

Earth-Rite® II FIBC

Static grounding protection for Type C FIBC located in potentially flammable/combustible gas or dust atmospheres



The **Earth-Rite® II FIBC** system validates and monitors the resistance of Type C FIBC bags ensuring that the conductive elements of the bag are capable of dissipating electrostatic charges in compliance with IEC 61340-4-4 “Standard test methods for specific applications - Electrostatic classification of flexible intermediate bulk containers (FIBC)” and NFPA 77 “Recommended Practice on Static Electricity”.

Enquiry > Click here to submit a product related query or a request for quotation.

The **Earth-Rite II FIBC** system can be installed and setup to ensure that operators ground the bag before filling or emptying operations are started. During the bag filling / emptying process the Earth-Rite II FIBC system continuously monitors the resistance of the bag so that if it rises above the recommended upper monitoring resistance level* this dangerous situation can be indicated to operators and the process halted, either manually or via the system's pair of NO/NC volt free contacts.

This feature ensures the generation and accumulation of static charges on the bag is stopped mitigating the risk of an incendive electrostatic spark discharge.

To compensate for normal wear and tear on Type C bags it is important to ensure the bag maintains its capacity to dissipate charge and also ensure the ground connection between the bag and plant earth grounding point is functioning correctly.

Newson Gale can also provide FIBC grounding systems that can validate and monitor Type C bags designed with an upper resistance threshold of 1×10^8 ohms (100 meg-ohm) or 1×10^7 ohms (10 meg-ohm).



Earth-Rite II FIBC Type C Static Grounding System

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

- > IEC 61340-4-4 state that the resistance through a Type C FIBC bag should not exceed 1×10^8 ohms (100 meg-ohm)
- > NFPA 77, state that the resistance through a Type C FIBC bag should not exceed 1×10^7 ohms (10 meg-ohm)

The Earth-Rite II FIBC includes:

- > SDP Controller (static dissipative GRP) with Intrinsically Safe Monitoring Circuits.
- > FIBC Grounding Clamp with single conductor Hytel® Protected Cable.
- > Junction Box with Stowage Pin for stowing FIBC Grounding Clamp.

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Features and Benefits

Attention grabbing LEDs

Three green LEDs continuously pulse informing operators that the FIBC bag to be protected from static discharges is correctly grounded. When the system is not in use, or when it detects the resistance in the static dissipative loop is higher than the upper monitoring resistance level*, a red LED illuminates the indicator panel located in the static dissipative GRP indicator station.

Continuous Ground Loop Monitoring

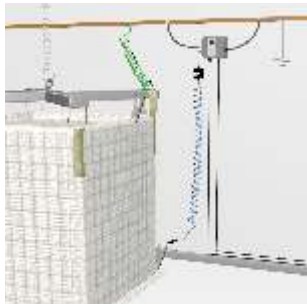
Monitors the resistance of the static dissipative loop through the FIBC bag back to the Earth-Rite FIBC via the plant earth grounding point. If the system detects that resistance in the loop is higher than the upper monitoring resistance level*, it engages a pair of output contacts.

Two volt free output contacts

The primary contact can interlock with electro-mechanical devices or PLC systems to shutdown the flow of product. The secondary contact can interface with attention grabbing audible alarms or strobe lights to provide an extra degree of safety over the hazard.

Easy Installation

Simple to mount GRP enclosures complemented by straightforward cabling and PCB system wiring. Flexible hazardous area enclosure location options with separate IS monitoring / indicator and Power supply PCBs. Power supply PCB can run off both 240 V and 110 V mains / line supply and 24 V / 12 V DC voltage supply.



The Earth-Rite II FIBC ensures Type C FIBC bags are protected from incendive electrostatic discharges during bag filling and discharging operations.



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.



FIBC stainless steel grounding clamp with Quick Connect and optional lengths of Hytrel protected single core cable included.

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

- > IEC 61340-4-4 state that the resistance through a Type C FIBC bag should not exceed 1×10^8 ohms (100 meg-ohm)
- > NFPA 77, state that the resistance through a Type C FIBC bag should not exceed 1×10^7 ohms (10 meg-ohm)

Options

- Ex(d)XP Flameproof enclosure for gas & vapour atmosphere.
- A 2nd clamp connects FIBC bag to verified earth grounding point.
- Explosion Proof Strobe Light
- Intrinsically safe (I.S) Switching PCB
- IEC/Genelec (European) and NEC/CEC (North American) versions available

Certification



Ingress Protection
IP 66

Temperature Range
-40°C to +55°C - ATEX / IECEx
-13°F to +122°F - CSA

Power Supply

110/120 V or 220/240 V AC, 50-60 Hz, 12 V or 24 V DC

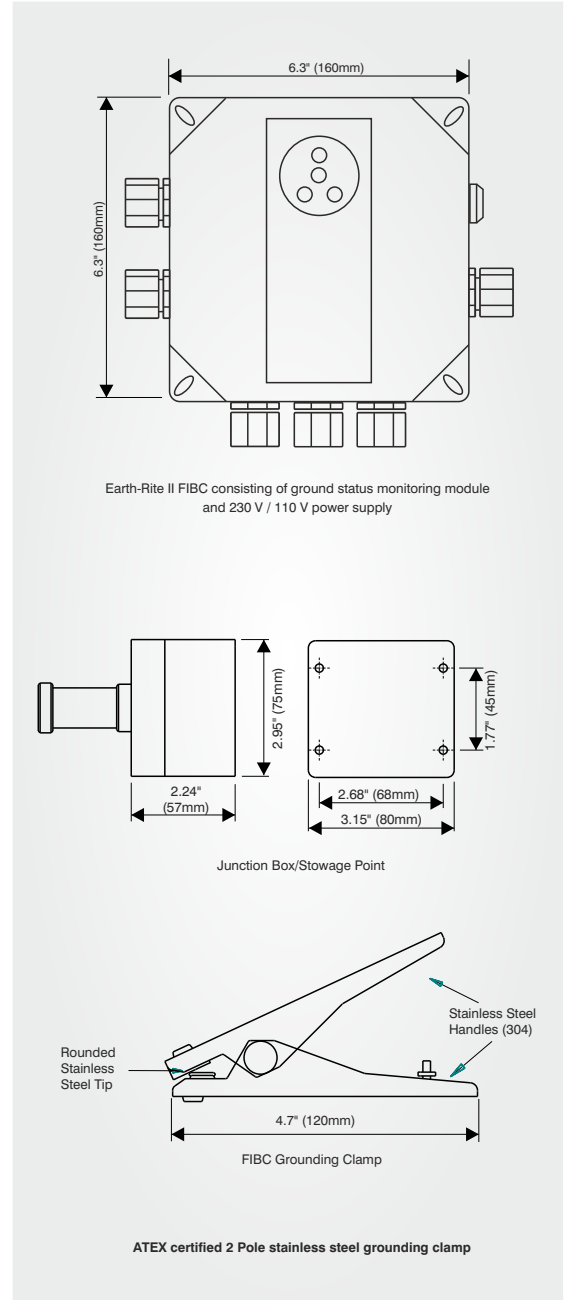
The Earth-Rite® II FIBC forms part of the Earth-Rite® range of Static Grounding and Bonding Equipment available from Newson Gale.

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Technical Specification

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

Power Supply & Monitoring-Unit	
Power supply (AC version)	108/125 V or 216/250 V AC, 50-60 Hz 12 V or 24 V DC
Power rating	10 watt
Ambient temperature range	-13°C to +131 °C
Ingress protection	Type 4X (IP 66)
Weight	3.3 lbs (1.5 Kg) nett
Construction	Carbon-Loaded GRP
Monitoring circuit	Intrinsically safe
Operational series ground resistance	≤ 1 x 10 ⁸ or 1 x 10 ⁷ Ohm
Output Relay Contacts Rating	2 dry contacts, 250 V AC, 5 A, 500 VA max resistive, 30 V DC, 2 A, 60 W max resistive
I.S. Switching PCB (NAMUR compatible)	30 V DC, 500 mA Li = 0H, Ci = 0F Optional extra - See system options
Cable Entries	7 x M20 (4 x plugged)
Junction Box/Stowage Point	
Enclosure Material	GRP with carbon loading
Terminals	2 x AWG #14 conductor capacity
Stowage Device	Insulated 0.19" diameter 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 304)
Certification	Ex II 1 GD T6
Spiral Cable	
Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	1 x AWG #12 steel
Length	5 metres extended, 1 metre unextended (other lengths available, please inquire)



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Hazardous Area Certification

Europe / International:	North America:
<p>IECEX Ex ec nC [ia] IIC T4 Gc(Ga) (gas & vapour) Ex tb IIIC T70°C Db (combustible dusts) Ta = -40°C to +55°C IECEX EXV 19.0059X IECEX certifying body: ExVeritas</p> <p>ATEX Ex II 3(1) G Ex II 2D Ex ec nC [ia] IIC T4 Gc(Ga) Ex tb IIIC T70°C Db Ta = -40°C to +55°C ExVeritas 19ATEX0545X ATEX Notified Body: ExVeritas</p>	<p>NEC 500 / CEC (Class & Division) 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 Ta = -13°F to +131°F</p> <p>OSHA recognised NRTL: CSA</p> <p>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, T70°C, (combustible dusts)</p> <p>CEC Section 18 (Class & Zoning) Class I, Zone 2 (Zone 0) Ex nA[ia] IIC T4 DIP A21, IP66, T70°C</p>

Additional Certification

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



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Technical Specification

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

Monitoring unit

Power supply	110/120 V or 220/240 V AC, 50-60 Hz 12 V or 24 V DC
Power rating	10 watt
Ambient temperature range	-40°F to +122°F (-40°C to +50°C)
Ingress protection	Type 4X (IP 66)
Weight	9.9 lbs (4.5 kg) nett
Construction	Copper-free cast aluminium
Monitoring Circuit	Intrinsically Safe
Operational Series Ground Resistance	≤ 1 x 10 ⁵ or 1 x 10 ⁷ Ohm
Output Relay Contact Rating	2 off dry contacts, 250 V AC, 5 A, 500 VA max resistive 30 V DC, 2 A, 60 W max resistive
I.S. Switching PCB (NAMUR compatible)	30 V DC, 500 mA Li = 0H, Ci = 0F Optional extra - See system options
Cable Entries	7 x 3/4" 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 0.79" diameter pin
Cable Entries	1 x M20
Clamp Cable Connection	Quick Connect

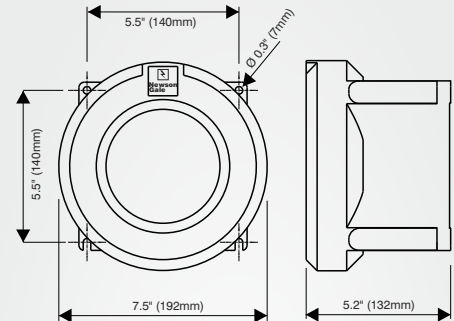
Grounding Clamp

Clamp Design	1 pole with single stainless steel contact
Body	Stainless Steel
Certification	Ex II GD T6

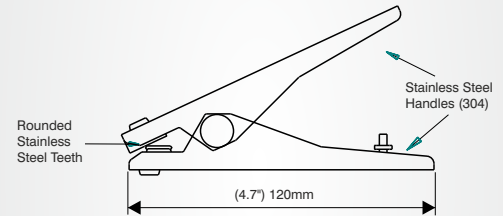
Spiral Cable

Cover	Cover Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	1 x AWG #12 steel
Length	16 ft (5m) extended, 3 ft (1m) unextended (other lengths available - please inquire)

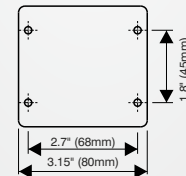
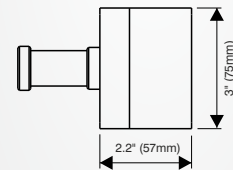
Mechanical Installation Data



Approved copper free cast aluminium enclosure - IP 66 / Type 4X



FIBC Grounding Clamp



Simple Apparatus GRP clamp stowage box with grounding clamp stowage pin

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Hazardous Area Certification

Europe / International:	North America:
<p>IECEX Ex d[ia] IIC T6 Gb(Ga) (gas & vapour) Ex tb IIIC T80°C IP66 Db (combustible dusts) Ta = -40°C to +55°C IECEX EXV 19.0052 IECEX certifying body: ExVeritas</p> <p>ATEX Ⓢ II 2(1)GD Ex d[ia] IIC T6 Gb(Ga) Ex tb IIIC T80°C IP66 Db Ta = -40°C to +55°C ExVeritas 19ATEX0537 ATEX Notified Body: ExVeritas</p>	<p>NEC 500 / CEC (Class & Division) 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 Ta = -40°F to +122°F</p> <p>OSHA recognised NRTL: CSA</p> <p>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)</p> <p>CEC Section 18 (Class & Zoning) Class I, Zone 1[0] Ex d[ia] IIC T6 Gb(Ga) DIP A21, IP66, T80°C</p>

Additional Certification

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



Earth-Rite® FIBC

System Options

Newson Gale supplies a range of product options that enhance the control and general safety of transfer processes and aid engineers with system installations and routine system service checks. Contact Newson Gale or your local Newson Gale representative for more information on the range of options available.

Universal Resistance Tester

The URT is designed to provide owners of Newson Gale **Earth-Rite®** and **Bond-Rite®** static grounding systems with a means of regularly testing the grounding settings for their system on a routine basis.

Periodic testing with the URT verifies that the grounding system's **GO/NO GO** settings are working in compliance with the recommendations of:

NFPA 77: "Recommended Practice on Static Electricity."

IEC 60079-32-1: "Explosive atmospheres. Part 32-1: Electrostatic hazards, guidance."

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.

Earth-Rite® and **Bond-Rite®** products that can be tested with the URT:

- > Earth-Rite® II PLUS
- > Earth-Rite® II FIBC (both 10 meg-ohm and 100 meg-ohm variants)
- > Bond-Rite® CLAMP
- > Bond-Rite® EZ
- > Bond-Rite® REMOTE
- > OhmGuard® (both 10 ohm and 100 ohm variants)

Intrinsically Safe (I.S) Switching PCB

The I.S Switching PCB is an additional circuit board added to Newson Gale system enclosures that 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 RTR, MGV, PLUS** and **FIBC** platforms.

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

Contact Us > Your inquiry will be processed rapidly via our webform enquiry service. If you would prefer to call us, or e-mail us, please use the contact details provided below.



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