

Maintenance & Operating Instructions

For

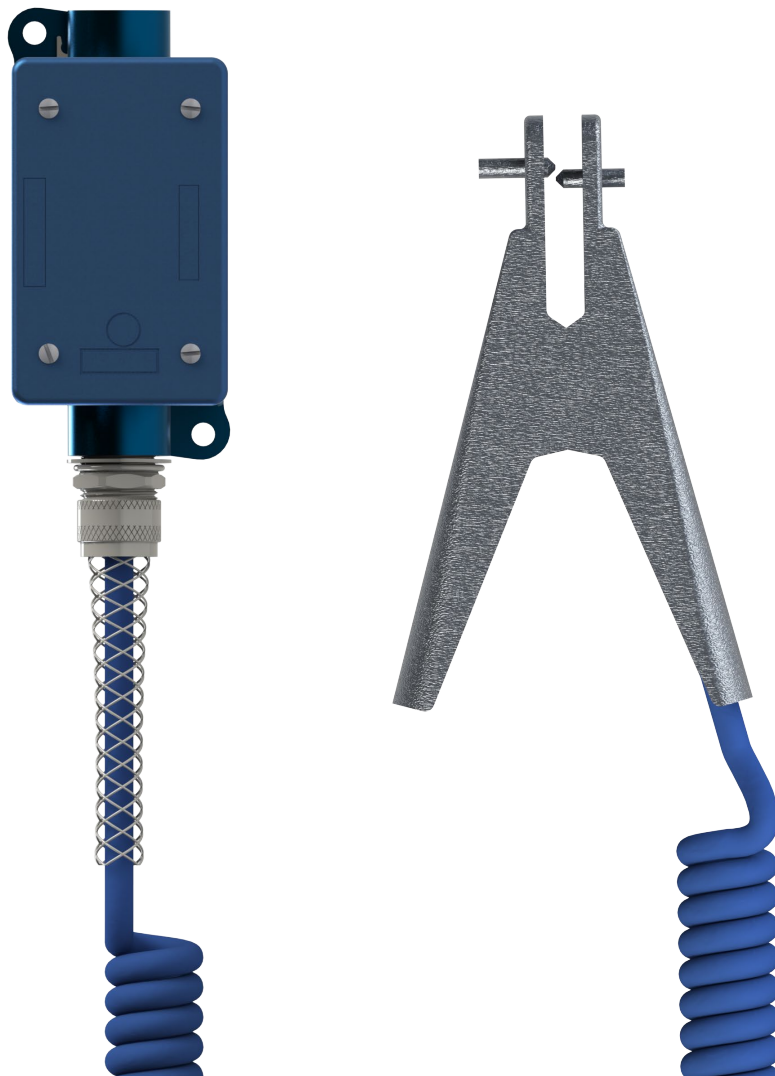
DIXON-ADS

Industrial Fluid Controls

A540 SERIES GROUND CLAMP



The Right Connection®



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Overview

The A540 Series ground clamps are key to creating a quality temporary connection for antistatic grounding applications. The clamp features three teeth to penetrate dirt, corrosion, and road grime when in use. The teeth are constructed of stainless steel to ensure lasting operation, and isolated from the clamp handle to allow operators to establish ground and a ground-verification signal in a single clamp action. The A540 also includes a high durability cable and junction box for convenient wiring access during installation and maintenance.

Common applications for the A540 series ground clamp include:

- Tank truck and Rail car loading facilities
- Drum and barrel filling sites
- Loading of stationary tanks

Features

- Clamp tethered to cable by stainless steel strap to protect connection from strain and wear.
- Pull-out resistant cord grip on junction box holds cable tighter the harder it is pulled.
- Junction box creates convenient service point for hazardous location installations.
- Coiled cable for compact storage.
- Strong clamping force to penetrate grime and remain connected during loading process.
- Can provide ground and a ground-verification signal in a single clamp

Technical Specifications

	MIN	MAX	NOMINAL
AMBIENT TEMPERATURE	-40°C	90°C	-
JUNCTION BOX			
HEIGHT	10.75 in. [27.3cm] INCLUDES STRAIN RELIEF		
WIDTH	3.0 in. [7.62cm]		
DEPTH	3.0 in. [7.62cm]		
WEIGHT	5 lbs. (2.27 kg)		
INGRESS PROTECTION	Weatherproof, raintight, and dust tight		
CONDUIT ENTRIES	ONE ¼" TRADE SIZE HOLE + FACTORY INSTALLED CABLE ON BOTTOM		
SUITABLE FOR INSTALL IN HAZARDOUS LOCATIONS:	Class I, Division 1 & 2, Groups B, C, and D hazardous locations Class II, Division 1 & 2, Groups E, F, and G hazardous locations Class III hazardous locations		
SUITABLE FOR CONNECTION TO HAZARDOUS LOCATIONS:	Class I, Division 1 & 2, Groups A, B, C, and D hazardous locations Class I, Zone 0, 1 & 2, Groups IIC, IIB, and IIA hazardous locations		
CABLE			
LENGTH	25 ft. stretched [7.6m] (Standard; other lengths available)		
DIAMETER	0.4 in. [1.0cm]		
WEIGHT	2.5 lbs. [1.13kg]; 0.1 lbs. PER FOOT [0.15g per meter]		
JACKET MATERIAL	Thermoplastic Elastomer, resistant to harsh environments.		
RESISTANCE	0.14Ω (6mΩ/foot)		
RECOMMENDED WIRE BETWEEN CONTROLLER AND A540	18 GA Stranded copper wire (THHN)		

Accessories

Ground Verification Monitor:

The A240 series ground verification monitors are designed to mitigate the danger of static buildup by verifying the presence of a high quality and reliable earth-ground bond. With the presence of a ground path for static to dissipate, loading and unloading of flammable or combustible liquids can be done safely. The A240 monitor verifies the bond is of sufficient quality to prevent static buildup. Internal indicators inform the operator whether the process connection is safely grounded and internal relay contacts may be used to interlock operations until a safe earth bonding has been established.



Sealing Fitting:

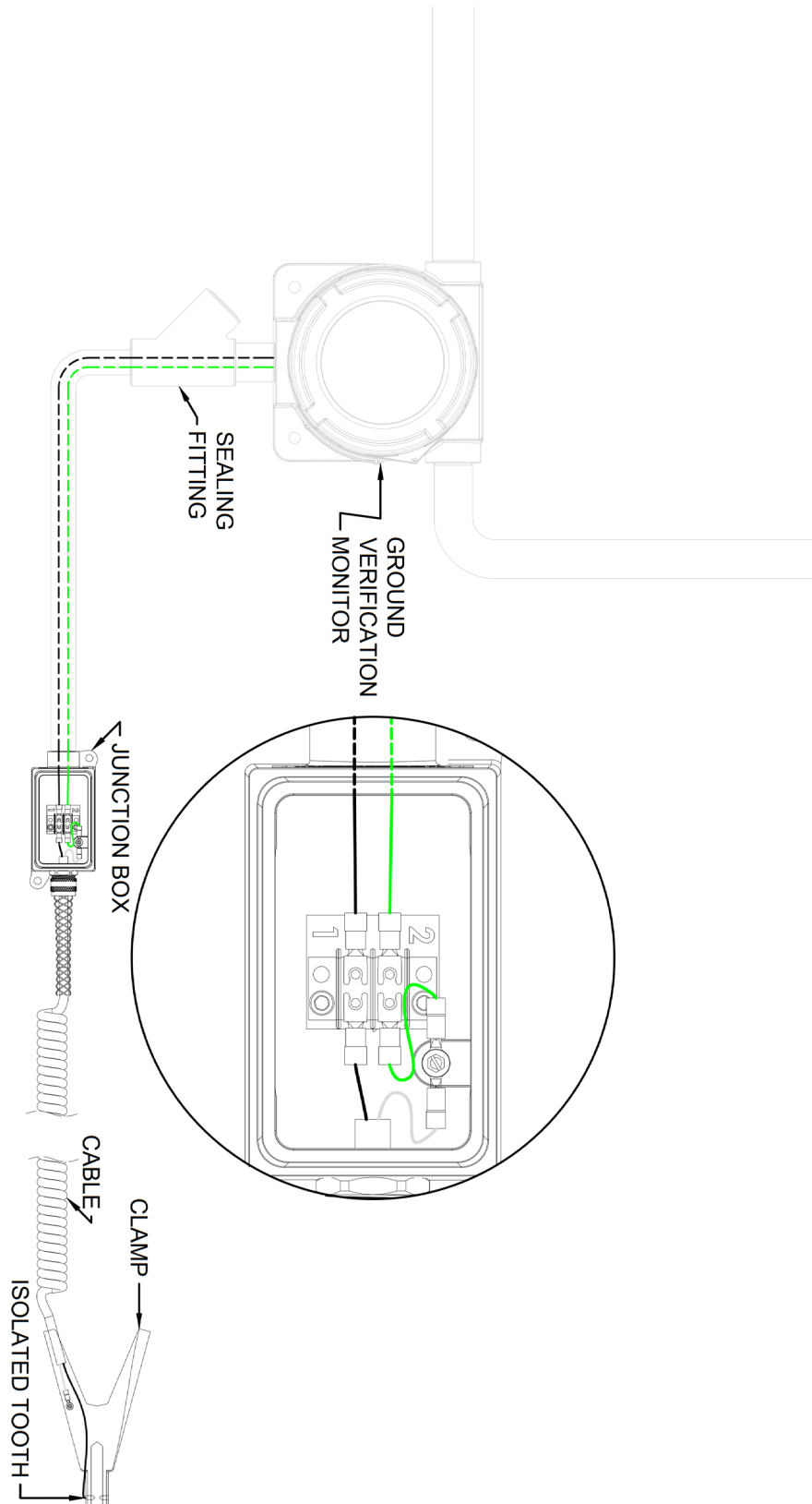
Sealing fittings are required within 18 inches of each enclosure entry used. These seal conduits from passing hazardous vapors or propagating flame. Sealing fittings are installed in-line with conduit, then filled with sealing compound once wiring has been installed and verified. Downstream junction boxes containing Intrinsically Safe circuits may be serviced without danger.



3/4" NPT Vertical Seal fitting with nipple; P/N: 30192AL

Note: Actual color may differ

Wiring Diagram



Installation

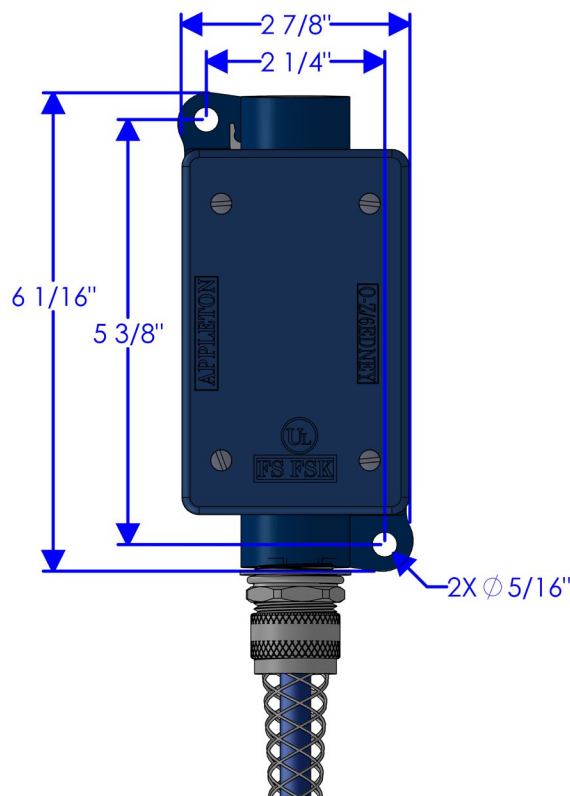
INSTALLATION MUST BE COMPLETED BY QUALIFIED PROFESSIONAL

A540 Series ground clamps are suitable for installation and use in ordinary and specific hazardous locations (listed in technical specifications section) as defined by NEC NFPA70 and IECEx standard 60079. Installation to be performed by a qualified professional.

Mechanical

It is recommended to wall mount the unit using stainless steel or galvanized steel hardware suitable for the monitor's weight and wall material.

1. Using the bolt pattern provided below, locate a sturdy area, large enough to install the junction box.



For greatest environmental resistance it is recommended to mount the junction box in the orientation shown. Keep in mind the coiled cable will hang below the box, and the clamp must be stored in an ungrounded position. The enclosure can withstand rain and sun exposure but will last longer when protected from the elements.

2. Level the bolt pattern and drill two holes marked on the pattern.
3. Have another person lift the junction box into position in front of the drilled holes.
4. Insert the two anchors or bolts into the two mounting holes shown below.
5. Tighten all the screws and ensure that the junction box is secure.

Electrical

- To be installed per NEC NFPA70 requirements for U.S. installations.
- Installation in other regions must conform to local electrical codes. Instructions provided below are general guidelines and may not cover local requirements.

1. Remove the lid from the A540 junction box.
2. Run conduit to junction box. Ensure conduit has sealing fitting at feeder end if installation is in hazardous location.

Conduit connection should be sealed from water intrusion through either rubber washers, caulking, or other sealing means.

3. Pull cable from process controller into A540 junction box.
4. Refer to wiring diagram above, as well as documentation for process controller to properly wire the process controller to the A540 ground cable.
5. Reinstall lid onto junction box.
6. Designate an ungrounded location to store the ground clamp while not in use. It is critical that the ground clamp be ungrounded while not in use. Storing in a grounded state can lead to unsafe loading conditions.
7. Verify proper functionality of system by testing before putting into service.

Maintenance

SERVICE SHOULD BE COMPLETED ONLY BY A QUALIFIED HAZARDOUS LOCATION TECHNICIAN.

REPLACE PARTS WITH GENUINE DIXON OR APPROVED EQUIVALENT PARTS; SUBSTITUTION MAY IMPAIR INTRINSIC SAFETY.

The A540 has few parts that will require regular maintenance and is designed for long service periods.

Unsheltered units should be serviced in dry weather to prevent rainwater from entering the enclosure and minimize moisture exposure.

1. If the ground connection is becoming intermittent, it is advised to inspect the clamp and cable.
2. Dulling of the clamp teeth may be a sign that the clamp has reached the end of its usable life and should be replaced. Contact Dixon for replacement parts.
3. Checking the cable for a failing conductor can be done by clamping to a known grounded piece of metal, then flexing the cable. If the ground controller's indicator changes while flexing the cable, the cable has reached the end of its usable life and should be replaced. Do not attempt to repair the cable. Contact Dixon for replacement parts.
 - a. In the event that the cable does need to be replaced, it can be removed while energized.
 - b. Open the A540 junction box and note the wire positions for each conductor in the A540 cable on the terminal block.
 - c. Remove the wires from the terminal block.
 - d. Compress the mesh cordgrip by pushing it toward the bottom of the junction box.
 - e. With the cordgrip compressed, the old cable may be pulled out, and new cable installed.
 - f. Once the new cable has been installed into the mesh cordgrip, re-wire the cable into the A540 junction box terminal strip.
 - g. Close the A540 junction box.
 - h. Verify proper functionality of system by testing before putting into service.

Replacement parts

Description	Part Number
Rack Cable with clamp	30585
Cord Grip	30708
Sealing Fitting; 3/4" Vertical	30129AL
Sealing Compound	30339 for 5 lbs. or 30339-002 for 1 lb.

Operation

WARNING - USING THE A540 IN A MANNER NOT DEFINED IN THIS MANUAL MAY IMPAIR SAFETY.

1. Verify process controller is powered on and idle.
2. Test the controller's operation by clamping to a known grounded piece of metal. Verify the controller's indicator changes from RED to GREEN. Remove the clamp from the test point.
3. Before any other electrical connections are made, secure the A540 clamp to the process connection that is to be loaded.
4. Verify the process controller's indicator changes from RED to GREEN.
5. Complete any other process connections.
6. Once all other safety measures are active, begin the loading process.
7. Once loading is complete, remove all other process connections, then the A540 last.
8. Return the A540 clamp to the isolated storage facility, verifying the indicator remains red.

Warranty

For warranty claims and information regarding coverage, please contact Dixon Support at

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