

# Earth-Rite® II PLUS

## Static Grounding Indicator and Interlock System



Earth-Rite II PLUS Static Grounding System



Medium and Large Heavy Duty Clamp/s  
 with Quick Connect and optional lengths of Hytrel coated 2 core cable included

Precision and reliability of the Earth-Rite® II PLUS provides QHSE professionals and engineers who are tasked with protecting personnel and plant assets from the ignition hazards of static electricity during railcar, skid, and IBC loading/unloading operations.

Conductive metal objects like railcars, LACT units, skids and IBCs that contain electrostatically charged liquids can accumulate hazardous levels of electrostatic charge if they are not grounded.

This hazardous level of electrostatic charge can spark to other objects close by and is in excess of the minimum ignition energy of combustible gases and vapours present.

The ignition of combustible atmospheres by static electricity can be mitigated by ensuring that such objects are grounded.

The Earth-Rite II PLUS is the ideal solution for grounding and bonding a broad range of equipment at risk of igniting combustible gases and vapours.

The Earth-Rite II PLUS ensures that a continuously monitored 10 Ohm, or less, connection is present between the grounded object and a designated true earth grounding point. This feature provides equipment specifiers with the ability to demonstrate compliance with the grounding and bonding recommendations of IEC 60079-32\*, NFPA 77\* and API RP 2003\*.

\*IEC 60079-32, "Explosive atmospheres: electrostatic hazards, guidance."

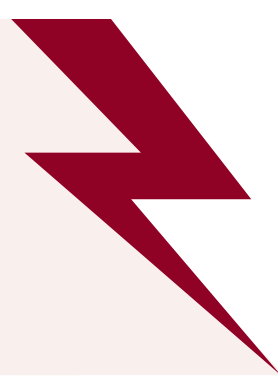
\*NFPA 77, "Recommended Practice on Static Electricity."

\*API RP 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents."

\* Always check for and read the latest version of the International Standards and or Recommended Practices.

### The Earth-Rite II PLUS includes:

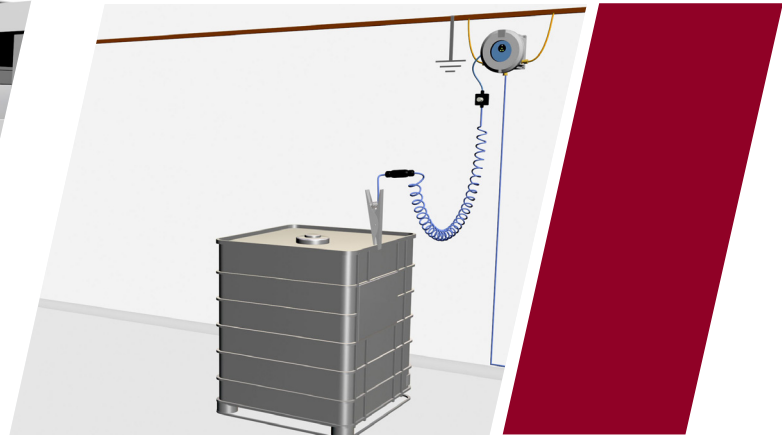
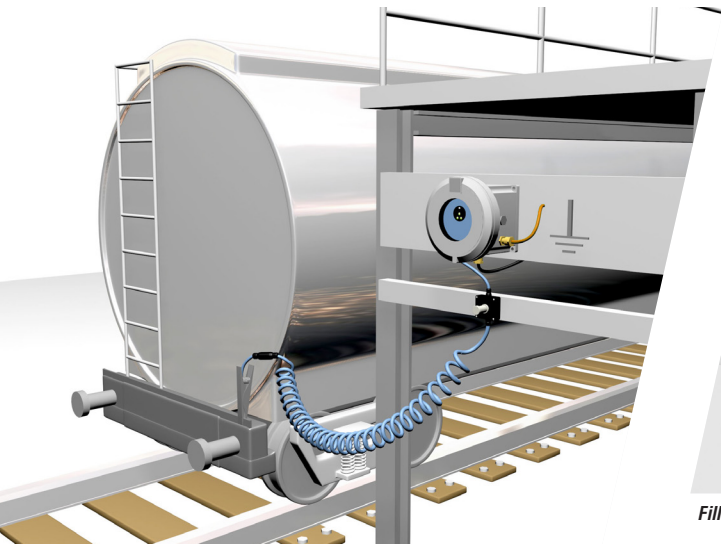
- > XP / Ex(d) Controller with Intrinsically Safe Monitoring Circuit  
or
- > HAZLOC approved static dissipative GRP controller with Intrinsically Safe Monitoring Circuit
- > Ground Connection Junction Box with Clamp Storage Point and Quick Release Connector
- > Universal Grounding Clamp with various lengths of 2 conductor Cen-Stat protected Cable
- > Flexible HAZLOC installation options



# Earth-Rite® II PLUS

## Static Grounding Indicator and Interlock System

## Earth-Rite® II PLUS



Filling IBCs, Totes, Drums, Containers and Rail Cars

## Features and Benefits

### Attention grabbing high intensity LEDs

Three green LEDs continuously pulse informing operators that the object to be protected from static discharges is grounded. The red LED will illuminate continuously when the system is not in use, or when it detects the resistance in the static grounding loop is higher than 10 Ohms\*.

### Continuous Ground Loop Monitoring

Monitors the resistance of the ground loop from the grounded object through to the site's verified true earth grounding point. If the Earth-Rite® II PLUS detects that resistance in the ground loop is higher than 10 Ohms, it engages a pair of volt free changeover contacts that can be interlocked with the control and/or product transfer system to turn them ON or OFF.

### Two dry output contacts

The primary contact can be interlocked with electro-mechanical devices or PLC systems to shut down the flow of product. The secondary contact can interface with attention grabbing audible alarms or strobe lights to provide an extra layer of protection over the hazard.

### Easy Installation

Simple wall mounted enclosures complemented by straightforward cabling and PCB system wiring requirements. Flexible hazardous location enclosure options and power supplies which can run off both 115 V / 230 V AC and 12 V / 24 V DC.

\* The international recommended practice for controlling the ignition hazards of static electricity in HAZLOC atmospheres, IEC 60079-32 and NFPA 77, recommend that the maximum resistance between conductive metal plant equipment and verified true earth earthing points should not be more than 10 Ohms resistance.



Designed for grounding drums and small containers



Designed for grounding large drums and large containers

# Earth-Rite® II PLUS

## Static Grounding Indicator and Interlock System

### Earth-Rite® II PLUS

#### Technical Specification

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

##### Monitoring Unit

<b>Power Supply</b>	115 V or 230 V AC, 50-60 Hz 12 V or 24 V DC
<b>Power Rating</b>	10 watt
<b>Ambient Temperature Range</b>	-40°F to +122°F (-40°C to +55°C)
<b>Ingress Protection</b>	Type 4X (IP 66)
<b>Weight</b>	9.9 lbs (4.5 kg) nett
<b>Construction</b>	Copper-free cast aluminium
<b>Monitoring Circuit</b>	Intrinsically safe
<b>Monitoring Loop Resistance</b>	Nominally $\leq 10$ Ohm ( $\pm 10\%$ )
<b>Output Relay Contact Rating</b>	2 off dry contacts 250 V AC 5 A 500 VA max resistive 30 V DC 2 A 60 W max resistive
<b>Cable Entries</b>	7 x 3/4" NPT (supplied with 4 stopper plugs)

##### Junction Box/Stowage Point

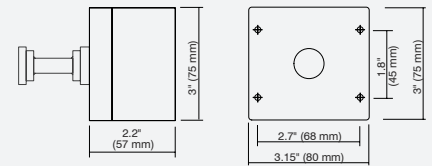
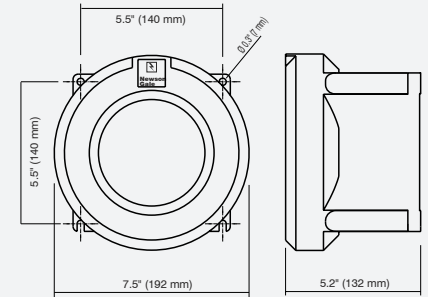
<b>Enclosure Material</b>	GRP with carbon loading
<b>Terminals</b>	2 x AWG #14 conductor capacity
<b>Stowage Device</b>	Insulated universal stowage pin
<b>Cable Entries</b>	1 x M20
<b>Clamp Cable Connection</b>	Quick Connect

##### Grounding Clamp

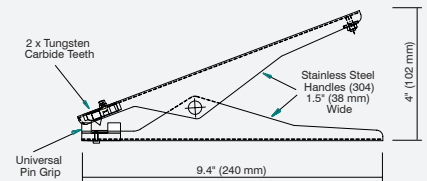
<b>Clamp Design</b>	2 pole with tungsten carbide teeth
<b>Body</b>	Stainless Steel
<b>Certification</b>	Ex II 1 GD T6
<b>Approval</b>	FM Approved

##### Spiral Cable

<b>Cable</b>	Blue Cen-Stat Hytrell sheath (Static dissipative, chemical & abrasion resistant)
<b>Conductors</b>	2 x AWG #18 copper
<b>Length</b>	32 ft extended, 3 ft unextended (other lengths available - please inquire)



Simple Apparatus  
GRP junction box with nylon grounding clamp stowage pin



Static Grounding Clamp  
ATEX certified / FM Approved 2 Pole stainless steel grounding clamp fitted with one pair of tungsten carbide tips

## Earth-Rite® II PLUS

### Hazardous Location Approvals

**North America:**

**Europe / International Version Available:**

**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 (-40°F to +122°F)

OSHA recognised NRTL: CSA

**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, T80°C

**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

**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

### 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 PLUS

## Static Grounding Indicator and Interlock System

## Earth-Rite® II PLUS

### Technical Specification

for single unit installation in Div.2 hazardous locations

#### Power Supply & Monitoring-Unit

<b>Power Supply</b>	115 V or 230 V AC, 50-60 Hz 12 V or 24 V DC
<b>Power Rating</b>	10 watt
<b>Ambient Temperature Range</b>	-13°F to +131°F (-25°C to +55°C)
<b>Ingress Protection</b>	Type 4X (IP 66)
<b>Weight</b>	4.4 lbs (2 Kg) nett
<b>Construction</b>	Carbon-loaded GRP
<b>Monitoring Circuit</b>	Intrinsically safe
<b>Monitoring Loop Resistance</b>	Nominally $\leq 10$ Ohm ( $\pm 10\%$ )
<b>Output Relay Contact Rating</b>	2 off dry contacts 250 V AC 5 A 500 VA max resistive 30 V DC 2 A 60 W max resistive
<b>Cable Entries</b>	7 x M20 (2 x plugged)

#### Junction Box/Stowage Point

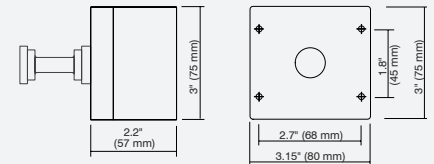
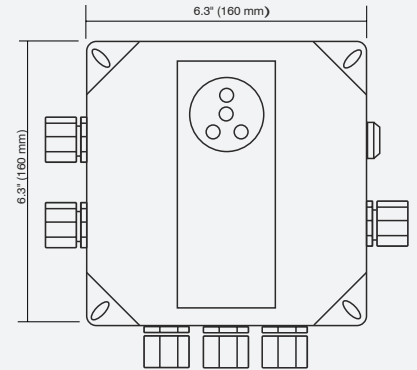
<b>Enclosure Material</b>	GRP with carbon loading
<b>Terminals</b>	2 x AWG #14 conductor capacity
<b>Stowage Device</b>	Insulated universal stowage pin
<b>Cable Entries</b>	1 x M20
<b>Clamp Cable Connection</b>	Quick Connect

#### Grounding Clamp

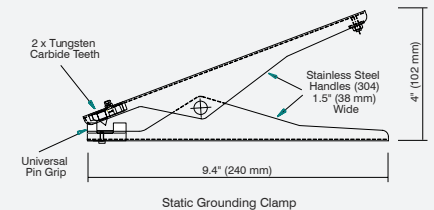
<b>Clamp Design</b>	2 pole with tungsten carbide teeth
<b>Body</b>	Stainless Steel (SS 304)
<b>Certification</b>	Ex II 1 GD T6
<b>Approval</b>	FM Approved

#### Spiral Cable

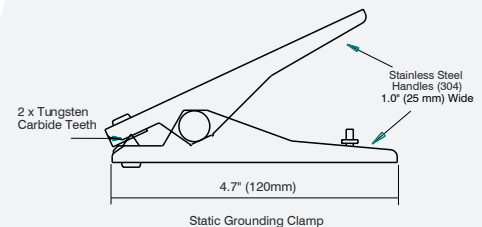
<b>Cover</b>	Blue Cen-Stat Hytel sheath (Static dissipative, chemical & abrasion resistant)
<b>Conductors</b>	2 x AWG #18 copper
<b>Length</b>	32 ft extended, 3 ft unextended (other lengths available - please inquire)



Simple Apparatus  
GRP junction box with nylon grounding clamp stowage pin



Static Grounding Clamp



ATEX certified / FM Approved 2 Pole stainless steel grounding clamp fitted with one pair of tungsten carbide teeth

## Earth-Rite® II PLUS

### Hazardous Location Approvals

**North America:**

**Europe / International Version Available:**

**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;  
 ER11-Q-10165 cCSAus  
 Ta = -25°C to +55°C (-13°F to +131°F)

OSHA recognised NRTL: CSA

**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)

**CEC Section 18 (Class & Zoning)**

Class I, Zone 2 (Zone 0) Ex nA[ia] IIC T4  
 DIP A21, IP66, T70°C

**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

**ATEX**

⊕ 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

### 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 PLUS

## Static Grounding Indicator and Interlock System

## Earth-Rite® II PLUS

### Technical Specification

for ground monitor-indicator station mounted in Div.1 locations and power supply for mounting in Div.2 or non-hazardous locations.

for Class 1, Div.1 locations (or lower)

#### Ground Monitor Indicator

##### U.S. / Canada Class and Division system:

Intrinsically Safe Equipment Exia for use in  
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-10173 cCSAus

##### Canada Class and Zone system:

Class I, Zone 0, Ex ia IIC T4  
DIP A20 T70C

##### U.S. Class and Zone system:

Class I, Zone 0 AEx ia IIC T4  
Class II, Zone 20, AEx iaD 20 T70C  
T4 @ Ta = -25°C to +55°C  
Enclosure Type 4X, IP 66. Static dissipative GRP

for mounting in Div.2 or Non-Hazardous locations

#### Power Supply Unit

##### Power Supply

115 V or 230 V AC, 50-60Hz

##### U.S. / Canada Class and Division system:

Associated Equipment [Exia] 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-10173 cCSAus

##### Canada Class and Zone system:

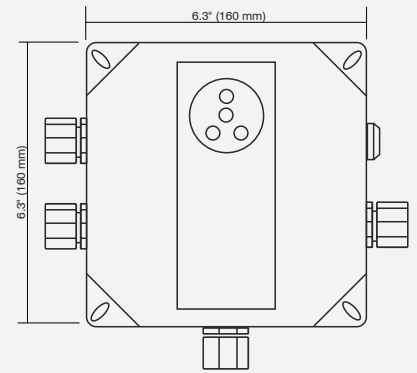
Class I, Zone 2 (zone 0), Ex nA[ia] IIC T4  
DIP A21 T70C

##### U.S. Class and Zone system:

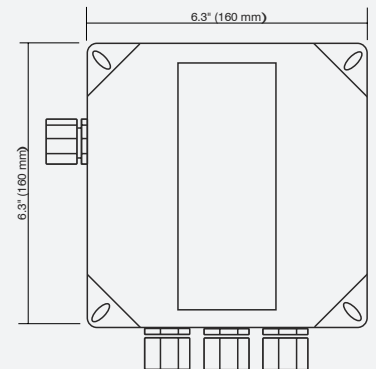
Class I, Zone 2 (zone 0) AEx nA[ia] IIC T4  
Class II, Zone 21, AEx tD[iaD] 21 T70C  
T4 @ Ta = -25°C to +55°C  
Enclosure Type 4X, IP 66. Static dissipative GRP

##### Output Relay Contact Rating:

2 off dry contacts,  
250 V AC, 5A, 500VA max resistive  
30 V DC, 2A, 60W max resistive



Earth-Rite II PLUS ground status indicator station  
for Class 1, Div.1 locations (or lower)



Earth-Rite II PLUS 240 V / 110 V AC power supply  
for mounting in Div.2 or Non-Hazardous locations



# Earth-Rite® II PLUS

## Static Grounding Indicator and Interlock System

### 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.



#### Retractable Cable Reel

The Retractable Cable Reel is supplied for grounding system installations where customers want to ensure the grounding clamp and cable are returned to the static grounding system by operators and drivers on completion of the product transfer process. The reel can be used in conjunction with the **Earth-Rite II PLUS**.

- > Certified for Div. 1 and 2 hazardous areas
- > Self-retracting with up to 50 ft (15 m) of Hytrel® protected cable.
- > Silver plated ultra low resistance slip ring contacts.
- > ATEX - Ⓜ II 2 GD T6



#### Sun Shield

Designed for operating environments subject to intense sunlight, the ERII Sun Shield protects against direct sunlight hitting the indicators on the **Earth-Rite II PLUS** static grounding systems.

The Sun Shield casts a shadow over the indicators during peak sun light hours so that operators can easily view the ground status indicators. The shield is constructed from stainless steel and can be fitted to any installation in a matter of minutes.





## System Options

### 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 PLUS**.

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



### Ex Strobe Light

The strobe light is mounted in an elevated position and when the equipment is correctly grounded, flashes continuously informing personnel that a transfer process is underway and is protected from the static hazard. The strobe light can be used in conjunction with the **Earth-Rite II PLUS**.

- > ATEX and Class/Div approved versions
- > 115 V / 230 V AC and 24 V / 48 V DC options
- > Amber, Green & Red strobe colour options



# Earth-Rite® II PLUS

## Static Grounding Indicator and Interlock System

### System Options

#### 2-Pole Surface Mountable connector

With this assembly operators tasked with earthing mobile process equipment will have a dedicated earthing point to attach the easy to use screw thread connector. The 'plug and play' connector can interface with all Newson Gale 2 core systems to provide earth monitoring capability on a wide range of mobile processes and equipment where generic earthing clamps cannot be used.

The conical shape design aids in the reduction of powder deposit build up over time and aids in clean down operations.

- > Made using Stainless Steel 304 with Viton O-Rings
- > IP 66
- > -40°F to 140°F (-40°C to 60°C)
- > Various lengths of straight or spiral Hytrel cable available



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Leading the way in hazardous area static control



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