

Earth-Rite® II PLUS

Static Earthing Indicator and Interlock System



Earth-Rite II PLUS Static Earthing 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 TS 60079-32*, NFPA 77* and API RP 2003*.

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

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

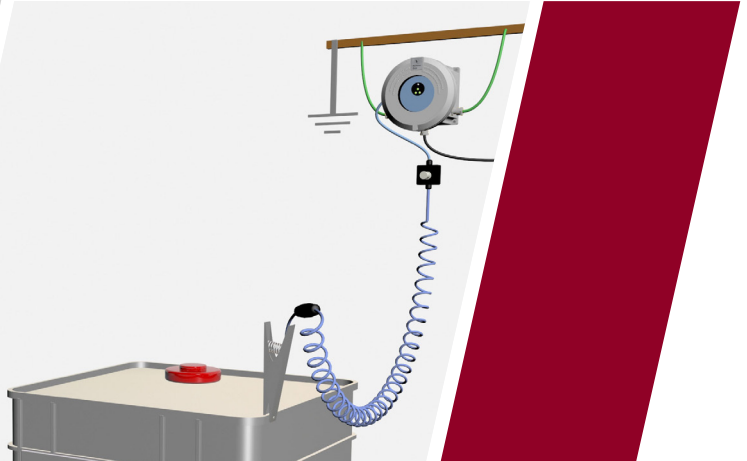
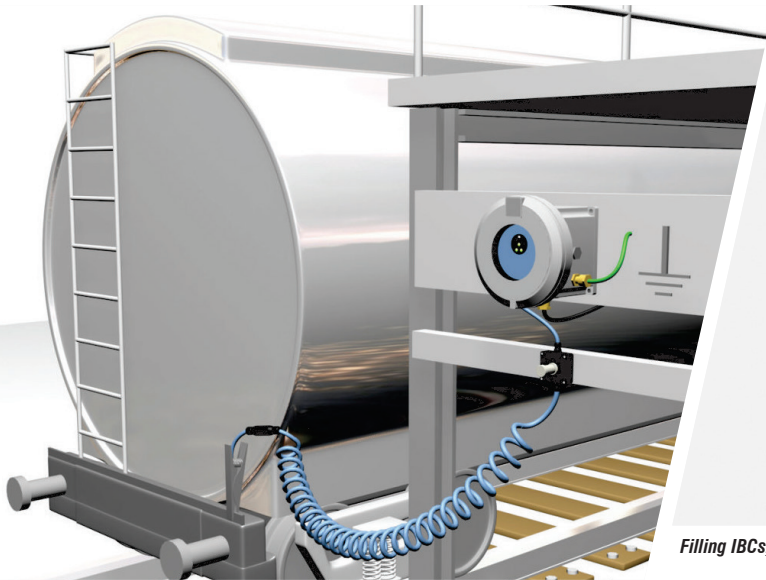
*API RP 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents."

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

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



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 volt free changeover 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 Ex enclosure options and power supplies which can run off both 230 V / 115 V AC and 24 V / 12 V DC.

* The international recommended practice for controlling the ignition hazards of static electricity in HAZLOC atmospheres, IEC TS 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 earthing drums and small containers



Designed for earthing large drums and large containers

Earth-Rite® II PLUS

Technical Specification

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

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	-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
Monitoring Loop Resistance	Nominally $\leq 10 \text{ Ohm}$ ($\pm 10\%$)
Output Relay Contact Rating	2 off voltage free changeover switch 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 2.5 mm ² conductor capacity
Stowage Device	Insulated universal stowage pin
Cable Entries	1 x 20 mm
Clamp Cable Connection	Quick Connect

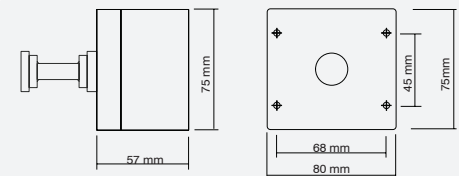
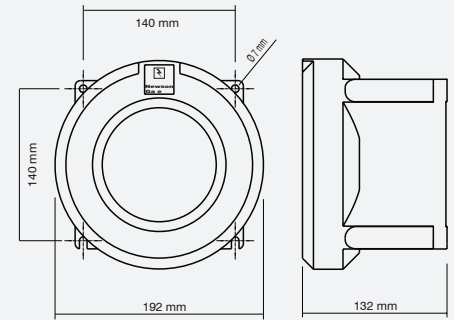
Grounding Clamp

Clamp Design	2 pole with tungsten carbide teeth
Body	Stainless Steel

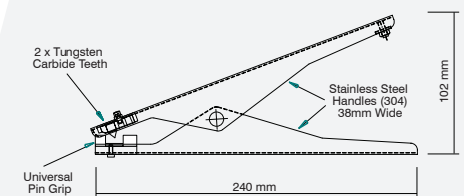
ATEX / FM / IECEx Certification:	Ex II 1 GD T6 (Assessed to EN 13463-1 : 2009) ATEX certificate number: Sira 02ATEX9381 FM Certificate of Compliance number: 3046346 IECEx Ex h IIC T6 Ga Ex h IIIC T85°C Da Ta = -40°C to +60°C IECEx EXV 20.0033
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Spiral Cable

Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	2 x 1.00 mm ² copper
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



Static Grounding Clamp
Dual core stainless steel grounding clamp fitted with one pair of tungsten carbide tips

Earth-Rite® II PLUS

Hazardous Area Certification

Europe / International:

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

North America 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

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

Technical Specification

for single unit installation in Zone 2 and 21 Ex hazardous areas

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	-40°C to +55°C
Ingress Protection	IP 66
Weight	2 kgs (4.4 lbs) nett
Construction	Carbon-loaded GRP
Monitoring Circuit	Intrinsically safe
Monitoring Loop Resistance	Nominally $\leq 10 \text{ Ohm}$ ($\pm 10\%$)
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
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 universal stowage pin
Cable Entries	1 x 20 mm
Clamp Cable Connection	Quick Connect

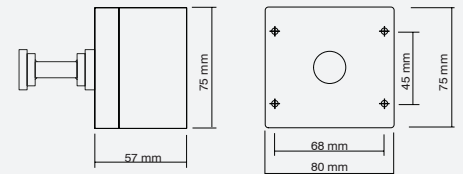
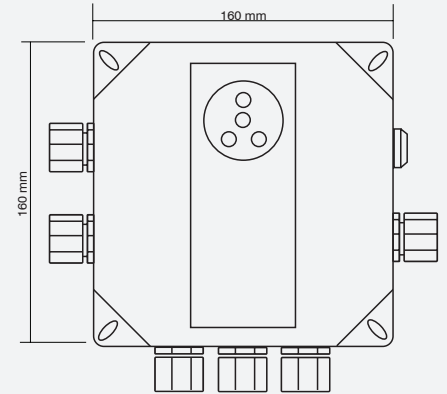
Grounding Clamp

Clamp Design	2 pole with tungsten carbide teeth
Body	Stainless Steel (SS 304)

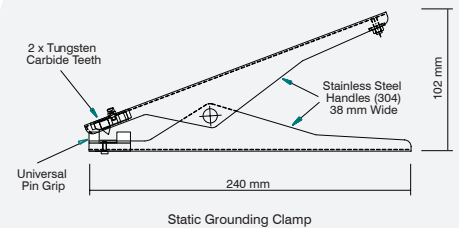
ATEX / FM / IECEx Certification:	Ex II 1 GD T6 (Assessed to EN 13463-1 : 2009) ATEX certificate number: Sira 02ATEX9381 FM Certificate of Compliance number: 3046346 IECEx Ex h IIC T6 Ga Ex h IIIC T85°C Da Ta = -40°C to +60°C IECEx EXV 20.0033
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Spiral Cable

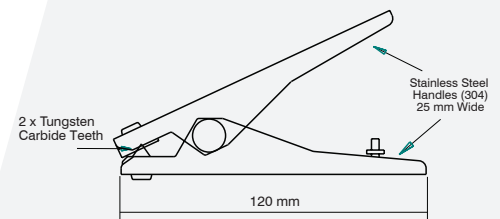
Cable	Blue Cen-Stat Hytrel sheath (Static dissipative, chemical & abrasion resistant)
Conductors	2 x 1.00 mm ² copper
Length	3 m (10 ft), 5 m (16 ft), 10 m (32 ft) or 15 m (50 ft) 2 pole Cen-Stat blue spiral cable with Hytrel coating which has colour, UV protective and static dissipative additives



Simple Apparatus
GRP junction box with nylon grounding clamp stowage pin



Static Grounding Clamp



Static Grounding Clamp

Dual core stainless steel grounding clamp fitted with one pair of tungsten carbide tips

Earth-Rite® II PLUS

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 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;
ERII-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

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

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)

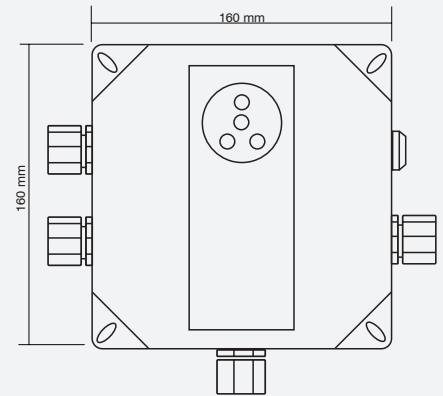
Ground Monitor Indicator

Ambient Temperature Range	-40°C to +55°C
Ingress Protection	IP 66
Weight	2 kgs (4.4 lbs) nett
Construction	Carbon-loaded GRP
Certification	Ex II 1 GD Ex ia IIC T4 Ga Ex ta IIIC T70C Da Ta = -40°C to +55°C ExVeritas 19ATEX0562 IECEX EXV 19.0067
Monitoring Circuit	Intrinsically safe
Monitoring Loop Resistance	Nominally ≤10 Ohm (±10%)
Cable Entries	3 x M20 (3 x plugged)

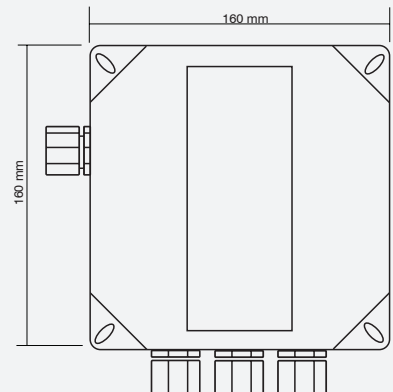
for Zone 2, 21, 22 or Non-Hazardous locations

Power Supply

Power Supply	115 V or 230 V AC, 50-60Hz
Power Rating	10 watts
Ambient Temperature Range	-40°C to +55°C
Ingress Protection	IP 66
Weight	4.5 kgs (9.9 lbs) nett
Construction	Carbon-loaded GRP
Certification	Ex II 3(1)G, II 2D Ex ec nC [ia] IIC T4 Gc(Ga) Ex tb IIIC T70C Db Ta = -40°C to +55°C ExVeritas 19ATEX0563 IECEX EXV 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 240 V / 110 V AC power supply for Zone 2, 21, 22 or Non-Hazardous locations

System Options

Installer's Kit

The kits provide installation engineers with the necessary Ex (d) enclosure glands required to complete an **Earth-Rite II MG** installation as specified in the system installation manual.

Kit A

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*,
IP68 plastic gland for junction box cable, 3m of 2 core conductor cable (x1) to connect system enclosure to clamp stowage box, 1m of solid green earth loop cable (x2) with PCB connectors and 10 mm bolt eyelets attached.

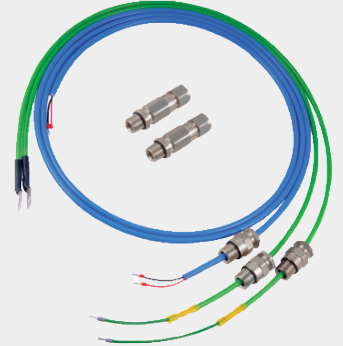
Kit B

Ex (d) IP68 glands (x5) for non-armoured cable 4 mm to 8.4 mm Ø*,
IP68 plastic gland for junction box cable, 3m of 2 core conductor cable (x1) to connect system enclosure to clamp stowage box, 1m of solid green earth loop cable (x2) with PCB connectors and 10 mm bolt eyelets attached.

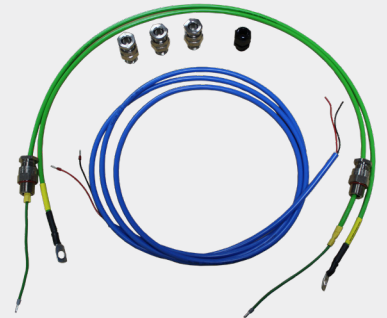
Kit C (GRP/P1)

Ex (e) IP68 glands (x5) for non-armoured cable 6 mm to 13 mm Ø,
IP68 plastic gland for junction box cable, 3m of 2 core conductor cable (x1) to connect system enclosure to clamp stowage box, 1m of solid green earth loop cable (x2) with PCB connectors and 10 mm bolt eyelets attached.

* For areas not requiring IIC apparatus.



Kit A - with Ex d glands, for use with armoured cable



Kit B - with Ex d glands, for use with non-armoured cable



Kit C - with Ex e glands, for use with non-armoured cable

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 ATEX Zone 1 and 21 hazardous areas
- > Self-retracting with up to 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 system.

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.

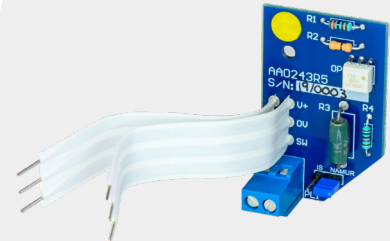


System Options

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**.

- > 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



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°C to 60°C
- > Various lengths of straight or spiral Hytrel cable available.
- > IECEx Ex h Certification:

Ex h IIC T6 Ga
Ex h IIIC T85°C Da
Ta = -40°C to +60°C
IECEx EXV 20.0033



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