

Earth-Rite® II PLUS

Static Grounding Indicator and Interlock System



Precision and reliability is what the **Earth-Rite® II PLUS** provides to 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.

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

Conductive metal objects like railcars, LACT units, skids and IBCs that come into contact with electrostatically charged liquids can accumulate hazardous levels of electrostatic charge that could discharge static sparks with energies far in excess of the minimum ignition energies of a vast range of combustible gases and vapours. The ignition of combustible atmospheres by static electricity can be prevented 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."



Earth-Rite II PLUS Static Grounding System

The Earth-Rite II PLUS includes:

- > **Ex(d) / XP Controller** with Intrinsically Safe Monitoring Circuit.
or
- > **ATEX / IECEx certified static dissipative GRP** controller with Intrinsically Safe Monitoring Circuit.
- > **Ground Connection Junction Box** with Clamp Stowage Point and Quick Release Connector.
- > **Universal Grounding Clamp** with various lengths of 2 conductor Cen-Stat protected spiral cable.
- > **Flexible EX area installation options.**

Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Features and Benefits

Attention grabbing LEDs

Three green LEDs continuously pulse informing operators that the object to be protected from static discharges is grounded. When the system is not in use, or when it detects the resistance in the static grounding path is higher than 10 ohms*, a red LED illuminates the indicator panel located inside the enclosure.

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 product transfer system.

Two volt free 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.

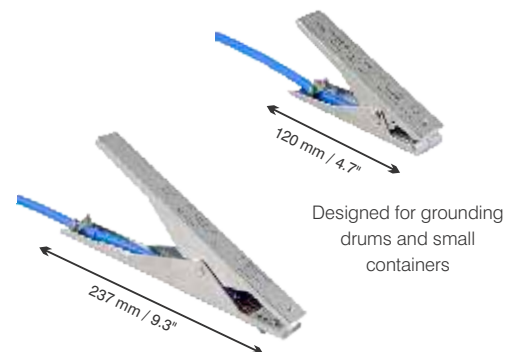
Easy Installation

Simple "bolt-on" enclosures complemented by straightforward cabling and PCB system wiring requirements. Flexible EX enclosure options and power supplies which can run off both 240 V / 110 V AC and 24 V / 12V DC.

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

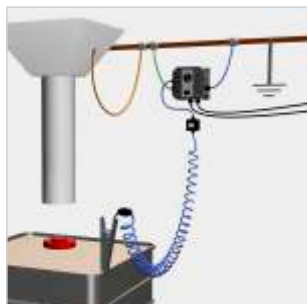


Universal grounding clamp
with Quick Connect and optional lengths of Hytrel protected 2 core cable included.



Designed for grounding drums and small containers

Designed for grounding large drums and large containers



Filling IBCs, Totes, Drums, Containers and Rail Cars



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

Options

- 15m Self-Retracting Cable Reel
- 5, 10, 15 mtr lengths of Retractable Spiral Cable
- Large or Standard size 2 Pole Clamps
- Intrinsically Safe (I.S) Switching PCB
- Explosion Proof Strobe Light
- IEC/Cenelec (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
110/120V or 220/240V AC, 50-60 Hz
12V or 24V DC

Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Technical Specification

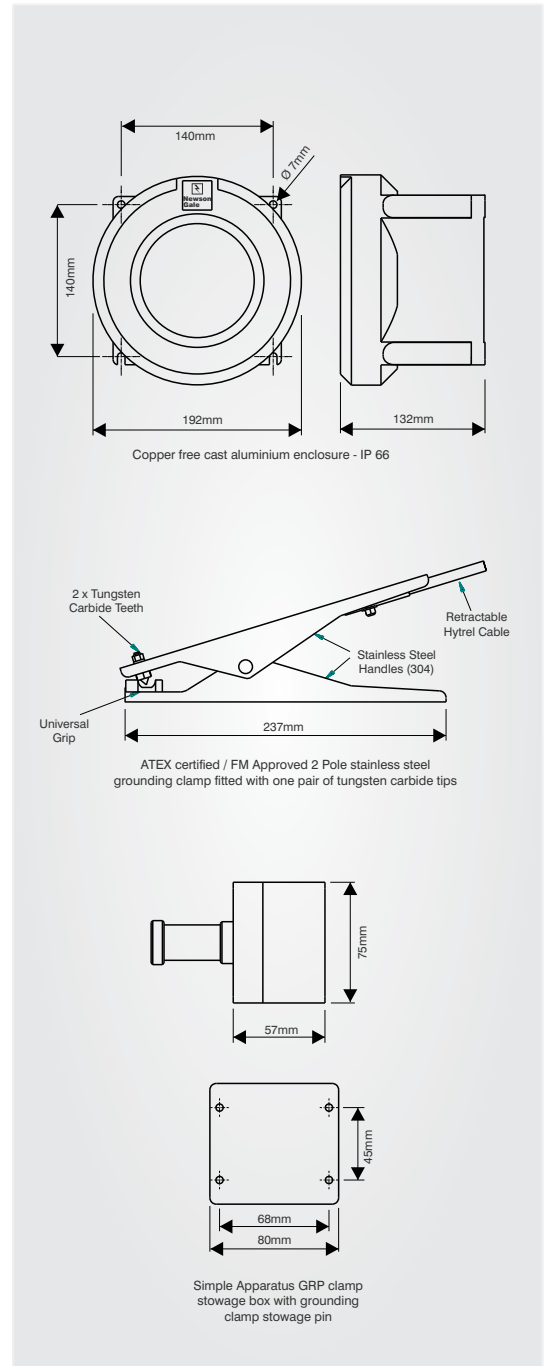
Ex d (Zone 1 Gas / Vapour Installations - Zone 21 Dust Atmospheres)

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°C to +55°C
Ingress Protection	IP 66
Weight	4.5 kgs (9.9 lbs) nett
Construction	Copper-free cast aluminium
Monitoring Circuit	Intrinsically safe
Operational Series Ground Resistance	Nominally ≤ 10 Ohm
Output Relay Contact Rating	2 off voltage free change-over switch 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 (2 x plugged)

Junction Box/Stowage Point	
Enclosure Material	GRP with carbon loading
Terminals	2 x 2.5 mm ² conductor capacity
Stowage Device	Insulated 20 mm Ø pin
Cable Entries	1 x 20 mm
Clamp Cable Connection	Quick Connect

Grounding Clamp	
Clamp Design	2 pole with tungsten carbide teeth
Body	Stainless steel
Certification	Ex II 1 GD T6
Approval	FM Approved

Spiral Cable	
Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	2 x 1.00 mm ² copper
Length	10 metres extended, 1 metre unextended (other lengths available, please enquire)



Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

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: SIRA</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)

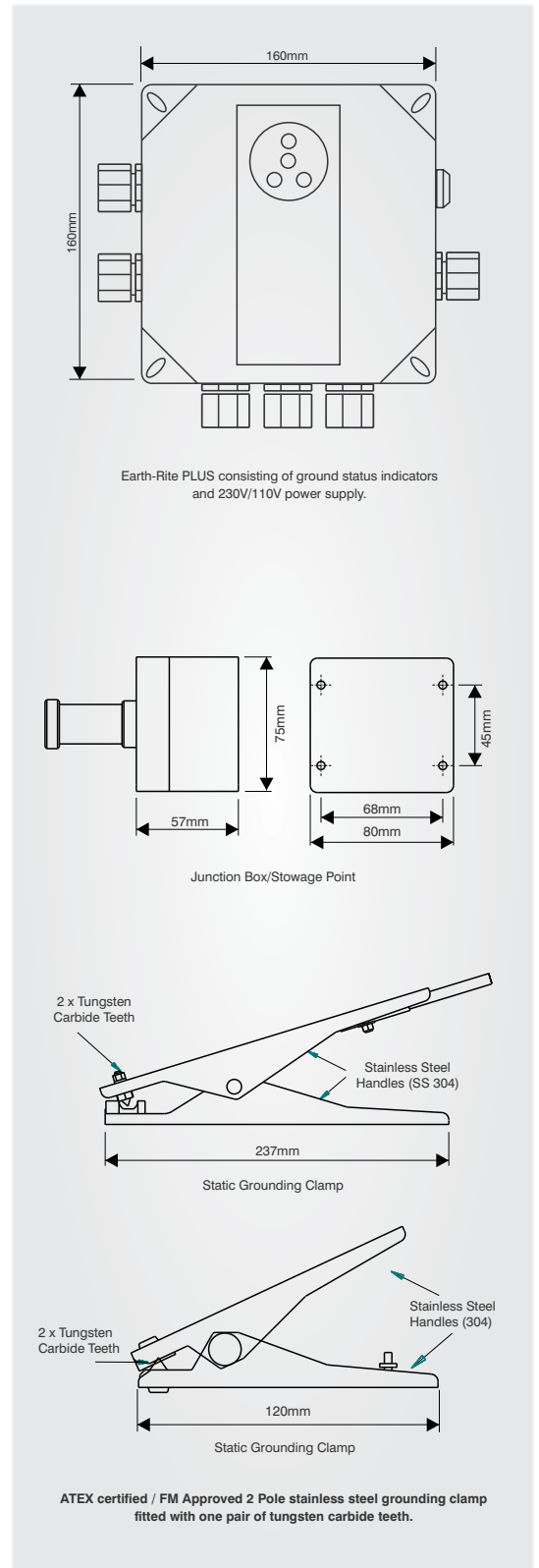


Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Technical Specification

for single unit installation in Zone 2 and 21 EX hazardous areas.

Power Supply & Monitoring Unit	
Power Supply	108/125 V or 216/250 V AC, 50-60 Hz 12 V or 24 V DC
Power Rating	10 watt
Ambient Temperature Range	-40°C to +55°C
Ingress Protection	IP 66
Weight	2 kgs (4.4 lbs) nett
Construction	Carbon-loaded GRP
Monitoring Circuit	Intrinsically safe
Operational Series Ground Resistance	Nominally ≤ 10 Ohm
Output Relay Contact Rating	2 off voltage free change-over switch 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 (2 x plugged)
Junction Box/Stowage Point	
Enclosure Material	GRP with carbon loading
Terminals	2 x 2.5mm ² conductor capacity
Stowage Device	Insulated 20 mm Ø pin
Cable Entries	1 x 20 mm
Clamp Cable Connection	Quick Connect
Grounding Clamp	
Clamp Design	2 pole with tungsten carbide teeth
Body	Stainless Steel (SS 304)
Certification	Ex II 1 GD T6
Approval	FM Approved
Spiral Cable	
Cover	Cover Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	2 x 1.00 mm ² copper
Length	10 metres extended, 1 metre unextended (Other lengths available - please enquire)



Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Hazardous Area Certification

Europe / International:

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

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

North America:

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;
 ERIL-Q-10165 cCSAus
 Ta = -25°C to +55°C
 Ta = -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

Additional Certification

Safety Integrity Level:

SIL 2 (in accordance with IEC/EN 61508)

SIL assessment body:

Exida

EMC Tested:

to EN 61000-6-4, EN 61000-6-2
 FCC - Part 15 (Class B)



IECEX



SIL 2



Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Technical Specification

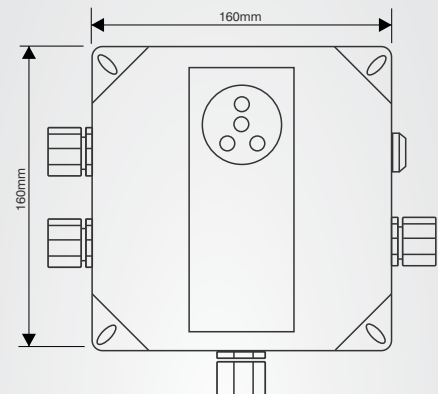
for ground monitor-indicator station mounted in Zone 0 / 20 areas and power supply for mounting in Zone 2 or 21 and non-hazardous areas.

for Zone 0 and Zone 20 locations (or lower)

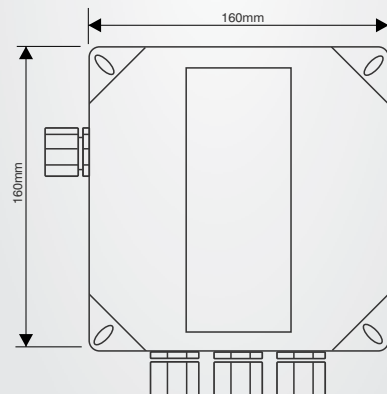
Ground Monitor-Indicator	
Ambient temperature	-40°C to +55°C
Ingress protection	IP 66
Weight	2.0 kgs (4.4 lbs) nett
Construction	Carbon-loaded GRP
Certification	Ex II 1 GD Ex ia IIC T4 Ga Ex ta IIC T70C Da Ta = -40°C to +55°C SIRA 19ATEX0562 IECEX SIR 19.0067
Monitoring circuit	Intrinsically safe
Operational ground series resistance	Nominally ≤ 10 Ohm
Cable entries	7 x M20 (3 x plugged)

for Zone 2, 21, 22 or Non-Hazardous locations

Power Supply	
Power supply	230/240 V AC 50Hz (supply voltage range: 216 V to 250 V AC). 110/120V AC 50Hz (supply voltage range: 108 V to 125 V AC).
Power rating	10 watts
Ambient temperature range	-40°C to +55°C
Ingress protection	IP 66
Weight	4.5 kgs (1 lbs) nett
Construction	Carbon-loaded GRP
Certification	Ex II 3(1)G, II 2D Ex ec nC [ia] IIC T4 Gc(Ga) Ex tb IIC T70C Db Ta = -40°C to +55°C SIRA 19ATEX0563 IECEX SIR 19.0068
Output relay contact rating	2 volt free change over switch contacts, 250 V AC, 5 A, 500 VA max resistive, 30 V DC, 2 A, 60 W max resistive.
Cable entries	4 x M20 (1 x plugged)



Earth-Rite II PLUS ground monitor-indicator station for Zone 0 and Zone 20 locations (or lower).



Earth-Rite II PLUS 240V / 110V ac power supply for Zone 2, 21, 22 or Non-Hazardous locations

Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

System options

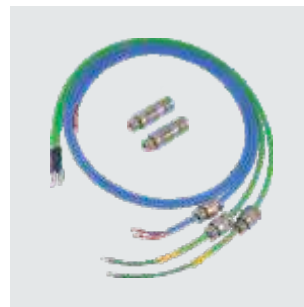
Newson Gale supplies a range of product options that enhance the control and general safety of transfer processes and aid engineers with system installations and routine system service checks. Contact Newson Gale or your local Newson Gale representative for more information on the range of options available.

Installer's Kit

This kit provides installation engineers with the necessary Ex (d) enclosure glands (x5) and system cable (x3) required to complete an **Earth-Rite II RTR** or **Earth-Rite II PLUS** installation as specified in the system installation manuals. Two of the glands cater for armoured cable diameters ranging from 9 mm to 13.5 mm. Three glands cater for IS current carrying non-armoured cable with cable diameters ranging from 4 mm to 8.4 mm.


* For areas not requiring IIC apparatus.

- > Ex (d) IP68 glands (x2) for armoured cable 9 mm to 13.5 mm Ø*
- > Ex (d) IP68 glands (x3) for non-armoured cable 4 mm to 8.4 mm Ø*
- > 3 m of 2 core conductor cable (x1) to connect system enclosure to clamp stowage box
- > 1 m of solid green earth loop cable (x2), with Ex (d) glands, PCB connectors and 10 mm bolt eyelets attached



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 RTR** and **Earth-Rite II PLUS**.

- > 115 V / 230 V AC and 24 V DC options
- > ATEX /IECEx approved Exd strobe light
- >  II 2 Ex d IIC T4 (Ta. -50°C to +70°C)
- > II 2G Ex d IIC T5 (Ta. -50°C to +40°C)
- > II 2D Ex tD A21 IP67 T125°C based on max. Ta. 70°C



Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

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 switches that enable an electrician to set up 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)



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 RTR**, **Earth-Rite II MGV** and **Earth-Rite II PLUS**.

- > Certified for ATEX Zone 1 and 21 hazardous areas
- > Self-retracting with up to 15 m (50 ft.) of Hytrel® protected cable
- > Silver plated ultra low resistance slip ring contacts
- > ATEX -  II 2 GD T6



Earth-Rite® II PLUS Static Grounding Indicator and Interlock System

Contact Us > Your enquiry 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.

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



Sun Shield

Designed for operating environments subject to intense sunlight, the ER II Sun Shield prevents direct sunlight hitting the indicators on the **Earth-Rite RTR** and **Earth-Rite 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.



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 prevents powder deposit build up over time and aids in clean down operations.

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



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

Deutschland
IEP Technologies GmbH
Kaiserswerther Str. 85C
40878 Ratingen
Germany
+49 (0)2102 5889 0
erdung@newson-gale.de

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

South East Asia
ngsea@newson-gale.com