides personnel with a wider field of view that the grounding SOP is underway.

On rare occasions grounding clamps can be removed by operators or lose contact with equipment due to unstable connections being made initially or overstretching of the cable connected to the grounding clamp. The grounding system can, via the output contacts, halt the process. However, please be aware that the movement of the product may not stop even though the equipment has halted. This could lead to the continued generation of static charge. In such circumstances it is the responsibility of the site operator to ensure their SOPs cater for such scenarios. This assumes the grounding system has been installed in accordance with the Instruction Manual. If you do not have access to an Instruction Manual contact Newson Gale.



Loading Operations:

Varying cable lengths are available to attach the clamp to the FIBC bag. However, if the bag loading / unloading process is aggressive and could cause the grounding clamp connection to be compromised irrespective of cable length, an alternative means of grounding the bag will need to be sourced.

Earth-Rite® II FIBC

Technical Specification
GRP (Class I, II, III - Div. 2 Installations)

Power Supply & Monitoring-Unit

Power Supply	115 V or 230 V AC, 50-60 Hz 12 V or 24 V DC
Power Rating	10 watt
Ambient Temperature Range	-13°F to +131°F (-25°C to +55°C)
Ingress Protection	Type 4X (IP 66)
Weight	3.3 lbs (1.5 Kg) nett
Construction	Carbon-Loaded GRP
Monitoring Circuit	Intrinsically safe
Operational Monitoring Resistance of Bag	Nominally $\leq 1 \times 10^8$ or 1×10^7 Ohm (±10%)
Output Relay Contact Rating	2 off change-over dry contacts, 250 V AC, 5 A, 500 VA max resistive, 30 V DC, 2 A, 60 W max resistive
Cable Entries	7 x M20 (2 x plugged)

Junction Box/Stowage Point

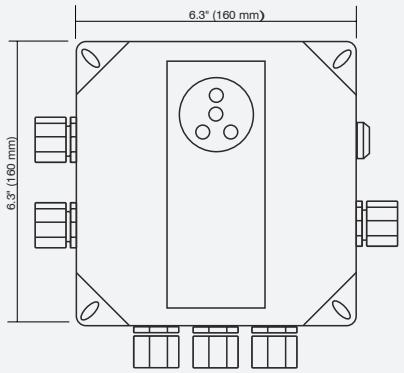
Enclosure Material	GRP with carbon loading
Terminals	2 x AWG #14 conductor capacity
Stowage Device	Insulated universal stowage pin
Cable Entries	1 x M20
Clamp Cable Connection	Quick Connect

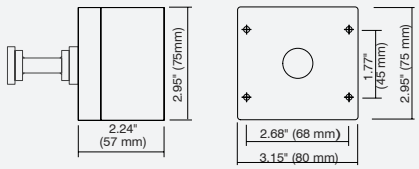
Grounding Clamp

Clamp Design	1 pole with single stainless steel contact
Body	Stainless Steel (SS grade: 304)
ATEX / FM / IECEx Certification:	Ex II 1 GD T6 (Assessed to EN 13463-1 : 2009) ATEX certificate number: Sira 02ATEX9381 IECEx Ex h IIC T6 Ga Ex h IIIC T85°C Da Ta = -40°C to +60°C IECEx EXV 20.0033

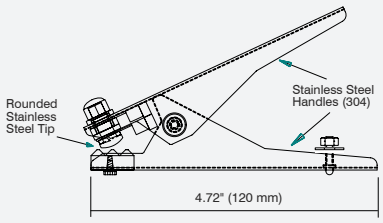
Spiral Cable

Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	1 x AWG #12 steel
Length	3 m (10 ft), 5 m (16 ft), 10 m (32 ft) or 15 m (50 ft) 2 pole Cen-Stat blue spiral cable with Hytrel coating which has colour, UV protective and static dissipative additives





Simple Apparatus
GRP junction box with nylon grounding clamp stowage pin



FIBC Monitoring Clamp

Earth-Rite® II FIBC

Hazardous Location Approvals

North America:	Europe / International: Version Available
NEC 500 / CEC (Class & Division)	***IECEx***
Associated Equipment [Ex ia] for use in Class I, Div. 2, Groups A, B, C, D Class II, Div. 2, Groups E, F, G Class III, Div. 2 Providing Intrinsically Safe circuits for Class I, Div. 1, Groups A, B, C, D Class II, Div. 1, Groups E, F, G Class III, Div. 1 When installed per Control Dwg; ERII-Q-10165 cCSAus Ta = -25°C to +55°C (-13°F to +131°F) OSHA recognised NRTL: CSA	Ex ec nC [ia] IIC T4 Gc(Ga) (gas & vapour) Ex tb IIIC T70ºC Db (combustible dusts) Ta = -40ºC to +55ºC IECEx EXV 19.0059X IECEx Certifying Body: ExVeritas ***ATEX*** ⟨Ex⟩ II 3(1) G Ex II 2D Ex ec nC [ia] IIC T4 Gc(Ga) Ex tb IIIC T70ºC Db Ta = -40ºC to +55ºC ExVeritas 19ATEX0545X ATEX Notified Body: ExVeritas
NEC 505 & 506 (Class & Zoning) Class I, Zone 2, (Zone 0), AEx nA[ia] IIC T4 (gas & vapour) Class II, Zone 21, AEx tD[iaD] 21, T70ºC (combustible dusts)	
CEC Section 18 (Class & Zoning) Class I, Zone 2 (Zone 0) Ex nA[ia] IIC T4 DIP A21, IP66, T70ºC	

Additional Certification

Safety Integrity Level:	SIL 2 (in accordance with IEC/EN 61508)
EMC Tested:	to EN 61000-6-3, EN 61000-6-2 FCC - Part 15 (Class B)

Earth-Rite® II FIBC

Technical Specification
XP (Class I, II, III - Div. 1 Installations)

Monitoring unit

Power Supply	115 V or 230 V AC, 50-60 Hz 12 V or 24 V DC
Power Rating	10 watt
Ambient Temperature Range	-40ºF to +122ºF (-40ºC to +50ºC)
Ingress Protection	Type 4X (IP 66)
Weight	9.9 lbs (4.5 kg) nett
Construction	Copper-free cast aluminium
Monitoring Circuit	Intrinsically safe
Operational Monitoring Resistance of Bag	Nominally ≤ 1 x 10^8 or 1 x 10^7 Ohm (±10%)
Output Relay Contact Rating	2 off change-over dry contacts, 250 V AC, 5 A, 500 VA max resistive 30 V DC, 2 A, 60 W max resistive
Cable Entries	7 x ¾" NPT (supplied with 4 stopper plugs)

Junction Box/Stowage Point

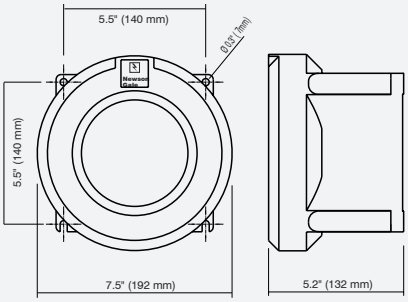
Enclosure Material	GRP with carbon loading
Terminals	2 x AWG #14 conductor capacity
Stowage Device	Insulated universal stowage pin
Cable Entries	1 x M20
Clamp Cable Connection	Quick Connect

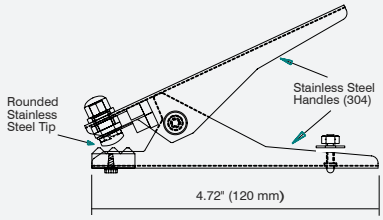
Grounding Clamp

Clamp Design	1 pole with single stainless steel contact
Body	Stainless Steel (SS grade: 304)
ATEX / FM / IECEx Certification:	Ex II 1 GD T6 (Assessed to EN 13463-1 : 2009) ATEX certificate number: Sira 02ATEX9381 IECEx Ex h IIC T6 Ga Ex h IIIC T85°C Da Ta = -40°C to +60°C IECEx EXV 20.0033

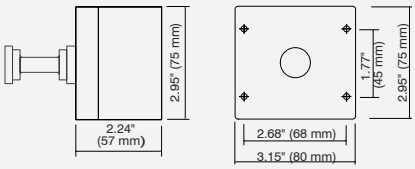
Spiral Cable

Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	1 x AWG #12 steel
Length	3 m (10 ft), 5 m (16 ft), 10 m (32 ft) or 15 m (50 ft) 2 pole Cen-Stat blue spiral cable with Hytrel coating which has colour, UV protective and static dissipative additives





FIBC Monitoring Clamp



Simple Apparatus
GRP junction box with nylon grounding clamp stowage pin

Earth-Rite® II FIBC

Hazardous Location Approvals

North America:	Europe / International: Version Available
NEC 500 / CEC (Class & Division)	***IECEx***
Associated Equipment [Ex ia] for use in Class I, Div. 1, Groups A, B, C, D Class II, Div. 1, Groups E, F, G Class III, Div. 1 Providing intrinsically safe circuits for Class I, Div. 1, Groups A, B, C, D Class II, Div. 1, Groups E, F, G Class III, Div. 1 When installed per Control Dwg; ERII-Q-10110 cCSAus Ta = -40°C to +50°C (-40°F to +122°F) OSHA recognised NRTL: CSA	Ex d[ia] IIC T6 Gb(Ga) (gas & vapour) Ex tb IIIC T80ºC IP66 Db (combustible dusts) Ta = -40ºC to +55ºC IECEx EXV 19.0052 IECEx Certifying Body: ExVeritas ***ATEX*** ⟨Ex⟩ II 2(1)GD Ex d[ia] IIC T6 Gb(Ga) Ex tb IIIC T80ºC IP66 Db Ta = -40ºC to +55ºC ExVeritas 19ATEX0537 ATEX Notified Body: ExVeritas
NEC 505 & 506 (Class & Zoning) Class I, Zone 1 [0] AEx d[ia] IIC T6 Gb(Ga) (gas & vapour) Class II, Zone 21 [20] AEx tD [iaD] 21 T80°C (combustible dusts)	
CEC Section 18 (Class & Zoning) Class I, Zone 1[0] Ex d[ia] IIC T6 Gb(Ga) DIP A21, IP66, T80ºC	

Additional Certification

Safety Integrity Level:	SIL 2 (in accordance with IEC/EN 61508)
EMC Tested:	to EN 61000-6-3, EN 61000-6-2 FCC - Part 15 (Class B)

System Options

Universal Resistance Tester (URT)

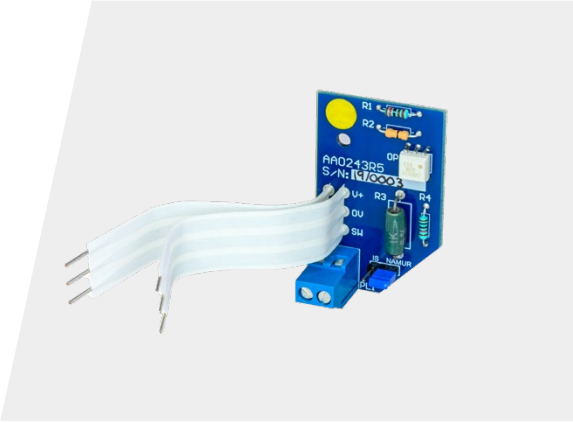
The URT is designed to provide users of Newson Gale **Earth-Rite®** static grounding systems with a means of testing the permissive resistance range on a regular basis.

The easy to use tester consists of a pair of rotary switches that enable a competent electrical person to check the resistance level at which the grounding system should be working and conduct a PASS / FAIL test at the required setting.

Intrinsically Safe (I.S) Switching PCB

The I.S Switching PCB is an additional circuit board added to Newson Gale system enclosures to enable users to directly interface with, and switch intrinsically safe circuits without the need for additional equipment. The I.S Switching PCB is designed not to affect the I.S signals electrical parameters and is compatible with the Earth-Rite II FIBC platforms.

- 30 V DC, 500 mA
- Li = 0H, Ci = 0F
- Suitable for Ex ia, ib, ic rated intrinsically safe circuits only
- NAMUR Compatible



United Kingdom
Newson Gale Ltd
Omega House
Private Road 8
Colwick, Nottingham
NG4 2JX, UK
+44 (0)115 940 7500
groundit@newson-gale.co.uk

United States
IEP Technologies LLC
417-1 South Street
Marlborough, MA 01752
USA
+1 732 961 7610
groundit@newson-gale.com

Deutschland
IEP Technologies GmbH
Kaiserswerther Str. 85C
40878 Ratingen
Germany
+49 (0)2102 58890
erdung@newson-gale.de